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Page(s): Page 189, Page 190, Page 191, Page 192

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probably caused by postmortem histolysis and post ovulation degeneration of unreleased eggs. The mature eggs throughout the ovaries were free of any ovarian tissues (connective or ovigerous), indicating that ovulation had occurred and that spawning was imminent at the time of injury. Most eggs matured at the same time, which indicates a single spawning occurrence per season. No evidence of male tissue was found during gross or histological examination.

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Biological Sciences

SPIDERS IN THE SUMMER DIET OF CATTLE EGRETS

Michael J. Fogarty and Howard K. Wallace

Wildlife Research Projects, 4005 S. Main Street, Gainesville, Florida 32601;
Department of Zoology, University of Florida, Gainesville, Florida 32601

Abstract: *In summer, 1969, contents of 410 egret stomachs were studied. Spiders, especially wolf spiders, were found to be widely present in the diet.*

In a study by the Florida Game and Fresh Water Fish Commission to determine the summer diet of cattle egrets (*Bubulcus ibis*) in northern Florida, spiders, mainly wolf spiders, were found to comprise a significant part of the foods identified from a sample of 410 egret stomachs. The purpose of this paper is to identify these spiders by families, except the Lycosidae, which are identified to species.

Methods—The egrets were shot in the late afternoon at four roosts in Alachua and Marion Counties, Florida between 19 June and 16 July 1969. The stomachs were removed soon after death and preserved in a buffered 10% formalin solution. The stomachs were later opened individually and the spiders were removed and pooled for the whole sample. After each of the 410 stomachs was examined, the spiders were identified. Members of each family and species were counted and measured volumetrically.

RESULTS AND DISCUSSION—Although orthopterous insects were found in 96.8 percent of the sample and comprise 80.5 percent of the diet by vol, spiders ranked second by occurrence and vol. Arachnids were present in

TABLE 1. Spiders in 410 cattle egret stomachs.

Family and Species	Number	Volume (ml)
LYCOSIDAE	2,398	472.5
Sosippus floridanus	2	0.5
Pirata sedentarius	1	Tr.[1]
Pardosa milvina	92	1.5
Pardosa saxatilis	2	Tr.
Pardosa longispinata	48	0.5
Pardosa georgii	9	Tr.
Geolycosa fatifera	2	0.5
Arctosa littoralis	1	Tr.
Schizocosa crassipes	1	Tr.
Schizocosa episima	9	0.5
Schizocosa ocreata	2	Tr.
Lycosa carolinensis	127	72.0
Lycosa punctulata	6	0.5
Lycosa rabida	333	56.5
Lycosa helluo	1,283	150.0
Lycosa hentzi	5	1.5
Lycosa lenta	452	143.0
Lycosa angusta	1	Tr.
Lycosa huberti	1	Tr.
GEOLYCOSIDAE	1	Tr.
Unidentifiable		
PARDOSA	20	Tr.
Unidentifiable		
LYCOSIDAE	Unknown	45.0
Unidentifiable		
CLUBIONIDAE	1	Tr.
THOMISIDAE	27	1.5
SALTICIDAE	40	2.5
PISAURIDAE	23	2.5
Dolomedes triton	19	2.5
Pelopatis undulata	4	Tr.
OXYOPIDAE	45	1.5
Peucetia abboti	45	1.5
THERIDIIDAE	10	0.5
Latrodectus mactans	10	0.5
ARANEIDAE	229	8.0
Nephila clavipes	3	0.5
Argiope aurantia	190	6.5
Acanthepeira sp.	1	0.5
Neoscona sp.	1	0.5
Araneus sp.	1	Tr.
ARANEIDAE	33	Tr.
Unidentifiable		
TETRAGNATHIDAE	23	Tr.
Tetragnatha sp.	23	Tr.
UNIDENTIFIABLE SPIDERS	7	0.5
TOTAL	2,803	489.5

[1]Tr. = less than 0.5 ml.

85.1 percent of the stomachs, amounting to 4.7 percent of the diet by vol. The stomachs contained an average of 1.19 cc of spiders. Nine genera of spiders were identified (Table 1).

It is well known that cattle egrets eat spiders, but families, genera, or species usually are not listed. Burns and Chapin (1969) examined 74 cattle egrets collected in Louisiana from June to October and found spiders totaled 10 percent of the foods. Heubeck (1967) examined 165 stomachs collected in Florida from May through January and found spiders in 7.2 percent of the sample. Ikeda (1956) identified the families Heteropodidae, Salticidae, Thomicidae, and Agelenidae from the stomachs of 21 egrets (*B. i. cormandus*) collected from rice fields and river banks in Japan. He noted that spiders comprised 26.1 percent of the diet by vol. Seaman (1955) examined one cattle egret taken at St. Croix, Virgin Islands, in February and found spiders made up 6.0 percent of the stomach contents. Seigfried (1966) noted that spiders made up 4.1 percent of the total vol of 15 nestling cattle egret regurgitates taken from a colony in South Africa. Snoddy (1966) reported that spiders comprised 4.0 percent of the contents of 20 egrets taken in Georgia from August through October. Kadry (1942), Kirkpatrick (1925), Lowe-McConnel (1967), Biaggi (in Palmer, 1962), Reilly (1968), Skead (1956), Ticehurst (1931), and Valverde (1958) reported spiders in the diet of the cattle egret but present no data on the species or frequency.

The Wolf Spiders. Emerton (1902) stated that the Lycosidae were the commonest spider family. Although many are nocturnal (Kaston, 1953), their frequent appearance in the stomach contents indicates that they are active in the day or are made available to the egret when disturbed by grazing livestock or farm machinery, both of which the egret attentively follow when feeding. Four species (*Lycosa helluo, L. lenta, L. rabida,* and *L. carolinensis*) comprised 78.3 percent of the spiders identified, amounting to 85.9 percent by vol of the entire spider diet.

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Biological Sciences

POLYCHAETE FAUNA ASSOCIATED WITH GULF OF MEXICO SPONGES

DANIEL M. DAUER

Department of Biology, University of South Florida, Tampa, Florida 33620

ABSTRACT: *From 1-17 polychaete worms were found in association with each of 14 sponges distributed among 8 genera.*

THIRTY-FOUR species of polychaetous annelids have been found associated with eight common sponges from the Gulf of Mexico. The sponges studied were: 1 *Adocia neens* (Todsent); 2 *Geodia gibberos* Lamarck; 3 *Ircinia campana* (Lamarck); 1 *Ircinia ramosa* (Keller); 2 *Spheciospongia vesparia* (Lamarck); 1 *Tedania ignis* (Duchassaing and Michelotti); 3 *Xytopsene sigmatum* de Laubenfels; and 1 unidentified Demospongea. From 1-17 species of polychaetes were found with any one sponge. Generalizations concerning diversity of polychaetes associated with sponges are presented.

MATERIALS AND METHODS—Sponges were collected from 9 to 11 m depths west and northwest of Tarpon Springs, Florida, on May 29-31, 1970, and from 2 m depth west of Hudson, Florida, on April 17, 1971. All sponges were collected by scuba diving, placed individually in plastic bags, narcotized with 0.015% prophylene phenoxytol, fixed with 10% formalin in seawater, and transferred after 24-48 hr to 70% isopropyl alcohol for storage. The contents of each plastic bag were sieved with a 0.5 mm sieve to obtain the polychaetes associated with the sponge cortex. The sponges were dissected to find the polychaetes living within the body of the sponge.