Chaetognatha: arrow worms

UNDERWATER FIELD GUIDE TO ROSS ISLAND & McMURDO SOUND, ANTARCTICA

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Photographs: Paul Cziko / McMurdo Oceanographic Observatory at https://moo-antarctica.net/live

The National Science Foundation's Office of Polar Programs sponsored Norbert Wu on an Artist's and Writer's Grant project, in which Peter Brueggeman participated. One outcome from Wu's endeavor is this Field Guide, which builds upon principal photography by Norbert Wu, with photos from other photographers, who are credited on their photographs and above. This Field Guide is intended to facilitate underwater/topside field identification from visual characters, and there can be some uncertainty in identifications solely from photographs.

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Arrow worms are predatory marine worms that are planktonic except for one genus \cite{1,3}. The arrow worms in these photos were about ten centimeters long \cite{2}. This ten centimeter length and location in McMurdo Sound south of the Antarctic Convergence, indicates they are *Pseudosagitta gazellae*, which has lengths up to 10.5 centimeters in Antarctic waters \cite{3,6}. *P. gazellae* is found in Antarctic and subantarctic waters, southeastern Australia, Tasmania, and New Zealand \cite{6}.

Here’s a line drawing of *Pseudosagitta. gazellae* for comparison \cite{6}. Chaetognaths swim/glide and float, with their fins being flotation devices, not propulsion; when the worm sinks, longitudinal muscles contract rapidly, and the worm darts forward \cite{3}. Copepods are the main prey of chaetognaths \cite{4}.

**Taxonomic Note:** Genus was changed to *Pseudosagitta* from *Sagitta* \cite{5}.

February 2020: taxonomic name checked in Zoological Record and World Register of Marine Species