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A Tern Prey Sample

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A tern prey sample. — The fact that young birds of many species regurgitate when under stress provides opportunities to gather data on food habits without the necessity of collecting the birds. During banding operations on (Big) Bird Island, Nassau Sound, Duval County, Florida, exactly 1699 Royal Terns (*Sterna maxima*) and approximately 20 Sandwich Terns (*S. sandvicensis*) were confined to a wire corral on 25 July 1976 between 0700 and 1100. The chicks ranged from about 7 days to about 20 days in age.

After banding the chicks, the area was searched and all regurgitated prey items were collected and identified as nearly as possible, given the partially digested condition of some items. A total of 243 prey items were recovered, of which 92.2% represented a single species. In order of abundance they were: Atlantic croaker (*Micropogon undulatus*) 223; Atlantic menhaden (*Brevoortia tyrannus*) 5; squid (*Illex illecebrosus*) 5; Atlantic bumper (*Chloroscrombus chrysurus*) 3; jacks (*Caranx crysos* or *C. bartholomaei*) 2; striped anchovy (*Anchoa hepsetus*) 2; white or brown shrimp (*Penaeus setiferus* or *P. aztecus*) 1; shad (*Alosa* sp.) 1; cusk eel (Ophidiidae) 1.

Of the regurgitated Atlantic croaker, 49 were intact enough to measure and 21 still had the eyes intact and were deemed complete enough to weigh (length \bar{x} 130.8 mm, SD 11.3, 113-168; weight \bar{x} 20.1 g, SD 5.0, 14.3-35.3). One-year-old fish of this species are about 152 mm long, two-year-olds about 203 mm (Migdalski 1958, Angler's guide to the salt water game fishes, New York, Ronald Press).

Little information on the diet of the Royal Tern has been published. In Virginia and North Carolina (Buckley and Buckley 1972, Ibis 114: 344-359), Royal Terns preyed on blue crabs (*Callinectes sapidus*) extensively and fed them to the young. Other items reported by the Buckleys were: squid (*Loligo* sp.), shrimps (prob. *Crangon*), silversides (*Menidia*), killifishes (*Fundulus*), anchovies (*Anchoviella*), menhaden (*Brevoortia*), toadfishes (*Opsanus*), pipefishes (*Syngnathus*), jacks (*Caranx*), flounders (Pleuronectidae) and eels (*Anguilla*).

As the Atlantic croaker is a bottom feeding species (Migdalski 1958), terns normally would have a difficult time catching large numbers of this fish. The shrimp fleet at Mayport, Duval County, some 2 miles south of the colony, is an active one, and Royal Terns are often seen flying between the colony and the area where the shrimp boats come in. The Atlantic croaker was the most abundant fish taken in shrimp nets in this immediate area in July 1933-35 (Anderson 1968, U.S. Fish & Wild. Ser., Spec. Sci. Rept. — Fisheries No. 570). Therefore, it seems likely that at this colony, the terns utilize shrimp boat dumpings extensively in feeding the young. However, several other species reported by Anderson as comprising

a large portion of shrimp boat dumpings in July were not represented in the prey sample.

My thanks to Ken Relyea for identification of the fishes. — Robert W. Loftin, *University of North Florida, Box 17074, Jacksonville, Florida 32216.*

Chick retrieval by Black Skimmer. — On 12 June 1976, while studying nesting behavior of Black Skimmers (*Rynchops nigra*), I observed an adult skimmer attempt to carry its nestling back to its scrape. Chick-carrying has been reported for various species: Clapper Rail (*Rallus longirostris*) and Virginia Rail (*Rallus limicola*) (Pettingill 1938, *Auk* 55: 411-415); Montagu's Harrier (*Circus pygargus*) (Lachner 1968, *Z. Tierpsychol.* 25: 666-667); African Jacana (*Actophilornis africanus*) and the Lotus-bird (*Irediparra gallinacea*) (Hopcraft 1968, *Living Bird* 7: 85-88). No mention of this behavior has appeared in the literature concerning the Black Skimmer.

Observations were made at a breeding colony of skimmers located along the western causeway of the Howard Frankland Bridge crossing Tampa Bay, Pinellas County, Florida. While watching a feeding attempt I saw the following behavior sequence. A female parent had been sitting on its scrape with its chick, which I estimated to be less than 5 days old, when the male parent landed beside the scrape with a fish in its bill. The chick struggled out of the scrape, having been prodded by the female as it climbed out, and approached the male. The chick began to stray when the male did not relinquish the fish. The chick was about ½ m from the scrape when the female walked over to it and picked it up by the neck. As the female turned back toward the scrape, it was interrupted by the aggressive advance of a skimmer on an adjacent scrape. The female dropped the chick in response to this attack, and retreated toward its own scrape. Soon, the female returned and picked up the chick by the neck, but was again blocked from returning to its scrape by the same neighbor. The female's third attempt to pick up the chick was also rebuffed by the same skimmer.

The chick, now about 1 m from its scrape, was joined by the male, which first offered the fish to the chick, but then suddenly turned away and ate the fish itself. The female, standing by its scrape, picked up a leaf and "chewed" it for a few moments before dropping it. This leaf-chewing is a displacement behavior that I have noted several times in skimmers that were thwarted from completing mating or chick-feeding attempts. The chick remained crouched under a small clump of vegetation during the remaining hour of my observation period and its eventual fate is unknown.

I have found that skimmer chicks often wander from their