

NEW RECORDS OF *Sphoeroides cutaneus* (GUNTHER, 1870) (PISCES, TETRAODONTIDAE)  
AND *Lophotus lacepedei* GIORNA, 1809 (PISCES, LOPHOTIDAE) IN THE MEDITERRANEAN

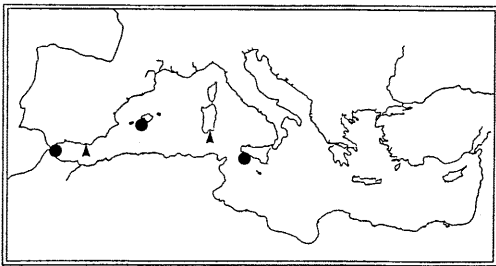
J. CRESPO, J.C. REY and A. GARCIA  
Instituto Espanol de Oceanografia, Centro Costero de Puengirola,  
Puengirola, Malaga (Espana)

New records on *Sphoeroides cutaneus* (Gunther, 1870) and *Lophotus lacepedei* Giorna 1809, rather rare species, can help in defining their distributional areas or migratory patterns which they may observe.

Three specimens of *Sphoeroides cutaneus* were captured (one in the locality of Cauta (Strait of Gibraltar) and two in Almeria).

This species is considered typical of the African Atlantic and its presence in Mediterranean was considered sporadic. From its first capture in Balearic waters in 1979 (Oliver, 1981), another 10 exemplaires have been fished, 5 in Sicily and 2 in Sardinia. (Vacchi & Cau, 1985). And like the fishermen of Cagliari, the trawl-fishermen of the bay of Almeria, actually know this species, although they consider it of recent appearance. Their catches in less than 100 mts depth, is not frequent but neither rare.

These catches could corroborate Fowler's hypothesis of 1928 (in Vacchi and Cau, 1985), stating that its distributional area is not limited to the Atlantic.

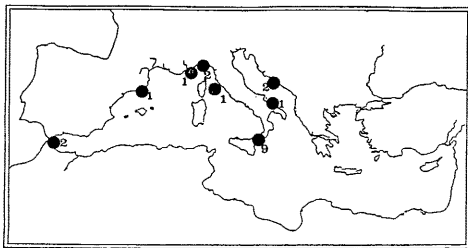


Catches of *Sphoeroides cutaneus* in the Mediterranean. Arrows indicate areas in which their presence is not rare.

With regards to *Lophotus lacepedei* Giorna, 1809, knowledge on its biology and migratory behaviour remains practically unknown.

The recent catch of a specimen in the bay of Algeciras located in the Strait of Gibraltar in a younger stage (40 cms. long) than the previously reported by Rey (1983) and the description of its larvae and young stages by Sanzo (1940) could mean that the reproductive area of this species is in the Mediterranean.

However, although most of its reports correspond to the Mediterranean area, there are some records in distant areas such as those of Goin and Erdman (1951) (in Rey, 1983) in the waters of Florida and Smith (1950) in South Africa.



Reports on *Lophotus lacepedei* in the Mediterranean indicating the number of catches.

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IMMIGRANT FISH SPECIES IN SKADAR AND ŠASKO LAKES  
AND SOME THEIR SPECIFICITIES (MONTENEGRO, YUGOSLAVIA)

Borivoj KNEZEVIĆ, Sreten MANDIĆ and Ivo JARDAS  
Biological Institute, Titograd (Yugoslavia)  
Marine Biology Institute, Kotor (Yugoslavia)  
and Institute for Oceanography and Fishery, Split (Yugoslavia)

Abstract: - In Skadar and Šasko Lakes, through the Bojana River there enter 9 that is 10 marine immigrants spending in their waters shorter or longer periods of time in order to spawn, feed, winter or get ready for spawning.

Summary: - There are 42 fish species living in Lake Skadar and 24 in Šasko Lake. Marine immigrants enter both of them through the Bojana River connecting these two lakes with the Adriatic Sea. 9 of these immigrants enter Skadar Lake and 10 Šasko Lake. Among them especially interesting are the species *Liza ramada* and *Mugil cephalus* staying here in order to prepare for spawning and feeding (females only), while the populations of *Alosa falax nilotica* spawn in both lakes, in spring time and form the so called "semilacustric" population. From the fishes of family *Acipenseridae* the species *Acipenser naccarii* (endem of Adriatic Sea) and *A. sturio* enter both of the lakes.

INTRODUCTION: Lake Skadar and Šasko Lake by their tropical character belong to oligotrophic ones; through the Bojana River they permanently communicate with the Adriatic Sea. Due to this moment in addition to the freshwater fishes, marine immigrants can be met. In Lake Skadar live 42 fish species (over 20 species from the family *Cyprinidae*), while in Šasko Lake live 24 (12 species of the *Cyprinidae* family). To Lake Skadar come 9 and to Šasko Lake 10 marine immigrants.

METHOD OF RESEARCH: Fishing in the lakes was performed by stagnant nets with mesh diameter rating 4 to 160 mm, and electro-shocker of type Mofix of 5 KVA in period from 1977 to 1978. Sexual cycle was given on the basis of macroscopic analyses of gonads, as well as on the basis of studies of histological sections in *Alosa f. nilotica* from Lake Skadar. For the analysis of fishing dynamics on the lakes statistical data of economical fishery of "Ribarstvo" from Rijeka Crnojevića and "Agropogon" from Ulcinj were used. The age was determined on basis of generation zones on the scales through "Bausch-Lomb" three simplex microprojectors with various increases.

RESULTS AND DISCUSSIONS: The research performed has shown that there are 10 marine immigrants entering the lakes. They are: *Alosa falax nilotica*, *Liza ramada*, *Mugil cephalus*, *Anguilla anguilla*, *Pleuronectes flesusus*, *Citharus linguatula*, *Dicentrarchus labrax*, *Acipenser naccarii*, *A. sturio*, *Atherina mochon* (the last one only in Šasko Lake).

*A. f. nilotica*, anadromic immigrant enters both lakes from the Adriatic Sea in order to spawn. On Lake Skadar there are multiplying places on "Tanki rt" and "Pijesci", while in Šasko Lake that is the littoral part, the part with vegetation. This was recorded by Janковиć (1971) and Vuković (1961). It spawns roe on sandy and muddy terrain on depth of 1 to 7 m. The period of intensive spawning is in March and April, and sexual maturity occurs in age of 3<sup>+</sup> to 5<sup>+</sup>. Our research also confirms, as Vuković (1961) registers, that a certain number of juvenile specimens of *A. f. nilotica* remains in lake until its first maturity, creating the so called "semilacustric" population. Janковиć (1971) also registered this phenomenon in Šasko Lake.

From total of 6 fish species of family *Mugilidae* living in Adriatic Sea, to both lakes come only *Liza ramada* and *Mugil cephalus*. By macroscopic analysis of gonads of both species it has been established that in both lakes there are only the populations of females. *M. cephalus* migrates massively from the sea to the Bojana River and to both lakes during winter and spring. In summer it spawns at the mouth of the Bojana River or in the sea, and than it comes back for wintering, feeding and preparation for spawning (so called physiological maturation of gonads). They mature sexually in the sixth year of age. *L. ramada* spawns from October until November. Multiplying places are at the mouth of the Bojana River or at the littoral part of the sea. It comes to the lake after spawning at the end of November and in December and it stays in the lakes during winter. They mature at age 3<sup>+</sup> and 4<sup>+</sup>. In recent years the occurrence of *Acipenser naccarii* (endem of Adriatic Sea) and *A. sturio* species is rare, most probably because of the specificities of their migratory ways.

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