RECENT LITERATURE

EDITED BY GLEN E. WOOLFENDEN

An Entire Issue

Broekhuysen, G. J., ed. 1966. Proceedings of the Second Pan-African Ornithological Congress. Ostrich, suppl. **6:** 1–511.—The 45 papers delivered at the congress held at Pietermaritzburg in September, 1964, are grouped in sections: History, Classification and Nomenclature, Osteology, General Habits and Behavior, Food Habits, Nidification, Migration, Ringing, Ecology, Population Studies, Pathology and Disease, Geographical Distribution, and Tape Recording. The more important titles are abstracted below under appropriate headings.—M.A.T.

Anatomy and Embryology

Pocock, T. N. 1966. Contributions to the osteology of African birds. Ostrich, suppl. **6:** 83–94.—The colies (Coliidae) are divided into two genera; the value of the carpometacarpus in distinguishing certain families of passerines is demonstrated; and a possible relationship between the Ploceidae, Estrildidae, and Nectariniidae is suggested by certain skull characters.—M.A.T.

Sigefried, W. R. 1966. On the post-embryonic development of the South African Shelduck, *Tadorna cana* (Gmel.). Ostrich, **37:** 149–151.

Behavior

Akerman, B. 1965. Behavioural effects of electrical stimulation in the forebrain of the pigeon. I. Reproductive behaviour. Behaviour, **26:** 321–350.—By stimulating mainly that area of the forebrain extending medially up into the paleo-, neo-, and hyperstriatum, actions associated with reproductive behavior were elicited. Stimulation of males at the preoptic and hypothalamic levels generally elicited intense bowing; when external stimuli were also provided, aggressive action was released. The preoptic area plays a main role in regulation of actions associated with reproduction.—J.W.H.

Beer, C. G. 1965. Incubation and nest-building behaviour of Black-headed Gulls. V: The post-hatching period. Behaviour, **26:** 189–214.—Incubating Black-headed Gulls given chicks quickly displayed chick-care behavior and did not immediately return to incubation when the young birds were removed. Substitution of eggs for chicks showed that the readiness to incubate progressively declines in the post-hatching period. Timing of change from incubation to parental behavior was mainly due to external factors.—J.W.H.

Dunham, D. W. 1965. Agonistic behavior in captive Rose-breasted Grosbeaks, *Pheucticus ludovicianus* (L.). Behaviour, **26:** 160–173.—Agonistic behavior resembled that of other finches studied, differing only in detail. Head thrusting and bill snapping did not occur and tail spreading was uncommon. Rather than wing-raising or quivering, the birds "wing-flick," flashing the colored, under wing coverts. Predictability of action subsequent to behavior elements is discussed.—J.W.H.

Farkas, T. 1966. Notes on the breeding activities and post-embryonic development in the Mocking Chat *Thamnolea cinnamomeiventris cinnamomeiventris* (Lafresnaye). Ostrich, suppl. **6:** 95–107.

Fischer, H. 1965. Das Triumphgeschrei der graugans (*Anser anser*). Zeits. f.

Tierpsychol., **22:** 247–304.—A detailed study of the ontogeny, motivation, and function of the triumph ceremony, which consists of cackling and rolling. Cackling is important in keeping the family together, and rolling maintains rank order relationships.—M.S.F.

GUITON, P. 1966. Early experience and sexual-object choice in the brown leghorn. 1966. Animal Behav., **14:** 534–538.—Sexual response was induced in seven-week-old cockerels by injection of androgens. In contrast to birds raised communally, those chicks raised initially in visual isolation showed little tendency to respond to homospecific stimulus, some showing bias for human stimulus. Response to homospecific stimulus increased with experience in communal living until, by six months, the groups were indistinguishable.—A.S.G.

GWINNER, E. 1966. Über bau und Funktion einer Nickhautstrucktur der Elster (*Pica pica*). J. f. Orn., **107:** 323–325.—A yellow spot on the nictitating membrane is used in courtship and agonistic displays. (In German.)—H.C.M.

HOGAN, J. A. 1965. An experimental study of conflict and fear: an analysis of behavior of young chicks toward a mealworm. Part II. The behavior of chicks which eat the mealworm. Behaviour, **27:** 273–289.—This paper examines the hypothesis of Kruijt (1964) that food-running is an ambivalent activity, being a mixture of a tendency to manipulate the prey and flee. (From author's summary.) —J.W.H.

ISHIGAKI, K. 1966. The interspecific territorialism between the shrikes, *Lanius bucephalus* and *L. cristatus,* in their cohabiting area. Japanese J. Ecol., **16:** 87–93. —A study of territorialism in a small woods in two consecutive years. *L. bucephalus* arrived first and established territories. When *L. cristatus* arrived territories were distributed anew following intra- and interspecific disputes. Both species reacted to mounts of *L. bucephalus* in their territories. Such territorialism may reduce competition between individuals but depresses population sizes of both species. (In Japanese; English summary.)—R.G.W.

KAHL, M. P. 1966. Comparative ethology of the Ciconiidae. Part 1. The Marabou Stork, *Leptoptilos crumeniferus* (Lesson). Behaviour, **27:** 76–106.—A breeding colony was studied, and adult and nestlings were kept in captivity. Feeding habits, displays, and breeding habits are discussed.—J.W.H.

KAHL, M. P. 1967. Observations on the behaviour of the Hamerkop *Scopus umbretta* in Uganda. Ibis, **109:** 25–32.—Characteristics of maintenance activities and hostile and sexual social displays do not support the view that *Scopus* is most closely related to herons and/or storks. In fact, behavioral evidence does not indicate a particularly close relationship with any birds so far studied.—W.B.R.

KONISHI, M. 1965. Effects of deafening on song development in American Robins and Black-headed Grosbeaks. Zeits. f. Tierpsychol., **22:** 584–599.—Individuals that were deafened when young developed abnormal syllables in their songs.—M.S.F.

KONISHI, M. 1965. The role of auditory feedback in the control of vocalization in the White-crowned Sparrow. Zeits. f. Tierpsychol., **22:** 770–783.—Young birds exposed to conspecific song during the critical period and deafened before they began singing could not later produce the normal song. However, song was normal after deafening if birds had sung before. Females with testosterone implants were capable of learning song dialects.—M.S.F.

MACLEAN, G. L. 1966. Studies on the behavior of a young Cape Dikkop *Burhinus capensis* (Lichtenstein) reared in captivity. Ostrich, suppl. **6:** 155–170.

McHENRY, M. G. 1966. Pheasant nest parasitized by a Bob-white. Kansas Ornith. Soc. Bull., **17:** 26.—A female Ring-necked Pheasant was flushed from a nest containing 10 pheasant and 6 Bobwhite eggs.—A.S.G.

PHILLIPS, R. E., AND P. B. SIEGEL. 1966. Development of fear in chicks of two closely related genetic lines. Animal Behav., **14:** 84–88.—High- and low-weight genetic lines of chicks were tested for response to a sudden, loud noise. The lines differed significantly in responsiveness. With increasing age responsiveness increased, then declined to a plateau above the initial level.—A.S.G.

PROZESKY, O. P. M. 1966. A study of the behavior of the Crested Barbet. *Trachyphonus vaillantii.* Ostrich, suppl. **6:** 171–182.—Breeding behavior.—M.A.T.

REINERT, J. 1965. Takt- und Rhythmusunterscheidung bei Dohlen. Zeits. f. Tierpsychol., **22:** 623–671.—A Jackdaw was conditioned to distinguish certain acoustical signals.—M.S.F.

ROBEL, R. J. 1966. Booming territory size and mating success of the Greater Prairie Chicken (*Tympanuchus cupido pinnatus*). Animal Behav., **14:** 328–331.—Territories of eight individually marked males on the booming ground were established. Two males accounted for 72.5 per cent of total observed copulations. Size of territory, particularly the primary portion (occupied by cock 50 per cent of times he was located), appeared to be related to mating success.—A.S.G.

SALZEN, E. A. 1965. The interaction of experience, stimulus characteristics, and exogenous androgen in the behaviour of domestic chicks. Behaviour, **26:** 288–322.—The behavior of normal domestic chicks was compared with that of chicks that had received a single injection of a slowly absorbed preparation of testosterone oenanthate, at from two to three days following hatching.—J.W.H.

SAUER, E. G. F., AND E. M. SAUER. 1966. Social behavior of the South African Ostrich, *Struthio camelus australis.* Ostrich, suppl. **6:** 183–191.—Preliminary report on an extensive investigation.—M.A.T.

SCHUTZ, F. 1965. Sexuelle Prägung bei Anatiden. Zeits. f. Tierpsychol., **22:** 50–103.—A detailed experimental study of sexual imprinting in 10 species of anatids. Sexual imprinting is widely distributed in ducks but not geese. In sexually dimorphic species, female responses are innate but males show imprinting to a sexual partner, this related to the female's having few releasers which could be used in species recognition. In *Anas flavirostris,* in which the sexes are alike and inconspicuous, females imprint as readily as males. Additional evidence suggests that sexual behavior in male Mallards is determined through both imprinting and innate factors.—M.S.F.

THIELCKE, G. 1965. Gesangsgeorgraphische Variation des Gartenbaumläufers (*Certhia brachydactyla*) in Hinblick auf das Artbildungsproblem. Ziets. f. Tierpsychol., **22:** 542–566.—An analysis of geographic variation in song. Greater variability was found in peripheral and insular populations. Various selective pressures acting on song are discussed.—M.S.F.

TRETZEL, E. 1965. Imitation und Variation von Schäferpfiffen durch Haubenlerchen (*Galerida c. cristata* [L.]). Zeits. f. Tierpsychol., **22:** 784–809.—Larks made accurate imitations of four different human whistles.—M.S.F.

DISEASES AND PARASITES

ASH, J. R., AND G. I. SHARPE. 1964. Post-mortem and pesticide examinations of birds in the cold spell of 1963. Bird Study, **11:** 227–239.—Birds of 46 species found

dead were examined. Only 3 of the 210 birds examined showed a pathological condition; in 3 of 19 analyzed for pesticide residues the levels were probably high enough to have been, in themselves, the cause of death. (From Wildl. Rev., no. 121, 1966.)—J.S.M.

BICKFORD, A. A., G. H. ELLIS, AND H. E. MOSES. 1966. Epizootiology of tuberculosis in Starlings. J. Amer. Vet. Med. Assoc., **149:** 312–318—On an Indiana farm, where a high incidence of tuberculosis occurred in swine, 7 of 125 Starlings showed tubercles or lesions on internal organs. (From Wildl. Rev. no. 123, 1966.)—J.S.M.

BIGLAND, C. H., A. J. DAMASSA, AND A. E. WOODARD. 1965. Diseases of Japanese Quail (*Coturnix coturnix japonica*), Avian Diseases, **9:** 212–219.—Reports on experimental transmission of selected avian pathogens.—J.S.M.

BOYD, E. M. 1967. Deutonymphs as endoparasites of the eastern Belted Kingfisher and the eastern Green Heron in North America. Proc. Ent. Soc. Wash. D. C., **69:** 73–81.—Two new species of heteromorphic feather mites (Acarina: Sarcoptiformes: Pterolichidae) which inhabit subcutaneous tissue: *Gabucinia alcyon* from the Belted Kingfisher and *Ardeacarus americanus* from the Green Heron.—H.W.K.

BOZEMAN, F. M., A. SHIRAI, J. W. HUMPHRIES, AND H. S. FULLER. 1967. Ecology of Rocky Mountain spotted fever. II. Natural infection of wild mammals and birds in Virginia and Maryland. Amer. J. Trop. Med. & Hyg., **16:** 48–59.—Several strains of *R. rickettsii* were recovered from six species of native, wild mammals in Virginia; antibodies were detected in sera of 15 different mammal species from Virginia and Maryland. Complement-fixing antibodies were found in 18 species of birds (the Snowy Egret, Downy Woodpecker, and 16 species of passerines most of which spend some time on the ground).—H.W.K.

BRADSHAW, J. E., AND D. V. TRAINER. 1966. Some infectious diseases of waterfowl in the Mississippi Flyway. J. Wildl. Mgmt., **30:** 570–576.—Tests for six arboviruses were negative in 123 Canada Geese and 179 Mallards; 12 geese and 55 ducks were negative for *Salmonella* (2 spp.) and *Mycoplasma*. Newcastle disease antibody was present in 40 of 236 Canada Geese and 37 of 267 Mallards. Blood parasites not studied in detail. (From Wildl. Rev., no. 123, 1966.)—J.S.M.

BRENES, R. R., G. ARROYO, AND G. MUÑOZ. 1966. Helmintos de la República de Costa Rica. XXI. Algunos tremátodos de aves silvestres 2. Rev. Biol. Trop., Univ. Costa Rica, **14:** 123–132.—Describes three species of trematodes from birds found in Costa Rica. (In Spanish; English summary.)—E.E.

BUSCHER, H. N. 1966. Intestinal helminths of the Blue-Winged Teal, *Anas discors* L., at Delta, Manitoba. Canadian J. Zool., **44:** 113–116.—Quantitative data for the 20 species of helminths found in over 100 birds. (From Helminthol. Abstr., **35:** no. 2467, 1966.)—J.S.M.

CARRIKER, M. A., JR. 1966. New species and records of Mallophaga (Insecta) from neotropical owls (Strigiformes). Amer. Midl. Nat., **76:** 74–99.—Status of Mallophaga species known to parasitize neotropical owls are reviewed, and genera known to infect owls are characterized; 15 new species and 3 new subspecies described.—A.S.G.

CLARK, G. W., AND B. SWINEHART. 1966. Blood protozoa of passerine birds of the Sacramento (Calif.) region. Bull. Wildl. Disease Assoc., **2:** 53–54.

COLLINS, W. E. *et al.* 1966. Blood parasites of birds of Wateree, South Carolina. J. Parasitol., **52:** 671–673.—Of 603 birds (67 species and 21 families) examined, 137 individuals of 37 species were infected. *Haemoproteus* was the most common

blood parasite, followed by *Plasmodium,* microfilaria, leucocytozoon, and *Trypanosoma.*—J.S.M.

ERNEK, E., AND M. LICHARD. 1965. Role of the English Sparrow (*Passer domesticus*) in the circulation of tick-borne encephalitis virus. J. Hyg. Epidemiol. Microbiol. Immunol., **8:** 375–379.

FADDOUL, G. P., G. W. FELLOWS, AND J. BAIRD. 1966. A survey on the incidence of Salmonellae in wild birds. Avian Diseases, **10:** 89–94.—Eight Brown-headed Cowbirds, two House Sparrows, and one White-throated Sparrow were infected with *Salmonella typhimurium*; *S. derby* was found in a Herring Gull. (From Wildl. Rev., no. 122, 1966.)—J.S.M.

GALINDO, P., AND O. SOUSA. 1966. Blood parasites of birds from Almirante, Panama, with ecological notes on the hosts. Rev. Biol. Trop., Univ. Costa Rica, **14:** 27–46. —Report on 3,634 blood smears representing 249 bird species of 48 families. Habitat data are provided and status at Almirante indicated where a species was found positive for blood parasites. (In English; Spanish summary.)—E.E.

GRIMES, J. E., T. D. SULLIVAN, AND J. V. IRONS. 1966. Recovery of ornithosis agent from naturally infected White-winged Doves. J. Wildl. Mgmt., **30:** 594–598. —An ornithosis agent was recovered from tissues of sick and dead White-winged Doves after unusual die-offs in the lower Rio Grande Valley. Thought to be the first report of natural occurrence of ornithosis in this species.—J.P.R.

GUNDACH, J. L. 1965. The helminth parasites of the Starling (*Sturnus vulgaris* L.) of the Lublin Palatinate. Acta Parasitol. Polonica **13:** 215–225.—Of 100 birds, 63 were infected; 25 species of helminths found. (From Helminthol. Abstr., **35:** no. 2468, 1966.)—J.S.M.

HARRIS, M. P. 1964. The incidence of some species of Trematoda in three species of *Larus* gulls in Wales. Ibis, **106:** 532–536.—The occurrence of eight species of Trematoda in 65 *L. argentatus,* 38 *L. fuscus,* and 86 *L. marinus* is discussed with respect to host species, sex, age, and locality of collection. (From Helminthol. Abstr., **35:** no. 1725, 1966.)—J.S.M.

KAWANO, K. 1963. [Variation in the infection rate of cestodes in the Japanese Tree Sparrow.] Japanese J. Parasitol., **12:** 502–506.—Of 130 *Passer montanus saturnatus* examined over a four-year period, 40 were infected with *Choanotaenia passerina.* The highest incidence was in June; none were infected during winter. (In Japanese; English summary; from Helminthol. Abstr., **35:** no. 1726, 1966.)—J.S.M.

KAWANO, K. 1964. [The longevity of cestodes of wild birds.] Japanese J. Parasitol., **13:** 139–142. (In Japanese; English summary.)

KIRMSE, P. 1966. New wild bird hosts for pox viruses. Bull. Wildl. Disease Assoc., **2:** 30–33.—Hosts: *Hylocichla ustalata, H. minima,* and *Certhia familiaris.* (From Wildl. Rev., no. 122, 1966.)—J.S.M.

LOOMIS, R. B. 1966. A new species and new records of the genus *Toritrombicula* (Acarina, Trombiculidae) from birds of Sonora, Mexico. J. Parasitol., **52:** 768–771.—A new species is from *Numenius a. americanus* and *Squaterola squaterola*; congeneric species from bird hosts of Japan and some Pacific Islands are discussed. —J.S.M.

MACINNIS, A. J. 1966. Trematodes from marine shorebirds from the northwest Gulf coast of Florida. Zool. Anz., **176:** 52–68.—Eight species recorded, some for

the first time, from 13 charadriiforms of six species. (From Helminthol. Abstr., **35:** no. 2469, 1966.)—J.S.M.

MARX, D. J. 1966. Some blood parasites from Minnesota and Wisconsin birds. Bull. Wildl. Disease Assoc., **2:** 6–8.

MCDANIEL, B., D. TUFF, AND E. BOLEN. 1966. External parasites of the Black-bellied Tree Duck and other dendrocygnids. Wilson Bull., **78:** 462–468.

NEWTON, I., AND I. C. WILLIAMS. 1967. A trematode infection of Bullfinches *Pyrrhula pyrrhula*. Ibis, **109:** 110–113.—Of 1,265 Bullfinches killed as orchard pests, 51 carried infections of *Urotocus rossittensis* in the bursa Fabricii. Infection rate highest in younger birds, which probably become infected from snails fed to them as nestlings.—W.B.R.

NUORTEVA, P., AND H. HOOGSTRAAL. 1962. The incidence of ticks (Ixodoidea, Ixodidae) on migratory birds arriving in Finland during the spring of 1962. Ann. Med. Exp. Biol. Fenniae, **41:** 457–468.

OOSTHUIZEN, J. H., AND M. B. MARKUS. 1967. The haematozoa of South African birds. I: Blood and other parasites of two species of game birds. Ibis, **109:** 115–117.—Lists all parasites of one francolin and eight guinea-fowl, and summarizes literature (six titles) on the haematozoa of South African birds.—W.B.R.

PALM, V. 1965. Ein Beitrag zur Helminthen fauna des Blesshuhns (*Fulica atra* L.) aus dem Raum von Potsdam. Acta Parasitol. Polonica **13:** 425–444.—Species of helminths recorded from 88 *Fulica atra* near Berlin totaled 18; some new for the host or region. A list of helminths known to occur in *F. atra* is given. (Polish summary; from Helminthol. Abstr., **35:** no. 2472, 1966.)—J.S.M.

SCHMIDT, G. D., AND K. A. NEILAND. 1966. Helminth fauna of Nicaragua. III. Some Acanthocephala of birds, including three new species of *Centrorhynchus*. J. Parasitol., **25:** 739–745.—Hosts include: *Buteo magnirostris, Dromococcyx phasianellus, Crotophaga sulcirostris, Piaya cayana, Ictinia plumbea, Tyto alba,* and *Turdus grayi*. First records of acanthocephalans from Nicaragua.—J.S.M.

SOGANDARES-BERNAL, F., AND D. W. WALTON. 1965. *Stictodora lariformicola* n. sp. (Trematoda: Heterophyidae) from Florida piscivorous birds. Proc. Helminthol. Soc. Wash., **32:** 115–117.—Hosts: *Larus argentatus, L. atricilla, L. delawarensis,* and *Thalasseus maximus*.—J.S.M.

STABLER, R. M., P. A. HOLT, AND N. J. KITZMILLER. 1966. *Trypanosoma avium* in the blood and bone marrow from 677 Colorado birds. J. Parasitol., **52:** 1141–1144.—Of individuals of 139 species (44 families; 13 orders), 49.3 per cent had marrow infections but only 4.9 per cent had blood infections.—J.S.M.

THRELFALL, W. 1964. Factors concerned in the mortality of some birds which perished in Anglesey and northern Caernorvonshire during the winter of 1963, with special reference to parasitism by helminths. Ann. Mag. Nat. Hist., Year 1963, ser. XIII, **6:** 721–737.—Record of 12 trematodes, 18 cestodes, 14 nematodes, and 5 acanthocephalans from 89 birds of 32 species collected in January and February. Of 123 birds, 20 per cent were alleged to have died of the combined effects of parasitism and starvation. (From Helminthol. Abstr., **35:** no. 1726, 1966.)—J.S.M.

THRELFALL, W. 1965. Helminth parasites and possible causes of death of some birds. Ibis, **107:** 545–548.—A report of 12 species of Trematoda, 20 Cestoda, 12 Nematoda, and 5 Acanthocephala from 88 birds of 29 species in Great Britain. Death was allegedly caused by parasites in only 4.5 per cent of the birds. New host and British records noted. (From Helminthol. Abstr., **35:** no. 1729, 1966.)—J.S.M.

UYS, C. J., AND W. B. BECKER. 1966. Studies on tern virus infection in chickens. Ostrich, suppl. **6:** 443–451.—A virus, isolated from dying Common Terns, was a strain of avian influenza virus Type A. The pathology of the infection is distinctive. —M.A.T.

WALLACE, J. H., AND O. W. OLSEN. 1966. Endoparasites of the Red-winged Blackbird *Agelaius phoeniceus* L. in Colorado. Bull. Wildl. Disease Assoc., **2:** 80.

WESTEMEIER, R. L. 1966. Apparent lead poisoning in a wild Bobwhite. Wilson Bull., **78:** 471–472.

DISTRIBUTION AND ANNOTATED LISTS

ALLEN, F. G. H., AND P. G. C. BRUDENELL-BRUCE. 1967. The White-rumped Swift *Apus affinis* in southern Spain. Ibis, **109:** 113–115.—Three nests found in 1966 in old nests of Red-rumped Swallows (*Hirundo daurica*) confirm range extension across the Straits of Gibraltar.—W.B.R.

BENSON, C. W., AND M. P. STUART IRWIN. 1966. The Brachystegia avifauna. Ostrich, suppl. **6:** 297–321.—Brachystegia woodland is found almost unbroken from Angola to Tanganyika and Moçambique. Relations of the 112 species characteristic of this zone are analyzed, and an attempt is made to trace the evolutionary history of the endemic species over the last 10,000 years.—M.A.T.

CLANCEY, P. A. 1966. A catalogue of birds of the South African sub-region (Pt. IV: Families Sylviidae-Prionopidae). Durban Mus. Novit., **7:** 465–544.—A continuation of the author's meticulous list of the birds of southern Africa, that is, south of the Cunene and Zambesi rivers. The following new subspecies described: *Apalis ruddi fumosa* from Swaziland, *Sylvietta whytii nemorivaga* from Rhodesia, *Cisticola brachyptera tenebricosa* from Sul do Save, *Melaenornis silens lawsoni* from the Northern Cape, *Bias musicus clarens* from Sul do Save, *Macronyx ameliae altanus* from Zambia. The type locality of *Cisticola campestris* Gould is restricted to Durban.—M.A.T.

CLAPP, R. B., AND F. C. SIBLEY. 1967. New records of birds from the Phoenix and Line islands. Ibis, **109:** 122–125.—Records 10 species (4 ducks, 5 shorebirds, and the Laughing Gull) of rare or accidental occurrence in the Central Pacific.—W.B.R.

DONNELLY, B. G. 1966. The range of the Booted Eagle, *Aquila pennata* (Gmelin), in southern Africa with a note on field identification. Ann. Cape Prov. Mus., **5:** 109–115.—In winter found throughout southern Africa except for desert areas. Extreme dates September to April. Old breeding records are erroneous.—M.A.T.

HERRN, C-P. 1966. Neue Sommerbeobachtungen in Anatolien, in Kiliken und im Hatay. Vogelwarte, **23:** 305–308.—Summer observations of birds in southern Turkey.—H.C.M.

KIPP, F. A. 1966. Vom Frühjahrdurchzug auf der Insel Samothrake. Vogelwarte, **23:** 283–285.—Observations of spring transients on the Aegean island, Samothrace. —H.C.M.

LAWSON, W. J. 1966. Zoogeographical divisions in southern Africa based on a study of the Muscicapinae. Ostrich, suppl. **6:** 493–497.—Three elements are recognized among the South African Muscicapinae; the zoogeographic and smaller ecologic areas are defined.—M.A.T.

MOREAU, R. E. 1966. The mutability of the African avifaunal scene. Ostrich, suppl. **6:** 453–459.—Summary of factors causing changes in Africa during the Pleistocene, with emphasis on the last 10,000 years.—M.A.T.

OZAWA, K. 1966. [Observation of the Brown Booby, around Kusagakijima and Sumisu-to, south of Japan.] Misc. Repts. Yamashina's Inst. Ornith., **4**: 378–383.—Discovery of what is apparently the northernmost breeding station (*ca.* 31° N) of *Sula leucogaster* in the Pacific. (In Japanese; English summary.)—K.C.P.

PETTS, MRS. T. A. "1966" [1967]. First record of a Ground Dove in Michigan. Jack-pine Warbler, **44**: 176.—Mist-netted 5 September 1966 in Presque Isle County. —R.B.

PINTO, O. M. DE O. 1966. [Critical study and provisional catalogue of the birds of the Federal Territory of Roraima.] Cadernos da Amazonia, **8**: 1–176. Instituto Nacional de Pesquisas da Amazonia, Caixa Postal 478, Manaus, Amazonas, Brazil.—The region covered, until recently known as the Territory of Rio Branco (situated in extreme northern Brazil between Venezuela and Guyana), consists predominantly of grassland. Some 390 species have been recorded, of which 61 were added by the author in less than a month (in March and April, 1962), chiefly from the Rio Mucajaí, an affluent of the Rio Branco. One new subspecies described, the antbird *Hypocnemis cantator perflava* from Rio Mucajaí. Taxonomic comments on a number of forms included. *Dendroica striata* was found presumably wintering. (In Portuguese.)—E.E.

ROUX, F., AND G. MOREL. 1966. Le Sénégal, région privilégiée pour les migrateurs Palaearctiques. Ostrich, suppl. **6**: 249–254.—Summary of 10 years of observation. —M.A.T.

SCHÜZ, E. 1966. Über Paläarkten in Äthiopien im April, mit zusätzlichen Angaben über den Weissstorch. Vogelwarte, **23**: 285–289.—Observations of spring migrants in Ethiopia.—H.C.M.

SIEGFRIED, W. R. 1966. The status of the Cattle Egret in South Africa with notes on the neighboring territories. Ostrich, **37**: 157–169.

TREE, A. J. 1966. Notes on the Palaearctic migrants in the north Kafue basin, Zambia. Ostrich, **37**: 184–190.—Detailed records of abundance and inclusive dates. —M.A.T.

TREE, A. J. 1966. Pectoral Sandpiper, *Calidris melanotus,* in Bathurst District, Eastern Cape. Ostrich, **37**: 195–196.—A second record for South Africa; seen from 3 April to 1 May 1966.—M.A.T.

VOOUS, K. H. 1966. The distribution of owls in Africa in relation to general zoogeographical problems. Ostrich, suppl. **6**: 499–506.—The African owl fauna shows a slight relation with the Oriental fauna.—M.A.T.

ECOLOGY AND POPULATION

BETTS, F. N. 1966. Notes on some resident breeding birds of southwest Kenya. Ibis, **108**: 513–520.—A severely condensed account of breeding records and ecological distribution (according to 13 "biotopes") of about 150 species in the Narok district, 1948–1952. The breeding seasons of most birds are prolonged and very irregular, depending almost entirely on the rainfall.—W.B.R.

BROEKHUYSEN, G. J. 1966. The avifauna of the Cape "Protea-Heath-Macchia" habitat in South Africa. Ostrich, suppl. **6**: 323–334.—Although 138 species are recorded for this habitat, only 5 are particularly attracted to it, and only 2 are mostly confined to it.—M.A.T.

BROOKE, R. K. 1966. Nuptial moult, breeding season and clutch size of Rhodesian Red Bishops *Euplectes orix* and congeners in relation to rainfall. Ostrich, suppl.

6: 223–235.—Some species showed a direct relation between breeding activity and onset of rains; others did not.—M.A.T.

CODY, M. L. 1966. A general theory of clutch size. Evol., **20:** 174–184.—The energy allocated to activities related to clutch size, predator avoidance, and competition, by various species, is considered in formulating a general theory of clutch size. In general, it is advantageous for birds inhabiting stable environments, where the population is at or near the carrying capacity, to devote more time and energy to predator avoidance and competition, at a sacrifice of reproductive rate. In unstable environments populations are usually below the carrying capacity, and birds which increase their clutch size will be favored. The model also accounts for increased clutch size with increased latitude.—A.S.G.

EMLEN, J. T. 1966. Some quantitative representations of ecological distribution and faunal structure applied to African birds. Ostrich, suppl. **6:** 271–283.—Analysis based on the author's earlier (*Ibis,* **98:** 565–576, 1956) quantitative method of describing habitats.—M.A.T.

ERN, H. 1966. Zur Ökologie und Verbreitung des Blaukehlchens, *Luscinia svecica,* in Spanien. J. f. Orn., **107:** 310–314.—The Bluethroat occurs in dwarf-shrub heaths at elevations of 1,500 to 1,800 m on several isolated mountain ranges in Spain. (In German; Spanish summary.)—H.C.M.

ERTZ, W. 1966. Ecological principles in the urbanization of birds. Ostrich, suppl. **6:** 357–363.—Discusses the ecology of the city, the origin of urban birds, and differences in population structure between urban and rural birds.—M.A.T.

FARKAS, T. 1966. The birds of Barberspan. III. Some structural changes in the avifauna of the Barberspan Nature Reserve. Ostrich, suppl. **6:** 463–491.—Changes in the composition of the avifauna traced as the pan dried up over a period of three years.—M.A.T.

FRY, C. H. 1966. The ecological distribution of birds in northern Guinea savanna, Nigeria. Ostrich, suppl. **6:** 335–356.—Detailed ecological breakdown of the avifauna within 50 miles of Zaria.—M.A.T.

HAAPANEN, A. 1965. Bird fauna of the Finnish forests in relation to forest succession. I. Ann. Zool. Fenn., **2:** 153–196.—A four-year study of the effects of succession, marsh-formation, and sylviculture on forest birds. Strip censuses showed fairly small annual changes in density and species composition associated with succession. Included is useful tabulation of the feeding and nesting niches of the species censused. Many conclusions should be valuable in studies in North America, especially of communities on glaciated areas. For example, Haapanen concludes that since the forest floor is a relatively unimportant feeding ground, the bird densities are more affected by stand composition and succession (and development of underbrush) than by swampiness of the ground and composition of ground vegetation (which is the basis of the "forest type" classification of northern European forest ecologists). Intensive sylviculture greatly affects the density and composition of the avifauna by its impact on the course of natural succession, by thinning of growing stands and clear-cutting of old pine forests, and, most significantly, by favoring spruce. On moist sites in southern Finland spruce stands increased from 25.5 to nearly 57 per cent while the hardwood stands, including birch, decreased in a like proportion. Hole-breeders are particularly declining, because they chiefly use the "hardwoods" (aspen and birch) for excavating their holes.—M.D.F.U.

HOLTMEIER, F-K. 1966. Die ökologische Funktion des Tannenhähers im Zirben-Lärchenwald und der Waldgrenze des Oberengadins. J. f. Orn., **107:** 337–345.—

Discusses the Nutcracker's, *Nucifnaga caryocatactes,* role in reforestation. (In German; English summary.)—H.C.M.

IMMELMANN, K. 1966. Ecology and behavior of African and Australian grass finches —a comparison. Ostrich, suppl. **6:** 371–379.—Development of forest, savanna, and grassland forms has occurred independently in both countries. The habit of drinking water by pigeon-like sucking is found only in Australian grassland forms.—M.A.T.

KLUYVER, H. N. 1966. Regulation of a bird population. Ostrich, suppl. **6:** 389–396.—Despite heavy artificial predation on eggs and young of *Parus major,* the population of the following year was normal, due to a much higher adult survival rate which is evidently density dependent.—M.A.T.

KURATA, A. 1966. A bird survey of Iriomote I., Yaeyama Group, S. Ryu Kyus. Misc. Repts. Yamashina's Inst. Ornith., **4:** 358–370.—On Iriomote and adjacent Nakano-Kamijima, 38 species, including 7 new to the Ryu Kyus, were found. Habitat segregation is described in a mixed seabird colony on Nakano-Kamijima, consisting of a combined total of 20,000 individuals of *Anous stolidus, Sterna fuscata, Calonectris leucomelas* (possibly at its southern limit), and *Sula leucogaster.* Control of the egg harvest on this island is recommended. (In Japanese; English summary.)—K.C.P.

LIVERSIDGE, R. 1966. Fluctuations in a breeding population in the eastern Cape. Ostrich, suppl. **6:** 419–424.—Details of 519 nesting attempts over a three-year period are tabulated. "It is concluded that density dependent factors do not operate under local conditions and that rainfall and its effect are the most important density independent factors." (From author's summary.)—M.A.T.

LOKEMOEN, J. T. 1966. Breeding ecology of the Redhead duck in western Montana. J. Wildl. Mgmt., **30:** 668–681.—Because few other ducks nested in the same cover, Redhead nest parasitism was mostly intra-specific in pothole habitat in the Flathead Valley. Parasitism, rapidly drying potholes, and blocks of nesting cover too small for adequate seclusion appeared to be responsible for a nest success of only 15 per cent.—J.P.R.

MOREAU, R. E. 1966. The bird communities of some African vegetation types. Ostrich, suppl. **6:** 265–270.—Comparisons of bird communities in six vegetation types, with notes on preferred foods. Lowland rain forest has the greatest density, but acacia steppe is surprisingly rich.—M.A.T.

MORSE, D. H. 1967. Foraging relationships of Brown-headed Nuthatches and Pine Warblers. Ecol., **48:** 94–103. Foraging behavior and interactions between these two species in longleaf pine lands of Louisiana during fall and winter. (From author's abstract.)—H.W.K.

OATLEY, T. B. 1966. Competition and local migration in some African Turdidae. Ostrich, suppl. **6:** 409–418.—Among small African forest thrushes, nest sites rather than food supply seemed to be the limiting factor for population size. Local migration may maintain gene flow.—M.A.T.

OGASAWARA, K. 1966. [Bird survey of Mt. Kurikoma and its surrounding area, northern Honshu, with ecological notes.] Misc. Repts. Yamashina's Inst. Ornith., **4:** 371–377.—Species composition of the avifauna and vertical distribution in summer and winter studied. Correlation of vegetation type and abundance of certain bird species described and tabulated. Noteworthy was a vertical segregation between the Nutcracker (*Nucifraga caryocatactes*) and Jay (*Garrulus glandarius*); violent interspecific fighting occurred in zones of overlap. (In Japanese; English summary.)—K.C.P.

ROWAN, M. K. 1966. Territory as a density regulating mechanism in some South African birds. Ostrich, suppl. **6:** 397–408.—Some South African species are permanently territorial. The effects of this habit are discussed, and its significance in population control is considered.—M.A.T.

STEPHENS, H. A. 1966. Observation on eagles in Kansas. Kansas Ornith. Soc. Bull., **17:** 23–25.—Of 15 nests, most in heron colonies, none showed any sign of attempts to rear young.—A.S.G.

TANNER, J. T. 1966. Effects of population density on growth rates of animal populations. Ecol., **47:** 733–745.—A detailed analysis of 111 different populations representing 71 species of invertebrates and vertebrates revealed that in most animal species a population's growth rate is a decreasing function of density. Tentative conclusions are presented regarding the processes regulating population numbers. (From author's abstract.)—H.W.K.

WILLSON, M. F. 1966. Breeding ecology in the Yellow-headed Blackbird. Ecol. Monogr., **36:** 51–77. Field studies of *X. xanthocephalus* in Washington, British Columbia, and California including over 100 hours of nest observation emphasizing territoriality, pairing, polygyny, clutch-size, incubation, foraging, food composition (chiefly Odonata), feeding rates, nestling growth, and nesting success. Speculates on the role of polygynous males in the feeding of their offspring.—H.W.K.

WINTERBOTTOM, J. M. 1966. Remarks on the avian ecology of north-central South West Africa. Ostrich, suppl. **6:** 285–295. Nine habitats are described and the dominant birds of each are listed.—M.A.T.

WYNNE-EDWARDS, V. C. 1966. Self-regulations of bird populations and the role of social behavior. Ostrich, suppl. **6:** 381–387.

GENERAL BIOLOGY

APPERT, O. 1966. Beitrag zur Biologie und zur Kenntnis der Verbreitung des Madagascar-Mähnenibisses, *Lophotibis cristata* (Boddaert). J. f. Orn., **107:** 315–322.—Observations on the nest and young of the Crested Ibis of Madagascar.—H.C.M.

BRAND, D. J. 1966. Nesting studies of the Cape Shoveller *Spatula capensis* and the Cape Teal *Anas capensis* in the western Cape Province 1957–1959. Ostrich, suppl. **6:** 217–221.

BROOKE, R. K. 1966. The Bat-like Spinetail *Chaetura boehmi* Schalow (Aves). Arnoldia, Natl. Mus. So. Rhodesia, **2**, no. 29: 19 pp.—Summary of distribution, taxonomy (two races recognized), and breeding data. All known nests are from old mine shafts and boreholes.—M.A.T.

BROOKE, R. K. 1966. Distribution and breeding notes on the birds of the central frontier of Rhodesia and Moçambique. Ann. Natal Mus., **18:** 429–453.—Report of a collection made in Portuguese Vumba in 1913 and 1914, with a wealth of interesting breeding records.—M.A.T.

CUMMING, S. C., AND P. STEYN. 1966. Observations on the breeding biology of the Rock Bunting, *Emberiza tahapisi* Smith. Ostrich, **37:** 170–175.

DEROO, A. 1966. Age-characteristics in adult and subadult swifts *Apus a. apus* (L.) based on interrupted and delayed wing-moult. Le Gerfaut, **56:** 113–134.—Age groups are recognizable by patterns of molt and feather wear, up to the age of 40–45 months. (In English; Flemmish and French summaries.)—C.T.C.

FRY, C. H. 1967. Studies of bee-eaters. Nigerian Field, **32:** 4–17, color frontisp.—

A good, popular account of the biology of bee-eaters, mainly as seen in Nigeria, where 13 species occur. Notable is a colony of 25,000 Rosy Bee-eaters (*Merops malimbicus*) nesting in a sand-bar in the middle of the Niger River. There is a large excess of adult males and up to six adults feed a brood. A yellow-throated morph of the Red-throated Bee-eater (*M. bullocki*) was fairly common in a population at Zaria. Five species in characteristic displays and postures are illustrated. —W.B.R.

HAAS, G. 1966. Jungenverluste bei Weissstorch-Gehecken mit zweierlei Altersgruppen. Vogelwarte, **23:** 300–305.—Lists several observations of mortality of small, young White Storks in nests where an unusual age difference existed within the brood.—H.C.M.

HOSONO, T. 1966. A study of the life history of Blue Magpie (I). 1. Breeding biology. Misc. Repts. Yamashina's Inst. Ornith., **4:** 327–347.—A study of 46 nests of *Cyanopica cyana* in Nagano Prefecturate, Japan, 1962–1965. Average egg date was 6 June (range mid-May to late July), with no evidence of second broods. Clutch size was 5–8 (usually 6–7), brood size 1–7 (usually 6), and fledging success highest in large broods. Only the female incubates; the male feeds the incubating female and helps in feeding nestlings. Data are presented for size and shape of eggs, and growth rate of chicks. (In Japanese; English summary.)—K.C.P.

HUNGERFORD, D. A., R. L. SNYDER, AND J. A. GRISWOLD. 1966. Chromosome analysis and sex identification in the management and conservation of birds. J. Wildl. Mgmt., **30:** 707–712.—Birds without obvious sexual dimorphism may be sexed by chromosome analysis using whole blood cultures. Method described and its value in work with endangered species, such as the Whooping Crane, suggested.—J.P.R.

ISHIZAWA, J., AND S. CHIBA. 1966. [Food analysis of four species of cuckoos in Japan.] Misc. Repts. Yamashina's Inst. Ornith., **4:** 302–326.—Stomach content analysis of 82 *Cuculus canorus,* 56 *C. saturatus,* 59 *C. poliocephalus,* and 22 *C. fugax.* All fed heavily on lepidopterid larvae, but with distinct species preferences. Definite food preferences among non-lepidopterous insects shown. (In Japanese; English summary.)—K.C.P.

JOHNSTON, R. F. 1967. Seasonal variation in the food of the Purple Martin *Progne subis* in Kansas. Ibis, **109:** 8–13.—Stomach contents from 34 Purple Martins indicate insect prey increases in diversity (at family level) and average size from April to a peak in early August. Samples (90) of flying insects show similar increases in the diversity and size. Peak food availability and peak energy demands of the martin population appear to coincide.—W.B.R.

KURODA, N. 1966. On the origin of raptor-pattern and hawk-mimicry of cuckoos. Misc. Repts. Yamashina's Inst. Ornith., **4:** 384–387.—Suggestions on a possible relationship between under-wing pattern and prey size in diurnal raptors, and a discussion of types of mimesis in parasitic cuckoos. (In English; Japanese summary.)—K.C.P.

KURODA, N. 1966. [Analysis of banding data (1924–'43) of the Tree Sparrow in Japan.] Misc. Repts. Yamashina's Inst. Ornith., **4:** 397–402.—Banding of 5,789 *Passer montanus* yielded 157 recoveries. Two distinct groups are involved: recoveries within 23 km of banding site (of which 91.8 per cent were within 5 km), considered resident birds; and recoveries 100–600 km from banding site (no recoveries between 23 and 100 km), considered emigrating birds. The latter are thought to be young of the year in winter dispersal. (In Japanese; English summary.)—K.C.P.

LITWINENKO, N. M., AND J. W. SCHIBAJEW. 1966. Zur Brutekologie von *Emberiza*

jankowskii taczonowski. J. f. Orn., **107:** 346–351.—Observations on the breeding of *E. jankowskii* in extreme southeastern Siberia.—H.C.M.

MASCHER, J. W., AND I. FRYCKLUND. 1966. Über das Tupfelsumpfhuhn (*P. porzana*) im Frühling und Hochsommer in Norduppland, Mittelschweden. Vogelwarte, **23:** 289–291.—Observations on the Spotted Crake at the northern limits of its range in central Sweden.—H.C.M.

MCLACHLAN, G. R. 1966. The first ten years of ringing in South Africa. Ostrich, suppl. **6:** 255–263.—Summary and examples of interesting migratory patterns.—M.A.T.

MILSTEIN, P. LE. S. 1966. Preliminary observations of White Storks feeding on poisoned brown locusts. Ostrich, suppl. **6:** 197–215.—A flock of 5,000 White Storks fed for a month almost exclusively on brown locusts that had been poisoned with benzene hexachloride. No fatalities or ill effects observed.—M.A.T.

MOREL, M.-Y. 1966. Productivité et renouvellement des populations de *Lagonosticta senegala* dans la basse vallée du Sénégal. Ostrich, suppl. **6:** 434–442.—A 10-year study of Senegal Fire-finch population. Young hatched from August to April, but all reach maturity together the following August.—M.A.T.

NIETHAMMER, G. 1966. Über die Kehltaschen des Rotflügelgimpels, *Rhodopechys sanguinea.* J. f. Orn., **107:** 278–282.—Review and descriptions of gular and esophageal pouches in various carduelines.—H.C.M.

NIETHAMMER, G. 1967. On the breeding biology of *Montifringilla theresae.* Ibis, **109:** 117–118.—Theresa's Snow Finch nests in burrows of *Citellus fulvus* and other rodents in northeastern Afghanistan.—W.B.R.

ROWAN, M. K. 1966. Some observations on reproduction and mortality in the Cape Sparrow *Passer melanurus.* Ostrich, suppl. **6:** 425–434.

SIEGFRIED, W. R. 1966. Age at which Cattle Egrets first breed. Ostrich, **37:** 198–199.—Birds banded and color-marked as juvenals bred when one year old at which time they had some juvenal primaries.—M.A.T.

SKEAD, C. J. 1966. A study of the Cattle Egret, *Ardeola ibis,* Linnaeus. Ostrich, suppl. **6:** 109–139.—Plumage sequence, relationship to cattle, and yearly cycle are described; based on a colony near King William's Town.—M.A.T.

SNOW, D. W. 1966. Moult and the breeding cycle in Darwin's finches. J. f. Orn., **107:** 283–291.—Wing molt is interrupted during the breeding season.—H.C.M.

SNOW, D. W., AND B. K. SNOW. 1967. The breeding cycle of the Swallow-tailed Gull *Creagrus furcatus.* Ibis, **109:** 14–24.—In a colony on South Plaza Island, Galapagos, 29 marked gulls, whose previous nesting had succeeded, laid again after a mean interval of 298 days. Breeding was synchronous in local areas, but occurred throughout the year in the colony at large. However, fewer nests were started in August–November when weather was less favorable. The 10-month cycle may break down when peaks occur at this season.—W.B.R.

STEYN, P. 1966. Observations on the breeding biology of the Familiar Chat, *Cercomela familiaris* (Stephens). Ostrich, **37:** 176–183.

STEYN, P. 1966. Observations on the Black-breasted Snake-Eagle, *Circaëtus pectoralis* A. Smith. Ostrich, suppl. **6:** 141–154.—Breeding cycle, behavior, and development of young.—M.A.T.

TREE, A. J. 1966. Further records of Palaearctic birds returning to place of banding in Zambia. Ostrich, **37:** 196.—Records of *Tringa hypoleucos, Acrocephalus arundinaceus,* and *A. schoenobaenus,* some taken in their third winter.—M.A.T.

VOHS, P. A., JR. 1966. Blood group factors for analysing pheasant populations. J. Wildl. Mgmt., **30:** 745–753.—Three blood group factors were detected in Ring-necked Pheasants in Iowa. Frequencies of these factors differed in three widely spaced samples of wild pheasants, indicating that they may be used to identify and characterize different populations.—J.P.R.

WALKINSHAW, L. H. "1966" [1967]. Summer observations of the Least Flycatcher in Michigan. Jack-pine Warbler, **44:** 150–168.—Male and some female *Empidonax minimus* tend to return to the territory used the previous year. Females arrive several days later than males. Warm weather stimulates nest building and egg laying. Nests are an average of 24 feet up in a crotch of a subcanopy tree. White oak was used in preference to white pine as a nest tree and sugar maple in preference to beech. Clutch size almost always four; regular incubation (87 per cent attentiveness) begins with the last egg. Incubation period was 13–15 days; nestling period, 13–16 days. Of 54 nests, 52 per cent produced fledged young. Only one attempt at a second brood found. None of 46 nestlings banded have been observed in succeeding years.—R.B.

YOSHII, M., AND Y. HASUO. 1966. [Fifth annual report on the bird ringing for the year ending 31st March 1966.] Misc. Repts. Yamashina's Inst. Ornith., **4:** 280–293.—During 1965–1966, 7,027 birds of 97 species were banded at more than 20 localities in Japan. Recoveries of 61 individuals representing 18 species are reported, 25 from outside Japan: 8 *Egretta intermedia* and 2 *Bubulcus ibis* in the Philippines; 8 ducks (various species) in the U.S.S.R.; 1 *Calonectris leucomelas* in the Philippines; and 6 *Arenaria interpres* in the Pribilofs and 1 in Anadyr Land, U.S.S.R. (In Japanese; English summary; non-Japanese localities given in roman type.)—K.C.P.

MANAGEMENT AND CONSERVATION

BRAKHAGE, G. K. 1966. Tub nests for Canada Geese. J. Wildl. Mgmt., **30:** 851–853.—Describes materials and methods for providing elevated nest sites.—J.P.R.

DUKE, G. E. 1966. Reliability of censuses of singing male woodcocks. J. Wildl. Mgmt., **30:** 697–707.—Courtship performance varied with the progress of the breeding season, density of performing males, and light intensity. Other physical factors were of little importance except in extremes. Findings are related to results from the U. S. Fish and Wildlife Service annual singing ground survey.—J.P.R.

ELLISON, L. 1966. Seasonal foods and chemical analysis of winter diet of Alaskan Spruce Grouse. J. Wildl. Mgmt., **30:** 729–735.—Analysis of 237 crops showed that the winter diet was largely spruce needles; at other seasons, berries and leaves of *Vaccinium* spp. were important. Black spruce needles have higher fat and caloric content and lower ash content than white spruce needles.—J.P.R.

GATES, J. M. 1966. Crowing counts as indices to cock pheasant populations in Wisconsin. J. Wildl. Mgmt., **30:** 735–744.—Of various factors studied, only population density significantly affected crowing intensity. Density bias was not enough to impair usefulness of annual crowing counts but could affect regional comparisons. The importance of counting under optimal weather conditions stressed.—J.P.R.

GULLION, G. W. 1966. The use of drumming behavior in Ruffed Grouse population studies. J. Wildl. Mgmt., **30:** 717–729.—Variations in drumming behavior, related to lateness of snow melt, temperature, and precipitation, lead to underestimates of numbers. Although roadside drumming counts appear best for fore-

casts of hunting success in a wide area, repeated searches for occupied drumming centers provide the best population estimates for small areas.—J.P.R.

HEIN, D., AND A. O. HAUGEN. 1966. Autumn roosting flight counts as an index to Wood Duck abundance. J. Wildl. Mgmt., **30:** 657–668.—Fall roosting flight counts in the upper Mississippi River valley in northwest Iowa could detect annual changes in abundance down to 15 per cent. Methods and limitations of the data discussed. —J.P.R.

MARTINSON, R. K., AND J. A. MCCANN. 1966. Proportion of recovered goose and brant bands that are reported. J. Wildl. Mgmt., **30:** 856–858.—About one-third of the bands recovered by hunters were reported in the 1962–1964 hunting seasons. Reporting rates may change annually.—J.P.R.

MONNIE, J. B. 1966. Reintroduction of the Trumpeter Swan to its former prairie breeding range. J. Wildl. Mgmt., **30:** 691–696.—A small, free-flying flock was established at La Creek National Wildlife Refuge in South Dakota. The swans were moved from Montana in 1960 as three-month-old cygnets; they began pairing at 20 months and first nested in 1963 at age 2 years, 9 months. Procedures and problems discussed.—J.P.R.

NOVAKOWSKI, N. S. 1966. Whooping Crane population dynamics on the nesting grounds, Wood Buffalo National Park, Northwest Territories, Canada. Canadian Wildlife Service Report Ser. no. 1: 20 pp. (available from Queen's Printer, Ottawa, $ .50).—First of a new series replacing the Canadian Wildlife Service Wildlife Management Bulletins and Occasional Papers. A most attractive format. This paper reports on annual changes of the Whooping Crane population, events on the breeding grounds from 1954 to 1965, and food habits. In these years, 61 young were produced, but the adult population increased by only 11. Prebreeding mortality is high. Two fertile eggs are laid but usually only one hatches. It is suggested that eggs be removed for artificial incubation in wet years, when nests are likely to be flooded out, and that some young-of-the-year be trapped on the wintering ground, either to be released when sexually mature or to build up a captive flock. In view of vulnerability of young birds in the wild, selective removal of eggs and young for experimental purposes would probably have little effect on the structure and growth of the species' population.—K.C.P.

RAVELING, D. G. 1966. Factors affecting age ratios of samples of Canada Geese caught with cannon-nets. J. Wildl. Mgmt., **30:** 682–691.—Age ratios of trapped geese are not necessarily representative of the true population structure; time of year, time of day, food availability, behavior changes, length of time on bait, and weather may influence the ratio. This study was based on marked birds and radio-tracking.—J.P.R.

SHERWOOD, G. A. 1966. Flexible plastic collars compared to nasal discs for marking geese. J. Wildl. Mgmt., **30:** 853–855.—Collars were superior to discs in visibility, retention, and ease of placement; they did not injure the geese.—J.P.R.

STEPHEN, W. J. D. 1967. Bionomics of the Sandhill Crane. Canadian Wildlife Service Report Ser. no. 2: 48 pp. (available from Queen's Printer, Ottawa, $.75). —A three-year study of damage, by fall flocks of *Grus canadensis,* to wheat fields near Last Mountain Lake, Saskatchewan. Analysis of a large sample indicates that the rare *G. c. tabida* is not present in these flocks (and, inferentially, that the races of the Sandhill Crane need to be redefined, with the newly described *G. c. rowani* Walkinshaw being of dubious validity). Land in the study area has low capability for grain production, but it is economically feasible to prevent crane damage.

Acetylene exploders are used to frighten birds from roosts and grain fields into alternative roosts and specially planted "lure fields." Detailed documentation of food requirements, flock sizes, financial aspects of crane damage, etc.—K.C.P.

ZWICKEL, F. C. 1966. Determining the age of young Blue Grouse. J. Wildl. Mgmt., **30:** 712–717.—Age can be determined by condition of molt and development of of juvenal and post-juvenal primaries. Studies on 73 wild birds of known-age indicated a high degree of precision.—J.P.R.

PHYSIOLOGY

FRASER, R. C. 1966. The rate of development of hemoglobin chain formation in developing chick embryos. Exp. Cell. Res. **44:** 195–200.—Definitive and primitive erythroid cells in the circulating blood of developing chicks synthesize hemoglobin at different rates. The relative number of cells of these types accounts for changes in erythrocyte hemoglobin content during development. It is estimated that 1.6 minutes are required for the synthesis of a polypeptide chain and approximately four times this for the entire hemoglobin molecule.—A.H.B.

FRY, C. H. 1967. Lipid levels in an intertropical migrant. Ibis, **109:** 118–120.—Before a spring migration of about 1,000 km from southern to northern Nigeria, White-throated Bee-eaters (*Merops albicollis*) deposit fat averaging about 10 per cent of body weight. Premigratory fat accumulation is associated with a change of diet to include the lipid-rich epicarp of oil-palm fruits.—W.B.R.

MERKEL, F. W. 1966. The sequence of events leading to migratory restlessness. Ostrich, suppl. **6:** 239–248.—Relationship of weight cycle, migratory restlessness, and day length discussed for the almost sedentary *Erithacus rubecula* and the long range migrant, *Sylvia communis*.—M.A.T.

POWELL, J. R., AND J. D. BURKE. 1966. Avian blood oxygen capacity. Amer. Midl. Nat., **75:** 425–431.—Samples of 56 *Columba livia* and 67 birds of 25 other species, mostly passerines, were taken. No significant difference found between sexes, but young pigeons had a significantly lower blood oxygen capacity than adults. Strong negative correlation existed between blood oxygen capacity/g body weight and body weight.—A.S.G.

WEST, G. C. 1967. Nutrition of Tree Sparrows during winter in central Illinois. Ecol., **48:** 58–67. Stomach analyses of wintering birds and collections of wild seeds from feeding areas were used to determine availability, choice, and caloric content of natural foods. Approximately 7.88 g of seeds (of average winter diet) must be eaten per day to meet existence energy requirements in winter.—H.W.K.

TAXONOMY AND PALEONTOLOGY

ABS, M. 1966. Contribution to systematic problems and geographic variation within the genus *Petronia* (Aves, Ploceidae). Ostrich, suppl. **6:** 41–49.

BENSON, C. W., AND M. P. STUART IRWIN. 1966. A new subspecies of desert Cisticola, *Cisticola aridula* Witherby. Arnoldia (Rhodesia), **2** (27): 3 pp.—Description of *Cisticola aridula traylori* subsp. nov. from eastern Angola and western Barotseland.—M.A.T.

BOURNE, W. R. P. 1967. Subfossil petrel bones from the Chatham Islands. Ibis, **109:** 1–7.—At least 20 species of procellariiforms (excluding storm petrels) from restudied material, probably from kitchen middens. When first colonized by man (c. 16th century), these islands, 375 miles east of New Zealand, may have been the

most important breeding station for petrels in the world, but many species have been extirpated since European settlement began in the late 18th century.—W.B.R.

CLANCEY, P. A. 1966. The avian superspecies of the South African fauna. Ostrich, suppl. **6:** 13–39.—Records 27 examples of superspecies found in South Africa. In some the extra-limital representatives are African, in others Palaearctic.—M.A.T.

CLANCEY, P. A. 1966. A catalogue of birds of the South African sub-region (Pt. IV: Families Sylviidae-Prionopidae). Durban Mus. Novit., **7:** 465–544.—A continuation of the author's meticulous list of the birds of southern Africa, that is, south of the Cunene and Zambesi rivers. The following new subspecies described: *Apalis ruddi fumosa* from Swaziland, *Sylvietta whytii nemorivaga* from Rhodesia, *Cisticola brachyptera tenebricosa* from Sul do Save, *Melaenornis silens lawsoni* from the Northern Cape, *Bias musicus clarens* from Sul do Save, *Macronyx ameliae altanus* from Zambia. The type locality of *Cisticola campestris* Gould is restricted to Durban.—M.A.T.

GARRIDO, O. H. 1966. Nueva subespecie del Carpintero Jabado, *Centurus superciliaris* (Aves : Picidae), para Cuba. Poeyana, Serie A, No. **29**, 4 pp.—*C. s. florentinoi* ssp. nov. (seven specimens from Cayo Largo del Sur, 35 km off the south coast) is a pale, small-billed form that appears to be more distinct than the sometimes-synonymized Isle of Pines race, *C. s. murceus*. (In Spanish; English summary.)—W.B.R.

HARRISON, C. J. O. 1966. The validity of some genera of larks (Alaudidae). Ibis, **108:** 573–583.—The 10 species that comprise *Alauda, Calendula, Galerida, Heliocorys, Lullula, Pseudalaemon, Spizalauda,* and *Spizocorys* as originally described should be lumped under *Alauda*. Alleged morphological criteria do not hold up and no basic ethological differences are known. *Chersophilus duponti* of northwest Africa differs from this assemblage and the monotypic genus may be retained. —W.B.R.

HOOGERWERF, A. 1966. Some notes on the genus *Trichastoma* especially on the validity of *T. sepiarium minus* (= *Malacocincla sepiaria minor*) from east Java and about the status of *T. vanderbilti* and *T. liberale* from northern Sumatra. Misc. Repts. Yamashina's Inst. Ornith., **4:** 294–301.—Dark-crowned specimens fitting the description of *T. s. minus* are found within the range of nominate *T. s. sepiarium*; *minus* is considered of doubtful validity pending comparison of Javan and Balinese specimens. *T. perspicillatum,* known from one specimen from southern Borneo, is highly distinctive (not related to *vanderbilti*) and may be generically misplaced. *T. vanderbilti,* with *liberale* as a synonym, is doubtfully distinct from *T. sepiarium barussanum*. Variation in *T. abbotti* discussed, but no taxonomic conclusions are drawn.—K.C.P.

KEVE, A. 1967. The juvenile plumage of the Jay *Garrulus glandarius*. Ibis, **109:** 120–122.—Plumage differences between subspecies groups are as distinct in juveniles as in adults, suggesting that these groups are "evolutionarily very old."—W.B.R.

KUNKEL, P. 1966. Beiträge zur Biologie und Ethologie einiger zentralafrikanischer Girlitze 1. *"Serinus" citrinelloides* Rüppell. J. f. Orn., **107:** 257–277.—As one result of a detailed field study of the ecology and behavior of this species in central Africa, the author argues that it should be placed in *Ochrospiza* and not in *Spinus* or *Carduelis*. (In German; English summary.)—H.C.M.

PHELPS, W. H., JR., AND R. AVELEDO H. 1966. A new subspecies of *Icterus icterus* and other notes on the birds of northern South America. Amer. Mus. Novit., no. 2270: 14 pp.—*Otus albogularis obscurus* Phelps & Phelps is a synonym of *O. a.*

meridensis Chapman. *Picumnus olivaceus eisenmanni,* nom. nov., replaces *P. o. perijanus* Phelps & Phelps, preoccupied. *Machetornis rixosa obscurodorsalis* Phelps & Phelps is a synonym of *M. r. flavigularis* Todd. *Icterus icterus metae* is described as new, from the Meta River, Apure, Venezuela. Range extensions given for several forms in Venezula, Colombia, and Brazil.—K.C.P.

QUICKELBERGE, C. D. 1966. A taxonomic study of the Boubou Shrike in southern Africa. Ann. Cape Prov. Mus., **5:** 117–137.—Divides the southern African races of *Laniarius ferrugineus* into three groups, *ferrugineus, aethiopicus* and *bicolor.* These probably are, but have not yet been proven to be, distinct species.—M.A.T.

RUSCHI, A. 1963. Genero *Augastes,* com a descrição de uma nova sub-espécie: *Augastes scutatus soaresi* – (Trochilidae – Aves). Bol. Mus. Biol. Prof. Mello-Leitão, ser. Divulgaéão no. 4, 12 May.—Similar to *Augastes s. scutatus* (Temminck) but male with dorsal surface including the tail, bronze-green; below with a lateral band of violet-blue. Type male, from Fazenda da Alegria, 900 meters elevation, Rio Piracicaba, Minas Gerais, Brazil. (In Portuguese.)

TRAYLOR, M. A. 1966. Relationships in Combassous (Sub-gen. *Hypochera*). Ostrich, suppl. **6:** 57–74.—Although as many as three of the taxa of Combassous may co-exist without interbreeding, therefore behaving as good species, all can be shown to intergrade through neighboring taxa. The present relationships and evolutionary history of the different "species" are traced.—M.A.T.

WOLTERS, H. E. 1966. On the relationships and generic limits of African Estrildinae. Ostrich, suppl. **6:** 75–81.—A thorough study based on ethology as well as skins. Contrary to most recent authors, Wolters thinks *Lagonosticta* is a distinct genus more nearly allied to *Mandingoa, Cryptospiza,* et al., than to *Estrilda*; *Uraeginthus* may also belong with former group. A family tree of the Estrildinae, both Oriental and African forms is included.—M.A.T.