

Information about the Environment and for travellers in Crete:

The Pearly razor fish (*Xyrichtys novacula*) on Crete's south coast A species of fish from the family wrasses (Labridae)

A contribution of our co-operation partner *Martina Stockinger*, Plakias ¹⁾

This delightful fish can be found on the south coast of Crete. Its haunt are sands in a deep between one and 90 meters (FishBase, 2016). It can be observed during dive sessions in the beautiful Souda Bay, just 5 minutes away from Plakias.

The academic name originates from the Greek and means “xyreo” = “cuts like a knife” and “ichtys” = fish. This term is more than proper since its forehead seems to be vertical flattened and horizontal tapered. If this fish would see you face on, you would have problems to see it, because viewed frontal it is like as thin as a rake.

This form indeed has practical reasons because at risk it buries like a flash in the sand. Thereby its knife-like forehead benefits. However this little fish uses also another trick to bolt as fast as possible within the sand. It has specific prepared places in the sand which also act as lair. These little spots already have scattered sand which make it easier to dunk and therefore save for violations. The ecosystem sandy soil does not offer protection only but also the necessary nourishment. The Pearly razor fish nourishes of irregular sea urchin (Echinodea), shells (Bivalven), snails (Gastropoden) and crustaceans (sunphylum Crustacea) which are found within the sand (Cardinale et al., 1997).



All these organisms protect themselves with a more or less hard skin (exoskeleton). In order to be able to nourish from that, the Pearly Razor fish has a pharyngeal set of teeth. With this extra set of teeth which is located in the pharynx, it has the ability to crack the exoskeletons.

During the dive session in Souda Bay between April and Mai, mainly females could be watched. From mid-June until now also isolated male could be viewed.

The male Pearly Razor fish has its own territory and lives within a harem with several females. It defends it of other males.

The sexual pattern of this species is very interesting. They rank among the protogyny hermaphrodite (Sordi, 1967). This means that they all are born as female and with a certain age or a certain body size pass through a Gender reassignment. There are 4 phases between the juvenile fish and the final male. Within the first phase the female is identified as initial female or young animal. Within this period the fishes are 1 to 2 years old. The body colour is light pink with yellow vertical stripes. In advance they have a white, pearl-white spot within the posterior region (closer to the tail fin) below the pectoral fin. Within the second phase the female is called secondary female. At this point they are about 3 years old and the exterior appearance changes.



The general body coloration gets bolt and can be almost a brash red. The former yellow stripes change slowly to blue. The third phase is the so called transition phase. This begins roughly within the fourth year of age. The body inclusive the head changes colour to a grey-violet, the back stays reddish and the blue strips on the head change to greenish. In phase 4 they are finally males. With a more greenish body colour getting darker to the back. The white, pearl-white spot disappears (Cardinale et al., 1998)

This species belongs to the wrasses. This kind of sexual pattern occurs more often within this family (Randall et al., 1998). In advance, this fish family is known for a specific swimming style. Labridae use for movement solely their pectoral fin while most of the other fish families use their tailfin to get forward. Although most of the sexual behaviour of this fish is already known, there are still some open questions. It would be interesting to know how deep the fish goes into the sand. How do they prevent from block their gills with sand while they are bury? May be we get some more answers soon!

With *Eolabroides* from the Monte-Bolca-Formation wrasses are verified since the Eocene. The origin of this family is probably in the upper cretaceous age before 78 to 66 million years.

References:

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¹⁾ *Martina Stockinger* is an associate of mare-mundi locally on Crete; more information's can be found here at: [<http://mare-mundi.eu/mehr-fuer-den-meeresschutz-und-die-umweltbildung-auf-kreta-erreichen/>] - [<http://mare-mundi.eu/mare-mundi-station-kreta/>] und [<http://mare-mundi.eu/neues-von-der-mare-mundi-station-kreta/>].

