

If the behavior of otariids at sea is similar to that exhibited by the entangled sea lion, then drowning may be another more immediate cause of mortality. Twisting and rolling could foul the foreflippers and prevent the animal from swimming. This seems particularly likely if it became caught in a larger net. Additionally, because the net was so tightly wrapped around the sea lion's neck, necrosis of the skin tissue and an open wound may have occurred within a matter of hours to a few days. Constant swimming could continue to tighten the net. Although several authors (Scordino and Fisher fn. 1) have speculated that neck wounds indicate a period of entanglement longer than 4 mo, these observations suggest that beached animals with open wounds may have become tangled only a few days prior to sighting.

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STEVEN D. FELDKAMP

*Scripps Institution of Oceanography
Physiological Research Laboratory A-004
La Jolla, CA 92093
Present address: Long Marine Laboratory
University of California at Santa Cruz
Santa Cruz, CA 95064*

NOTES ON THE LIFE HISTORY OF THE CATSHARK, *SCYLIORHINUS MEADI*

The catshark, *Scyliorhinus meadi* (family Scyliorhinidae) is a rare, poorly known species, easily identified by the eight dark saddle-like blotches along the dorsal surface. Springer (1966) first described *S. meadi* and Springer and Sadowski (1970) assigned it to subspecies status of *S. retifer*. In Springer's (1979) revision of the family, it was again given species status. At present only 10 immature specimens of *S. meadi* have been collected, seven males (180-490 mm in length), two females (235 and 385 mm in length), and one 190 mm specimen of unknown sex. This paper reports on the collection of an additional specimen of *S. meadi* and provides valuable life history information.

During a cruise aboard the RV *Delaware II* on 5

May 1984, a specimen of *S. meadi* was collected at a depth of 412 m using a 17 m otter trawl at lat. 28°59.85'N, long. 79°55.98'W. The shark measured 430 mm in length and weighed 0.4 kg. This shark, together with its stomach contents, is deposited at the Ichthyological Museum of the Florida Department of Natural Resources, St. Petersburg (FSBC 16208). Examination of the reproductive system revealed a developing right ovary measuring 4.4 cm long and 0.6 cm wide. The left ovary was atrophied. Follicles teased from the right ovary measured 0.75 mm in diameter. The nidamental glands were 3.0 mm wide and 8.0 mm long. The oviduct, from nidamental gland to vagina, was 82 mm long and 1.0 mm wide. Gut content examination revealed several cephalopod beaks and tentacles, shrimp remains, and the articulated caudal skeleton from a relatively large, unidentified teleost.

This specimen of *S. meadi* is the third and largest female collected to date. Burgess et al. (1979) reported on the collection of a 385 mm total length female in which the right ovary measured 33.2 mm and the left 8.9 mm in length. This represents about 8.6% of the total length of the shark. The right ovary of the specimen reported in this paper represents about 10.2% of the shark's total length. This specimen is immature, but the allometric increase in ovary length, and the fact that the left ovary was completely atrophied suggests that the specimen might be considered a subadult (maturation begun). The small size of the Florida Bahama specimens compared with the North Carolina examples led Burgess et al. (1979) to suggest geographical size segregation. This large specimen from off the central Florida east coast does not support this segregation. Discovery, in gut content examination, of the large, teleost caudal skeleton suggests an unexpected ability to prey on relatively large fishes.

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GLENN R. PARSONS

*Department of Marine Sciences
University of South Florida
140 Seventh Avenue South
St. Petersburg, FL 33701*

A COMPARISON OF SCALE AND OTOLITH AGING METHODS FOR THE ALEWIFE, *ALOSA PSEUDOHARENGUS*¹

Beginning in 1971, the Maine Department of Marine Resources monitored the harvests of anadromous alewives ascending the Damariscotta River (Libby 1982). Part of this monitoring assessed changes in age composition within and between years. Aging was done by interpreting the number of scale annuli in terms of fish age as has been done in earlier investigations (Havey 1961; Rothschild 1963; Marcy 1969). However, scale annuli were sometimes difficult to interpret, so in 1979, methods for removing and reading alewife otoliths were studied. A relatively fast and efficient method was developed for removing otoliths. The ease with which the otoliths were processed to age fish prompted an analysis of which method (scales or otoliths) was best for determining the age of an alewife. This paper compares the precision of reproducibility and accuracy between the scale and otolith methods.

Materials and Methods

Alewives, *Alosa pseudoharengus*, were taken daily from the commercial harvest throughout the fishing period for their otoliths and scales. The fish were taken to the laboratory, sexed, and measured for length and weight. About 10 scales were removed from the left side above the lateral line just posterior to the dorsal fin. The scales were cleaned and put into envelopes labeled with the length and sex of the alewife. In 1963, Rothschild described the alewife scale and characteristics of the annuli.

Otoliths were collected and stored as follows: A

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