



Species: *Heteromastus* sp LA3

Synonyms: *Heteromastus filiformis* Cmplx

Heteromastus filiformis

Heteromastus filiformis

Haggin, 2023 §

of authors SCB; in part

of authors NEP; not (Claparède, 1864)

of authors NEP; not Blake 2000

P-code—none

ITI-code—none

Family: Capitellidae

Order:

Infraclass: Scolecida

Subclass: Sedentaria

Class: Polychaeta

Phylum: Annelida

Diagnostic Characters:

- 1) Prostomium with eyespots absent (images 1 & 3).
- 2) Thorax areolated, but not inflated thru chaetiger 4, chaetigers 5-11 smooth (images 1 & 2).
- 3) Thorax with 11 chaetigers, 5 with capillary chaetae
- 4) Thoracic formula - $(5c+6h)/(5c+6h)$
- 5) Abdominal hooded hooks with 11-15 small teeth in 3 rows above the main fang
- 6) Branchiae present from middle abdominal segments as short, broadly-based, rounded lamellae
- 7) Pygidium unknown

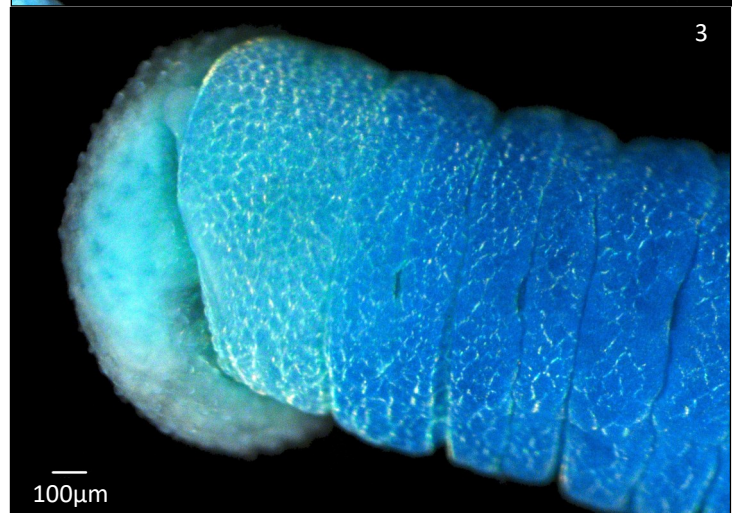
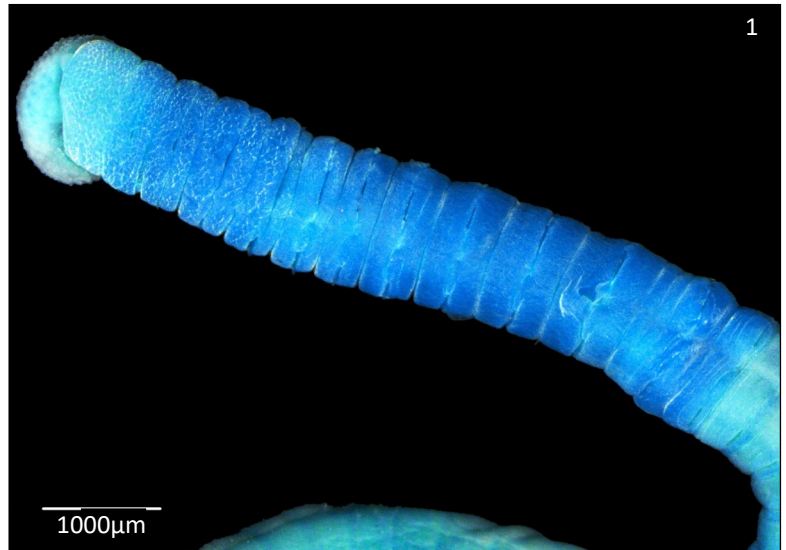
Pigmentation/MGS:

- 1) Prostomium and peristomium unstained or retaining light stain (images 1-3).
- 2) Thoracic stain darkest on chaetigers 6-11, most intense on chaetigers 7-9, with a lighter band on the anterior of chaetiger 11 (images 2 & 4).
- 3) Abdomen with inter-segmental banding (image 4).
- 4) Ventral stripes in the abdomen described by Blake (2000) for NEP material was not observed (image 5).

Material Examined:

LACSD stations: 0793-0A (305 m—33.81830N, 118.45420W—14JUL93) - 1 individual (images 1, 3 & 4); 0196-7A (315 m—33.69770N, 118.35320W—23JAN96) - 1 individual (images 2 & 5)

All photos by B. Haggin



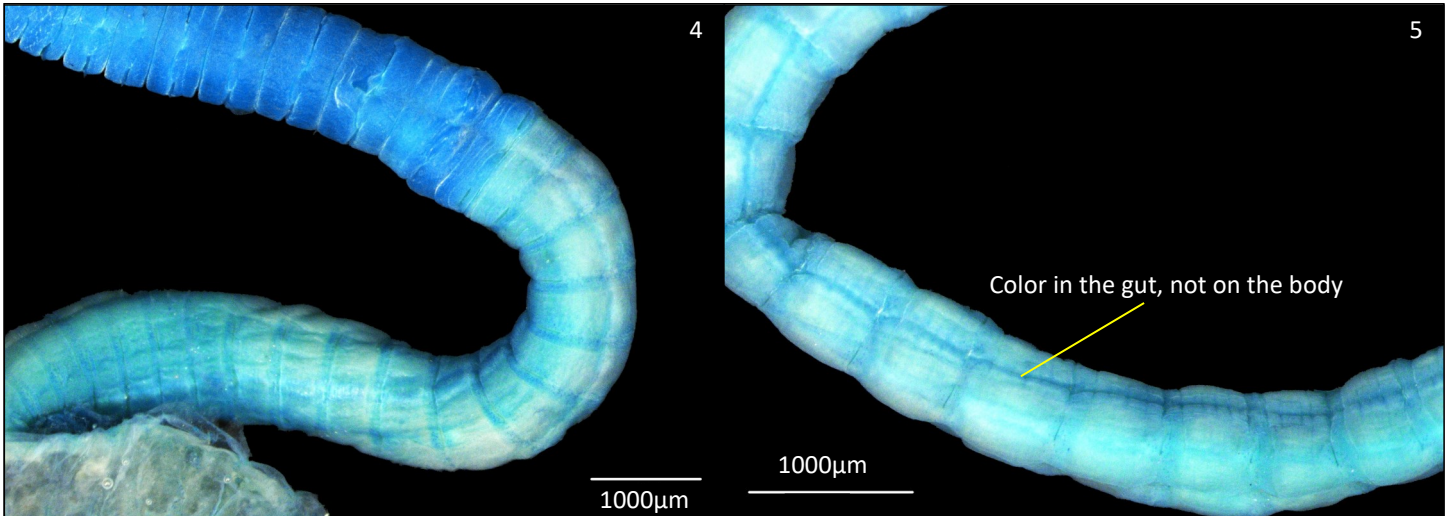


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Similar Species:

Heteromastus filiformis Claparède, 1864 (*sensu* Hutchings & Rainer, 1982)—*Heteromastus filiformis* as re-described by Hutchings & Rainer (1982) has short, broad-based, rounded branchiae beginning around the 90th abdominal chaetiger. The MGS pattern for *H. filiformis* was not described by Hutchings and Rainer. The branchiae of *H. sp LA3* are also short, rounded lamellae but begin more anteriorly.

NEP *Heteromastus filiformis* Claparède, 1864 (*sensu* Blake, 2000)—The MGS pattern of NEP *Heteromastus filiformis* as described by Blake (2000) is similar to *H. sp LA3* in having a solidly staining thorax but differs from *H. sp LA3* in having a band of speckles on the posterior of half of the abdominal segments and in having a pair of stripes mid-ventrally. *Heteromastus sp LA3* lacks the mid-ventral stripes described by Blake and has a solid posterior stain band. The branchiae of NEP *H. filiformis* (*sensu* Blake, 2000) begin around the 80th abdominal chaetiger while the branchiae of *H. sp LA3* begin more anteriorly.

Korean *Heteromastus filiformis* Claparède, 1864 (*sensu* Choi & Yoon, 2016)—The MGS pattern of Korean *Heteromastus filiformis* as described by Choi & Yoon (2016) differs from *H. sp LA3* in having a lightly staining thorax with slight banding on chaetigers 1 and 3-11, and a pair of mid-ventral stripes on the abdomen. *Heteromastus sp LA3* has a solidly staining thorax, most intense on chaetigers 7-9, and lacks the mid-ventral stripes in the abdomen. The branchiae of Korean *H. filiformis* (*sensu* Choi & Yoon, 2016) begin around the 20th abdominal chaetiger, similar to *H. sp LA3*.

Heteromastus filobranchus Berkeley & Berkeley, 1932—*Heteromastus filobranchus* differs from *H. sp LA3* in having up to 16 palmately arranged filiform branchiae per bundle from chaetiger 30-50 rather than short, rounded lamellae. The anterior abdomen of *H. filobranchus* sometimes retains a mid-dorsal stripe not seen in *Heteromastus sp LA3*.

Heteromastus sp LH1 Harris, 20XX §—*Heteromastus sp LH1* differs from *H. sp LA3* in having up to 8 palmately arranged filiform branchiae per bundle from chaetiger 55-100 rather than short, rounded lamellae. The abdomen of *H. sp LH1* retains a dark dorsal stain on each segment, forming a continuous stripe down the body.



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Discussion:

Heteromastus filiformis (Claparède, 1864) was originally described from Port-Vendres, France and was re-described by Hutchings & Rainer (1982) but from a locality in Egypt, 1,664 miles from the type locality. Morphological and staining differences reported from Korean material (Choi & Yoon, 2016) show that this is indeed a species complex and acknowledged that the NEP *Heteromastus filiformis* reported by Blake (2000) are likely a different species. Based on this, local specimens of *H. filiformis* matching the stain pattern described in this voucher sheet should use the new provisional name *Heteromastus* sp LA3 Haggin, 2023 §. Variations in the abdominal stain pattern from what was described by Blake (2000) suggests that there may be an additional provisional species regionally that may have been previously reported as *Heteromastus filiformis*.

A review of additional *Heteromastus filiformis* Cmplx from LACSD has yielded two more provisional species based on the stain pattern. One individual has the stain pattern as described by Blake (2000) for NEP *Heteromastus filiformis*, with midventral stripes in the abdomen. A second individual has an unstained anterior thorax and an intense stain in the posterior thorax, a stain pattern unique for NEP *Heteromastus filiformis* Cmplx. Voucher sheets for these individuals will follow at a later time.

Habitat:

Heteromastus sp LA3 is currently only known from the Palos Verdes Peninsula from a depth of 305-315m and occurs in silty sediments. This range will likely expand across southern California as local reviews of *Heteromastus filiformis* occur.

References:

- Berkeley, E. & Berkeley, C. 1932. Some Capitellidae (Polychaeta) from the northeast Pacific with a description of a new genus. *Proceedings of the Zoological Society of London* 102(3): 669-675.
- Blake, J. A. 2000. Family Capitellidae Grube, 1862. pages 47-96. IN: Blake, J. A., Hilbig, B. & Valentich-Scott, P. *Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel. 7 - The Annelida Part 4 - Polychaeta: Flabelligeridae to Sternaspidae*. Santa Barbara Museum of Natural History.
- Choi, H. K. & Yoon, S. M. 2016. First record of *Heteromastus filiformis* (Polychaeta: Capitellidae) from Korean waters, with a taxonomic note on the genus. *Journal of Species Research* 5(3): 264-271.
- Claparède, É. 1870. Les Annélides Chétopodes du Golfe de Naples. Supplément. *Mémoires de la Société de physique et d'histoire naturelle de Genève* 20(2): 365-542.
- Hutchings, P. A. & Rainer, S. 1982. Designation of a neotype of *Capitella filiformis* Claparède, 1964, type species of the genus *Heteromastus* (Polychaeta: Capitellidae). *Records of the Australian Museum* 34(4): 373-380.

Other Literature Consulted:

- Fauchald, K. 1977. The polychaete worms, definitions and keys to the orders, families and genera. *Natural History Museum of Los Angeles County: Los Angeles, CA (USA), Science Series* 28: 1-188.
- Hartman, O. 1969. *Atlas of the sedentariate polychaetous annelids from California*. 1-812. Allan Hancock Foundation, University of Southern California. Los Angeles.
- Jeong, M-K., Soh, H. Y. & Suh, H-L. 2019. Three new species of *Heteromastus* (Annelida, Capitellidae) from Korean waters, with genetic evidence based on two gene markers. *Zookeys* 869: 1-18.



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Other Literature Consulted cont.:

Magalhães, W. F. & Blake, J. A. 2020. 7.6.4 Capitellidae Grube, 1862. pp. 349–403, *In*: Purschke, G., Böggermann, M. & Westheide, W. (Eds.), *Handbook of Zoology. Annelida*, 2 (Pleistoannelida, Sedentaria II), pp. 1–465.

Version History:

Version 1.0—Voucher sheet created (19AUG2024)



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