

## On the record of red seabream *Pagrus major* (Temminck and Schlegel, 1843) (Osteichthyes: Sparidae) in the Adriatic Sea

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**SUMMARY:** One specimen of red seabream *Pagrus major*, 44.9 cm total length, was caught in the eastern middle Adriatic (Island Molat, Cape Bonaster) by long-line hook at a depth of about 20 m on a hard rocky bottom on 25 September 2004. It is the first record of this species in the Adriatic Sea and Mediterranean area.

**Keywords:** *Pagrus major*, Sparidae, record, Mediterranean, Adriatic.

**RESUMEN:** APARICIÓN DE LA ESPECIE *PAGRUS MAJOR* (TEMMINCK AND SCHLEGEL, 1843) (OSTEICHTHYES: SPARIDAE) EN EL MAR ADRIÁTICO. – Un espécimen de la especie *Pagrus major* de 44.9 cm de longitud total se recolectó en la parte este del Adriático medio (isla Molat, cabo Bonaster) mediante un palangre a la profundidad a unos 20 m sobre un fondo rocoso duro el 25 de septiembre de 2004. Esta es la primera aparición de esta especie en el mar Adriático y en el área Mediterránea.

**Palabras clave:** *Pagrus major*, Sparidae, aparición, Mediterráneo, Adriático.

### INTRODUCTION

The family Sparidae contains 35 genera and 112 species, distributed mainly in tropical and temperate waters of the Atlantic, Pacific and Indian oceans (Froese and Pauly, 2005). Eighteen of these species inhabit the Adriatic continental shelf (Jardas, 1996). Two of these belong to the genus *Pagrus* (Cuvier, 1816): *Pagrus pagrus* (Linnaeus, 1758) and *Pagrus coeruleostictus* (Valenciennes, 1830). Most sparid species have been used in mariculture and cultivated in cages (Skaramuca *et al.*, 2000).

Red seabream, *Pagrus major* (Temminck and Schlegel, 1843) is a demersal species that occurs in the northwest Pacific (the northeastern part of the

South China Sea northward towards Japan) at depths between 10 and 50 m. It is a highly commercial species in fisheries, aquaculture (cultivated in cages), as a game fish and in public aquariums (Eggleston, 1974).

One specimen (♂, not releasing sperm) of red sea bream (Fig. 1), 44.9 cm in total length (TL) (total weight 1247 g), was caught in the eastern middle Adriatic (Island Molat, Cape Bonaster) (Fig. 2) by long-line hook at a depth of about 20 m on a hard rocky bottom on 25<sup>th</sup> September 2004. The specimen was deposited in the Ichthyological Collection of the Institute of Oceanography and Fisheries (Split) and received the catalogue number: IOR 289. It is the first record of this species in the Adriatic Sea and Mediterranean area.

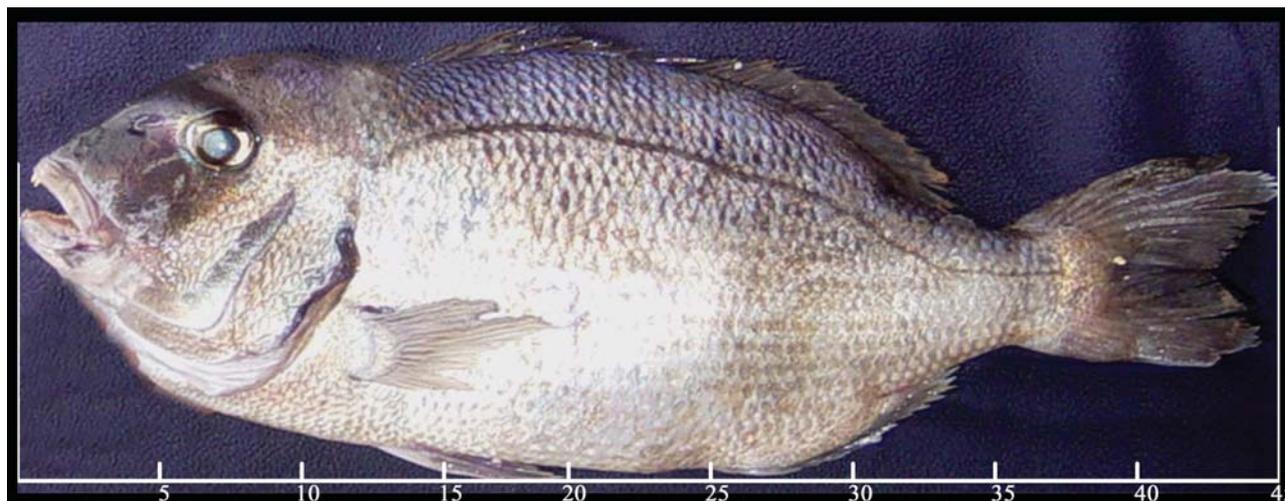


FIG. 1. – Specimen of *Pagrus major* (TL = 44.9 cm) caught near Cape Bonaster (Island Molat, eastern middle Adriatic).

#### DESCRIPTION OF ADRIATIC SPECIMEN

Body robust, oblong, moderately compressed. Upper profile of head convex with a bulge above eye. Lower jaw slightly shorter than upper. Head and upper body dark violet, sides and belly silvery. Several small bright blue spots on upper sides. All spines of dorsal fin tough and not elongated. Caudal fin forked with pointed lobes. Scales moderately large, absent from bases of soft dorsal and anal fins. Posterior margin of caudal fin black, lower margin white. Total length (TL) = 44.9 cm; Standard length = 38.7 cm (86.2%TL); Fork length = 42.4 cm (94.4%TL); Preanal length = 23.1 cm (51.5%TL); Predorsal length = 10.3 cm (22.9%TL); Prepelvic length = 10.7 cm (23.8%TL); Prepectoral length =

8.7 cm (19.4%TL); Body depth = 15.8 cm (35.2%TL); Head length (HL) = 7.9 cm (17.6%TL); Eye diameter = 2.4 cm (30.4%HL); Preorbital length = 2.2 cm (27.9%HL). Dorsal fin: D XII-10, Anal fin: A III-8, Pectoral fin: P 15. Scales on lateral line: 56. Gill rakers. 18 (lower limb: 11, upper limb: 7). All descriptions and meristic characters are in agreement with those presented by Nakabo (2002).

#### REMARKS

The specimen caught probably came from the aquaculture. It is known that *P. major* was raised in local aquaculture. Red sea bream was introduced into Italy, Cyprus and Croatia in the hope that it could be successfully cultured (Kraljević and Dulčić, 1999). In 1985, the Center for Mariculture - CENMAR (Zadar, Croatia) imported fertilized eggs of this species and they kept parental stock (first in Europe) (Šarušić, personal communication) in cages in Lamjana cove (Island Pašman, eastern middle Adriatic). The last fertilization was done in 1999 and then the cultivation of this species in cages was stopped. The most probable explanation for this record is that specimens of *P. major* escaped from the cages and existed in the wild for at least 6 years. Since this species is a popular aquarium fish and survives well in aquariums, there is also an increased chance that specimens might ultimately escape or be released from public or private aquariums. According to an observed deformation on the dorsal side of the head, already

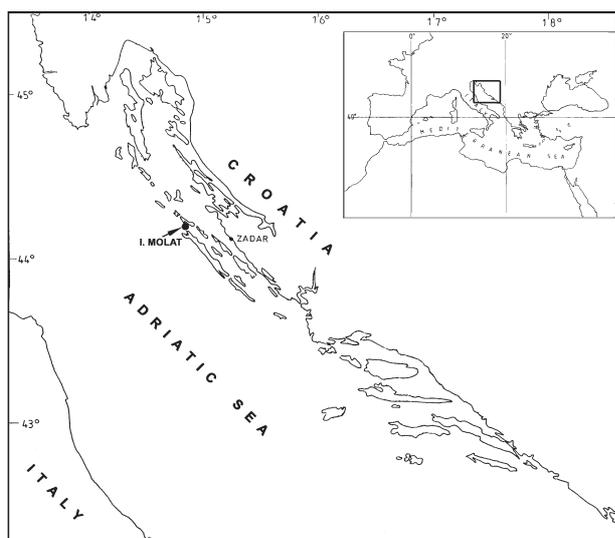


FIG. 2. – Location (•) where the specimen of *Pagrus major* was caught (eastern middle Adriatic, Croatian waters).

noted in reared sparid specimens (Kraljević, personal communication), we believe that this specimen escaped from the cages.

The potential impact of this introduction on the other species in the area is still unknown but it could affect niche separation (habitat selection, feeding habits and spawning season) between red sea bream and indigenous sparid species from the Adriatic Sea. It is also premature to say whether this species is already permanently established in Adriatic waters. There is no information on the natural reproduction of the species in the area. However, hybridization between *P. major* and *Dentex dentex* in aquarium conditions has been documented (Kraljević and Dulčić, 1999). This calls for controlling the natural sparid populations in order to detect eventual natural hybrids and their viability, and greater care in the future when introducing an allopatric species into an environment already populated with the same family. However, as *P. major* is a highly adaptable fish (predator which feeds on zoobenthos and nekton) with a high tolerance to temperature and variations in other physical and chemical parameters (Eggleston, 1974; Foscarini, 1988), the possibility of the population becoming established in the wild cannot be excluded.

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