

## ORNITHOLOGICAL LITERATURE

**BREEDING BIOLOGY OF THE EGYPTIAN PLOVER *Pluvianus aegyptius*.** By Thomas R. Howell. Univ. Calif. Publ. Zool. Vol. 113, Univ. California Press, Berkeley, California, 1979:76 pp., color frontispiece, 15 black-and-white plates, 6 numbered text figs., 5 tables. \$10.50.—The Egyptian Plover, which is not a plover and no longer occurs in Egypt, has been an ornithological enigma fraught with the uncertainties attendant to a largely anecdotal and embellished literature. This courser (Cursoriinae, Glareolidae) figures in the textbooks as the reputed symbiont that gleans food particles from between the teeth of crocodiles (*Crocodilus niloticus*) and as a species whose buried eggs are incubated by solar heat. To our good fortune, a keen student of “avian adaptations that contribute to reproductive success in difficult and unusual environments” has conducted the first detailed field investigation of the species. The work was carried out on the Baro River at Gambela, Ethiopia from 24 January–6 April 1977, and this publication is the fascinating product of these efforts.

The principal subject of the research is evident from the title; the plover-crocodile association was only of minor concern. Nonetheless, Howell provides a brief but informative historical review of the latter, commencing with Herodotus who visited Egypt in 459 BC and “wrote of a bird called the Trochilos” which foraged inside “the gaping mouths of basking crocodiles.” Although Howell never observed this behavior, he concludes from the published evidence that it probably occurs, and that it “may have been more frequent and widespread in earlier times, when both crocodiles and Egyptian Plovers were common all along the Nile.” The interesting point is made that Herodotus’ Trochilos cannot be identified with certainty as the Egyptian Plover; it may have been one of the spur-winged plovers (*Hoplopterus* sp.) or some other species.

Any sense of disappointment that the question of plover-crocodile symbiosis was not resolved once and for all is overwhelmed by the wealth of information on breeding biology contained in the remainder of the publication. Moreover, Howell’s presentation is so logically structured and devoid of prolixity that a thoroughly lucid exposition of a large amount of data is packed within a relatively short monograph. Much of the data concern the remarkable egg-burying behavior of the Egyptian Plover which is central to a number of ecophysiological and behavioral adaptations of the species. The salient points are described below.

The eggs (usual clutch is 2 or 3) are laid in a scrape and kept covered with sand (to a depth of 2–3 mm above their upper surfaces) during the day. Adults toss the sand over the eggs with their beaks. Howell quantified the thermoregulatory parameters of nesting behavior by simultaneously recording nest temperatures (using thermocouple-implanted eggs) and relevant ambient temperatures. The pattern which emerged demonstrated that incubation is a “balanced combination of body heat, solar heat, and heat retained by the sand.” During the periods from sunrise to about 10:00 and from about 16:00 to sunset, the latter two heat sources incubate the eggs, allowing the adults time to rest and feed. During the hottest part of the day (approximately 10:00 to 16:00) the eggs are in imminent danger of being overheated and solar input must be moderated. Simple shading of the nest is inadequate; instead the adults make frequent trips to the nearby river where they soak their ventral feathers, then quickly return and settle on the nest thereby moistening the eggs and surrounding sand. The resultant evaporative cooling keeps the eggs below lethal temperatures. Somehow the adults monitor nest temperatures (possibly with the beak), and their behavior varies accordingly. On cloudy days, for example, they stop wetting the eggs and regulation of nest temperatures is through other behaviors, such as varying the depth of the sand cover and/or settling on the nest. With the chill of night, an adult scrapes the sand (using its feet) away from the eggs and incubates them with the direct application of body heat. After hatching, the egg-

burying and nest-wetting behaviors carry over to the chicks. The latter are highly precocial and respond to potential danger by flattening themselves on the ground whereupon the adults cover them with sand. The chick-burying habit appears to be unique among birds, and is often so thorough that an observer cannot find them. While buried, the young are frequently wetted by the adults. This has significance in meeting the thermal stresses of early life, especially during the hottest hours of the day. The foregoing behaviors are nicely illustrated by accompanying plates.

Since Egyptian Plover eggs are small (9.5 g) relative to body weight (78 g) and incubation is protracted (30 days), Howell devotes a considerable portion of the monograph to the physiology of incubation. He hypothesizes that a lengthy period of incubation is "adaptively advantageous" since it produces a highly precocial chick able to survive in a difficult environment, and that the nest-wetting habit allows the small egg to withstand extended incubation without excessive dehydration.

The text is replete with a well-reasoned evolutionary theme concerning the adaptive values of the Egyptian Plover's breeding habits. Howell also uses his findings in an interesting "attempt to reconstruct the phylogeny" of the species. This outstanding monograph merits the attention of most avian biologists.—OSCAR W. JOHNSON.

**THE PEREGRINE FALCON.** By Derek Ratcliffe. Illus. by Donald Watson. Buteo Books, P.O. Box 481, Vermillion, South Dakota 57069, 416 pp., 4 color plates, 60 black-and-white photographs, numerous drawings, 16 numbered text figs., 23 tables. \$42.50.—This is a detailed account of the biology of the British Peregrine Falcon (*Falco peregrinus*), surely the most thoroughly studied population of this species in the world. Major chapters are devoted to distribution, abundance, food, breeding behavior, population regulation and dynamics, and to man-caused impacts endured by the bird in historical times. The author claims the book has "no pretensions of scientific sophistication." Nevertheless, the vast data are exhaustively presented in table form and are tightly reviewed.

Ratcliffe has gone far beyond his own experience with the peregrine and provides a perspective based on both the formal and casual observations of hundreds of people. The book is probably the best single way yet to find out what peregrines are all about.

This book leaves the reader with two major impressions. One is the thoroughness with which the author and his many co-workers have recorded field data on over 950 eyries in England, Scotland and Wales. The other is the remarkable resiliency shown by peregrines in habitat so populated by people with varied interests in the bird. Falconry, first practiced by the Saxons in the 9th Century, flourished into the 1800's. Peregrine territories apparently remained at an upper numerical limit despite protection by nobility in that period. Between 1770 and the Second World War gamekeepers destroyed large numbers of peregrines, mainly on behalf of the Red Grouse (*Lagopus lagopus*). In one small locality alone in Scotland, 98 peregrines were killed between 1837 and 1840. Egg collectors, first active about 1840, took several hundred clutches in England such that few young fledged in some districts between 1900 and 1960. Between 1925 and 1959 racing pigeon fanciers waged war on peregrines. As before, immigration from more remote areas prevailed and territory occupancy was little affected. From 1939–1945 the Air Ministry organized destruction of nests to protect carrier pigeons, resulting in a brief 13% decline of the national peregrine population. Pesticides created a more severe reduction. Compounds such as dieldrin apparently increased adult mortality, and coupled with DDE-related egg breakage, evoked a population crash to 44% of pre-war numbers in the period 1955–1964. Following a ban on dieldrin and greatly reduced use of DDT, the population had increased to 75% of the pre-war level by 1979. The author

meticulously unravels these events, accounts which give cause for some optimism concerning reduced peregrine populations elsewhere.

Ratcliffe focuses on the British bird but provides a listing of the recent status of peregrines in European countries. Spain appears to have the only remaining intact population. He applauds the recovery effort through captive breeding in North America, suggests the technique might restore European peregrines, but points to the loophole it provides in Britain by sheltering wild eggs taken illegally.

There are exceedingly few apparent errors or misinterpretations in the book. It is Townsend's ground squirrel (*Spermophilus townsendii*), not Richardson's ground squirrel (*S. richardsonii*), that figures so importantly into the diet of the raptors of the Snake River Birds of Prey Area in Idaho. The author attributes the habit of feeding exclusively on small alcids in the Queen Charlotte Islands as a unique subspecies specialization of the Peale's Falcon (*F. p. pealei*). He overlooked the fact that about one-third of prey taken by that race in the Aleutians are not alcids. Even in coastal Scotland peregrines catch what is handy; puffins (*Fratercula arctica*) are much the favored prey there. A chap by the name of Tom Speedy reported to Ratcliffe that one coastal eyrie was "a perfect holocaust of Puffins."

The author admits that very few artists catch the real essence of the peregrine. Some of the paintings in this book are stylized and reminiscent of the work of Allan Brooks. Some are especially nice, among these the black-and-white washes that are scattered in the text. The photographs are superb.

The last chapter, entitled "Conservation and the future" falls short of what I feel the author might have said at a time when peregrines in all but a few places in the world are threatened. Is it not appropriate that people such as Ratcliffe, who understand the bird best, give clear recommendations on the course conservation efforts must take? He might have used his careful objectivity to explore the usefulness of recovery strategies and to balance the uses of peregrines by people against the necessity of assuring stable wild populations. Even after the recovery in Britain it is difficult for people to enjoy the bird because of regulations and surveillance.

In the preface, ten or so of the major European and North American works on peregrines are briefly reviewed. This book surely ranks among the better of these in terms of scope, information content and readability.—JAMES H. ENDERSON.

A NATURALIST ON A TROPICAL FARM. By Alexander F. Skutch. Illus. by Dana Gardner. Univ. California Press, Berkeley, California, 1980:405 pp., many line drawings. \$16.95.—Of 23 chapters in this book, six are concerned primarily with particular species of wild birds, two with wild mammals and two with insects. Much of the book concerns plants, and all of it concerns the interesting experiences of an observer unique in the depth and breadth of his interests and biological knowledge. In addition to the chapters on particular species (Bicolored antbird [*Gymnopithys bicolor*], Hermit Hummingbird, Speckled Tanager [*Tangara guttata*], Golden-naped Woodpecker [*Melanerpes chrysauchen*], Gray-necked Wood Rail [*Aramidés cajanea*] and White-whiskered Softwing [*Malacoptila panamensis*]), virtually every chapter contains interesting observations on birds, especially on bird-plant relationships, as well as data on migrants and winter birds from temperate breeding grounds, as well as tropical species. The data on the Bicolored Antbird is largely the same as in Skutch (1969 Pacific Coast Avifauna 35). As the author acknowledges, six of the chapters were published earlier elsewhere, but are not all readily available now.

It seems ironic that Skutch has better data on certain aspects of the life history (e.g., duration of parental care after nesting, specific food of young and adult birds) for some tropical species than American ornithologists have been able to acquire over the years for

many temperate zone breeders. Conservation being what it is in much of tropical America, we should be glad that Skutch was there to make the observations. This book, however, is not intended as a technical reference. It is to be read for enjoyment, and the author's writing style seems generally cheerful. The line drawings by Dana Gardner are pleasing and add greatly to the reader's perception of the places and animals discussed.

Anyone planning to visit Central America could profit from the book, and should pay special attention to Chapter 2 on the patterns of weather, the phenology of a tropical year.

First and last, the book is a statement of philosophy from a sensitive man in a world that seems bent on destruction. All of us wish for a world without suffering, but recognize the futility of the wish. Skutch perhaps has thought about it more than most. The summary of his views in the final chapter of the book is worth reading and thinking about, but it is like wishing that the earth was another planet.—RICHARD R. GRABER.

**HANDBOOK OF THE BIRDS OF INDIA AND PAKISTAN.** Vol. 2, 2nd ed. By Sálím Ali and S. Dillon Ripley. Oxford University Press, London (England) and New York (New York), 1980:347 pp., 13 color plates, numerous drawings and maps. \$34.00.—This is the second of the ten-volume series on birds of the Indian subcontinent to be reprinted. A few small changes have been made in the text and three color plates have been replaced, but otherwise this is the same book first published in 1969. This volume covers the orders Galliformes, Gruiformes and Charadriiformes. Each species is described concisely in a standard format including English, scientific and local names, size, field characters, status, distribution and habitat, general habits, food, voice and calls, breeding, and museum diagnosis. In addition, keys and distribution maps are provided for some groups. As in Volume 1, recently reprinted, this book is printed on cheap paper. This no doubt keeps the price down, but how long will it last?—ROBERT J. RAIKOW.

**FINDING BIRDS AROUND THE WORLD.** By Peter Alden and John Gooders. Houghton Mifflin Co., Boston, Massachusetts, 1981:683 pp., numerous maps. \$17.95.—Two widely-traveled observers provide a guide to 111 of the best and most accessible places to see birds around the world. For each area there is a description, information useful to travellers, a map and a checklist. The index lists the birds so that you can find out where to go to see the species you are after. Now all we need is a guide to financing worldwide birding trips. The royalties from books like this?—R.J.R.

**CHIMNEY SWIFTS AND THEIR RELATIVES.** By Margaret Whittemore. Nature Books Publishers, Jackson, Mississippi, 1981:169 pp., numerous drawings and black-and-white photographs, paper cover. \$5.95.—A long-time observer's anecdotes and musings on the life of swifts. The photographs are mostly blurred or muddy.—R.J.R.

**THE "MID-SOUTH BIRD NOTES" OF BEN B. COFFEY, JR.** By Jerome A. Jackson (ed.). Special Publication No. 1, Mississippi Ornithological Society, 1981:127 pp., paper cover. Order from Mississippi Ornithological Society, % Dept. of Biological Sciences, Box Z, Mississippi State, Mississippi 39762. \$10.00.—This is a compilation of bird records collected and privately published by Coffey from 1952–1956, when there were no state ornithological societies in Arkansas or Mississippi.—R.J.R.

**WATER AND SHORE BIRDS.** By Walther Thiede. Chatto & Windus, London, United Kingdom. Distributed in the U.S. by Merrimack Book Service, 99 Main St., Salem, New Hampshire 03078, 1981:143 pp., approx. 128 color plates, paper cover. \$5.95.—Intended as a field guide to the commoner shore and water birds of Europe, this book includes accounts of about 117 species of loons, grebes, Fulmar, Gannet, cormorants, herons, storks, ducks, geese, swans, rails, waders, gulls, terns and auks. Its value to American readers will lie in the excellent set of color photographs of the species taken in their natural surroundings.—R.J.R.

**PHEASANTS IN ASIA 1979.** By Christopher Savage (ed.). The World Pheasant Association, 1 Harraton Square, Church Lane, Exning, Suffolk CB8 7HA, United Kingdom, 1980:116 pp., numerous black-and-white illustrations. £8.50.—This paperback book contains the proceedings of the First International Symposium on Pheasants in Asia, held in Nepal in November of 1979. It includes some 29 papers and other reports on the status of pheasants in Asia, field study techniques, captive breeding of pheasants and conservation management.—R.J.R.

**BIRDS OF REGINA.** Revised Edition. By Margaret Belcher, illus. by Fred W. Lahrman. Special Publication No. 12, Saskatchewan Natural History Society, Regina, Saskatchewan, Canada, 1980:151 pp., numerous black-and-white photos and drawings, paper cover. \$5.00 + \$0.50 postage.—Records of the occurrence, abundance and breeding density of birds in the City of Regina and the surrounding farmlands in a 48 km (30 mile) radius.

**BIRDS OF THE QU'APPELLE, 1857–1979.** By E. Manley Callin. Special Publication No. 13, Saskatchewan Natural History Society, Regina, Saskatchewan, Canada, 1980:168 pp., 4 maps, 10 black-and-white habitat photos, paper cover. \$7.00 + \$0.50 postage.—An annotated list of bird records from the Qu'Appelle River Valley east of the City of Regina, Saskatchewan.

**NATURE SASKATOON: AN ACCOUNT OF THE SASKATOON NATURAL HISTORY SOCIETY, 1955–1980.** By C. Stuart Houston. Saskatoon Natural History Society, Saskatoon, Saskatchewan, Canada, 1980:46 pp., 7 black-and-white photos, paper cover. \$2.50 + \$0.50 postage.

These three books may be ordered by mail from the Blue Jay Bookshop, Box 1121, Regina, Saskatchewan S4P 3B4 Canada.—ROBERT J. RAIKOW.

**AVIAN MORTALITY AT MAN-MADE STRUCTURES: AN ANNOTATED BIBLIOGRAPHY (REVISED).** By Michael L. Avery, Paul F. Springer and Nancy S. Dailey. U.S. Fish and Wildlife Service, Biological Services Program, National Power Plant Team, FWS/OBS-80/54, 1980:152 pp. \$5.50.—Revision of FWS/OBS-78/55 (1978). Includes 1042 references, of which 189 are new. Available from the Superintendent of Documents, Washington, D.C., as Stock No. 024-010-00560-2.—R.J.R.

**Erratum.**—Vol. 93, No. 2, “Cowbird parasitism and evolution of anti-parasite strategies in the Yellow Warbler” by Karen L. Clark and Raleigh J. Robertson. Table 4, p. 253, sub-headings of “Frequency of response” should read “buried,” “deserted” and “accepted.”—KC