

Scartella cristata (Molly Miller)

Family: Blenniidae (Combtooth Blennies)

Order: Perciformes (Perch and Allied Fish)

Class: Actinopterygii (Ray-finned Fish)



Fig. 1. Molly miller, *Scartella cristata*.

[http://meerwasserwiki.de/w/images/thumb/6/67/Scartella_cristata downloaded 24 October 2016]

TRAITS. The molly miller *Scartella cristata* is a small fish of the family Blenniidae, the combtooth blennies, which have a set of comb-like teeth in their jaws (Wikipedia, 2015). However, they are unable to adequately soften their food due to the absence of pharyngeal teeth (Mendes et al., 2009). They are generally about 10cm long, with a maximum length of 12cm. In comparison to their size, they have a large, bulging head and eyes, with hair-like projections called cirri on top (Wingerter, 2012). Their bodies are a mixture of cream, shades of olive green, grey and brown colours with dark brown and sometimes reddish body bars (Fig. 1), allowing them to camouflage in their habitat (Wingerter, 2012). In order to detect changes in water movement and pressure, they have a lateral line system (Wikipedia, 2015). Their swim bladders are poorly developed, less buoyant since they are shallow benthic fish. Sexual dimorphism (Fig. 2) exists in this species as males and females differ in size and colour; females are generally broader and are of a lighter colour (Wingerter, 2012).

DISTRIBUTION. *Scartella cristata* is found extensively throughout the eastern and western central Atlantic, Mediterranean and north-west Pacific Ocean (IUCN, 2016) (Fig. 3).

HABITAT AND ECOLOGY. They occupy benthic temperate and tropical marine regions (Mackiewicz et al., 2005) at a shallow depth of 10m (Wingerter, 2012). They utilise the crevices of substratum (rocks or coral reefs) and dead barnacles for shelter (IUCN, 2016) and nests (Mackiewicz et al., 2005). They live alone or in small groups (Fig. 4), often hiding in crevices in rocks, shells or algae that resemble their body colour (Wingerter, 2012). Gut analysis by Mendes et al (2009) revealed that the main constituents of their diet were filamentous algae (25-85%) such as *Cladophora* and *Ectocarpus*, small amounts of diatoms and calcareous and corticated algae; detritus (35-65%) containing colonies of micro-organisms such as bacteria (Cyanobacteria), fungi and protozoans. However, they are suitably described as omnivores since they also consume a variety of small invertebrates (Wingerter, 2012). Warm temperatures increase feeding rate and cool temperatures decrease it. Feeding increases during the early daylight hours and decreases before sunset (Mendes et al., 2009). Larvae feed on zooplankton and then change to the previously mentioned diet.

REPRODUCTION. External fertilisation occurs, with care of the eggs in nests or holes, e.g. empty barnacle shells. Males are dichromatic, existing in two forms based on the roles they play in juvenile development. ‘Nester’ males have larger fins and mucus secreting structures, which are reduced in ‘sneakers’ (Neat et al., 2003). The nester identifies a suitable nest, attracts a female and fertilises her eggs if she complies (Wingerter, 2012). After seven days, a nest with a few hundred eggs (possibly from different females) will hatch into planktonic larvae (Wingerter, 2012). Sneakers steal opportunities to fertilise a proportion of the eggs guarded by nesters, resulting in a mixed brood of young. Nesters fan and physically defend the nest of fertilised eggs from predators and sneakers (Mackiewicz et al., 2009).

APPLIED BIOLOGY. Although *Scartella cristata* has been used in aquarium trade, current population is not threatened and therefore it is of Least Concern on the IUCN Red List (IUCN, 2016).

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Fig. 2. Male (left) and female (right) exhibiting sexual dimorphism in *Scartella cristata*.

[<http://www.advancedaquarist.com/2012/9/fish>, downloaded 15 October 2016]

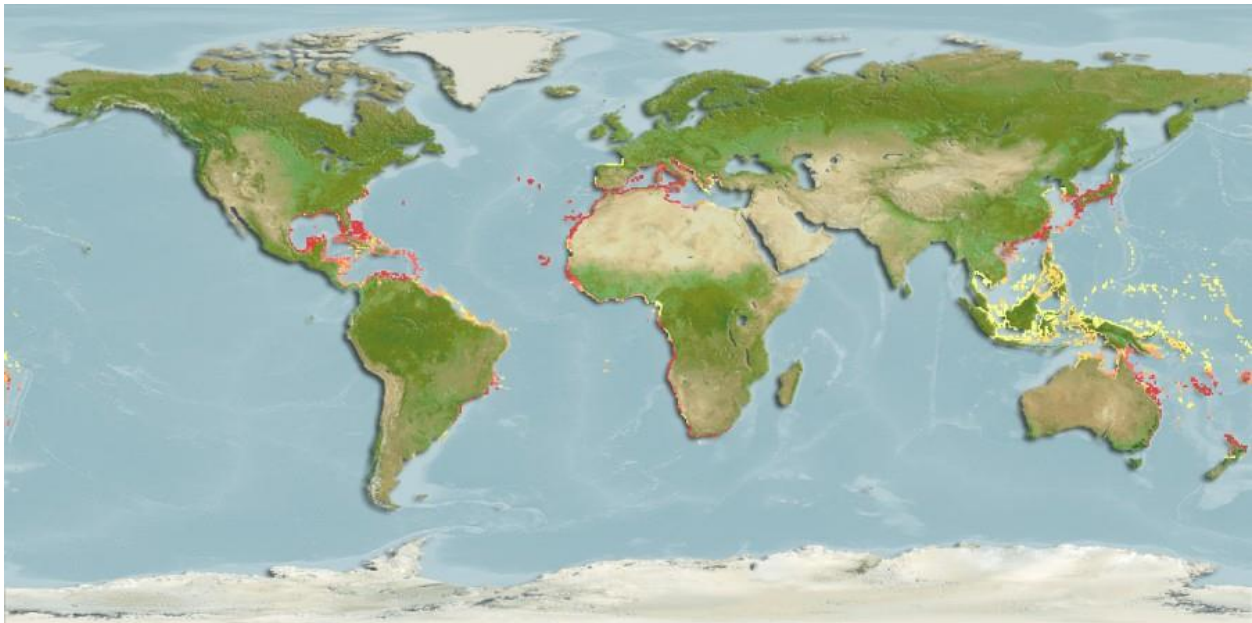


Fig. 3. Range of distribution of *Scartella cristata*.

[http://www.aquamaps.org/receive.php?type_of_map=regular, downloaded 15 October 2016]



Fig. 4. Small group of *Scartella cristata* camouflaged in the substratum.

[<http://www.naturamediterraneo.com/Public/data7>, downloaded 15 October 2016]

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