

The distinctness of the falcons from other hawks is emphasized by at least a dozen muscle characters of importance. These and many other points of taxonomic value are brought out in the discussion of the different muscles and in the excellent summary. In view of the fact that dissections must often be made from poorly preserved material, it is easy to miss minor details, so that the author's re-examination of various supposedly well-known species is worth while. Thus he finds that Shufeldt overlooked three leg muscles in the Raven, which though small, prove to be present. The usually accepted statement that the ambiens is absent in the Alcidae is shown to be untrue, for Hudson finds it is small but present in the California Murre, and calls attention to an overlooked note of Gadow's on its occurrence in this genus. The probable nearness of the swallows to the tyrant flycatchers is favored by finding that both families agree in having no post-acetabular portion of the tibialis, and thus differ from twenty other families of Passeriformes examined, in which it is present. It is evident that the details of musculature in birds vary widely even among forms clearly related so that broad generalizations must be made with caution and only "with due regard to all other known morphological facts"; yet, judiciously used, they often offer valuable evidence in classification.

Dr. Hudson's paper may well serve as a guide in much needed additional work in this important field, while as a laboratory manual for the student and teacher of comparative anatomy it should prove of great service. The many important suggestions of relationship afforded by this comparative study should not be overlooked by the systematist. It remains for some future worker to study more particularly the musculature in relation to the habits of different groups of birds in an attempt to correlate these with the variations established, in order to gain further insight into their meaning.—G. M. A.

Bartlett's 'Birds of Eastern New York'¹ is a pocket-sized pamphlet with stiff paper covers, privately printed by the author. It is obviously intended to present a concise summary of the bird life of the 'region' in as small a compass as possible consistent with clarity. The brief introduction shows that the area covered by this faunal list is actually restricted to Schenectady, Albany, Rensselaer and Saratoga Counties. The records and data are compiled from Eaton's 'Birds of New York,' Judd's 'Birds of Albany County,' and the observations of a group of field enthusiasts, of from several to twenty years' experience. A commendable feature is a careful definition of the terms used in outlining the status of each species. The systematic list, in A. O. U. Check-list order, gives full migration dates and seasonal variation in numbers. A second part summarizes this information under the headings, permanent residents, winter residents, etc., in which the birds are divided into groups according to rarity. A third part is a seasonal calendar of arrivals and departures.

It is apparent that all records have been reviewed and weighed with some critical skill. The discoveries of the modern 'sight-record' period are obviously in accord with changes and developments in adjacent areas, and few are the records or dates which arouse skepticism. The type used is so painfully small that there is much more meat in these twenty-two pages than one would suppose. It is to be hoped that so compressed a summary will be followed by a real faunal report.—L. G.

¹ Bartlett, Guy. *Birds of Eastern New York*. Privately printed by the author, Rosendale Rd., R. D. 1, Schenectady, N. Y., 9.5 x 17 cm., 24 pp., 1937. Price 40 cents.

PERIODICAL LITERATURE

- BATES, G. L. [Change of name.] Bull. Brit. Ornith. Club, **57**: 100, Mar. 6, 1937.—*Alseonax flavipes* Bates for a small flycatcher from Camma River, Gaboon, is invalidated by the prior use of the name for an Indian species, by Legge, in 1875, and is replaced by *Alseonax flavitarsus* Bates.
- BATES, G. L. [On the identity of *Saxicola sennaarensis* Seebohm.] Bull. Brit. Ornith. Club, **57**: 100–101, Mar. 6, 1937.—The supposed origin of the type from Sennaar is shown to be erroneous. Instead it undoubtedly came from the district of Taiz, Arabia, where the collector, Botta, travelled. Comparison shows it to be identical with *Oenanthe chrysopygia* (De Filippi), of which it becomes a synonym.
- BATES, GEORGE L., AND PHILBY, H. ST. J. B. Birds of Jidda and central Arabia collected in 1934 and early in 1935, chiefly by Mr. Philby. Ibis, (14) **1**: 47–65, pl. 8, Jan. 1937.—A continuation of the list of species, previously begun, seen or taken in the coastal part of west-central Arabia, with a map of localities, and many interesting notes on habits and migration. A very large business in hawks for hawking purposes is carried on by the Badawin, chiefly in the Peregrine or Duck Hawk, of which numbers are taken from nests among the rock ledges on the coast; prices range from about fifty to one hundred dollars for a trained bird. An interesting note on the Cattle Heron (*Bubulcus ibis*) which accompanies the herds of camels and goats, is that the stomach of one such bird showed it had been feeding on ticks that dropped from the camels; no less than 68 ticks were found in this bird in addition to fly larvae and a grasshopper.
- BERLIOZ, J. Three new cases of presumed natural hybrids among Trochilidae. Ibis, (14) **1**: 105–109, Jan. 1937.—Among old Bogotà trade skins of hummingbirds, three specimens have lately come to light, which are regarded as natural hybrids between species abundant in the locality where they occur. The first is a presumed hybrid between *Lafresnayeia lafresnayeii* and *Helianthea bonapartei*, both of which are common in the temperate zone of the Bogotà region; the second is regarded as a cross between *Chrysuronia oenone* and *Thalurania nigrofasciata*, two very abundant species in the tropical zone of the eastern Andes; while the third is a cross of *Agyrtrina franciae* and *Saucerottia cyanifrons*, both of which are common in the Bogotà region. Descriptions of the three specimens are given.
- BIRD, C. G. The birds of southern Asia Minor from Mersin to the Euphrates. Ibis, (14) **1**: 65–85, Jan. 1937.—A list of birds from the country on the west and north sides of Lake Van, an area in the highest part of Asiatic Turkey, little known zoologically. Many interesting notes on status and habits of the species observed, with brief critical comment on the nomenclature of certain of them. The Mallophaga found on the specimens collected are listed with each. The common White Stork was seen in "tremendous flocks" numbering several thousands on the marshy plain between Inonü and Eskisehir. These birds are never molested and every village, in country not too dry, has its full quota of nests.
- BOHMANN, LUDWIG. Schwalbenzug-Katastrophe im Oktober 1936. Der Vogelzug, **8**: 25–26, Jan. 1937.—In the first week of October, 1936, a sudden cold spell overtook the migrating swallows, similar in its results to a disaster in 1931. In Munich over five thousand birds that sought shelter in houses and barns were easily caught and sent by airplane to Venice where they were released. All but two or three per cent were young of the year. Nearly seven hundred were banded. Placed in cartons holding from twenty to forty birds each, there was a very small percentage of loss en route. On being released at the end of the journey, they seemed dazed at first, but after a brief period of rest, took wing and flew away. The

- Common Swallow (*Hirundo rustica*) comprised the greater part of the birds with small numbers of House Martins and a few Bank Swallows.
- BRODKORB, PIERCE. New or noteworthy birds from the Paraguayan Chaco. Occasional Papers Mus. Zool., Univ. of Mich., Ann Arbor, no. 345, 2 pp., Jan. 5, 1937.—Two new races are described: *Icterus croconotus paraguayae*, type from 265 km. west of Puerto Casado, Paraguayan Chaco; and *Paroaria cristata schulzei*, type from the same place. An adult male *Pheucticus aureo-ventris* is the first record for Paraguay.
- BRODKORB, PIERCE. Some birds of the Amazonian islands of Caviana and Marajó. Occ. Papers Mus. Zool., Univ. Michigan, no. 349, 7 pp., Mar. 18, 1937.—Collections made in 1871 by Professor J. B. Steere, and now in the Museum of Zoology, University of Michigan, include forty-nine species from Caviana, which are here listed. Previously the only published reference to the avifauna of the island is a record of the Flamingo. Thirteen species are also added to the recorded avifauna of Marajó. Sundry of the species listed are briefly commented upon. The toucan is a distinct race, *Rhamphastos toco toco*, differing from *R. t. albogularis* of Paraguay in its constantly smaller bill. The Vermilion Warbler from the southern part of its range, Buenos Aires Province to eastern Bolivia, is shown to differ in color from birds of northern South America, and should stand as *Pyrocephalus rubinus strigilatus* (Wied).
- BRODKORB, PIERCE. Ein neuer Name für *Larus canus major* Middendorff. Ornith. Monatsber., 44: 20, Aug. 1936.—A new name, *Larus canus stegmanni*, is proposed to replace *major* of Middendorff, preoccupied by *Laroides major* C. L. Brehm, for the race of Gray Gull of eastern Europe and northern Asia.
- BRODKORB, PIERCE. A new genus of tyrant-flycatchers. Proc. Biol. Soc. Washington, 50: 1-2, Feb. 23, 1937.—A new genus, *Eumyobius*, is proposed for *Empidonchus poecilurus*, formerly included in *Cnemotriccus*, from which it differs in style of coloration and in wing formula, with tenth primary equalling second instead of shorter than secondaries, and ninth primary longer than fifth, longer middle toe and more strongly curved claws.
- BRODKORB, PIERCE. The southern races of the Great Ant-shrike, *Taraba major*. Proc. Biol. Soc. Washington, 50: 7-8, Feb. 23, 1937.—Three forms are recognized: typical *T. major* of northeastern Brazil, Paraguay, and southern Brazil; *T. major virgultorum* of northwestern Argentine and eastern Bolivia; and a new race, *T. major ablatus*, of the Paraguayan Chaco.
- BROUN, MAURICE. Three seasons at Hawk Mountain Sanctuary. Emergency Conservation Comm., New York, publ. no. 61, 10 pp., 1937.—A comparison is made of censuses of migrating hawks and eagles seen in the autumn flights at Hawk Mountain, Pennsylvania, in 1934, 1935, and 1936. In the two latter years, the totals were well over fifteen thousand. The numbers of Turkey Vultures were much less in 1936 than in 1935 and Red-tailed Hawks showed a constant decline while Red-shouldered Hawks increased correspondingly. Of Rough-legged Hawks, twenty were seen in 1934, and nine in each of the two following years; four Gyrfalcons were recorded in 1934, none in 1935, and one in 1936. Possibly in the case of these northern hawks a four-year cycle may be indicated. Various points of interest in connection with the flights are briefly discussed.
- CHAPIN, JAMES P. The discovery of *Afropavo congensis*. Bull. Brit. Ornith. Club, 57: 84-85, Jan. 29, 1937.—A summary of his previous announcement concerning this new phasianid of the eastern Congo, followed by remarks by Percy Lowe, who suggests, *passim*, that the Miocene remains from France referred by Milne-Ed-

- wards to *Phasianus* and later by Lambrecht to a special genus, *Miophasianus*, might have been peacock-like birds related closely to *Lophura*.
- CLARK, LEONARD B., LEONARD, SAMUEL L., AND BUMP, GARDINER. Light and the sexual cycle in game birds. *Science, new ser.*, **85**: 339-340, Apl. 2, 1937.—Experiments with Ring-necked Pheasants and Ruffed Grouse show that (1) the absence of light inhibits the onset of sexual activity, since birds kept in practical darkness fail to come into breeding; (2) continuous illumination during the winter months can stimulate grouse into sexual activity and egg laying, but does not prevent the cessation of laying when the normal number of eggs, fourteen, has been produced; (3) this cessation is presumed to be due to a failure of the pituitary gland to furnish the hormones necessary for stimulating the gonads, rather than to an exhaustion of the gonads.
- CLELAND, J. BURTON. The history of ornithology in South Australia. *Emu*, **36**: 197-221, Jan. 2, 1937.—Gives a short resumé of the ornithological work done by the earlier explorers and naturalists in this State, beginning with Matthew Flinders in 1802, who explored the southern coast, followed almost at once by Baudin and Péron, the French naturalists. John Gould's stay in 1839 was the most important event in the ornithological history of South Australia and there are many extracts from contemporary literature concerning his work. The explorations of Sturt and Eyre make interesting reading. In the latter's published account of his discoveries, Gould contributed a list of the birds known to inhabit South Australia.
- DEIGNAN, H. G. A revised hand-list of the birds of the Chiengmai region. *Journ. Siam Soc., Nat. Hist. Suppl.*, **10**: 71-131, Nov. 1936.—The Chiengmai region of northern Siam is an area some 20 by 36 kilometers, and includes the mountain Doi Sutep. This list brings up to date the one published by the same author in 1931, with additions, corrections and a list of published papers since that time. In all, 410 species or subspecies are listed, with brief notes on occurrence and various comment. A great incursion of Siberian Honey Buzzards occurred in the cold season of 1935-36. Red Jungle Fowl (*Gallus gallus*) are still fairly common at the south end of the mountain. There is a common belief among the natives concerning the Burmese Hemipode (*Turnix maculatus*) that fire will not burn where it makes its home, hence it is "frequently kept caged in houses as a cheap form of fire insurance." As a bird of narrow adaptation, the White-winged Starling is practically confined to the trees of *Butea frondosa*.
- DEIGNAN, H. G. Some observations on bird-life of the middle Me Ping. *Journ. Siam Soc., Nat. Hist. Suppl.*, **10**: 131-135, Nov. 1936.—A narrative account of the birds seen in a journey to this little-known area of central Siam.
- FLEAY, D. H. Nesting habits of the Brush-turkey. *Emu*, **36**: 153-163, pl. 23-27, Jan. 2, 1937.—"Probably no bird . . . is so industrious and happy in captivity" as this mound-builder (*Alectura lathami*) of Australia. Observations on captive birds in the Melbourne 'zoo' are given in detail. The male busies himself in constantly adding to the mound of earth and leaves thrown up by his powerful feet and does not tolerate the hen on it until she comes to lay an egg. Several times before rain, he would open the mound at the top and close the crater together again when rain ceased. He makes deep narrow holes into the loose mass at the top, thrusting in his head as if testing the temperature. The female when about to lay, excavates a hole about a foot and a half deep, into which she thrusts her head as if also to test the warmth, and lays a single egg, after which the material is scratched back and stamped down. The male constantly works over the material at the top of the mound, which often steams as he opens it, and maintains a tempera-

ture of from 85 to 90 degrees Fahrenheit. The hen apparently lays from eighteen to two dozen eggs during late September and October. Eleven or twelve weeks elapsed between the laying of the eggs and the emergence of the chicks. Many details of the process, and of the development of the young.

GILBERT, H. A. [Remarks on British duck decoys.] Bull. Brit. Ornith. Club, **57**: 86-87, Jan. 29, 1937.—Since 1918, many decoys have gone out of action in the British Isles. At present, only five are in full use, with six additional 'pipe' decoys in partial use. The average number of ducks caught in British decoys during the last ten years is 11,767 annually.

GILES, F. H. A description of the swifts (*Collocalia francica* and *Collocalia innominata*), the birds which build edible nests. Journ. Siam Soc., Nat. Hist. Suppl., **10**: 137-160, pl. 1-7, Nov. 1936.—A timely account of the history and present state of the industry of collecting and marketing the edible nests of the two swifts. The birds breed in caves chiefly on the islands off the coasts of Tenasserim and Arakan in Burma, the Nicobar and Andaman islands, the west coast of Siam between Pang Nga and Satul, the islands of the Javan archipelago and Borneo. Two types of nests are recognized, the 'white' and the 'dark,' the former built by *C. francica* and consisting almost wholly of the glutinous saliva of the bird, the latter made by *C. innominata* and of less value and darker color because much mixed with feathers. Chemically, the 'white' nests contain about 50 per cent of protein and 7.5 per cent of mineral matter, mostly lime. Both species breed in the same caves but *C. francica* is in most places the less common, on account probably of its laying but one or in some places (according to report) two eggs, while the other species lays double the number. Formerly some attempt was made to regulate this preponderance of 'dark' nests by destroying a proportion of the eggs. While the time of nesting varies with the onset of the monsoons, the first are usually collected in March. The birds then construct a second nest, requiring some twenty days. This is of poorer quality. After this nest is taken a third of still more inferior quality is made. Formerly the third nests were allowed to remain unmolested, but at the present time these too are gathered. Some idea of the volume taken may be gained from figures given of the quantities exported. For the years 1926-27 to 1934-35, the export was from 206 to 368 piculs annually, or approximately fourteen to twenty-five tons (the picul is 133.33 pounds). About forty per cent of this harvest is sold in Penang. Hongkong is the chief center of distribution in China. So valuable is this delicacy that at one time an annual revenue of twenty thousand pounds was realized from receipts in return for the rights of collecting these nests. The nests are often imitated cleverly, using jelly obtained by boiling down certain seaweeds and flavoring artificially so that only an expert can detect the difference. Most of the 'birds' nest' sold in Chinese restaurants abroad is probably thus adulterated. A few photographs show the two species of swift and their nests in caves.

GOETHE, FRIEDRICH. Beobachtungen und Untersuchungen zur Biologie der Silbermöwe (*Larus a. argentatus* Pontopp.) auf der Vogelinsel Memmertsand. Journ. f. Ornith., **85**: 1-118, 28 text-figs., Jan. 1937.—A study of the habits of Herring Gulls, especially during the breeding cycle, at the bird island of Memmertsand in the southern part of the North Sea. The breeding bird of this area was long ago stated by Brehm to be slightly different, of smaller size and with minutely variant wing markings, as compared with birds of the northern part of the North Sea; Brehm called it *Larus a. argenteus*, but the present author believes the differences too slight for formal recognition. Males are slightly larger than females of the species, and have a very little longer wing and on the whole less extensive amounts

of white in the terminal spots of first and second primaries. Most of the birds breeding at the island seemed to arrive already paired, and mark out territory by taking up particular stations or standing-places where they spend much time on lookout. The males show this action to a much greater degree than females. The breeding cycle is described in detail: courtship, nesting, care of young, and the development of the latter in their social relations with parents and other adults, as well as with each other. Interesting is the tendency to build trial nests, one of which is finally chosen for the egg-laying, and is further lined, sometimes decorated with objects such as white shells, bits of bone, even pieces of coal. When the young hatch, the diet of the adults changes to one of crabs and shrimps, suitable for the young, and is fed by regurgitating it on the ground before them. The young may not always react if not hungry, and the parent may then eat the mass ejected. The young show a definite reaction to red objects by picking. As suggested by Heinroth, the red spot on the bill of the adult may be looked upon as a 'signal' to the young that food is at hand. By presenting the bill of a stuffed adult to very small young, the picking reaction was induced in a significantly greater number of times than when the red spot was covered with a bit of paper. The usual occurrence of red on the bill in gulls and terns may thus have a similar meaning. An exception is the Rosy Gull with a black bill. Experiments tried with regard to the sense of locality in returning to the nest location, irrespective of disguise, show that in gulls this is strongly developed. Other experiments in regard to distant orientation, proved that birds taken to unfamiliar inland points as far away as 450 km. and there released, were able to find their way back to the nest, in this case in four days. The writer argues for an optical as well as a kinesthetic orientation.

- GRANT, C. H. B., AND MACKWORTH-PRAED, C. W. (1) On the races of *Vinago delalandii* (Bp.); (2) On the races of the European Cuckoo which visit eastern Africa in the non-breeding season; (3) The subspecific status of *Centropus burchellii* Swainson and *Centropus fasciopygialis* Reichenow, and their relationship to the central African forms. Bull. British Ornith. Club, **57**: 87-92, Jan. 29, 1937.—*Vinago orientalis* and *V. delalandei granti* are synonymous with *Vinago delalandii*. Only the typical race of *Cuculus canorus* may as yet be recognized as occurring in eastern Africa in winter. Critical examination indicates that *Centropus fasciopygialis* is indistinguishable from *C. burchellii*, which itself is here made a race of *C. superciliosus*, making in all three races in Africa in addition to the typical subspecies.
- GRANT, C. H. B., AND MACKWORTH-PRAED, C. W. [Two new races of African birds.] Bull. British Ornith. Club, **57**: 101-102, Mar. 6, 1937.—The new forms are *Geokichla piaggiae rowei* from Loliondo Forest, northern Arusha, Tanganyika Territory; and *Apalis murina bensoni* from the Dedza district, Nyasaland.
- GRANT, C. H. B., AND MACKWORTH-PRAED, C. W. (1) On the races of *Streptopelia decipiens* (Finsch & Hartl.). (2) On the status of *Pachycoccyx validus canescens* Vincent. Bull. British Ornith. Club, **57**: 102-104, Mar. 6, 1937.—Of the dove, only four races are deemed recognizable: *Streptopelia decipiens decipiens*, western Abyssinia to central Uganda; *S. d. ambiguus*, southern Angola to southeastern Belgian Congo and the Zambesi; *S. d. perspicillata*, central Abyssinia to Kenya and Nyasaland; and *S. d. shelleyi*, Senegal to Lake Chad. *Pachycoccyx v. canescens* is regarded as inseparable from the typical form.
- GRINNELL, JOSEPH, AND LINSDALE, JEAN M. Vertebrate animals of Point Lobos Reserve, 1934-35. Publ. Carnegie Inst. Washington, no. 481, 159 pp., 39 pls., 10 Dec. 1936.—This reserve of 336 acres situated on the coast of Monterey County,

California, has been set aside as a "unique example of the natural character of the narrow coastal strip of California." Through its diversity of terrain it supports a varied fauna and flora, of which this ecological survey will serve a valuable purpose, not only as an inventory of what the intelligent tourist or nature-lover may expect to meet with here, but also as a basis of comparison in years to come in the study of the environmental changes taking place in a natural area over long periods. For these reasons the report recommends that no human interference with the natural conditions be allowed, for "the greatest potentiality for damage in the Reserve lies in efforts to improve conditions." Of the vertebrates known to occur within the limits of the reserve and its adjacent stretch of Pacific Ocean, by far the most numerous and conspicuous are naturally the birds of which a list of 147 species is given with field notes concerning their habits, status, whether resident, transient, or seasonal, and their ecological relations. Since no collecting was done, subspecific titles are omitted from the list of birds and in certain cases the authors have preferred to depart from the nomenclature of the A. O. U. Check-list. A careful account of the vegetal types, the geology, and the general meteorology and their influence on the vertebrate animals is illustrated by nearly eighty photographic views. The establishment of such reserves as examples of the natural conditions under which our native species live is a far-sighted policy that well merits extension before the effects of human interference shall have wrought irreparable harm.

GRISCOM, LUDLOW. A monographic study of the Red Crossbill. Proc. Boston Soc. Nat. Hist., 41: 77-210, Jan. 1937.—In treating the difficult question of subspecific division in the Red Crossbill, the author here adopts a new line of approach by taking into account the extraordinarily nomadic habits of the bird in both Old and New Worlds. It was formerly assumed that specimens taken in winter represented the breeding bird of the boreal region to the north of the locality and that those taken in summer represented the usual breeding bird of the region, both of which are unwarranted conclusions. For the birds of the northern regions in North America, Europe and Asia, since they depend almost wholly on seeds of conifers for food, are often forced out of wide areas through the failure of the cone crop, even for years at a time, and make extended search for other areas where cones are to be had in quantity. These found, the birds may settle down for a time and breed at whatever season of the year. Often as a result of their wanderings, "three or even more different Crossbills have been found together in the same winter flock, or as non-breeding birds in the breeding area of one of them." Using only breeding birds in his study, the author finds that although two subspecies may breed in the same place, this is almost never known to have occurred in the same year. The extremely erratic behavior of the birds and the lack of breeding specimens in collections have hitherto contributed to much misunderstanding of the true status of various races. It is suggested further that the effect of competition with the White-winged Crossbill may be an added factor restricting the extent of the Red Crossbill's movements. A detailed account of the nomadic habits of crossbills in North America precedes a review of the races regarded as valid with diagnoses and details of distribution based on a study of nearly 2500 specimens (in contrast to 191 of Ridgway's 1901 revision). Typical *Loxia curvirostra* is accidental in East Greenland (two records). An unfortunate complication of names results from the fact that *minor*, formerly applied to the bird of eastern North America, proves to be the bird of the humid Northwest Coast, and hence replaces *silkensis* for the small-billed and very distinct race of that region; the type of *pusilla*

on the other hand, a vagrant bird from Georgia, proves to be identical with the large-billed form of Newfoundland so that this name replaces *perna* for the island race. The common breeding bird of eastern United States and Canada is thus left without a name, hence *neogaea* is proposed for it (type from Lake Umbagog, Maine). The name *bendirei* is restricted to birds normally breeding in south-central British Columbia, eastern Washington and Oregon, Idaho, and western Montana and Wyoming. To the form breeding from southeastern Montana and eastern Wyoming to the western parts of the Dakotas and the Rocky Mountain region of Colorado, the new name *benti* is given (type from Grafton, North Dakota); while to the race of the southern Sierra Nevada and adjacent ranges of southern California the new name *grinnelli* is applied (type from Phillips, El Dorado County, California). The largest New World race is *stricklandi*, resident in the pine belt of the Mexican tableland; while a small and very dark bird of southern Honduras to north-central Nicaragua, proves to be a well-marked new race, and is named *mesamericana* (type from Rancho Quemado, Honduras).

In the Old World the Red Crossbill has similar nomadic habits and is found in coniferous forests as far south as the Philippine Islands. Its races are reviewed on the basis of a fairly large series, with a resulting reduction in the number of recognized forms and the addition of one new race, *bangsi* (type from Hadja-Tungoo, western Szechwan). Supplementary notes are given on the races of the White-winged Crossbill and its relationship to the Red Crossbill.

Among many interesting points brought out, it is shown that the small-billed Alaskan race, *minor*, has from time to time wandered to the Atlantic coast and in one instance bred in the Algoma district, Ontario. In the winter of 1887-88 a great flight of these birds occurred in which specimens were taken from Michigan and Massachusetts to South Carolina and Louisiana. One would like to know if such vagrants eventually find their way back to their normal breeding area; whether the entire population of that area evacuates or if part only makes the lengthy flight; whether they ever interbreed with the races whose areas they invade, and if so, whether or not this is sufficient to modify either form. Among other points, the author shows that it is still undetermined if there is a resident race in the southern Alleghenies.

GROTE, H. Zur Kenntnis der Tannenmeisenzüge. Der Vogelzug, 8: 11-14, Jan. 1937.—The southern breeding limit of the Coal Tit (*Parus ater*) in Russia coincides with the southward limit of spruce forest, which in turn is delimited by the northward extent of the 'black-earth' zone. There is annually an invasion of these and other tits to the southward, into areas of deciduous forest and brushwood, varying in different years. The great invasions come in years when the spruce cones fail and the birds must make wider search for food, and may extend their wanderings to the shores of the Caspian Sea. In eastern Russia many species of birds in winter become wanderers but in other parts of their range are stationary.

HAGAR, JOSEPH A. Hawks at Mount Tom. Bull. Massachusetts Audubon Soc., 21: 5-8, Apl. 1937.—Mount Tom, bordering the Connecticut Valley, in western Massachusetts, proves to be an excellent point from which to observe migratory flights of various hawks. The spring flights are smaller and of shorter duration than those of autumn, and are most noticeable in mid-April; those in autumn begin with the Broad-winged Hawk in late August, Bald Eagles in early September, followed by Sharp-shinned, Red-tailed, Red-shouldered and Marsh Hawks, and small falcons. On a single day, September 17, over five hundred Broad-winged Hawks were counted passing. The peak for the Sharp-shinned Hawks is later, in about mid-

- October. Clearing weather after a storm, with west or northwest wind, seems most favorable for hawk flights but a southwest wind is distinctly unfavorable, and will even stop a flight if one is in progress and the wind shifts into that quarter.
- HALLER, WERNER. Ein Beitrag zur Kenntnis der Verbreitung und Nistweise von Haus- und Feldsperling im schweizerischen Hügelland. Arch. Suisses d'Ornith., 1: 350-357, Dec. 1936.—In the Swiss uplands the distribution of the House and Tree Sparrows is somewhat complementary. The former is found in the agricultural districts but is not common in all. Thus between the Wigger and Rot Valleys it is found only about the larger towns but is absent from the hill country to the northwest. The Tree Sparrow (*Passer montanus*) is less common in the larger towns of the valleys, but has in recent years become somewhat commoner, utilizing nest boxes in garden trees; it is more abundant in the higher parts where House Sparrows are fewer or absent and may associate with man about houses. Both species will breed in Bank Swallow holes.
- HAMILTON, J. E. The Chilean Skua in Falkland Islands. Ibis, (14) 1: 177-178, Jan. 1937.—Elaborates an earlier note by recording that two of three specimens observed at Eagle Point, East Falkland Island, November 26, 1930, were shot and the skins are in the British Museum.
- HAMLING, H. H. Notes from Lomagundi district, Southern Rhodesia. Ibis, (14) 1: 175-177, Jan. 1937.—As a breeding bird, the Ostrich has much decreased since the War. The Corn Crake is found to be a regular migrant, arriving as early as December 3 and departing by April 5. Notes on contrasting habits of three species of Coucals are given. The earliest and latest dates when the long wing feathers have been seen in the Pennant-winged Night-jar are September 3 and February 3, respectively.
- HAMPE, HELMUT. My tame Barn Owl. Avicultural Mag., (5) 2: 54-55, 2 pls., Feb. 1937.—This bird came into the writer's possession when it was still very young, about nine days old, and was reared with great care, becoming unusually tame and affectionate, but showing marked dislike to strangers by flying at their heads and sometimes inflicting severe scratches, so that it had to be shut up when visitors came. Once, when the writer was wearing dress clothes, the owl failed to recognize him and flew at his face as he passed, but became friendly at once when he spoke. It was much afraid of carp and other fishes which it saw swimming in a vessel in the kitchen, and was terrified at a snake or a cat. It would catch sparrows and live cockchafers in flight but preferred mice, was exceedingly inquisitive, and delighted to catch paper balls, playing with them like a kitten.
- HARTMAN, CARL G. The hen's egg not fertilized in the ovary. Science, n. s., 85: 218, Feb. 26, 1937.—Although a hen may continue to lay fertile eggs for two or three weeks after isolation from the male, yet it is rarely possible to recover living sperm even a day after insemination. For this reason Iwanow has suggested that nearly ripe oocytes may be fertilized synchronously in the ovary. The author adduces as proof against this, the work of Warren and Kilpatrick on fowls exposed to males of known different strains, possessing dominant characters easily recognizable in young chicks. Thus eleven hens were penned with White Leghorn males for 21 days, then with Black Minorcas for the same length of time, then again with the White Leghorns. "The results showed that in some cases as early as the second day after changing males the eggs laid had been fertilized by sperms from the replacing male. There was practically no overlapping of the offspring. The conclusion seems inevitable that the clutch of eggs were *not* coincidentally fertilized in the ovary."

- HESLOP, I. R. P. *Anomalophrys superciliosus* in Nigeria. *Ibis*, (14) 1: 174, Jan. 1937. —The rare Brown-chested Wattled Plover is recorded from near Okigwi, Nigeria, where small numbers appeared in two successive seasons from December to February, and may have nested.
- HOOGERWERF, A. Enkele biologische aantekeningen over de kleine zilverreiger, *Egretta garzetta nigripes*. *Limosa*, Orgaan d. Club van Nederl. Vogelkundigen, 10: 1–11, pl. 1–6, Mar. 1937.—An account of the breeding habits of the Little Silver Heron in Java. Young birds are much esteemed as food by the natives so that few young reach maturity in some of the heronries. The nest, eggs and young are described and the activities of the nesting birds are illustrated by a series of excellent photographs. In eastern Java the breeding season extends from January to March but in western Java is later, from April to May, perhaps influenced by the coming of the monsoons. Four eggs are usually laid, less often three. Nestlings show two types of bill color: in one the bill is dark to blackish, the eyes grayish green to grayish other, the naked skin of the head greenish or dark gray; while in the other type the bill is golden yellow, the eyes pale yellow and the naked skin of the head citron. The young are fed on small fish and water insects. Some close-range photographs show the interesting postures of adults, and the erection of plumes before each other at the nest.
- JACOBI, R., AND OTHERS. Beiträge zum Zug des Wiedehopfes, *Upupa e. epops* L. *Der Vogelzug*, 8: 21–25, map, Jan. 1937.—A summary of returns from banded Hoopoes. Of the relatively few instances of recovery of birds so marked in Germany, most of them were retaken in extreme southern Europe, Sicily, Italy, and Greece, to the south, with two others retaken in localities to the westward in France. Almost all these birds were banded as young in the nest.
- JOURDAIN, F. C. R. [On a nest and eggs of *Prunella modularis* from Algeria.] *Bull. British Ornith. Club*, 57: 98, Mar. 6, 1937.—This is the first record of the breeding of this Grass Warbler in Africa. The bird has hitherto been found breeding only in the mountains of Italy. The set of eggs from Constantine, Algeria, was unaccompanied by specimens of the parent birds, but identification seems unquestionable.
- JOURDAIN, F. C. R. The birds of southern Spain.—Part II. Passeres (concluded). *Ibis*, (14) 1: 110–152, Jan. 1937.—In continuation of the preceding part of this paper, the remaining Passeriform birds are listed for southern Spain. Interesting is the number of forms of various genera occurring either as migrants or breeding birds: thus there are six kinds of pipits, seven of wagtails, four tits, three shrikes, seven thrushes, and nineteen representatives of three genera of small warblers. The Spanish name, status, distribution in Spain, and data as to nesting are given for each bird. Another case is added to those where races nearly identical in structural characters are readily identified by the song: thus the common Chiffchaff with its two-syllabled repetition is hardly distinguishable from the Spanish race except by its shorter second primary and darker feet, but the song of the Spanish breeding bird is very different, in that the second syllable of the two is replaced by a series of four or five descending notes. It is stated that quite fifty per cent of the nests of the Fire-crested Kinglet are destroyed by enemies before incubation begins.
- KINNEAR, N. B. Types of British birds in the Rothschild Collection. *Ibis*, (14) 1: 182–183, Jan. 1937.—In a “generous spirit of scientific co-operation” the American Museum of Natural History has presented to the British Museum the type specimens of fifteen described forms of British birds which had been received with the great Rothschild Collection.

- KIRCHNER, H. Beitrag zur Vergesellschaftung ziehender Limicolen. Der Vogelzug, 8: 14-18, Jan. 1937.—Notes on flocks of migrating shorebirds tending to show that flocks consisting of a single species are closed groups, but when resting or feeding may mingle with other species. On being put up, such flocks separate out into groups of one species each, which form then a social unit. The difference in speed of flight between the various species is suggested as one factor helping to keep the groups homogeneous, while difference in the reaction threshold to the approach of disturbing factors as man, may be another. Various examples are given.
- KOELZ, WALTER. Notes on the birds of Spiti, a Himalayan province. Ibis, (14) 1: 86-104, Jan. 1937.—The collection here listed is in the Museum of Zoology of the University of Michigan. The area covered is high country between northern India and the Tibetan plateau. Two ornithologists had previously visited this area, Hugh Whistler in 1922 and Dr. Stoliczka over fifty years earlier. The destruction of cedar trees at higher levels by the human inhabitants has probably had in the course of centuries the result of driving out various species of birds. Among notes on food, it is said that a pair of Golden Eagles had proved an annoyance by carrying off lambs; the stomach of a kite was filled with grasshoppers; two specimens of the odd Ibis-bill, *Ibidorhyncha struthersi*, shot along a stream were found to have fish in their stomachs.
- LAVAUDEN, LOUIS. Essai sur la Perdrix Bartavelle. Arch. Suisses d'Ornith., 1: 330-349, Dec. 1936.—The Mountain Partridge or Bartavelle comprises a widespread group found at upper levels of the temperate zone from the French Alps eastward to Manchuria. In addition to the typical race, *Alectoris graeca graeca*, a dozen or more races are known (twenty-one according to some authors), to be distinguished from the Red Partridge, *A. rufa*, which in a few places overlaps its range. In France it occurs only in the Alps of the eastern part of the country, and in spite of various reports, is not known with certainty from the Pyrennes. As the subspecies *A. g. saxatilis*, it is found at high levels as far east as the Carpathians. All the older records for France are examined critically, and a brief account of the habits is given. In winter it seeks food, partly spiders and insects, around the bases of trees where the ground may be reached. Where the two species overlap as in part of the French Alps, hybrids formerly occurred, having the flank feathers of the Bartavelle and the red collar of the Red Partridge. At the present time these are no longer found since the birds are extirpated along the contact zone.
- LEOPOLD, ALDO, AND OTHERS. The university and conservation of Wisconsin wildlife. Bull. Univ. Wisconsin, ser. no. 2211, gen. ser. 1995, 39 pp., Feb. 1937.—A report of the Committee on Wildlife Conservation of the University, setting forth the history of the decline of wildlife in Wisconsin and urging measures for the study and improvement of the general conditions in the State.
- LOW, CARMICHAEL. [A cystic tumor in a European Partridge]. Bull. British Ornith. Club, 57: 98-99, Mar. 6, 1937.—A cystic tumor 90 by 75 mm., was found in a bird killed, apparently, in England. Dissection showed that the tumor was growing from the posterior end of the sternum. It showed no sign of calcification but contained necrotic matter surrounded by a dense fibrous wall. There was no evidence of parasitic origin.
- LOWE, WILLOUGHBY P. Can gulls dive? Ibis, (14) 1: 175, Jan. 1937.—At Exmouth, England, a small flock of Herring Gulls was seen diving for small fish in clear shallow water, one or two at a time plunging in like Gannets from a height of fifteen to thirty feet, remaining out of sight "for some seconds" when each reappeared with a fish, which it immediately swallowed.

- LOWTHER, E. H. N. Notes on some Indian birds. I.—The Indian Crested Swift. Journ. Bombay Nat. Hist. Soc., **39**: 116–124, 6 pls., Dec. 1, 1936.—This swift occurs in open woods and scrub jungles of the Indian hill country, nesting by solitary pairs. The nest is a flimsy saucer-like cup made of thin flakes of bark, glued to the upper side of a small horizontal branch. The single egg nearly fills the nest. The birds usually sit crosswise to the limb, but may alter position variously, sitting erect with the tail hanging down and neck up-stretched. The young one assumes a similar stiff posture in the nest and its mottled down causes it to resemble a knob very closely so that it is remarkably inconspicuous. A series of unusually beautiful close-up photographs shows the adults, nest and young and was taken from a platform built close to the nest. The adults proved unsuspecting, even allowing themselves to be touched. The nesting season is April and May; nests are placed at heights of from twelve to forty-five feet.
- LUDLOW, F. The birds of Bhutan and adjacent territories of Sikkim and Tibet. With notes by N. B. Kinnear. Ibis, (14) **1**: 1–46, pl. 1–7, Jan. 1937.—Hitherto the ornithology of Bhutan has remained almost unknown, the only collection of importance previously made being one secured by Dr. William Griffith a century ago. It is an area in the Himalayas between Assam and Tibet, of some 18,000 square miles, and though only about 100 miles in east-west breadth, offers a variety of conditions in rainfall and corresponding flora, conveniently divided into four altitudinal zones, from the tropical and subtropical forest of the plains and slopes to 4000 feet, to the deciduous forest of birch, maple, oak and rhododendron (4000 to 8000 feet), the conifer zone between 8000 and 12,000 feet, and the alpine zone above tree line. About 1700 specimens were collected, some from beyond Bhutan on the Tibetan plateau. The itinerary with maps and illustrations of the types of country, is followed by the first part of the list of species, beginning with the Passeriformes. Among other rarities, the unknown female of the Tibetan Blood Pheasant was secured; diagnoses of new races of smaller birds have already been published, three of which (*Garrulax gularis*, *Fulvetta ludlowi*, and *Spelaornis sherriffi*) are shown in a colored plate.
- MACK, GEORGE. A systematic revision of the Australian Thornbills. Mem. Nat. Hist. Mus., Melbourne, no. **10**: 86–118, 10 text-figs., Nov. 1936.—Still another revision of the difficult Australian group comprising the genus *Acanthiza*, results in a recognition by the author of ten species with thirty-four subspecies. They occur chiefly south of the tropical parts of the continent, and in a wide variety of country. Of three species extending to Tasmania, only one, *Acanthiza ewingi*, is not found on the Australian mainland. No new names are proposed, but full synonymies and descriptions are given, with outline maps of distribution.
- MACKWORTH-PRAED, C. W., AND GRANT, C. H. B. Systematic notes on East African birds.—Part XIII. Ibis, (14) **1**: 179–182, Jan. 1937.—In this part are discussed the races of African Sand-grouse. The authors conclude, from a study of the series in the British Museum, that three races of *Pterocles exustus* are admissible: the typical one from Senegal (where not now found) to Abyssinia and Kenya Colony; *P. e. ellioti*, less dark and less yellow, from Eritrea and British Somaliland east to India; and *P. e. floweri* of Egypt which is still darker and rather larger. Of *Eremialector lichtensteinii* inhabiting much the same regions, four races are recognized: the typical one from the Sudan to Somaliland; *E. l. sukensis* of Kenya Colony and Uganda; *E. l. arabicus* of Arabia and India west of the Indus; and *E. l. targius* of the central Sahara.
- MATHEWS, GREGORY M. Some changes in the names of New Zealand birds. Emu,

- 36:** 221-223, Jan. 2, 1937.—Lists changes due to the discovery of earlier names applicable. *Apteryx australis novaezealandiae* replaces *A. a. mantelli*; *Stictapteryx owenii maxima* replaces *Apteryx haasti*, having a year's priority. *Procellaria gavia* of Forster is undeterminable, hence the two species of Fluttering Petrel should be known as *Reinholdia reinholdi* and *R. bryoni*; a key to the genus is added, including four forms. *Hypoleucus atriceps purpurascens* replaces *Phalacrocorax traversi* for the Macquarie Island Shag. *Eudyptes vittata* is an earlier name for *E. sclateri*. No new names are proposed.
- MATHEWS, GREGORY M. Petrel notes. *Emu*, **36:** 242-244, Jan. 2, 1937.—Brief comment on certain contrasting or characteristic habits of petrels. *Priocella*, *Pagodroma* and *Daption* have similar nesting sites and never chose an unprotected southward-facing cliff on which to nest. *Pagodroma* though not a Fulmar bears many resemblances to Fulmars in nesting habits. The unexplained differences in migratory habits of various species are commented upon. Among the few birds breeding within the antarctic circle are *Pagodroma* and *Oceanites*.
- MAXWELL, P. H. The collared Puff-bird (*Bucco colaris*) (sic). *Avicultural Mag.*, (5) **2:** 33-34, Feb. 1937.—A bird of dry hilly country in Amazonia and Guiana, this species is seldom seen in captivity. Its habits are sedentary. It will at times sit for hours together on low branches in the shade, darting out from time to time to catch a passing insect.
- MAYR, ERNST. Notes on the genus *Sericornis* Gould. *Amer. Mus. Novitates*, no. 904, 25 pp., 13 Jan. 1937.—These little Scrub Wrens of Australia and New Guinea present many difficulties in classification which the present paper attempts further to straighten out with the added help of recent collections. *Neosericornis*, *Tasmanornis*, *Arfakornis* and *Aethomyias* are regarded as not generically separable from *Sericornis*. Eight species-groups are recognized with key to those of Papua. Of the six species that occur in New Guinea, "never more than three can be found at any one locality, because their vertical ranges are not identical. While in Australia all of the species occur in the lowlands, only one of the New Guinea species (*spilodera*) does so regularly." Various of the forms treated by Mathews as species are here relegated to subspecific rank, which better expresses their relationships and reduces to more reasonable compass the number of distinct types. The following new races are described: *S. beccarii dubius* from Cape York; *S. b. randi* from Wuroi, western Papua; *S. b. weylandi* from Mt. Kunupi, Weyland Mts., Papua; *S. b. wondiwoi* from Wondiwoi Mts., Papua; *S. b. imitator* from Siwi, Arfak Mts.; *S. spilodera wuroi* from Wuroi, Oriomo River, southern New Guinea.
- MAYR, ERNST, AND RAND, A. L. Neue Unterarten von Vögeln aus Neu-Guinea. *Mitteil. a. d. Zool. Mus. Berlin*, **21:** 241-248, 1937.—Seven new races of birds are here described, from the collections made by Dr. Mayr and by Archbold and Rand, in New Guinea. They are: *Aprosmictus erythropterus papua* from Wuroi; *Aegothetes albertisi wondiwoi* from Wondiwoi, Wandammen Mts.; *Coracina papuensis oriomo* from Wuroi; *C. caeruleo-grisea adamsoni* from Mafulu, central division; *Sericornis nouhuysi monticola*, southwest side of Mt. Albert Edward; *Myiolestes megarhynchus wuroi* from Wuroi; *Melidectes leucostrephes brassi* from Mt. Tafa, central division; the types are in the American Museum of Natural History.
- MILLER, R. S. The Mangrove-kingfisher. *Emu*, **36:** 149-152, pl. 22 (col.), Jan. 2, 1937.—This widespread species of the oriental and East Indian regions is found in Australia from the tropic of Capricorn in the northwest, coastwise to the region of Brisbane in Queensland. It is a characteristic bird of the coastwise mangrove swamps, and feeds mainly on small crustaceans, as crabs, crayfish and shrimps. The nests are drilled in termite nests on the trunks of the mangroves.

- MOREAU, R. E., AND MRS. W. M. Biological and other notes on some East African birds. *Ibis*, (14) 1: 152-174, Jan. 1937.—Various notes on food and habits of a number of Tanganyikan birds add to the known facts of their life histories. The Martial Eagle (*Stephanoaëtus coronatus*) is well known to prey on monkeys, but in addition, instances are given of its capturing a dik-dik, as well as attempting to seize a tree hyrax and a small goat. Additional evidence is adduced of the dependence of the Vulturine Fish Eagle (*Gypohierax angolensis*) on the oil-palm, but a few instances indicate that it may occur occasionally where this palm is lacking. A nesting of the Banded Sand Plover is described where the great heat of the open site of the nest forced the adult birds to shade the nest during the heat of the day, when they might have placed the nest in the shelter of a nearby bush. The increase in size of the Forest Trogon as one goes inland from the coast is noted. There are some interesting notes on hornbills: with the large *Bycanistes cristatus*, the female is the one that does the plastering up of the nest hole, receiving for this earth brought by the male in his gullet. An interesting development in the social habits of the White-eared Barbet is described. A nest hole was found containing four young birds (the usual number is two) that were being fed by four adults, evidently two pairs that had laid in the same cavity.
- NAETHER, CARL. Further observations on keeping foreign doves. *Avicultural Mag.*, (5) 2: 45-48, Feb. 1937.—Various exotic species have been successfully kept in southern California, including Bronze-wings, Cape, Australian Crested, Blue Ground and Diamond Doves. In covered aviaries they seek the darkest spots in which to nest. Although Bronze-wings and Galapagos Doves do not seem to bathe in the special pans placed for them, they enjoy being sprinkled when the pens are watered once a week, spreading out one wing at a time and squatting on the ground. Some species will breed in that climate the year round, with a cessation sometimes in early fall. "A noteworthy characteristic of some foreign doves is that though they hatch two youngsters regularly, they will always rear but one, letting the other die after three or four days." It would be interesting to know if this is normal or only a result of captivity.
- OSMASTON, B. B. Do birds employ ants to rid themselves of ectoparasites? *Journ. Bombay Nat. Hist. Soc.*, 39: 182-183, Dec. 1, 1936.—Doubts this purposive use suggested by Sálím Ali. Tame Laughing Thrushes (*Trochalopteryx* and *Dryonastes*) brought up from the nest, when offered bugs with pungent excretion, instead of rejecting them, proceeded to press or rub the insects against their under tail coverts, in a vigorous manner, eventually swallowing the insect. The meaning of this action is unexplained.
- PENNELL, FRANCIS W. Travels and scientific collections of Thomas Nuttall. *Bartonia*, Proc. Philadelphia Botanical Club, no. 18, p. 1-51, pl. 1-5, Dec. 17, 1936.—To ornithologists Thomas Nuttall is best known for his 'Manual of Ornithology' in two volumes, of which the first, 'Land Birds', appeared in 1832, and the second, 'Water Birds', in 1833. A second edition of the 'Land Birds', with much new matter gained in the course of his western journey across the continent, appeared in 1840. But Nuttall was first of all a botanist. Born in western Yorkshire, January 5, 1786, he came to this country in the spring of 1807 or 1808 as a printer, but under the encouragement and patronage of Barton, his inherent taste for the study of plants developed apace. So absorbed would he become in this pursuit that at times he almost neglected his bodily needs. He travelled extensively in the eastern United States, making large collections of plants, which he brought back to Philadelphia and there devoted himself to their consideration. While studying his

collections at the Academy of Natural Sciences, he would often remain at work all night, at length "lying down when weary under the skeleton of the great mastodon for repose." The available facts in Nuttall's life have been at various times reviewed, but in the present sketch much new matter is brought forward derived in part from a study of the dates and localities of his extant specimens and in part from the recently discovered papers of Barton who did much to finance his more extensive travels. The details of his various expeditions are given as fully as may be, together with a brief account of his activities at Philadelphia and Cambridge. Two maps enable the reader to follow his explorations much more precisely than heretofore possible. While Nuttall evidently "had the faculty of making friends," he was withal painfully shy, preferring the life of a scholarly recluse. Three portraits show him in young manhood, in middle age, and again at a later period, after he had returned to England to live upon an estate which he inherited and where he died.

PONCY, R. La collection d'oiseaux des "pays les plus septentrionaux" rapportés en 1769 par Jean Louis Pictet à son ami le Professeur Horace Bénédict de Saussure. Arch. Suisses d'Ornith., 1: 364-376, Dec. 1936.—Of historic interest are the notes from a manuscript of Pictet concerning a collection of northern birds given by him to Saussure, including a Tufted Puffin collected by Steller and a Snowy Owl from Hudson Bay. Most of the birds were collected by Pictet in Lapland in 1769, and his notes on these are quoted, together with a few interesting comments on naturalists he met at the time in the course of the Transit of Venus Expedition.

POOLE, EARL L., AND POUGH, RICHARD H. Enter hawk—exit mouse. Circular Nat. Assoc. Audubon Socs., no. 24, 4 pp., 2 figs., 1937.—The economic value of hawks and owls, in particular the Rough-legged Hawk, is emphasized in the control of meadow mice. Specifically, the city of Reading, Pennsylvania, in 1928, acquired some 3500 acres of land for an impounding dam for water supply, and in the following years planted on the area two and a half million seedling pines, allowing the area to remain undisturbed. Rabbits, pheasants and meadow mice increased abundantly, and ere long the hawk population also increased, especially in the colder months. In 1934-35 many Rough-legged Hawks were killed there by a local deputy. An examination of the stomachs of these birds showed that every one contained meadow mice exclusively. Soon after, an appalling loss amounting to some forty per cent of young pines, was reported due to girdling by mice which were favored by the dense cover. These and other facts make it clear that killing of hawks and owls is a result of pure stupidity and willful ignoring of their demonstrated value as natural controls of these rodents.

PORTER, SYDNEY. Wanderings in the Far East. Avicultural Mag., (5) 2: 34-45, Feb. 1937.—A continuation of his account of the bird life met with, and in this installment his experiences in the bird markets of China. In Hongkong thousands of Pekin Robins are seen for sale as cage birds; the East Siberian Ruby-throat is a favorite cage bird in the Peking shops and requires a rich insectivorous diet, in which wasp grubs are much favored. Cage birds are valued by the Chinese only if they sing which may account for the fact that several wild species common about Hongkong are not seen in the shops. Notes on various pheasants as captive birds are given. The Blue Crossoptilon is readily domesticated and becomes very tame. At Shanghai there is a local trade in the dried bodies of the Chinese Impeyan to be used as food.

ROBERTS, AUSTIN. [Change of name.] Bull. British Ornith. Club, 57: 99, Mar. 6, 1937.—The name *Apalis thoracica alticola* Roberts for the Transvaal bird is preoc-

cupied by *Apalis alticola* (Shelley), from northern Rhodesia. The new name *Apalis thoracica drakensbergensis* is proposed in its place, with type locality Nelsburg, eastern Transvaal.

RÜPPELL, WERNER. Die Mittelrichtung. Terminologisches und Theoretisches zum Vogelzüge. Der Vogelzug, 8: 1-10, 2 text-figs, Jan. 1937.—One may distinguish with migrating birds a normal direction, or the straight course from the point of start to the point to which the migration is directed; and a mean direction which is the average course taken to the desired point. This is illustrated by the course of migrating storks from western Europe to South Africa, a nearly due-south direction, reached, however, by either of two routes, skirting the Mediterranean Sea and converging to the wintering area. For various species, the 'migration angle' may be defined as the angle which the migratory flight as determined by banding returns, makes to the north-south line. Thus the mean direction for the storks of southern Holland is about 4° west, whereas those of northern Holland show a more easterly trend, 20° east, so that the mean direction for all Holland is to the east, about 7°. Still farther east the storks of the upper Rhine area show a mean direction of 20° west. The normal north-south direction is not followed but the point to the south where wintering takes place is thus attained by following inherited flight lines. In this the old birds act as guides for the young, so that the route becomes traditional.

RÜPPELL, WERNER. Heimfindeversuche mit Staren, Rauchschwalben, Wendehälsen, Rotrückengewürgern und Habichten (1936). Journ. f. Ornith., 85: 120-135, Jan. 1937.—Continuing experiments on the ability of birds to return to their nesting place from a distance, Starlings, Swallows, Wrynecks and Red-backed Shrikes, as migratory species, and Goshawks as sedentary birds, were used. The birds were sent by airplane to varying distances from Berlin during the nesting season, then released and the time of return noted in the successful instances. Of 24 birds thus sent to London (900 km. distant), four birds were retaken after twelve to fourteen days; of those sent to Rome (1200 km.) and Madrid (1850 km.), one of each lot returned; while of those sent to Malmö, Sweden, one returned after an absence of seventeen days. Of the swallows ten were sent to Athens and ten to Madrid (1800 and 1850 km. respectively) and one of each lot returned in five days, each showing an equal rate of travel. Of eight shipped to London (900 km.), two returned. Similar results were obtained with Wrynecks and Red-backed Shrikes, except that the proportion of returning birds was for the latter only one in twelve birds for unexplained reasons. The Goshawks showed no ability to return. The results are regarded as proof that these migratory birds when removed to unfamiliar regions at a distance from their nesting area, possess a sense of direction with respect to the latter.

SÁLIM, ALI. The ornithology of Travancore and Cochin. With notes by Hugh Whistler. Part VI. Journ. Bombay Nat. Hist. Soc., 39: 3-35, 1 pl., Dec. 1, 1936.—Includes the cuckoos, parrots, rollers, bee-eaters, kingfishers, hornbills, hoopoe, trogon, swifts, nightjars, and owls, with many notes on distribution, color of soft parts, breeding and feeding habits. A nest of the Malabar Trogon containing two eggs, is described as a flimsy platform of rotten twigs wedged between a growing sapling and a cane stem in dense growth, an unusual circumstance since cavities in trees or stumps are usually selected. The bird is somewhat crepuscular, often to be seen hawking beetles well after dusk. The squabs of the Great Indian Hornbill are much hunted by natives who esteem them as food. The Bengal Palm Swift is definitely 'symbiotic' with the Palmyra Palm (*Borassus*), building its

fimsy nest in a fold of the frond. In the stomach of a Mottled Wood Owl were found the remains of a field mouse and a large scorpion with its sting intact.

SÁLIM, ALI, AND HUMAYUN, ABDULALI. The birds of Bombay and Salsette. Part 1. Journ. Bombay Nat. Hist. Soc., **39**: 83-103, 4 pls., map, Dec. 1, 1936.—Since the War, the vicinity of Bombay has undergone "stupendous transformation," with consequent changes in the local bird life, due to clearing, building, and road improvement. The rainfall is restricted to the southwest monsoon from June to September, and is about 75 inches. In addition to the resident birds, migrants from the north arrive from August on, some stopping to winter, others passing farther southward. The northward exodus begins about the end of February and is over by early May. In addition are species which move about locally, present at some seasons but not in others, according to abundance or scarcity of food (as Rufous-backed Shrikes and Pittas). The first part of the systematic list of species is included.

SAUNDERS, ARETAS A. Ecology of the birds of Quaker Run Valley, Allegany State Park, New York. N. Y. State Mus. Handbook, no. 16, 164 pp., map, illustr., 1936.—Much valuable information is given on the types of habitat, the component species of plants, and the characteristic birds of this area, especially on the number of pairs breeding in particular areas, so that an estimate may be made of the carrying capacity of the acreage for the different species of birds. For the area as a whole, an average of 84.6 pairs of breeding birds for each 100 acres was worked out. A special study is included of the nesting of the Ruby-throated Hummingbird in the Park. The distribution of hummingbirds in the Park was found to be governed chiefly by the occurrence of bee-balm. This as well as spotted jewel-weed and cardinal flower, are unquestionably hummingbird flowers, and are pollinated by the birds in their visits for nectar. Aphids were also found to constitute part of the bird's food. The pale jewel-weed is not sought by the birds. Male hummingbirds seem to occupy territories in summer distinct from those of the nesting females and may even contend with the latter for possession.

SERVENTY, D. L. The menace of acclimatization. Emu, **36**: 189-196, Jan. 2, 1937.—A review of the effect of introducing exotic species into New Zealand and Australia. "Any successful introduction, even if directly innocuous from the human standpoint, must, by very reason of the fact that it has obtained a foothold, disturb the balance which had existed, and therefore have repercussions which will detrimentally affect the existing fauna." In New Zealand around towns, European species of birds have largely supplanted the native ones. In Australia, the European Goldfinch has become established around Perth since 1933 and the South African Grenadier Weaver is now introduced in South Australia. Government regulation of all importations of foreign species is strongly urged.

SNOUCKAERT VAN SCHAUBURG, Baron. De geographische verbreiding der Pycnonotidae van Azië en den Indischen Archipel, VI. Limosa, Orgaan d. Club van Nederl. Vogelkundigen, **10**: 32-61, Mar. 1937.—This concludes a review of the bulbuls of Asia and the Indian archipelago. The species and races of the six genera *Iole*, *Microscelis*, *Cerasophila*, *Irena*, *Irenella* and *Chloropsis* are listed, each with its geographic distribution and occasional critical comment and references to pertinent literature.

STANFORD, J. K., AND SMITH, H. C. The nesting of the Indian Crested Swift (*Hemiprocne coronata*) in Upper Burma. Journ. Bombay Nat. Hist. Soc., **39**: 125-126, Dec. 1, 1936.—Description of a nest found March 28, at a height of about twenty feet, in the Pidaung Game Sanctuary. The bird incubated sitting erect with the

- body and tail nearly vertical, the breast feathers projecting over the egg. The young bird was still in the nest a month later. See also the paper by Lowther in same issue (*antea*).
- STOLPE, M., AND ZIMMER, K. *Physikalische Grundlagen des Vogelfluges*. Journ. f. Ornith., **85**: 147-164, text-fig. 1-24, Jan. 1937.—In this study of the mechanics of flight, a well-mounted bird with wings outspread was fixed at the outlet of an air tunnel on a frame capable of being moved in imitation of rowing flight. The forces represented by air resistance and suction are analyzed and illustrated by a series of diagrams. The lift due to the camber of the wing in section arises partly from the suction of air on the upper surfaces. The slight differences in the tilt of the forward edge of the wing are seen to be effective in raising or lowering the bird. The general conclusions reached are not very different from those generally accepted, except that the views of Lorenz are not borne out, regarding the loss of forward motion with the down stroke.
- STONER, DAYTON. Ten years' returns from banded Bank Swallows. Circular N. Y. State Mus., Albany, no. 18, 21 pp., 8 text-figs., Jan. 1937.—As a result of this work carried on in Iowa and New York State, 3044 young and 1881 adult birds were banded. It was found that birds usually breed in their first season after hatching, often making a less bulky and less neat nest than adults. Such first-year birds do not often return to breed in the same gravel pit where reared but many return to the general region of their origin and a still greater proportion of adults was found to return yearly to the same gravel pit. Usually adults have a different mate each year, while others have a different mate for first and second broods in a year. The rapid decrease in number of birds recaptured in successive seasons from earlier bandings suggests great mortality in all age classes. Probably relatively few birds (about five per cent) attain an age of four years.
- STONOR, C. R. The male characters of the immature female of *Rhyticeros plicatus*. Ibis, (14) **1**: 178-179, Jan. 1937.—A Plicated Hornbill at the Zoological Gardens, London, previous to its first post-juvinal moult, was identical in appearance with a male, but in the succeeding plumage came out in the colors of the female, with a black instead of brown head and neck. The New Zealand Paradise Duck does the same thing. The young female has the black head of the male but at the first post-juvinal moult the color changes to white. In this species the female is the active partner in the courtship activities, hence the desirability of knowing the relations in the hornbill.
- STREICH, G., AND SWETOSAROV, E. Über die Schnelligkeit des Federwachstums. Zool. Jahrbücher, Abt. f. Allgem. Zool. u. Phys., **57**: 280-292, 2 text-figs., 1937.—The authors conclude that the rate of growth of feathers is independent of their structure and point of origin; that there is a direct relation between the length of a feather and its rate of growth, so that the longer the individual feather, the more rapid is its growth. Geese, ducks and hens show no important differences in the rate of feather growth, but in doves the rate is greater and the length of time required to renew the plumage is thus shorter.
- TINBERGEN, L. Feldbeobachtungen an Zwergmöwen, *Larus minutus* Pall. Limosa, Organ d. Club van Nederl. Vogelkundigen, **10**: 12-21, 11 text-figs., Mar. 1937.—In Holland the Little Gull occurs regularly from May to August on the east and southeast coasts of the Zuiderzee but particularly concentrates in the region of Hardenwijk, where a favored spot attracts them for rest and feeding. Their numbers reach a maximum about mid-August. Whence these birds come is not clear for the nearest known breeding places are in Denmark and western Prussia.

- A series of diagrams illustrates the changes in color pattern in the first-year birds. Pursuit flights take place in which one bird may leave the group and fly off pursued by one or more of the others, and at times the relation may be reversed, the pursued turning pursuer. When the pursuer overtakes the pursued it extends its head upward and forward in a characteristic manner, or if the birds alight the head is stretched upward and tail erected, to the accompaniment of a series of calls. The meaning of this social ceremony is not suggested.
- TROLLER, JUL. Weiterer Beitrag zur Systematik der Wasseramsel. Arch. Suisses d'Ornith., **1**: 357-363, Dec. 1936.—After comparison of northern European Water Ousels (*Cinclus cinclus*) with those of the Swiss Alps, the author regards the latter as a distinct race with darker umber-brown crown and nape. The author further attempts to set up the alpine races *medius* and *meridionalis* of Brehm, on the basis of color characters, but since these breed in the same areas with *montanus* the editors point out that the supposed forms are better regarded as individual variations. The immature plumages are described, but the editors again take issue with the author and agree with Witherby that the feathers bordering the white throat-patch are individually variable in their dark edging, rather than that these dark edges are characteristic of the immature bird in juvenal plumage.
- TURKEWITSCH, B. G. Ueber das Gehörorgan der Vogel: das Knöchernen innere Ohr des *Pterocles alchata caudacutus* Gm. Sitzb. Ges. Naturf. Freunde, Berlin, 1935: 256-273, 4 text-figs.—Describes the bony labyrinth of the ear in birds, pointing out that in gallinaceous birds it is similar in the various forms, but that in the sand grouse (*Pterocles*) it is markedly different and most closely resembles that in the pigeons, thus indicating the relationship of the sand grouse with the latter.
- VÖLKER, OTTO. Ueber fluoreszierende, gelbe Federpigmente bei Papageien, eine neue Klasse von Federfarbstoffen. Journ. f. Ornith., **85**: 136-146, 4 text-figs., Jan. 1937.—The discovery, previously announced by the author, that the yellow feathers of the Australian Grass Parakeet are fluorescent, is now further elaborated. This phenomenon occurs almost altogether in the parrots of the Australian region, but not in the Loriidae nor in the genus *Eclectus*; while among various New World parrots investigated, only two species showed fluorescent color when exposed to ultra-violet light with a quartz lamp. In proof that this appearance is a characteristic of the yellow zooxanthin of these birds, the artificial breed of Grass Parakeet in which this element is wanting, and the plumage is white and blue through its loss, the phenomenon is absent.
- WAGNER, H. O., AND SCHILDMACHER, H. Ueber die Abhängigkeit des Einsetzens der nächtlichen Zugunruhe verfrachteter Vögel von der geographischen Breite. Der Vogelzug, **8**: 18-19, Jan. 1937.—Unexpected results were obtained by transporting migrants to distant latitudes. In the spring of 1936 a large number of male warblers, *Sylvia communis*, were captured in Helgoland; ten were taken in cages to Australia, the others kept at Helgoland as controls. The return journey from Port Lincoln, South Australia, began August 14, continuing to Durban (September 3), thence around the Cape of Good Hope, reaching Antwerp on September 30. Six birds survived the journey. A nightly activity ("migration-restlessness") was first noticed in these birds on September 21 and 22 while the ship's course was between 20° 10' and 24° 48' north latitude. The controls at Helgoland showed this activity much earlier and with some individual variation,—two showed the migration urge first on the night of August 6 and 7, a third ten days later, and others at dates up to September 8 and 9, the last, however, probably correlated with moulting irregularities. Previous investigations showed the beginning of the

- migration urge between August 10 and 25. The European thrushes, *Turdus merula* and *T. philomelos*, naturalized in Australia, and living in the gardens there, behave like resident birds.
- WEVER, ERNEST GLEN, AND BRAY, CHARLES W. Hearing in the pigeon as studied by the electrical responses of the inner ear. *Journ. Comp. Psychology*, **22**: 353-363, 4 text-figs., Dec. 1936.—Studying the process of hearing in pigeons by means of electrical responses of the cochlea under anaesthetics, the authors conclude that the ear in these birds is a reasonably accurate device for the transmission of sound frequencies, with little distortion and no more marked differences in sensitivity for different frequencies than are shown by other animals. On the other hand the sensitiveness to sound intensity is low, so that "it seems safe to conclude that behavioral tests on pigeons would show them to be seriously handicapped in the discrimination of loudness." The upper limit of range for sound vibrations is less than half that found in the guineapig. A brief description of methods used and a review of previous work are given.
- WHARTON-TIGAR, N. Notes from the London Zoo. *Avicultural Mag.*, (5) **2**: 49-50, Feb. 1937.—At the London Zoological Gardens there is a splendid collection of various species of live Birds of Paradise, including an "absolutely perfect" Prince Rudolph's Bird of Paradise, and a fine pair of Sickle-billed Bird of Paradise, the male of which has tail feathers several feet long. Although the males of some of the species display freely and the birds seem healthy, none has as yet been induced to breed successfully.
- WHITTEMORE, WENDELL L. Summer birds of Reelfoot Lake. *Journ. Tennessee Acad. Sci.*, **12**: 114-128, Jan. 1937.—A total of 116 species is here recorded as occurring in summer about this Tennessee lake. Egrets, Double-crested Cormorants and Anhingas breed and the Wood Ibis was seen in numbers in late summer, as a visitor from the Gulf Coast. The Dickcissel was twice recorded in summer, three birds in each instance.
- WOOD JONES, FREDERIC. The breeding of Prions on islands off the coast of Victoria. *Emu*, **36**: 186-188, pl. 28, Jan. 2, 1937.—A difference in breeding habits on two different islands is described. On the Lawrence Rocks the area into which burrows can be made is very restricted and is mostly occupied by penguins. The birds (*Pachyptila turtur*) were nesting in late November. On the neighboring Lady Julia Percy Island, the birds appeared to be nesting beneath boulders instead of in burrows of their own construction, notwithstanding that there was a large area suitable for burrows. Possibly the presence of "myriad rabbits" on the latter island may account for the marked difference in nesting habits.

The following mimeographed publications have been received, containing many brief notes of local interest:—

- Archaeopteryx, vol. 6, no. 2 (St. Anselm's College Ornithological Society).
Bird Calendar of the Cleveland Bird Club, 32d year, bull. 4, Sept.-Dec. 1936.
The Bluebird, vol. 4, nos. 1, 2, 1937 (Audubon Society of Missouri).
Bowdoin Scientific Station, bull. no. 3, Second annual report, 1937.
The Flicker, vol. 8, no. 4, Dec. 1936 (Minnesota Bird Club).
Jack-pine Warbler, vol 15, no. 1, Jan. 1937 (Michigan Audubon Society).
The Prothonotary, vol. 3, no. 1-4, 1937 (Buffalo Ornithological Society).
The Raven, vol. 8, nos. 1-3, 1937 (Virginia Society of Ornithology).
The Redstart, vol. 4, no. 5, Feb. 1937 (Brooks Bird Club, Wheeling, West Virginia).

St. Louis Bird Club Bulletin, vol. 6, no. 1, Jan. 1937.

The Snowy Egret, vol. 12, no. 1, Jan. 1937 (Pippapass, Kentucky).

U. S. Dept. Agric., Wildlife Research and Management Leaflet, BS-77-87.

U. S. Dept. Agric., Soil Conservation Service, 'Winter feeding of North Dakota birds', by Adrian C. Fox, 1936.

Migration dates for the birds of central Ohio, compiled by Donald J. Borrer, Columbus, Ohio, 11 pp., March 1937.