Morphometric Study of Ophioplocus imbricatus (Müller & Troschel, 1842) from the coastal waters of Pakistan

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ABSTRACT

Introduction: The class Ophiuroidea is considered the largest group among the phylum Echinodermata with a pronounced diversity of about 2,096 recognized species (Stöhr et al. 2020). The morphological body plan is composed of a pentagonal to round central disk and five arms that sharply depart from the disk. However, some species exhibit six, seven, or up to ten arms that can be branched once or several times (Stöhr et al. 2012). Ophiuroids occupy marine benthic habitats and can be found in all the oceans, from the poles to the equator and from the intertidal to the hadal zones (Stöhr et al. 2012); although some species can tolerate brackish environments (Hendler 1996). Ophioplocus imbricatus is considered the frequently distributed brittle star throughout the IWP region and found around (Stohr and Hansson, 2009; Hendler et al., 1995). The ecological significance of ophiuroids in benthic ecosystems can be verified regarding their distribution and abundance.

Objectives: The current study focused the morphometric relationships of selected species (Ophioplocus imbricatus) of Ophiuroidea and rate of regenerated arms in the natural environment.

Materials and Methods: The specimens of Ophioplocus imbricatus was collected from the sandy coast of Rocky ledge of Buleji. The sampling was done at low tide level during the month of September and October 2021. Initially, the samples were preserved in the Ice box and later preserved in Alcohol. The morphometric (weight, length of each arms, and diameter of disc) data was taken by the help of divider and scale. The obtained data were analyzed through Excel and Minitab ver 19.0.

Results: A total of 25 specimens of Ophioplocus imbricatus was analysed for the morphometric study. The positive correlation was observed in the diameter and the length of the arms. The estimated mean disc size was 5.7 mm with the mean arm length of 38.6 mm. The ratio of regenerated arms were also estimated from the natural population.

Conclusion: This preliminary study provides the importance of the species in the benthic ecosystem and suitability of habitat for these species and also provides potentially relevant information for future systematic, biological and phylogenetic studies.

Keywords: Biogeographic, Morphometric, mean size, Disc diameter , arms Ophiuroid

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