RECENT LITERATURE

Parental Care and Its Evolution in Birds.—S. CHARLES KENDEIGH. Illinois Ecol. Monogr., 22: v + 356 pp. Cloth, $5.00; paper, $4.00.

Among the greatest needs of ornithologists today are scholarly studies that bring together, correlate, and synthesize the widely scattered literature on some topic such as parental care in birds, and this Dr. Kendeigh has done in his new book.

In the first section of "Parental Care and Its Evolution in Birds," Dr. Kendeigh describes the ingenious electrical devices (developed by the workers at the Baldwin Research Laboratory and by others on both sides of the Atlantic) for use in nest studies. The section includes seventy-eight pages which record the results of an intensive study of the House Wren (*Troglodytes aëdon*) made at the Baldwin Laboratory. There are also shorter reports on 19 other American birds of widely differing families which Kendeigh studied for comparison. These studies, though brief, are extremely important contributions. It is unfortunate that, for most of the species investigated, Kendeigh has failed to mention the locality of the study. Locality is, of course, of real importance in interpreting such data.

The second major section of the book is devoted to a survey of the published data on families of "the birds of the world" and to thoughtful discussion of the evolution of parental care in birds. Dr. Kendeigh generously acknowledges the work of several assistants who helped over the years on the task of compilation. It is regrettable that their work seems not to have been adequately checked and coordinated. Thus we find *Grallina*, *Hemipus*, and *Colluricincla* included in the Prionopidae, a classification hardly used elsewhere since Mayr's analysis of the family in 1943. The Honeyeater family is called Meliphagidae (p. 265) and also Melithreptidae (p. 287). Female tinamous are said to be "more brightly colored" than males. Walkinshaw's 1947 study of *Grus antigone* is said to refer to "the sandhill crane." And Stonor's captive screamers (whose eggs in fact did not survive—Ibis, 1939: 45–49) are described as producing nidifugous young.

The author states that his survey of parental care among the birds of the world includes data on all living Orders except the Coliiformes, but he makes no statement on how many bird families are treated. This is to be regretted, since the novice will certainly not suspect that 44 families of Wetmore's 1951 classification are missing. Actually, published data are available on at least the following of the 44: Numididae, Heliornithidae, Cariamidae, Steatornithidae, Podargidae, Nyctibiidae, Hemiprocnidae, Coliidae, Eurylaimidae, Phytotomidae, Pittidae, Campephagidae, Dicruridae, Cracticidae, Pycnonotidae, Cyclarhidae, Nectariniidae, and Drepaniidae.

The value of the book is seriously reduced by a lack of attention to what some people refer to as the "minutiae." The publisher has apparently made little effort to edit the "details" of English or to eliminate the errors made by the typesetter; the author seems to have overlooked entirely the need for checking the scientific names. Errors will creep in despite our best efforts, but when the errors in the scientific names in the index approach 5 per cent of the total, any reviewer is entitled to protest, and the more skeptical users of the volume may wonder whether a similar proportion of less easily detectable errors occurs among the thousands of figures listed in the book's 52 tables.—J. VAN TYNE.

The Fulmar.—JAMES FISHER. London: Collins. xv + 496 pp., 1 painting (frontis.), 82 phot. (4 in color), 70 maps, diagrams, and line drawings. 1952. 35 shillings. This New Naturalist *Monograph* is a notable contribution to avian literature; it adds to and expands in narrative style Fisher's paper on Fulmar population

problems (*Ibis*, 94: 334–354, 1952) and draws on his bibliography of 2,378 items. These titles mostly are omitted from this volume, which is aimed at the general reader; the bibliography has been deposited with the Society for the Bibliography of Natural History, c/o British Museum (Natural History), London, and, let us hope, eventually it may be published. The present book is, in a large measure, the product of a successful cooperative enterprise—the British Trust for Ornithology's Fulmar Investigation. Knowledge of his subject has enabled Fisher to piece together an account of much wider scope than was covered by the Trust's investigation and to evaluate statements about the Fulmar that are scattered through many accounts of voyages and explorations.

Following K. H. Voous (1949), Fisher (p. 8) states that it is "abundantly clear" that the Fulmars of both hemispheres belong in a "superspecies" comprised of: *Fulmarus glacialoides* (A. Smith) of the Antarctic and sub-Antarctic, which has occurred north of the Equator in the Pacific; *F. glacialis rodgersii* (Cassin) of the North Pacific; and *F. g. glacialis* (Linn.) of the North Atlantic. Not all ornithologists will agree with this treatment. Validity of the proposed race *F. g. minor* Kjaerbølling of Baffin Island, northwestern Greenland, and vicinity is questioned. Differences between the three recognized forms of the superspecies are those of degree, notably in bill shape. Voous theorized that Fulmars spread from the Southern Hemisphere to the North Pacific, then through the Arctic Ocean to the North Atlantic. All three birds are polymorphic—containing light, all degrees of intermediates, and dark individuals. The Antarctic bird is treated very briefly. About 20 pages are devoted to the Pacific Fulmar, whose range and breeding stations are poorly known; generally speaking, the percentage of dark-phase birds decreases with high latitude, the situation being the opposite in the Atlantic Fulmar.

Distribution and the breeding stations of the Atlantic Fulmar are documented in great detail and mapped for each two-month period of the year. The picture is one of dispersal, not migration, and the shifting pattern is related mainly to food availability and the time the birds have to find and gather it. Nowhere in its range has this bird occupied all of the sites that appear to be suitable breeding stations. There is strong support for the theory that the spread of the Fulmar in the past two centuries was caused by a change in food and its supply, this being first the waste of whales and, following the decline of whaling, fish offal from trawlers. In Britain and vicinity, the spread in recent decades has been tallied to the extent of noting when and for how many years Fulmars 'prospected' sites before nesting at them. The birds even have 'prospected' the cliff-like walls of castles. In parts of its range the Fulmar breeds inland, some distance from the sea.

The annual cycle in sizable British and nearby colonies is as follows: birds begin arriving about the end of October (up to months later at smaller colonies and 'prospecting' places); the population increases, but fluctuates, into January; it decreases in February–March; there is a peak in April; after a sharp drop in May there is another peak and breeding begins. Courtship evidently consists of relatively few formalized actions (much more data are needed). The egg is incubated alternately by both adults, with change-over at intervals of 2–5 days, for about 53 (range of 41–57) days. Fledging requires about 46 (41–57) days; near the end of the fledging period the chick, which is tended by both parents, may outweigh an average adult. They desert it and, some time thereafter, it flies to the sea. The annual cycle begins later, but may not end later, in the Arctic. Perhaps 7–9 years pass before the Fulmar first breeds. It is postulated that, contrary to the theory of Wynne-Edwards (1939), most adult Fulmars breed yearly.

'Psittacosis' (ornithosis) may have been contracted by Fulmars eating infected dead parrots thrown overboard. It was detected among humans in the Faeroes beginning in 1933, in Iceland in 1939, and traced to Fulmar-fowling activities. It has become common among the birds, killing some, but evidently has not attained epizootic proportions. Because of the human illnesses and fatalities attendant upon it, Fulmar-fowling has been prohibited in the Faeroes and Iceland.

The manner of ejecting the stomach oil (really a wax) and its probable various functions are discussed in detail. As to predators, man eats more Fulmars than does any other animal. Food of the Fulmar is treated at length, also the pros and cons of possible causes of the bird's spread. Among other information included is: an Eskimo legend about the Fulmar, names and synonymy, measurements, weights of young, recovery of banded birds, statistics on Fulmar-fowling in Iceland, palatability of the Fulmar (very poor) and its egg (very good). There are indices of species and place names, but no subject index.

This book adds up to an inclusive and overall picture of the characteristics and ecology of the Atlantic Fulmar. The discussions of the relations of the Fulmar with man should interest many readers. A few pages on and diagrams of molt—a matter of some interest to shipboard observers—would have been appreciated by the serious student. The book indicates many of the existing deficiencies in our knowledge of the Fulmar and points the way for future cooperative and individual research. Major impressions gotten from reading it are (a) that it is based on an immense amount of traveling by its author and (b) that it is, for a monograph, short on precise data on breeding biology—which may be forthcoming eventually from observations on marked birds. The book's illustrations are first-rate. I caught only two minor errors in type: a wrong date for Audubon (p. 420) and omission of a cross-reference (p. 458). The world of the Fulmar and man are tied together nicely in this volume; on noting mention of "red lichens" (p. 66) I wondered whether some plant ecologist might also be tying in the plant world by a study of the development of 'ornithocoprophilous' lichens (see *Bot. Rev.*, 10: 25, 1944; *Am. Midland Nat.*, 49: 6–8, 1953) at sites that the Fulmar has occupied for known lengths of time.—RALPH S. PALMER.

A Generic Revision of Flycatchers of the Tribe Muscicapini.—Charles Vaurie. Bull. Amer. Mus. Nat. Hist., *100:* 453–538, 27 figs., 7 tables, 1953.—It is a pleasure to review this paper. There is a current trend toward synthesis; toward enlarging the scope of genera and using them to indicate relationships rather than to maximize differences. Vaurie's contribution is one of the best, if not the best, of these contributions I have seen, and in one of the most difficult groups, that of the Old World flycatchers which has nearly 400 species in it. Vaurie divides these flycatchers into four tribes: Monarchini, Rhipidurini, Muscicapini, and Pachycephalini. The first two are clearly defined; the second two intergrade with each other and with thrushes and warblers. The Muscicapini, dealt with here, includes some 113 species related to *Muscicapa* and some of the most controversial elements.

All too often it is impossible to find adequate generic diagnosis, or an author's included species. Genera that seem quite valid in one area break down completely in another. Here we have a study of specimens of all but one (of which the unique type is in Stockholm) of the 113 species. Structure, plumage and color, and habits are all considered. The result is the recognition of 12 genera that are actually diagnosed, and that without a wealth of inconsequential detail. Conflicting views are discussed, where indicated alternative treatments are pointed out, and included species listed. The reduction in number of genera is not as great as that proposed by Mayr and by Deignan recently, but some of the genera are fairly large: *Ficedula*,

26 species; *Niltava*, 22 species; and *Muscicapa*, 21 species. The frequent new combinations are, of course, an annoyance, but many of the species went under several combinations in the recent literature anyway. All will not agree with the conclusions, but the data are presented for examination.

The total of all the characters, structure, color, pattern, and habits, are weighed together. Surprisingly perhaps, in this group, plumage and color characters seem more conservative and in general to better indicate relationships, than do structural characters. But emphasis on certain characters shifts. The immature of certain genera lack the "family character" of spotted plumage (*Culicicapa*). It is interesting to find that in a single species, *Rhinomyias gularis*, the bill varies from "typical" flycatcher-like to "typical" thrush-like. Internal characters were not investigated, and Vaurie, wisely I think, presumes that in these relatively poorly differentiated species they are not necessarily more significant than external characters. I find it irritating, and not at all convincing, to be told that a passerine bird is definitely of one group and not another because of a few anatomical characters when I know full well but few individuals of few of the species of either group have been examined, and the value and variation of the characters unknown. Habits are becoming more used in taxonomy, and as these are not "collectable," we must be dependent on description. It is interesting to find different field observers' notes diametrically opposed on relationships indicated by habits.

Earlier, Vaurie reviewed the drongos (Dicruridae), usually placed near the orioles and starlings. He called them an isolated, clear-cut family without obvious affinities. Now he suggests that certain more primitive ones show an approach to such flycatchers as *Melaenornis*. The possibility of their relation to the *Monarcha* group should not be overlooked either.

When species are shifted from genus to genus as some of these have been in recent years, nomenclatural difficulties may result. These are often ignored by authors instructed only in the "broader" aspects of the subject. But Vaurie has taken his responsibilities seriously and cleaned up as he went along. In an appendix, the allocation of names affected by the generic changes are listed.

For younger students who are attempting to "arrange" species in family groups, on the basis of a few characters seen in a few specimens, of a few species, this paper should be required reading.—A. L. RAND.

Studies on the Morphogenesis of the Brain in Birds.—Knud H. Krabbe. (Morphogenesis of the Vertebrate Brain V) (Ejnar Munksgaard, Copenhagen), pp. 1–100, 53 plates, 1952.—The Tornblad Institute for Comparative Embryology in Lund is to be complimented upon the completion of this fifth volume in the series on the vertebrate brain; the first book dealt with the structure of the reptilian brain, and the second, third, and fourth with the phylogeny of the brain in mammals.

There has been a preoccupation with domestic species of birds, or ones of some economic importance, when embryology was even considered. I believe it would be an exaggeration to say that there were, in the last half-century, as many as 25 authors who published more than passing observations on the development of the nervous system of wild birds. The domestic hen has too frequently been used for the depicting of the generalized avian brain. This is understandable for various reasons. Then too, the evidence available from the few papers published previously seems to indicate a lesser variability in ontogeny and in adult morphology in birds as compared with mammals.

All these factors make even more significant the appearance of this study of the rich collection in the Tornblad Institute. Fourteen genera in 11 orders are consid-

ered, and about two-thirds of the book are devoted to descriptions of the stages available for each species. *Spheniscus, Ardea, Cygnus, Phasianus,* and *Melopsittacus* receive the major attention. To a biologist familiar with chick or human development these descriptive sections may seem sparse, gross, and lacking in minute detail. It must be borne in mind, however, that this is the first information on neural morphogenesis available for many of the species treated.

The discussion of brain size and the development of its parts, in relation to body size, function, and systematic position, brings out several points of interest. Interspecific variations in size of the primordial brain are very small, as compared to variations in body size; in the second stage *Dromiceius* has a brain smaller than that of *Parus* in the same stage, and *Chlorostilbon's* brain is one-third as long as the brain of *Cygnus* when both are in the fifth stage. Slight development of the rhinencephalon in most birds is perhaps correlated with a poor sense of smell. The development of the optic apparatus seems remarkably uniform. This is perhaps just a reflection of the relative conservatism of structure which is evident throughout the organ systems of the Class Aves and especially in the central nervous system. The mesencephalon is the center of the most specialized and distinctive functions in birds. One can in all parts of the brain observe " . . . variations that may be characterized, but do not afford a foundation for any systematics" (p. 91).

There are 187 figures in the plates. These are excellently prepared and provide a wealth of comparative information on the grosser aspects of brain development.—HARVEY I. FISHER.

Vom Vogelzug. Grundriss der Vogelzugskunde.—SCHÜZ, ERNST. Verlag Dr. P. Schöps, Frankfurt/Main, 232 pages, unbound DM 18.50, bound 22.—1952.—One of the reasons why birds are watched and studied by more people than any other group of animals is the phenomenon of bird migration. The clock-like regularity of their coming in spring and departure in fall, the movement of migrating flocks, the sudden appearance of great rarities, all this has focused the attention of bird students on the problems of bird migration. Our understanding of this complex of questions has greatly advanced during the past fifty years, particularly after the introduction of the method of bird banding, and literature on the subject is accumulating very rapidly. Popular accounts of the field are common, but only few authoritative treatments of the whole field are available. The most recent is by Professor Ernst Schüz, for many years the director of the famous Vogelwarte Rossitten. The high expectations one might have of such a volume are completely fulfilled. Here is a well organized account of the whole field of bird migration, based on the entire recent literature, including that of nearly all languages, with particular emphasis on those problems which at the present are under active consideration.

The volume contains three major sections. One on methods, one on migration phenomena, and one on the causal factors. That not all birds migrate in a similar manner is still too often ignored. There are day and night migrants, there are fast and slow fliers, there are some which follow definite routes while most others fly simply in a certain direction. The case histories of the migration of 13 European species, based on banding and observation, are given in detail, in order to bring out these differences. A special section (with five maps) is devoted to the migration of tropical and southern hemisphere species. Directional and vertical migration are discussed in this section as well as the location and other problems of the winter quarters.

Almost half of the volume is devoted to two great subjects, to the physiology of migration with its relation to season and weather, and to orientation. The treat-

ment of the causes of migration is not as well organized as some other sections. The respective rôles of genetic, selective, physiological, and environmental factors in migration are not stated precisely; and the voluminous recent work on the physiology of migration, though mentioned and largely listed in the bibliography, is not discussed in detail. On the other hand, there is a very complete account on the problem of orientation with a summary of the important researches of Rüppell, Kramer, and others.

There are 55 figures, a bibliography of 11 pages, and an index. Particularly as a key to the literature on important European research on bird migration, the volume is quite indispensable. No student of bird migration can afford to be without it.—E. MAYR.

The Whooping Crane.—Robert Porter Allen. Research Report No. 3 of the National Audubon Society. xxvi + 246 pp., col. frontisp., pls. 1–13, 30 text-figs., 10 maps, 7 graphs. New York. $3.00.—A cooperative work of the United States Fish and Wildlife Service and the National Audubon Society, this work was begun in 1945 by Olin Sewall Pettingill, Jr. and taken up in 1946 by Robert P. Allen who completed it with enthusiasm and ability. This work stands as a monument to Bob Allen and others who worked for its completion.

The plates include actual photographs of captive birds and of wild Whoopers at Aransas Refuge, Texas; some beautiful life-like drawings by Bob Allen himself, which include many figures of different behavior and several outstanding dancing poses, also help adorn the book. In addition Kay G. Morton and Joel W. Hedgpeth present many figures of marine life and plants from the Aransas area where *Grus americana* spends its winter. A number of maps show past winter and breeding areas of the species in relation both to geographical and habitat ranges.

The main work is divided into eight parts: (1) Distribution, (2) Abundance, (3) Migration, (4) Food Habits, (5) Winter Life, (6) The Breeding Season, (7) Molts, Plumages, and Anatomy, and (8) Survival: Protection and Conservation. Following this are two appendices, a thirteen-page bibliography, and a seven-page index.

The serious nature of the present status of *Grus americana* is stressed throughout. But Allen produces actual observations of past ornithologists showing that this species has actually never been common during historic times. He describes fragmentary remains of seven individuals from the late Pliocene and/or early Pleistocene of California, Idaho, Kansas, and Florida showing a much wider distribution in prehistoric times.

The distribution (13 pages) from 1722, when the species was discovered, until now is described in detail. This is based on 467 actual observations, and as Allen has written (p. 50) "some old records are included on rather slim evidence." Two such records were from Michigan, both now discarded (see Josselyn Van Tyne's "Check List of the Birds of Michigan," 1938 and Norman A. Wood's "The Birds of Michigan," 1951, p. 12). However, they do include many worthwhile reports, many previously unpublished.

Allen's belief (p. 83) is that the population of this species until 1860, or possibly 1870, totalled between 1300 and 1400 individuals. Many authors, quoting authors prior to them, never saw *Grus americana* and believed it common in central North America. This was not the case, however. In 1858, Spencer F. Baird realized the inadequacy of the existing knowledge and reported it as one of the rarest of birds in collections. He knew of no specimen in any museum in the United States but during that year obtained one for the U. S. National Museum. Allen lists kill records by year and by state and province. With the large number of small museums

and private collections, it is probably impossible to get all of these, but he certainly must have obtained a large per cent.

The original wintering areas decreased in number until in 1912, 88 Whooping Cranes were estimated from six places. It is evident that ornithologists assumed that there were many more and worried little about the status of the species. Of these six places, only one remains, that at the Aransas Wildlife Refuge near Austwell, Texas. Probably if the U. S. Fish and Wildlife Service had not taken over this area and supervised it, there would be no Whooping Cranes to-day. This winter flock of cranes increased from 18 in 1938 to 31 during 1947. (Additional notes not included in this work show this increase reached a peak of 33 in 1949 and 1950, and dropped to 22 in 1952.) This presents the serious status of *Grus americana*. During a nine-year period, 1940–1949 there was an actual loss of 33 cranes, 3.6 per year, yet there was an average increase of .44 annually.

Migration periods, routes, and behavior are well described. One family group was seen in Nebraska by Allen six or seven days after they left Aransas. He presents evidence that with the disappearance of the Whooping Crane in Minnesota, Manitoba, and Iowa a similar decrease occurred in Louisiana. This is probably correct. I feel sure that Sandhill Cranes in North America east of the Rockies have and did have a similar migration route, but their range was much greater. Sandhills breeding in Michigan and Wisconsin apparently move towards and possibly through Georgia. Sandhills from the Canadian Arctic and probably Alaska proceed down through Alberta, Saskatchewan, the Dakotas, and Nebraska to Texas, New Mexico, and Mexico. In the region between these two migration routes Sandhill Cranes are now seldom, if ever, seen.

Whooping Cranes leave the Canadian Provinces between October 1 and 10, normally arriving on the Texas coast between November 2 and 8. Family groups arrive last, indicating that more time is required for the youngsters to make the trip of 1800 to 2000 miles. (Sandhill Cranes often begin to arrive in California, New Mexico, and Texas by mid or late September. During the spring migration Sandhills now begin to arrive on the Platte River in Nebraska by February increasing to greatest numbers in late March and early April. Whoopers reach this area in late March and April.)

Much valuable work was done with food. Twenty-two items were found in droppings, and 13 others were listed from observations of feeding birds. Of these items, 28 were animal and 17 vegetable. Only seven, all animal, were of major importance at Aransas, the most important being decapod crustaceans. In winter Sandhill Cranes feed mainly on grain. The Whoopers at Aransas fed on blue crabs, acorns, fishes, tubers, crayfish, razor clams, grasses, sedges, and even water scavenger beetles.

On the winter range at Aransas, the Whooping Cranes differ greatly in behavior from the Sandhill Cranes. Families of the former have definite territorial boundaries, strongly defended by some males, less so by others, yet much more than any Sandhill Cranes, or any other cranes with the possible exception of *Grus leucogeranus*. Except for some resident birds in Cuba and Florida, most Sandhills are very gregarious in winter and on migration, roosting and often feeding in large flocks. Even *Grus japonensis* in Japan and Korea often occurs in flocks in winter. Sandhills during both fall and winter feed much more on highlands, flying about sunrise from their shallow-water roosting areas to feeding areas. Apparently Whoopers do much more walking even though the Sandhills are also great walkers. At Aransas, the

management of *Grus americana* revolves around the blue crab, which is found in water with a wide variation in salinity.

Little has been published in the past on nests and nest sites of the Whooping Crane. The breeding range included three areas: one, along the coast of Louisiana; a second, whose size was and still is unknown, in the Arctic and sub-Arctic; and the third and best known, from the Prairie-Aspen Parkland Belt into the Grama-Grass Antelope Biome. Yet even in historic times, only a small part of this last area was utilized.

The last actual nesting record for the United States (except for the captive pair in Texas) was from Iowa in 1894; the last observed nesting in Canada was in Saskatchewan (two areas) in 1922. None has been found since. Neither Pettingill, Fred Bard, Bob Smith, Allen nor any other searcher discovered any Whooping Cranes after they migrated past the farming areas of central Saskatchewan, from 1945 until the summer of 1952. (In 1952 two birds were found by Bob Smith northwest of Great Slave Lake; another possibility was the finding of tracks of a large crane with those of small young in Alberta by Rowan.)

In the past, nest sites were located in fresh-water marshes unlike the saline winter marsh but similar to those in which the Sandhill Crane nests. Thus summer food must be entirely different from winter food, as is the case with the Sandhill Crane. In summer, these marshes, sometimes as large as 3,000 acres, were shallow, overgrown with sedges, cat-tails, rushes, etc. At times Whooping and Sandhill cranes nested in the same marsh.

The behavior of the captive Whoopers at the nest in Texas showed a pattern similar to that of other cranes. Both male and female incubated, the male the more during daytime, the female more at night. Apparently this was the situation in 1949 when Bob Allen watched them for nearly two weeks. (In 1950 I watched Crip and Jo for seven complete days. On five days, the male, Crip, incubated the majority of the time while on two, Jo did the more. I arrived at the tower at daylight each morning and left after dark at night. On three mornings Jo, who was incubating when I left at dark the previous night, was still incubating. On one morning after she had been incubating at night, Crip was there at daylight; on two other occasions, it was the opposite.) Allen found similar behavior in 1949, the birds apparently changing places during the night.

Two eggs are laid, and the collecting of these eggs definitely has harmed the species. Eggs were taken again and again from Iowa marshes until both Whooping and Sandhill cranes disappeared from that state. In the existing sets of Whooping Crane eggs in museums, there are many more sets of one egg than of two. This is not the case with Sandhill Cranes or any other cranes, and I believe that collectors often divided sets of two, which probably also accounts for the fact that few data were furnished with many sets.

The plumage of the Whooping Crane was described in detail, but little is known concerning the anatomy. The colors of the soft parts were well described from live captive and wild birds.

The prospect for the future of the species is not good. Protection is necessary in areas where it occurs in winter, on migration, and in summer, and a great problem of education continues to exist. Allen has summarized this very well as he has the entire book, chapter by chapter. It is a model for similar studies and is valuable for anyone studying cranes throughout the world.

The present rate of increase of human populations could easily result in the destruction of most of the world's cranes. Civilization, with its hunters, drainage of land, obliterating of great remote areas, has advanced at a terrific rate and will probably

continue to move on even faster. Any crane is conspicuous, but a white crane is particularly so. The Whooping Crane, conspicuous because of its color, large size, and loud call and existing in such small numbers, is in an extremely dangerous spot. Only the remoteness of its present nesting area, protection on its winter range, and the birds' own wariness, together with public education, have prevented it from becoming extinct many years ago.

In comparison, during recent years Sandhill Cranes have increased on most of their range. The marshes in which they nest have decreased in numbers, and hunters shoot some of them in the fall and winter. But they are much more protectively colored than Whooping Cranes. They also were more widely spread over North America when white people settled here, and they existed in larger numbers then as well as now.

If there is any chance of saving the great Whooping Crane, Bob Allen, his many visits with people across the migration route, and his book are certainly auspicious factors for its benefit.—LAWRENCE H. WALKINSHAW.

The Birds of Crater Lake National Park.—Donald S. Farner. (University of Kansas Press), xii + 187 pp., 1 map, 16 pls. 1952. Paper-bound. $1.25.—The objectives of this book are stated in the preface to be the providing of: (1) an inventory of "the available information on the birds of the Park"; (2) basic information for a sound interpretative and informational service by Park Service personnel; (3) a park visitors' source for the "what, where, and when" related to birds of the Park (but not identification); and (4) a contribution to a better understanding of the distribution and habits of the birds of the High Cascades.

As essential background for all of these objectives the area is described briefly with respect to its location, topography, geology, and climate, and much more fully as regards its history and the progress of ornithological knowledge of it from 1855 through 1951. From this historical account it is evident that the preponderance of the information now available on the birds of the Park has come from those who have held biologist, naturalist, or interpretative positions in the Park Service in 1926 and subsequently. The author's own work in such capacity for parts of eight years since 1938 was made of considerably greater value by time allowances for research in ornithology during four of these summers.

Under "Avian Habitats" the author's general statements (pp. 10–11) about the habitat requirements of birds properly emphasize the importance of life form and spacing of the vegetation. He then describes the ecologic features important to avian occupants of eight types of coniferous forest, and of mixed forest and chaparral, chaparral, montane meadows, barren rock and rock slides, open pumice areas, streams, and "the Lake"—the depauperate avifauna of the last being accounted for by the absence of "a well-developed littoral zone, the rocky shores, and the depth of available food" (p. 6). In this description of habitats, Farner also states (p. 11) that "No implications in terms of synecology or successional ecology are intended." Yet his subdivision of the coniferous forest into eight types might well approach being a complete list of the forest associations (climax and subclimax) of the Park. The plates are photographs of good quality and reproduction, most of them depicting the appearance of these various habitats.

The life zone concept, although admittedly of less value in areas of mild relief, is applied by Farner to the Crater Lake montane area by allocating certain of the widespread forest types to the Transition, Canadian, or Hudsonian Zone, for each of which he lists certain characteristic plants and the common breeding birds. One frequent difficulty in using life zones is the necessity of explaining as "non-zonal"

the distribution of species which respond to habitat features which are other than those found in the widespread associations selected as composing any one zone or several adjacent zones. Of this, Farner says (p. 16) "the extension of the life zone concept to the biotae of such habitats as wet meadows, pumice deserts, the wet canyon floors, the talus slopes, and rock slides . . . is of questionable value."

The bulk of the book is an annotated list of 132 species known to occur within or over the Park, plus a supplemental list of 20 species for which there is some doubt as to occurrence there or "only single sight records." Several species (e.g., Eared Grebe, Wood Duck, Long-eared Owl) on the supplemental list seem as worthy of inclusion in the main list as is the Cliff Swallow which is so included (p. 75) on the basis of a single observation.

In the main list, insofar as it is known, the occurrence of each species is summarized as to relative abundance and seasonal status, and as to the life zones and habitats in which it occurs at various seasons. This is in paragraph form and is frequently followed by a documented historical summary of the growth of knowledge supporting it. By comparing these paragraphs with the discussions of habitats and zones, the interpretative naturalist and the ornithologically-interested visitor should soon learn where to find the various species of birds and what birds to expect in each of the major habitats. Much evidence of seasonal shifts in altitudinal distribution is presented for many species, and there is clarification thereby of early reports of some species as breeding birds, for which there is no verified breeding record. There are lists of observations indicating the breeding phenology of the commoner species.

Specimens collected and their present whereabouts, if known, and (for most species) sight observations as well, are tabulated in a *Resumé of Records*, except that the commoner species have only selected observations listed and the most widespread ones are treated adequately in a "summary of observations." The reviewer has been unable to find any consistent method of arrangement of records within these resumés. For most species, the arrangement seems to be by localities, but the localities are not listed in any consistent order. For some species (e.g., Sooty Grouse, Hermit and Russet-backed thrushes, Red Crossbill, Fox Sparrow) the list is chronological with locality names duplicated in the various years. With the considerable amount of valuable phenological data contained within these tabulations, such as nesting and singing dates and even data on population densities, a rearrangement of the longer lists according to calendar dates would have greatly aided anyone interested in such data for comparison with other areas. Since most of the tabulated records, with some lists numbering over 60 separate items, are for the summer seasons, the occasional non-summer record is buried in a classification seemingly emphasizing the history of ornithological effort in the region.

When the observations are referable to a given subspecies, this is indicated in the text, while subspecific identification of specimens is mentioned in either the text or the resumé, or in both. Otherwise trinomials are used only in the sub-headings for subspecies of a few species (sparrows). There is a thorough index of common and scientific names (genera, species, and subspecies).

It is unfortunate that a work such as this, which contains much information beyond that of a simple distributional list and which will find years of use by persons visiting or working in the Park, was not printed on better quality paper and with a more durable cover. The printing is good, with very few typographical errors.

Of especial interest to this reviewer and indicative of the type of information on "distribution and habits" which is scattered through the book (fulfilling its fourth objective) are such records as:

1. a Bald Eagle swimming for 200 yards.
2. a detailed record of 3½ hours observation of migrating White-fronted and Canada Geese, totalling over 3700 individuals in 58 flocks.
3. the critically trap-wise behavior of adult Steller's Jays after being once trapped. (The reviewer has had almost identical experience with this species in southern California.)
4. experiments disclosing bits of the mental capacity of Clark's Nutcrackers—the bird most conspicuous to the average visitor to Crater Lake, and appropriately figured on the cover.
5. a Dipper travelling slowly, and presumably foraging, for 30 feet along a stream beneath eight feet of snow.
6. evidence of great fluctuations in year to year numbers of Rock Wrens, Lazuli Buntings, and other species at higher altitudes.
7. first indications of the factors which may be important in enabling the significant ecologic overlap of breeding Ruby-crowned and Golden-crowned kinglets.
8. a summary of the population of Lincoln's Sparrows for 3 years on a 10-acre tract, with description of the vegetational composition of the territories and sizes of the territories during two successive years.

Such items make the book of value to those interested in various aspects of ornithology in general, as well as to those interested in a local distributional list.—HOWARD L. COGSWELL.

Arizona and Its Bird Life.—HERBERT BRANDT. (The Bird Research Foundation. Cleveland, Ohio). xvi + 1–723 + 2 pp., 62 illus., 20 being col. pls., 18 pen sketches, and 16 full page photographs. Indexed. 1951. $15.00. Although the author's experiences with birds in Arizona constitute the main theme of the book, many allied considerations are included such as physiography, climate, vegetation, life areas, other forms of animal life, history, and exploration. Not all of Arizona is covered, instead just the southeastern portion of the state is featured. A better idea of the content of the book is revealed by the subtitle which indicates that the book is an account of "A naturalist's adventures with the nesting birds on the deserts, grasslands, foothills, and mountains of southeastern Arizona."

The book is a pretentious one, selling at a relatively low price, probably at less than actual cost. It measures 10 × 7½ × 2 inches, has an attractive cover, and weighs about five pounds. The type is large, easy to read, and is printed on fine quality paper. The book is beautifully and artistically illustrated in a variety of ways. Of the 20 color plates there are nine paintings by Allan Brooks, eight by Roger Tory Peterson, two by George Miksch Sutton, and one by Terence Michael Shortt. There are 13 line drawings by Sutton and other pen sketches by Brooks and Edwin Richard Kalmbach for a total of 18. The 16 full-page photographs are by Karl H. Maslowski, Ed N. Harrison, the author, and others. An intriguing picture of the Saguaro cactus ecological formation is spread across the inside cover and front endpaper while in similar position at the back is a schematic map of southeastern Arizona showing the physiography and locations mentioned in the text.

The subject matter of the book is divided into sections. The first is rather short and serves to introduce the reader to the area. The weather is discussed. A significant contribution is the material in Chapter 3 on the distribution of birds and the ecology of the region. Five life zones and six subzones are described, and the prominent breeding birds are placed in 24 nesting associations. As categories of lesser rank the author also conceives of archipelagos, islands, and islets. A full spread, schematic, combination diagram and chart shows a cross section of the primary

physical divisions, altitudinal profile, rainfall, soil moisture conditions, life zones, dominant plants, and bird-nesting associations of the region.

Section two pertains to the deserts. This covers 215 pages and is the longest section. After discussing the nature of the desert, Brandt presents in separate chapters his experiences with certain distinctive birds such as the thrashers or groups of birds in their ecological formations. Examples of the latter are the cactus cave dwellers and birds of the cottonwood stream bottoms. An interesting chapter is concerned with a visit to old Fort Lowell, an important early-day collecting station of ornithologists.

Section three is concerned with the grasslands. Here are featured the birds in the prairie cattle country, the yucca gardens, and the Agave foothills. Another area of considerable interest in connection with early-day ornithology is Fort Huachuca, which is discussed in this section. The foothills are next treated in section four and finally the mountains in section five. Thus the author takes the reader from the streamside and desert associations of the lowlands up through successive environmental situations to the boreal habitats of the mountains. An outstanding chapter is the last one, number 50, on the wild turkey. Here much new information is presented.

The concluding section, number six, is entitled "The Appendix." It contains an annotated list of 170 nesting birds of southeastern Arizona together with a supplementary list of 23 possibly breeding birds. There are records of occurrence, however, for the latter in the region. The information presented in the appendix is based mostly on data gathered on the eight expeditions to the region conducted by the writer from 1935 to 1948. This section will be the most valuable to the student of geographic distribution of birds, although there is little systematic discussion. However, one new subspecies of the Purple Martin is described, *Progne subis oberholseri*. It seems to the reviewer that it is inappropriate to describe a new race in a book of this kind when the description could have been easily presented in a separate article in one of our ornithological journals, as the author did with the Apache Wren (*Troglodytes brunneicollis vorhiesi*) which was also discovered in the course of the field work. The emphasis throughout the book is on nesting birds, but the nesting data are concentrated in the annotated list.

Since the subject matter in the book is based primarily on the experiences and data of the author, no literature is formally cited in the text, nor is there a terminal bibliography. However, in the narrative credit is given individuals and sources of information are indicated. Opinions of Dr. Harry C. Oberholser are frequently expressed in connection with the annotated list. Indeed, in an introductory section tribute is paid to this eminent ornithologist for his encouragement, aid, and guidance.

The author's style of writing is verbose and characterized by much descriptive matter. The reader will enjoy the word pictures and intimate glimpses of southeastern Arizona. He will be intrigued with the country and all that it has to offer the bird student. Highlights of the book to the reviewer are the ecological picture of the birds of the region, the beautiful illustrations, the many exciting bird biographies, intimate glimpses of the ornithologists of the region who accompanied the author in the field, and finally the spirit of adventure and the thrill of bird finding and bird watching in southeastern Arizona with a noted naturalist.—WILLIAM H. BEHLE.

Records of Parrots Bred in Captivity.—Arthur A. Prestwich. Privately printed, Chelmsford Road, Southgate, London N. 14, England, 1–384, 1950–52, £1.15.—The active and enterprising Hon. Secretary of the Avicultural Society of London has for thirty years collected all available data on the breeding in captivity of

Parrots and Parrakeets. Many Psittacine birds are prominent among the avian species which can be propagated in confinement the most easily. Some of them, particularly the Australian Budgerigar (*Melopsittacus undulatus*) and the African Love-birds (*Agapornis*), have even become domestic birds, showing numerous color phases which are most interesting for the purpose of studies in genetics.

All the records are dealt with in detail, with many quotations, and the result is a highly informative book. The scientific names are those of Peters' Check-List of the Birds of the World.

Mr. Prestwich is to be congratulated for his painstaking, disinterested work, which proves invaluable as a source of information for all those interested in the fascinating family Psittacidae.—J. D.

Foreign Birds for Beginners.—D. H. S. Risdon. Cage Birds, Dorset House, London, 1–140, 14 plates, 10 figures in text, 1953. 1 sh. 6 p. ($1.50).—This excellent little book, which will prove most useful to all who keep birds in captivity for either pleasure or experiments, has been prefaced by the Duke of Bedford, an outstanding authority on the subject: "I have never read any treatise on this subject so full of useful information, based on personal experience, as Mr. D. H. S. Risdon's book, which should prove of the utmost value, especially to beginners in aviculture."

A bird-keeper from boyhood, the author has had extensive experience with all kinds of foreign species. Previously a Director of the Keston Foreign Bird Farm, he is now General Manager of the Dudley Zoo. He indicates in a lucid, straightforward manner, the steps a beginner should take for the care of birds. He gives a "golden rule" about the housing of exotic species, and describes briefly the various requirements, such as shelter, light, warmth, and so on. Cages, small indoor aviaries, and large outdoor enclosures are all dealt with. The feeding of the exotic species, of course, varies considerably, and for the sake of clarity, Mr. Risdon has divided the commoner ones into three categories, according to their staple diets. 56 different species are illustrated in colors, thus providing the beginners with a guide for identification.—J. D.

A Guide to Bird Watching.—Joseph J. Hickey (Garden City Books, Garden City, New York.) xiv + 264 pp. Reprint Edition. 1953. $1.98.—That Hickey's valuable book has been reprinted will be good news to ornithologists. (For a review, see the Auk, 61: 151–152, 1944.) The current printing differs from at least three copies of the first in having a different dust jacket, in lacking the figures of bird tracks on the end papers, and in the addition of three pages on "National and Regional Organization Devoted to Ornithology." The latter, however, may have been added at some time during the first printing, as the officers listed for these organizations are out of date by several years.—R. W. S.

The Life of the Robin.—David Lack. (Penguin Books, Baltimore) 240 pp. 1953. $0.65.—Penguin Books are to be congratulated for bringing out a revised edition of this excellent little book at a price which all can afford. For a full review see the Auk, 60: 609–610. 1943.—R. W. S.

ALDRICH, JOHN W. 1953. Habits and habitat differences in two races of Traill's Flycatcher. Wilson Bull., **65** (1): 8–11.—Discusses *Empidonax traillii traillii* and *E. t. campestris* in eastern North America.—J. T. T.

BABERO, B. B. 1952. The experimental infection of Alaskan gulls (*Larus glaucescens*) with *Diphyllobothrium* sp. Journ. Parasit., **38** (4, sect. 2): 23.—Identical plerocercoids from trout developed to maturity in gulls, bears, dogs, foxes, and man.—J. D. W.

BAILY, A. L., and R. P. FOX. 1953. Notes on warblers in Colorado. Wilson Bull., 65 (1): 47.

BAUER, K. 1952. Der Blutspecht (*Dryobates syriacus*) Brutvogel in Österreich. Journ. f. Ornith., **93**: 104–111.—This Asiatic species, which only 25 years ago reached Hungary, has now been nesting regularly in eastern Austria.—E. M.

BAUER, K. 1952. Der Bienenfresser (*Merops apiaster* L.) in Österreich. Journ. f. Ornith., **93**: 290–294.—Bee-eaters have nested regularly in Austria since 1946. They have also expanded their range in Hungary and Czechoslovakia.—E. M.

BAUMEL, JULIAN J. 1953. Individual variation in the white-necked raven. Condor, **55** (1): 26–32.—The paper is concerned with the quantitative aspect of individual variation in 36 skeletal measurements of *Corvus cryptoleucus*. Variability of external measurements was about 3 per cent. Tail length was most variable and extent of wings least variable. Average skeletal variability was about 3.5 per cent, the skull being the least variable. Body weight was more variable than any external or internal linear measurement. No significant differences in variability between sexes were found. A relatively larger pelvis was indicated for females. The modal number of sclerotic plates was 14. In both limb skeletons there was a gradation in variability from least in the proximal elements to greatest in the distal elements.—W. H. B.

BENNETT, HOLLY REED. 1952. Fall migration of birds at Chicago. Wilson Bull., **64** (4): 197–220, 8 tables.—A study of the influence of season, topography, and weather on fall migration. Waves of autumn migrants accompanied or followed the passage of cold fronts.—J. T. T.

BENSON, C. W. 1952. Notes from Nyasaland. Ostrich, **23**: 144–159.—Taxonomic and ecological.

BOURLIÈRE, F. 1952. Des oiseaux sur l'inlandsis groënlandais. Alauda, **20** (3): 179.—*Nyctea scandiaca* at the center of the ice cap (a lost bird).—C. V.

BRACKBILL, HERVEY. 1952. Light intensity and waterfowl flight; pre-flight activities. Wilson Bull., **64** (4): 242–244, 1 table.

BRODKORB, PIERCE. 1953. Pleistocene birds from Haile, Florida. Wilson Bull., **65** (1): 49–50.

BULLOCK, W. L. 1952. Two new species of Monostomes from the Canada Goose with a review of *Paramonostomum alveatum* (Mehlis in Creplin, 1846). Journ. Parasit., **38** (5): 371–378.—New species of *Catatropis* and *Paramonostomum*, from New Hampshire.—J. D. W.

CADE, TOM J. 1953. Sub-nival feeding of the redpoll in interior Alaska: a possible adaptation to the northern winter. Condor, **55** (1): 43–44.—Observations of redpolls feeding on seeds under the snow.—W. H. B.

CADE, TOM J. 1953. Behavior of a young Gyrfalcon. Wilson Bull., **65** (1): 26–31.—Observations on a tame *Falco rusticolus* and its "play," with a brief discussion of play in birds.—J. T. T.

CADE, TOM J. 1953. "Cataleptic" behavior in the Hudsonian Chickadee. Wilson Bull., **65** (1): 45.—Discussion of "cataleptic" behavior in *Parus hudsonicus* and comments on similar behavior recorded for other species of *Parus*.—J. T. T.

CADE, TOM J. 1953. Aerial feeding of the Rusty Blackbird [*Euphagus carolinus*] on mosquitoes. Wilson Bull., **65** (1): 52–53.

CREUTZ, G. 1953. Beeren und Früchte als Vogelnahrung. Beitr. Vogelkunde, **3**: 91–103.—A list of various fruits and berries, particularly of ornamental shrubs, that are eaten by certain species of European birds.—E. M.

CROSSLEY, D. A., JR. 1952. Two new nasal mites from Columbiform birds. Journ. Parasit., **38** (5): 385–390.—New species of *Spleognathus* from the Rock Dove and *Neonyssus* from the Mourning and Mexican Ground doves from Texas.—J. D. W.

DEMANDT, C. 1953. Brutbiologische Probleme beim Wanderfalken (*Falco peregrinus*). Journ. f. Ornith., **94**: 99–102.—Clutch-size in the Rhine region is often only one or two. Two individuals which bred in juvenal plumage did not produce fertile eggs. No second broods were observed when the first brood was destroyed. In the mountains the nests are on cliffs, in the lowlands in trees.—E. M.

DROST, R. 1953. Über die Heimattreue deutscher Seevögel. Journ. f. Ornith., **94**: 181–193.—Records of sea birds recovered in the colonies where they had been hatched, and in other colonies.—E. M.

EISENMANN, EUGENE. 1952. Olivaceous Cormorant. Wilson Bull., **64** (4): 195–196, 1 plate (by George M. Sutton).—A brief description of *Phalacrocorax olivaceus* and its range and habits.—J. T. T.

EMEIS, W. 1953. Von den schleswig-holsteinischen Störchen. Journ. f. Ornith., **94**: 114–116.—The stork population continues to decrease: 2,175 pairs in 1939, 1,002 in 1948, 814 in 1951. 1,901 young (= 3.1 per pair) were raised in 1951.—E. M.

ENGELBACH, P. 1952. Notes de voyage dans les Monts des Cardamomes (Cambodge). L'Oiseau, **22**: 283–302.—A spring trip in the southern Cambodia mountains, species noted.—C. V.

ETCHECOPAR, R. D. 1952. Note sur la nidification de l'Hirondelle Rousseline en Espagne. L'Oiseau, **22**: 319–320.—Apparently the northernmost breeding record of *Hirundo daurica* in Spain (Despeñaperros, Sierra Morena).—C. V.

FARR, M. M. 1952. *Tyzzeria* sp. from wild geese and a wild duck. Journ. Parasit., **38** (4, sect. 2): 15.—This coccidian was common in Canada and Snow geese and was found in a Black Duck, all in North Carolina.—J. D. W.

FENNELL, CHESTER M. 1953. Notes on the birds of Daikokujima, Hokkaido, Japan. CONDOR, **55** (1): 38–42.—Annotated list of 17 species.—W. H. B.

FERRY, C. 1952. Sur la reproduction du Bihoreau en Côte-d'Or. L'Oiseau, **22**: 317–319.—This species (*Nycticorax nycticorax*) is spreading and its population is increasing in France.—C. V.

FRANK, F. 1952. Beobachtungen en einer Nonnensteinschmätzer-Population (*Oenanthe p. pleschanka* [Lepechin]). Journ. f. Ornith., **93**: 138–141.—Notes on territorial requirements and song in this wheatear.—E. M.

GLENNY, FRED H. 1952. The Problem of Specific and Subspecific Status and Morphological Deviation in the Ancient Murrelet *Synthliborhamphus antiquus* (Gmelin). Ohio Journ. Sci., **52** (4): 221–223, 3 figs.—*S. wumizusume* belongs to bicarotidinae normales but of 7 *S. antiquus* studied, 2 were bicarotidinae and 5 were laevocarotidinae, the latter all from "Alaska." The author suggests that the population of the laevocarotidinae type be known as *S. antiquus L*, and the other population as *S. antiquus B* until such time as other characters may be established to justify further separation.

GLENNY, FRED H. 1952. A Systematic Study of the Main Arteries in the Region of the Heart. Aves XVI. Charadriiformes, Part 2. Ohio Journ. Sci., **52** (6):

314–316.—One charadriid, 1 larid, and 5 alcids are all basically bicarotidinae normales.

GLOVER, FRED A. 1953. Nesting ecology of the Pied-billed Grebe [*Podilymbus podiceps*] in northwestern Iowa. Wilson Bull., **65** (1): 32–39, 1 photo, 2 tables.

GOETHE, F. 1953. Experimentelle Brutbeendigung und andere brutethologische Beobachtungen bei Silbermöwen (*Larus a. argentatus* Pontopp.). Journ. f. Ornith., **94:** 160–174.—The calls of the unhatched young, heard through the egg shell, cause a pronounced shift in the behavior of the parents. If fairly fresh eggs are replaced by such pre-hatching eggs, the parents react by many irrelevant actions (preening, calling, etc.) but quickly take care of the hatching young. Details on various phases of the breeding of Herring Gulls are given.—E. M.

GRUBE, G. E. 1953. Black snake captures nestling Blue-winged Warbler [*Vermivora pinus*]. Wilson Bull., **65** (1): 50.

HAND, R. L. 1953. Bird notes from western Montana. Condor, **55** (1): 44–46.—Annotated list of 20 species.—W. H. B.

HAVERSCHMIDT, FR. 1952. More bird weights from Surinam. Wilson Bull., **64** (4): 234–241, 1 table.—Records of the weights of a total of 482 specimens of 186 species, with month, sex, and age noted.—J. T. T.

HAVERSCHMIDT, FR. 1953. Notes on the life history of Columbigallina talpacoti in Surinam. Condor, **55** (1): 21–25.—The Talpacoti Ground Dove breeds throughout most of the year, raising several broods. Data are presented on three broods reared in the same nest. Other topics dealt with pertain to song-courtship flight, copulation, nest building, incubation and growth of young.—W. H. B.

HAVERSCHMIDT, FR. 1953. Wing-flashing of the Graceful Mockingbird, *Mimus gilvus*. Wilson Bull., **65** (1): 52.

HEIM DE BALSAC, H. 1952. Considérations sur une biocénose constituée autour d'un nid de Cigogne *Ciconia ciconia*, en Lorraine. Alauda, **20** (3): 144–155, 1 fig.—An old stork nest, consisting of about 200 pounds of mud and organic material, and its rich animal community is studied. Two species of birds (Kestrel and Tree Sparrow), 31 species of Coleoptera, 1 of Hemiptera, and 1 of Hymenoptera share the nest with the stork.—C. V.

HERMAN, C. M. and L. S. DIAMOND. 1952. Trypanosomes from Canada Geese. Journ. Parasit., **38** (4, sect. 2): 12.

HOESCH, W. 1952. Ornithologische Beobachtungen aus dem Kaoko-Veld in Südwest-Afrika. Journ. f. Ornith., **93:** 115–121, 4 plates.—Description of the birds and mammals encountered in this district of South West Africa.—E. M.

HOESCH, W. 1952. Über die Funktion des phalloiden Organs beim Büffelweber (*Bubalornis albirostris niger*). Journ. f. Ornith., **93:** 362–363.—During copulation the male apparently hooks his curved phalloid organ into that of the female.—E. M.

HOFSTETTER, F. B. 1952. Das Verhalten einer Türkentauben-Population. Journ. f. Ornith., **93:** 295–312.—The recently arrived *Streptopelia decaocto* has already reached a population of 20–30 individuals in the town of Soest. Three broods are raised annually and mortality is very low. The birds are closely associated with human habitations. Call notes, displays, location of nest, and raising of the brood are discussed. A hybrid with the turtle dove (*S. turtur*) was found.—E. M.

HUE, FRANCOIS. 1952. Nouvelles observations sur le Coucou Geai *Clamator glandarius* (L.) en France. L'Oiseau, **22:** 303–316, 1 fig.—A study of some young birds, apparently not of the same age, raised in the same magpie's nest with speculations on the incubation of the magpie which, it is concluded, starts only when the clutch is complete. A few notes on the distribution and migration of *Clamator glandarius* in France.—C. V.

HUNTER, W. S. 1952. Contributions to the morphology and life history of *Gynaecotyla adunca* (Linton, 1905) (Trematoda: Microphallidae). Journ. Parasit. **38** (4, sect. 1): 308–314.—Second intermediate host the fiddler crab. Best final hosts are various charadriiform birds and Seaside Sparrow, but also occurs in various ocean fish.—J. D. W.

HUNTER, WANDA SANBORN, and WINONA B. VERNBERG. 1952. *Leucochloridium beauforti* n. sp. (Trematoda: Brachylaemidae) from the Seaside Sparrow, *Ammospiza maritima macgillivraii* (Audubon). Journ. Parasit., **38** (3): 215–217, 1 fig.

JACOBS, L., M. L. MELTON, and F. E. JONES. 1952. The prevalence of toxoplasmosis in wild pigeons. Journ. Parasit., **38** (5): 457–461.—*Toxoplasma gondii* is fairly common in feral Rock Doves, but the epidemiologic relationship to the disease in man and domestic mammals is not known.—J. D. W.

JENNER, C. E., and W. L. ENGELS. 1952. The significance of the dark period in the photoperiodic response of male Juncos and White-throated Sparrows. Biological Bull., **103** (3): 345–355, 2 figs., 4 tables.—When male *Junco hyemalis* were subjected to 10 hours of light and 14 of darkness for 8 weeks, their testes failed to develop to breeding condition. When other Juncos were subjected to 16 hours of light and 8 of darkness for 8 weeks, their testes developed to breeding condition. Testes of other Juncos, subjected to a cycle of 8¼ hours of light, 7 hours of dark, 1¾ of light, and 7 hours of dark (totalling 10 hours of light and 14 of dark) either developed mature sperm (4 cases) or became slightly enlarged (2 cases). The response of *Zonotrichia albicollis* was similar. There appears to be a dark-period reaction in the development of the breeding condition of these birds.—J. T. T.

JOHANSEN, H. 1952. Die Vogelfauna Westsibiriens, II, 1. Journ. f. Ornith., **92:** 145–204.—A continuation of the discussion of the birds of western Siberia, the present installment containing the Motacillidae, Certhiidae, Paridae, Regulidae, Paradoxornithidae, Laniidae, and Bombycillidae. Data are given on taxonomy, ecology and habits. New subspecies: *Anthus richardi dauricus* (p. 145), *A. r. ussuriensis* (p. 146), *A. campestris kastschenkoi* (p. 147), *A. gustavi commandorensis* (p. 152), *Parus ater rosso-sibiricus* (p. 177), *P. palustris altaicus* (p. 182), *Lanius collurio pallidifrons* (p. 199).—E. M.

JOUANIN, C. 1952. Une invasion de Pétrels cul-blanc. L'Oiseau, **22:** 322–325.—An inland invasion in France of *Oceanodroma leucorhoa* Vieillot following a severe cyclonic storm.—C. V.

JUBB, R. A. 1952. Some Notes on Birds of Southern Rhodesia. Ostrich, **23:** 162–164.—Life history.

JULIEN, M. H. 1952. Avifaune de l'île d'Ouessant. Alauda, **20** (3): 157–170.—List of the pelagic species.—C. V.

KEEGAN, H. L. and R. A. HEDEEN. 1952. Collections of ectoparasitic mites from Alaska. Journ. Parasit., **38** (4, sect. 1): 360–361.—Includes records from swallows' nests.—J. D. W.

KLUZ, ZD. 1951. Zum Problem des Wegtragens der Jungen durch Altvögel bei *Charadrius h. hiaticula* L. Journ. f. Ornith., **93:** 36–38.—No carrying of the young of this plover by the parents was observed at a locality from which another observer had recorded it.—E. M.

KOEHLER, O. 1951. Der Vogelgesang als Vorstufe von Musik und Sprache. Journ. f. Ornith., **93:** 3–20.—Some bird songs appear innate, others are learned. Birds may repeat songs or other sounds a year or more after having first heard them, without uttering them in the meantime. What is truly innate can be determined only by raising birds from the egg in sound-proof rooms. The author points out various parallels between bird sounds and human music and language.—E. M.

KOENIG, O. 1952. Ökologie und Verhalten der Vögel des Neusiedlersee-Schilfgürtels. Journ. f. Ornith., **93**: 207–289.—An analysis of the ecology of the birds living in the vast marshes around this lake on the border of Austria and Hungary. Food, enemies, location of nest, abundance, call notes, and habitats are discussed. The Penduline Tit (*Remiz*) nests in willows and also in Phragmites, as in central Asia. Some marsh harriers (*Circus aeruginosus*) prey on eggs and nestlings of herons and spoonbills and decimate their colonies. Each bird of the area has its well defined niche and is specially adapted for it.—E. M.

KOENIG, OTTO. 1952. Kormoran und Fischerei. Natur und Land, **38** (7/8): 91–92.

KRAMER, G. 1953. Über Wachstum und Entwicklung der Vögel. Journ. f. Ornith., **94**: 194–199.—The various parts of the body, e. g., digestive tract, wings, legs, skeleton, total weight, change unevenly during the development of the young bird. Each deviation from a smooth growth curve has a specific selective significance.—E. M.

KUHK, R. 1953. Lautäusserungen und jahreszeitliche Gesangstätigkeit des Rauhfusskauzes, *Aegolius funereus* (L.). Journ. f. Ornith., **94**: 83–93.—Description of the vocal repertoire of Tengmalm's Owl. The normal song period extends from Christmas to the end of June, with peaks in April and May.—E. M.

KÜHTREIBER, JOSEF. 1952. Die Vogelwelt der Lienzer Gegend. Schlern-Schriften, **98**: 225–243.—A study of the avifauna of Lienz and vicinity in Eastern Tyrol.

KUMERLOEVE, H. 1953. "Verkehrter" Herbstzug über der Insel Amrum. Beitr. Vogelkunde, **3**: 103–106.—Description of a case of reverse migration and of the weather conditions under which it took place.—E. M.

LABITTE, A. 1952. Notes biologiques sur le Pipit des arbres en Pays drouais. L'Oiseau, **22**: 261–282.—A study of the life history of *Anthus trivialis* in central western France.—C. V.

LAFERRÈRE, M. 1952. Passages de Rapaces au printemps dans le Sud-Est. Alauda, **20** (3): 186–188.—Late Spring migration (May 8–20) of hawks in the Rhône Valley.—C. V.

LÖHRL, H. 1951. Balz und Paarbildung beim Halsbandfliegenschnäpper. Journ. f. Ornith., **93**: 41–60.—An excellent detailed study of courtship and pair formation in the Collared Flycatcher (*Muscicapa a. albicollis*). For an abstract see Bird Banding, 1952, vol. 23, no. 2, pp. 85–86.—E. M.

LUGITSCH, RUDOLF. 1952. Der Blutspecht im Neusiedler Seegebiet. Natur und Land, **38** (3/4): 46–47.—*Dryobates syriacus* recorded for the first time in Eastern Austria.

LUGITSCH, RUDOLF. 1952. Einiges aus der Biologischen Station in Neusiedl. Natur und Land, **38** (11/12): 155–156.—*Rissa tridactyla, Otus scops, Aquila pomarina, Clangula hyemalis, Merops apiaster, Dryobates syriacus, Aquila heliaca* occurring in Eastern Austria in the territory of the salt lake near Neusiedl.

MACDONALD, J. D. 1952. Variation in the Capped Wheatear, *Oenanthe pileata*. Ostrich, **23**: 160–161.—*Oenanthe pileata neseri*, subsp. nov., from Erongo Mts., Omaruru Dist., S. W. Africa.

MCINTOSH, A., and M. M. FARR. 1952. *Renicola brantae* n. sp. from the kidney of the Canada Goose, *Branta canadensis* (Linnaeus, 1758). Journ. Parasit., **38** (4, sect. 2): 35–36.

MEHNER, JOHN F. 1952. Turkey Vultures [*Cathartes aura*] attacking Great Blue Heron [*Ardea herodias*]. Wilson Bull., **64** (4): 242.

MEISE, W. 1952. *Zosterops intermedia mentoris* nom. nov. Journ. f. Ornith., **93**: 365.—A new name for *Z. i. erwini* Meise 1941, preoccupied by *Z. palpebrosa erwini* Chasen 1934.—E. M.

MERWALD, FRITZ. 1952. Eine Kormorankolonie bei Linz. Natur und Land, **38** (5/6): 69–70.—A brief study on a colony of *Phalacrocorax carbo* near Linz (Upper Austria).

MILDENBERGER, H. 1953. Zur Fortpflanzungsbiologie des Kampfläufers (*Philomachus pugnax* L.).—Journ. f. Ornith., **94**: 128–143.—The results of the observation of five males and seven females of the Ruff differ in various ways from the classical reports of Selous. Three of the five males had their favorite display stations. Two of the males were "superior" and attracted two females each, one male was essentially monogamous, and two males with a common display ground shared two females. One of the "superior" males copulated also with the otherwise monogamous female. In this small population there were thus monogamy, polygamy, polygyny, and polyandry represented. The females built their nests near the display stations of the males, and the males took a decided interest in the nest sites of the females within their territory. After the hatching of the young the males continued to show interest in the females. The first eggs were laid more than five weeks after the first appearance of the females.—E. M.

MILLER, JEANNE ELIZABETH, and HERBERT L. EASTLICK. 1952. Studies on Transplanted Embryonic Limbs of the Chick. IV. The cytology of the "Adipose Tissue." Trans. Amer. Micros. Soc., **71** (1): 1–19, 25 figs.—Fat cells are specialized active cells and not passive storage cells.

MUMFORD, RUSSELL E. 1952. Bell's Vireo in Indiana. Wilson Bull., **64** (4): 224–233, 1 photo., 1 table.—The records of *Vireo bellii* in Indiana are summarized, and observations of habitat, nesting, and song are recorded.—J. T. T.

MUMFORD, RUSSELL E. 1953. White-rumped Sandpiper in Indiana. Wilson Bull., **65** (1): 44–45.—A summary of records of *Erolia fuscicollis* in Indiana.—J. T. T.

NICE, MARGARET M. 1953. Some experiences in imprinting ducklings. Condor, **55** (1): 33–37.—At the Delta Waterfowl Research Station, Manitoba, studies on newly-hatched ducklings were made in 1951 and 1952. The first year no imprinting occurred but the second year, using Fabricius' technique, 12 ducklings of 5 species were imprinted on human beings.—W. H. B.

OAKESON, BARBARA BLANCHARD. 1953. Cyclic changes in liver and spleen weights in migratory white-crowned sparrows. Condor, **55** (1): 3–16, 3 figs.—A comparison was made of strongly migratory wintering and breeding populations of *Zonotrichia leucophrys gambelii*. The former (September through April) were from Santa Barbara, California, the latter (May through July) were taken at Mountain Village, Alaska. Monthly average liver weights for adult males increased from November through April and dropped sharply in May. Females paralleled males in direction and timing, but not in magnitude, of changes in absolute liver weight. Spleen weights were more variable, but both sexes showed increases in mean spleen weights for certain of the successive periods of the annual cycle.—W. H. B.

PARKES, KENNETH C. 1953. Some bird records of importance from New York. Wilson Bull., **65** (1); 46–47.

PAULIAN, P. 1952. Une capture de *Sterna paradisaea*, Pontoppidan à l'Ile Amsterdam. L'Oiseau, **22**: 320–321.

PEARSON, OLIVER P. 1953. Use of caves by hummingbirds and other species at high altitudes in Peru. Condor, **55** (1): 17–20, 1 fig.—Many small birds nesting under the rigorous climatic conditions of the Andes do so in caves where temperatures are more equable. The principal species discussed is the Estella Hummingbird (*Oreotrochilus estella*).—W. H. B.

PRIEBE, M. D. 1952. Acanthocephalan parasites of waterbirds in Eastern Washington. Trans. Amer. Micr. Soc., **71** (4): 347–349.—Host lists for about eight species of acanthocephalans.—J. D. W.

RADFORD, C. D. 1953. The mites (Acarina: Analgesidae) living on or in the feathers of birds. Parasitology, **42** (3): 199–230.—523 species of quill and feather mites, some of which cause depluming, are listed, with all of their recorded hosts.—J. D. W.

RADFORD, C. D. 1953. Four new species of parasitic mites (Acarina). Parasitology, **42** (3): 239–243.—Includes two new species from the cuckoo *Centropus melanops* from the Philippines.—J. D. W.

RAND, A. L. 1953. Geographical Variation in the Laughing Thrush, *Garrulax affinis*. Nat. Hist. Miscellanea (Chicago), No. 116: 1–6.—An Himalayan species; 6 races recognized, 2 new: *G. a. flemingi*, western Nepal, and *G. a. muliensis*, western China.

RAND, R. W. 1952. Guano Enterprise in South West Africa. Ostrich, **23:** 169–185.

RAY, D. K. 1952. On a New Coccidium, *Eimeria sphenocercae* n. sp., from *Sphenocercus sphenurus* (Kokla Green Pigeon). Journ. Parasit., 38 (6): 546–547.

RICHTER, H. 1952. Der Masseneinfall des Fichtenkreuzschnabels, *Loxia curvirostra* L., in Mitteleuropa in den Jahren 1942/43. Beitr. Vogelkunde, **3:** 20–27.—The Red Crossbill invasion took place in two stages. In 1941 an eastern population invaded West Russia and bred there successfully in 1942. These birds reached western Europe in July, 1942. A second eastern wave from eastern Russia started moving in September and flying past western Russia settled in the same areas as the earlier wave.—E. M.

RICHTER, H. 1953. Zur Lebensweise der Wasseramsel: Der Ortswechsel. Journ. f. Ornith., **94:** 68–82.—Color banding of a population of Water Ouzels (*Cinclus cinclus aquaticus*) in Saxony revealed that most paired individuals stayed on their territories during their lifetime. Some individuals leave their territory in September-October to return again in February-March. Young birds wander widely before pairing. In the area of observation there were twice as many males as females, so that some males did not get paired until their third year.—E. M.

RITTINGHAUS, H. 1953. Adoptionsversuche mit Sand- und Seeregenpfeifern. Journ. f. Ornith., **94:** 144–159.—Knowledge of their own young or of their own parents is not inborn in Ringed and Kentish plovers (*Charadrius hiaticula* and *C. alexandrinus*). Voice and appearance are learned. Even when young plovers were placed under Least Terns (*Sterna albifrons*) a parental bond was established in spite of the impossibility of feeding. Reacting to the voice of their own species seems inborn to some extent and has to be replaced by learning.—E. M.

ROBINSON, H. W. 1952. A preliminary report on the life cycle of *Cloacitrema michiganensis* McIntosh, 1938 (Trematoda). Journ. Parasit., **38** (4, sect. 1): 368.—Intermediate host is a marine snail, definitive host various charadriiform birds.—J. D. W.

SAPIN-JALOUSTRÉ, J. 1952. Découverte et description de la Rookery de Manchot Empereur (*Aptenodytes forsteri*) de Pointe Géologie (Terre Adélie), conclusion. L'Oiseau, **22:** 225–260, pls. 11–16.—The conclusion of a detailed study on the morphology, ecology, food, social life, and life cycle of a very interesting species which, thanks to its perfect adaptation and social organization, occupies successfully a niche at the extreme possible limits of homeothermal life. The plates, consisting of 14 photographs, one of them a splendid one in color, illustrate different

phases of behavior including the feeding of the young. A very complete bibliography of 132 titles is given.—C. V.

SCHÄFER, E. 1952. Ökologischer Querschnitt durch den "Parque Nacional de Aragua." Journ. f. Ornith., **93:** 313–352, 10 plates.—A description of the various habitats of the coastal cordillera of Venezuela and of its inhabitants. Details of the life history of the Bell Bird (*Procnias averano*).—E. M.

SCHIERER, A. 1952. Les Cigognes en Alsace. Résultats des recensements des années 1950 et 1951. Alauda, **20** (3): 129–143, 5 graphs.

SCHMIDT, W. J. 1952. Neuere Untersuchungen über Schillerfarben. Journ. f. Ornith., **93:** 130–135.—The iridescence of glossy feathers originates at the surface of melanin granules and is not caused by keratin lamellae, as stated in the earlier literature.—E. M.

SCHNEIDER, K. M. 1953. Einiges von gefangen gehaltenen Seetauchern (*Colymbus* L.). [= *Gavia*]. Beitr. Vogelkunde, **3:** 63–91.—Observations on loons kept in captivity; discusses their food intake, swimming and diving, preening, and diseases.—E. M.

SCHNEIDER, W. 1952. Beitrag zur Lebensgeschichte des Stars, *Sturnus v. vulgaris* L. Beitr. Vogelkunde, **3:** 27–52.—Based on 25 years of observation of a starling colony, in which 950 breeding adults and 1350 of their young were banded. Data on migration, returns, and broods. About 50 per cent of the females have a second brood, often in the same nest box. No second broods in certain years. Average May clutches 5.7 eggs, June 4.1 eggs. Successful broods in May had 4.6 fledglings, in June 3.3 fledglings.—E. M.

SCHNURRE, O. 1953. Über einige Bestandsveränderungen märkischer Raubvögel. Journ. f. Ornith., **94:** 94–98.—The Peregrine Falcons are decreasing, Goshawks and Sea Eagles increasing. Gunners and game keepers are the most serious enemies of the larger birds of prey. The Coot (*Fulica atra*) is the staple food of the Sea Eagle, and pigeons (during the breeding season) that of the Peregrine Falcon.—E. M.

SCHÖNWETTER, M. 1952. Die Schalendicke bei Zwerg- und Rieseneiern. Journ. f. Ornith., **94:** 175–180.—The thickness of the shell in dwarf and giant eggs of a species fluctuates around the same mean as that of normal eggs.—E. M.

SCHÜZ, E. 1953. Schlussbericht (1944) über die Starsiedlung in Rossitten. Journ. f. Ornith., **94:** 31–35.—Concluding report on seasonal and other biological phenomena of a starling colony at Rossitten.—E. M.

SCHWARTZ, C. W., and E. R. SCHWARTZ. 1953. Notes on the Hawaiian Duck. Wilson Bull., **65** (1): 18–25, 5 photos.—Notes on the abundance and habits of *Anas platyrhynchos wyvilliana*, now threatened with extinction.—J. T. T.

SCHWARTZKOPFF, J. 1952. Über den Gehörsinn der Vögel. Journ. f. Ornith., **93:** 91–103.—Data on various aspects of the acoustics of hearing in birds, the sensitivity of their hearing, and the function and efficiency of middle and inner ear.—E. M.

VON SCHWEPPENBURG, H. G. 1951. Zahmheit bei Vögeln. Journ. f. Ornith., **93:** 32–35.—Tameness in gallinules and ducks is acquired; the young of tame parents are shy. Discussion of attraction of robins for large animals.—E. M.

VON SCHWEPPENBURG, H. G. 1953. Zum Reihen der Enten. Journ. f. Ornith., **94:** 117–127.—The courtship displays of ducks normally take place on the water. If a duck is pursued in flight by one or several drakes, it can mean one of four things: (1) a shift of location, particularly during migration, usually preceded and followed by a swim display; (2) nuptial courtship: a drake pursuing his mate in a

courtship flight; (3) territorial chase: a territory-holding drake pursuing the duck of an invading pair with her drake following; (4) pursuit chases of a duck by several drakes. The author is of the opinion that these pursuit chases are neither territorial chases nor courtship flights, but attempts of the males to rape the females. He seems to be unaware of the frequency of pursuit flight in the courtship of many passerine birds.—E. Mayr.

SKEAD, C. J. 1952. The Status of the Cattle Egret, *Ardeola ibis*, in the Eastern Cape Province. Ostrich, **23:** 186–218.—Discusses range expansion of the Cattle Egret in Africa and mentions possible correlation with its invasion of America.

SICK, H. 1951. Umstellung der Nistweise beim Stachelschwanz-Segler (*Chaetura andrei*). Journ. f. Ornith., **93:** 38–41.—This swift, which normally nests in hollow palms, was found nesting in chimneys in several Brazilian towns.—E. M.

STEIN, G. H. W. 1952. Probleme der Ökologie und der Siedlungsdichte bei der Misteldrossel, *Turdus viscivorus* L. Journ. f. Ornith., **93:** 158–171.—Analysis of the ecological differences between various populations of the Mistle Thrush and of the reasons for the rapid expansion of this species in northwestern Europe.—E. M.

STEVENSON, JAMES O. 1953. Bird notes from the Texas coast. Wilson Bull., **65** (1): 42–43.

STEYN, P. B. 1952. The Nesting of the African Great Swift, *Apus melba africanus*. Ostrich, **23:** 221–222.—Nests composed of "chewed up" feathers mixed with saliva.—D. A.

STRESEMANN, E. 1951. Weiteres Vordringen der Türkentaube. Journ. f. Ornith., **93:** 26–31.—The rapid increase and spread of *Streptopelia decaocto* continues.—E. M.

STUNKARD, H. W. and M. C. HINCHLIFFE. 1952. The morphology and life history of *Microbilharzia variglandis* (Miller and Northrup, 1926) Stunkard and Hinchliffe, 1951, avian blood flukes whose larvae cause "Swimmers' itch" of ocean beaches. Journ. Parasit., **38** (3): 248–265.—Intermediate host is a mud snail; final host is the Lesser Scaup and probably other migratory ducks and shore birds.—J. D. W.

SUTTON, GEORGE MIKSCH. 1952. New birds for the State of Michoacan, Mexico. Wilson Bull., **64** (4): 221–223.—Seven species believed to be reported for the first time from this area.—J. T. T.

SUTTON, GEORGE MIKSCH. 1953. Gray Hawk. Wilson Bull., **65** (1): 5–7, 1 plate.—A brief description of *Buteo nitidus*, its range and habits.—J. T. T.

THOMSEN, P., and E. STRESEMANN. 1953. Briefe, gewechselt in den Jahren 1818 bis 1820 zwischen Heinrich Boie und Johann Friedrich Naumann. Journ. f. Ornith., **94:** 7–30.—An interesting exchange of letters between two great ornithologists, giving an intimate picture of the personalities and current problems of that period.—E. M.

TORDOFF, HARRISON B. 1953. Irazu Junco [*Junco vulcani*]—a primitive member of the genus. Wilson Bull., **65** (1): 51.

WADE, DOUGLAS E. 1952. Mortality of migrating birds at Mt. Washington, New Hampshire. Wilson Bull., **64** (4): 242.—Eleven individuals of 5 species apparently killed by downdraft winds.—J. T. T.

WADEWITZ, O. 1952. Ein Beitrag zur Biologie des Flussuferläufers, *Actitis hypoleucos* (L.). Beitr. Vogelkunde, **3:** 1–20.—Differences between male and female in parental care. Call notes, nest sites, incubation.—E. M.

WALLRAFF, H. G. 1953. Beobachtungen zur Brutbiologie des Stares (*Sturnus v. vulgaris* L.) in Nürnberg. Journ. f. Ornith., **94:** 36–67.—A very detailed report of observations made on 5 starling nests during four years. Roosting, pre-pairing

activities, territory, pair-formation, sex-ratio, polygamy, nest-building, egg-laying, eggs, incubation, hatching, fledging, and second broods are described and quantitatively documented, as is the participation of the male in incubation and feeding. Such detailed studies in different parts of the world are necessary to give us information on the amount of individual and geographic variation in the biology of a single species.—E. M.

WEHR, E. E. 1952. *Dermoglyphus elongatus* (Megnin, 1877), a quill mite of the house canary in the United States. Journ. Parasit., **38** (6): 548–549.—The mites lived in developing pinfeathers and caused serious depluming.—J. D. W.

WENDLAND, V. 1952. Populationsstudien an Raubvögeln. I. Zur Vermehrung des Mäusebussards (*Buteo b. buteo* (L.)). Journ. f. Ornith., **93**: 144–153.—Of 170 broods of buzzards studied over a number of years, 31 per cent were destroyed, mostly through human interference. On the average, a pair raises 1.4 young. In the year of a vole plague the average was 2.6 young, in two other mouse years 1.77 and 1.52. In extensive pine-forests other animals, such as birds, reptiles, and frogs, are important food.—E. M.

WENDLAND, V. 1953. Populationsstudien an Raubvögeln: Bruterfolg 1940–1951, untersucht bei 7 Arten. Journ. f. Ornith., **94**: 103–113.—331 pairs of seven species of birds of prey were studied in the years 1940 to 1951. The percentage of destroyed broods ranged from 28 (Goshawk) to 76 (Peregrine Falcon). Chief causes of destruction were man (Peregrine, Goshawk, Buzzard), crows (Kite, Hobby) and other hawks (Kestrel). The number of young raised per pair ranged from .47 (Peregrine) to 1.9 (Kestrel). The mouse-eating species (Buzzard, Kestrel) may have high mortality in the nest when mice are scarce. Population numbers remained static for most species. Goshawks increased after shooting terminated in 1945, Peregrines decreased when pigeons became scarce in the same year.—E. M.

VÖLKER, O. 1951. Die Isolierung eines gelben und eines roten Lipochroms aus Vogelfedern. Journ. f. Ornith., **93**: 20–26.—The author succeeded in extracting pure carotinoids from bird feathers. He proved, by analysis of the crystals, that the yellow pigment of an African oriole (*Oriolus*) is lutein, and that the red pigment of an African shrike (*Laniarius*) is astaxanthin. Surprisingly, the red pigment of a flamingo (*Phoenicopterus*) and of a Scarlet Ibis (*Guara rubra*) is not astaxanthin. —E. M.

VÖLKER, O. 1952. Die Lipochrome in den Federn der Cotingiden. Journ. f. Ornith., **93**: 122–129.—Various carotinoids occur in the Cotingidae: lutein in *Ampelion cucullatus*, zeaxanthin in *Rupicola p. peruviana*, and rhodoxanthin in *Phoenicircus nigricollis*. There is no evidence for a special class of pigments, formerly referred to as cotingin. Purplish, dark red, and violet colors of cotingids turn into yellowish red with pressure on the feathers. They have all the characteristics of mixtures of carotinoids, the color of which is modified by structural elements of the feathers.—E. M.