

Hermodice carunculata (Bearded Fireworm)

Order: Aciculata (Active Bristleworms)

Class: Polychaeta (Bristleworms)

Phylum: Annelida (Segmented Worms)



Fig. 1. Bearded fireworm, *Hermodice carunculata*.

[<http://www.gettyimages.com/detail/news-photo/bearded-fireworm-on-orange-cup-coral-hermodice-carunculata-news-photo/146140969>, downloaded 23 February 2016]

TRAITS. *Hermodice carunculata*, also known as the bearded fireworm, is a type of active (not tube-dwelling) bristleworm which has a range of diverse colours such as green, yellow, red and white, with a pearly glow (Fig. 1). These worms typically have lengths of approximately 4-10cm, although some individuals reach lengths as much as 13.8cm (Sain, 2016). These beautiful flattened worms are protected by a cuticle divided into 60-150 identical segments by fine white streaks. Each segment possesses a group of stinging white bristles, a pair of red branched gills, and a pair of parapodia (structures for locomotion) along the sides. The white bristles are fragile, hollow, venom-filled and are easily torn upon handling. On the anterior part of the worm is a red appendage called the caruncle which is a chemo-sensory organ associated with smell. The ventral (underside) mouth of these worm is situated on the segment behind the head, which has the eyes and other sensory organs.

DISTRIBUTION. The bearded fireworm *Hermodice carunculata* is found in the Caribbean Sea and the Gulf of Mexico, Ascension Island and the Azores in Atlantic Ocean, and in the Mediterranean and Red Seas (Fig. 2) (Polychaeta, 2008).

HABITAT AND ACTIVITY. These bristleworms are commonly found beneath stones in rocky areas, on reefs and on some muddy bottoms along the reef. They are found in depths of up to 150m in their native habitat, however they can also be found close to the surface in wreckage (MarineBio, 2011). These fireworms are ravenous predators which spend most of their time clambering around the rocks in search of food (Fig. 3). They are highly mobile and are mainly active at night, and least active during the middle of the day. They are very slow creatures and generally not a threat unless touched (Lamar University, 2013).

FOOD AND FEEDING. These worms are voracious predators which feed on soft and hard corals, sea anemones, and small crustaceans and other invertebrates. The worm can engulf tip of the coral within its pharynx and remove the coral tissue directly from the skeleton, typically within 5-10 minutes. This feeding becomes noticeable due to the absence of colour on the coral (Lamar University, 2013). However these worms are also scavengers, readily eating other organisms in captivity such as squid, clam, shrimp, krill, and mussels along with any lifeless animal on the bottom of the ocean (MarineBio, 2011). They identify prey using an olfactory organ called a caruncle which is also used to search and track prey across a habitat (Archipelago Wildlife, 2009).

REPRODUCTION. These worms utilize two forms of reproduction. In asexual reproduction these worms undergo fragmentation by separating their body into two or more fragments, which regenerate to produce a head and tail, growing into new individuals (Ahrens, 2013). These worms also reproduce sexually, spawning 2-5 days after a full moon. The larvae then hatch and drift out to sea and continue the life cycle (Lamar University, 2013).

BEHAVIOUR. They are sometimes found in a group during feeding, however this occurs in rare instances (Lamar University, 2013) (Fig 4). When threatened the fireworm flares out the venom-filled bristles to defend itself. These bristles easily infiltrate the skin where they break and cause a burning sensation that can last for weeks (MarineBio, 2011). The bearded fireworm is fluorescent at night (Fig. 5), a phenomenon of unknown function also found in many other marine invertebrates (Irwin, 2010).

APPLIED ECOLOGY. *Hermodice carunculata* is not listed in the International Union for Conservation of Nature (IUCN) data base. They present no risk to humans unless they come in contact with each other during swimming (Lamar University, 2013).

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Sain, T. 2016. Our Breathing Planet. <http://www.ourbreathingplanet.com/bearded-fireworm/>. Accessed February 20, 2016.

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Posted online: 2016



Fig. 2. Distribution of the bearded fireworm.

[<http://www.marinespecies.org/polychaeta/aphia.php?p=taxdetails&id=129831>, downloaded 24 April 2016]



Fig. 3. A bearded fireworm feeding on a starfish.

[<http://www.gettyimages.com/detail/photo/fire-worm-feeding-on-sea-star-high-res-stock-photography/513094243>, downloaded 28 February 2016]



Fig. 4. Interaction between two bearded fireworms.

[<https://cretazine.com/en/crete/travel-explore/crete-360/item/1734-the-sea-bed-of-asterousion>, downloaded 28 February 2016]



Fig. 5. A bearded fireworm showing fluorescence at night.

[<http://www.uwphotographyguide.com/category/article/featured-artist>, downloaded 28 February 2016]

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