

Onuphidae Kinberg, 1865

Of SCAMIT (Ed. 13) and Local Provisional Species



Brent Haggin
November, 2021

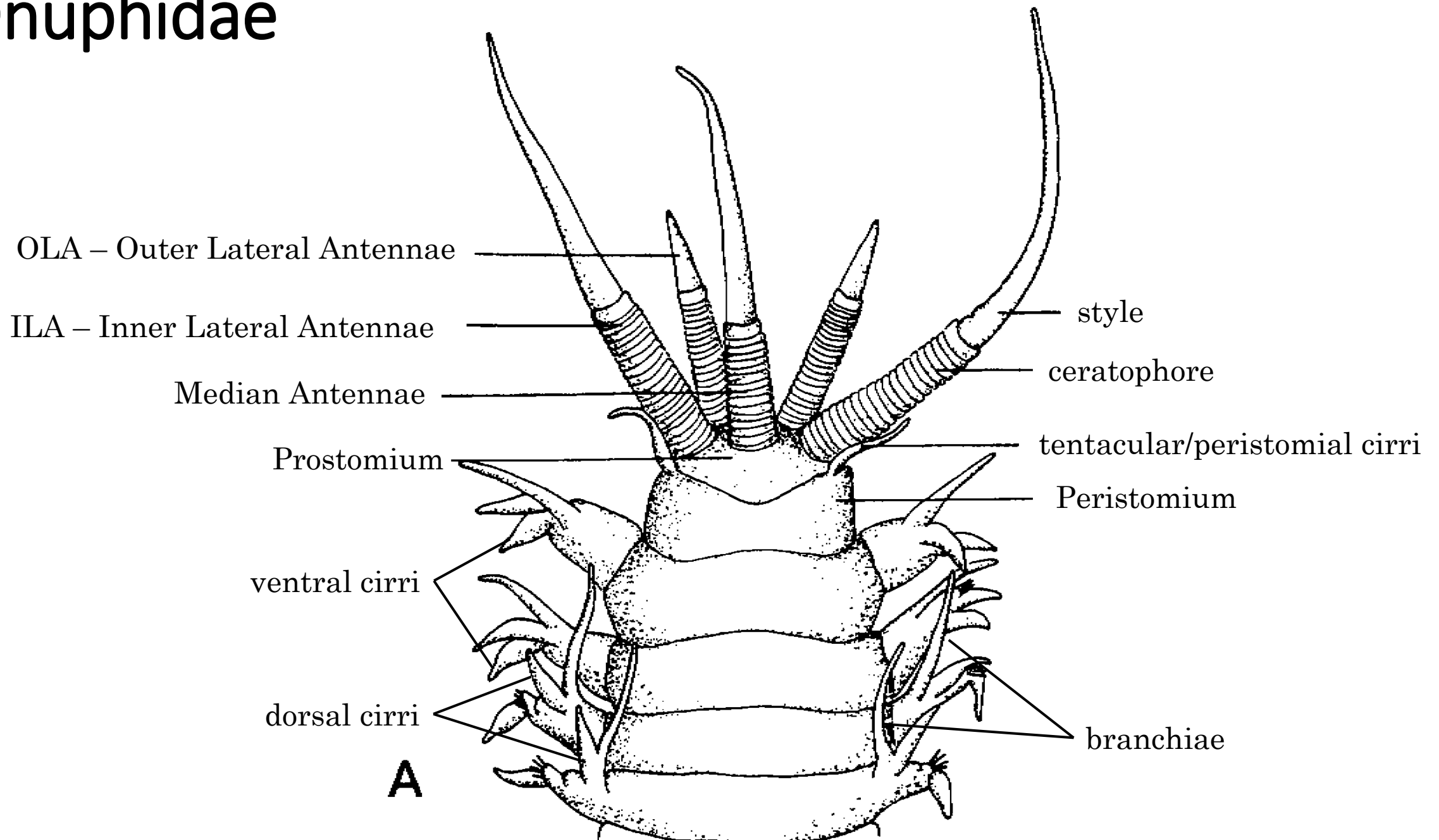


LOS ANGELES COUNTY
SANITATION DISTRICTS

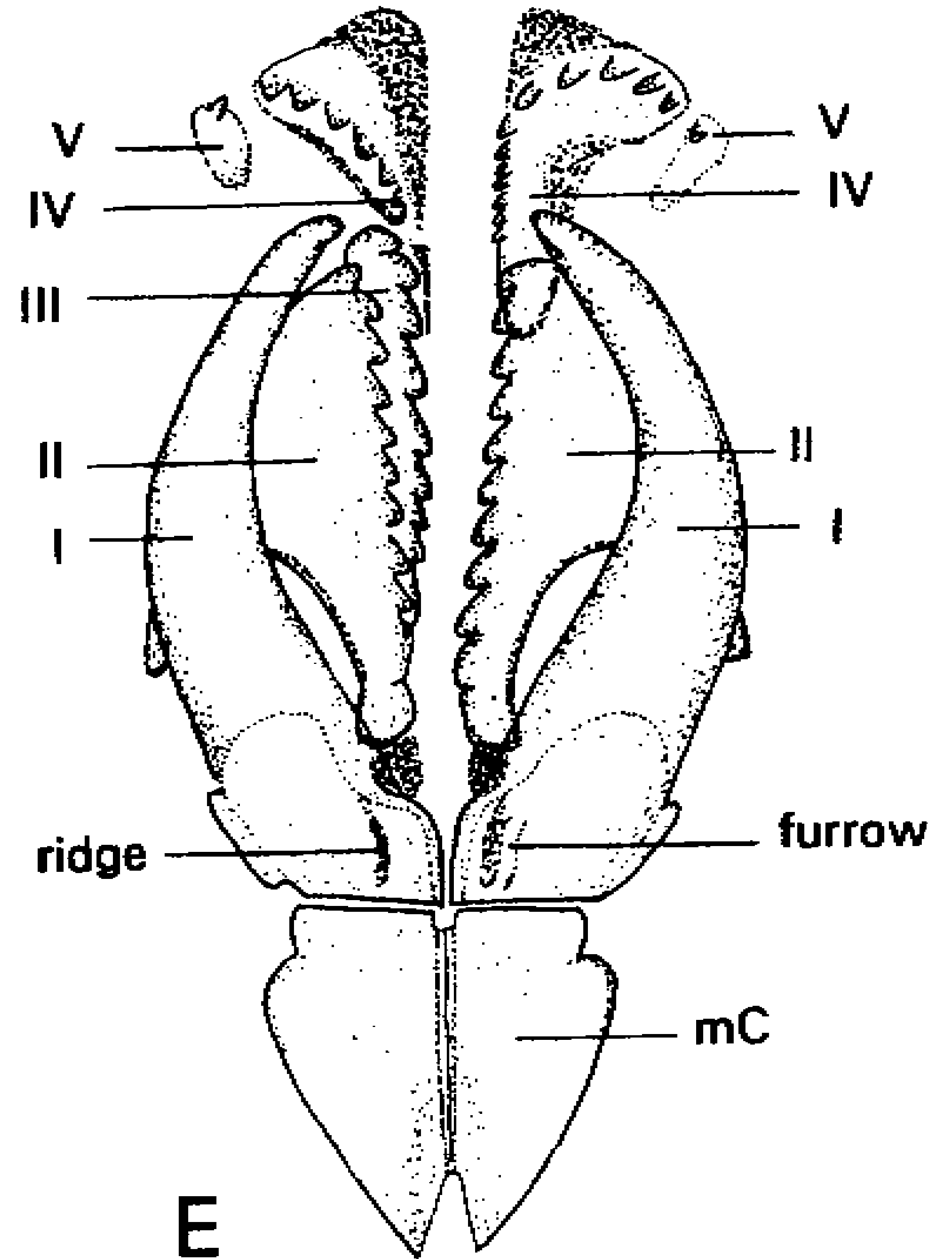
Onuphidae

- WoRMS lists 343 accepted species
 - 2 subfamilies (Hyalinoeciinae & Onuphinae)
 - 22 genera (5 & 17)
- SCAMIT ED. 13 with 22 species in 8 genera
 - 5 provisional species in 2 genera
 - This key also includes 3 additional provisional species not currently listed in ED. 13
 - *Onuphis* sp LA1 Haggin, 2019 §
 - *Nothria* sp DC1 Harris, 2014 §
 - *Mooreonuphis* sp SD2 Rowe, 1996 §

Onuphidae



Onuphidae



Hyalinoecia juvenalis Moore, 1911

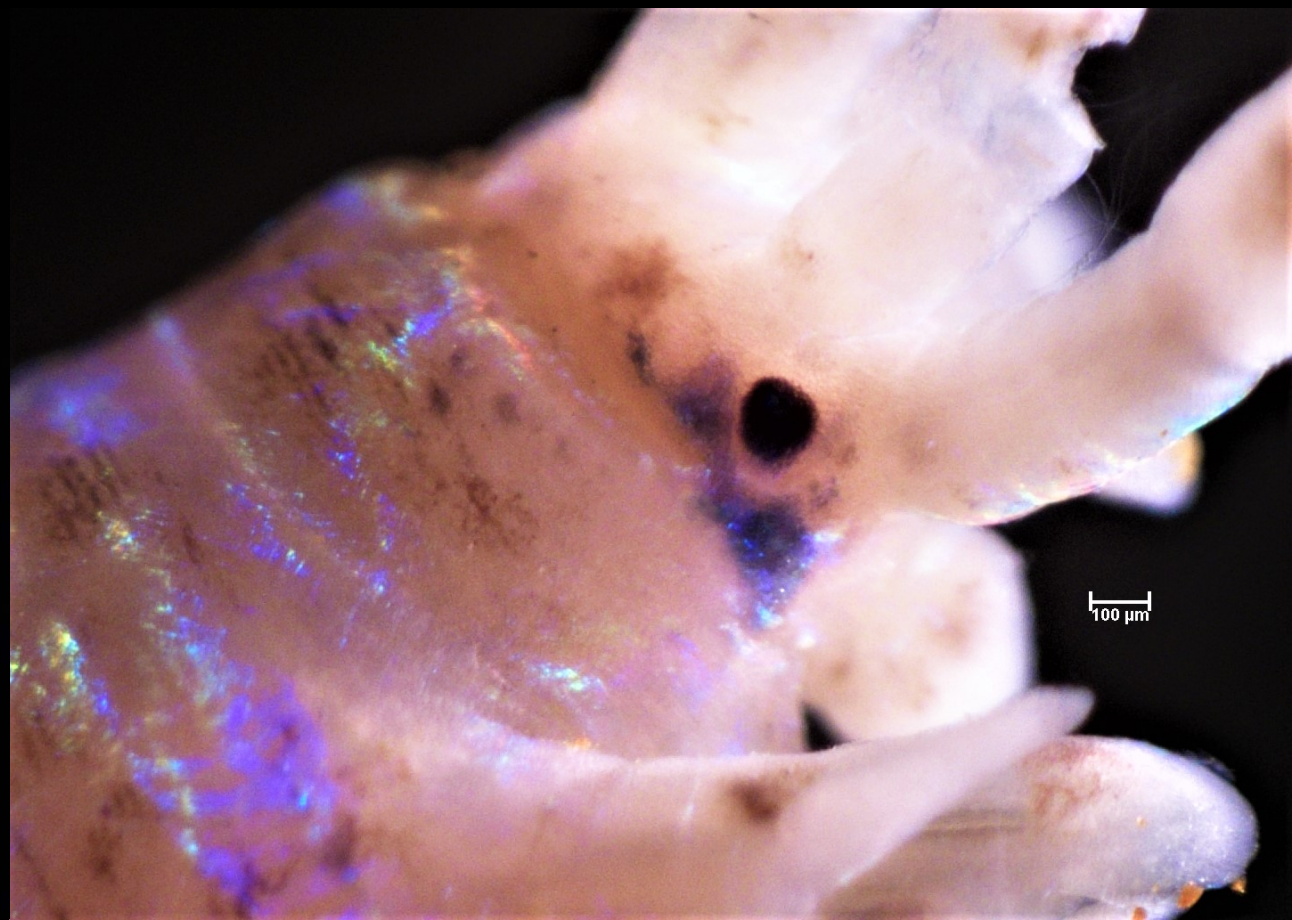
- Peristomial cirri absent
- Eyes present; 1 or 2 pair, large and conspicuous
- Branchiae from chaetiger 19, simple
- Ventral cirri pad-like from chaetiger 3
- Pseudocompound Hooded Hooks (PCHH) present on chaetigers 1-3, bidentate
- Subacicular Hooded Hooks present from chaetiger 20



Hyalinoecia juvenalis Moore, 1911 (cont.)



Photos by B. Haggin



Nothria sp DC1 Harris, 2014 §

- Collected by CLAEMD, Station 5B, 76m, 24July1976
- OLA extends to chaetiger 1
- ILA extends to chaetiger 4
- MA extends to chaetiger 5
- Branchiae from chaetiger 8-9, simple
- Ventral cirri cirriform on chaetigers 1-2, transitional on chaetiger 3, pads from chaetiger 4
- Postchaetal lobes digitate thru chaetiger 13
- Hooks falcate chaetigers 1-2; Pseudocompound on chaetiger 3, unidentate & bidentate in chaetigers 1-3
- Infraacicular hooks from chaetiger 13
- Pectinate chaetae with many teeth
- Maxillary formula: MI-1+1; MII-6+10; MIII-7+0; MIV-6+8; MV-1+1
- Differs from *Nothria occidentalis* in the following ways
 - *N. occidentalis* MA extends to chaetiger 9
 - Ventral cirri pads from chaetiger 3
 - *N. occidentalis* is falcate & unidentate in chaetigers 1-2 & Pseudocompound & bidentate in chaetiger 3
 - Infraacicular hooks from chaetiger 9
 - Pectinate chaetae with ~10 teeth

Onuphis sp LA1 Haggin, 2019 §

- Eyes present; 1 pair, obscured by Inner Lateral Antennae from above.
- Outer Lateral Antennae (OLA) with ~25 annulations, reaching to chaetiger 2.
- Inner Lateral Antennae (ILA) with 29 to 30 annulations, reaching to around chaetiger 10.
- Median Antennae (MA) with ~20 annulations, reaching to chaetiger 6 or 7.
- Branchiae from chaetiger 1, pectinate with 5 (maybe a small 6) filaments at maximum development; 1st branching from chaetiger 17, 2nd branch from chaetiger 26.
- Ventral cirri digitate in chaetigers 1-6, papilliform in chaetiger 7, globose in chaetiger 8 and pad-like from chaetiger 9 (globose VC in chaetiger 8 may be small pad).
- Postsetal lobe (PSL) digitate for 23 chaetigers (reducing rapidly in size from chaetiger 13) then small & conical to chaetiger 35. PSL reduced to papillae after.
- Interramal papillae present on chaetigers 5-10
- Pseudocompound Hooded Hooks (PCHH) present on chaetigers 1-5. Tridentate, with proximal tooth very thin and set close to median tooth (may appear bidentate).
- Subacicular Hooded Hooks present from chaetiger 10, bidentate, hooded.
- Pectinate chaetae present from chaetiger 6, distally slightly oblique, with 9-10 very long teeth.
- Limbate chaetae with very fine wings present on all chaetigers.
- Compound spinigers absent.
- Maxillary Formula: MI 1+1 (falcate); MII 9+9; MIII 8+0; MIV 6+8(9); MV 1+1 (oval plates, rounded at one end and pointed at the other, giving appearance of a tooth).

Onuphis sp LA1 Haggin, 2019 § (cont.)

Pigmentation

- Prostomium with transverse brown band anterior to MA, stretching between the bases of OLA & ILA.
- Peristomium with transverse brown band dorsally and scattered pigment around the edge of lips ventrally.
- Ceratophores of OLA with brown pigment on annulations 2-5 and 14-16; subdermal pigment spot in annulations 3 & 4, 10 & 11 and 17 & 18; with brown pigment at base of styles.
- Ceratophores of ILA with brown pigment on annulations 3-6 and 18-24; subdermal pigment spot in annulations 3-7, 12-14 and 18 & 19; with brown pigment at base of styles.
- Ceratophores of MA with brown pigment on annulations 2-5 and 10-13; subdermal pigment spot in annulations 4 & 5 and 10 & 11; with light brown pigment at base of style (not as noticeable as in ILA & OLA)
- Anterior chaetigers with transverse brown bands dorsally and 2 brown pigment patches (1 dorso-lateral & 1 ventro-lateral) on posterior of parapodia base (dorso-lateral patch connects to dorsal bands, ventro-lateral patch separate).
- Slight brown pigment in posterior interramal region of parapodia. Dorsal pigment decreasing in intensity thru chaetiger 40

Onuphis sp LA1 Haggin, 2019 § (cont.)

Similar species

- ***Onuphis eremita parva*** Berkeley & Berkeley, 1941
 - Similarities
 - presence of interramal papillae in anterior setigers
 - branchiae present from setiger 1 and becoming pectinate.
 - Differences
 - the branchiae in ***O. e. parva*** first branch in setigers 23 - 30 and in ***O. sp LA1*** they first branch in setiger 17 and a second branch in setiger 26.
 - the number of setigers with pseudocompound hooded hooks (1-4 in ***O. e. parva*** & 1-5 in ***O. sp LA1***)
 - the start of subacicular hooded hooks (setiger 8 in ***O. e. parva*** & setiger 10 in ***O. sp LA1***)
 - the maximum number of annulations on the occipital ceratorphores (21 annulations in ***O. e. parva*** & 30 annulations in ***O. sp LA1***)
 - the start of pad-like ventral cirri (setiger 7 in ***O. e. parva*** & setiger 8 or 9 in ***O. sp LA1***).

***Onuphis* sp LA1 may be *Onuphis eremita parva* but the description of *O. e. parva* was vague and the variability of characters within the species is unknown. Recent work (Arias & Paxton 2014) suggest that *Onuphis eremita* is a species complex and due to differences in the insertions of some characters a provisional species, *Onuphis* sp LA1, has been erected.**

Onuphis sp LA1 Haggin, 2019 § (cont.)

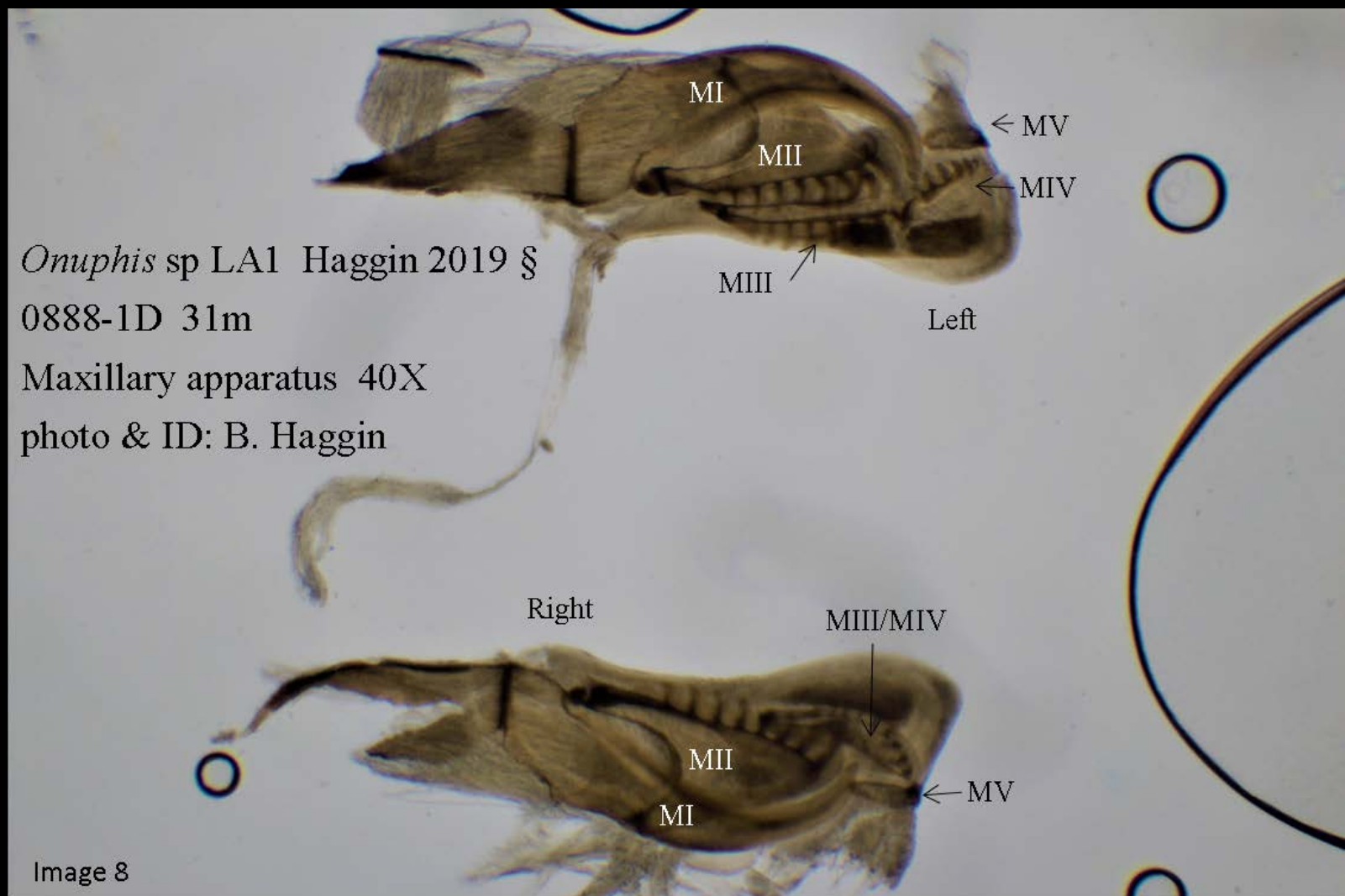
Similar species

- ***Onuphis multiannulata*** Shisko, 1981
 - Similarities
 - the first appearance of subacicular hooded hooks at setiger 10
 - branchiae present from setiger 1 and becoming pectinate
 - pseudocompound hooded hooks present in the first 5 chaetigers
 - Differences
 - maximum number of branchial filaments (3 filaments in ***O. multiannulata*** & 5(maybe 6) filaments in ***O. sp LA1***)
 - pseudocompound hooded hooks differ in their dentition (bi- & tridentate in ***O. multiannulata*** & tridentate in ***O. sp LA1***)
 - maxillary formula (***O. multiannulata***—MII 8/9+10; MIII 10+0; MIV 7+10/11 and ***O. sp LA1***—MII 9+9; MIII 8+0; MIV 6+8(or 9, difficult to count))
 - ***O. multiannulata*** lacks the interramal papillae in anterior setigers that are present in ***O. sp LA1***
 - ***O. multiannulata*** lacks pigment while ***O. sp LA1*** is heavily pigmented in anterior setigers



Image 1

Photo: N. Lee
ID: B. Haggin



Onuphis sp LA1 Haggin 2019 §
0888-1D 31m
Maxillary apparatus 40X
photo & ID: B. Haggin

Image 8



Image 2



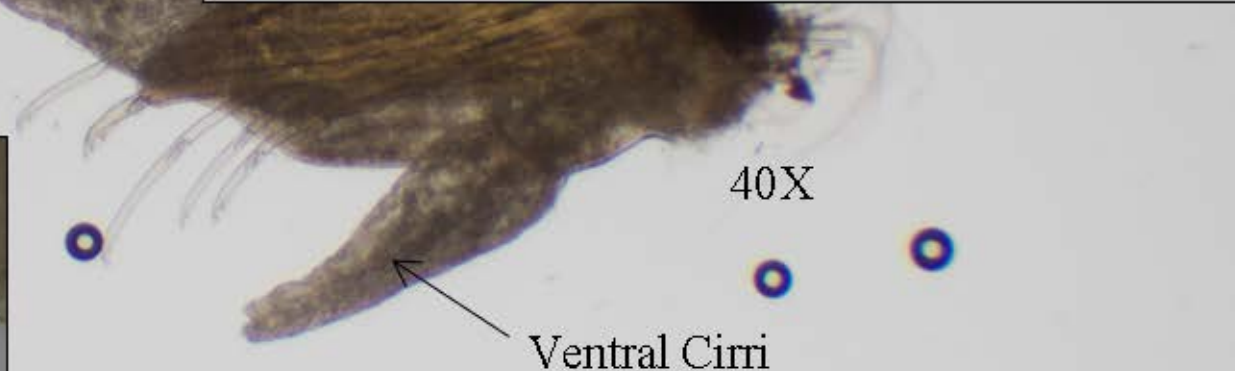
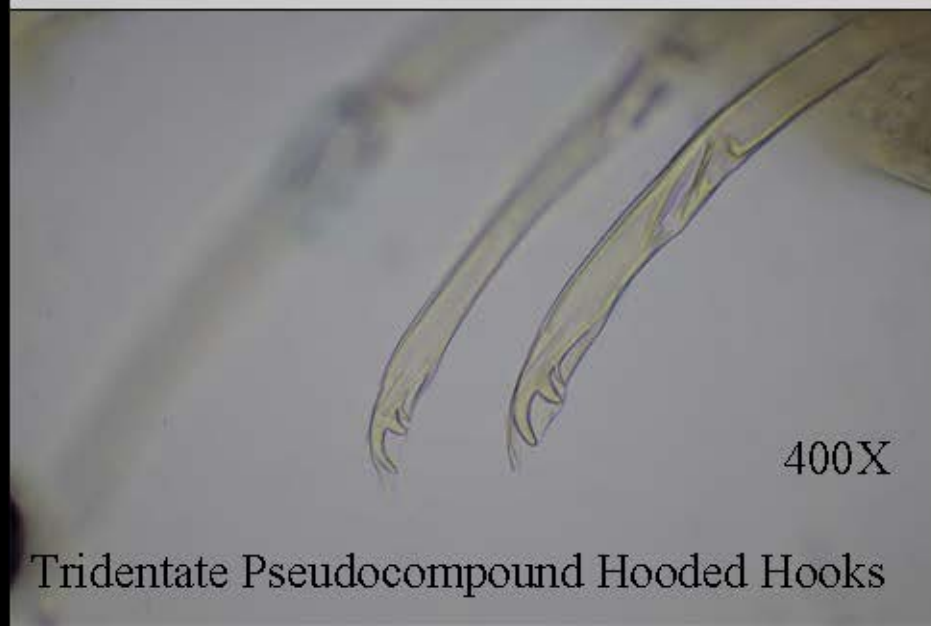
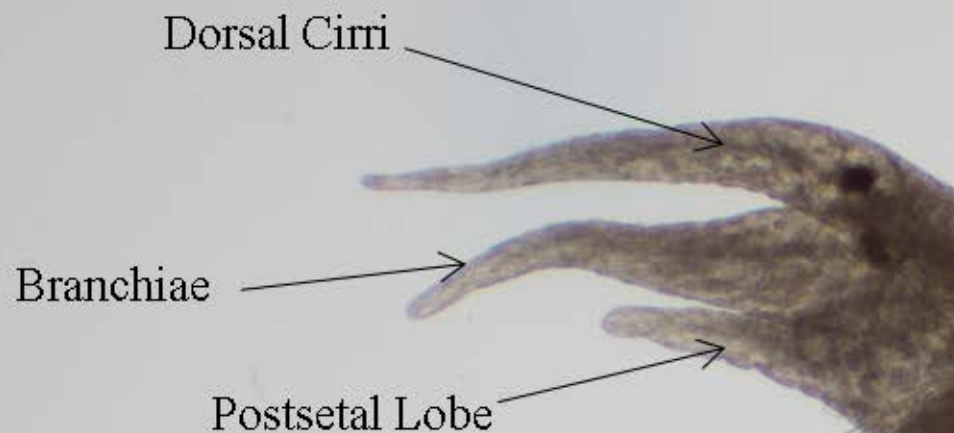
Onuphis sp LA1 Haggin 2019 §
0888-1D 31m

photo: N. Lee ID: B. Haggin

Image 3

Image 4

Setiger 1



Onuphis sp LA1 Haggin 2019 §
0888-1D 31m
photo: N. Lee ID: B. Haggin


Onuphis sp LA1 Haggin 2019 §
0888-1D 31m Setiger 8 100X
photo: N. Lee ID: B. Haggin

Dorsal Cirri →

Interramal Papillae →

Postsetal Lobe →

Branchiae →

A detailed microscopic view of a parapodium from a polychaete worm. The image shows the central branchiae, the dorsal cirri, the postsetal lobe, and the interramal papillae. The structures are dark brown and have a textured, fibrous appearance. Arrows point from the text labels to the corresponding anatomical features.

Onuphis sp LA1 Haggin 2019 §
0888-1D 31m Setiger 10 100X
photo: N. Lee ID: B. Haggin

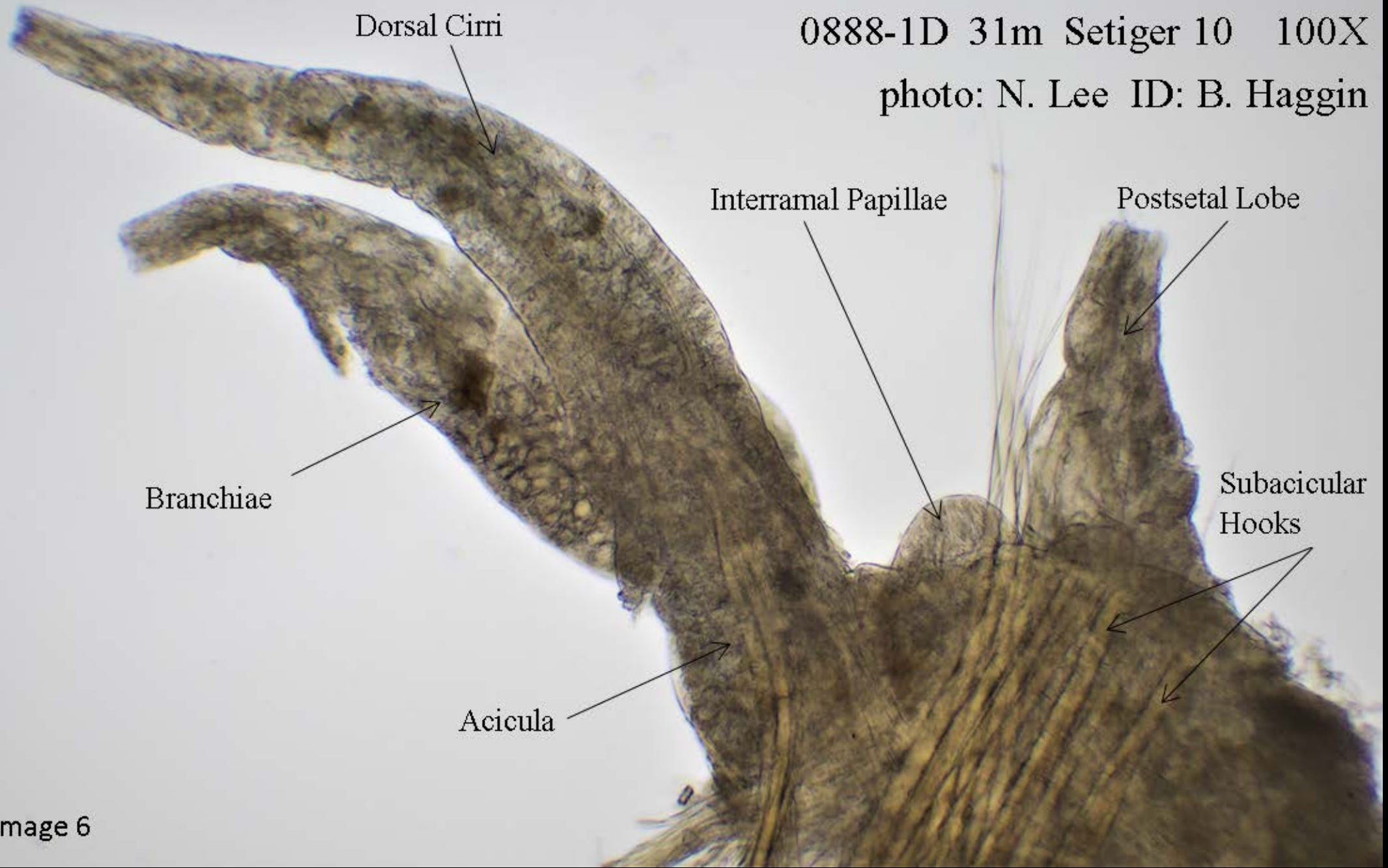
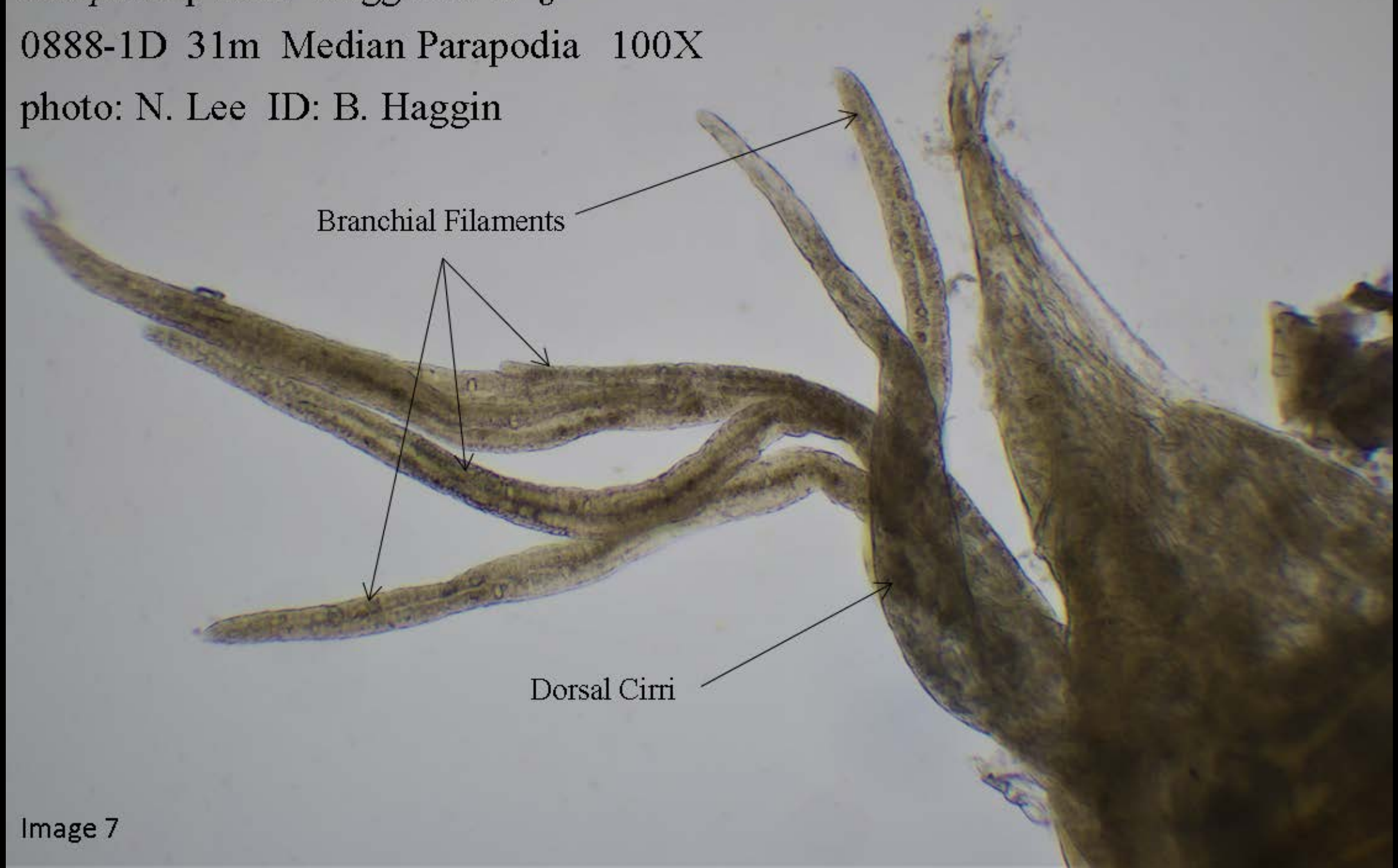


Image 6

Onuphis sp LA1 Haggin 2019 §
0888-1D 31m Median Parapodia 100X
photo: N. Lee ID: B. Haggin



Onuphis sp HYP1 Phillips, 2012 §

- Collected by CLAEMD, B1 (44m), July 2011
- OLA with 15 annulations
- ILA with 18-19 annulations
- Branchiae from chaetiger 1, single to end of fragment (52 chaetigers)
- Ventral cirri cirriform in chaetigers 1-6, transitional chaetiger 7, pads from chaetiger 8
- Postchaetal lobe cirriform thru chaetiger 10, reduced in chaetiger 11 and absent after
- Pseudocompound hooded hooks in chaetigers 1-4, tridentate
- Subacicular hooks begin in chaetiger 11
- Pigmentation is similar to *Onuphis iridescens*



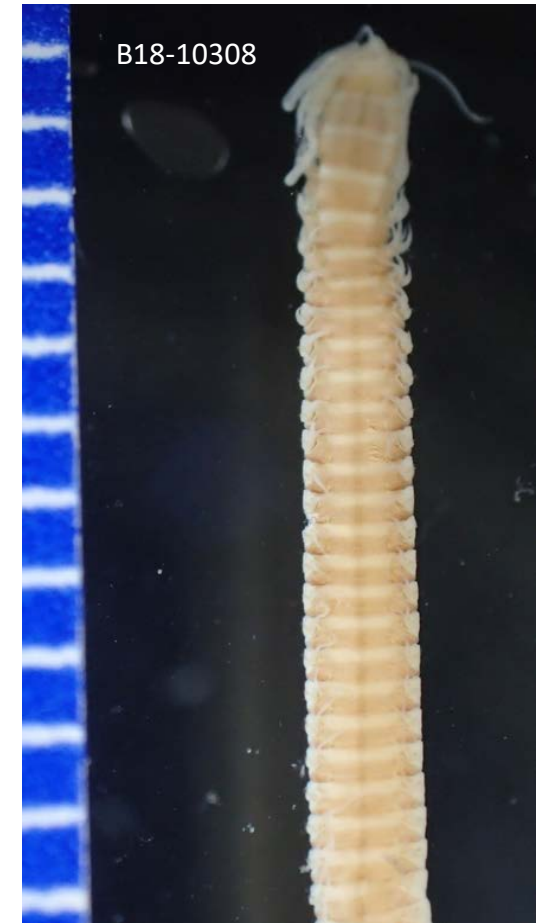
Photo by T. Phillips (2012)



Photo by E. Oderlin (2020)

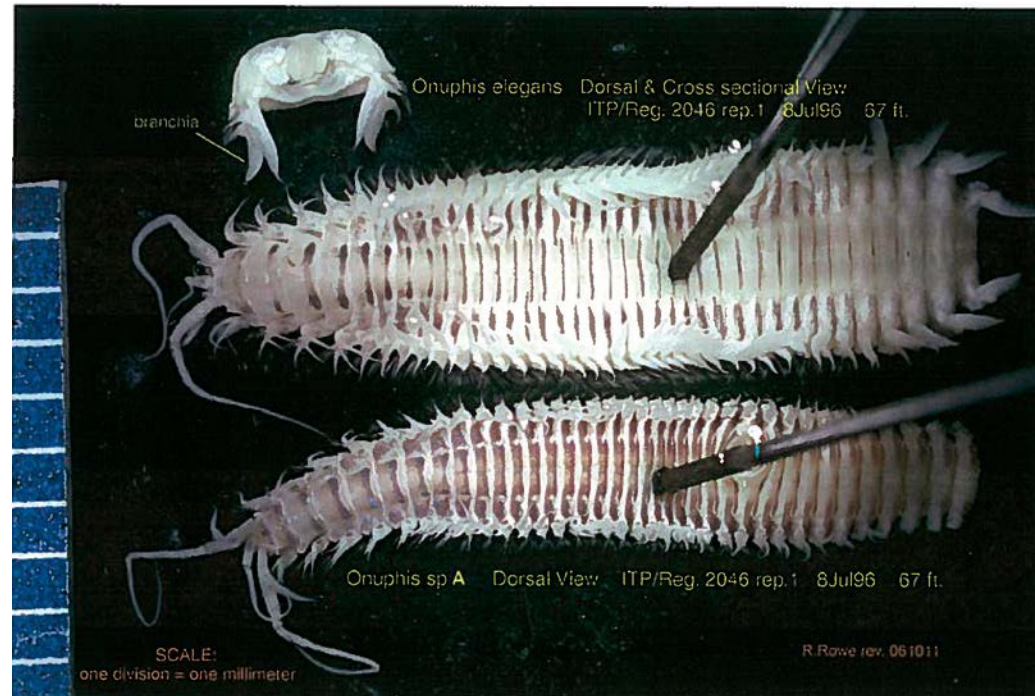
Onuphis sp HYP2 CLAEMD, 2020 §

- Collected by CLAEMD, B18-10286 (175m); B18-10309 (166m); B18-10308 (173m); B18-11000 (380m) – All collections August, 2018
- Branchiae from chaetiger 1, single, changes from skinny to wide, but not winged
- Ventral cirri cirriform in chaetigers 1-5, transitional chaetiger 6, pads from chaetiger 7
- Postchaetal lobe present thru chaetiger 17, absent after
- Pseudocompound hooded hooks in chaetigers 1-4 (1-3 in small specimens), tridentate
- Subacicular hooks begin in chaetiger 12
- Pectinate chaetae flat, oblique, about 16 teeth
- Maxillary formula: MI-1+1; MII-9+9; MIII-8+0; MIV-7+8; MV-1+1
- Pigmentation – wide brown bands form mid-dorsal squares in first few segments then complete bands



Onuphis sp A SCAMIT, 1992 §

- Shallow water species
- Branchiae from chaetiger 1, single & thin throughout
- Ventral cirri pads from chaetiger 6 or 7
- Subacicular hooks begin in chaetiger 8-9
- Maxillary formula: MI-1+1; MII-7+7; MIII-8+0; MIV-6+8; MV-without teeth
- Pigmentation – wide brown bands form mid-dorsal squares in first few segments then complete bands
 - Similar to *Onuphis iridescens* but *O. iridescens* subacicular hooks begin in chaetiger 12-13 and is from deeper water
 - Similar to *Onuphis elegans* but the branchiae of *O. elegans* becomes very wide in median chaetigers and the maxillary formula of *O. elegans* is MI-1+1; MII-6/7+5/7; MIII-7/10+0; MIV-6/7+5/8; MV-1+1



Mooreonuphis sp LA1 Brantley, 1999 §

- Originally collected off of Santa Cruz Island
 - LACSD has most of its records from station 2D (30m), which is characterized by gravel and larger sand particles; usually collected in large #'s (10-50/sample)
- OLA to chaetiger 2
- ILA to chaetiger 7
- MA to chaetiger 2
- Branchiae absent
- Ventral cirri pads from chaetigers 4-6
- Postchaetal lobes digitate through chaetigers 16-18
- Pseudocompound hooded hooks in chaetigers 1-4, bidentate & tridentate
- Subacicular hooks begin in chaetiger 11-13
- Composite spinigers in chaetigers 4-12(13)
- Pigmentation – dark brown band across peristomium; thin band across the center of each segment which branch into a sideways triangle shape near each parapodia; thin bands across intersegmental groove; fading by chaetiger 40

Mooreonuphis sp LA1 Brantley, 1999 § (cont.)



Mooreonuphis sp SD1 Rowe, 1996 §

- Originally collected off San Diego
 - LACSD has 1 record from station 2D (30m), which is characterized by gravel and larger sand particles
- ILA to chaetiger 8(7-12)
- Branchiae from chaetigers 23-40 (high variability but always after chaetiger 22), simple
- Ventral cirri cirriform chaetigers 1-3, digitate on chaetiger 4, pads from chaetiger 5
- Pseudocompound hooded hooks in chaetigers 1-3, tridentate (occasionally with 1 or 2 bidentate)
- Subacicular hooks begin in chaetiger 11-14
- Simple hooks on chaetigers 4-5
- Composite spinigers in chaetigers 4-11
- Pigmentation – Peristomium brown, light transverse banding on chaetiger 1, darkening on 2 & 3, darkest from 4-25 then fading

Mooreonuphis sp SD2 Rowe, 1996 §

- Originally collected off San Diego
 - LACSD has no records
- OLA to chaetiger 2
- ILA to chaetiger 5-7
- MA to chaetiger 2
- Branchiae from chaetigers 5-8 (only present through ~1/2 of body), simple
- Ventral cirri cirriform chaetigers 1-3, digitate on chaetiger 4, pads from chaetiger 5
- Postchaetal lobes digitate through chaetigers 16-18
- Pseudocompound hooded hooks in chaetigers 1-3/4, tridentate (occasionally bidentate)
- Subacicular hooks begin in chaetiger 9-10
- Simple hooks on chaetigers 4-6
- Composite spinigers in chaetigers 5-9/11
- Pigmentation – broken band across chaetigers 1 & 2, continuous across next ~20 chaetigers, band getting thinner posteriorly

References

- Berkeley, C. 1972. Further records of Polychaeta new to British Columbia with comments on some others. *Canadian Journal of Zoology*. 50(4): 451-456.
- Berkeley, E. & Berkeley, C. 1941. On a collection of Polychaeta from Southern California. *Bulletin of the Southern California Academy of Sciences*. 40(1): 16-60.
- de León-González, J. A. 1994. Soft bottom polychaetes from the western coast of Baja California Sur, Mexico. 4. Onuphidae. *Cahiers Biologie Marine*. 35: 57-67.
- Fauchald, K. 1968. Onuphidae (Polychaeta) from Western Mexico. *Allan Hancock Monographs in Marine Biology*. 3: 1-82.
- Fauchald, K. 1980. Onuphidae (Polychaeta) from Belize, Central America, with notes on related taxa. *Proceedings of the Biological Society of Washington*. 93(3): 797-829.
- Fauchald, K. 1982. Revision of *Onuphis*, *Nothria*, and *Paradiopatra* (Polychaeta: Onuphidae) based upon type material. *Smithsonian Contributions to Zoology*. 356: 1-109.
- Fauchald, K., Granados-Barba, A., & Solís-Weiss, V. 2009. Polychaeta (Annelida) of the Gulf of Mexico, Pp. 751–788 in D.L. Felder and D.K. Camp (eds.). *Gulf of Mexico. Origin, Waters, and Biota. Volume 1, Biodiversity*. Texas A&M University Press, College Station, Texas.
- Gil, J. & Machado, M. 2014. A new species of *Onuphis* (Polychaeta: Onuphidae) from Southern Portugal, with comments on the validity of *O. panzerii* Claparède, 1868. *Zootaxa*. 3860(4): 343-360.
- Glasby, C. J., Read, G. B., Lee, K. E., Blakemore, R. J., Fraser, P. M., Pinder, A. M., Erseus, C., Moser, W. E., Burreson, E. M., Govedich, F. R., Davies, R. W. & Dawson, E. W. 2009. Phylum Annelida: bristleworms, earthworms, leeches, in: Gordon, D. P. (Ed.) (2009). *New Zealand inventory of biodiversity: 1. Kingdom Animalia: Radiata, Lophotrochozoa, Deuterostomia*. pp. 312-358.
- Harris, L. H. 2003. West Coast Onuphid Species - British Columbia to Western Mexico. *NHMLAC/SCAMIT Handout*.
- Hartman, O. 1944. Polychaetous Annelids. Part V. Eunicea. *Allan Hancock Pacific Expeditions*. 10(1): 1-237.
- Hartman, O. 1968. *Atlas of the Errantiate Polychaetous Annelids from California*. Los Angeles, Ca, University of California, Allan Hancock Foundation.
- Hilbig, B. 1995. Family Onuphidae Kinberg, 1865. pages 229-262. IN: Blake, J. A., Hilbig, B., & Scott, P. H. *Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel. 5 - The Annelida Part 2. Polychaeta: Phyllodocida (Syllidae and scale-bearing families), Amphinomida, and Eunicida*. Santa Barbara Museum of Natural History.
- Hobson, K. D. 1971. Some polychaetes of the superfamily Eunicea from the north Pacific and north Atlantic Oceans. *Proceedings of the Biological Society of Washington*. 83(47): 527-544.
- Johnson, H. P. 1901. The Polychaeta of the Puget Sound region. *Proceedings of the Boston Society for Natural History*. 29(18): 381-437, plates 1-19.
- Kinberg, J. G. H. 1865. Annulata nova. *Öfversigt af Königlich Vetenskapsakademiens förhandlingar, Stockholm*. 21(10): 559-574.
- Monro, C. C. A. 1933. The Polychaeta Errantia collected by Dr. C. Crossland at Colón, in the Panama region, and the Galapagos Islands during the Expedition of the S.Y. 'St. George'. *Proceedings of the Zoological Society of London*. 103(1): 1-96.
- Moore, J. P. 1903. Polychaeta from the coastal slope of Japan and from Kamchatka and Bering Sea. *Proceedings of the Academy of Natural Sciences of Philadelphia*. 55: 401-490, plates XXIII-XXVII.
- Moore, J. P. 1904. New Polychaeta from California. *Proceedings of the Academy of Natural Sciences of Philadelphia*. 56: 484-503, plates XXXVII-XXXVIII.
- Moore, J. P. 1911. The polychaetous annelids dredged by the U.S.S. "Albatross" off the coast of Southern California in 1904. III. Euphrosynidae to Goniadidae. *Proceedings of the Academy of Natural Sciences of Philadelphia*. 63: 234-318, plates XV-XXI.
- Paxton, H. 1986. Revision of the *Rhynchobranchium* complex (Polychaeta: Onuphidae). *Records of the Australian Museum*. 38(2): 75-104.
- Rupit-Arteaga, S. K., Hernández-Alcántara, P. & Solís-Weiss, V. 2013. Description of *Mooreonuphis bidentata* a new species of Onuphidae (Annelida: Polychaeta) from the Mexican Caribbean with remarks on the distribution of the genus. *Journal of the Marine Biological Association of the United Kingdom*. 93(04): 981-990.
- Shisko, J. F. 1981. Five new polychaetes of the families Eunicidae and Onuphidae, collected in 1975 and 1976 during the Southern California Baseline Project. *Proceedings of the Biological Society of Washington*. 94(4): 968-983.
- Treadwell, A. L. 1922. Polychaetous annelids collected at Friday Harbor, State of Washington, in February and March, 1920. *Carnegie Institute of Washington Publication*. 312: 171-181.
- Uebelacker, J. M. & Johnson, P. G. (eds). 1984. *Taxonomic guide to the polychaetes of the Northern Gulf of Mexico. Final report to the Minerals Management Service, contract 14-12-001-29091. Volumes 1-7*, Barry M. Vittor & Associates. Mobile, Alabama.
- WoRMS