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NEW RECORDS OF SOME RARE AND LESS-KNOWN FISHES IN THE GULF OF TRIESTE (NORTHERN ADRIATIC)

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ABSTRACT

The authors present some data on four fish species that have up-to-date been reported as rare or at last less known rare fishes for the Gulf of Trieste. Three of them, Luvarus imperialis, Mola mola and Ranzania laevis, are considered typical ocean species, whereas Ophidion barbatum is a less-known and overlooked fish species with particular habitat demands.

Key words: new records, *Luvarus imperialis*, *Mola mola*, *Ranzania laevis*, *Ophidion barbatum*, Gulf of Trieste

NUOVE SEGNALAZIONI DI SPECIE ITTICHE RARE E POCO CONOSCIUTE NEL GOLFO DI TRIESTE (ADRIATICO SETTENTRIONALE)

SINTESI

Gli autori riportano nuovi dati inerenti quattro specie ittiche, che fino ad oggi sono state considerate specie rare o perlomeno poco conosciute nel Golfo di Trieste. Tre di queste, Luvarus imperialis, Mola mola e Ranzania laevis vengono considerate tipiche specie oceaniche, mentre Ophidion barbatum è una specie poco conosciuta e trascurata, con esigenze particolari nella scelta dell'habitat.

Parole chiave: nuove segnalazioni, *Luvarus imperialis*, *Mola mola*, *Ranzania laevis*, *Ophidion barbatum*, Golfo di Trieste

INTRODUCTION

Although the research on ichthyofauna in the Gulf of Trieste has more than a centennial tradition, the area has been receiving rather poor scientific attention in terms of a wider ichthyologic research. The knowledge of marine fish fauna is therefore considered still to be fairly scarce. In this regard it still happens that some new, rare or less-known species are reported for the area. To this end, we would like to present new data on four more or less rare fish species, recently caught in the Gulf of Trieste.

Some authors presented a list of fishes, based mainly on species found at the Trieste market (probably with supposition that the majority of them had been caught in the Gulf of Trieste) (for example Stossich, 1876; Faber, 1883; Graeffe, 1906), while some other presented check-lists of fishes of the Slovenian part of the Gulf of Trieste (Lipej, 1999; Marčeta, 1999). Some new (Lipej *et al.*, 1996; Parenti & Bressi, 2001; Lipej *et al.*, 2005) and rare species (Bettoso & Dulčić, 1999) for the Adriatic were noted from the Gulf of Trieste.

During comprehensive surveys of ichthyofauna, certain rare or less known fish species were recorded. The aim of this paper is to present new data on four more or less rare fish species, recently caught in the Gulf of Trieste.

MATERIAL AND METHODS

The area investigated during this study includes the Gulf of Trieste (northern Adriatic Sea). During the 1995–2007 period, information on four fish species, *e.g.* *Luvarus imperialis*, *Mola mola*, *Ophidion barbatum* and *Ranzania laevis*, has been gathered from records documented by the staff of the WWF Miramare Marine Reserve (Trieste, Italy) and Marine Biology Station of the National Institute of Biology (Piran, Slovenia). The data on occurrence of the herewith studied species originated from occasional catches or underwater inspection (Fig. 1).

RESULTS AND DISCUSSION

This paper presents data on four largely rare or less-known fish species, recorded in the Gulf of Trieste during the last decade. Three of them, *Luvarus imperialis*, *Mola mola* and *Ranzania laevis*, are considered typical ocean species, whereas *Ophidion barbatum* is a less-known fish species with particular habitat demands.

Louvar *Luvarus imperialis* (Rafinesque, 1810)

The specimen of *L. imperialis* was caught on August 26th, 2007, in the waters off Grado by the vessel belonging to the Port Authority of Grado. It measured 120 cm TL and weighed 45 kg. Some photographs of the specimen were taken (Fig. 2). Unfortunately, the fish has been discarded.

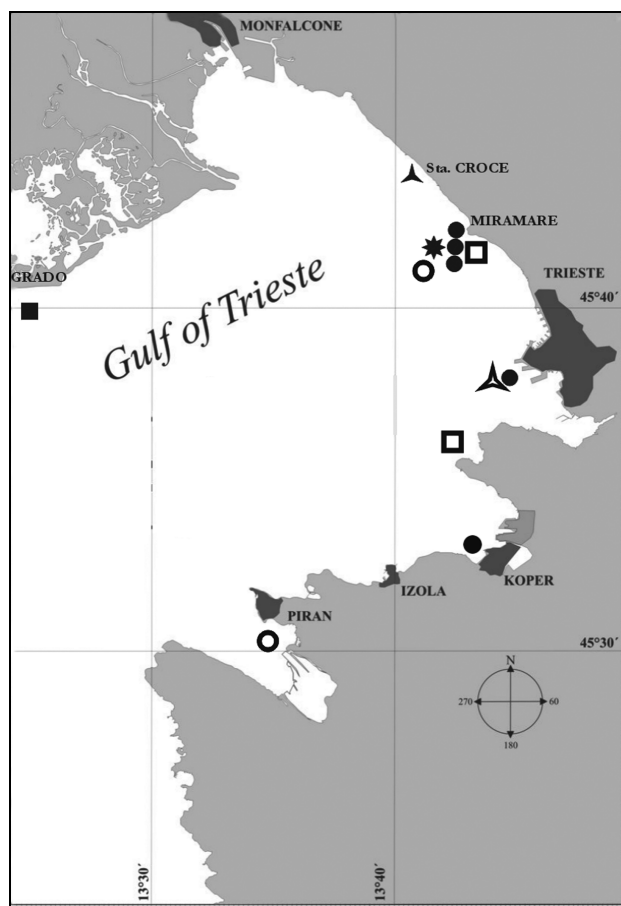


Fig. 1: Map of the Gulf of Trieste with the sites where specimens of the studied fish species were recorded. **Legend:** *Luvarus imperialis*: ■ – new record, □ – old records; *Mola mola*: ● – new records, ○ – old record; *Ranzania laevis*: ▲ – new record, ◇ – old record; *Ophidion barbatum* – ★ – new record.

Sl. 1: Zemljevid Tržaškega zaliva in lokalitete, kjer so bili ujeti ali najdeni primerki obravnavanih vrst. **Legenda:** *Luvarus imperialis*: ■ – nova najdba, □ – stari podatki; *Mola mola*: ● – nove najdbe, ○ – stari podatki; *Ranzania laevis*: ▲ – nova najdba, ◇ – stari podatki; *Ophidion barbatum* – ★ – nova najdba.

Stossich (1876) considered *L. imperialis* a rare and occasional species in the Gulf of Trieste. Graeffe (1906) reported on a specimen of Louvar in the Gulf of Trieste. Bussani (1980) reported on a specimen of Louvar (without any specific data) caught in the Marine protected area of Miramare on July 21st, 1977. Additional two juvenile specimens of Louvar were caught 5 Nm off Miramare in the direction of Koper Bay on the very next day. The first measured 56 cm in TL and weighed 4 kg, while the second measured 60 cm and weighed 4.30 kg (Bussani, 1980).

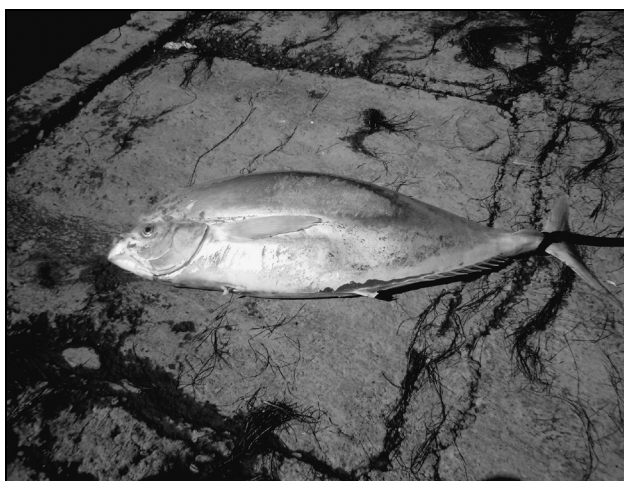


Fig. 2: A specimen of Louvar *Luvarus imperialis* found dead in the waters of Grado. (Photo: by courtesy of the staff of Capitaneria di porto di Grado).

Sl. 2: Primerek pečinke *Luvarus imperialis*, ki so jo našli mrtvo v vodah blizu Gradeža. (Foto: z dovoljenjem posadke luške kapitanije mesta Gradeža).



Fig. 3: Ocean sunfish *Mola mola* found stranded in April 2001 in the Bay of Grignano near Trieste (WWF Miramare archives).

Sl. 3: Morski mesec *Mola mola*, ki je nasedel aprila 2001 v zalivu Baia di Grignano pri Trstu (arhiv WWF Miramare).

Ocean sunfish *Mola mola* (Linnaeus, 1758)

The ocean sunfish *M. mola* has been recorded fairly frequently during the last decade. A specimen of about 1 m in length and 70 kg in weight was recorded in Koper Harbour on September 29th, 1998. The next record dates from April 2001, when a female of 200 cm TL and 400 kg was found stranded in the Baia of Grignano near Trieste. The specimen was deposited in the Museo Civico di Storia naturale di Trieste. The specimen died due to the hook, entangled in the mouth (Beraldo *et al.*, 2002). Another specimen was recorded in November of the same year at almost the same locality. It was sighted and photographed (Fig. 3), but subsequently the specimen died and eventually found stranded in the Baia of Grignano. In April 2002, at least five specimens were recorded in the northern Adriatic; one of them was found stranded in Trieste. The last record of *M. mola* dates to July 13th, 2004, when a specimen was sighted close to the shore beneath Miramare Castle.

According to Stossich (1876), *M. mola* is a rare and occasional species in the Gulf of Trieste. However, the occurrence of the ocean sunfish is much more common in the Adriatic Sea than previously thought. According to Dulčić *et al.* (2007), 43 records of ocean sunfish were made in the Adriatic Sea between 1781 and 2006. Only three specimens, however, have been mentioned in their checklist. Two specimens, one from Koper (1998) and one from Trieste (April 2002), have already been mentioned, whereas the third record is much older and refers to the specimen recorded on April 13th, 1975, in the

waters near Portorož (Jardas & Knežević, 1983). On their list, several other records mentioned in this study are missing. It seems that the occurrence of sunfish is related to the warm season, since the majority of data originated from the March–November period.

Slender sunfish *Ranzania laevis* (Pennant, 1776)

A single specimen of *R. laevis* was caught in mid-June 1995 in the waters off Santa Croce Harbour (near Trieste). The slender sun fish was harpooned by a trident fishing tool called "fiocina". The total length of the fish was 35 cm (Fig. 4).

This is the third record of this species for the Gulf of Trieste. The first record in the area was made by Trois (1884a, b). The second recovery of this species was reported by Specchi & Bussani (1973) for the Port of Trieste on July 21st, 1972. It measured 52 cm and weighed 4.5 kg. Although Jardas and Knežević (1983) considered *R. laevis* fairly rare and occasional fish in the Adriatic Sea, they presented a list of 16 records for the area in the ten year period from 1972 to 1982. Recently, Dulčić *et al.* (2007) presented data dealing with the occurrence of slender sunfish in the Adriatic Sea. In their list, 35 records of *R. laevis* are documented, where only a single record, the capture described by the above mentioned Specchi & Bussani (1973), is listed from the Gulf of Trieste. The data are more or less equally distributed throughout the year.



Fig. 4: A specimen of slender sunfish *Ranzania laevis* caught in mid-June 1995 in the waters off the Santa Croce Harbour (WWF Miramare archives).

Sl. 4: Primerek loparja *Ranzania laevis*, ujetega sredi junija 1995 v mandraču Sv. Križa pri Trstu (arhiv WWF Miramare).

Snake blenny *Ophidion barbatum* Linnaeus, 1758

On September 8th, 2007, a 16 cm TL specimen of *O. barbatum* was caught by hand by a diver swimming in the Miramare Marine Park near Trieste. The specimen was found almost dead on a sandy patch under the bed-rock below Miramare Castle at 8 m depth. The specimen was photographed and subsequently released (Fig. 5).

According to Marčeta (1999), a single specimen of this species has previously been reported from the Gulf of Trieste, *i.e.* in the 19th century. Stossich (1876) considered this species more or less common, particularly in



Fig. 5: Snake blenny *Ophidion barbatum*, photographed on 8 September 2007 in the marine protected area of Miramare. (Photo: D. Poloniato)

Sl. 5: Bradati huj *Ophidion barbatum*, fotografiran 8. septembra 2007 v podvodnem parku Miramare. (Foto: D. Poloniato).

winter months. Since this nocturnal predator lives in fine sandy and muddy habitats, the species would have been probably detected more frequently with the increased sampling frequency in suitable areas, especially during the night.

Possible factors affecting the occurrence of the studied species

Although the Gulf of Trieste represent the northernmost part of the Mediterranean Sea, some apparently open-water (or oceanic) marine organisms occasionally occur in this area. For example, fin whales (*Balaenoptera physalus*) and basking sharks (*Cetorhinus maximus*) have been reported on several occasions in the Gulf of Trieste during the last three decades (see for example Lipej *et al.*, 2000, 2004).

It is difficult to speculate what phenomena affected the occurrence of the three ocean fishes in the Gulf of Trieste, considering that only few specimens have been recorded. However, there is an ongoing trend in the increase of marine fish biodiversity in the Adriatic Sea (see for example Dulčić & Lipej, 2002; Lipej & Dulčić, 2004) and in the Gulf of Trieste as well. Due to the use of new techniques and increased prospection activity, some new and rare species such as *Thorogobius eppihippiatus*, *Millerigobius macrocephalus* and *Apletodon incognitus* have been documented for the very first time in the Slovenian part of the Gulf (Lipej *et al.*, 2005) and in the entire Gulf at the very same time as well.

Nowadays, it is well known that temperature is the main large-scale variable, known to affect fish populations (*sensu* Francour *et al.*, 1994; Dulčić *et al.*, 1999, 2004). In this respect, various cases of movements by some thermophilous southern species such as *Plectorhynchus mediterraneus* (Lipej *et al.*, 1996), *Thalassoma pavo* (Dulčić & Pallaoro, 2002), *Sphoroides pachygaster* (Dulčić, 2002) and others have been already documented in the Adriatic Sea as well. According to Dulčić *et al.* (2007), the occurrence of *M. mola* coincides with sea warming. The same could be said of the herewith mentioned records of this species, as well as of the other two species, *R. laevis* and *L. imperialis*.

It should be pointed out that "rarity" is a subjective and elastic term varying with place, even such a small area as is the Gulf of Trieste, and moreover it is subject to change with our increasing knowledge of the fauna. According to Morović (1973), the rarity of certain fish species could be evaluated from the records in scientific literature. The same author proposed three possibilities regarding rarity. If the species is recorded fewer than five times, it should be treated as a very rare species. If up to ten records have been made, then the species is considered to be rare, whereas fish species caught in certain areas but only in specific season should be treated as fairly rare. According to the proposed criteria, we could

say that *L. imperialis*, *R. laevis* and *O. barbatum* (at least nowadays) could be treated as very rare, and *M. mola* as a rare species in the Gulf of Trieste. If we take into account the entire Adriatic area, Jardas (1985) considered *L. imperialis* and *O. barbatum* rare species, whereas *M. mola* and *R. laevis* are interpreted as fairly rare Adriatic species.

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NOVE NAJDBE NEKATERIH REDKIH IN MANJ ZNANIH RIB V TRŽAŠKEM ZALIVU (SEVERNI JADRAN)

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POVZETEK

Navzlic stoletni tradiciji je Tržaški zaliv z ihtiološkega vidika še vedno razmeroma slabo raziskan. Še vedno se dogaja, da v ta najsevernejši predel Sredozemskega morja zaidejo nekatere vrste rib, ki so redke ali slabo poznane. V tem prispevku navajamo najdbe o štirih vrstah rib, ki so bile doslej komajda kdaj evidentirane v Tržaškem zalivu. Tri od teh, pečinka (*Luvarus imperialis*), morski mesec (*Mola mola*) in lopar (*Ranzania laevis*), so značilne oceanske vrste, huj (*Ophidion barbatum*) pa je manj znana in prezrta ribja vrsta s posebnimi zahtevami glede izbire habitata. Na podlagi novih najdb in dosedanjih zapisov lahko pečinko, loparja in huja opredelimo kot zelo redke vrste z manj kot petimi zapisi o pojavljanju v Tržaškem zalivu, morski mesec pa kot redko vrsto.

Ključne besede: nov zapisi, *Luvarus imperialis*, *Mola mola*, *Ranzania laevis*, *Ophidion barbatum*, Tržaški zaliv

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