



***Melinna* sp LA1 Haggin, 2026 §**

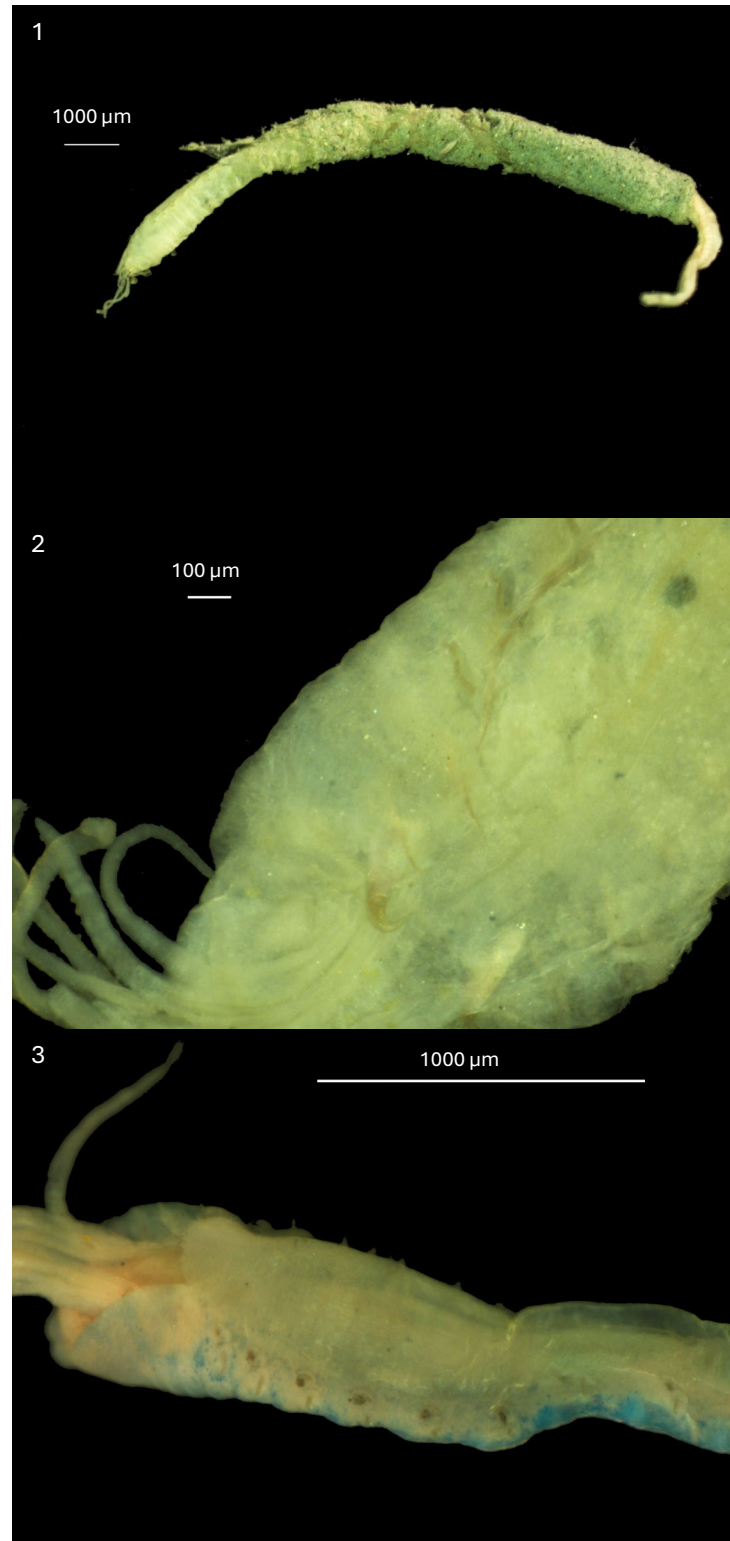
P-Code – P294
ITI – Group 1

Synonyms: *Melinna oculata* of Authors SCB in part, not Hartman, 1969

Family: Melinnidae
Suborder: Terebelliformia
Order: Terebellida
Infraclass: Canalipalpata
Subclass: Sedentaria
Class: Polychaeta
Phylum: Annelida

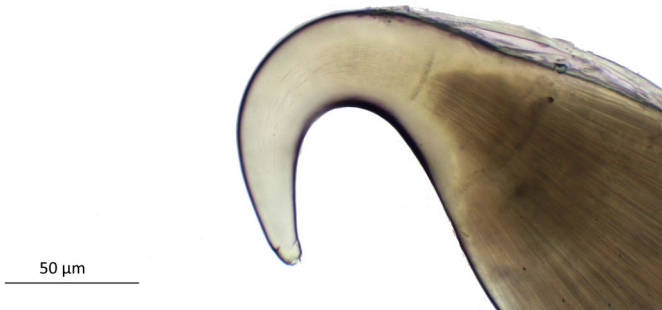
Diagnostic Characters: (segment #'s *sensu* Gunton *et al.* {2023}) (smaller species; 16 individuals examined; 7.7-18.0mm TL)

- Very similar to *Melinna oculata*
- 2 sets of scattered clusters of eyespots present on glandular ridge (may be faded)
- 4 pairs of branchiae; 1:3 arrangement; with transverse white pigment bands or brown pigment faded (unsure which) (Images 2, 8 & 9)
- Postbranchial membrane shorter than dorsal width; with 8-12 fine teeth
 - Teeth do not extend across entire membrane
- Segments 2-5 fused dorsally & laterally, forming lateral wings, bearing 4 rows of needle-like neurochaetae (Image 6), 4th set very small (Images 3, 9 & 11)
- Anterior thorax – 0/ac - 0/ac - no/ac - no/ac - no/un
 - 1st pair of notochaetae very small, often covered by edge of lateral wings
- Dorsal hooks present, less obscured by lateral wings than in *M. oculata* (Image 2)
 - Greatly recurved, at an angle much <90° relative to the shaft (Images 4 & 5)
- TC 18, TU 14, AU 52-56
 - Abdominal uncinigers very small and crowded after AU30, difficult to count accurately
- Thoracic & anterior abdominal uncini – P(R4)(1:1:1:1) (Image 7)
- Middle abdominal uncini – unknown
- Posterior abdominal uncini – P(R3)(Cr:1:1)
 - Uncini very small, dentition difficult to determine
- Notopodial rudiments present thru AU8 as very small papillae set very close to abdominal uncini
- Pygidium small, ornamentation not determined
- Tube constructed of fine sediment held together by mucus (Image 1)

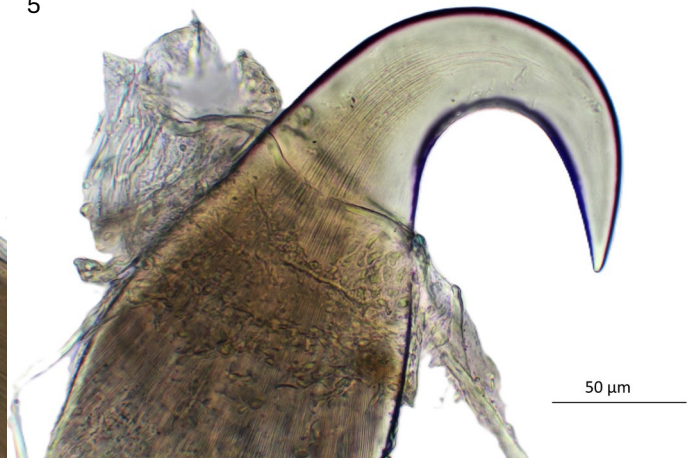




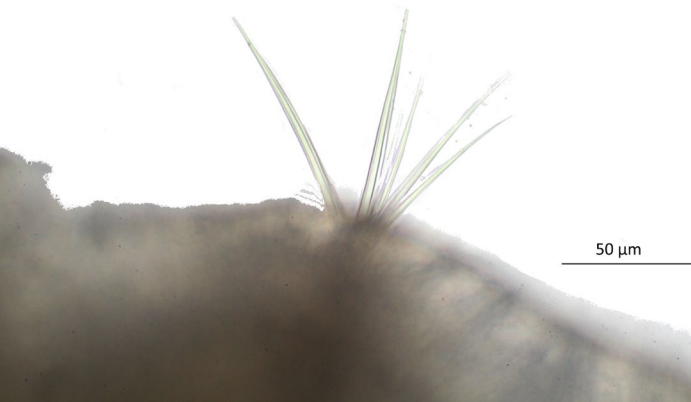
4



5



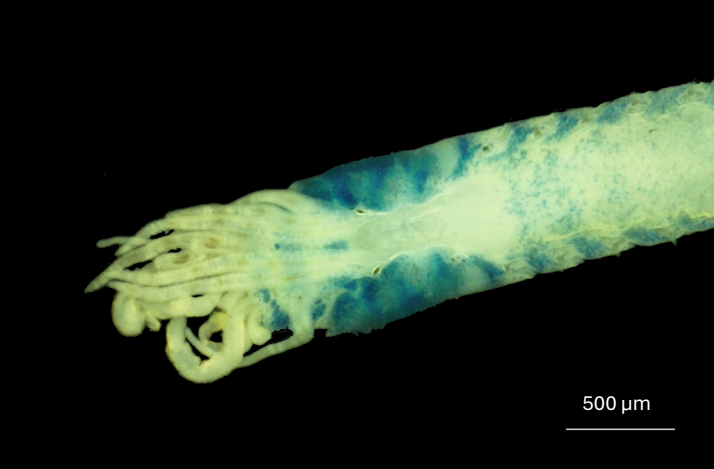
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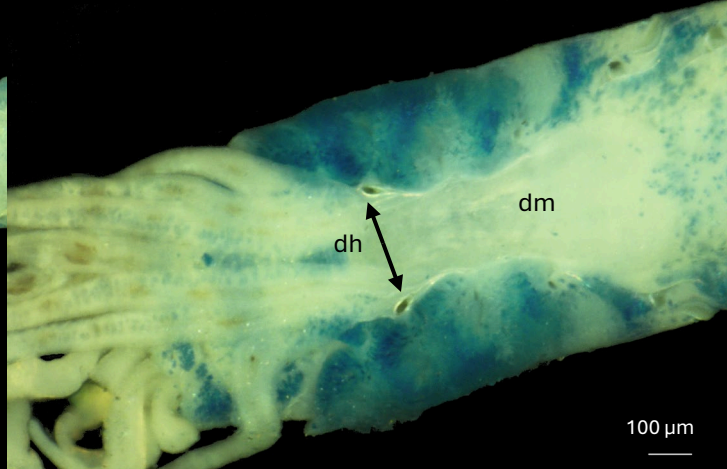
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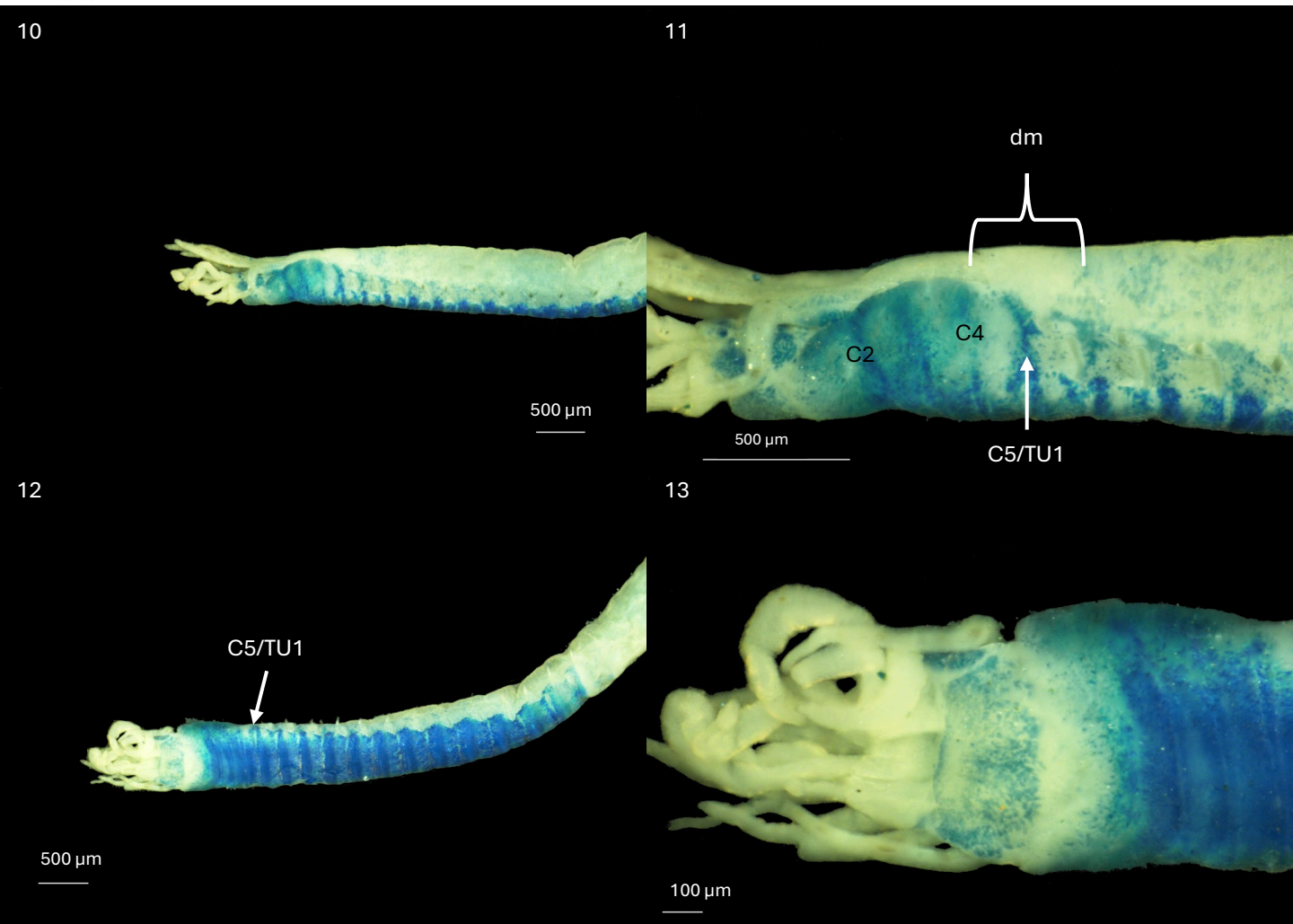


9



Pigmentation/Methyl Green Stain Pattern:

- Prostomium transversely banded; with an unstained anterior edge, a stain band, an unstained band around nuchal organs & glandular ridge, and a darkly staining posterior edge
- Peristomium weakly staining ventrally, without non-staining glandular pad
- Segments 2-5 (lateral wings) staining with segmental striations laterally, not extending to dorsum, slightly darker in median region of ventrum (Images 8-11)



Pigmentation/Methyl Green Stain Pattern:

- Segment 4 (C3) without pair of ventral unstained spots (Image 13)
- Postbranchial dorsal membrane not retaining stain
- Dorsum without dark stain patch posterior to dorsal membrane, may be lightly speckled (Images 8, 9 & 11)
- Ventral scutes stain darkly thru TU12, fading on TU13-14 (Image 12)
- Lateral stain patches extending dorsally between TU1-4, not connecting dorsally (Images 9-11)
- Posterior abdomen sometimes with light stain encircling segments
- Pygidial ring not retaining stain

Material Examined:

LACSD Stations: 0790-2D (31m – 33.74120N, 118.42130W – 19JUL1990) – 1 individual (complete-18.0mm TL); 0798-0D (33m – 33.76947N, 118.42288W – 15JUL1998) – 1 individual (complete, in tube- ~52AU) (Images 1 & 2); 0702-8B (157m – 33.69210N, 118.33728W – 16JUL2002) – 1 individual (complete) (Image 4); 0704-3C5 (61m – 33.72988N, 118.40236W – 15JUL2004) – 1 individual (complete, but damaged); 0707-10D (31m – 33.69322N, 118.28919W – 19JUL2007) – 1 individual (complete-14.3mm TL); 0711-3C (60m – 33.73011N, 118.40241W – 13JUL2011) – 1 individual (fragment - ~21AU); 0713-1D (31m – 33.76503N, 118.43519W – 09JUL2013) – 1 individual (complete) (Images 3, 15 & 16); 0714-1D (32m – 33.76512N, 118.43526W – 08JUL2014) – 3 individuals (complete-range 7.7-16.7mm TL) (Images 8-14); 0718-6D (32m – 33.71599N, 118.34857W – 26JUL2018) – 2 individuals (complete-56AU-range 14.7-15.7mm TL) (Images 5-7)



Material Examined cont.:

LACSD Baseline Survey Station: B57A (43m – 33.62170N, 118.19753W – 18JUL2003) – 1 individual (complete)

SCBPP Station: PLABE 12270 (18m – 33.71783N, 118.16028W – 14JUL1994) – 3 individuals (complete-56AU)

Additional Material Examined:

Melinna heterodonta Moore, 1923 – LACSD Station: 0723-1B (152m – 33.74944N, 118.44666W – 10JUL2023) – 1 individual (fragment-21AU) (**Image 18**)

Melinna oculata Hartman, 1969 – LACSD Stations: 0106-2C (61m – 33.73778N, 118.42321W – 10JAN2006) – 1 individual (complete, damaged) (**Image 14**); 0713-1D (31m – 33.76503N, 118.43519W – 09JUL2013) – 4 individuals (complete-56AU) (**Images 16 & 17**); 0714-1D (32m – 33.76512N, 118.43526W – 08JUL2014) – 1 individual (complete-56AU) (**Image 15**)

All photos by B. Haggin

Habitat:

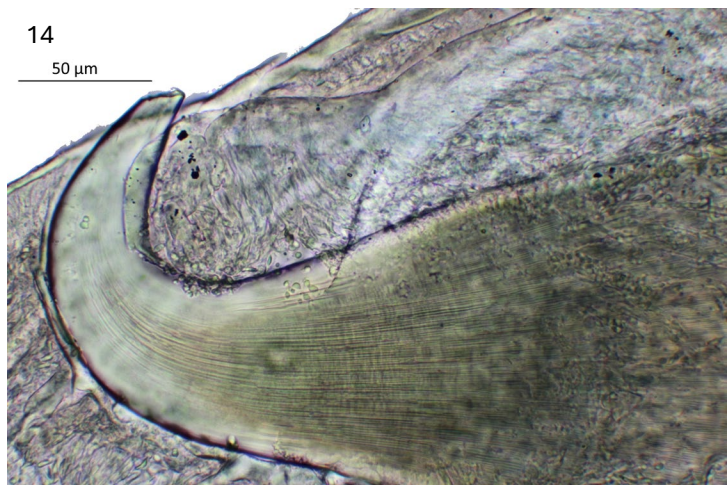
Melinna sp LA1 has been collected from the Palos Verdes Peninsula and outside the LA/LB Harbor Breakwall in depths from 18 to 157m. It has been collected in silty to sandy-silty sediments. *Melinna* sp LA1 has been collected with its congener *Melinna oculata* and the two species are currently separated by the dorsal stain patch present posterior to the dorsal membrane in *Melinna oculata*.

Similar Species:

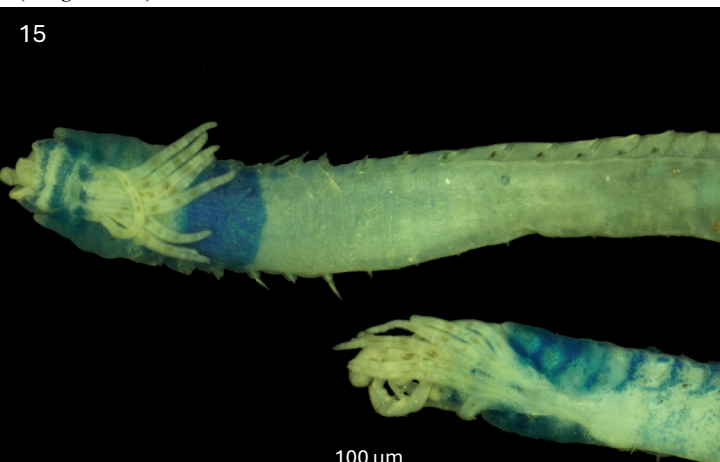
Melinna oculata Hartman, 1969 – *Melinna oculata* is very similar to *Melinna* sp LA1. Both species have pigmented branchiae, eyespots present on the prostomium, recurved dorsal hooks and around 56 abdominal chaetigers. The two species differ in their MGS pattern and in the degree to which the dorsal hooks are recurved. The dorsal hooks of *Melinna oculata* are less recurved ($\leq 90^\circ$) (**Image 14**) than in *Melinna* sp LA1 (much $< 90^\circ$) (**Images 4 & 5**) relative to the shaft. *Melinna oculata* has a dark dorsal stain patch on C5-8 (TU1-4) that is absent or only lightly speckled in *Melinna* sp LA1 (**Images 15-17**).

14

50 μ m



15



16



1000 μ m



Similar Species cont.:

Melinna heterodonta Moore, 1923 – *Melinna heterodonta* differs from *Melinna* sp LA1 in having dorsal hooks that are curved ($>90^\circ$) and have a canal on the convex surface rather than greatly recurved as in *Melinna* sp LA1 (much $<90^\circ$) and without a canal. *Melinna heterodonta* lacks pigment on its branchiae while *Melinna* sp LA1 has dark or white crossbars on its branchiae. *Melinna heterodonta* has 14-16 fine denticulations on its dorsal membrane that extend across the length of the membrane. *Melinna* sp LA1 has only 8-12 fine denticulations and they stop well before the edge of the membrane. *Melinna heterodonta* has a solid lateral collar stain on C1-4 and a dorsal band on C5 (TU1) (Image 17), while *Melinna* sp LA1 has lateral striations on the collar (Image 11) and lacks a dorsal stain band posterior to the dorsal membrane (Images 3 & 8). *Melinna heterodonta* has a non-staining glandular pad present on the ventral peristomium that is lacking in *Melinna* sp LA1 (Image 13).

Discussion:

The family Melinnidae was formerly the subfamily Melinninae within the Ampharetidae. Recent molecular work by Stiller *et al.* (2020) shows that the group has a closer affinity to the Terebellidae than the Ampharetidae, thus necessitating the elevation to family status. The most recent diagnoses of the Family Melinnidae and the genus *Melinna* can be found in Gunton *et al.* (2023) and are given below.

Diagnosis (Melinnidae): Tubicolous. Hood like prostomium lying over the buccal region, with eye spots present or absent and nuchal organs present. Retractable buccal tentacles. Peristomium clearly demarcated from an achaetous segment. Typically, with 4 pairs of tapering conical branchiae (2-3 pairs in some species) on segments 2-5, although may appear to arise from segments 2 and 3. Neuropodia on segments 2-5 with acicular chaetae, from segment 6 neuropodia with pectinate uncini. Notopodia with capillary notochaetae from segment 4 or 5 and continuing with a variable number of thoracic segments (10-16). Variable number of abdominal segments (20-90) with only neuropodia. Often with a more or less distinct membrane across dorsum at level of segments 2-3. Postbranchial dorsal recurved hooks present or absent.

Diagnosis (*Melinna*): Melinnidae with 4 pairs of apinnate branchiae on segments 2-5. Single pair of postbranchial dorsal hooks on segment 3. Segments 4 to 7 forming dorsal depression, posteriorly delimited by transverse membranous fold. Eighteen pairs of thoracic chaetigers, segments 2-5 with neuropodia with slender acicular chaetae, subsequent neuropodia with uncini. Notopodia from segment 4 or 5, with capillary notochaetae. Four pairs of nephridia on segments 4-7. Abdomen with variable number of neuropodia with uncini. Pygidium lobulate, anal cirri absent.

Discussion cont.:

A review of LACSD *Melinna oculata* vouchers while preparing for this presentation lead to the discovery of a potential provisional species that has been previously identified as *Melinna oculata*. The lack of a dorsal stain is similar enough to *Melinna heterodonta* that *Melinna* sp LA1 may have been misidentified as *Melinna heterodonta* in the past and could be responsible for the shallow water (<150m) records of *Melinna heterodonta*. The counts of abdominal chaetigers and pigmented branchiae are also very similar to *Melinna oculata* and some of these misidentifications could be responsible for the deeper-water (>100m) records of *Melinna oculata*.

Melinna sp LA1 inherited the P-Code P254 from *Melinna oculata*, as this is what *Melinna* sp LA1 would have been identified as in the past. *Melinna* sp LA1 is assigned to ITI Group 1 as melinnids were formally members of the family Ampharetidae when the infaunal trophic feed groups were established.

Uncini Dentition Formula : A/P(R#)(X/Cr#:X:...)

- A – avicular
- P – pectinate
- (R#) – # of rows of teeth when viewed laterally
- (X:X:...) – # of teeth in each row when viewed head-on
- Cr# - crown of small teeth & # of teeth in crown

References:

- Gunton, L. M., Zhang, W., Kupriyanova, E. K. & Hutchings, P. A.** 2023. New Species of *Melinna* (Melinnidae, Annelida) from the Australian Abyss with Comments on *M. albicincta*, *M. cristata* and *M. elisabethae*. *Records of the Australian Museum* 75(3): 125-154.
- Hartman, O.** 1969. *Atlas of the sedentary polychaetous annelids from California*. 1-812. Allan Hancock Foundation, University of Southern California, Los Angeles.
- Hilbig, B.** 2000. Family Ampharetidae Malmgren, 1867. pages 169-230. 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.
- Moore, J. P.** 1923. The polychaetous annelids dredged by the U.S.S. "Albatross" off the coast of southern California in 1904. IV. Spionidae to Sabellariidae. *Proceedings of the Academy of Natural Sciences of Philadelphia* 75: 179-259, plates XVII-XVIII.
- Stiller, J., Tilic, E., Rousset, V., Pleijel, F. & Rouse, G. W.** 2020. Spaghetti to a tree: A robust phylogeny for Terebelliformia (Annelida) based on transcriptomes, molecular and morphological data. *Biology* 9(4): 73 [29 pp. + supplementary material].

Other Literature Consulted:

- Chamberlin, R. V.** 1919. The Annelida Polychaeta [Albatross Expeditions]. *Memoirs of the Museum of Comparative Zoology at Harvard College* 48: 1-514.

Version History:

Version 1.0 – Voucher sheet created (10SEP2026 – BMH)