Key to the Family Capitellidae of SCAMIT Ed. 14 and Local Provisional Species

B. Haggin (LACSD)
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Definitions

TF - Thoracic Formula (see key below)
MGS - Methyl Green Stain pattern

1a. Thorax with a true achaetous segment absent
1b. Thorax with a true achaetous segment present; pygidium modified into an anal plaque

2a. (1a) Thorax with capillary chaetae present in the notopodia and neuropodia of at least some thoracic segments
2b. Thorax with capillary chaetae absent, hooded hooks only present in thoracic segments

3a. (1b) Thorax with 9 thoracic chaetigers; genital spines present or absent; branchiae absent
3b. Thorax with 10 or more thoracic chaetigers; genital spines absent; branchiae present or absent

4a. (3a) Thorax with 6-7 chaetigers with capillary notochaetae; genital spines present in males only, absent in females; TF - variable; eyes present or absent
4b. Thorax with 4 chaetigers with capillary notochaetae; genital spines present in males and females; TF - \(\frac{(3c+1c(m)+2m+1m(h)+2g)}{(3c+2m+2m(h)+2h)}\); eyes absent; MGS - broad lateral stain patch on posterior of chaetiger 7 and chaetiger 8, chaetiger 9 and anterior abdomen with post-chaetal banding

5a. (4a) Thorax with 6-7 chaetigers with capillary notochaetae, some with mixed fascicles of capillaries and hooded hooks
5b. Thorax with 7 chaetigers with capillary notochaetae only, mixed fascicles not present

6a. (5a) Thorax with 6-7 chaetigers with capillary notochaetae; genital spines present in males only; TF - \(\frac{(3c+1c(m)+2m+1m(h)+2g)}{(3c+2m+2m(h)+2h)}\); eyespots occasionally present, small; MGS - not described
6b. Thorax with 7 chaetigers with capillary notochaetae; genital spines present in males only; TF - \(\frac{(5c+2c(m)+2g)}{(4c+3c(m)+2h)}\); eyespots absent; MGS - not described

Scyphoproctus oculatus
Reish, 1959

Amastigos acutus
Piltz, 1977

……… genus Capitella †

Capitella sp LA3
Haggin, 2023 §
-part of Capitella capitata Cmplx

Capitella capitata tripartata
Hartman, 1961
-not reported by SCAMIT
-originally described hosting a parasitic copepod

Capitella ovincola
Hartman, 1947
-not reported by SCAMIT
-originally described from squid egg masses

Definitions

TF - Thoracic Formula (see key below)
MGS - Methyl Green Stain pattern

1a. Thorax with a true achaetous segment absent
1b. Thorax with a true achaetous segment present; pygidium modified into an anal plaque
7a. (5b) Thorax with 7 chaetigers with capillary notochaetae; gential spines present in males only; TF - ♂ (7c+2g)/(7c+2h) ♀ (7c+2h)/(7c+2h); eyespots present, black; MGS - not described

7b. Thorax with 7 chaetigers with capillary notochaetae; gential spines present in males only; TF - ♂ (7c+2g)/(7c+2h) ♀ (7c+2h)/(7c+2h); eyespots present, red; MGS - ♂ not retaining stain ♀ retaining stain on chaetigers 6-9, with distinct speckling on chaetiger 9

8a. (3b) Thorax with 10 thoracic chaetigers

8b. Thorax with 11 or more thoracic chaetigers

9a. (8a) Thorax with 4 chaetigers with capillary notochaetae, remainder hooded hooks

9b. Thorax with 6 or more chaetigers with capillary notochaetae, hooded hooks present or absent in thoracic notopodia

10a. (9a) Hooded hooks of posterior thoracic notopodia not modified into spine- or paddle-like hooks (appear as bidentate); eyespots present or absent; MGS - retains stain in anterior thorax

10b. Hooded hooks of posterior thoracic notopodia modified into spine- or paddle-like hooks (appear as bidentate); eyespots, if present, black; MGS - prostomium thru chaetiger 5 not retaining stain, chaetiger 6-9 and anterior of chaetiger 10 staining intensely, abdomen with speckles of stain around tori; also along midventral line in larger individuals

11a. (10a) eyespots absent

11b. eyespots present dorsally; MGS - prostomium and peristomium unstained, anterior thorax retaining stain with variable intensity, middle thorax not retaining stain, posterior thorax with intense stain bands, abdomen sometimes with speckled banding

12a. (11a) Chaetiger 2 without white pigment band; MGS - prostomium and peristomium not

12b. Chaetiger 2 with white pigment band (evident without staining); MGS - dorsal patch on posterior of prostomium and peristomium retaining stain, chaetigers 1-2 not retaining stain, remaining thoracic chaetiger staining, most intense in posterior thorax, abdomen with intense stain banding

13a. (12a) MGS - prostomium, peristomium & chaetiger 1 unstained, chaetigers 2-9 staining darkly, chaetiger most intense, abdomen with weak intersegmental banding throughout

13b. MGS - prostomium, peristomium & chaetiger 1 unstained, chaetiger 2 & anterior of chaetiger 3 staining intensely, remaining thoracic segments retaining stain, darkening in posterior thorax, abdomen with weak intersegmental banding anteriorly, with intense staining on the notopodial and neuropodial lobes in posterior abdomen

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**Capitella capitata oculata**
Hartman, 1961
- not reported by SCAMIT
- originally described hosting a parasitic copepod

**Capitella teleta Φ**
Blake, Grassle & Eckelbarger, 2009

**Mediomastus acutus**
Hartman, 1969

**Mediomastus californiensis**
Hartman, 1944

**Mediomastus sp A**
SCAMIT, 2015

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

**Mediomastus sp 7 ♠**
Harris, 2020

14a. (9b) TF \( (6c+4h)/(6c+4h) \); MGS - body uniformly green, thorax with bands on chaetigers 4-11, darkest on 10-11, abdomen with lateral speckling

14b. TF \( (10c)/(8c+2e) \); MGS - thorax with variable banding intensity, darkest in chaetigers 2-3 and chaetiger 10 and anterior abdomen, remaining abdomen with intersegmental banding

15a. (8b) Thorax with 11 chaetigers; abdominal capillary notochaetae present or absent

15b. Thorax with 12 or more chaetigers; abdominal capillary notochaetae absent

16a. (15a) Thorax with 5 chaetigers with capillary notochaetae; hooded hooks present in remaining thoracic notopodia

16b. Thorax with 7 or more chaetigers with capillary notochaetae; hooded hooks present or absent in remaining thoracic notopodia

17a. (16a) Branchiae simple, short, broadly rounded lamallae

17b. Branchiae tufted or palmate filamentous

18a. (17a) MGS - thoracic chaetigers staining solidly, with chaetigers 5-9 most intense, abdominal chaetigers with mid-ventral stripe in posterior 1/2 of the segment

18b. MGS - thoracic chaetigers staining solidly, most intense in chaetigers 5-9, abdominal chaetigers without mid-ventral stripe in posterior 1/2 of the segment

19a. (17b) Branchiae with up to 16 filaments from chaetigers 30-50; MGS - peristomium & thoracic chaetigers staining uniformly, abdominal chaetigers retaining stain on parapodial lobes, pygidial ring staining, not the filament

19b. Branchiae with up to 8 filaments from chaetigers 55-100; MGS - thoracic chaetigers staining uniformly, abdominal chaetigers retaining stain weakly on parapodial lobes, also retaining stain dorsally, giving the appearance of a stripe down body

20a. (16b) Thorax with 7 chaetigers with capillary notochaetae; anterior abdominal notopodia with hooded hooks only

20b. Thorax with 11 chaetigers with capillary notochaetae; anterior abdominal notopodia with capillary chaetae present or with hooded hooks only

21a. (20a) TF \( (6c+1m+4h)/(6c+3b) \)

21b. TF \( (6c+1m+4h)/(6c+1m+4h) \)

22a. (20b) Anterior abdominal chaetigers with hooded hooks only in the notopodia; TF \( (11c)/(11c) \) or \( (11c)/(0+10c) \); eyespots present or absent; chaetiger 1 complete or incomplete; branchiae present or absent

22b. First 1 or 2 abdominal chaetigers with capillary chaetae present in the notopodia, sometimes also in the neuropodia; TF \( (11c)/(11c) + (12k)/(12k+em) \); eyespots present; chaetiger 1 complete; branchiae present, palmate

23a. (22a) Chaetiger 1 incomplete, neuropodia absent; eyespots present (may be faded)

23b. Chaetiger 1 complete, neuropodia present; eyespots present or absent
24a. (23a) MGS - abdominal chaetigers without pair, mid-ventral stripe
24b. MGS - prostomium, peristomium and chaetigers 1-6 staining uniformly, chaetigers 7-10 staining darkly, abdominal chaetigers with paired, mid-ventral stain stripe

25a. (24a) eyespots brown (usually faded); MGS - thorax and abdomen stain uniformly, occasionally darker in posterior thorax, no distinct pattern
25b. eyespots red (faint); MGS - thoracic chaetigers 9-11 with posterior banding, anterior abdominal chaetigers not retaining stain, from about the 5th abdominal chaetiger stain retained dorsally, unstained ventrally

26a. (23b) MGS - Thoracic chaetigers staining uniformly or darker in posterior thorax, abdominal chaetigers with distinct staining pattern
26b. MGS - Thoracic chaetigers staining uniformly, with intense band on chaetiger 6, abdominal chaetigers stain uniformly, without a distinct pattern

27a. (26a) MGS - abdominal chaetigers with segmental banding, may also have dorsal patches present
27b. MGS - abdominal chaetigers without segmental banding, dorsal stain patches only

28a. (27a) MGS - abdominal chaetigers with pre- & post-chaetal banding, 1 or 2 dorsal stain patches also present
28b. MGS - abdominal chaetigers with post-chaetal banding only, pre-chaetal bands and dorsal stain patches absent; branchiae simple lobes; abdominal neuropodial lobes conical, rounded

29a. (28a) Branchiae conspicuous palmate tufts; abdominal notopodial lobes low mounds; abdominal neuropodial lobes conical, rounded; MGS - posterior half of last thoracic chaetiger most intense, abdominal chaetigers with staining on neuropodial tori, appearing as paired segmental bands (fades in larger individuals), dorsum of abdomen with either a single dorsal patch around the notopodia (non-reproductive) or the nephridial pores stain intensely and appear as paired dorsal patches (reproductive)
29b. Branchiae simple, rounded lobes; abdominal notopodial lobes fused, stand erect, axeshaped; abdominal neuropodial lobes sharply conical; MGS - posterior half of last thoracic chaetiger most intense, abdominal chaetigers with pre- & post-chaetal stain bands, pre-chaetal band with paired, dorsal triangular extensions projecting anteriorly, post-chaetal band not connecting dorsally, notopodial lamellae with a "Ψ"-shaped stain pattern, less developed on posterior face, nephridial pores staining intensely and appear as paired dorsal patches (reproductive only)

30a. (27b) MGS - abdominal dorsal stain patches "U"-shaped; branchiae unknown
30b. MGS - thoracic chaetigers staining uniformly, abdominal dorsal stain patch solid, branchiae unstaining, giving the appearance of two unstained spots in posterior abdomen; branchiae palpate

31a. (30a) MGS - thorax staining uniformly, darker in posterior thorax, abdominal dorsal stain patch "U"-shaped, opening posteriorly
31b. MGS - thorax with an unstained band in posterior of chaetiger 10 and anterior of chaetiger 11, abdominal dorsal stain a mid-dorsal spot and a "U"-shaped patch, opening

32a. (15b) Thorax with 12 chaetigers
32b. Thorax with 13 or more chaetigers

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Notomastus hemipodus
Hartman, 1945

Notomastus tenuis
Moore, 1909

Notomastus sp SF1
Norris, 2008 §

Notomastus sp E
Harris, 2021 §

Notomastus sp LA5
Haggin, 2023 §

Notomastus magnus
Hartman, 1947

Notomastus sp LA4
Haggin, 2023 §

Notomastus sp LA3
Haggin, 2023 §

Notomastus sp SD2
Rowe, 1999 §

Notomastus sp SD3
Rowe, 2004 §
33a. (32a) Thorax with 12 chaetigers with capillary notochaetae; chaetiger 1 incomplete, neuropodia absent
33b. Thorax with 10 chaetigers with capillary notochaetae; chaetiger 1 complete, neuropodia present

34a. (33a) $\text{TF - } (12c)/(0+9c+1e+1h)$
34b. $\text{TF - } (12c)/(0+9c+2h)$

35a. (32b) Thorax with 13 thoracic chaetigers; 1st chaetiger complete, neuropodia present
35b. Thorax with 17-18 thoracic chaetigers; 1st chaetiger incomplete, neuropodia absent

36a. (35a) Thorax uniannulate with deep intersegmental furrows; branchiae present as 2-3 short, hollow, sausage-shaped filaments
36b. Thorax biannualte with deep intersegmental furrows; branchiae not described

**Key to Thoracic Formulas**

achaetous segment + (thoracic notopodia)/(thoracic neuropodia) + (abdominal notopodia)/(abdominal neuropodia)

c=capillary, h=hooded hooks, e=either, m=mixed fascicle, g=genital spines, s=spatulate, p=paddle-like, (-)=achaetous segment present, 0=without chaetae

**Comments**

† Species of *Capitella* that do not fit the key and would have been previously called *Capitella capitata* Cmplx should be given a provisional designation and documented for SCAMIT distribution.

Φ This species was originally described from laboratory cultures in Woods Hole, MA and confirmed by DNA analysis to be found in southern California. Organisms that key to this species should be given this name with caution.

♣ Methyl Green stain patterns are the most useful means of differentiating between species of *Mediomastus*. If staining is inconclusive, report as *Mediomastus* sp.

♠ The majority of the worm is needed to distinguish between *Mediomastus ambiseta* and *Mediomastus* sp 7.

% *Heteromastus* sp MEC1 was reported in Bight '03 but not documented. It has not been included in this key.

£ *Heteromastus* sp LA3 was created to contain part of the NEP *Heteromastus filiformis* Cmplx. *Heteromastus* sp LA3 lacks the mid-ventral stipe described by Blake (2000) for NEP *Heteromastus filiformis*. Specimens found with the mid-ventral stipe should be given its own provisional designation as *Heteromastus filiformis* is restricted to the Mediterranean Sea.

€ Specimens identified as *Barantolla* sp are listed in SCAMIT Ed. 14. A review of *Barantolla* sp from LACSD showed them to be juveniles of a different genus, possibly *Decamastus*. *Barantolla americana* Hartman, 1963 has not been reported by SCAMIT but was described from Monterey Bay, CA and has been included in the key for comparison.

¢ *Notomastus* sp LA5 is a replacement name for NEP *Notomastus lineatus*. *Notomastus lineatus* was described from the Mediterranean Sea and is likely not found locally.

‡ *Notomastus* sp LA4 is a replacement name for NEP *Notomastus latericeus*. *Notomastus latericeus* was described from the North Atlantic region and is likely not found locally.

¥ *Leiochrides hemipodus* was originally described as having capillary chaetae in all thoracic neuropodia. *Leiochrides* sp A was erected because it had hooded hooks in the last two thoracic neuropodia. The type of *Leiochrides hemipodus* was reviewed and shown to have hooded hooks present in the last 1 or 2 thoracic neuropodia. Leslie has expressed that she has not seen *Leiochrides* sp A since 1985 and it may be a local synonym of *Leiochrides hemipodus*.

**Version History**

1.0 Key Created.  
September, 2023 - BMH
References


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.


