

 Puget Sound Polychaetes:
Family Capitellidae

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General characters (from Blake, 2000)

- Capitellids have capillary setae anteriorly, hooded hooks posteriorly.
- No structures on anterior end; prostomium is very small, may have eyes but hard to see.
- Genera distinguished by number of thoracic segments with capillary setae.
- However, juveniles will have fewer segments with capillary setae than adults...this is confusing. As they mature, they grow more setigers with capillary setae.
- Posteriorly, abdomen has hooded hooks, if the genus has gills (branchiae), they will be on the abdomen. The gills can be from simple, swollen bump on notopodium, to one or more tufts; can be retractable or nonretractable.
- For some species you need the posterior end to tell the difference from other species.

General notes

- We will encounter capitellids frequently in our Puget Sound samples, but realize that they can be confused with both Oligochaeta and Arenicolidae.
- Capitellids look a lot like oligochaetes, so we need to be able to distinguish between them
- Oligochaetes with few setae, can be bifid, capillary, or long and hair-like, never with hooded hooks.
- Capitellids will always have hooded hooks.
- Family Arenicolidae – a family of polychaetes that we encounter that look a whole lot like capitellids. These have capillary setae and non-hooded hooks. Posterior end has section with no setae at all.
- Methyl green staining patterns do not work well for capitellids. The patterns are not consistent.

Genus *Barantolla*

- Capillary setae present in setigers 1-6.
- Prostomium looks “pushed in”, like it was chasing parked cars! Very distinct.
- Setiger 7 with mixed capillaries and hooded hooks or with hooks only.
- Thoracic setae capillaries and hooks.
- Thorax with 11 setigers.
- Genital spines absent.

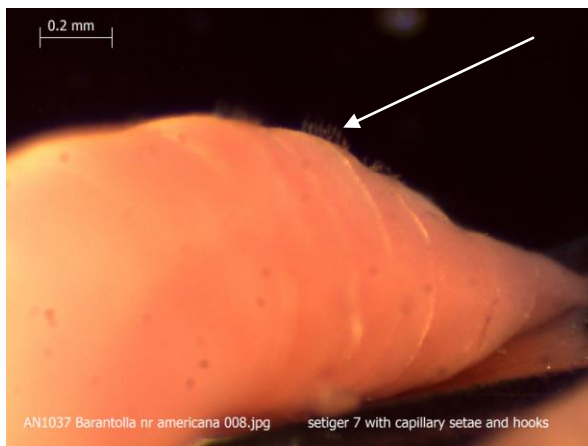
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Barantolla nr. americana

- The Puget Sound species differs from the Hartman, 1963 original description in lacking mixed capillary setae and hooded hooks on setigers 7 and 8. The Puget Sound “nr” species has mixed setae/hooks only on setiger 7.
- The Puget Sound species also has an inflated anterior end and two lateral grooves along the body.
- It is probably an undescribed species. (Ruff 2013, personal communication)



Anterior end, lateral view, note “pushed in” prostomium, lateral groove (lg) (l,r)



Setiger 7 with capillary setae and hooded hooks (difficult to see at this magnification)

Genus *Capitella*

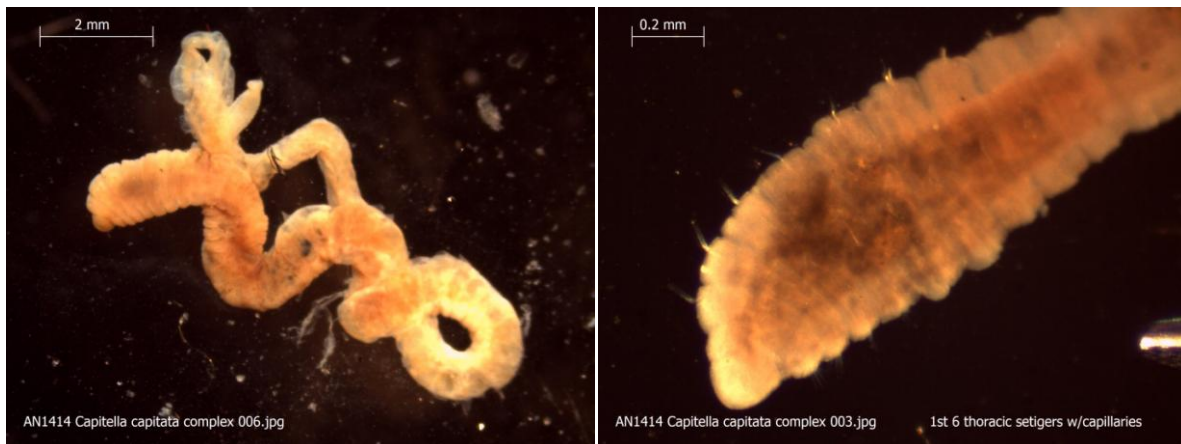
- Thorax with 9 setigers.
- Genital spines sometimes present in setigers 8-9 (very noticeable when present, golden, thick).

Capitella capitata complex

- Strong resemblance to each other but can't clearly distinguish.
- "Systematics of the genus *Capitella* have become very complex in recent years owing to the discovery of biological sibling species....Because of the difficulty of recognizing these siblings in routine benthic surveys, it has become common practice to refer to *Capitella capitata* as *C. capitata* spp. complex." (Blake in Blake et al., 2000)
- 6 thoracic setigers with capillary setae, capillaries in both rami (this may differ with juveniles...we saw capillaries to setiger 5 and to setiger 7).
- To distinguish from oligochaetes...*Capitella* has...
 - Body sometimes with a purplish hue.
 - Conical prostomium/peristomium combination.
 - More abundant capillary setae.



Whole body, lateral (l,r)



Whole body (l), anterior end with 6 thoracic setigers with capillary setae (r)



Dorsal genital hooks on setigers 8-9

Genus *Heteromastus*

- Thorax with 11 setigers.
- Genital spines absent.
- Thoracic setae capillaries and hooks.
- **Capillary setae present in setigers 1-5, setigers 6-11 with hooks only.**

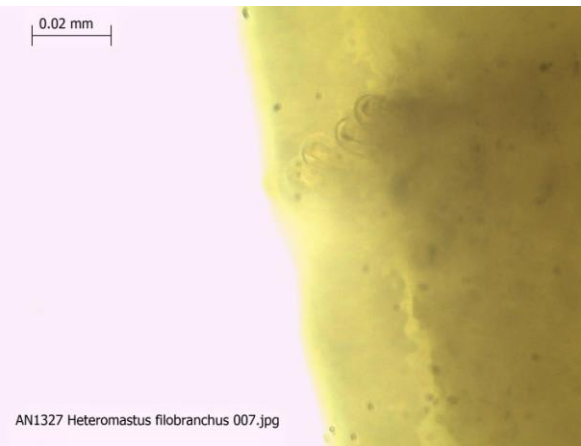
Heteromastus filibranchus Berkeley and Berkeley, 1932

- Branchiae with multiple filaments, from about setiger 30-50.
- Body robust.
- Distinguishing features from *H. filiformis*: *H. filiformis* – branchiae small, single, not with multiple filaments, from setiger 100 or more posteriorly; body slender, fragile)



Whole body, lateral view (l); anterior end, lateral view (r)

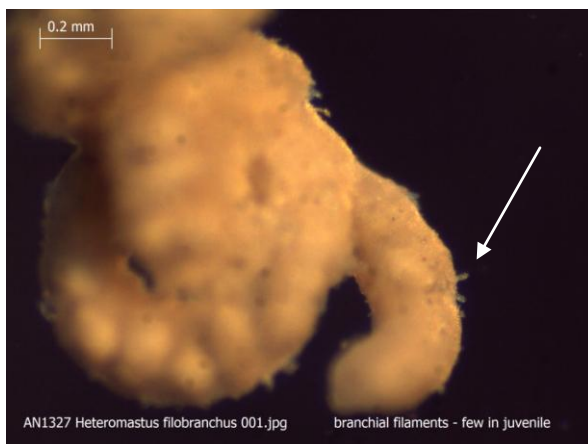
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Anterior end, pharynx everted (l); hooded hooks (r)



Branchial filaments from posterior (l,r)



Juvenile with only a few branchial filaments (l); pygidium (r)

Genus *Mediomastus*

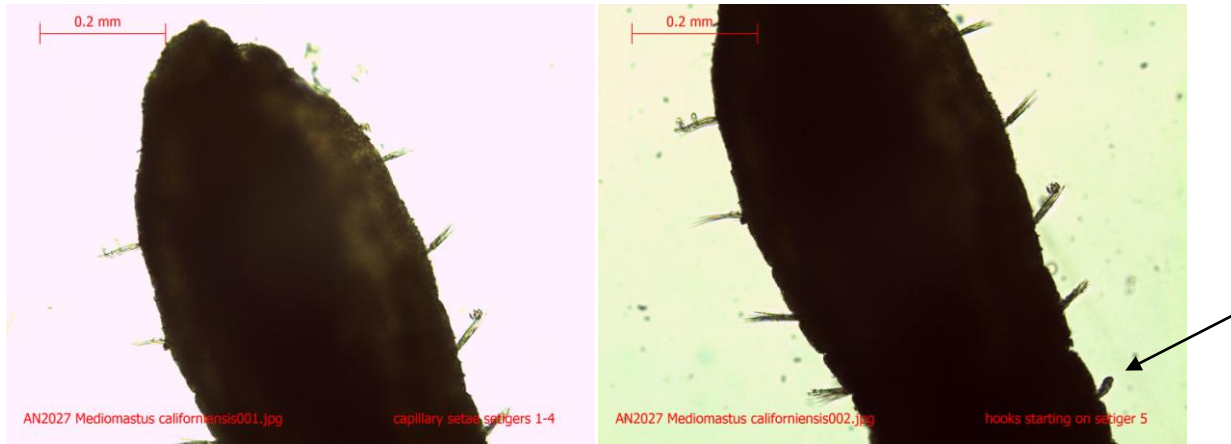
- Thorax with 10 setigers.
- Genital spines absent.
- Capillary setae present in setigers 1-4, setigers 5-10 with hooks.
- Setae (both the capillary and hooded hooks) on *Mediomastus* seem to be “longer” proportionally than those on juveniles of other capitellids.

Mediomastus californiensis Hartman, 1944

- Prostomium small, conical.
- Thoracic capillaries limbate, with distinct wings, not spatulate.
- **Posterior abdominal notopodial capillaries absent.**
- Thoracic and abdominal capillaries more or less similar, both with long, straight shaft and weakly developed shoulder and constriction
- Body larger, up to 35 mm long



Whole body (l); anterior end, hooded hooks starting on setigers 5



Capillary setae on setigers 1-4 (l); hooded hooks begin on setigers 5

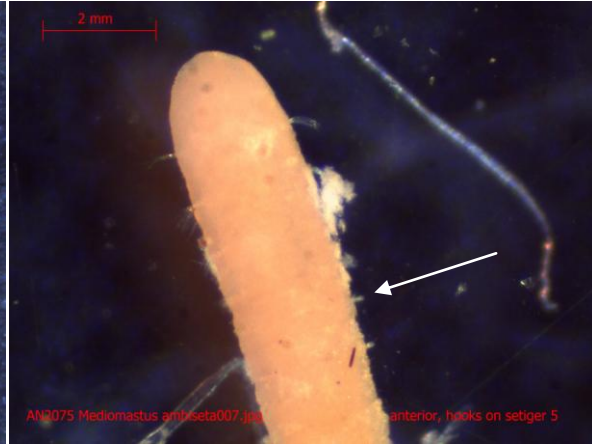


Posterior with no capillary setae

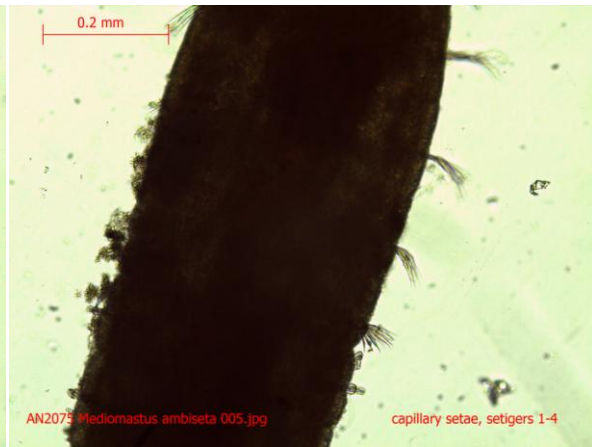
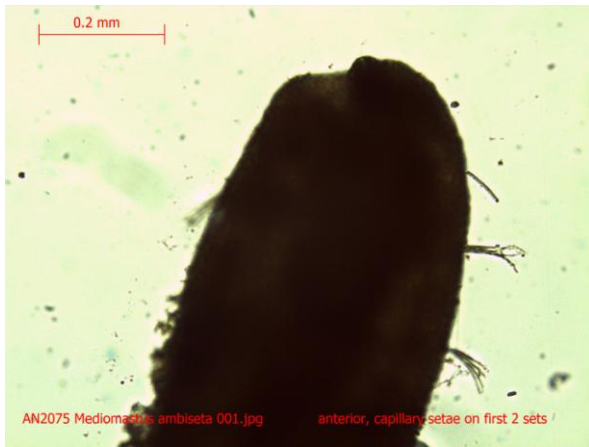
***Mediomastus ambiseta* (Hartman, 1947)**

- Prostomium small, conical.
- Thoracic capillaries limbate, with distinct wings, not spatulate.
- **Posterior abdominal notopodial capillaries present.**
- Thoracic hooks long, with straight shaft, no constriction.
- abdominal hoods shorter, with distinct shoulder and constriction on shaft.
- Body rarely exceeding 14 mm in length, usually smaller.
- Less commonly found than *M. californiensis*.
- Slender, more fragile in general than *M. californiensis*.

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Whole body (l); anterior end, hooks begin on setigers 5 (r)



Anterior end (l); anterior end, capillary setae setigers 1-4 (r)



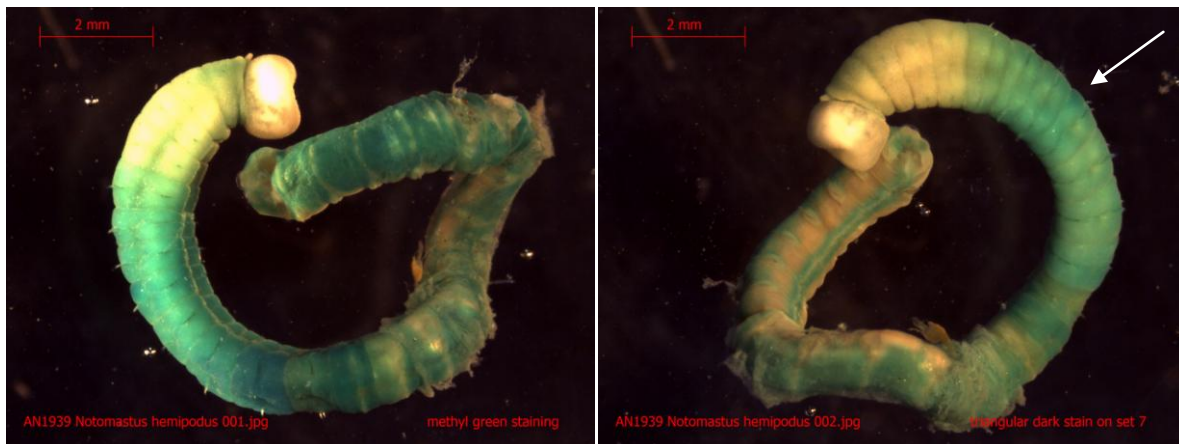
Posterior with capillary notosetae

Genus *Notomastus*

- Thoracic setae all capillaries.
- Thorax with 11 setigers.
- Genital spines absent.

Notomastus hemipodus Hartman, 1945

- Methyl green staining pattern as in Blake, 2000, **note dark patch on setiger 7.**
- Thoracic region with setigers **not compressed**, as they are in *N. latericius*.
- Also in Blake, 2000 key, but we don't use these features:
 - Nephridia absent in abdominal segments, present or absent in thoracic segments.
 - Hood of abdominal hooks inflated, but not voluminous.
 - Setiger 1 uniramous, with notosetae only.



Anterior end with methyl green staining pattern (l,r); note dark stain on dorsum of setigers 7



Anterior end, unstained

Notomastus latericius M. Sars, 1851

- Thoracic region with setigers that appear compressed and crowded, abrupt change between thoracic segments and abdominal segments.
- In key, but we don't use these:
 - **Abdominal notosetae present.**
 - Branchiae single, long, filamentous.
 - Nephridia large, conspicuous middorsally on abdominal segments, absent in thoracic segments.
 - Hood of abdominal hooks greatly enlarged, voluminous.



Anterior, ventrum, note 11 “crowded” thoracic setigers with abrupt change between thoracic and abdominal segments (l,r)

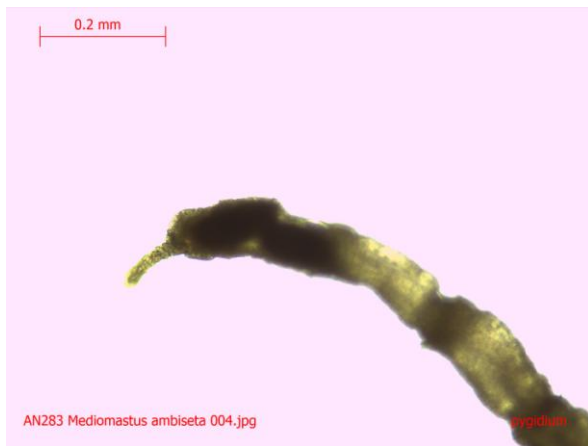


11 crowded thoracic setigers (l,r)

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11 crowded thoracic setigers, with proboscis everted (l); capillary notosetae present in abdomen (r)



Pygidium

Additional species of Capitellidae found in Puget Sound

Decamastus gracilis

Heteromastus filiformis Cmplx

Notomastus lineatus

Notomastus tenuis

Capitella teleta

Literature

Blake, J.A. 2000. Chapter 4, Family Capitellidae Grube, 1862. Pages 47-96. IN: Blake, J. A.; B. Hilbig; and P. H. Valentich-Scott (editors). Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel. Volume 7 - The Annelida Part 4. Polychaeta: Fabelligeridae to Sternaspidae. Santa Barbara Museum of Natural History. Santa Barbara, California. ISBN-13: 978-0936494128.

More Information

More information about Puget Sound benthic invertebrates is available at:

<http://www.ecy.wa.gov/programs/eap/sediment/>

This document is available on the Department of Ecology's website at

<https://fortress.wa.gov/ecy/publications/SummaryPages/1403234.html>.

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These notes were compiled by Kathy Welch and Maggie Dutch after a polychaete workshop held on August 6, 2014 at the Department of Ecology.