

Guide to the Benthic Nemertea of Southern California (Point Conception to Bahía Todos Santos)

Compiled by Ethan Kahn
Presented to SCAMIT, 2026-Jun-17



Background on Phylum Nemertea

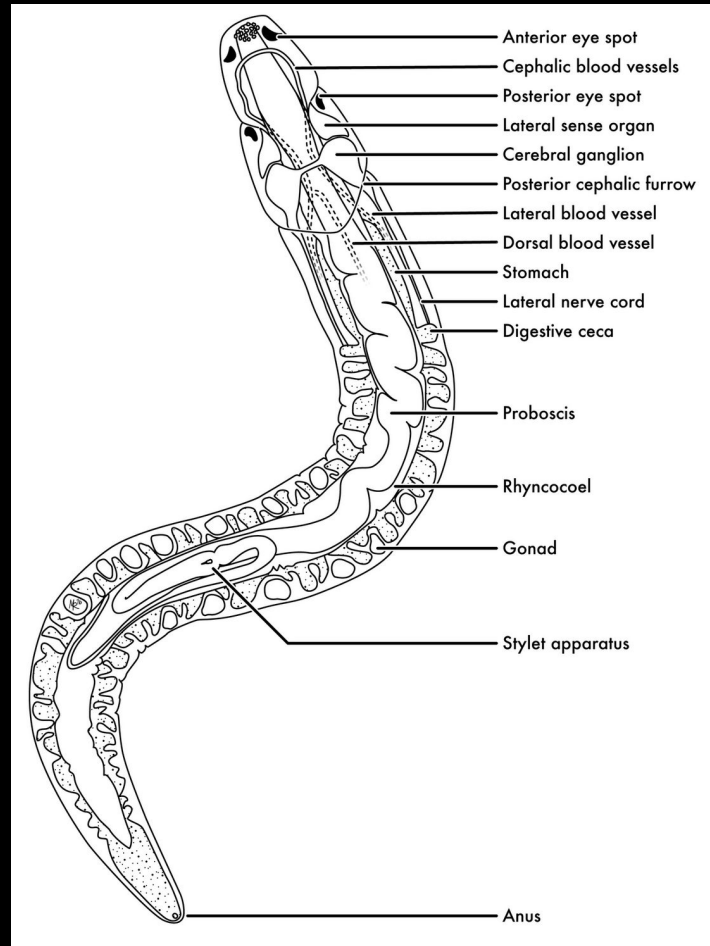
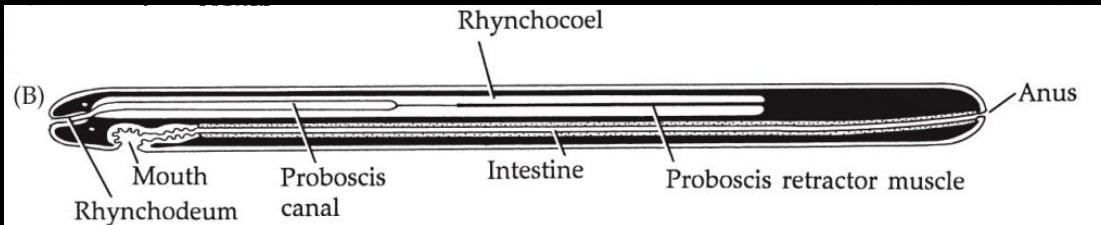
- Ribbon worms
 - Soft, smooth, un-segmented, often stretchy, sometimes flattened
- Mostly predators; some scavengers, some parasites/commensals
- Mostly marine; a few are terrestrial or freshwater
- Characteristic proboscis
 - Like an inverted sock in their face that can shoot out
 - Often has poison or venom
 - One class (Hoploneurata) has a sharp, calcareous stylet on the tip to stab
- Usually move quite slowly on the benthos, a few can swim
- Field identification to species not always possible, but details of the head, coloration, and proboscis chamber usually provide the most valuable clues

Classes of Nemerteans

- Class Hoplonemertea *often* characterized by
 - 0, 2, 4, or many dorsal eyes
 - 1 or many sharp stylets on proboscis tip
 - Mouth and proboscis pore close together (at tip) or fused
- Class Pilidiophora *often* characterized by
 - Pilidium larval form
 - Mouth ventral, separated from proboscis pore, usually conspicuous
 - May have lateral slits and caudal cirrus
 - May have eyes, dorsally or lining lateral slits
- Class Palaeonemertea characterized by
 - No stylet
 - No lateral slits, no caudal cirrus
 - Rarely have adult eyes

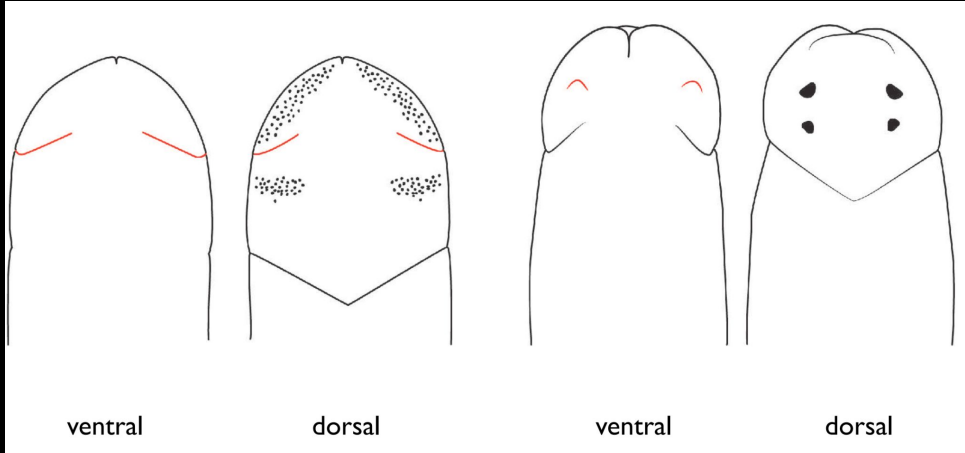
Anatomy

- Closed circulatory system
- Proboscis in separate, coelomic cavity
- Through gut sits below proboscis chamber
- Distinctly colored gonads generally develop between intestinal diverticula for the length of the body
- Paired dorsal and ventral cerebral ganglia, lateral nerve cords, eyes (if present) usually in 2/4 groups, various sensory openings

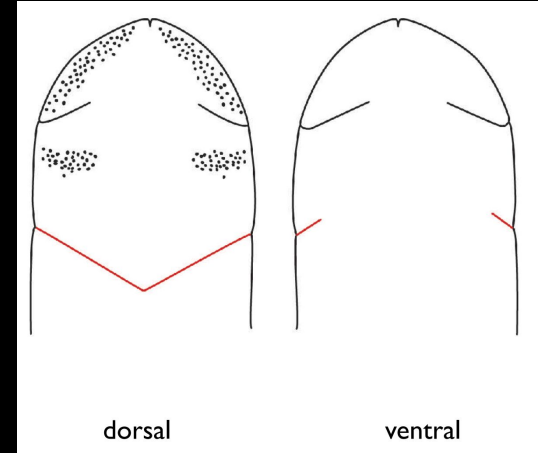


See: [Brusca et al. 2016](#), Meghan Rock.

0-2 pairs of cephalic furrows

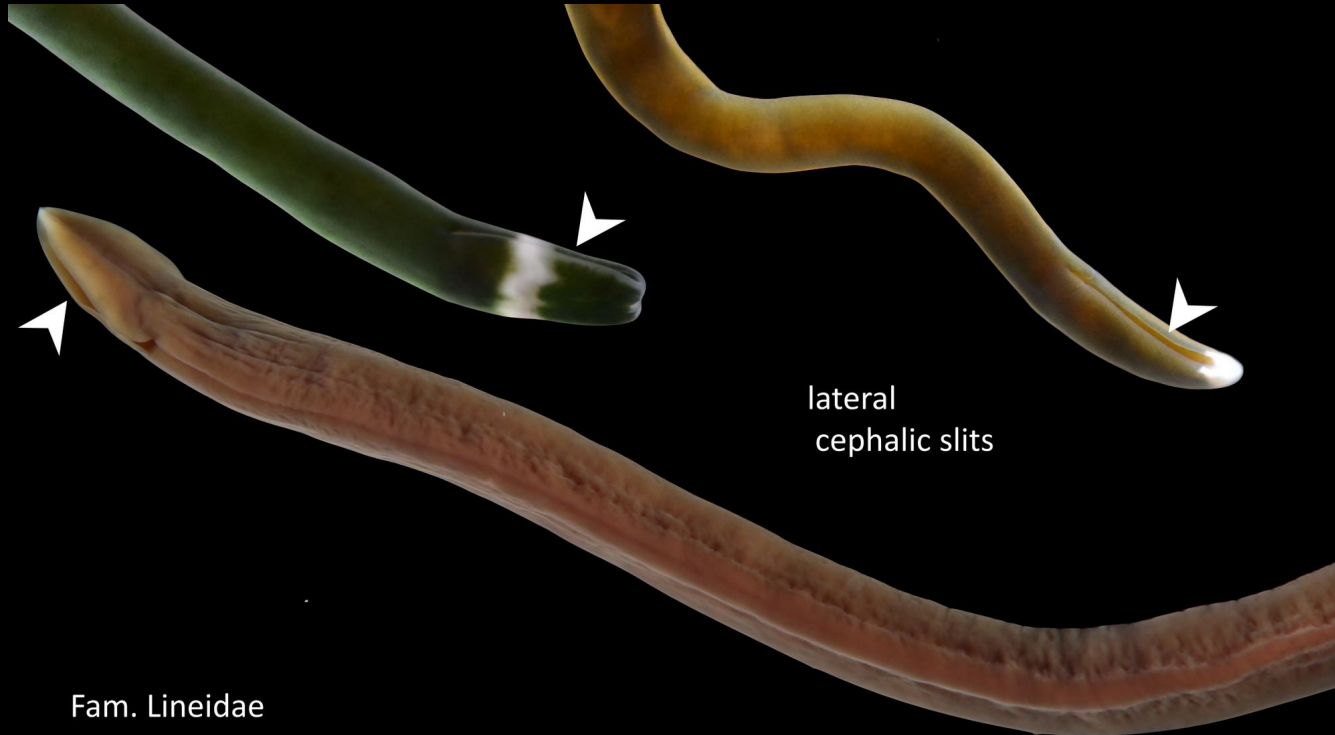


Anterior
(head)

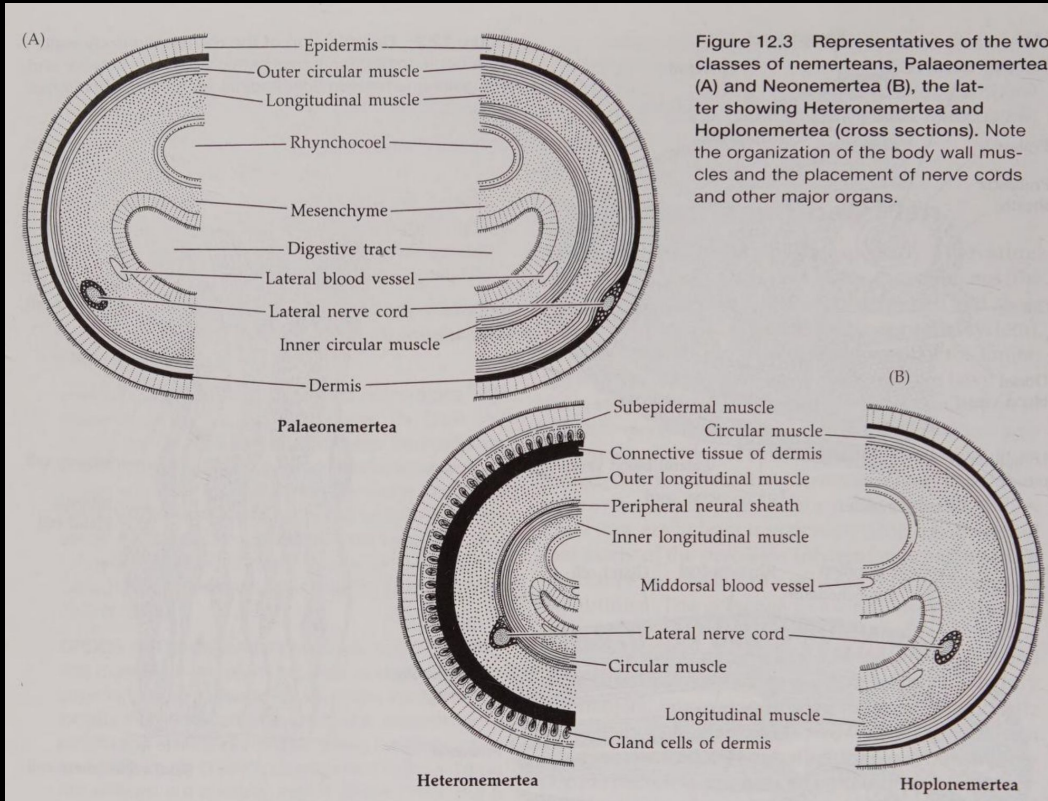


Posterior
(neck)

Lateral cephalic slits (unique to family Lineidae, in class Pilidiophora)



Body wall and muscle layout differ between classes

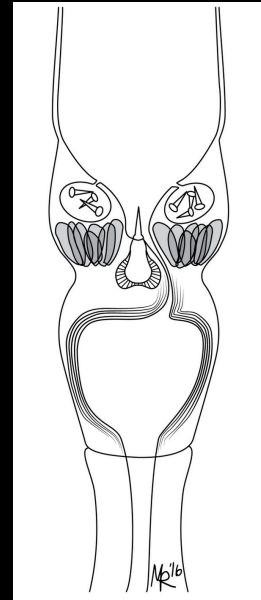
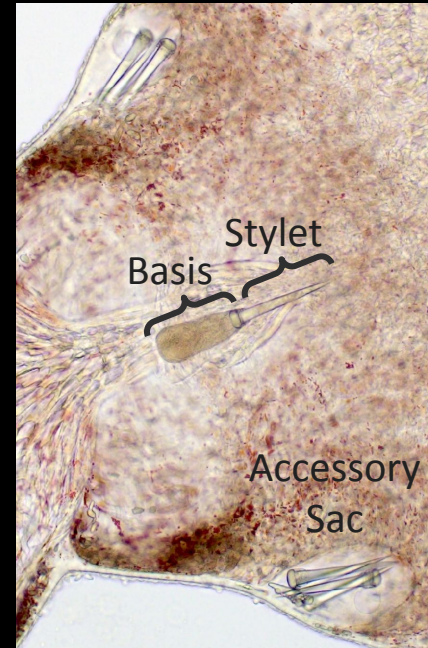


Note especially:

- Lateral nerve cord
- Circular muscle
- Longitudinal muscle
- Mid-dorsal blood vessel

Proboscis

- Class Hoplonemertea have 1 or many calcareous stylets embedded on the tip, which can deliver venom
- Potentially diagnostic features:
 - Rhynchocoel (proboscis chamber) size relative to body, often visible through body wall [all classes]
 - Shape of the stylet, the proteinaceous basis which holds it, and their relative lengths [Hoplonemertea]
 - Number of reserve stylet sacs and number of stylets per sac [Hoplonemertea]



Historical Summary

- Nemerteans have not received a lot of study
- Wesley Coe (Yale) was fundamental for documenting Pacific North American nemerteans, and indeed was a world expert in his day
- Svetlana Maslakova (Oregon Institute of Marine Biology) is the most prominent nemertean expert currently active in Pacific North America
 - Works from her and her students have been crucial for confirming species identities with molecular data
- Other nemertologists past and present have published important sources but not focused specifically on this region
 - Including Hiroshi Kajihara, Alexei Chernyshev, Diva Diniz Corrêa, Ray Gibson, Janet Moore, Fumio Iwata, Jon Norenburg, Megan Schwartz, Pamela Roe, and more

How to Use this Guide

- One slide per species
- Known range limits and max recorded length (may be underestimates)
- Max length is better for excluding identifications than matching, because even the big worms start small
- Refer to adults unless larvae are explicitly mentioned
- Focus on external morphology
 - Histological sections are important, but often impractical
- Taxonomy informed by molecular data wherever possible
- Dichotomous key not currently available

➤ Class: Hoplonemertea

- Mouth and proboscis pore close together or combined, near the anterior tip (unique)
- 3-chambered proboscis, radial (unique), without diagonal muscules
- Calcareous stylet(s) embedded on proboscis (except *Malacobdella*) (unique)
- No caudal cirrus
- Often have many dorsal ocelli
- Usually anterior (head) and posterior (neck) furrows
- Body wall has outer circular, diagonal, and longitudinal layers and sometimes inner circular muscle layers
- Brain and lateral nerve cords inside inner longitudinal muscle
- Has mid-dorsal blood vessel (unlike Palaeonemertea)

➤ Class: Hoplonemertea

○ Order: Polystilifera

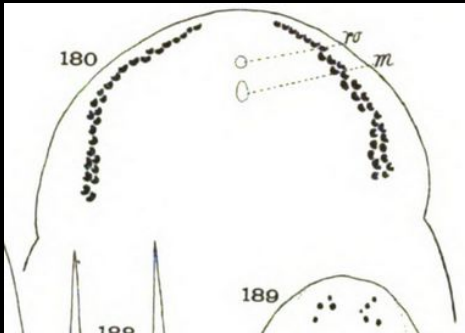
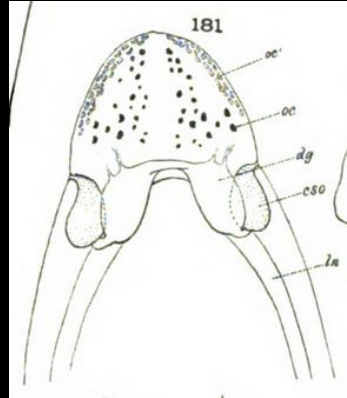
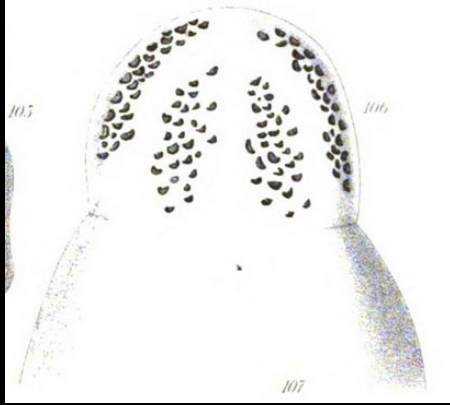
- Proboscis has many (up to dozens) of minute embedded stylets
- Proboscis bulb weakly developed

- Class: Hoplonemertea
 - Order: Polystilifera
 - Suborder: Reptantia

- Often large, wide, fleshy
- Glide on the substrate

- Class: Hoplonemertea
 - Order: Polystilifera
 - Suborder: Reptantia
 - Family: Drepanophoridae
 - 30+ proboscis nerves

Drepanophorus ritteri



- Body short and broad, 5-10 cm
- Paired proboscis sheath diverticula
- Head small, conspicuous cephalic furrows, pale transverse secondary furrows
- 25-30 black ocelli each side between brain and tip dorsally, another each side 25-30 ventro-laterally
- Dull reddish dorsally, covered with fine brownish dots, pink brain, pale yellow ventrally
- Santa Catalina Island to San Pedro, 50-300 m on coarse sand

➤ Class: Hoplonemertea

○ Order: Monostilifera

- Single stylet embedded on proboscis tip
- Bulb region of proboscis well developed and with criss-crossed muscles

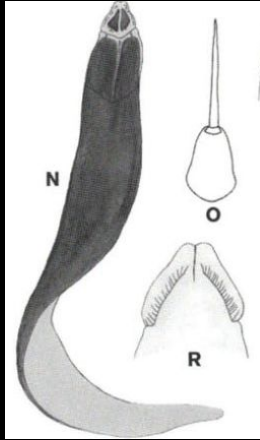
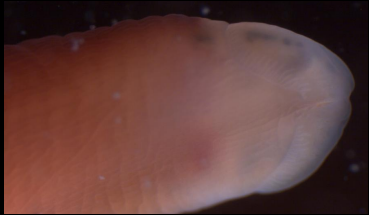
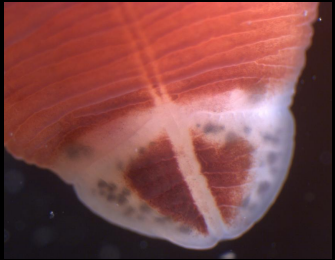
➤ Class: Hoplonemertea

- Order: Monostilifera
- Suborder: Cratenemertea

- Spade-shaped head
- Wickerwork of longitudinal and circular muscle fibers in proboscis sheath
- Single vascular plug
- Cerebral organs mostly extend behind brain

- Class: Hoplonemertea
 - Order: Monostilifera
 - Suborder: Cratenemertea
 - Family: [suspended]

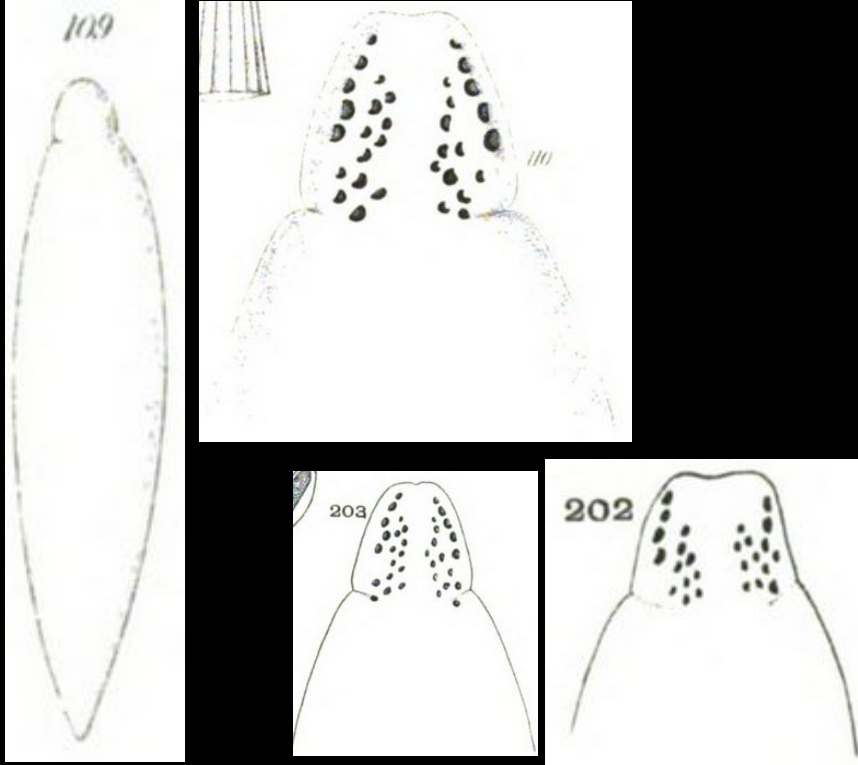
Nipponnemertes cf. bimaculata



- Long, broad; pointed head narrower than body; 15 cm
- 14-16 proboscis nerves (?)
- Conspicuous anterior furrows, transverse secondary furrows, posterior furrow in a V
- 12-30 large ocelli
- Reddish brown dorsally, almost white ventrally; head white, with two maroon triangles; pink ganglia
- Stylet long and slender, small basis, 2 or 4 accessory pouches
- Species complex documented Kodiak Island to Ensenada, low intertidal, kelp
- Distinct species exist in Oregon and Bodega Bay, relationship to Southern California is unknown

See: [Coe 1901](#), [Coe 1905](#), [Roe et al. 2007](#), [Hiebert 2016](#), [Maslakova et al. 2022](#), [Ellison et al. 2024](#), BIN [AAX6404](#).

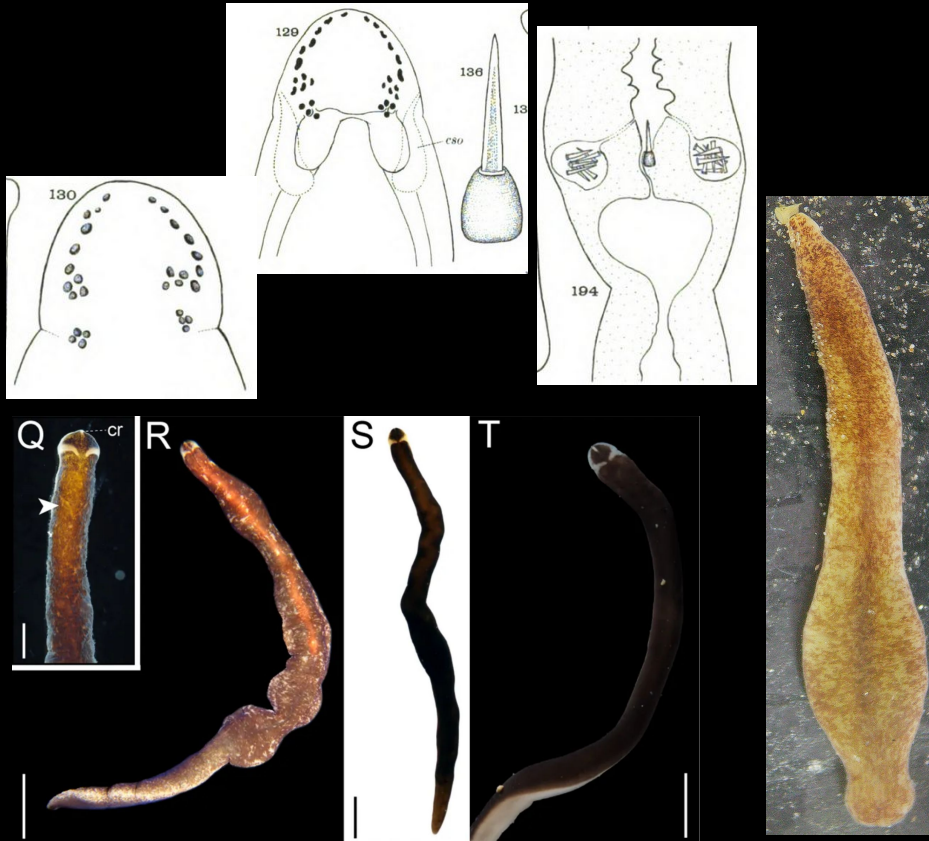
Nipponnemertes pacifica



- Short, broad, cerebral sense organs large, no esophageal caecum, 12-75 mm
- 14 proboscis nerves
- Shallow furrows separate head
- 12-20 ocelli in narrow cluster each side, with 4-6 of those larger and in a line; others have anterior groups of 10 large and 8 small, posterior groups of 8 large and 6 small each side
- Reddish-brownish dorsally
- Basis conical and somewhat bell-shaped, 2 accessory pouches of 3-7 stylets, S/B ~1
- Point Barrow to Central California (Gulf of California?), 9-226 m dredge, mud

See: [Coe 1905](#), [Coe 1944](#), [Coe 1952](#).

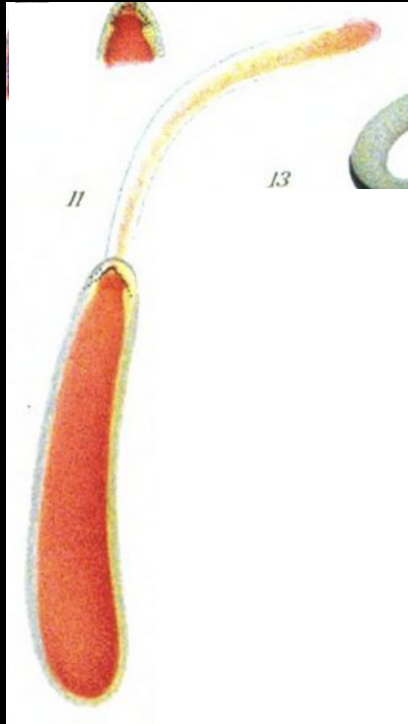
Nipponnemertes punctatula



- Head narrower than body but not demarcated, flattened, 35-50 mm
- 12-13 proboscis nerves
- 2 pairs furrows, fluted
- Ocelli fairly large, anterior marginal group of 10-16 on each side, posterior groups of 3-6 overlying ganglia
- Dark brown mottling dorsally and ventrally
- Proboscis large at $\frac{3}{4}$ body length, 12-13 nerves, basis thick and short, 2 accessory pouches of 5-8+ stylets, S/B >2
- Fukue, Catalina Island to La Jolla, beneath stones in mud

See: [Coe 1905](#), [Iwata 1952](#), [Hookabe et al. 2022](#). iNat images: [kerckhoff_marine_lab](#)

Nipponnemertes rubella



- Short, thick, stout, broader posteriorly, large proboscis, moderate parenchyma, intestinal caeca do not reach highly developed esophageal caecum, 25 mm
- 14 proboscis nerves
- 6-12 in irregular anterior row of larger ocelli, 6-8 in posterior cluster, each side
- Deep brownish-yellow to pale red, paler and grayish ventrally
- San Pedro to San Diego, wharf piles and dredge 35-200 m

See: [Coe 1905](#), [Roe et al. 2007](#).

Nipponnemertes sp. 1 Andrade et al.

- Santa Rosa-Cortes Ridge, California



See: [Andrade et al. 2012](#). iNat images:
[alanarama3](#)

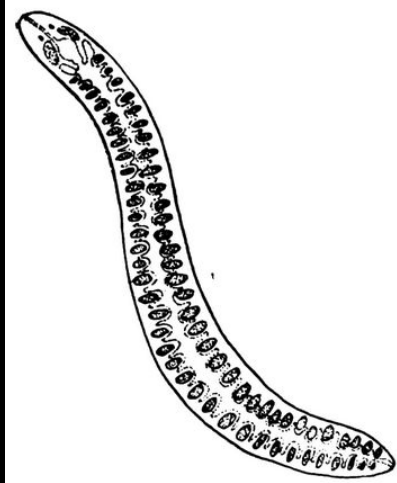
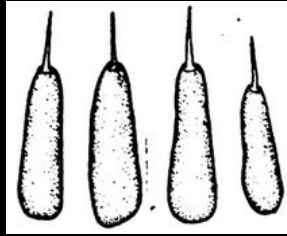
- Class: Hoplonemertea
 - Order: Monostilifera
 - Suborder: Eumonostilifera

- Cerebral organs not extending behind brain
- Mouth and proboscis pore merge at or behind opening
- Cerebral furrows often present, never with secondary grooves

- Class: Hoplonemertea
 - Order: Monostilifera
 - Suborder: Eumonostilifera
 - Infraorder: Amphiporina
 - Mid-dorsal blood vessel penetrates rhynchocoel, forming single vascular plug
 - Two-layered (inner longitudinal and outer circular) rhynchocoel wall

- Class: Hoplonemertea
 - Order: Monostilifera
 - Suborder: Eumonostilifera
 - Infraorder: Amphiporina
 - Family: Carcinonemertidae
[technically suspended]
- Parasitic on decapod eggs
 - Takakura's duct in males

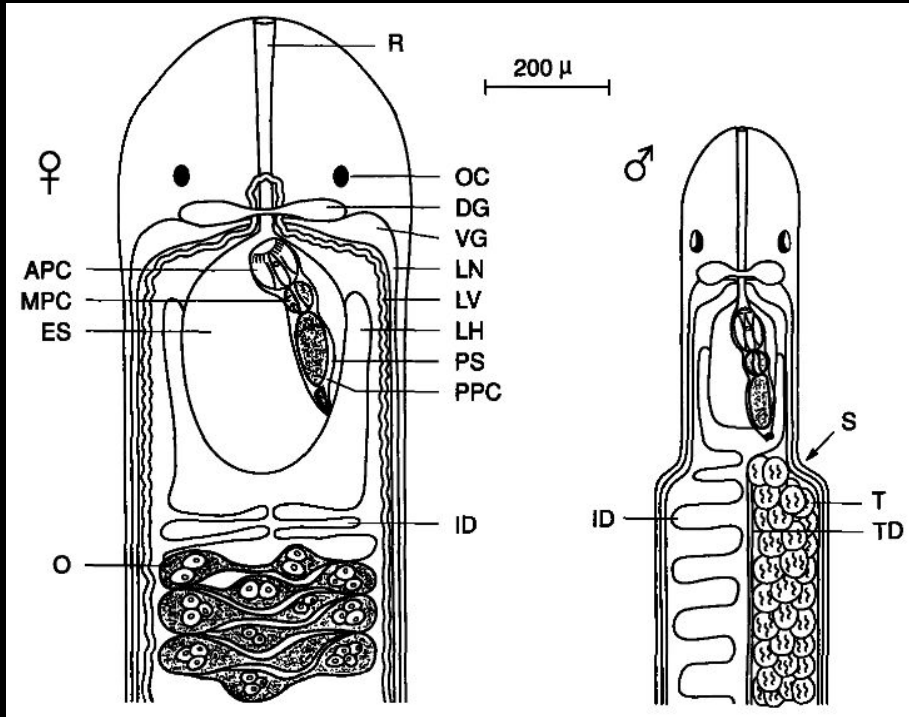
Carcinonemertes epialti



- Head not demarcated, rudimentary proboscis, fragile, less adhesive, 6 mm
- Cephalic glands occupy most of head
- 2 black ocelli between tip and ganglia
- Larvae with 2 pairs of ocelli
- Bright orange to rose pink to brownish, no spots, head paler, ganglia pink
- Very small stylet, no accessory pouches, S/B $\sim \frac{1}{3}$
- Parasitic on crab eggs (*Pugettia producta*, *Hemigrapsus oregonensis*, *H. nudus*, *Pachygrapsus crassipes*, others; not *Cancer magister*), sturdy sheath
- Coos Bay to San Diego (Peru?)

See: [Coe 1904](#), [Coe 1905](#), [Coe 1944](#), [Roe et al. 2007](#), [Hiebert 2016](#), [von Dassow et al. 2022](#).

Carcinonemertes wickhami

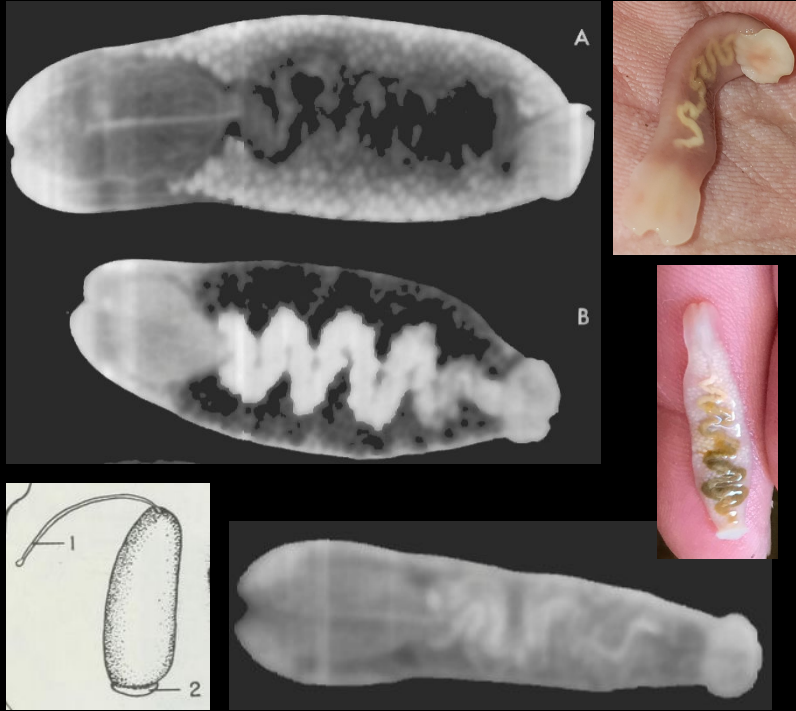


- Filiform, anterior rounded, posterior blunt, posterior foregut large and robust, large anterior proboscis chamber, adhesive, female 50 mm, male 20 mm
- 2 ocelli
- Voluminous seminal vesicle, 2 rows ovaries
- Female orange, male pinkish-white
- Basis large, stylet broad and flat with knob-like proximal piece, $S/B = \frac{1}{2}$
- Santa Barbara, on female *Panulirus interruptus*, often in glistening parchment-like sheaths or free
- Eggs faint pink, in flimsy mucous matrix; larvae white with pink anterior

- Class: Hoplonemertea
 - Order: Monostilifera
 - Suborder: Eumonostilifera
 - Infraorder: Amphiporina
 - Family: Malacobdellidae
- [technically suspended]

- Commensal inside clam mantle cavities
- Proboscis with single chamber, no stylet

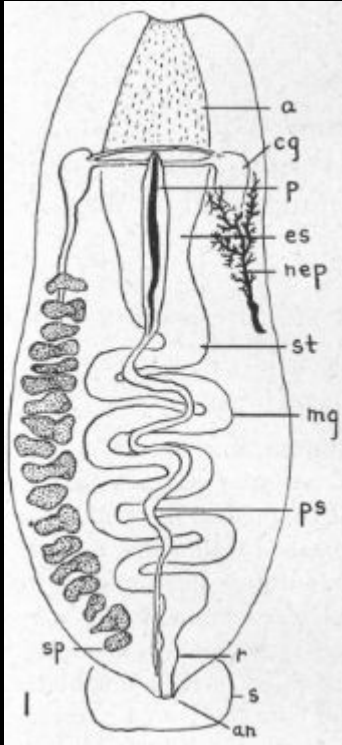
?*Malacobdella grossa*?



- Short and thick, posterior wide and has sucker, anterior rounded with large mouth, ovaries small and numerous, scattered throughout intestinal region, rhynchocoel nearly whole length of body, proboscis less than $\frac{1}{2}$ body length, (7)10-11 intestinal undulations, 15-50 mm
- No ocelli
- White
- No stylet
- Commensal inside mantle cavity of clams (*Siliqua patula*, *Mya arenaria*, *Venus*, *Macoma secta*, others)
- Puget Sound to California
- MAY NOT BE PRESENT -- compare Riepen 1933 description

See: Riepen 1933, [Coe 1940](#), [Corrêa 1964](#), [Gibson 1968](#), [MacGinitie & MacGinitie 1968](#), [Bernhardt 1979](#), [Kozloff 1991](#), [Roe et al. 2007](#). iNat images: [jd_and_em](#), [mossy](#), [davidcbailey](#), [taylorbeck34](#), [leecain](#)

Malacobdella minuta



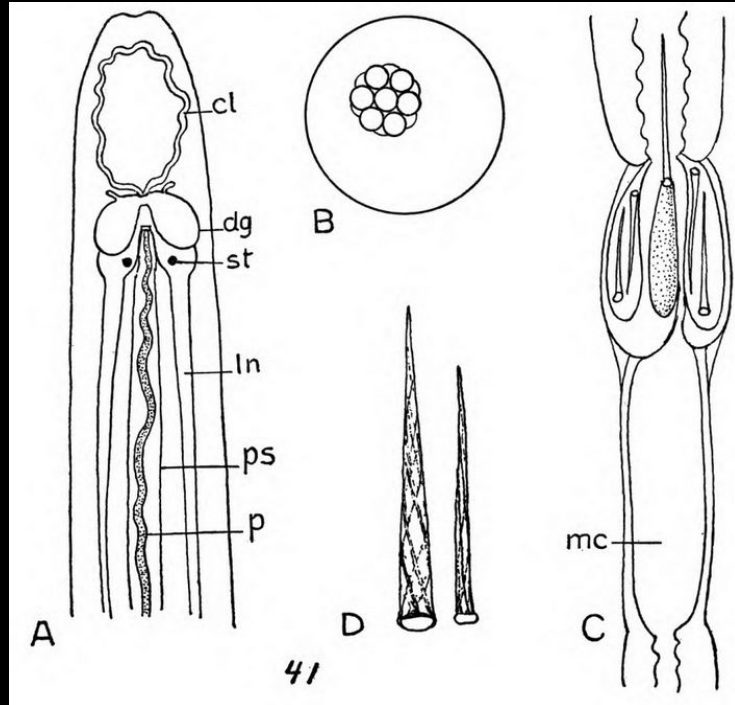
- Gonads large in single irregular row on each side of the body, rhynchocoel nearly body length, 7-8 intestinal undulations, rhynchocoel reaches nearly level of anus, 5-8 mm
- 18 pairs spermaries
- San Diego, 40 m in *Yoldia cooperi*
- Distinguish by small size, few but large gonads in single row, short rhynchocoel

See: [Coe 1945](#), [Corrêa 1964](#), [Bernhardt 1979](#), [Kozloff 1991](#), [Roe et al. 2007](#).

- Class: Hoplonemertea
 - Order: Monostilifera
 - Suborder: Eumonostilifera
 - Infraorder: Amphiporina
 - Family: Ototyphlonemertidae
[technically suspended]

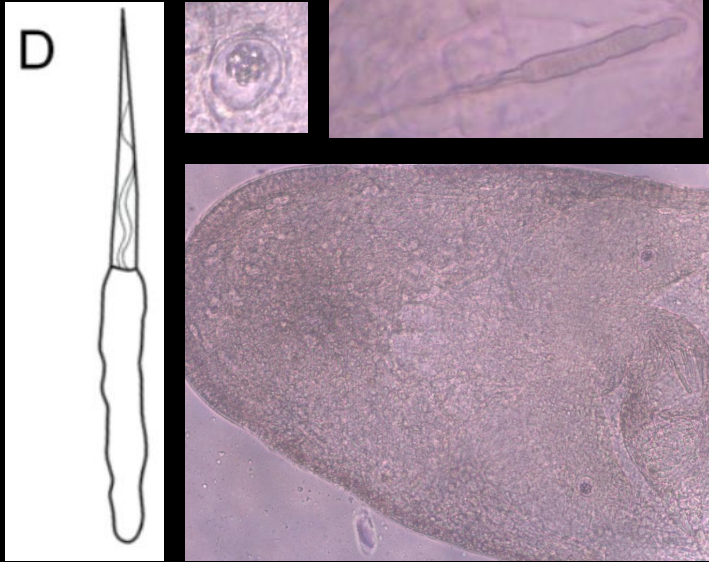
- Interstitial meiofauna, among sand grains
- Have statocysts in ventral ganglia

Ototyphlonemertes (Norenburgia) spiralis



- Tiny, filiform, head not demarcated, rhynchocoel short, cerebral organs present, 3-5 cm
 - No ocelli
 - 1 pair of small refractive statocysts on ventral ganglia, statolith of 8/12/16 globules
 - White to gray to yellow, deeper color anteriorly, ganglia pinkish, may have minute brownish granules in epithelium
 - Basis very long, 2 accessory pouches of 2-4 stylets, stylets spirally ridged
 - Contracts into knot or close spiral
 - San Diego, in sand under corallines and growths
- See: [Coe 1940](#), [Norenburg 1988](#), [Roe et al. 2007](#), [Liu et al. 2022](#).

Ototyphlonemertes (Norenburgia) sp. BOBA030



- Head slightly demarcated, 3.5 mm
- Polygranular statocyst in each of 2 ventral ganglia
- White, transparent foregut, cream intestine
- Short proboscis diaphragm, bulbous middle chamber; basis slender, irregular cylinder, S/B <1
- Bodega Bay to San Diego (not Half Moon Bay), low intertidal coarse sediments, wave-exposed sandy beach



See: [Ellison et al. 2024.](#)

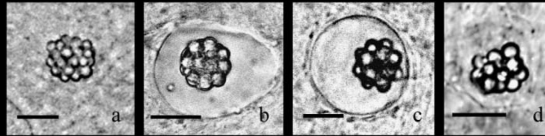
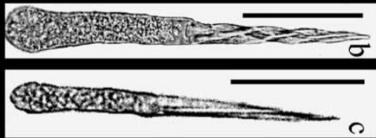
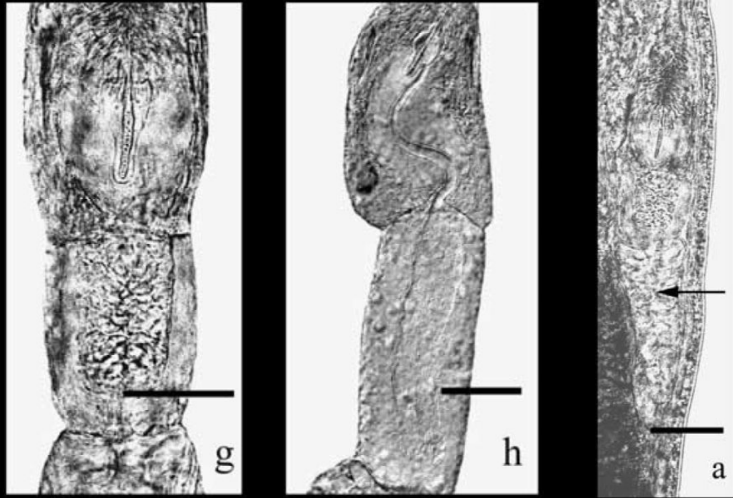
Ototyphlonemertes (Ototyphlonemertes) sp.



- Each statolith with 2 granules
- Short proboscis diaphragm, bulbous middle chamber; smooth central stylet, thick basis
- Duplex morpho-group, *O. duplex* species group

See: [Envall & Norenburg 2001](#), [Roe et al. 2007](#), [Kajihara et al. 2018](#), [Liu et al. 2022](#).

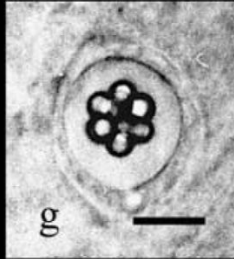
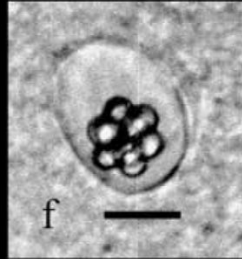
Ototyphlonemertes (Norenburgia) sp.



- 1 statolith with 7-30 granules
- Cerebral organs stunted or absent, if present posteriorly border brain
- Proboscis diaphragm long or short, middle chamber long tubular or short (often squarish), posterior chamber vesicular; stylets smooth or sculpted
- Cirri usually absent
- Corresponds to Lactea + Macintoshi morpho-groups, or the Lactea/Macintoshi phylo-group

See: [Envall & Norenburg 2001](#), [Roe et al. 2007](#), [Leasi et al. 2016](#), [Liu et al. 2022](#).

Ototyphlonemertes (Procso) sp.

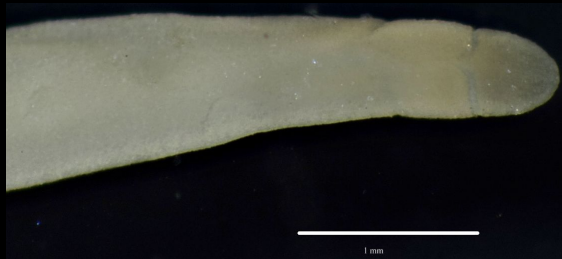
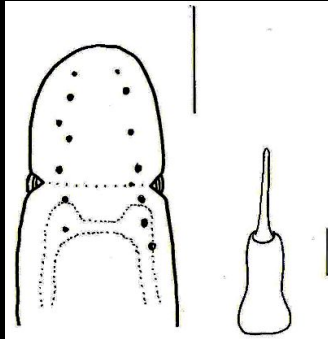
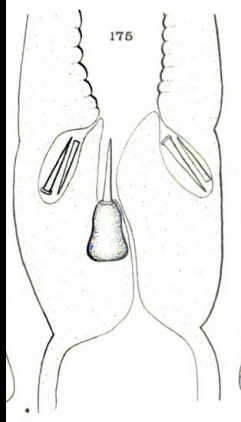
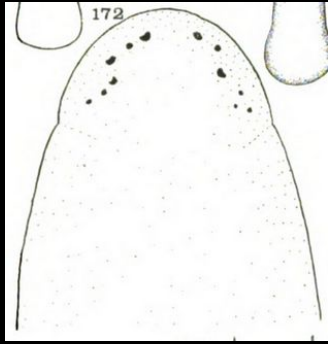


- 1 statolith with 6-12 granules
- Cerebral organs normal or rarely stunted, fully anterior to brain (not bordering)
- Proboscis chamber short, middle chamber bulbous, posterior chamber with specialized anterior region; stylets sculpted
- Cirri at anterior and posterior end
- Corresponds to Parmula + Fila morpho-groups

See: [Roe et al. 2007](#), [Leasi et al. 2016](#), [Liu et al. 2022](#).

- Class: Hoplonemertea
 - Order: Monostilifera
 - Suborder: Eumonostilifera
 - Infraorder: Amphiporina
 - Family: [suspended]

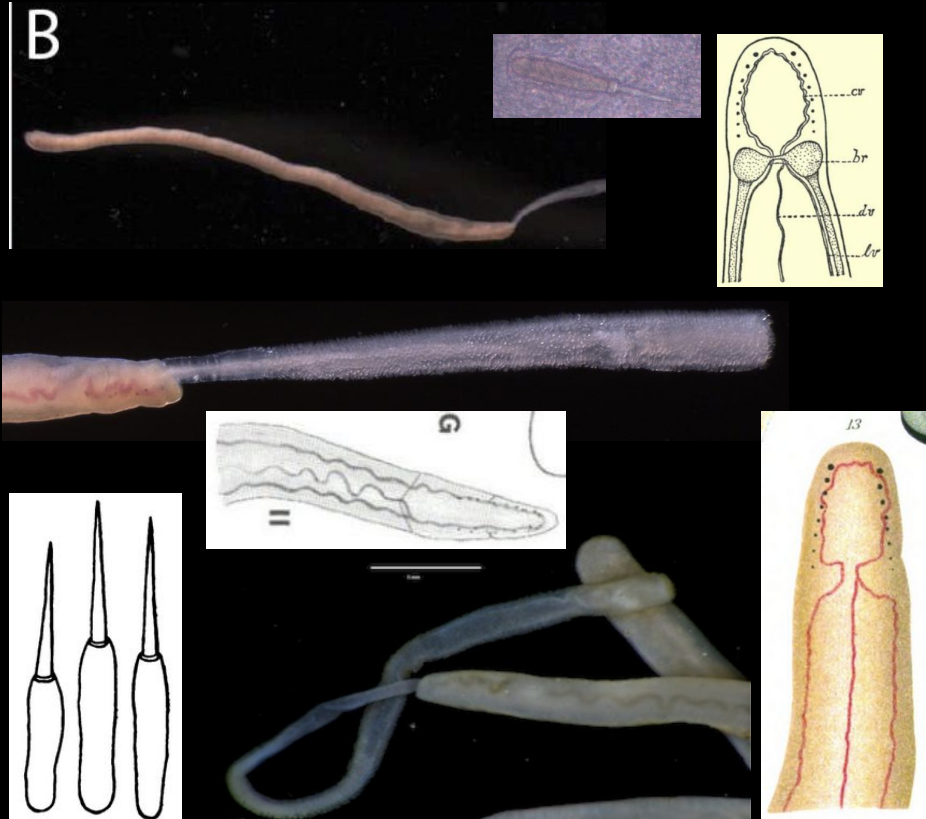
Amphiporus californicus



- Shape, 10-25+ mm
- 10-12 proboscis nerves
- 5-8 moderate sized ocelli clustered each side, anterior ocelli largest
- Deep reddish orange to brick red, duller ventrally; olive green ova are very distinct when ripe
- Basis conical and bell-shaped, S/B slightly >1
- Santa Barbara to San Diego, wharf piles or 100 m dredge, rock crevices

See: [Coe 1905](#), [SCAMIT 2025](#).

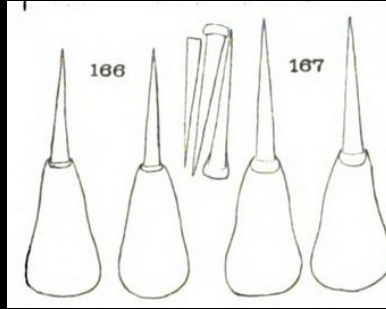
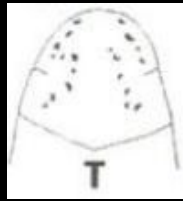
Amphiporus aff. *cruentatus* BOBA024



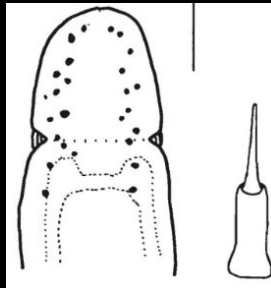
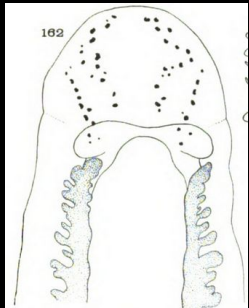
- Slender, head narrow, 25 mm
- Inconspicuous furrows
- Single row of 5-10 ocelli each side, largest anterior
- Yellowish white, bright red blood vessels
- Slender cylindrical basis narrow at posterior, $S/B < 1$, 2 accessory pouches
- Puget Sound to San Diego, wave-exposed rocky shores, among surfgrass roots, to 80 m
- Resembles *A. cruentatus* but almost certainly distinct

See: [Coe 1904](#), [Coe 1905](#), [Coe 1944](#), [Roe et al. 2007](#), [Hiebert 2016](#), [Ellison et al. 2024](#).

Amphiporus flavescens

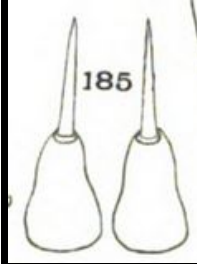
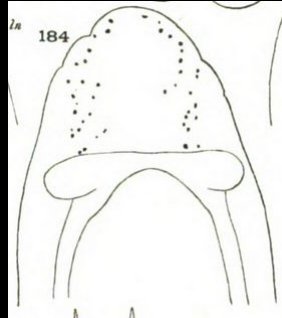


- 6-25 mm
- 10-12 proboscis nerves
- 12-25 ocelli each side in 2 groups each side, 6-12 ocelli in anterior row, 6-12 in posterior cluster, arranged irregularly
- Whitish or pale yellow, intestines may be pale yellow to orange, ripe ova yellower, brain yellowish
- Basis conical or bell-shaped, S/B slightly >1, 2 accessory pouches
- Monterey Bay to Mexico, piles, under stones, among algae



See: [Coe 1905](#), [Roe et al. 2007](#), [SCAMIT 2025](#).

Amphiporus fulvus

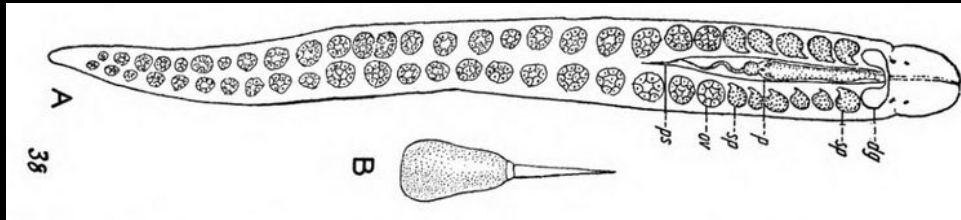


- 15-25 mm
- ~25 ocelli in irregular cluster each side
- Brown due to thickly scattered minute dots, anterior paler, head pale yellow
- Stylet slender and pointed, basis bell-shaped, 2 accessory pouches with 2-3 stylets, $S/B = 4/3$
- San Francisco to San Pedro, wharf piles and 85 m



See: [Coe 1905](#). iNat images: [CA Clark](#)

Dichonemertes hartmanae



- Moderately slender, rounded, firm, not very contractile, cigar-shaped, rhynchocoel only in anterior $\frac{1}{3}$, 10-15 mm
- 10 proboscis nerves
- 4 very small crescentic ocelli in rectangle, anterior and posterior pairs very close together
- Pale red or yellowish, deep red blood
- Basis pear-shaped, S/B ~ 1 , 2 accessory sacs of 2-3 stylets, proboscis small and short
- San Diego, in mud and dead vegetation

See: [Coe 1940](#).

Amphiporus imparispinosus

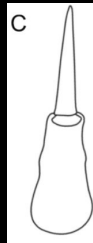
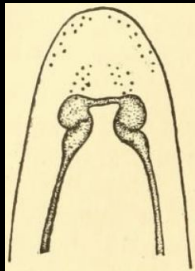
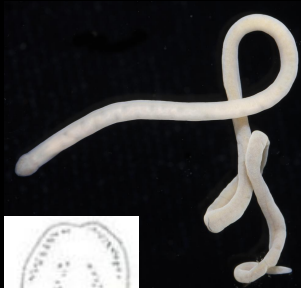
- 75 mm
- Ganglia pinkish
- 3 accessory pouches
- Dutch Harbor to Coos Bay
- *A. imparispinosus* complex, longer than *A. similis*, possibly same as BOBA017/OTU 6?

See: [Griffin 1898](#), [Coe 1901](#), [Coe 1905](#), [Maslakova et al. 2022](#), [Ellison et al. 2024](#).

Amphiporus cf. imparispinosus BOBA017/OTU 6

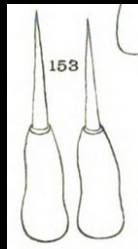
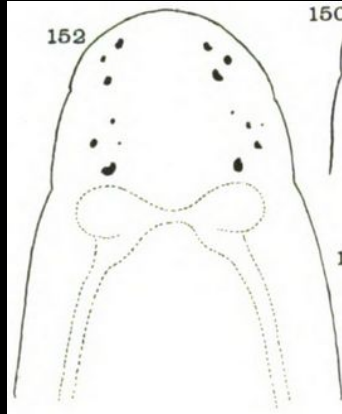
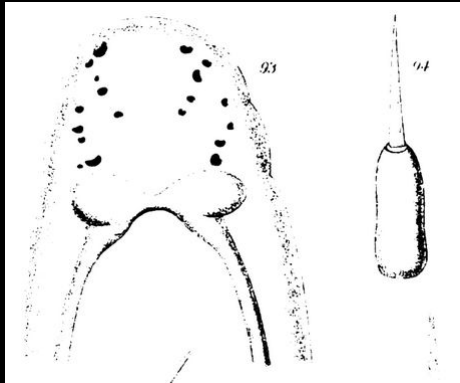


- Head round, and wider than body, 63 mm
- Marginal line of 6-15 ocelli each side, parallel posterior line of 6-15 (or 30) ocelli each side
- Opaque white, sometimes pale reddish to yellowish tinge, ganglia pinkish
- 3 accessory stylet pouches of 2-3 stylets, stylet slender and S/B ~1, basis slightly pear-shaped
- Coos Bay to Point Mugu (Ensenada?), wave-exposed rocky intertidal, wharf piles
- *A. imparispinosus* complex, longer than *A. similis*



See: [Griffin 1898](#), [Coe 1901](#), [Coe 1905](#), [Corrêa 1964](#), [Roe et al. 2007](#), [Rudy et al. 2013a](#), [Maslakova et al. 2022](#), [Ellison et al. 2024](#). iNat images: [anudibranchmom](#)

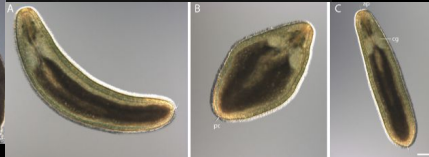
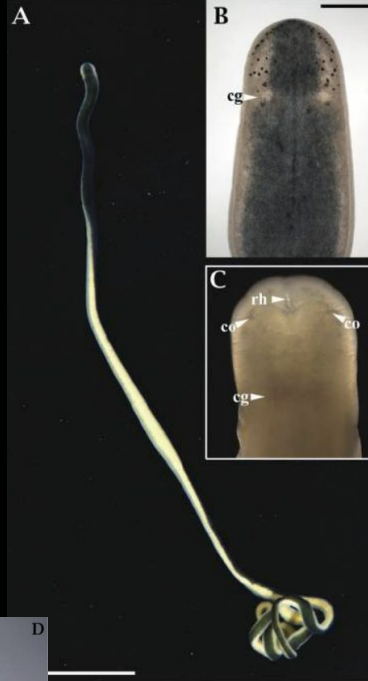
Amphiporus similis



- Head slender, 8-15 mm
- 10 proboscis nerves
- 2 pairs cephalic furrows
- 6-12 ocelli each in 2 parallel lines each side of head
- White with tinge of pinkish or yellowish
- Slender stylet, 2 accessory pouches with 1-3 stylets, basis slender, S/B slightly >1
- Puget Sound to Ensenada, on piles and among corallines
- Distinguish from *Amphiporus imparispinosus* complex by number of pouches

See: [Coe 1905](#), [Coe 1944](#), [Roe et al. 2007](#), [Hiebert 2016](#).

Emplectonema viride

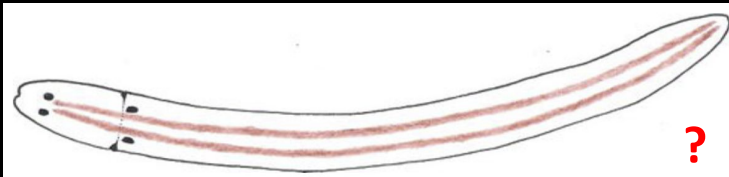
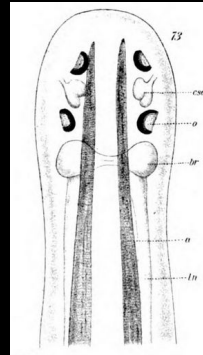
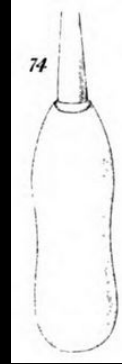


- Long and often tangled, proboscis very short and slender, 20-50 cm
- 8-10 ocelli on margin each side and posterior cluster of 10-20 each side
- Dark to yellowish-green dorsally, cream ventrally (grayer in the north), pink ganglia
- Basis long and slender, S/B = $\frac{1}{2}$ - $\frac{1}{3}$, stylet acutely pointed and gracefully curved, 2 accessory pouches of 5-7 stylets
- Unalaska to Mexico, high-water mark to 100 m, near mussels and acorn barnacles



See: [Griffin 1898](#), [Coe 1901](#), [Coe 1905](#), [Coe 1944](#), [Hiebert 2016](#), [Mendes et al. 2021](#), [Ellison et al. 2024](#), BIN [AAP1200](#).

Nemertopsis gracilis



- Long and extremely filiform, 10-15 cm
- 8 proboscis nerves
- 4 large ocelli in square, difficult to see
- Dull whitish with tinge of brown, 2 dark dorsal stripes which fade posteriorly, stripes extend onto head inside of without connecting
- Stylet slender, basis slender, basis not swollen posteriorly, 2 accessory pouches of 4-6 stylets
- Do not coil or spiral
- Point Barrow to Ensenada, among corallines, mussels, and growths on rocks and piers

See: [Coe 1904](#), [Coe 1905](#), [Coe 1944](#), [Coe 1952](#), [Roe et al. 2007](#). iNat images: [Graham Montgomery](#)

Paranemertes californica



- Body thick, narrower at anterior, head pointed and rounded, 45 cm
- 10 large proboscis nerves
- Anterior furrows conspicuous, posterior furrows in shallow V
- 2 or 2 clusters of 2-3 ocelli each side
- Near translucent orange to yellow to pinkish, ganglia reddish, gray-green intestine, paler ventrally, proboscis pink
- Basis somewhat truncated, $S/B = \frac{1}{2}$, striations at stylet base, 2-6 pouches of 2-3 stylets
- 2 longitudinal muscle layers anteriorly
- Southern Oregon to Ensenada, prefers sand, intertidal and subtidal

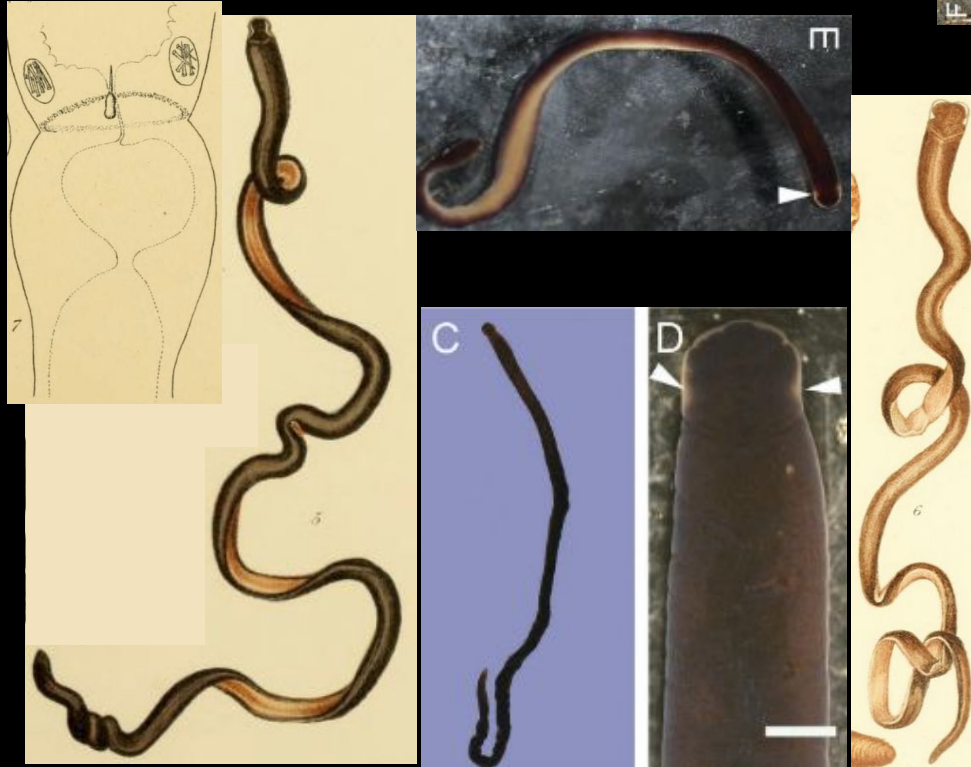
See: [Coe 1904](#), [Coe 1905](#), [Coe 1944](#), [SCAMIT 2011](#), [Hiebert 2016](#), [von Dassow et al. 2022](#).

Paranemertes sp. B SCAMIT 2007

- Inconspicuous ocelli in 4 clusters of 2-3, anterior pair near tip, posterior pair in front of cerebral ganglia
- Like *P. californica*, some confusion about Coe's description

See: [SCAMIT 2025](#).

Paranemertes peregrina

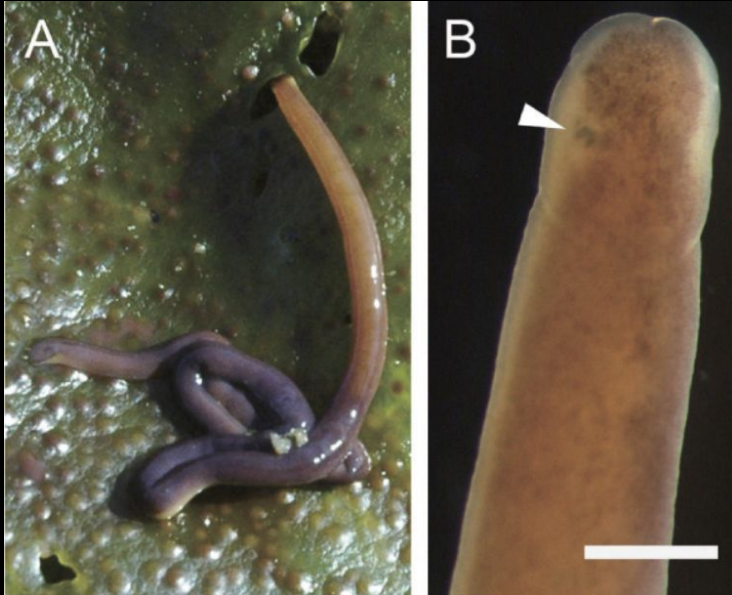


- Elongate, rounded, slightly slender anterior, head flattened and variable, tip can be pointed, 40 cm
- Inconspicuous V-shaped posterior furrow
- Numerous ocelli on lateral margins
- (2-)4 accessory pouches of 6-10 stylets
- Brownish or chestnut dorsally (purplish in Kuril Islands), pale ventrally
- Dalian to San Juan Island, under stones, among barnacles and fouling community
- "Brown variety" of Coe 1901, Network2

See: [Coe 1901](#), [Coe 1905](#), [Hao et al. 2015](#), BIN [AAL3452](#).

iNat images: [Jorge Merchán](#)

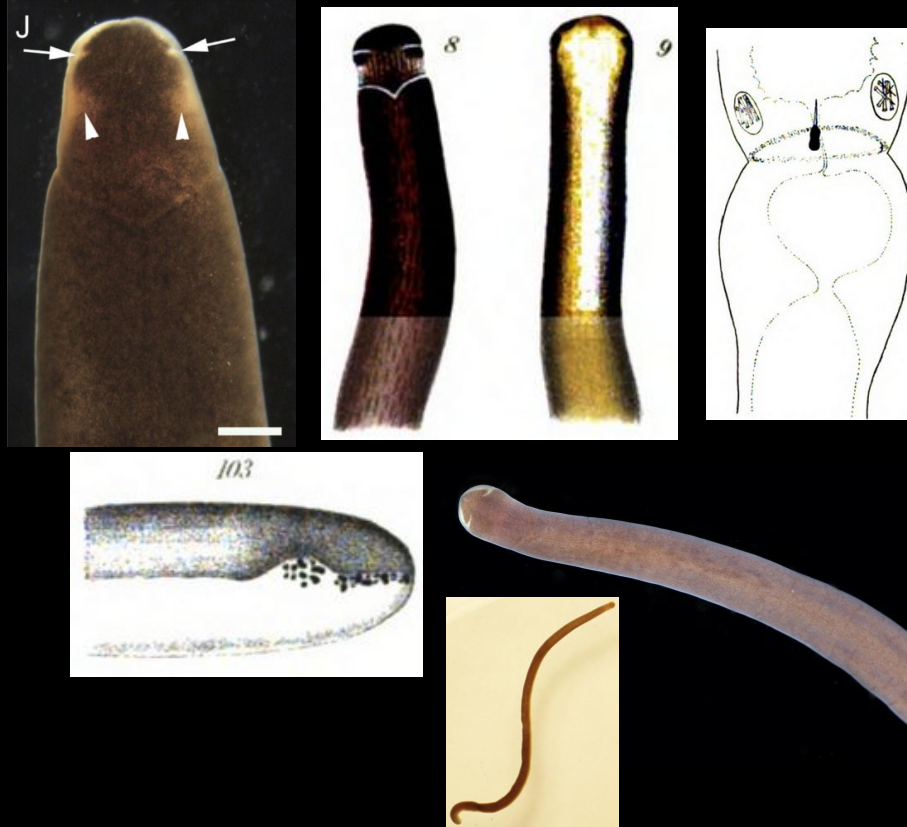
Paranemertes aff. *peregrina* Network1



- Brownish or chestnut color dorsally, two-toned with purple posterior (?)
- Bodega Bay and Santa Barbara, not farther north than San Juan Bay, rocks and algae, unknown which species is south to San Pedro
- Stylet with spiral striations
- *P. peregrina* complex

See: [Coe 1901](#), [Hao et al. 2015](#).

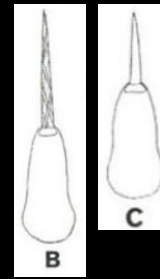
Paranemertes aff. peregrina BOBA009 / Network3



- Head slightly demarcated, 5cm or up to 25 cm
- Brownish or orangish purple dorsally, paler ventrally, red ganglia visible, conspicuous whitish transverse grooves on lateral margins of head (upper arrows)
- Stylet with spiral striations, 2 accessory pouches, 2-4 stylets each
- Unalaska to Bodega Bay, mudflat and nearby kelp holdfasts, unknown which species is south to San Pedro

See: [Coe 1901](#), [Ellison et al. 2024](#), [Hao et al. 2015](#).

Paranemertes peregrina complex



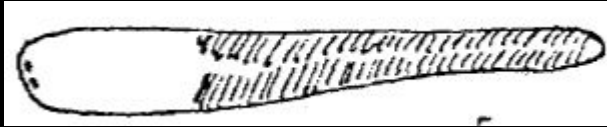
- One with central stylet spirally sculpted, 2 accessory pouches (of 2-4 stylets), brownish purple, Juneau to California (Coe 1905)
- One with smooth stylet, 4 accessory pouches, more purple, 25 cm, Alaska (Coe 1901)
- *Paranemertes peregrina* at San Juan Island
- *Paranemertes* sp. 1 (Oregon). May equal one of the two cryptic species above



- *Paranemertes* sp. 2 (Oregon) (larva)

See: [Coe 1901](#), [Roe et al. 2007](#), [Rudy et al. 2013d](#), [Hao et al. 2015](#), [Ellison et al. 2024](#).

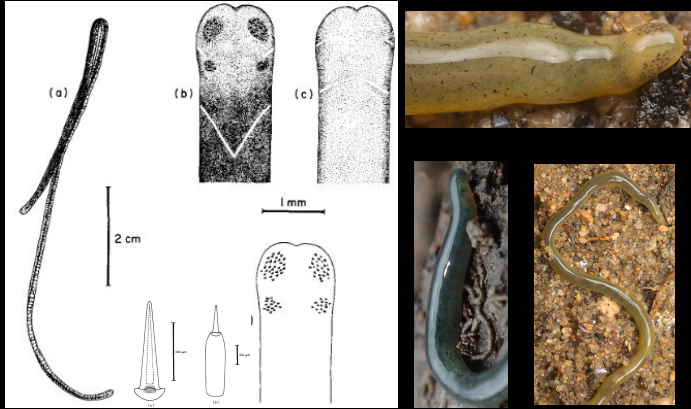
Paranemertes sp. A Bernhardt 1979



- Short and stubby
- 2 ocelli
- White, intestinal region deep green
- 'Certain peculiarities in stylet'
- King Harbor at Redondo Beach, associated with *Pseudopolydora*, prefers muddy habitats

See: [Bernhardt 1979](#).

"*Pantionemertes*" *californiensis*

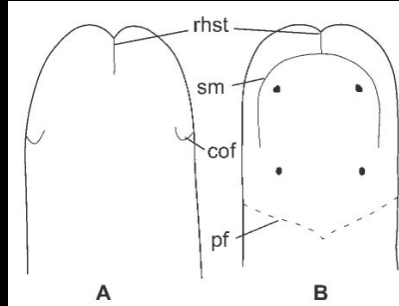
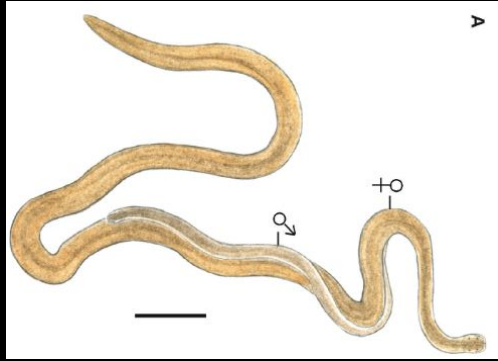


- Head slightly bilobed, no prosorhochmid smile, large proboscis, 2-45 cm
- Anterior furrows reduced, posterior furrows V-shaped
- 2 anterior groups of 5-100 ocelli, 2 posterior groups of up to 50 ocelli
- Grayish-green to tan to bluish, tannish laterally, dark dorsal midline, black speckling appears common, ventral and head light cream, gametes bright red when ripe
- $S/B < \frac{1}{2}$, 2 accessory pouches of 1-5 stylets
- Puget Sound to Huntington Beach, high intertidal, semi-terrestrial

See: [Gibson et al. 1982](#), [Roe et al. 2007](#), [Maslakova & Norenburg 2008](#), [Hiebert 2016](#). iNat images: [kueda](#), [alex bairstow](#), [thirty legs](#), [thirty legs](#), [Graham Montgomery](#)



Prosadenoporus aff. floridensis

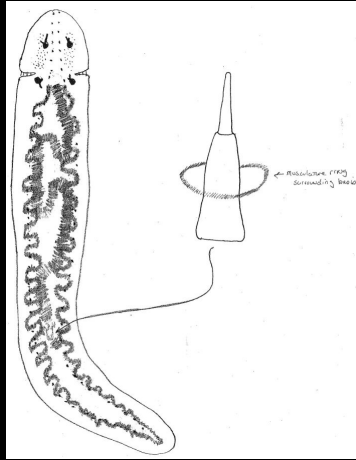
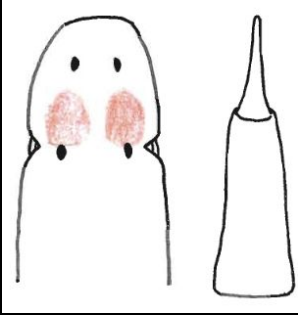
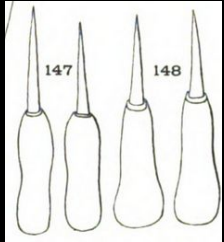
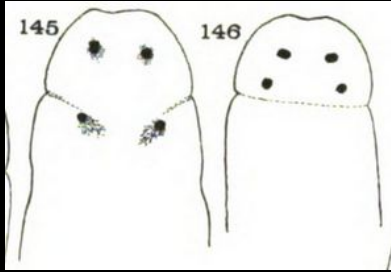


- Widest at middle, narrow anterior and tapering posterior, bilobed head, epidermal fold in 'smile', 75 mm (female larger)
- Anterior furrows rudimentary, posterior furrows in shallow V
- 4 large dark brown to black ocelli
- Light orange- to greenish-brown dorsally, yellowish-cream ventrally, darkest at dorsal midline
- basis truncated, 2 accessory pouches of 2-3 stylets, S/B 0.39-0.7
- Santa Monica to San Diego, high intertidal, often aggregate



See: [Maslakova & Norenburg 2008](#). iNat images: [Graham Montgomery](#), [tobiashays](#)

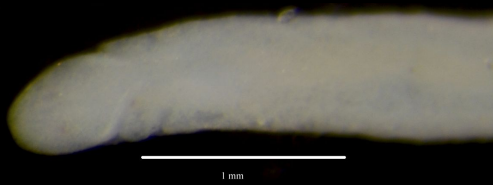
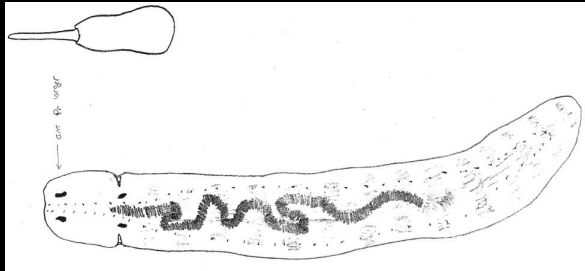
Tetrastemma albidum



- Slender, head narrow but not pointed, intestinal caeca reach brain, 25 mm
- Cephalic furrows
- 4 large ocelli in rectangle, anterior ocelli more separated
- Speckled brownish-red between ocelli, opaque milk white or creamy, can be tinged yellow or gray
- Basis slender and can be irregular, 2 accessory pouches of 2-4 stylets, S/B ~ 0.9
- Monterey Bay to Ensenada, algae and corallines

See: [Coe 1905](#), [Coe 1940](#), [Coe 1944](#), [Hiebert 2016](#), [SCAMIT 2025](#).

Tetrastemma candidum



- Rhynchocoel extends to end of body, rather flattened, 35 mm
- 4 small ocelli in rectangle
- Greenish or yellowish-green, immatures may be grayish or whitish
- Basis pear-shaped
- Alaska to Ensenada, among algae and growths on rocks and piers. [probably an Atlantic sp. ?]
- More flattened than *Oerstedtia dorsalis*

See: [Coe 1940](#), [Verrill 1892](#), [Roe et al. 2007](#), [Hiebert 2016](#), [SCAMIT 2025](#).

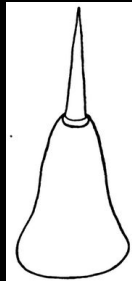
Tetrastemma nigrifrons



- Shape, 20-30 or 70 mm
- Anterior furrows connect ventrally, posterior furrows form full collar
- 2 pairs medium ocelli
- Head white or pale yellow with single dark spot; otherwise highly variable:
 - a) deep purple, b) 1 white dorsal stripe, c) pale brown, d) 2 dark dorsal stripes, e) reddish brown dotting, f) brick red
- Basis cylindrical, S/B slightly <1 , 2-4 stylets in 2 accessory pouches
- Unalaska to Costa Rica, algae, bryozoans, wharf piles, surfgrass

See: [Coe 1904](#), [Coe 1905](#), [Coe 1944](#), [Chernyshev et al. 2021a](#), [Ellison et al. 2024](#), BIN [ADX0572](#). iNat images: [bridgetspencer](#), [Leslie Harris \(2,3\)](#)

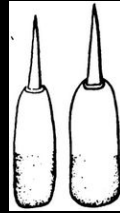
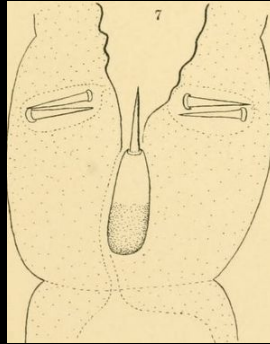
Tetrastemma quadrilineatum



- 8-12 mm
- 4 ocelli in square
- Whitish, intestinal region tinged yellow or salmon, 2 dark brown dorsal stripes and 2 lateral, median lines nearly reach tip but do not join, lateral lines end behind ocelli
- Basis enlarged and truncated, $S/B = \frac{3}{4}$, 2 accessory pouches of 2 stylets
- Monterey to Ensenada, wharf piles amid ascidians and other growths

See: [Coe 1904](#), [Coe 1905](#), [Coe 1944](#).

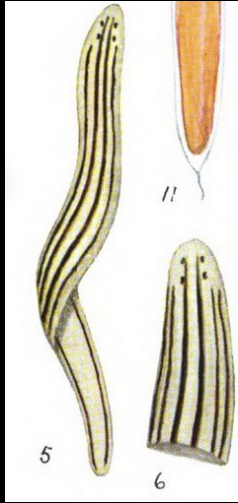
Tetrastemma reticulatum



- 8-15 mm
- 4 ocelli in square
- White to cream, light or chocolate brown rectangular markings dorsally in 1-2 columns
- Basis elliptical and only slightly wider posteriorly, 2 accessory pouches of 2 stylets, $S/B = \frac{2}{3}$
- Monterey Bay to San Diego, wharf piles to 20 m

See: [Coe 1904](#), [Coe 1905](#), [Roe et al. 2007](#), [Chernyshev et al. 2021a](#). iNat images: [thetidepooler](#)

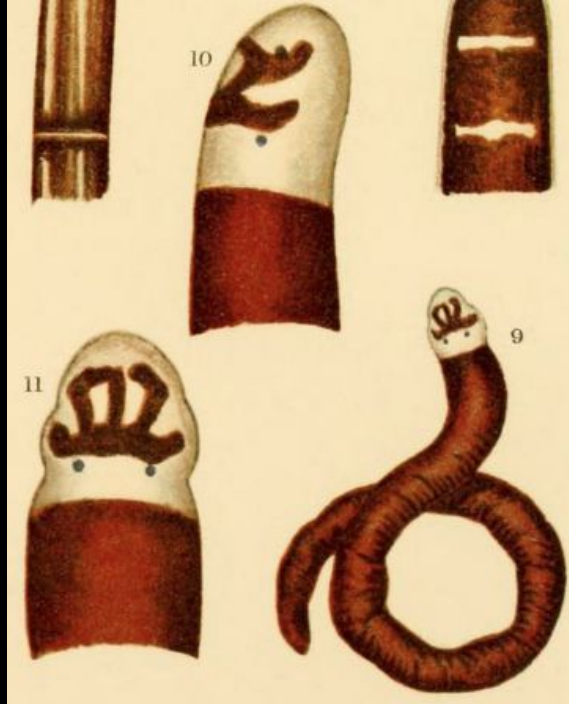
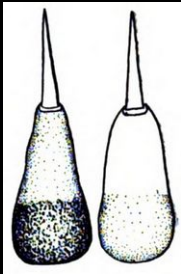
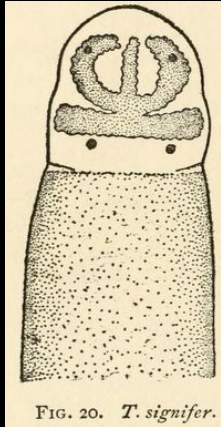
Tetrastemma sexlineatum



- Short, stout, 5 mm
- 4 ocelli, in square
- Gray or slightly yellowish dorsal and ventral, 6 dark brown stripes (2 dorsal, 2 dorso-lateral, 2 ventro-lateral), 2 dorsal lines reach head tip, other 4 only reach brain
- Large pear-shaped basis, S/B ~1, 2 accessory pouches of 2-3 stylets
- Santa Barbara to San Clemente Island, intertidal to 35 m

See: [Coe 1940](#). iNat images: [imlichentoday](#)

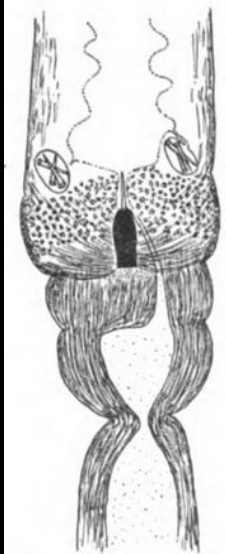
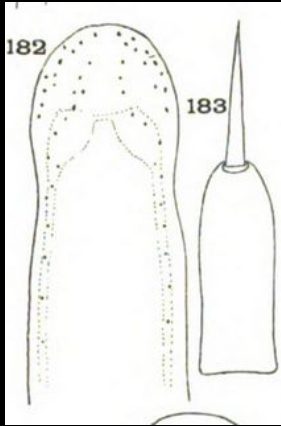
Tetrastemma signifer



- 15-25 mm
- Conspicuous anterior and posterior furrows
- 4 ocelli in square
- Reddish brown, head white with dainty wreathlike marking made of 3 dark lines, duller ventrally
- Stylet slender, basis rounded, $S/B = \frac{2}{3}$ to 1
- Monterey Bay to San Diego, wharf piles and kelp holdfasts

See: [Coe 1904](#), [Coe 1905](#), [Coe 1944](#), [Roe et al. 2007](#).

Zygonemertes albida

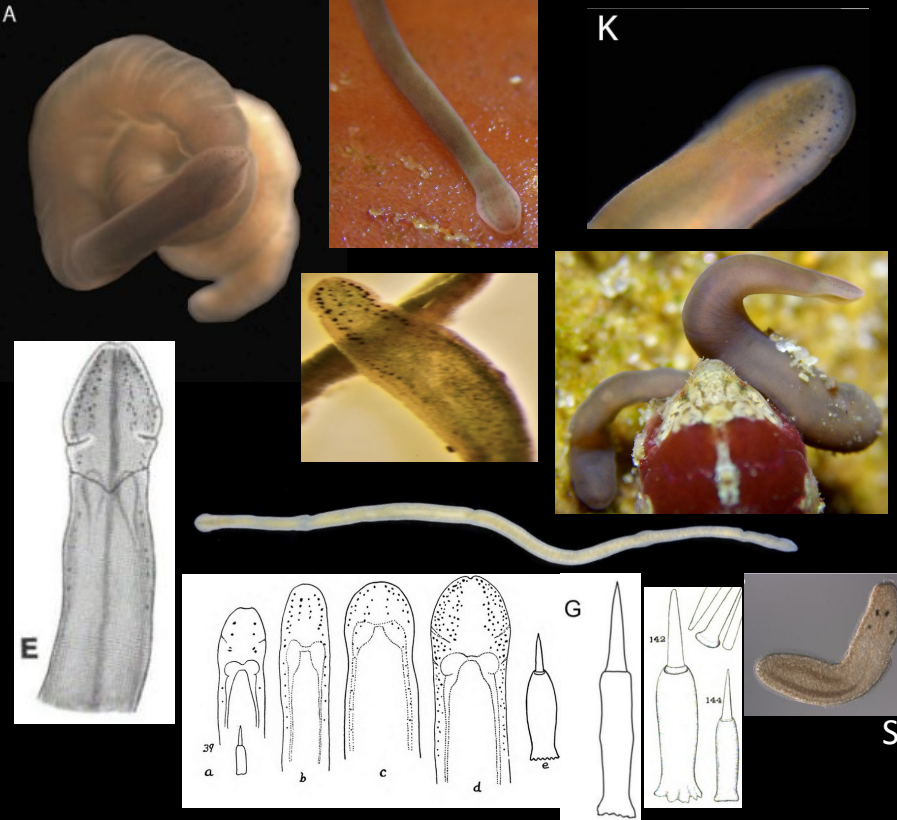


- <25 mm
- Numerous ocelli extend in 1 post-cerebral row each side
- White to tinged yellow
- Stylet slender and elongate, basis sharply truncated but not posteriorly notched
- Extremely active in confinement
- *Zygonemertes* spicules in skin
- Victoria to Ensenada
- Fewer ocelli than *Zygonemertes* aff. *virescens*



See: [Coe 1901](#), [Coe 1905](#), [Coe 1944](#), [Roe et al. 2007](#). iNat
images: [silversea_starson](#)

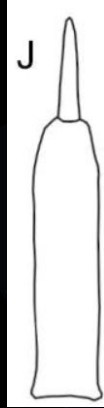
Zygonemertes aff. *virescens* BOBA012 sp. 1



- Slender, 15 cm
- 15-25 ocelli in irregular row, 4-12(?) small post-cerebral ocelli in single row, each side
- Somewhat transparent, greenish yellow with clear margins, purplish cast, pink ganglia
- Basis posterior concave to flared, usually posterior notching, S/B ~0.5, 2 accessory pouches with 2-3 stylets each
- Yellow *Zygonemertes* spicules
- Active in confinement
- Puget Sound to Bodega Bay (Gulf of California), intertidal, kelp (to 120 m)

See: [Coe 1905](#), [Corrêa 1964](#), [Roe et al. 2007](#), [Hiebert 2016](#), [Ellison et al. 2024](#). iNat images: [imlichentoday](#), [imlichentoday](#)

Zygonemertes sp. BOBA015



- 4-15 mm
- ~25 ocelli each side of head in 2 irregular rows
- Brownish, pink ganglia
- Basis relatively large, S/B 0.4-0.75, one individual had triangle-shaped basis, 2 accessory pouches with 2-3 stylets
- Queen Charlotte Sound to Point Mugu, surfgrass roots and colonial ascidians in low intertidal



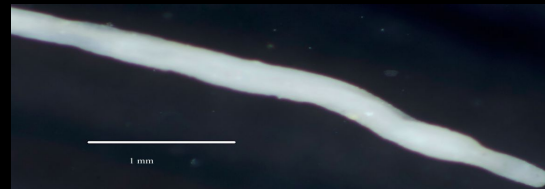
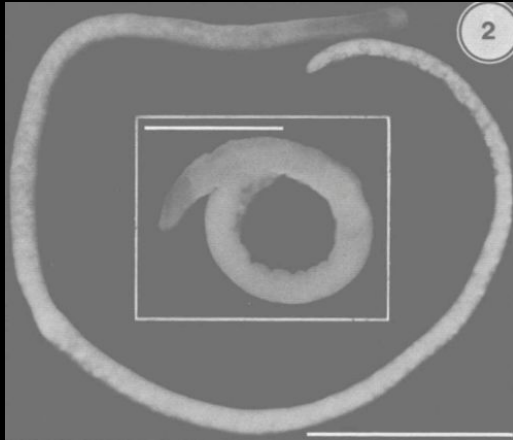
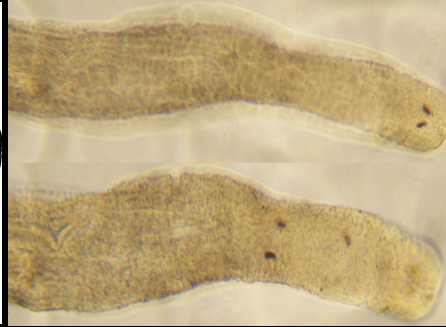
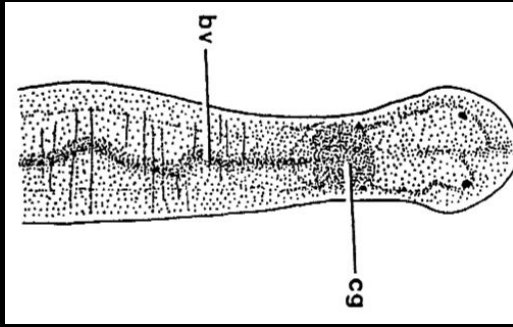
See: [Ellison et al. 2024](#), BIN [ADR7155](#), perhaps [AEJ0119](#).

- Class: Hoplonemertea
 - Order: Monostilifera
 - Suborder: Eumonostilifera
 - Infraorder: Oerstediiina
 - No mid-dorsal blood vessel penetrates rhynchocoel to forming single vascular plug

- Class: Hoplonemertea
 - Order: Monostilifera
 - Suborder: Eumonostilifera
 - Infraorder: Oerstediiina
 - Family: Oerstedidae

- 2-layered rhynchocoel wall
- Cephalic vessels protrude into rhynchocoel at cerebral ring (may form vascular plugs)

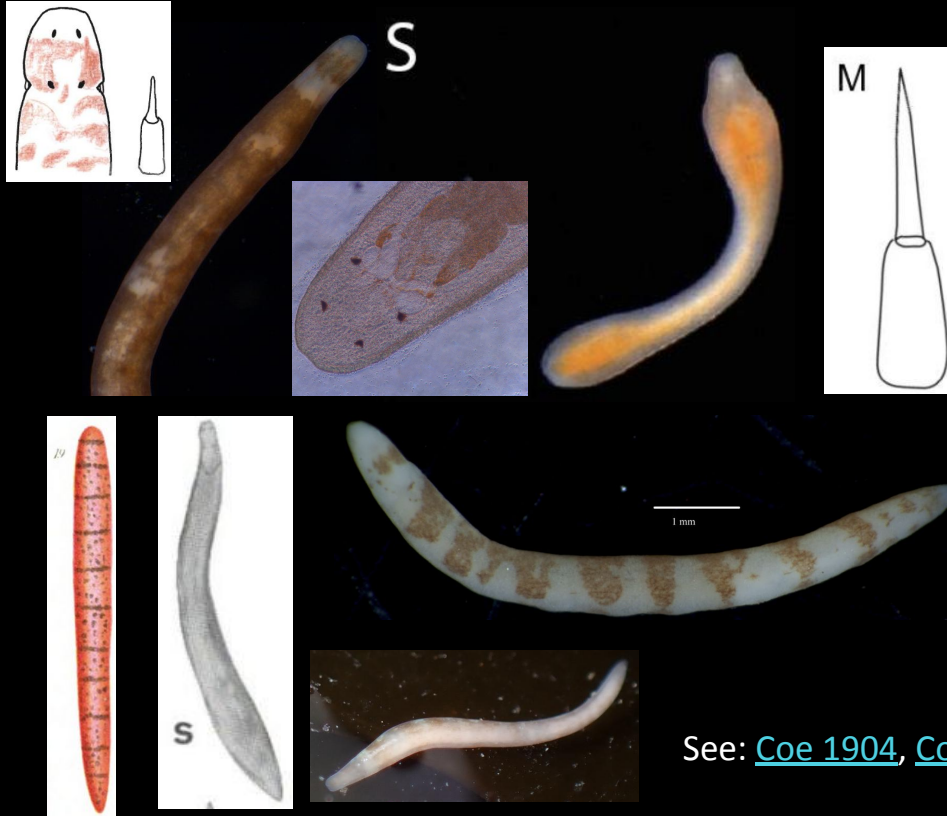
Oerstedtia actinophila



- Elongate, thin, oval head, rounded anteriorly and tapered posteriorly, rhynchocoel $\sim \frac{1}{4}$ of body, 45 mm
- Extremely shallow furrows
- 1 anterior large ocellus, 1 irregular posterior ocellus, each side
- Orange to orange-red
- Long stylet, basis cylindrical, S/B ~ 1 , 2-4 accessory pouches of up to 8 stylets
- Vancouver Island to San Diego, rocky intertidal to 150 m, among actinarians and infaunal

See: [Gibson 1986](#), [Phillips 2011](#).

Oerstedtia sp. BOBA022

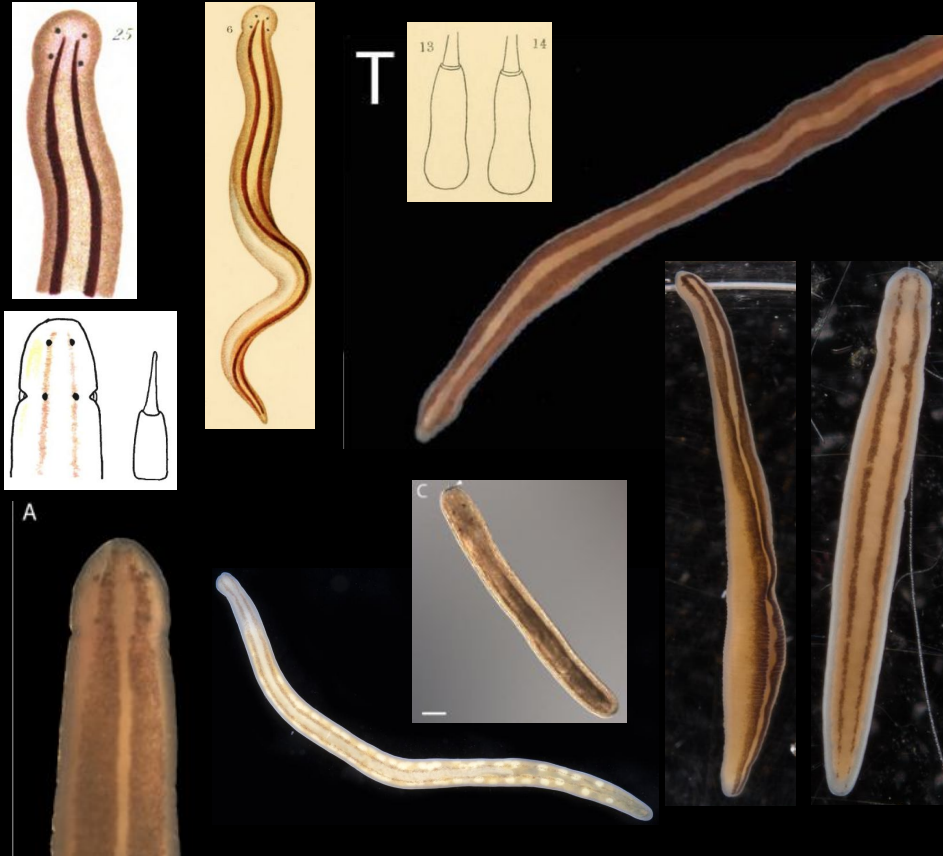


- Stout and cylindrical, head narrower than body, head bullet-shaped, 15 mm
- 4 large ocelli
- May be pale with bright orange gut, blotched brown, pale pink or yellow
- Basis conical, stylet slender, $S/B > 1$, 2 accessory pouches with 3-4 stylets
- Puget Sound to Gulf of California, intertidal red algae on rocky boulders to 60 m
- Distinct from *Oerstedtia dorsalis*

See: [Coe 1904](#), [Coe 1905](#), [Coe 1944](#), [Roe et al. 2007](#), [Ellison et al. 2024](#), [SCAMIT 2025](#). iNat images: [alanarama3](#), [itazura](#)

- Class: Hoplonemertea
 - Order: Monostilifera
 - Suborder: Eumonostilifera
 - Infraorder: Oerstediiina
 - Family: *incertae sedis*

"*Tetrastemma*" *bilineatum*



- Head triangular to ovate, 5-10 mm
- 4 ocelli in rectangle, anterior pair of ocelli halfway to posterior pair
- Pale cream to tan, 2 dorsal brown stripes each $\frac{1}{3}$ body width along whole body, grayish ventrally
- Stylet slender, basis slightly wider posteriorly, 2 accessory pouches of 2-3 stylets
- Vancouver Island to San Diego, wave-exposed mussel beds, wharf piles, root masses, etc.

See: [Coe 1904](#), [Coe 1905](#), [Hiebert 2016](#), [Ellison et al. 2024](#), [SCAMIT 2025](#).

➤ Class: Pilidiophora

- Pilidium larval form (unique)
- Mouth ventral, separated from proboscis pore, usually conspicuous
- May or may not have lateral slits and caudal cirrus (unique if present)
- Proboscis bilateral, with diagonal musculature, often 1 or 2 muscle crosses
- Brain and lateral nerve cords outside of outer circular muscle layers of body wall (unique)
- Has mid-dorsal blood vessel

See: [Roe et al. 2007](#), [Schwartz 2009](#), [Chernyshev 2021](#).

➤ Class: Pilidiophora

○ Order: Heteronemertea

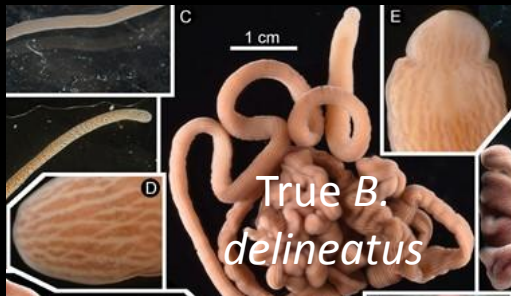
- Body wall has outer longitudinal, outer circular, middle longitudinal, and sometimes inner circular muscle layers
- Brain and lateral nerve cords between outer longitudinal and outer circular muscle layers of body wall (unique)

➤ Class: Pilidiophora

- Order: Heteronemertea
 - Family: Valenciniidae

- No lateral slits
- May have cephalic furrows
- 0 or 1 frontal organ
- Proboscis mostly lacking muscle crosses

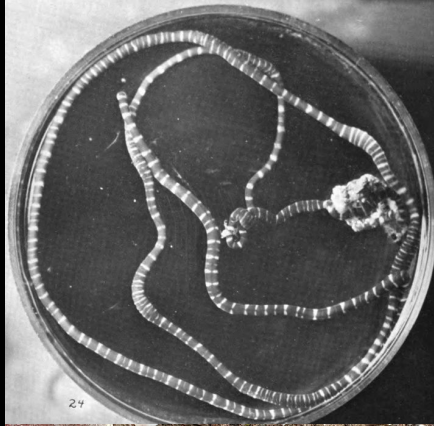
Baseodiscus cf. delineatus



- Large
- Row of ocelli on anterior margins
- Rhynchocoel circular muscles not interwoven with body-wall inner longitudinal muscles; connective tissue in distinct packets around rhynchocoel
- Light brown striping dorsal and ventral, stripes evenly spaced, stripes irregular and less dense ventrally

See: [Coe 1940](#), [Schwartz 2009](#), [Kajihara et al. 2022](#).
iNat images: [nudibitch](#), [squishlefish](#), [declanbulwa](#)

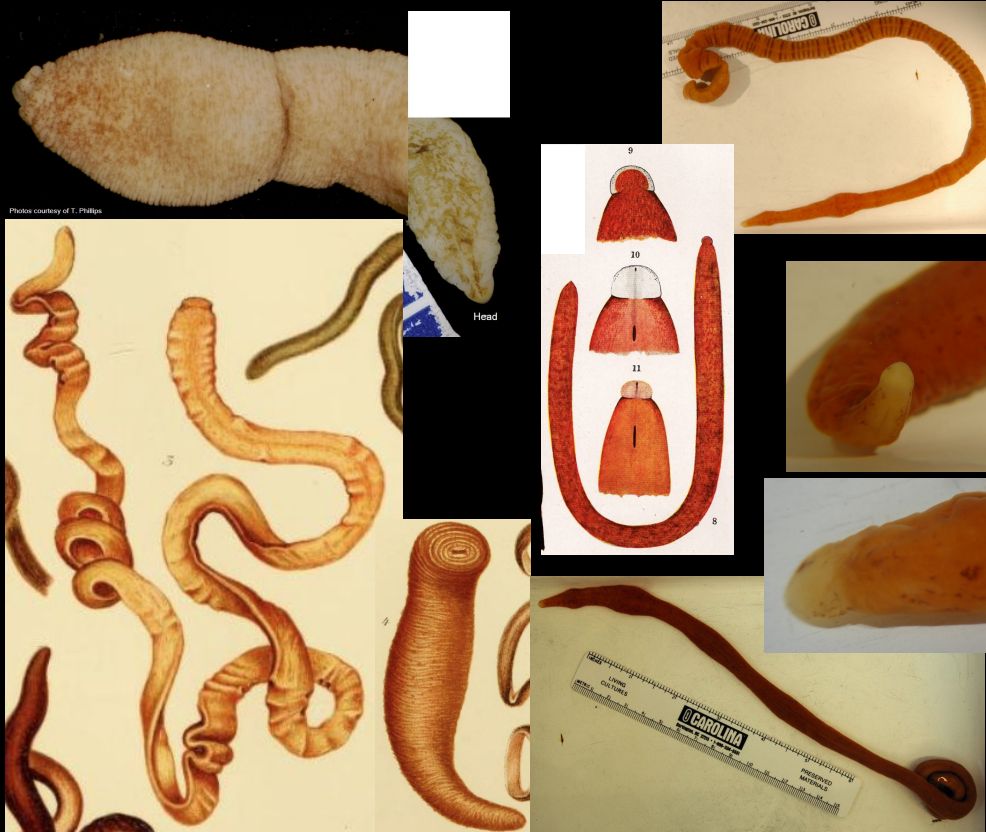
Baseodiscus mexicanus



- Slender, flattened when strongly contracted, largest just behind the head, 2 m
- Conspicuous anterior furrows on head
- Numerous ocelli, elongated cluster each lateral border
- Dark greenish or reddish brown, numerous (several hundred) fine white rings at irregular intervals, horizontal white band on head margin
- Gulf of California to Galapagos, twisted tough mucus tubes beneath stones, low-water to 100 m, shells and corals

See: [Coe 1905](#), [Coe 1940](#). iNat images: [don15301](#), [hubertszcz](#)

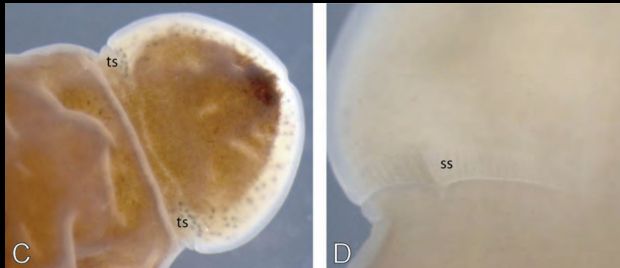
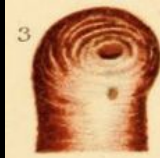
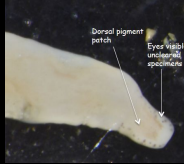
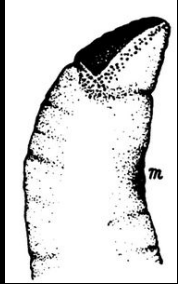
Baseodiscus princeps



- Large, long, thick, rounded anterior, flattened posterior, head can be strongly contracted into body, posterior pointed, 2 m
- Inconspicuous lateral slits
- Group of 40+ minute ocelli each side
- Deep ochre yellow to orange or brownish, irregular reddish dots near anterior, ventrally paler or greenish, some have lateral and ventral white on head
- Contract and spiral if handled
- Hokkaido to Southern California Bight, in mud and under stones, intertidal muddy situations to 340 m

See: [Coe 1901](#), [Yamaoka 1940](#), [Coe 1944](#), [Iwata 1954](#),
[Cowles 2007](#), [Pasko 2017](#).

Baseodiscus punnetti



- Head demarcated by furrows, 40-60 cm
- Secondary cephalic furrows present, no lateral slits
- 40-60 ocelli each in 2 clusters below the dark head shield
- Pale pink to red to brownish, head with white terminal border and ventrally white as far as mouth, transverse dark spot on head (not always observed), paler ventrally
- San Juan Island to Gulf of California, intertidal to 380 m, algal holdfasts, gravel and shell hash

See: [Coe 1904](#), [Coe 1905](#), [Coe 1944](#), [Schwartz 2009](#), [Pasko 2017](#), [Goodsell et al. 2025](#). iNat images: [tomleeturner](#)

Baseodiscus sp. "gray speckle"



- Pale white, gray speckling roughly longitudinal
- Clarion Island
- Compare *Baseodiscus* sp. CB004 from Caribbean

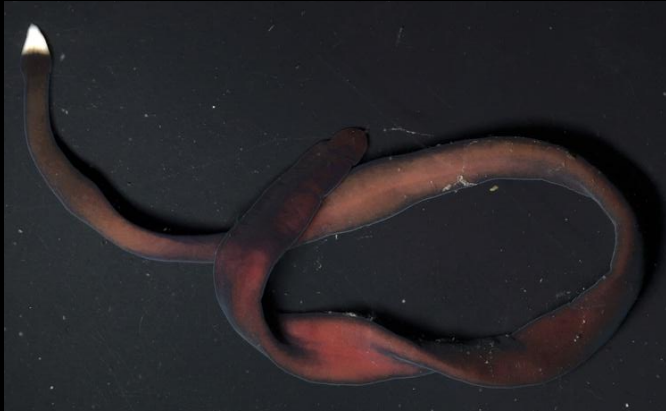
See: [Maslakova et al. 2022](#). iNat images:
[tidechaser96](#)

➤ Class: Pilidiophora

- Order: Heteronemertea
 - Family: Lineidae

- Longitudinal lateral slits each side of the head, usually extending from level with the anterior edge of the mouth toward the head tip
- May have caudal cirrus
- 3 frontal organs

Cerebratulus albifrons



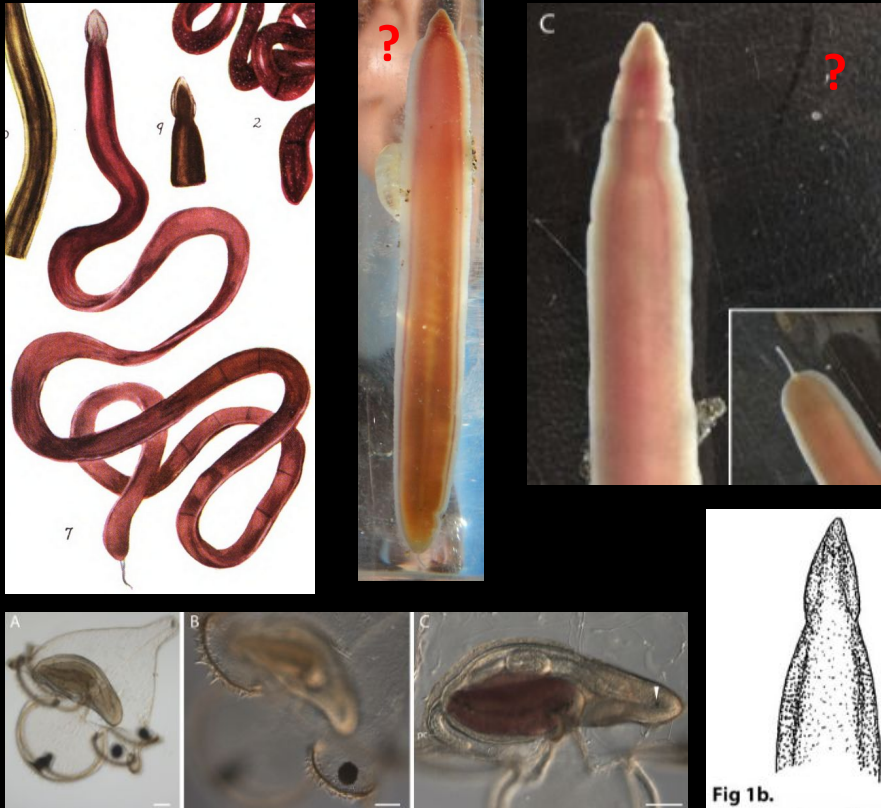
- Long, ribbon-like, very flattened, 15-30 cm
- Long and deep lateral slits
- No ocelli
- Dark to reddish-brown, head white to $\frac{3}{4}$ length of lateral slits
- Excellent swimmer
- Sitka to San Diego, under stones, in fine sand and mud, low water to 100 m



See: [Coe 1901](#), [Coe 1904](#), [Coe 1905](#), [Coe 1944](#), [Hiebert 2016](#).

iNat images: [FLMNH](#), [Hakai Institute](#), and [MarineGEO](#),
[kookamongus](#)

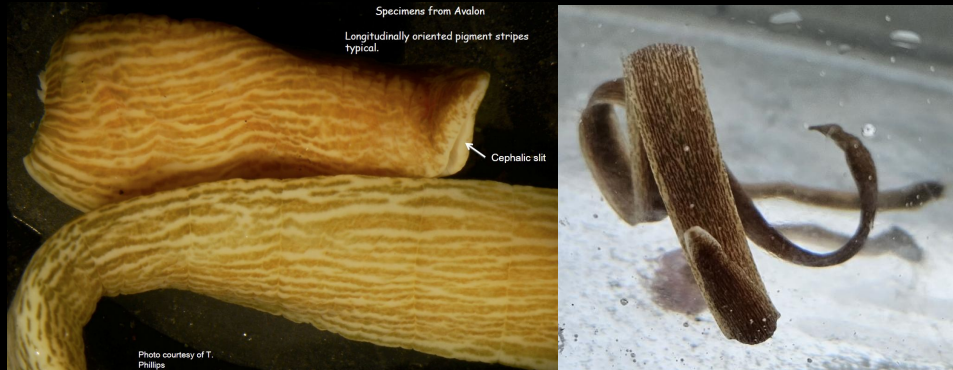
Cerebratulus californiensis



- Ribbon-like with sharp margins, head triangular and tapering to point, head smaller than body width, small caudal cirrus, 10-15 cm
- Deep lateral slits more than $\frac{1}{2}$ the distance from tip to brain
- No ocelli
- Tan to pinkish to yellowish, pale margins
- Active swimmer
- Distinguish by posterior of head narrower than adjacent body, and color
- Puget Sound to San Diego, mud to sand, intertidal to 35 m

See: [Coe 1905](#), [Coe 1944](#), [Rudy et al. 2013c](#), [Hiebert 2016](#).

Cerebratulus lineolatus



- Slender, head acute, 20 cm
- Lateral slits moderately long and deep, mouth very large
- 6-10 ocelli regularly spaced each side of the anterior tip
- Pale gray, many clusters of fine and frequently interrupted dark olive brown longitudinal lines, brain red, lines larger dorsally
- Ambushes gobies from mud
- Strait of Juan de Fuca to west coast of Mexico, intertidal to 70 m

See: [Coe 1905](#), [Coe 1944](#), [MacGinitie & MacGinitie 1968](#), [Pasko 2017](#). iNat images: [smeebo](#), [underwaterpat](#), [felex](#)

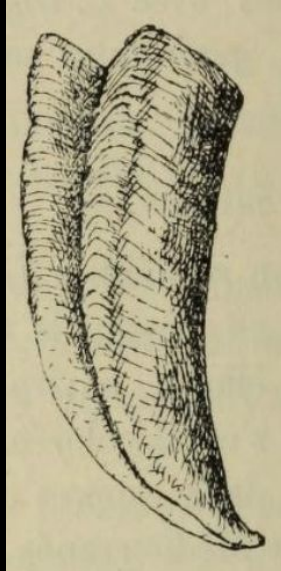
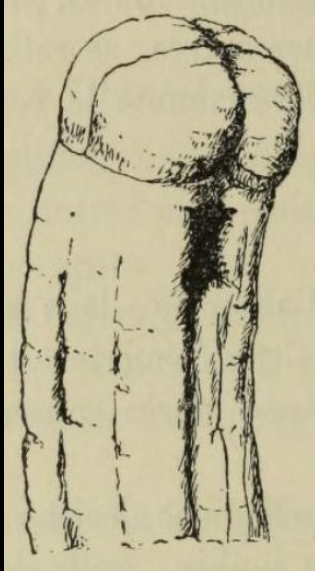
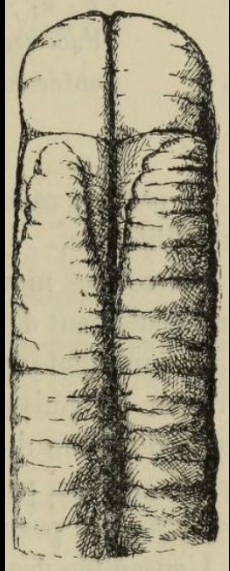
Cerebratulus sp. BOBA008



- Flattened, ribbon-like, lateral margins flattened, spade-shaped head barely wider than body, caudal cirrus, 1 m
- Long slit-like mouth behind slits, deep lateral slits more than $\frac{1}{2}$ the distance from tip to brain
- No ocelli except on young
- Dull reddish brownish to gray, margins often pale, paler ventrally, ganglia brownish-gray
- Excellent swimmer and burrower
- Bering Sea to Bodega Bay (San Diego?), intertidal mudflats with sandy sediments, often >30 cm below surface, to 70 m
- Distinct from *C. marginatus*

See: [Coe 1905](#), [Coe 1944](#), [Roe et al. 2007](#), [Hiebert et al. 2015](#), [Hiebert 2016](#), [Ellison et al. 2024](#). iNat images: [roysh](#), [hakaiinstitute](#)

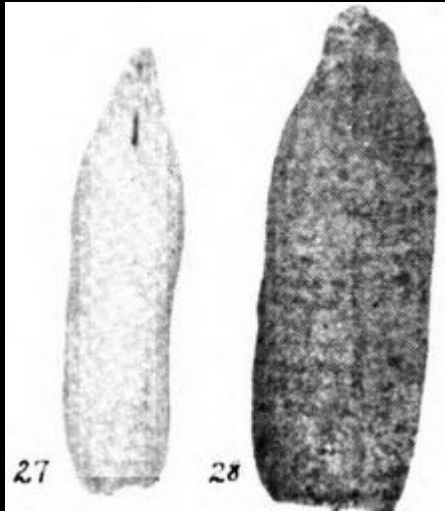
Diplopleura vivesi



- Head small and rounded, head in 4 segments, longitudinal folds ventrally, small transverse folds, 15 cm
- Large dorsal groove from tip of head to posterior, widens and deepens posteriorly; ventral furrow less prominent; mouth large
- Brick red
- La Paz, Baja California, fine sand at low-water

See: [Joubin 1905](#), [Coe 1940](#).

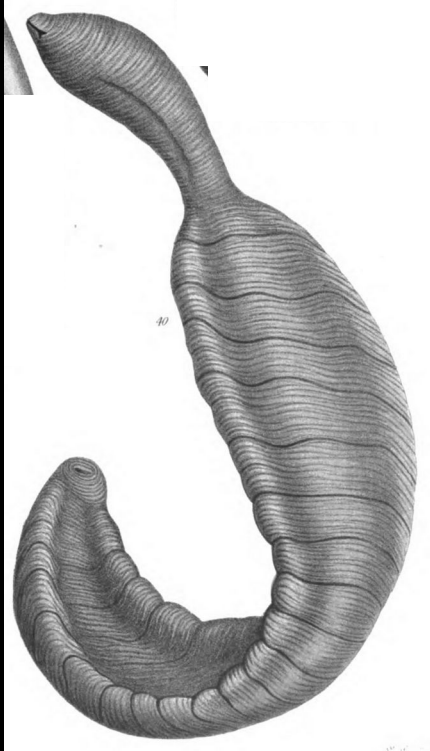
Euborlasia hancocki



- Head narrow and pointed, body broad and flattened, head not demarcated, 30 cm and 12 mm diameter
- Long lateral slits
- PRESERVED gray or pale olive green, speckled and blotched with dark brown dorsal and ventral, dots more separated on head
- Oaxaca to Independencia Bay, 17 to 100 m

See: [Coe 1940](#).

Euborlasia maxima



- Enormous, head comparatively small and pointed, head not demarcated, 29 cm and 45 mm in diameter
- Furrows short and inconspicuous, vertical groove on snout tip, large mouth
- IN ALCOHOL dark brown tinged green, head paler, brown mottling above and below
- Gulf of California, 60 m, sand and shells

See: [Coe 1905](#).

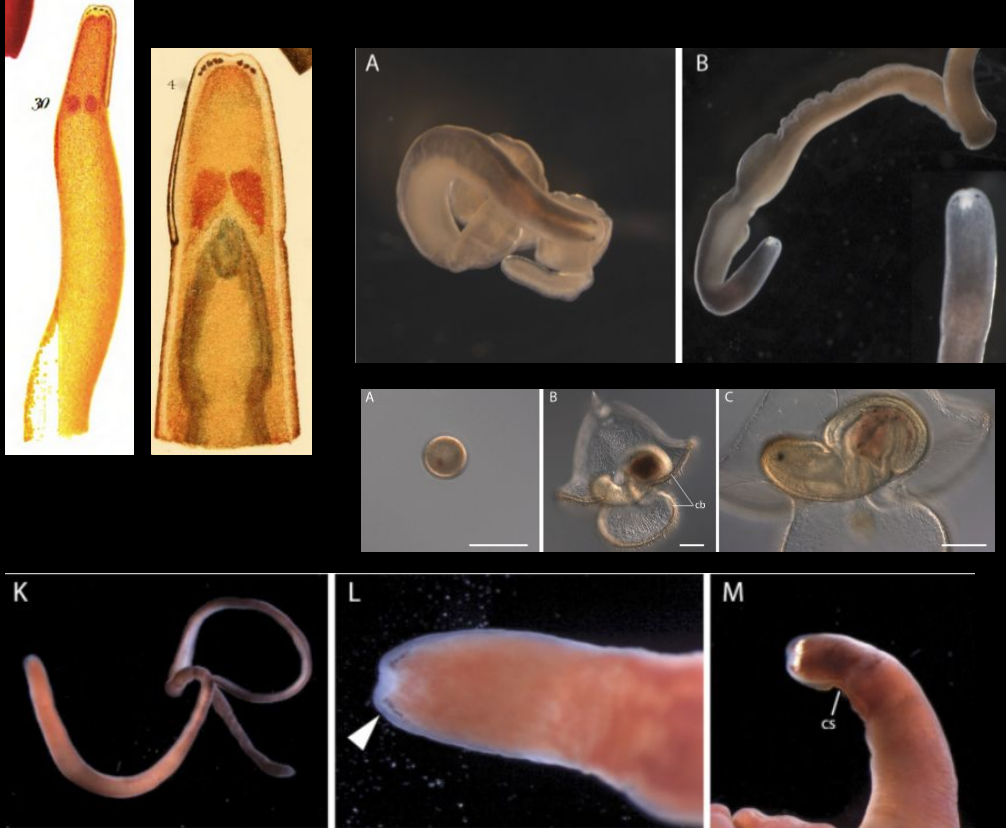
Euborlasia nigrocincta



- Head not separated, proboscis much shorter than body, body remarkably thick, wrinkled surface, 50-70 cm
- Lateral slits inconspicuous and short, large mouth 9 mm
- No ocelli
- DARK morph purplish-brown and speckled with white, narrow dark rings, head white and speckled with orange-brown dots; LIGHT morph rosy, thickly speckled with purple, purplish-brown rings, head pinkish
- San Francisco Bay to Chile, intertidal to 60 m, fine sand, stones, hard clay

See: [Coe 1940](#), [Coe 1944](#), [Roe et al. 2007](#). iNat images: [michaelvoeltz](#), [christrent](#)

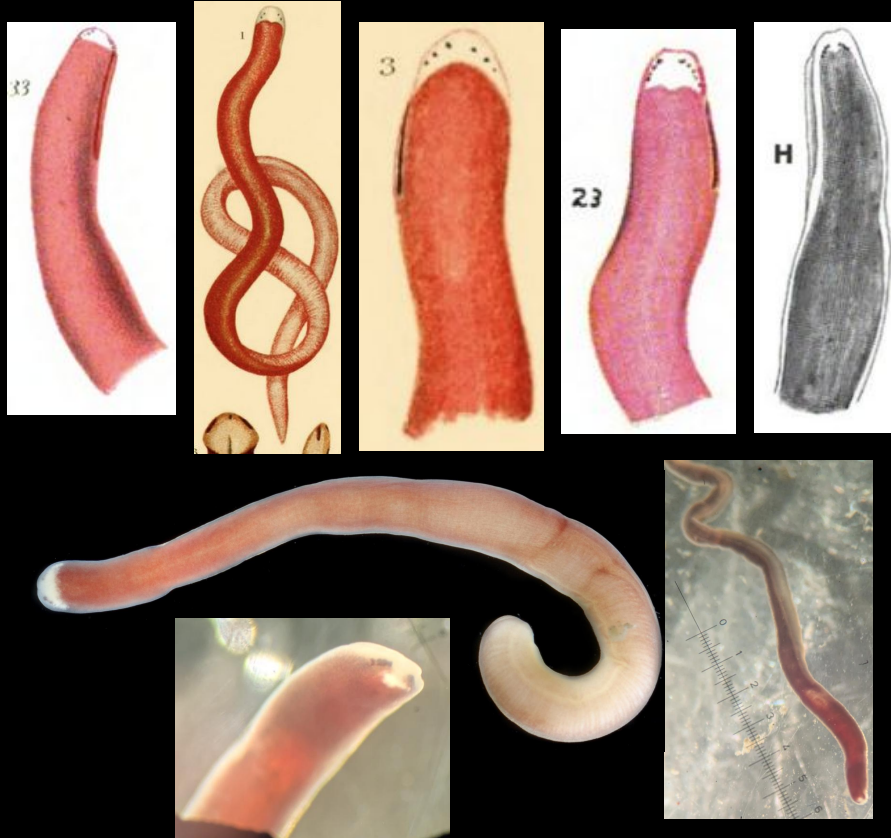
'*Lineus*' *flavescens*



- Filiform, head long and slender, no cirrus, 120 mm
- Long lateral slits, large mouth posterior to end of slits
- 3-7 irregular red to purple to black ocelli each side of head, anterior ocelli largest
- Variable pale tan to reddish brown to ochre, or bluish purple, or greenish yellowish, antero-dorsal white patch on head between ocelli
- Puget Sound to Gulf of California, low intertidal to 100+ m
- Groups with *Siphonenteron* clade

See: [Coe 1904](#), [Coe 1905](#), [Coe 1944](#), [Hiebert 2016](#), [Pasko 2017](#), [Ellison et al. 2024](#).

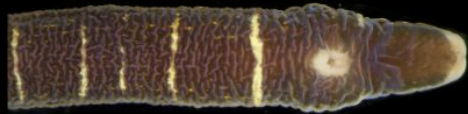
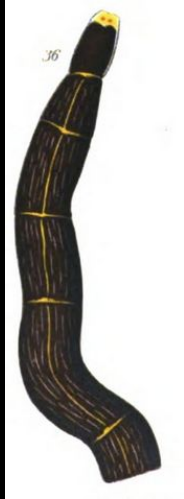
Lineus rubescens



- Head long and rather broad, no cirrus, 15 mm
- Lateral slits long
- 2-4 or occasionally 8 irregular ocelli each side, dark reddish, in row on white margin
- Tip of head white along lateral slits and tip, body pink to purplish brown, becoming pinkish, pale pinkish ventrally, ganglia pale tan
- Puget Sound to San Diego, near low-water
- Possibly color morph of *Lineus flavescens* (Hiebert 2016)

See: [Coe 1904](#), [Coe 1905](#), [Roe et al. 2007](#), [Hiebert 2016](#). iNat images: [Ethan Kahn](#), [smithsonian_marinegeo](#)

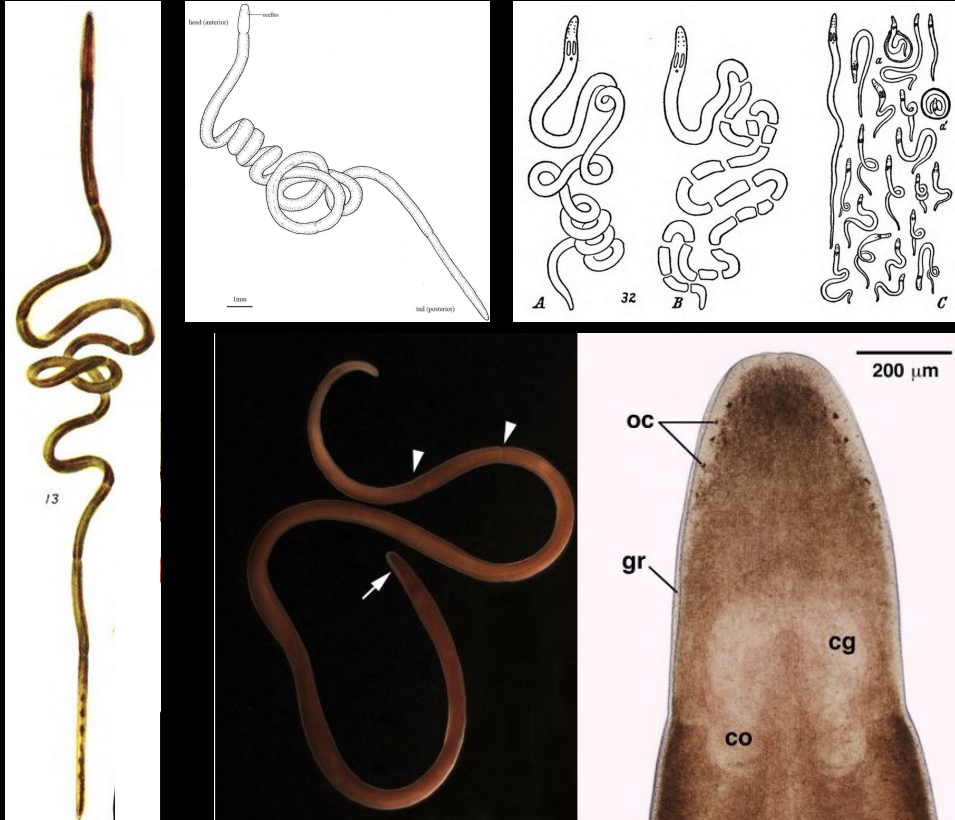
Lineus pictifrons



- Soft and flabby, often snarled, fluted longitudinally, head narrower than body and elongate, 50 cm
- No ocelli
- Deep-brown to chestnut, bluish or greenish sheen, head has terminal border of white with two orange spots, 40-100 narrow yellow rings, 7-15 inconspicuous longitudinal yellow stripes, small diamonds at intersections
- Puget Sound to Colima, mud and stones intertidal to 30 m

See: [Coe 1904](#), [Coe 1905](#), [Coe 1944](#), [Pasko 2017](#). iNat
images: [christrent](#), [walkabata](#)

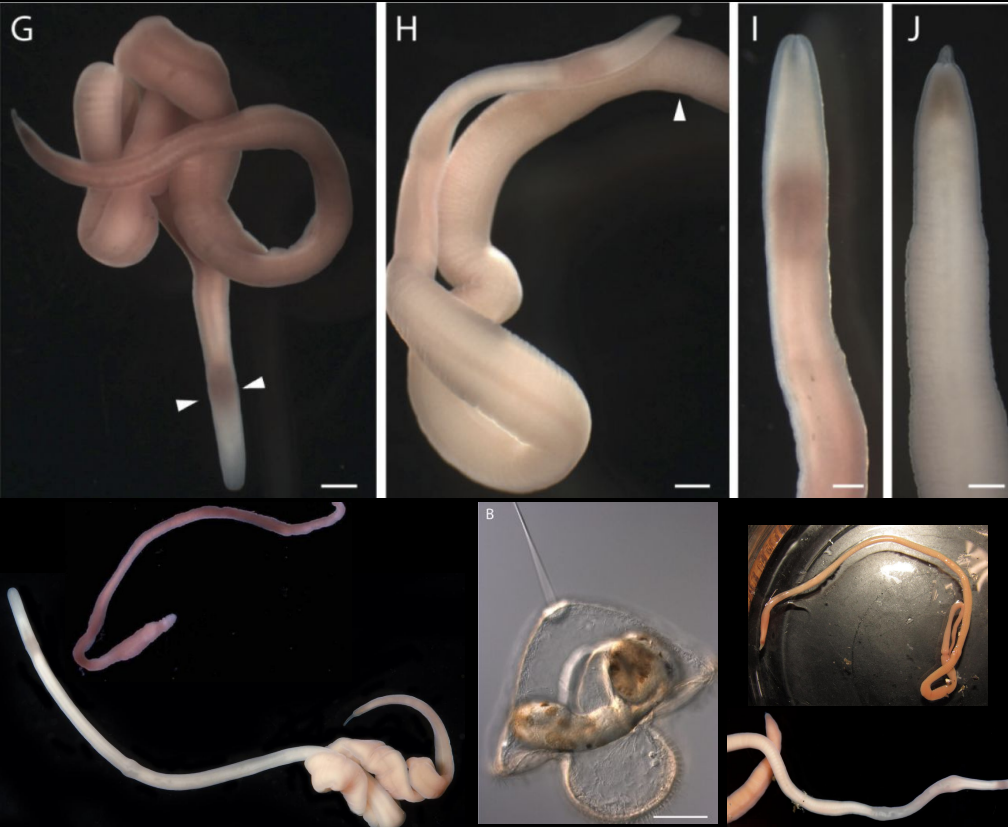
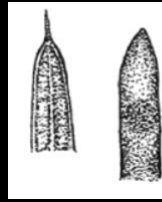
Lineus sanguineus



- Slender and filiform, head shape long and rectangular but not demarcated, no caudal cirrus, 0.5-15 cm
- Lateral slits long
- 2-8 ocelli each side within lateral slit
- Large individuals olive to brown to red to green, small ones whitish gray, brain region rosy, posterior lighter, anterior and lateral head margins white, ?many inconspicuous light rings?
- San Francisco Bay to Mexico, intertidal, frequently in clusters
- Distinguish from *Lineus ruber* and *Lineus viridis* by coiling into spiral

See: [Roe et al. 2007](#), [Caplins & Turbeville 2011](#), [Rudy et al. 2013e](#).

Maculaura cerebrosa



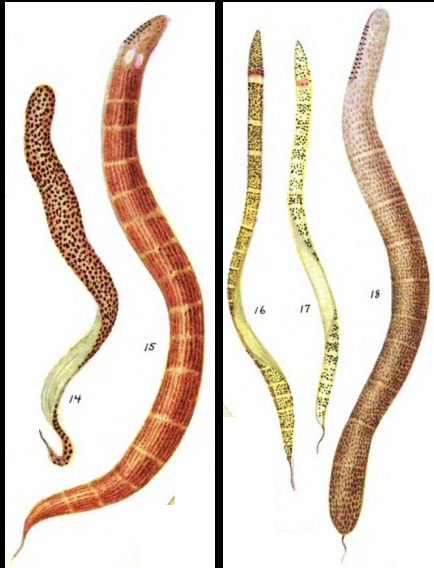
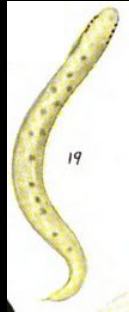
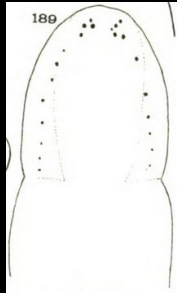
- Oval to flattened, head not distinctly marked off unless contracted, head narrow anteriorly, lateral margins not sharp, short caudal cirrus with gradual transition to body, smaller and narrower than congeners, 10 cm
- Shallow lateral cephalic slits, long slit-like mouth
- No ocelli
- Pale pink, slightly paler ventrally, distinctly pink ganglia
- Wrangell to Bodega Bay, intertidal, often gravel and shell hash
- Hard to distinguish within genus, often seeks to burrow

See: [Hiebert & Maslakova 2015a](#), [Hiebert 2016](#), [Ellison et al. 2024](#), BIN [AAP1201](#).

Maculaura griffini ?

- Shape and size like *Maculaura magna*, oval to flattened, head not distinctly marked off unless contracted, lateral margins not sharp, long caudal cirrus, 30 cm
- Shallow lateral cephalic slits
- No ocelli
- Rosy to bright pinkish-red to purplish, head tip pale white, ganglia deep pink, clear oocytes
- San Pedro
- May be *Maculaura cerebrosa*

Micrura coei



- Head not differentiated from body, caudal cirrus present, 3 cm
- Lateral slits moderate
- 10-18 ocelli in irregular row on lateral margins of head each side, but difficult to spot
- Pale tan, covered with dark brown spots which can be elongated into irregular lines or rectangles, brain lobes pale reddish-brown, head tip white
- Monterey to Ensenada, crevices at extreme low water, mucus tubes
- Priority name for *Micrura pardalis*

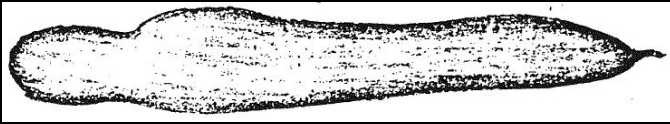
Micrura nigrirostris



- Slender, more rounded than flattened, head tip narrow, proboscis long, caudal cirrus not found, 40-80 mm
- Lateral slits moderate length
- No ocelli
- Blood red, white band just behind tip of head, anterior tip with small dark spot
- San Pedro, among holdfasts of kelp and algae

See: [Coe 1904](#), [Coe 1905](#). iNat images: [Leslie Harris](#)

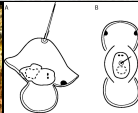
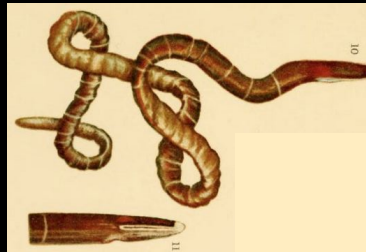
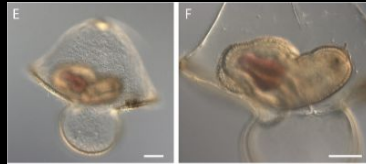
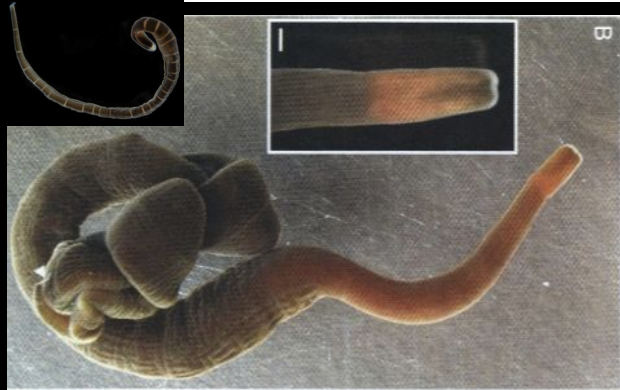
Micrura olivaris



- Small, short, head broad, Body rounded, conflicting reports on caudal cirrus, 7-15 cm
- Lateral slits shallow and less than $\frac{1}{2}$ distance to ganglia, mouth immediately behind ganglia
- 6-12 or more small ocelli in irregular row each side of head
- Pale olive-brown to ochre
- San Francisco to southern California, rock crevices at low water to 120 m

See: [Coe 1905](#), [Bernhardt 1979](#), [Roe et al. 2007](#).

Micrura wilsoni



- Small white caudal cirrus, very wrinkled, often constricted, head long and not marked off, short cirrus, 15 cm
- Lateral slits remarkably long
- No ocelli
- Brown or black, anterior edge white in front of cephalic lobe, first ¼ of inside of lateral slits white, underside grayer or paler, with or without narrow whitish rings along body, pale rosy ganglia
- Sonoma County to Gulf of California, kelp holdfasts, exposed rocky shore under boulders, low intertidal to 35 m
- [*incertae sedis*, lineage G]

See: [Coe 1904](#), [Coe 1905](#), [Coe 1944](#), [Corrêa 1964](#), [Hiebert & Maslakova 2015b](#), [Hiebert 2016](#), [Ellison et al. 2024](#), [BIN ADW9830](#). iNat images: [crr0](#)

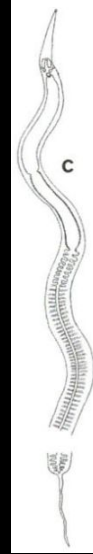
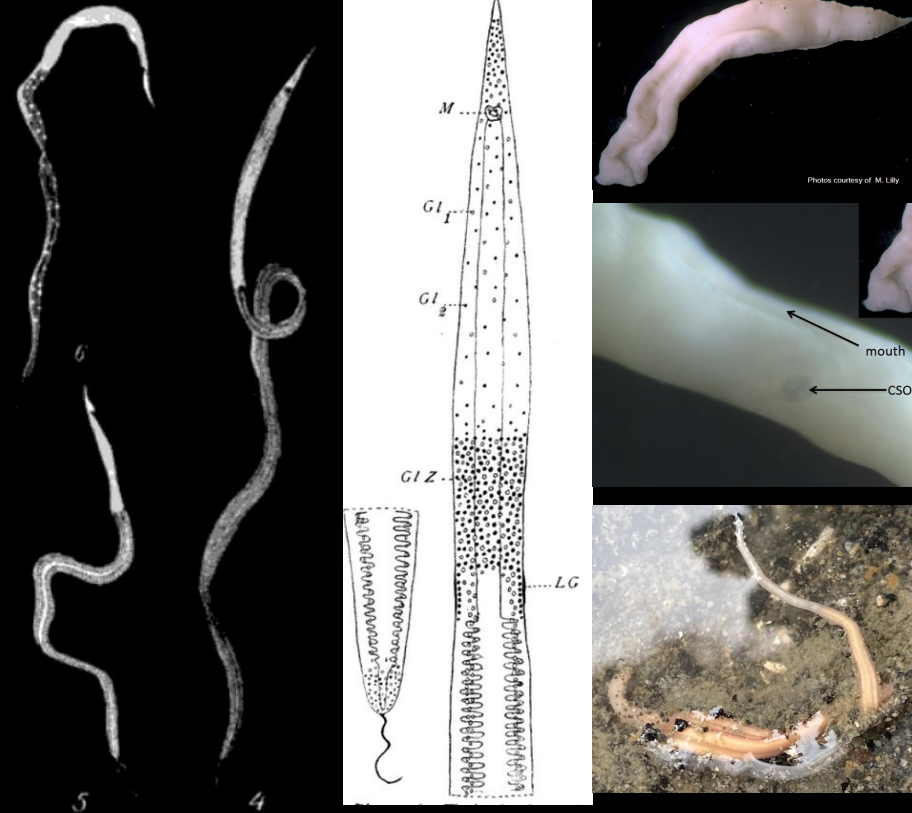
Siphonenteron bilineatum



- Head short and broad, head slightly wider than neck, 10-20 cm
- Lateral slits deep and rosy, well separated anteriorly
- No ocelli
- Dark to olive brown, white to yellow mediodorsal stripe, stripe widens on head into pear shape, usually faint reddish lateral lines
- Alaska to San Diego, dredged from 30-50 m in strong parchment-like tubes, kelp holdfasts, among algae

See: [Coe 1904](#), [Coe 1905](#), [Roe et al. 2007](#), [Pasko 2017](#).

Zygeupolia cf. rubens



- Slender, head tapers to a point, slender caudal cirrus, 5-8 cm
- No third, inner, circular muscle layer in esophageal region; muscle crosses in proboscis
- No lateral slits, proboscis pore minute and far back, small mouth a short distance posterior to proboscis pore
- No ocelli
- Rather translucent, white to pale rosy, intestinal region rose to chocolate brown
- Monterey to San Pedro, sand flats; apparently Massachusetts

See: [Coe 1895](#), [Thompson 1902](#), [Coe 1904](#), [Coe 1905](#), [Roe et al. 2007](#), [Pasko 2017](#). iNat images: [mara-](#)

➤ Class: Palaeonemertea

- Typically slender, extensive, not very flattened
- No stylet
- Cephalic furrows less prominent or absent; lateral sensory organs
- No lateral slits, no caudal cirrus
- Rarely have adult ocelli
- Mouth separate from proboscis pore, may or may not be conspicuous
- No mid-dorsal blood vessel (unique)

See: [Roe et al. 2007](#), [Chernyshev 2021](#).

➤ Class: Palaeonemertea

○ Order: Archinemertea

- No epidermal 'tubulanid' ring
- No cerebral organs
- No lateral organs
- Larvae have 1 pair of ocelli
- Body wall has outer diagonal, outer circular, middle longitudinal, and inner circular muscle layers
- Brain and lateral nerve cords in longitudinal body muscle

- Class: Palaeonemertea
 - Order: Archinemertea
 - Family: Cephalothricidae

- Internal circular muscle weakly developed

Cephalothrix hermaphroditica



- Filiform, preoral region shorter than congeners, 6 cm
- Orange with translucent margins, somewhat paler ventrally, with a deeper orange anterior tip
- Crescent City and south to Chile (introduced from Europe), exposed rocky intertidal, among ascidians, habitat

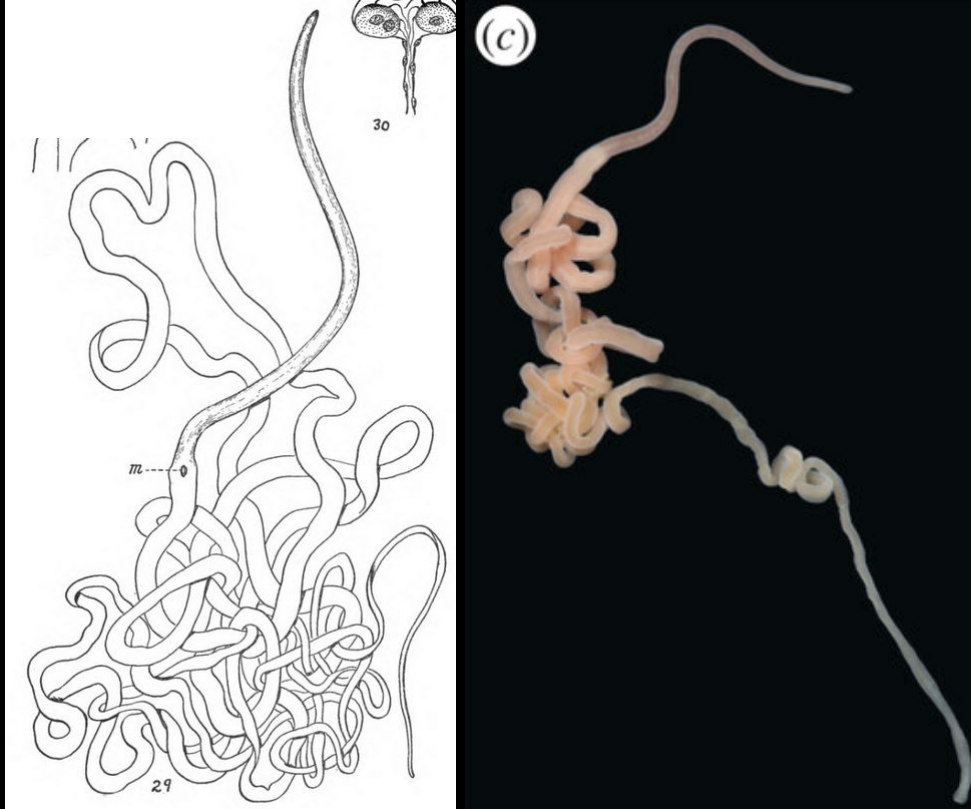
See: [Kajihara 2019](#), [Ellison et al. 2024](#). iNat images: [arheyman01](#), [abbyt](#)

Cephalothrix cf. *linearis*

- Very slender, tapered at both ends, head very long and acutely pointed, 15 cm
- Mouth very far back
- No ocelli except in larvae
- Whitish to pale tan, some with reddish or greenish tinge
- Prince William Bay to San Diego, near high-water mark under stones, in mud
- Often coils into tight spiral

See: [Coe 1901](#), [Coe 1905](#), [Kajihara 2019](#).

Cephalothrix major



- 125 cm, preoral region 4-6 cm in 100 cm specimen
- Mouth very far behind brain
- 1 pair of larval ocelli (no adult)
- Pale yellow-tan to straw color, pinkish pre-oral region, gray posteriorly
- San Mateo County to Ensenada, hard sand or clay fully exposed, tends to form knotted masses with other individuals
- Distinguish from *Cephalothrix spiralis* by contracting into snarled tangle with 2-3 cm of anterior end exposed

See: [Coe 1940](#), [Hiebert 2016](#), [Kajihara 2019](#), [Maslakova et al. 2022](#).

Cephalothrix simula

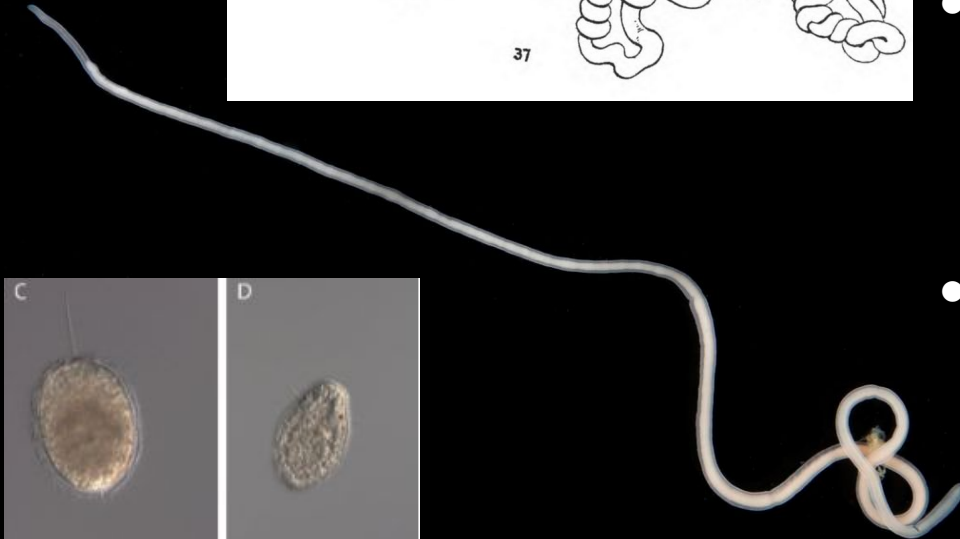
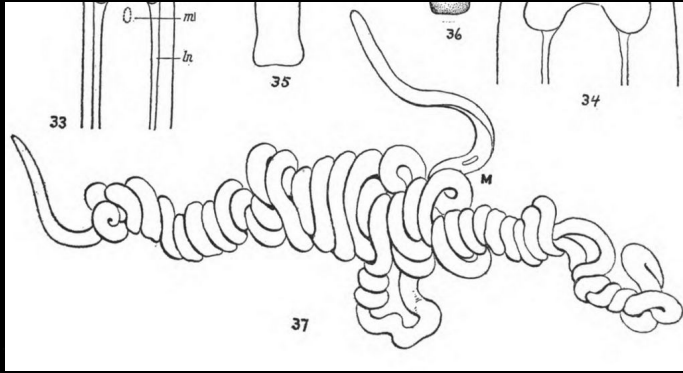


- Filiform, 30 cm
- Yellowish-brown, head tip pinkish, paler and somewhat translucent posteriorly
- Bodega Bay to southern California (introduced from East Asia), dock fouling community, and worldwide



See: [Kajihara 2019](#), [Ellison et al. 2024](#).

Cephalothrix spiralis



- 5-15 cm (not longer)
- Mouth far behind brain
- 1 pair larval ocelli (0 on adult)
- Mostly whitish, may be gray or pale yellow, often pinkish or greenish tinge, no variation dorsal to ventral
- Alaska to San Diego, Maine, protected sites under stone or in mud, intertidal to 20 m subtidal, associated with decaying organic matter and anoxic sediment, tends to form coiled masses with other individuals
- Distinguish from *Cephalothrix major* by contracting into uniform corkscrew shape

See: Coe [1940](#), [Corrêa 1964](#), [Hiebert 2016](#), [Kajihara 2019](#),
BIN [ACQ6349](#).

➤ Class: Palaeonemertea

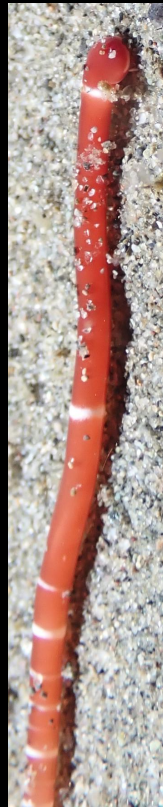
○ Order: Tubulaniformes

- Epidermal 'tubulanid' ring in nephridial region, with lateral sense organ
- Larvae lack ocelli
- Body wall has outer circular, diagonal, middle longitudinal, and inner circular muscle layers

- Class: Palaeonemertea
 - Order: Tubulaniformes
 - Family: Tubulanidae

- Lateral nerves immediately outside body wall circular muscle

Tubulanus albocinctus



- Body stout, head moderately wider than neck, 150 cm
- Has cephalic furrows
- Ocelli
- Cherry to purplish red, many narrow white rings, narrow white anterior margin
- Point Barrow to San Pedro, subtidal among red algae and 65-200 m

See: [Coe 1904](#), [Coe 1905](#), [Coe 1952](#). iNat images: [kim215](#), [thiebaud](#), [leftcoaster](#),

Tubulanus cingulatus



- Long, slender, subcylindrical, head broader than neck, 15 cm
- Mouth large
- Pair of anterior ocelli distinctive
- Chocolate to cinnamon brown, head paler, white rings, 4 longitudinal white lines, 2 dorsal and 2 lateral, starting from the first white ring
- Behm Canal to San Diego, subtidal soft sediments, 400 m

See: [Coe 1904](#), [Coe 1905](#), [Coe 1944](#), [Corrêa 1964](#), [Pasko 2014](#). iNat images: [smithsonian_marinegeo](#)

Tubulanus frenatus

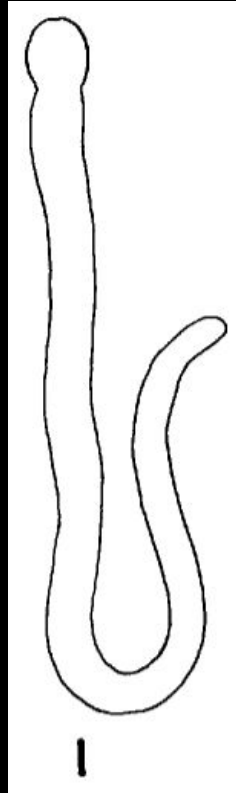


- Head rounded and strongly flattened
- Proboscis sheath forms enlarged chamber at nephridial region
- Deep cephalic furrows
- Yellow to greenish to rosy, sharp deep brown (or velvety blue luster) markings in 3 longitudinal stripes and in narrow rings, 1 dorsal stripe and 2 lateral, median line extends to tip, lateral lines start from neck, whitish flecks ventrally
- Point Barrow to San Diego, subtidal among algae, mussels, and other growths

See: [Coe 1904](#), [Coe 1905](#), [Coe 1952](#). iNat images:

[uwkwai](#)

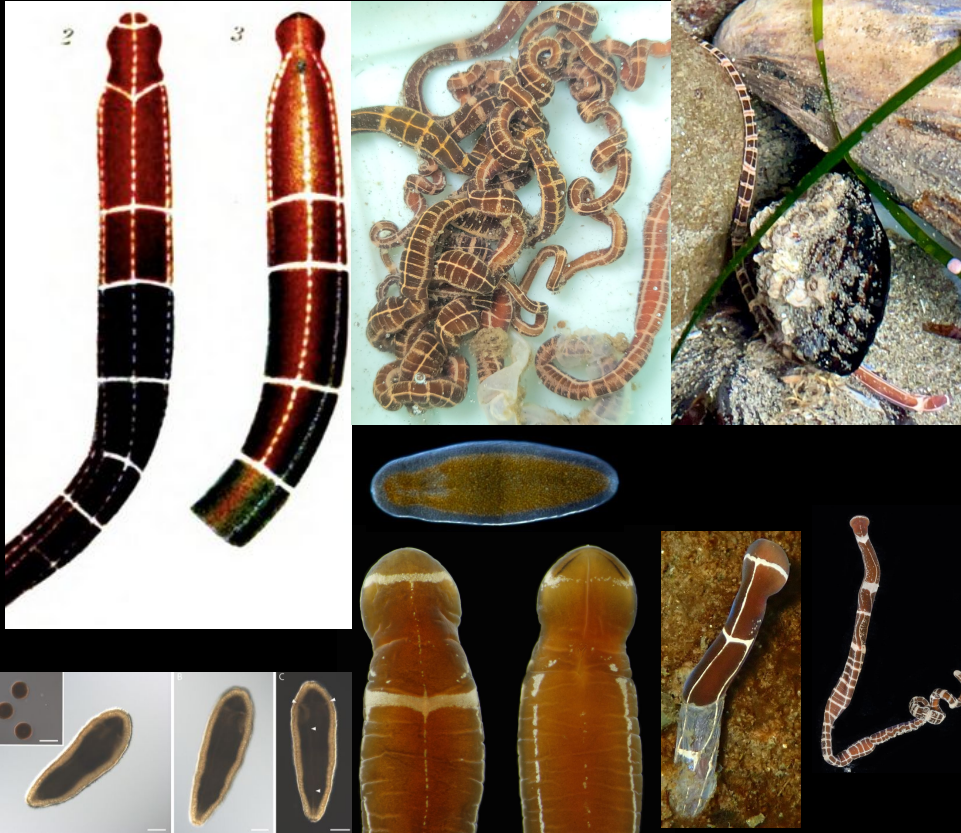
Tubulanus pellucidus



- Filiform, ends rounded, head slightly wider than body and separated by constriction, 25 mm
- Slit mouth, indistinct furrows, cerebral sensory organs are very slight grooves, oval lateral sensory organs on posterior margin of tubulanid band
- No ocelli
- Pure white to cream, ventral band pale yellow with ova, somewhat translucent
- Monterey Bay to San Diego (and East Coast per Coe), parchment-like tubes
- Resembles unrelated palaeonemerteans; note head shape, mouth, cephalic furrows, lack of spiraling
- *Tubulanus cf. pellucidus*? skeptical that it is the same as an Atlantic species

See: [Coe 1905](#), [Corrêa 1964](#).

Tubulanus sexlineatus



- Head blunt and disk-like, has tubulanid ring, lateral organs at 5th ring, 1.5 m
- Dark transverse cephalic furrows
- No ocelli
- Chocolate brown, paler ventrally, white rings regularly spaced, 5 or 6 white stripes evenly spaced (1 mediodorsal, 2 dorso-lateral, 2 ventro-lateral, 1 medioventral that can be indistinct, lines often are closely placed dots)
- Homer to San Diego, intertidal to +0.3 m, growths on rocks and pilings, in long transparent and tough tubes

See: [Griffin 1898](#), [Coe 1901](#), [Coe 1905](#), [Corrêa 1964](#), [Rudy et al. 2013g](#), [Hiebert 2016](#), BIN [ADM0945](#). iNat images: [kenzilamb](#), [lutea11](#), [arheyman01](#), [Jorge Merchán](#)

- Class: Palaeonemertea
 - Order: Tubulaniformes
 - Family: Carinomellidae

- Monotypic
- Expanded anterior proboscis chamber

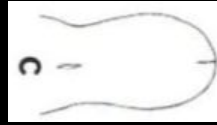
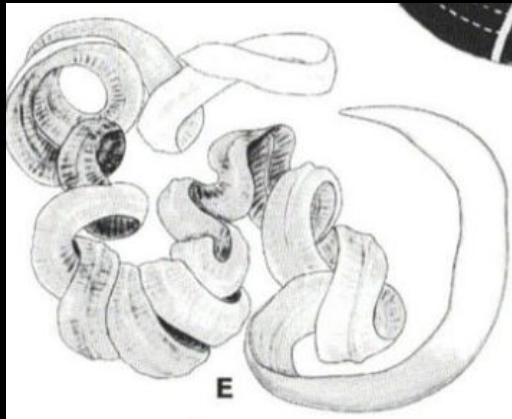
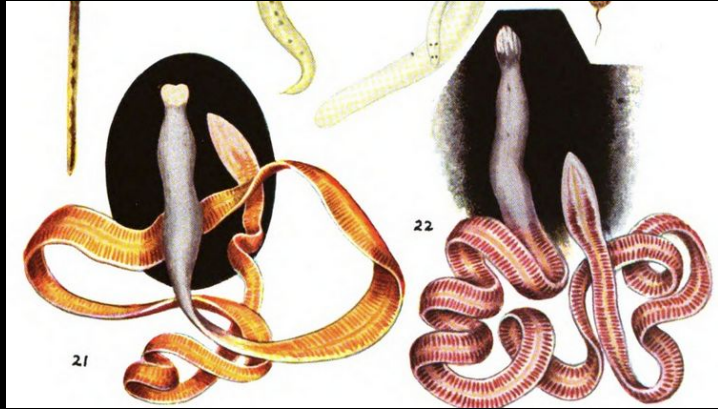
➤ Class: Palaeonemertea

○ Order: Carinomiiformes

- No lateral organ, may have 'tubulanid' band
- Larvae with 1 mid-ventral ocellus
- Body wall has outer circular, diagonal, middle longitudinal, and inner circular muscle layers

- Class: Palaeonemertea
 - Order: Carinomiformes
 - Family: Carinomidae

Carinoma cf. mutabile



Found at depths ranging from 17m to 120m; sandier sediments

- Head rounded, wider than trunk; posterior broad and flat; inconspicuous dorsal median sensory pits; 50 cm
- Paired intestinal diverticula show as dark lines, 6 post-cerebral vessels; rhynchocoel wall has interwoven long. and circ. muscle
- No ocelli
- White to yellowish, cream to brownish intestinal region; yellowish or reddish when ripe
- Vancouver Island to Gulf of California, sandy bays, intertidal to 120 m
- Known cryptic diversity in the genus, tendency to coil posterior of body, head not retractable

[Griffin 1898](#), [Coe 1901](#), [Coe 1905](#), [Corrêa 1964](#), [Roe et al. 007](#), [Kajihara et al. 2011](#), [Rudy et al. 2013b](#), [Hiebert 2016](#).

References

https://docs.google.com/document/d/1EzuEfZQ-GQ3gts0g7332gvO_C1WSDZGi1fAMAJazYlo/edit?usp=sharing