

PRELIMINARY NOTE ON CEPHALOPODS IN THE STOMACH CONTENT OF
SWORDFISH, Xiphias gladius L., FROM THE IONIAN AND ADRIATIC SEAS

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ABSTRACT: The analysis of the stomach content of 14 specimens of Xiphias gladius L. from the Ionian and Adriatic Seas, showed that Cephalopods are the most important component. Todarodes sagittatus is the most preyed upon species (64% of total number of preys).

Cephalopods represent the main food item in the diet of the swordfish, Xiphias gladius L. (see the review by TOLL & HESS, 1981).

To establish the role of Cephalopods as prey of large pelagic teleosts in the Mediterranean, the stomach content of 14 specimens of X. gladius was analyzed. The swordfish were caught during the summer months of 1984 with drifting longlines by boats from Porto Cesareo (three specimens), Leuca (eight sp.), and Mola di Bari (three sp.), that fish, respectively, in the Gulf of Taranto (inlet of the Ionian Sea), the Ionian, and the Southern Adriatic Sea, in areas where the bottom exceeds 500 m of depth.

The swordfish specimens sized between 0.8 and 1.7 m (length at the fork), weighing between 8 and 98 Kg (dressed weight). The stomach contents were removed soon after capture and preserved in 10% formalin; such operations were performed at sea by the fishermen.

All fleshy remains, among which cephalopods mandibles with radula and muscles of the buccal mass still in place, were identified to the lowest possible taxon. In addition to traditional soft-tissue characters, the morphology of mandibles and radula was taken in account for identification purposes.

The results table shows that Cephalopods are by far the most important food item of Mediterranean swordfish; only one of the studied specimens did not have any cephalopod in its stomach. The average number of cephalopod preys per swordfish was 2.1, while for Osteichthyes it was 0.5; therefore we can assume that bony fishes play a secondary role in the diet of X. gladius.

No positive correlation between predator size and volume of stomach content was observed. The size of preys was extremely variable, ranging from 8 cm of total length (mictophids) to 45 cm of ML (T. sagittatus).

specimen n.	P. Cesarea Gulf of Taranto			Leuca Ionian Sea					Mola Adriatic Sea					
	1	2	3	1	2	3	4	5	6	7	8	1	2	3
CEPHALOPODA:														
<u>Todarodes sagittatus</u> (LAMARCK)	2	1	3	1	1			1	1	2	2	4	1	4
<u>Illex coindetii</u> (VERANY)										1				
Unidentified Ommastrephid						1								
<u>Onychoteuthis banksi</u> (LEACH)			1											
<u>Ancistroteuthis lichtensteini</u> (ORB.)								1		1				
Unidentified Sepiolid			1											
OSTEICHTHYES:														
Mictophidae	1				1									
<u>Sudis hyalina</u> RAF. (Paralepididae)			1				1							
Unidentified Osteichthyes										1			2	

The fauna recovered from the swordfish stomachs was not very diverse: a single species, T. sagittatus, made up 63.9% of the total number of preys, with a frequency of 1.6 specimens/predator. The preponderance of T. sagittatus is even more evident when its sizes, ranging from 18 to 45 cm (ML), are compared to those of the other teuthoids: I. coindetii 10 cm, O. banksi 9.7 cm, A. lichtensteini 7.7 cm.

The heavy predation by X. gladius upon T. sagittatus can be explained with the habit of the squid to migrate to the surface at night (CLARKE, 1966), coupled with parallel trophic movements of the swordfish. Furthermore MANGOLD-WIRZ' (1963) reports that T. sagittatus seems to live preferentially on bottoms 400 to 700m deep, which well corresponds to the depth of the areas where the swordfish specimens were caught.

Because of the opportunistic nature of X. gladius predation, its stomach contents reflect the diversity and relative abundance of potential preys (TOLL & HESS, 1981). Therefore it is possible to infer that T. sagittatus is the most abundant pelagic cephalopod in the examined area.

CLARKE, M.R., 1966 - Adv. mar. Biol., 4: 91-300.

MANGOLD-WIRZ, K., 1963 - Vie Milieu, suppl. 13: 285 pp, 4 pl, 1 c.

TOLL, R.B. and S.C. HESS, 1981 - Fish. Bull., 79: 765-774.