PHYLUM: HEMICHORDATA

Authors

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Phylum: HEMICHORDATA

Cephalodiscus gilchristi

Hemichordates form a small phylum of only a few hundred species, most commonly known being the acorn worms. Some DNA-based studies of evolution suggest that hemichordates are actually closer to echinoderms than to true chordates.

The Hemichordate phylum currently consists of two classes: Enteropneusta (acorn worms, not dealt with in this guide) and Graptolithoidea (previously Pterobranchia). Graptolithoidea consist of seven orders, of which only Cephalodiscoidea is addressed in this guide, represented by a single species, *Cephalodiscus gilchristi*.

Approximately 100 hemichordates have been described with at least 11 species recorded in South Africa.

Graptolithoidea mostly form colonies in which the individuals are interconnected by stems or stolons. Almost all species create and live within a network of tubes. These tubes are made up of collagen protein, secreted by special glands. Individuals, or zooids, that live within the tubes are often less than one millimeter long.

Collection and preservation

Specimens should be frozen immediately with a portion (± 30 mm) of the animal preserved in 96% ethanol. Care should be taken to ensure the minute zooids are retained with the tube network.

References

Gilchrist JD. 1917. On the development of the Cape Cephalodiscus. *Quarterly Journal of Microscopical Science* 189-211.

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van der Land J. 2015. Cephalodiscus gilchristi Ridewood, 1908. In: Shenkar N, Swalla BJ, van der Land J. 2015. *Hemichordata World Database*. Accessed through World Register of Marine Species, www.marinespecies.org, on 2016-01-06.

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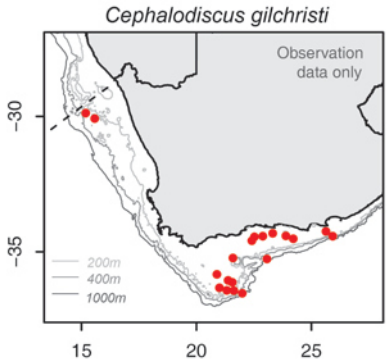
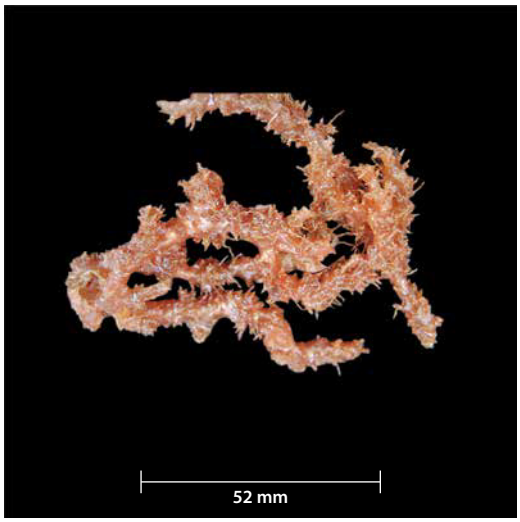
Potential VME

Cephalodiscus gilchristi (AGAMAL)

Phylum:	Hemichordata
Class:	Graptolithoidea
Order:	Cephalodiscoidea
Family:	Cephalodiscidae
Genus:	*Cephalodiscus*
Species:	*gilchristi*
Common name:	Agar animal





Distinguishing features

Very little is known about this unusual animal. Colonial species harbouring polypides (zooids) within the branched tubes make up the structure of the animal. Tubes joined together at base are thought to provide attachment to substratum. Base larger in diameter than tubes and without spines. Zooids reside in cavities of the branched tubes (tubarium). Juveniles are believed to move through the structures to form new branches. Solid spines occur on the tubarium along with ostia (apertures). *Cephalodiscus* means 'disk-head'.

Colour

Red-orange to brown.

Size

Largest recorded 190 mm in length and 110 mm wide.

Distribution

South African endemic. Mostly South Coast of South Africa but specimens have been recorded from West Coast.

Similar species

None.

References

Gilchrist JD. 1917. On the development of the Cape Cephalodiscus. *Quarterly Journal of Microscopical Science* 189-211.

Ridewood WG. 1908. A new species of Cephalodiscus from the Cape seas. *Marine investigations in South Africa* 4:174-192.