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BULL SNAKE PREYS ON ROUGH-WINGED SWALLOW NEST

LOUIS B. BEST

The Rough-winged Swallow (*Stelgidopteryx ruficollis*) typically nests in burrows excavated in steep banks; these nests are relatively inaccessible to assault by predators. Nesting failure has, however, been attributed to the longtail weasel (*Mustela frenata*; Lusk, *Nuttall Ornithol. Club Publ.* 4, 1962), black snake (*Coluber flagellum*; Bailey, *The birds of Florida*, p. 116, Williams and Wilkins, Baltimore, 1925), and possibly the common sand crab (*Ocyropsis albicans*; Bent, *U.S. Natl. Mus. Bull.* 179:424-433, 1942). To my knowledge, there is no published record of predation on Rough-winged Swallow nests by the bull snake (*Pituophis melanoleucus sayi*).

The incident reported here occurred in Story Co., Iowa. I found a Rough-winged Swallow nest at the end of a burrow (68 cm deep) in a stream bank. The nearly perpendicular bank extended 53 cm above and 125 cm below the burrow's entrance before sloping outward to the stream edge. I inspected the nest contents periodically, without altering the structure of the burrow or the natural character of the bank. By 12 June, the female had completed her clutch of four eggs and was actively incubating. At 0730 on 17 June, I discovered a bull snake coiled in the nest burrow;

when the snake was removed, the nest was found to be empty. The parent birds were not seen in the vicinity.

The 133-cm snake was dissected within 3 h of discovery and was found to be a gravid female carrying 14 eggs in the oviducts. Four broken, white eggshells and their contents (undoubtedly those of the Rough-winged Swallow) were present in the anterior portion of the digestive tract; little digestion had taken place. (Eggs are crushed as they pass through the esophagus of the bull snake; Smith, *Univ. Kansas Mus. Nat. Hist. Misc. Publ.* 9:250-253, 1950.) The digestive tract contained little else, and there was no evidence that an attending adult bird had been eaten. Black snakes will take adult Rough-winged Swallows on the nest (Bailey 1925), but in this instance the adult bird either escaped the bull snake or, more likely, was absent from the nest when it entered the burrow. During my inspections of the nest contents, the incubating adult, when present, would move passively aside and make no attempt to escape. Bull snakes are diurnal (Smith 1950); thus, the nest was entered between dawn and 0730 on the day the snake was discovered, or on the day preceding with the snake remaining in the burrow overnight.

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RECENT PUBLICATIONS

Manual of Neotropical Birds. Volume 1: Spheniscidae (Penguins) to Laridae (Gulls and Allies).—Emmet R. Blake. 1977. University of Chicago Press. 674 p. \$50.00. This is the first of four volumes that will treat all recorded birds from the mainlands of Central and South America, the continental islands, and adjacent waters. Mexico, the West Indies, the Galápagos Islands and the Falkland Islands are excluded. For each family, Blake gives a key to the

species, followed by the species and subspecies accounts (names, diagnostic features, description, measurements, distribution, and references). The book is handsomely illustrated with text figures and plates, several in color, mostly by Guy Tudor and Richard V. Keane. The ranges of most species are delineated on 237 maps. Indexed. This monumental reference work will be invaluable to researchers concerned with the identification, distribution, or systematics of neotropical birds.

North American Bird Songs—a World of Music.—Poul Bondesen. 1977. Scandinavian Science Press Ltd., 2930 Klampenborg, Denmark. 254 p. Paper cover, \$15.50. This book is a guide to the songs of more than 300 species of North American passerines. Introductory sections describe the fundamentals of bird song, methods of analysis, song behavior, musical and poetic interpretation of bird songs, and techniques of recording. A discography of North American bird voices follows. Most of the book consists of descriptions of "motif-songs," arranged in a key according to their characteristics. The descriptions give measurements of the songs and characterizations of the song, singing behavior, and habitat as culled from the literature. Many are complemented with clear audio-spectrograms. Glossary, list of references, and index. The key will be useful to recordists and experienced listeners; it may be too difficult for novices to use in learning to recognize songs.

Guide to the Young of European Precocial Birds.—Jon Fjeldså. 1977. Skarv Nature Publications, 285 p. dkr 200. Available: Skarv Nature Publications, Strandgården, Godhavnvej 4, DK 3220 Tisvilde, Denmark. This is primarily a guide to the identification of the downy young in all European species of precocial birds. No keys are given, but the general descriptions for families and subfamilies will lead one to the right group of species. Specific accounts describe each chick in detail and give pertinent information about nesting. Illustrated with excellent pen-and-ink drawings and color paintings by the author. This book is less comprehensive than Harrison's (noticed in *Condor* 78:279), but the treatment is more thorough. Since most of the species covered occur also in this hemisphere or have close relatives here, North American ornithologists will find this book useful for identification. Of perhaps even greater interest are the comparative figures and the author's speculations on the evolution of downy plumage patterns.

Grzimek's Encyclopedia of Ethology.—Edited by Klaus Immelmann. 1977. Van Nostrand Reinhold Co., New York. 705 p. \$39.50. This fat volume, first published in 1973, presents current ideas and research findings in the study of animal behavior. These are organized in 43 chapters, beginning with background information on ethological research. Subsequent chapters examine nervous systems and sensory organs, orientation in time and space, learning and communication behavior, sexuality and parental behavior, etc. The last chapters consider the evolution and adaptive value of behavior, and the significance of ethology in understanding human behavior. Nearly all the contributors are European; unfortunately their affilia-

tions are not given. The book is generously illustrated with diagrams, drawings, and photographs in monochrome and color. List of supplementary readings, glossary, and index. Advanced students and their teachers should find this a convenient, comprehensive reference work.

Pigeons and Doves of the World.—Derek Goodwin. 1977. Comstock Publishing Associates, Cornell University Press, Ithaca, New York. 446 p. \$27.50. Although labeled a second edition, this is but a new printing of a monograph originally published in 1967 by the British Museum (Natural History), background that is nowhere explained. General chapters describe the adaptive radiation, plumage, habits, and behavior of the birds. Goodwin characterizes each genus or group of genera and discusses the evolution, distribution, and relationships of their species. Species accounts cover appearance, distribution, habitat, habits, nesting, voice, and display, as far as is known; a short list or references is appended to each account. Range maps and simple pen-and-ink drawings of the birds by Robert Gillmor illustrate the accounts. Indexes of English and scientific names. More than a compilation of an immense amount of information, the book offers insights on the systematics of one of the largest and most diverse of avian families.

W. H. Hudson. A Bibliography.—John R. Payne. 1977. Dawson/Archon Books [Hamden, CT]. 248 p. \$17.50. Among ornithologists, Hudson (1841–1922) is chiefly remembered for his contributions to *Argentine Ornithology*, later republished as *Birds of La Plata*. He wrote a great deal more about birds in South America and England, not to mention the exotic romances for which he is most widely known. This bibliography attempts to record all of his important writings: books and pamphlets, contributions to books and periodicals, and translations. It is a reference work for scholars of the man and his work.

HELP! A Step-by-Step Manual for the Care and Treatment of Oil-Damaged Birds.—Emil P. Dolensek and Joseph Bell. 1977. New York Zoological Society. 39 p. Pamphlet 50¢ (reduced prices in quantity). Available: Publications Dep., N.Y. Zool. Soc., Bronx, NY 10460. Volunteers attempting to save avian victims of oil spills have usually lacked the knowledge to back up their zeal. This excellent booklet gives practical instructions for the capture, treatment, and veterinary care of such birds. It includes a brief guide to the identification and handling of the species likely to be encountered. Well illustrated with photographs and drawings. Birders who take part in coastal rescue operations should prepare themselves with this manual.