

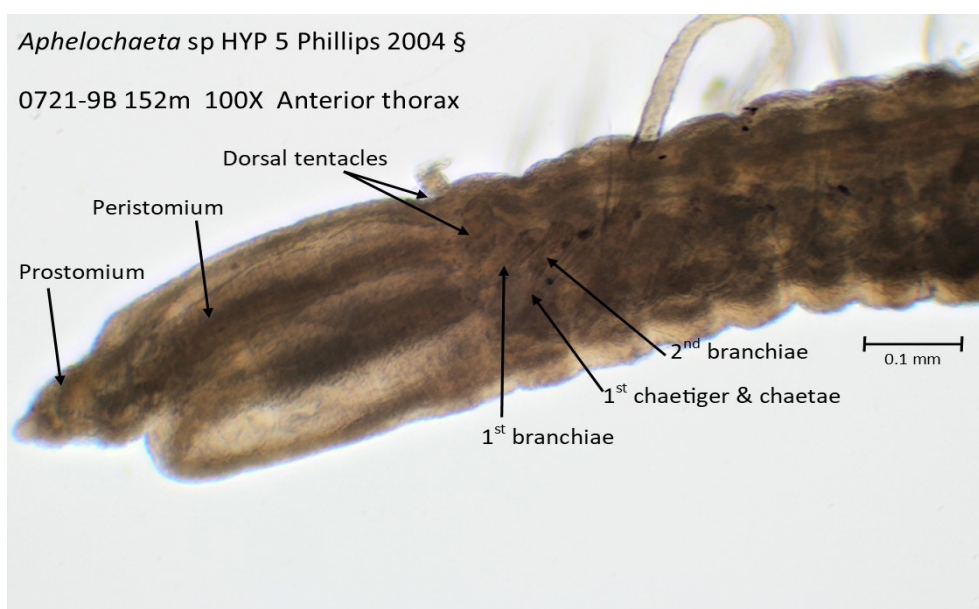
SOUTHERN CALIFORNIA ASSOCIATION OF MARINE INVERTEBRATE TAXONOMISTS



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Antero-lateral view of *Aphelochaeta* sp Hyp5 Phillips 2004 § showing the insertion of the dorsal tentacles. Photo by B. Haggin

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The SCAMIT newsletter is not deemed to be a valid publication for formal taxonomic purposes

Publication Date: March 2024

12 SEPTEMBER 2022, EUNICIDAE, ZOOM

Attendance: Brent Haggin (LACSD); Ricardo Martinez, Veronica Rodriquez, Maiko Kasuya, Adam Webb (CSD); Leslie Harris (NHMLAC); Erin Oderlin, Greg Lyon, Jennifer Smolenski (CLAEMD); Angelica Zavala Lopez (MTS); Tom Biksey (Retired – Formerly of Don Reish Lab, CSULB); Erica Keppel, Smithsonian.

There was no administrative business to discuss so Brent began the meeting with some responses to unresolved items from SCAMIT newsletter 39(6).

The first was a question posed by

Leslie, “Where have all the *Raricirrus*

gone? Have we made the water too clean?” A review of LACSD benthic data showed that *Raricirrus maculatus* Hartman, 1961 was recorded regularly from 1972 to 1982, scattered along the Palos Verdes peninsula but with the majority of the records in the vicinity of the outfalls. Only 1 additional report from 2001 is in their records, 3 individuals from the outfall station. In 1984 the LACSD Joint Water Pollution Control Plant (JWPCP) implemented a Partial Secondary treatment and in 2003, a Full Secondary treatment. It would appear as though *R. maculatus* does prefer impacted sediments and the improved sediment quality is no longer favorable for this species.

The meeting moved on to a discussion of *Anotomastus gordiodes* (Moore, 1909) and a “honeycomb” methyl green stain (MGS) pattern observed by CLAEMD. Brent reviewed the *A. gordiodes* at LACSD, and photographed and documented the variability in thoracic chaetiger counts and chaetal arrangement, as well as MGS stain variation. The “honeycomb” pattern was captured and the group decided that “mottled” was a better description (Image 12 of attached *A. gordiodes* voucher sheet). A brief discussion on *A. gordiodes* is below.

Anotomastus is a monotypic genus erected by Hartman in 1947 to accommodate the species *Eunotomastus gordiodes* Moore, 1909 because it differed from the type species *Eunotomastus grubei* McIntosh, 1885 in the number of transitional thoracic chaetigers (1 in *Anotomastus* and 4 in *Eunotomastus*). Transitional thoracic chaetigers are defined as those with capillary notochaetae and hooded hooks or mixed fascicles in the neuropodia. *Eunotomastus* also has a complete first chaetiger whereas *Anotomastus* has an incomplete first chaetiger. The number of transitional thoracic chaetigers can also be used to help distinguish between *Pseudocapitella*, *Paracapitella* and *Anotomastus* as they all have a different number of transitional thoracic chaetigers.

The genus *Anotomastus* is described as having 17-18 thoracic chaetigers but a review of LACSD material shows worms with as few as 15 thoracic chaetigers and no transitional thoracic chaetigers (possibly juveniles). A review of *Anotomastus gordiodes* from San Diego Bay by Leslie (pers. comm.) also shows variation in the chaetal arrangement of the posterior thorax, with hooded hooks present from the 17th chaetiger, rather than the 18th, hooks in the last thoracic notopodia, capillary chaetae only or capillary chaetae present in the first abdominal notopodia.

Variation in the MGS pattern can also be seen within *Anotomastus gordiodes*. The thoracic stain is fairly consistent as far as which chaetigers stain intensely, but whether the stain is solid or speckled in the posterior thorax seems to be variable. The degree of abdominal banding is also highly variable, being either absent completely (B’13-9304—L. Harris, pers. comm., 21m off Santa Cruz Island, CA; B’18-10226—K. Barwick, pers. comm., 29m off Huntington Beach,

UPCOMING MEETINGS

Visit the SCAMIT website at: www.scamit.org for the most current meetings announcements.



CA) to present, and ranging from faint to intense in LACSD samples (Images 8-11 & 13 of attached *A. gordiodes* voucher sheet).

The type locality of *Anotomastus gordiodes* is San Diego, intertidal. Leslie has suggested that true *A. gordiodes* only occurs in shallow water and we perhaps have an additional species subtidally. An additional review of *A. gordiodes* specimens from throughout the SCB would be needed to assess this.

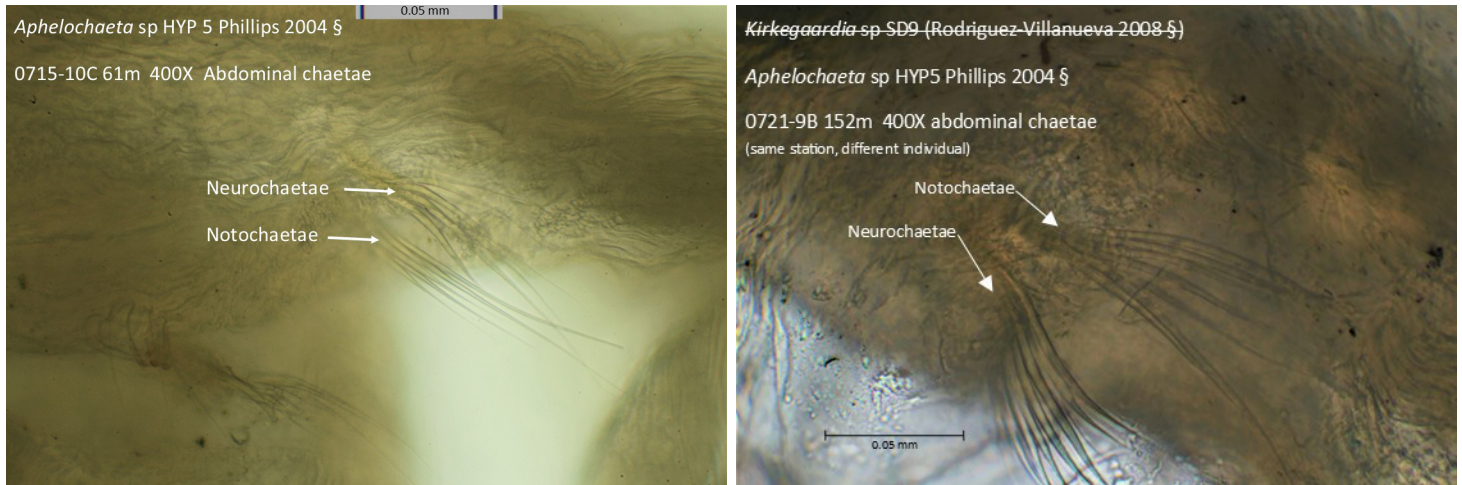
The final item from SCAMIT newsletter 39(6) was the discussion of *Aphelochaeta* sp HYP5 vs. *Kirkegaardia* sp SD9. Brent conducted a review of LACSD specimens and striking similarities between *Aphelochaeta* sp HYP5 Phillips, 2004 § and *Kirkegaardia* sp SD9 (Rodriguez Villanueva, 2008 §) were seen. General overall morphology, stain pattern, and shape of the abdominal chaetae (pictured below) have shown that, at least in the Los Angeles area, all previous LACSD reports of *K. sp SD9* are actually *A. sp HYP5*. These individuals have abdominal neurochaetae that lack a distinct basal swelling, lack visible denticles at 400X magnification, are of nearly equal length as the notochaetae, all typical characteristics of the genus *Aphelochaeta*. The insertion of the dorsal tentacles is also on the anterior of chaetiger 1, another *Aphelochaeta* characteristic.



Blake (2019) emended the generic diagnosis of *Aphelochaeta* to be: “Prostomium conical to rounded; peristomium elongate with pair of grooved dorsal tentacles arising either on, or anterior to, setiger 1. Anterior segments often expanded, crowded or uncrowded; abdominal



segments sometimes beaded or moniliform in appearance; setae simple capillaries lacking distinct serrations using light microscopy but distinct fibrils may be visible using SEM; posterior end frequently expanded, tapering to a simple pygidial lobe.”

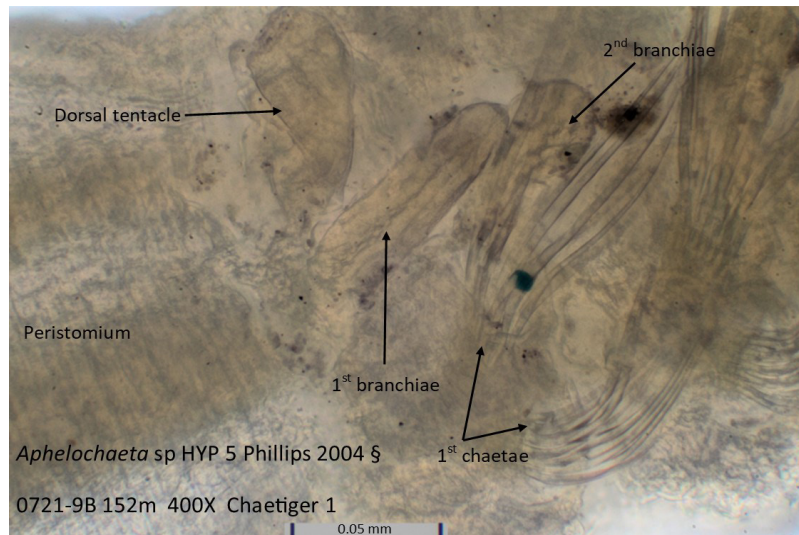


Blake (2016) replaced the genus *Monticellina* with the genus *Kirkegaardia* after discovering that *Monticellina* was preoccupied in the Platyhelminthes and redescribed the genus as: “Bitentaculate cirratulids with distinct body regions and all setae distally pointed. Pre-setigerous area typically elongate, cylindrical, with short, blunt prostomium and long peristomium with none to many weakly developed annulations; dorsal tentacles arising on posterior margin of peristomium, anterior to setiger 1. Thoracic notopodia often shifted dorsally, elevated, producing distinct dorsal groove along thoracic region; other species with thoracic parapodia more lateral, leaving broad elevated dorsum; parapodia of middle and posterior segments wider than long, somewhat crowded, with posterior most segments usually expanded or enlarged. Setae including simple capillaries with fibrils observed under SEM and denticulated capillaries with distinct denticles present along one edge of seta; denticles visible at 400-1000X; blades usually basally expanded.”

Based on these descriptions, the best features for separating *Aphelochaeta* and *Kirkegaardia* are the chaetal structure and secondarily, the insertion of the dorsal tentacles. The dorsal tentacles are always inserted on the posterior of the peristomium in *Kirkegaardia* but can be on either the peristomium or chaetiger 1 in *Aphelochaeta*. The presence of denticles and basal swelling in the abdominal neurochaetae also are indicative of the genus *Kirkegaardia*. SCAMIT had previously established a 400X magnification threshold for determining the presence of denticles but according to Blake’s generic diagnosis, up to 1000X is used to define species as is the case for *Kirkegaardia serratiseta* (Banse & Hobson, 1968) (Blake, 2016). It was decided during the meeting to maintain the 400X threshold for denticle determination for future provisional species but Blake’s descriptions should be used to reliably identify currently described species. The methyl green stain patterns of the individual species can also be useful in aiding in the separation of the two genera once the individual species patterns are known.

Viewing the shape and dentition of the abdominal neurochaetae and the insertion of the dorsal tentacles (see cover photo and next page), clearly on the anterior of chaetiger 1, along with the stain pattern, *Kirkegaardia* sp SD9 should be locally synonymized with *Aphelochaeta* sp HYP5 and a detailed review of specimens from Orange County to San Diego should be made to determine if a complete synonymy is needed. A review of the images provided by Veronica during her Cirratulidae presentation in 2017 seem to show a similar stain pattern, abdominal





neurochaetae that lack basal swelling and clear denticulation, and are of nearly equal length to the notochaetae. The insertion of the dorsal tentacle is difficult to determine from the images.

The meeting then moved on to reviewing provisional voucher sheets.

Jasmineira sp LA1 Haggin 2019 § was originally collected in Bight '18 by LACSD from a single station in the San Pedro Channel (off the west end of Catalina Island) in 548 m. During the B'18 QC resolution, it was discovered that another individual was collected in CLAEMD B'18 samples from deeper water in Santa Monica Bay. It was determined that *J. sp* LA1 should be included in the next edition of the SCAMIT species list and should get a SCAMIT name designation. Update: This species has since been added to the SCAMIT Species List, Ed.14 as *Jasmineira* sp C SCAMIT 2023 § and the updated voucher sheet published in SCAMIT Newsletter 40(5). Brent will also prepare a stain-comparison with *Jasmineira* sp B SCAMIT 1986 §.

The next provisional voucher reviewed was *Kirkegaardia* sp LA1 Haggin 2019 §. This was another deep-water Bight'18 collected species. Numerous individuals from Santa Monica Basin and San Pedro Channel were collected from 738–883 m. It most closely resembles *Kirkegaardia cryptica* (Blake, 1996) having an elongated peristomium but differs in its stain pattern. It was determined that *Kirkegaardia* sp LA1 should be included in the next edition of the SCAMIT species list and should get a SCAMIT name designation. Update: This species has since been added to the SCAMIT Species List, Ed. 14 as *Kirkegaardia* sp B SCAMIT 2023 § and the updated voucher sheet published in SCAMIT Newsletter 40(5).

The final provisional voucher sheet reviewed was *Cossura* sp LA1 Haggin 2019 §. This was a single individual collected during Bight'18 from 745 m in the San Pedro Channel. After discussion during the meeting and further review, it was determined that this was actually *Cossura rostrata* Fauchald, 1972. Brent had counted his specimen as having 34 thoracic chaetigers. *C. rostrata* was described as having 19-21 thoracic chaetigers and 10-15 transitional chaetigers. Taking this into account, the 34 thoracic chaetigers counted in *C. sp* LA1 would fall into this range and changes in the MGS pattern correlate with the transitional chaetigers. The overall MGS pattern also agrees well with *C. rostrata*. Brent will update the voucher sheet with the new information and make it available. Brent will also prepare a comparison of stain patterns of the *Cossura* species encountered at LACSD.



Adam led the remainder of the meeting with a presentation on the Family Eunicidae, with a focus on *Marphysa sensu lato*. It is one of the largest polychaete families, with more than half of the species described prior to 1900. There are 29 described genera, 11 are considered valid and 6 are represented in the NEP. The Eunicidae are considered the sister group to the family Onuphidae. They have 1-5 antennae and may have peristomial cirri present or absent. They are tubiculous or free-living, and are carnivorous, herbivorous or scavengers.

Marphysa, as a group, lack peristomial cirri and possess branchiae. Fauchald had separated *Marphysa* into 5 groups based on characteristics of the composite chaetae, while Grube had suggested separating *Marphysa* into 2 groups based on branchial distribution. Molina Acevedo (2018) split *Marphysa* and erected a new genus, *Paucibranchia*, for species with a limited branchial distribution and an MI with a rounded falcate arch. Species with branchiae throughout and an MI with a rectangular falcate arch remained in *Marphysa*. Locally identified species of *Marphysa mortenseni* Monro, 1928 should be given a provisional designation and identified as such in the future based on characteristics of the dentition of MII and MIII.

With the recent split of *Marphysa*, a question was raised regarding *Marphysa* sp B SCAMIT 1999 §. Based on its branchial distribution and MI characteristics, this species should be retained within *Marphysa*. Leslie also has a personal provisional species, *Marphysa* sp B from San Diego Bay, that differs from the *Marphysa* sp B currently on the SCAMIT list. Adam has a character table for the local *Marphysa* that will be updated with all the local provisional species.

Leslie shared images of *Leodice lucei*. It has a mottled dark-red appearance anteriorly that fades rapidly to a brown/cream color posteriorly. This species is associated with hard substrates so may not be encountered during routine monitoring.

A question about the Flabelligeridae was asked - “How does Sergio Salazar-Vallejo define ankylose vs. pseudocompound?” Ankylose chaetae possess a stiff joint caused by fusion, whereas pseudocompound chaetae have a distinct shaft and blade.

The meeting concluded with choosing the provisional vouchers to be reviewed in the next meeting: *Syllis* sp LA4, *Dispio* sp SD1, *Phyllochaetopterus* sp LA1, *Chaetozone* sp LA2 and *Lepidonotus* sp LA1. The topic for the next polychaete meeting was also decided and it will cover problematic polychaete groups *Syllis* and *Eusyllis*, *Parasabella*, *Prionospio* and potentially others.

17 OCTOBER 2022, POLYCHAETES, ZOOM

Attendance: Brent Haggin, LACSD; Leslie Harris, NHMLAC; Ricardo Martinez, Veronica Rodriguez, Adam Webb, Maiko Kasuya, CSD; Erin Oderlin, Greg Lyon, Jennifer Smolenski, CLAEMD; Ashley Loveland, Diane O’Donohue, Jessica Donald, SFPUC; Bill Furlong, MBC; Ernie Ruckman, OCSD; Kelvin Barwick, OCSD-Retired; Dany Burgess, Washington State Dept. of Ecology; Tony Phillips, DCE; Erica Keppel, Smithsonian.

The meeting began with an impromptu discussion on the differences between *Aphelocheata petersenae* Blake, 1996 and *Aphelocheata* sp B SCAMIT, 2015 §. The key differences are in the stain patterns and an expansion of a few thoracic chaetigers in *A.* sp B that is not present in *A. petersenae*.

Veronica provided a brief review of her provisional species *Dispio* sp SD1 Rodriguez Villanueva 2018 §. Its closest congener *Dispio uncinata* Hartman, 1951



has multiple dorsal papillae on the first chaetiger that are lacking on *D. sp* SD1. Veronica will work on updating the provisional voucher sheet to conform with the new SCAMIT guidelines.

Brent then led a review of some of his provisional species. The first was *Lepidonotus sp* LA1 Haggin, 2019 §. *L. sp* LA1 was a deep-water species collected during Bight'18 from 745 m. It is most similar to *Lepidonotus spiculus* (Treadwell, 1906) but *L. spiculus* has polygonal basal plates on the elytra that are absent on *L. sp* LA1. Additionally, *L. spiculus* is known from shallower water (84-126 m) and is found locally on hard substrates. *L. sp* LA1 was elevated to *Lepidonotus sp* A SCAMIT, 2023 § and the voucher sheet was published in Vol. 41, no. 1-2.

The next provisional species was *Syllis sp* LA4 Haggin, 2019 §. It is another deep-water species collected during Bight'18 from 745 m. *S. sp* LA4 is different from other local *Syllis* species based on the combination of articles in the antennae, tentacular cirri and dorsal cirri, the location of the proventriculus, and the lengths of the blades of the compound falcigers. This species was elevated to *Syllis sp* A SCAMIT, 2023 § and the voucher sheet was published in SCAMIT Newsletter Vol. 41, no. 1-2.

This led to a discussion of local shallow water *Syllis* after Bill Furlong (MBC) told us about a strange specimen from around 9 m off Ventura. His specimen had few articles and unidentate blades in the compound falcigers. Bill was directed to *Syllis farallonensis* (Blake & Walton, 1977) as a likely suspect. *Syllis adamantea* (Treadwell, 1914) was also suggested but Leslie pointed out that *S. adamantea* was one of the few syllids that have and retain pigment. Tony and Leslie noted that *S. adamantea* is typically found locally in shallow water associated with rip-rap and pier pilings.

The next species was *Phyllochaetopterus sp* LA1 Haggin, 2019 §. It was collected during Bight'18 from deep water (745-883 m). *P. sp* LA1 is most similar to *Phyllochaetopterus limicolus* Hartman, 1960 due to its lack of eyes, and number of chaetigers in Regions A and B. It can be distinguished from *P. limicolus* by its ventral pigment pattern in Region A. This species was elevated to *Phyllochaetopterus sp* A SCAMIT, 2023 § and the voucher sheet was published in SCAMIT Newsletter Vol. 41, no. 1-2.

The final provisional species reviewed was *Chaetozone sp* LA2 Haggin, 2019 §. It was also collected from deep water (818 m) during Bight'18. *C. sp* LA2 is most similar to *Chaetozone hartmanae* Blake, 1996 based on the different types of spines in the notopodia (straight) and neuropodia (curved). The two differ in the start of the spines (chaetiger 8 for *C. sp* LA2 and 33 in *C. hartmanae*) and the stain patterns. Leslie also pointed out that *C. hartmanae* was arched in the thorax and the parapodia were dorsally displaced due to this arch. Tony pointed out that the spines of *C. hartmanae* were orange in color and with slight serrations distally. *C. sp* LA2 was elevated to *Chaetozone sp* D SCAMIT, 2023 § and the voucher sheet was published in SCAMIT Newsletter Vol. 40, no. 5.

A question was raised by Brent about the inheritance of P-codes and ITI-codes from species that new provisional species might have been identified as in the past. This discussion was moved to an agenda item for the upcoming Species List Review Committee meeting.

Leslie Harris led the remainder of the meeting on some problematic polychaetes. The discussion began with characters used to separate *Syllis* and *Eusyllis* species. *Syllis* species have a definite articulation to the antennae and cirri, and unfused palps. *Eusyllis* have a partial fusion to the palps and a pseudo-articulation to the antennae and cirri. Species of *Eusyllis* can vary to the degree



of articulation in the anterior, ranging from smooth throughout to pseudo-articulated anteriorly changing to smooth posteriorly.

The discussion then moved to that of *Parasabella*. Leslie shared a recent paper by Keppel *et al* (2020), *Re-description of Parasabella fullo* (Grube, 1878) (Polychaeta: Sabellidae) and diagnostic characteristics for detection in California. This paper also includes a key to species of *Parasabella* from California. Leslie then shared some images of two local *Parasabella* collected from San Diego Bay. The first was *Parasabella rugosa* (Moore, 1904). The rugosity of the ventral surface is easily seen and is distinctive. Leslie collected this specimen on a settling plate. This species is not common and has only a few recent records. Leslie suggested that this may be a warm water species or possibly introduced, but Dany Burgess (Washington State, DoE) stated that they find *P. rugosa* in Puget Sound in coarse gravel so Leslie's warm water theory may not hold water.

The next images were of *Parasabella fullo* (Grube, 1878). This organism is darkly pigmented dorsally when alive but the pigment fades rapidly once preserved. The radioles are heavily speckled and this speckling typically remains after preservation. *P. fullo* is found mostly in harbors and marinas, though Kelvin Barwick (OCSA-retired) stated that they did collect one from 16 m offshore during Bight'13.

The topic then moved to the local species of *Prionospio*. *Prionospio jubata* Blake, 1996 has 4 pairs of branchiae, the 1st and 4th pair pinnate, the fourth slightly longer than the first. It also has dorsal crests from chaetiger 6. *P. jubata* was described from material collected from Santa Maria Basin, Santa Barbara Channel and San Diego.

Prionospio dubia Day, 1961 has 4 pairs of branchiae, the 1st and 4th pair pinnate, the first much longer than the fourth. *P. dubia* was originally described from South Africa but has since had its range increased to include the North Atlantic Ocean, Mediterranean Sea, North Sea, Australia, Japan and California. Blake (1996) made his local ID's based on similar stain patterns with *P. dubia* from the Western Atlantic and not from the type locality. This species is either highly invasive or a cryptic species complex and local records should be re-evaluated.

Prionospio ehlersi Fauvel, 1928 has 4 pairs of branchiae, the 1st pair pinnate, and interparapodial pouches from chaetigers 4/5. Maciolek (1985) synonymized *Prionospio lobulata* Fauchald, 1972 with *P. ehlersi* and was followed by Blake (1996). *P. ehlersi* was originally described from the Indian Ocean and Leslie expressed that this synonymy was unlikely to be correct. SCAMIT has switched back to *P. lobulata* for NEP worms effective with SCAMIT Species List, Ed. 14.

Prionospio lighti Maciolek, 1985 was originally described from material collected from Washington to Central California in bays or shallow water (to 38 m). *P. lighti* has 6-12 pairs of apinnate branchiae, each branchiae 2-3 chaetigers long. Blake (1996) based his illustrations off a few specimens from around 150 m and show them with branchiae around 7-8 chaetigers long. Blake (1996) also expanded the depth range from the intertidal to 600 m. Leslie only uses *P. lighti* for specimens that match Maciolek's description, with branchiae 2-3 chaetigers long. The long branchiae form illustrated by Blake is likely an undescribed species and if encountered should be treated as a provisional species. The large range in branchial number (6-12) and the wide geographic range of samples used in the original description suggest that *Prionospio lighti* represents a west coast species complex. A detailed review of *P. lighti* from the North American west coast would be needed to separate the potential cryptic species contained within.



Prionospio multibranchiata Berkeley, 1927 was originally described from Vancouver Island, British Columbia, Canada in shallow water. Berkeley and Berkeley (1942) subsequently synonymized *P. multibranchiata* with *Prionospio cirrifer* Wirén, 1883 and this was supported by Foster (1971). Maciolek (1985) re-instated *P. multibranchiata* as valid based on the presence of very large eyes and subsequently restricted the distribution of *P. cirrifer* to arctic Europe. *P. multibranchiata* has 7-11 (usually 8-9) pair of apinnate branchiae and large eyes. Leslie stated that some spionids become epitokous when spawning, and while the morphological changes are not as drastic as those seen in nereids and syllids, they do develop very large eyes. The similarities with *P. lighti* and the similar type localities suggest that *P. multibranchiata* may be an epitokous *P. lighti* but genetic analysis may be needed to resolve this issue. Dany Burgess expressed that this is not a common species in the Puget Sound.

Prionospio steenstrupi Malmgren, 1867 is another *Prionospio* species described from Europe and subsequently reported from most of the northern hemisphere. *P. steenstrupi* has 4 pairs of branchiae, the 1st and 4th pair pinnate, the first about equal to the fourth, and chaetiger 2 has a ventral process to the neuropodial lobe. Gopal et al. (2020) provided a table of characters of all species of the *P. steenstrupi* group in their supplemental material and may be helpful if an animal with these characteristics is encountered. Leslie expressed that true *P. steenstrupi* is likely not found in the NEP.

Leslie then discussed her provisional species *Prionospio* sp J Harris, 2014 §. *P. sp J* most closely resembles *P. jubata* but *P. sp J* has a striking stain pattern on the dorsum, sides and ventrum, larger notopodial lamellae, and the dorsal crest begins on chaetiger 9 rather than on chaetiger 6. *P. sp J* has been collected in Santa Monica Bay from 60 m. Leslie also provided comparison images of the stain patterns of *P. sp J*, *P. jubata* and *P. dubia*.

Prionospio newportensis Reish, 1959 was reinstated by Delgado-Blas (2014). *P. newportensis* has 5 pairs of branchiae, 1st, 4th & 5th pinnate, the first pair longest. It was originally described as a subspecies of *Prionospio heterobranchia* (Moore, 1907) and was placed in synonymy with it by Foster (1971). This synonymy was upheld by Maciolek (1985) but she did not examine the type material. Delgado-Blas (2014) restricted the range of *P. heterobranchia* to the northwestern Atlantic and reinstated *P. newportensis* based on its lack of dorsal ridges, size of the first notopodial lamellae, and start of the notopodial hooded hooks. *P. newportensis* is from shallow water in Newport Bay and this name should be used going forward. The next edition of the SCAMIT species list will reflect this change.

Prionospio pygmaeus Hartman, 1961 was not discussed.

The next topic of discussion was a comparison of *Glycinde picta* Berkeley, 1927 and *Glycinde* sp SF1 Norris, 2006 §. *G. sp SF1* has a greenish-yellow hue to the body, 2 types of proboscoidal papillae (1 row duck feet and 1 row cigar-shaped) in region 5, some bifid papillae in region 2 and ventral micrognaths absent. *G. picta* has a distinct dorsal and ventral pigment, 1 type of proboscoidal papillae (2 rows of duck feet) in region 5, papillae in region 2 are not bifid and ventral micrognaths are present. The cigar-shaped papillae in *G. sp SF1* have a distinct pore at the tip. Micrognaths develop with size so their presence/absence are not a reliable character for smaller individuals. The best way to separate the two species is by checking region 5 for the types of proboscoidal papillae. Methyl green or Shirlastain A can be used to enhance the papillae. Leslie also provided a table of characters to the *Glycinde* of the NEP.



A few ampharetids from the SFPUC lab were reviewed next. They have been recording *Amphicteis* specimens similar to *Amphicteis scaphobranchiata* Moore, 1906 but that have more than 1 pair of foliose branchiae. The new provisional *Amphicteis* sp SF1 has rudimentary notopodia in the abdomen, with the first few the most distinct. *A. sp SF1* also has a middle pair of branchiae that are expanded and ciliated. If branchiae are missing, the difference in prostomial stain can help to differentiate *A. scaphobranchiata* and *A. sp SF1*. Jirkov (2018) described a new species of *Amphicteis* from the polar region with more than one pair of foliose branchiae but it does not match with *A. sp SF1*. The number of foliose branchiae is important taxonomically and this character should be examined more closely. Leslie provided a table of characters for *Amphicteis* of the NEP.

Ampharete acutifrons (Grube, 1860) was originally described from Greenland and bays of the north Atlantic but its range has since expanded to the Mediterranean Sea, North Atlantic and eastern United States, Bearing Sea to Japan and central to southern California, and based on a single specimen from Pioneer Canyon, Halfmoon Bay, California (Hilbig, 2000) to a depth of 1400 m. Leslie expressed that we do not have true *A. acutifrons* here on our coast, but actually 2 undescribed species. True *A. acutifrons* has dorsal cirri present from the last two thoracic chaetigers and all abdominal chaetigers. A northern (Puget Sound region) provisional species *Ampharete* sp N1 NAMIT, 2013 § have dorsal cirri in the posterior thorax as blunt superior processes. A southern (San Francisco to San Diego) provisional species *Ampharete* sp SF1 § has dorsal cirri from thoracic chaetigers 1-2, elongating on thoracic chaetigers 8-9 and elongating again on the 5th abdominal chaetiger. The deep-water form identified by Hilbig (2000) likely represents a third provisional species. Provisional voucher sheets for both species will be made in the future and these name changes are expected to be included in the next edition of the SCAMIT species list. Leslie provided a table of characters for *Ampharete* of the NEP.

The final topic of discussion was of *Eumida longicornuta* and the general problem with phyllodocid taxonomy. Parker (1995) placed into synonymy most of Hamilton's (1976) provisional species or changed their generic designations. Leslie has requested the samples from LACSD to re-evaluate the synonymies proposed by Parker.

24 OCTOBER 2022, SLRC, ZOOM

Attendance: Brent Haggin, Don Cadien, Jovairia Loan (LACSD); Veronica Rodriguez, Wendy Enright, Zoë Scott, Katie Beauchamp, Andrew Davenport (CSD); Erin Oderlin, Greg Lyon, Jennifer Smolenski (CLAEMD); Ben Ferraro (OCSD); Kelvin Barwick (OCSD - Retired); Leslie Harris (NHMLAC); Dean Pasko, Tony Phillips (DCE).

Kelvin began the meeting with a brief review of the progress of the Provisional Species Review. The majority of the meeting then moved to the topic of Don's SCAMIT List - Species Tracking Sheet. This sheet came about as a consequence of Tim Stebbins inquiring about collection information for a species that was on the SCAMIT Species List, and ultimately, why it was initially added to the list. Don's proposal for a Species Tracking Sheet was based on a format used by WoRMS and aims to serve as a way to document changes proposed and made for each species on the SCAMIT Species List. The document contained the species name, taxonomic hierarchy, when it was added to the SCAMIT species list, why it was added, synonyms, basionyms, comments on its current generic placement, current disposition, who edited the page and references. The document would track who made changes to the document, but not what changes were made. The process is time intensive as it requires a manual search of each edition of the



Species List to determine the timing of a species' initial inclusion. Additionally, often a knowledge of historical nomenclature is needed to find a species as it was originally listed.

Dean noted that the Species Tracking Sheets demonstrated by Don did not address the initial query of primary collection information justifying a species inclusion on the List. Part of the problem lies in how the SCAMIT Species List was originally generated. The early editions of the list were compiled mostly thru species lists of the various agencies and collection information was not well documented. Even now the emend list usually only states an agency, or Bight program, and a collection year for a newly added species but not an actual station and depth.

Questions about the detail of the taxonomic hierarchy were raised and it was decided that it should contain all of the levels recognized within the SCAMIT Species List. It was decided that additional comments on the sheet could be listed under the comments on generic placement. It was recommended that distributional data could also be added to the sheets to act as a quick synoptic data review across agencies but this idea did not seem to gain much traction. Species currently on the List that become synonymies would require a new sheet for the new species name and the current species would have its disposition updated on its sheet to show it as a synonym of the new species.

A question was raised as to how much this duplicated the effort by WoRMS. Don replied that WoRMS does not handle provisional species at all and we are not always in agreement with WoRMS in the treatment of each species. Dean had also mentioned that historically, voucher sheets were created for all species, not just provisional species, where much of this information could be found. Don mentioned that Species Sheets were created as a way to collect information on a species but which was not required for inclusion on the SCAMIT Species List. Leslie mentioned that SCAMIT meetings began as round-robin species exchanges in an effort to standardize name usage. The material presented in early SCAMIT newsletters reflects this.

A question was also raised as to what to do with the sheets after they were created? It was decided that they would mostly be used as reference material for the species list review committee and that the labor intensive chore of updating the sheets would likely fall to the SLRC during updates to the Species List. It was also decided that the sheets could be shared openly with all SCAMIT members and with outside individuals upon request. Storage of the Species Sheets was another question raised during the meeting. It was agreed that ultimately having this information linked to the species in a database would be the most beneficial.

Some questions and objections were raised to the proposal, such as - the time and effort required to complete the task for all species and synonyms on the SCAMIT Species List; the continued maintenance; the needed level of cladistic and taxonomic experience of those involved; the project being beyond the scope of SCAMIT even though the information would be useful. It was recommended that if it was decided to put forth the effort, that it should be done with the ultimate intention of publication in a scientific journal.

The meeting resolved with a brief discussion of P-codes. It was mentioned that there has been increased interest from regulators in updating the standardization of P-codes. The topic was added to the discussion for the December 2022 SLRC meeting.

NOVEMBER 2022 – MEETING CANCELED



05 DECEMBER 2022, SLRC, ZOOM

Attendance: Brent Haggin, Don Cadien, Jovairia Loan (LACSD); Veronica Rodriguez, Wendy Enright, Zoë Scott, (CSD); Erin Oderlin, Greg Lyon, Jennifer Smolenski, Cody Larsen (CLAEMD); Ben Ferraro (OCSD); Kelvin Barwick (OCSD - Retired); Leslie Harris (NHMLAC); Marie Nydam (SOKA University).

Kelvin began the meeting with a discussion of the WoRMS match list. He recommends using the list as a starting point for the emendation process. The WoRMS match list is good for catching spelling or hierarchy changes. Zoë mentioned that she wrote an R-script that also evaluates the higher level taxonomy automatically between WoRMS and the SCAMIT Species List. Don's species tracking sheets can also be a good source for documenting differences and justifications.

The provisional species review progress was discussed next. Provisional species currently residing on the SCAMIT Species List but lacking proper supporting documentation should be removed to the Hold-List and documented for inclusion in an appendix that will be added to Edition 14 of the Species List to help track provisional and other species that are being removed from the List. The topic arose of whether organisms should be included if they are reported by reputable organizations but not by SCAMIT members. It was decided to add this subject to the December 2022 All-Hands meeting agenda.

Don's species tracking sheets were next on the agenda and the new templates for the sheets were evaluated. It was decided that the headers should be moved from rows to columns for easier database uploading in the future.

The Database committee discussed its current progress. Cody discussed the ITIS framework and how it could be used for our needs. He has a stripped-down version to use for design and testing purposes. Using this framework would reduce the need for an outside consultant to develop the database and would allow SCAMIT to host the database on SCAMIT.org. It would require an additional SCAMIT position to be added, Database Manager, and an experienced Web Designer would be needed as a consultant/developer to assist in building the user interface.

BRI and P-codes were also briefly discussed and were added as a roundtable discussion item on the December 2022 All-Hands meeting agenda.

12 DECEMBER 2022, SCAMIT ALL-HANDS, ZOOM

Attendance: Greg Lyon, Erin Oderlin, Craig Campbell, Joanne Linnenbrink, Jennifer Smolenski, CLAEMD; Rob Gamber, Ben Ferraro, OCSD; Tony Phillips, DCE; Zoë Scott, Wendy Enright, Megan Lilly, Adam Webb, Ricardo Martinez, Maiko Kasuya, Andy Davenport, Stephanie Smith, Lauren Valentino, CSD; Shelly Walthers, Brent Haggin, Don Cadien, Cody Larsen, Terra Petry, Jovairia Loan, Norbert Lee, Amber Von Tungeln, LACSD; Matt Hill, EcoAnalysts; Austin Hendy, NHMLAC; Kelvin Barwick, Bill Furlong, Robin Gartman, Retired.

President, Brent Haggin

Opening remarks: Brent reviewed the year's meetings and thanked external experts for being guest speakers.

Voucher sheet database: It is progressing well. Over the summer the voucher sheet guidelines and criteria for acceptability to SCAMIT List were updated. There were 18 new sheets



uploaded with most of them being legacy provisionals that had information added allowing them to meet the new guidelines. A new voucher sheet that made it all the way through the process was *Glycera* sp LA1 Parker 1999 § and it will be given the SCAMIT designation *Glycera* sp B SCAMIT 2022 § .

Species List Review Committee Chair, Kelvin Barwick

Kelvin gave a presentation on the SLRC's activities for 2022. Ed 14 is on target for publication 1 July 2023. This year the committee was focusing on trying to align with WoRMS as much as possible. They are continuing the review of all provisional species currently on the List. There are 390 provisionals in Ed 13. It is a significant amount of work as it requires a line by line search to check for sufficient documentation on SCAMIT.org. Kelvin clarified that when he refers to a species being "removed" it means it will go to the Hold List but is not deleted entirely. The SLRC is not looking to prevent labs from using in-house provisional species names, those species just won't be included in an edition of the Species List until more sufficient documentation is provided.

The next topic was the taxonomic database. ITIS has a free downloadable database structure. Cody has been working with it and felt that with some work and modification, it could be used by SCAMIT. Erin is going to meet with her brother who is a web developer to talk about what it would take to develop a web based tool.

Shelly Walther asked if P-codes for the BRI are going to be prioritized for the database. Kelvin said yes and feels it would add value and may even help secure funding. Some members worried it could open SCAMIT to litigation but not everyone agreed with that concern.

That brought up the question of whether we should expand the List to include all species in Southern California in general, which would affect our ability to use p-codes. Shelly noted that p-codes aren't necessarily the issue, but that litigation may be more involved with the BRI. Don stated that the problem historically has been with p-code updates as there is no standardization in application of updates. A long discussion ensued about BRI, SQO's, p-code drift, etc.

Kelvin noted that nothing can proceed without a database. Shelly thinks we need to prioritize our wish list for the database, and that list needs to prioritize p-codes. An initial SCAMIT database was created by Shelly Moore at SCCWRP but support for the project was terminated and it stalled. Shelly Walther suggested starting with an Access database and leave the web-based database for a future wish list.

Brent asked if bay and estuary p-codes were removed (and accordingly SQO responsibilities) to avoid liability and we solely focus on coastal BRI, how much interest will the state water board still have? Shelly feels we should start with coastal BRI and she will reach out to her contacts at the Region 9 Board to see if they are worried about liability issues.

Cody chimed in and agrees with Shelly, that we should start small and not over complicate it. We have access to the database that SCCWRP started and it's hosted on the SCAMIT domain, but, it's hard to work backwards and he feels it would be better to start fresh. SCCWRP's design is going to be substantially different from the ITIS design.

Treasurer, Erin Oderlin

Treasurer's Report: This is our 40th year! Go SCAMIT! Erin reviewed her summary report, noting



that the majority of our members renew via PayPal. We have created a donate button via PayPal and it has been added to the website. She cautioned - just be sure you don't use the donate button for paying your membership dues.

Secretary, Megan Lilly

Megan didn't have many updates other than the fact that she is trying to catch up on newsletters but as usual she is woefully behind. She noted that during the Round Table portion of the meeting members should discuss the option of the newsletter going fully digital.

With that we circled back to Brent and the meeting agenda. We proceeded to fill the 2023 meeting calendar.

It was decided to have a B'23 trawl prep meeting in April. Megan will lead the meeting and will be sure to include counting conventions for species like *Thesea* and conventions regarding what is countable and what is not, i.e., parasites (*Elthusa*), and pelagics (*Doryteuthis*). She will also review aliquoting conventions for *Brisaster* spp, *Pleuroncodes*, etc. She asked people to email her with any other topics they'd like to see included.

At that time nominations for officers was announced and the existing suite was nominated. No surprises. There was a preliminary discussion for adding a secondary Secretary position. Nothing was decided but it is an idea that will be explored further.

Cody, SCAMIT web master, has added a "Latest Website Updates" link to the SCAMIT home page. It lists new additions, such as new species added to the Toolbox and the PayPal donate button.

With that it was time for the Round Table Discussion:

1) Brent – he has received some suggestions to promote SCAMIT meetings on social media. Is this a good idea? Bad idea? If approved, would need to include the meeting Zoom links in the social media post. Erin doesn't see the need to advertise. Brent's concern is that one of the benefits of being a paying member of SCAMIT is the meetings and if we open up attendance to any and all, then people have no reason to join. One suggestion was for SCAMIT to have a social media presence that would simply promote SCAMIT, not necessarily advertise meetings. But then the question arises - who would run it? An action item was created: put out a request on the Listserv for a social media person.

2) Leslie was unable to attend but had given Brent a list of her talking points:

- The Scamit List is limited to species reported by members from member agencies; should we expand the List? Make it more of a faunal list, including all species reported from reputable sources. This wouldn't be done by Ed 14, and would be a longer term project that would take place over a few editions.
- We should not be ignoring validly described species just because they aren't on the List
- People are already using our list instead of WoRMS, so it is better to expand it
- Could use different colored fonts to indicate what is possible to see versus what has actually been reported
- This would add all the names coming out of Fish and Game invasive species studies, so it would be quite an expansion



Don stated that he is not against this idea but it changes the nature of the List and will require a lot more work to maintain it since we don't currently use the literature to create our list but rather use occurrence data. Additionally, how do we define "reputable source"?

Shelly seconded Don's concern. She feels the List should be about standardization across the member agencies. She also would like us to focus on the database rather than trying to expand the List. She suggested an Appendix for listing species that are possible to encounter but haven't necessarily been vetted by SCAMIT.

We decided that at least for this year and this edition we will not pursue the option of expanding the List.

Shelly told us that she worked with one of Dr. Sue Kidwell's students on a paper regarding a molluscan BRI and she will share the link.

The meeting was adjourned at 12:25 pm.

SCAMIT TREASURY SUMMARY

Attached you will find the Treasury Summary for the SCAMIT fiscal year 1 June 2021 - 31 May 2022. Technically this should have been included with newsletter, Volume 41 no 1-2, but your Secretary was negligent.

VOUCHER SHEET

Attached you will find a voucher sheet for *Anotomastus gordiodes* (Moore, 1909), prepared by B. Haggin.

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SCAMIT OFFICERS

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SCAMIT is a 501(c)(3) charity. The newsletter is published every two months and is distributed freely to members in good standing. Membership is \$20 for an electronic copy of the newsletter, available via the web site at www.scamit.org, and \$35 to receive a printed copy via USPS. Institutional membership, which includes a mailed printed copy, is \$65. All correspondences can be sent to the Secretary at the email address above or to:

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SCAMIT Treasury Summary

2021-2022

Below is the treasurer's report for 2021-2022. In 2018 we raised dues for the first time since the start of SCAMIT in 1982 from \$15 to \$20 for electronic memberships, \$30 to \$35 for hardcopy memberships, and \$60 to \$65 for institutional memberships. We have over 150 members across the US and worldwide. As stipulated in our grant policy, we have **\$8,022.57** or 25% of our operating budget of \$32,090.26 available for publication grants this year. Please help get the word out that these funds are available. The taxonomic database support tools on our website were maintained by our webmasters.

Account Balances (as of 5/31/2022)

Checking	\$ 31,364.66
PayPal	\$ 725.60
Total	\$ 32,090.26

Income

2021-2022 Membership dues	\$ 2,996.34
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Expenses

Newsletters (printing/postage)	\$ 264.29
January 4, 2021 PayPal Transfer Fee	\$ 17.00
Zoom Subscription	\$ 187.98
2021-2022 PO Box Renewal	\$ 216.00
Total	\$ 685.27



Species: *Anotomastus gordiodes* (Moore, 1909)

P-Code—P057

Synonyms: *Eunotomastus gordiodes* Moore, 1909

ITI—no group assignment

Subfamily:

Family: Capitellidae

Suborder:

Order:

Infraclass: Scolecida

Subclass: Sedentaria

Class: Polychaeta

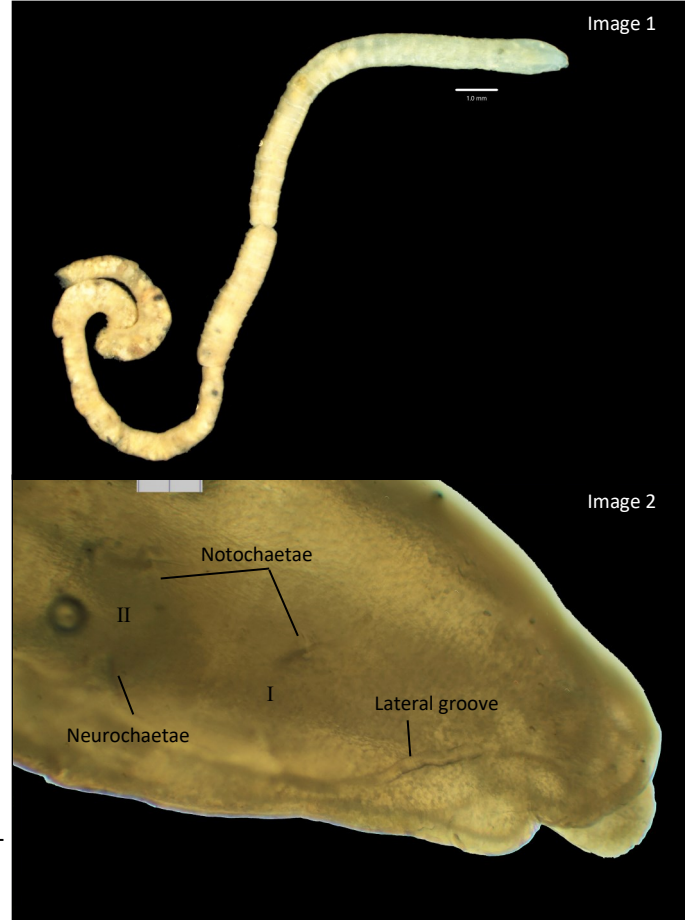
Phylum: Annelida

Diagnostic Characters: (from Moore, 1909; Hartman, 1947; Hartman, 1969)

- 1) Prostomium elongate, rounded anteriorly (appearing as a small palpode) bearing a pair of nuchal organs; 6-15 reddish-brown eyespots (may be faded) (**Images 1 & 2**)
- 2) Peristomium truncate, subconical, smooth; slightly longer than chaetiger 1, somewhat constricted around the middle; with a pair of small spots, probably representing the lateral organs; lateral groove present (**Image 2**)
- 3) Thorax with achaetous segment absent; chaetiger 1 incomplete, with notochaetae only (**Image 2**)
- 4) Thoracic formula— $\frac{(17-18c)}{(0+15-16c+1m)}$ (**Image 3**)
- 5) Abdominal neuropodia forming distinct ventro-lateral tori, somewhat elevated and glandular (**Image 4**)
- 6) Branchiae present in posterior abdominal segments; dorsal, posterior to notopodia; tufted/palmate, with up to 12 filaments (**Image 5**). Notochaetae reduced in number with branchial insertion, becoming lost entirely in far posterior segments.
- 7) Abdominal hooded hooks with a distinct shoulder, a neck that gradually increases in diameter to a rather large head with a stout beak and high crest enclosed in a short but much inflated hood; main fang surmounted by a single large tooth and a crest of 5 teeth in three rows (1*2*2) (**Image 6**)
- 8) Lateral organs located along thorax between noto- & neuropodia
- 9) Nephridial pores present in posterior thorax in intersegmental furrows
- 10) Pygidium with a pair of thicker, longer filaments ventrally and 4-5 slenderer, shorter filaments on the sides (**Image 7**, showing regeneration)

Pigmentation/MGS:

- 1) Prostomium, peristomium and chaetiger 1 with lightly speckled stain (**Images 8 - 11**)
- 2) Chaetigers 2-15(16) staining intensely (**Images 8 - 13**)
- 3) Last thoracic and first abdominal chaetigers with stain lightening (**Images 8 - 11, & 13**)
- 4) Abdominal stain with thin band around tori, connecting ventrally but not dorsally; stain fades and stops around branchial insertion (**Images 8 - 11**)
- 5) Images 11-13 show detail of the variability of stain in the posterior thorax, including the “honeycomb” pattern (**Image 12**) reported by CLAEMD



Photos by B. Haggin

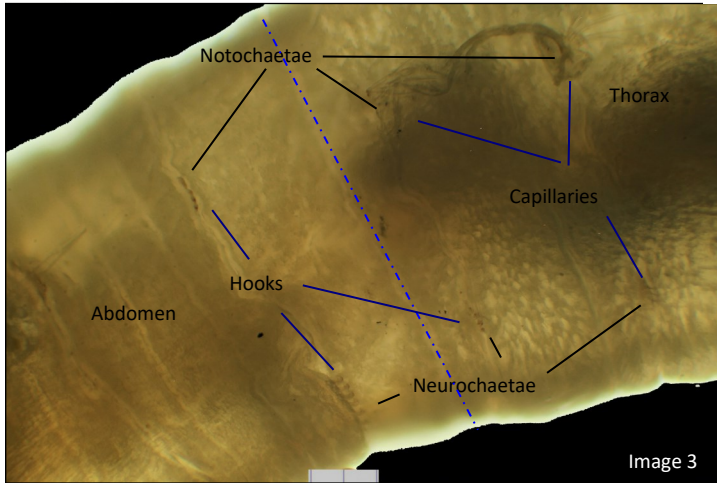


Image 3

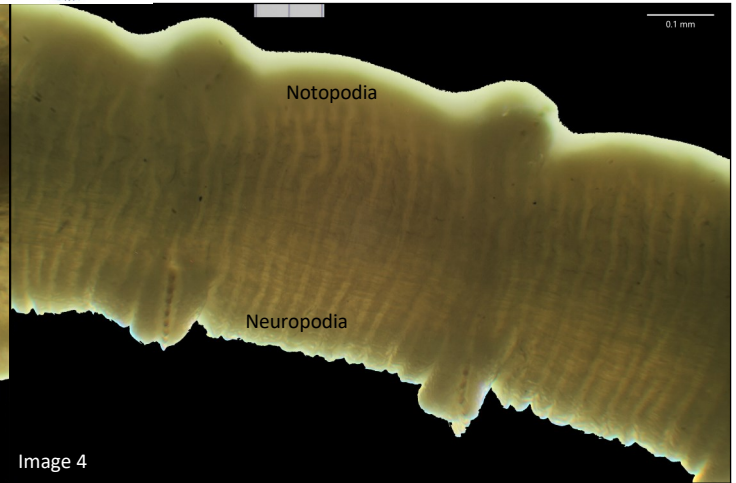


Image 4

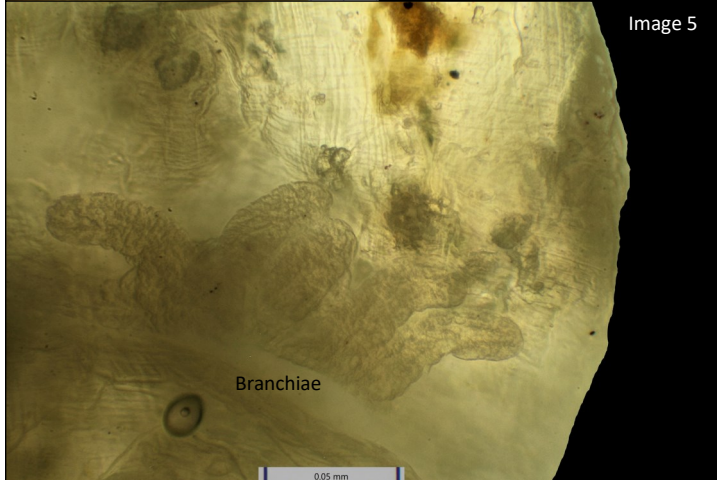


Image 5

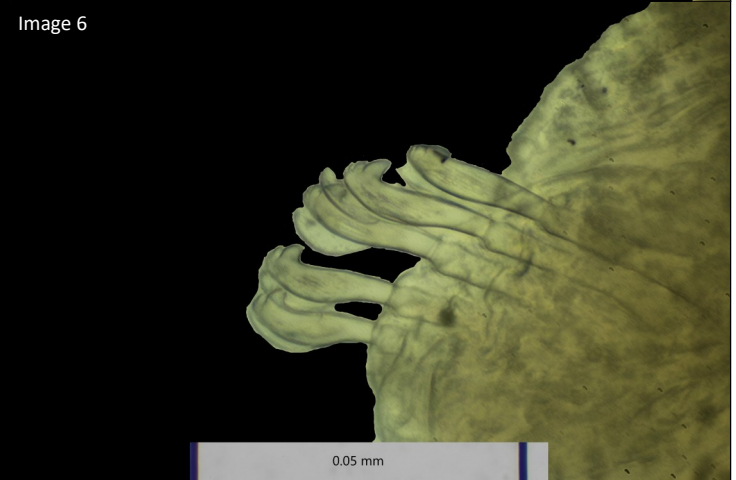


Image 6

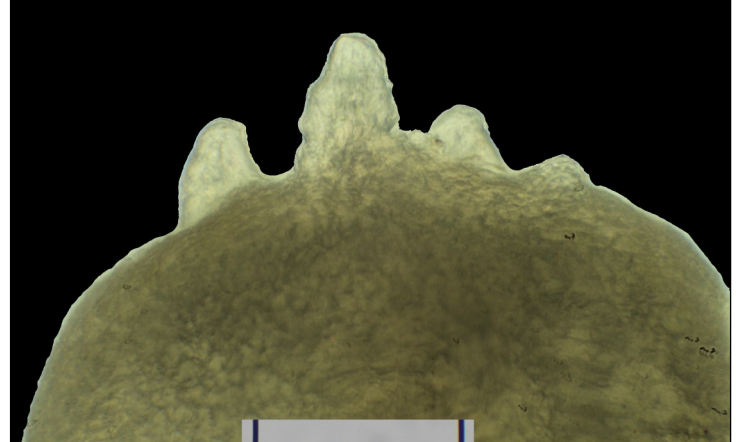
Material Examined:

LACSD station 0194-1D (31 m—33.76500N, 118.43530W—
12JAN94) - 1 individual (Images 1, 2, 3, 5, 6, 8, 9 & 11)

SCBPP station PLABE 11230 (15 m—33.87095N,
118.41870W—19JUL94) - 1 individual (Images 4, 10 & 12)

SCBPP station PSCBE 06650 (24 m—34.20236N,
119.34052W—16AUG94) - 2 individuals (Images 7 & 13)

Image 7



Photos by B. Haggin



Image 8

Dorso-lateral

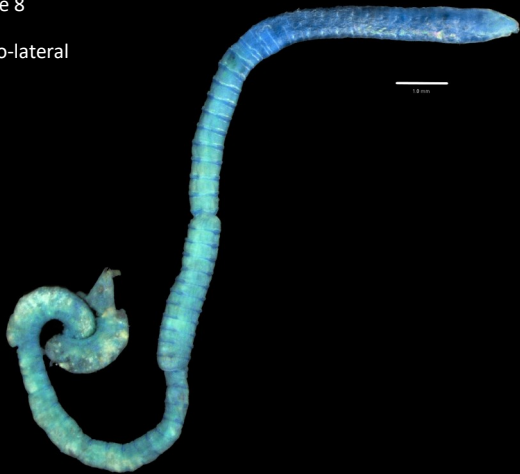


Image 9

Ventro-lateral



Image 10

dorsal

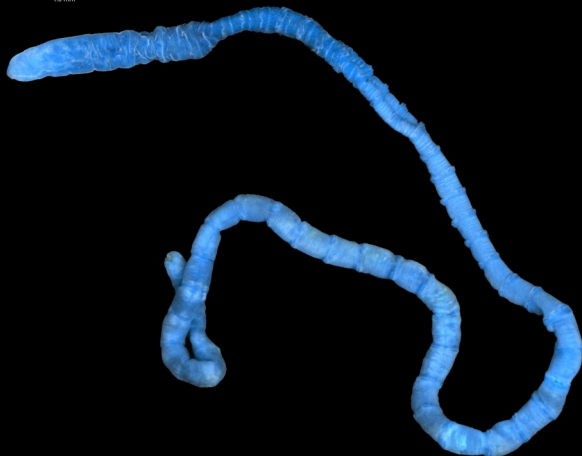


Image 11

Thorax/anterior abdomen

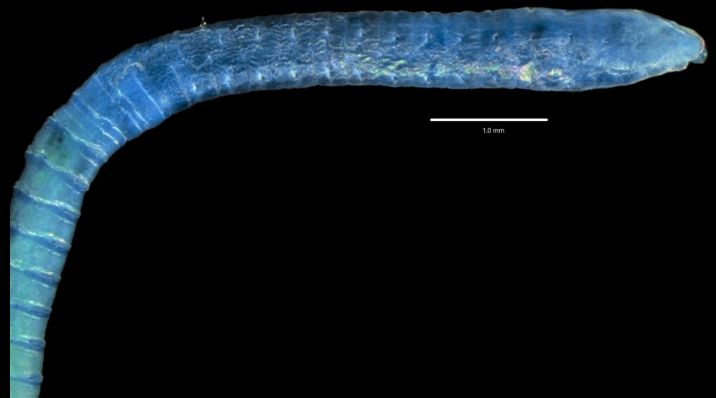


Image 12

Posterior thorax

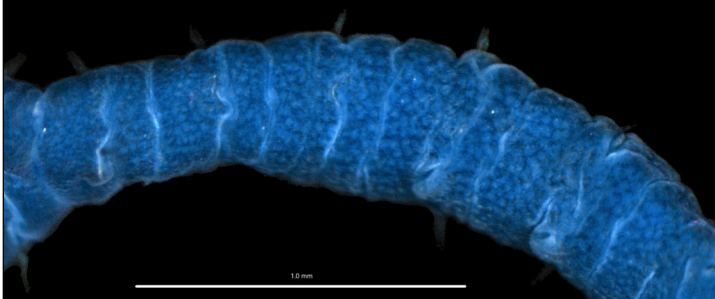


Image 13



Photos by B. Haggin



Similar Species:

With 17-18 thoracic chaetigers, *Anotomastus gordiodes* (Moore, 1909) should not be confused with any other local capitellid species, the next closest being *Dasybranchus glabrus* Moore, 1909 with 13 thoracic chaetigers.

Globally, the genus *Anotomastus* could be confused with the genus *Pseudocapitella* (17 thoracic chaetigers; $^{(17c)}_{(0+13c+3h)}$) (sensu Magalhães & Blake, 2020), the genera *Capitobranchus* (sensu Fauchald, 1977) or *Paracapitella* (sensu Magalhães & Blake, 2020) (both with 18 thoracic chaetigers; $^{(18c)}_{(14c+4h)}$ & $^{(18c)}_{(0+9C+8H)} + ^{(4c)}_{(4h)}$ respectively), or the genera *Eunotomastus* (sensu Magalhães & Blake, 2020) or *Lumbricomastus* (sensu Magalhães & Blake, 2020) (both with 20 thoracic chaetigers; $^{(16c+4m)}_{(16c+4h)}$ & $^{(20c)}_{(0+19c)}$ respectively). The larger chaetiger counts of the genera *Eunotomastus* or *Lumbricomastus* should distinguish them from the genus *Anotomastus* and all can be differentiated by their thoracic formulas.

Habitat:

Anotomastus gordiodes has been reported in the literature to inhabit mud flats in low, intertidal zones (Hartman, 1947). *Anotomastus* was described from the intertidal in San Diego (Moore, 1909). Hartman (1947) extended the range north to the Anaheim Slough, with questionable records from Bodega Bay in central California, with a depth of intertidal. Hartman (1963) extended the range north to Oxnard, California and extended the depth to 119 m. Reish (1968) extended the range of *A. gordiodes* south to Bahía de los Ángeles, Baja California, Mexico, Gulf of California. Hartman (1969) lists the distribution from southern to central California, in intertidal and shelf depths.

Anotomastus gordiodes has been reported from Santa Monica Bay and LA Harbor in 11-17 m by CLAEMD, from Palos Verdes Peninsula in 15-30 m by LACSD, and from San Diego in 13-37.5 m by CSD. OCSD's only record is off Huntington Beach during B'18 (see below). It has been collected from Huntington Beach to Ventura and Santa Cruz Island during Bight surveys.

Discussion:

Anotomastus is a monotypic genus erected by Hartman in 1947 to accommodate the species *Eunotomastus gordiodes* Moore, 1909 because it differed from the type species *Eunotomastus grubei* McIntosh, 1885 in the number of transitional thoracic chaetigers (1 in *Anotomastus* and 4 in *Eunotomastus*). Transitional thoracic chaetigers are defined as those with capillary notochaetae and hooded hooks or mixed fascicles in the neuropodia. *Eunotomastus* also has a complete first chaetiger whereas *Anotomastus* has an incomplete first chaetiger. The number of transitional thoracic chaetigers can also be used to help distinguish between *Pseudocapitella*, *Paracapitella* and *Anotomastus* as they all have different number of transitional thoracic chaetigers.

The genus *Anotomastus* is described as having 17-18 thoracic chaetigers but a review of LACSD material shows worms with as few as 15 thoracic chaetigers and no transitional thoracic chaetigers (possibly juveniles). A review of *A. gordiodes* from San Diego Bay by Leslie Harris (pers. comm.) also shows variation in the chaetal arrangement of the posterior thorax, with hooded hooks present from the 17th chaetiger, rather than the 18th, hooks in the last thoracic notopodia, capillary chaetae only or capillary chaetae present in the first abdominal notopodia.

Variation in the MGS pattern can also be seen within *A. gordiodes*. The thoracic stain is fairly consistent as far as which chaetigers stain intensely, but whether the stain is solid or speckled in the posterior thorax seems to be variable. The degree of abdominal banding is also highly variable, being either absent completely (B'13-9304—L. Harris, pers. comm., 21m off Santa Cruz Island, CA; B'18-10226—K. Barwick, pers. comm., 29m off Huntington Beach, CA) to present, and ranging from faint to intense in LACSD samples (Images 8-11 & 13).

The type locality of *Anotomastus gordiodes* is San Diego, intertidal. Leslie Harris has suggested that true *A. gordiodes* only occurs in shallow water and we perhaps have an additional species subtidally. An additional review of *A. gordiodes* specimens from throughout the SCB would be needed to assess this.



References:

- 1) **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.
- 2) **Hartman, O.** 1947. Polychaetous Annelids. Part VII. Capitellidae. *Allan Hancock Pacific Expeditions* 10(4): 391-481.
- 3) **Hartman, O.** 1963. Submarine canyons of southern California. Part III. Systematics: Polychaetes. *Allan Hancock Pacific Expeditions* 27(3): 1-93.
- 4) **Hartman, O.** 1969. *Atlas of the sedentariate polychaetous annelids from California*. 1-812. Allan Hancock Foundation, University of Southern California. Los Angeles.
- 5) **Magalhães, W. F. & Blake, J. A.** 2020. 7.6.4 Capitellidae Grube, 1862. pp. 349–403, *In: Purschke, G., Böggemann, M. & Westheide, W. (Eds.), Handbook of Zoology. Annelida, 2 (Pleistoannelida, Sedentaria II)*, pp. 1–465.
- 6) **Moore, J. P.** 1909. Polychaetous annelids from Monterey Bay and San Diego, California. *Proceedings of the Academy of Natural Sciences of Philadelphia* 61: 235-295, plates VII-IX.
- 7) **Reish, D. J.** 1968. A Biological Survey of Bahia de los Angeles, Gulf of California, Mexico. II. Benthic Polychaetous Annelids. *Transactions of the San Diego Society of Natural History* 15(7): 67-106.
- 8) **Williams, S.** 1985. *Anotomastus gordiodes* voucher sheet. *SCAMIT Newsletter* 3(11): 18.

Version History:

Version 1.0—Voucher sheet created (06SEP2022)