

SOLEIDAE

soles

Solea senegalensis

Kaup, 1858



Photo : Jean-Pierre Quignard

Relevant synonyms: *Solea melanochira*

Misidentification: None

Meristic formula: D, 72-95; A, 60-75; P, 8-12/8-10; LL, 119-130; GR, 6-7/2

SHORT DESCRIPTION

Body oval. Both eyes on the right side. Caudal fin distinctly separated from dorsal and anal fin. Upper eye less than its own longitudinal length from dorsal profile of the head and less than interorbital length. Anterior nostril on blind side tubular, not conspicuously swollen, its diameter close to half of eye diameter. Tube of the anterior nostril on eyed side not reaching to front border of the lower eye. Pectoral fin on the blind side.

color: eyed side brownish with blue spots in fresh specimens. Pectoral fin on eyed side with white, yellowish or gray rays and a black membrane.

common size: in the Mediterranean 20-35 cm; in the Atlantic 45 cm, with maximum 60 cm.

DISTINGUISHING CHARACTERISTICS

- *Solea solea*: black blotches on the upper distal part of pectoral fin on the eye side.
- *Solea lascaris* and *S. kleini*: enlarged with fringed rim anterior nostril on the blind side, its diameter greater than the body scales.
- *Monochirus hispidus*: no pectoral fin on blind side.
- *Dagetichthys lusitana*: dorsal and anal fins confluent by small membrane to caudal fin.
- *Microchirus hexophthalmus* and *Microchirus ocellatus*: distinct ocelli on upper side.
- *Microchirus* spp., *Bathysolea profundicola*, *Buglossidium luteum* and *Dicologlossa cuneata*: pectoral fin on the blind side reduced to 2-3 rays.

Pleuronectidae: free pre-operculum margin.

Other flat fishes families: eyes on the left side.

BIOLOGY / ECOLOGY

Feeds on benthic organisms, crustaceans, bivalves and polychaetes. Sexual maturity is reached at 30 cm. Spawning seasons in May-June (Spanish and French coasts in the Atlantic) and February-May (Tunisian coast in the Mediterranean). Eggs and larvae are planktonic.

habitat: benthic sandy or muddy substrate, from brackish lagoons to 100 m depth in the sea.

DISTRIBUTION

Worldwide: eastern Atlantic from Angola to La Rochelle, France.

Mediterranean: recorded first from coast of Spain, as *Solea melanochira* (Borja, 1920; Rodriguez and Rodriguez, 1980). Successive records from northern coast of Tunisia (Torchio, 1973), Bizerte and Ichkeul Lagoon (Goucha and Ktari, 1981), Gulf of Lions (Quignard *et al.*, 1986), Gulf of Taranto, Italy (from genetic analysis; Tinti and Piccinetti, 2000), Mellah lagoon, eastern Algeria (Chaoui and Kara, 2004), Strait of Sicily (Bianchini and Ragonese, 2007), Sea of Marmara, Aegean Sea and eastern Mediterranean off Turkey (Fricke *et al.*, 2007), and Tel-Aviv, Israel (Golani *et al.*, 2013).

MODE OF INTRODUCTION

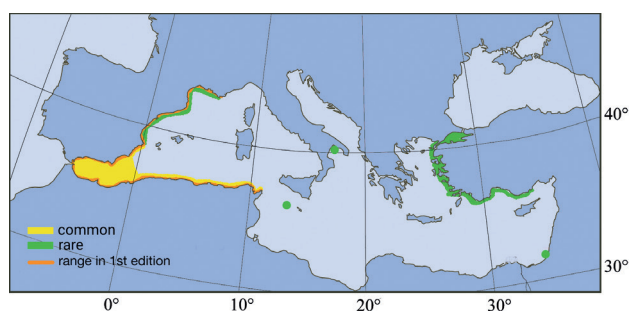
Via Gibraltar.

ESTABLISHMENT SUCCESS

Common.

IMPORTANCE TO HUMANS

Of growing importance in northern Tunisian fisheries: 25% of soles caught in Ichkeul Lagoon (Bizerte) are *S. senegalensis*. It is exploited with trammel nets in Mellah lagoon (eastern Algeria), mainly between September and February, with annual catches of 400 kg (660 specimens).



KEY REFERENCES

- Chaoui L. and Kara M.H. 2004. First record of *Solea senegalensis* (Soleidae) in Mellah lagoon (North-East Algeria). *Cybium*, 28(3): 267-268.
- Golani D., Fricke R. and Appelbaum-Golani B. 2013. First record of the Senegalese sole, *Solea senegalensis* (Actinopterygii: Pleuronectiformes: Soleidae) from the Mediterranean coast of Israel. *Acta Ichthyologica et Piscatoria*, 43 (4): 319-321.
- Goucha M. and Ktari M.H. 1981. Présence de *Solea senegalensis* Kaup, 1858 sur les côtes nord de la Tunisie. *Rapp. Comm. int. Mer Médit.*, 27(5): 131-133.
- Quignard J.P., Bourquard C. and Shehata S. 1986. Note faunistique concernant les Soleidae du Golfe du Lion (Pisces, Soleidae). *Vie et Milieu*, 36: 141-143.
- Rodriguez A. and Rodriguez R.B. 1980. Primera cita en el Mediterráneo de *Solea senegalensis* Kaup, 1858 (Heterosoma, Soleidae). *Investigación Pesquera*, 44(2): 291-295.