

# *Aphrodita* Linnaeus, 1758

Of SCAMIT (Ed. 13), Local Provisional  
Species and Questionable Synonymies

Brent Haggin  
November, 2021



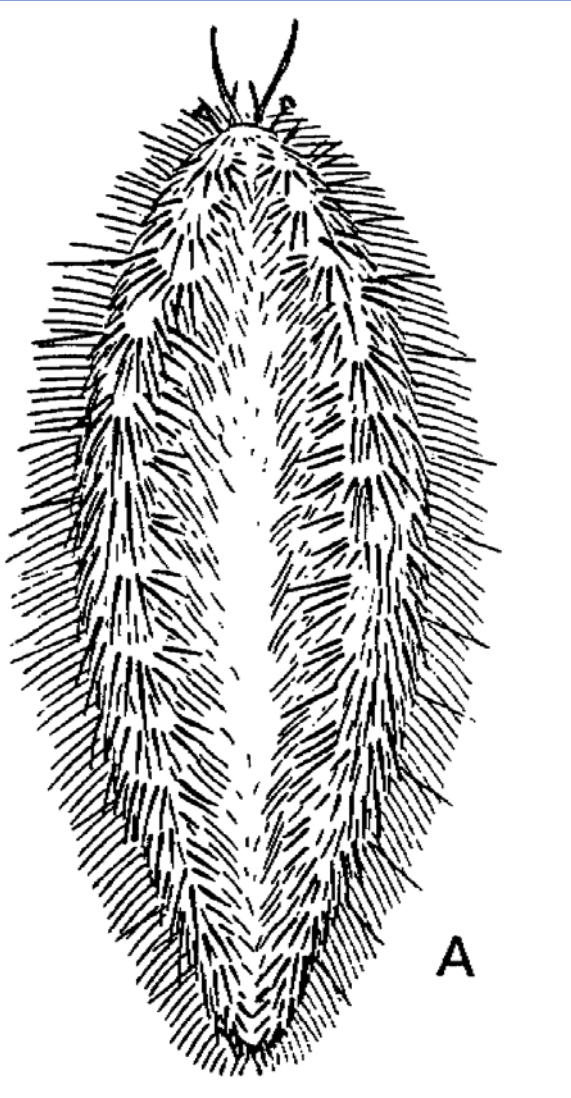
LOS ANGELES COUNTY  
SANITATION DISTRICTS



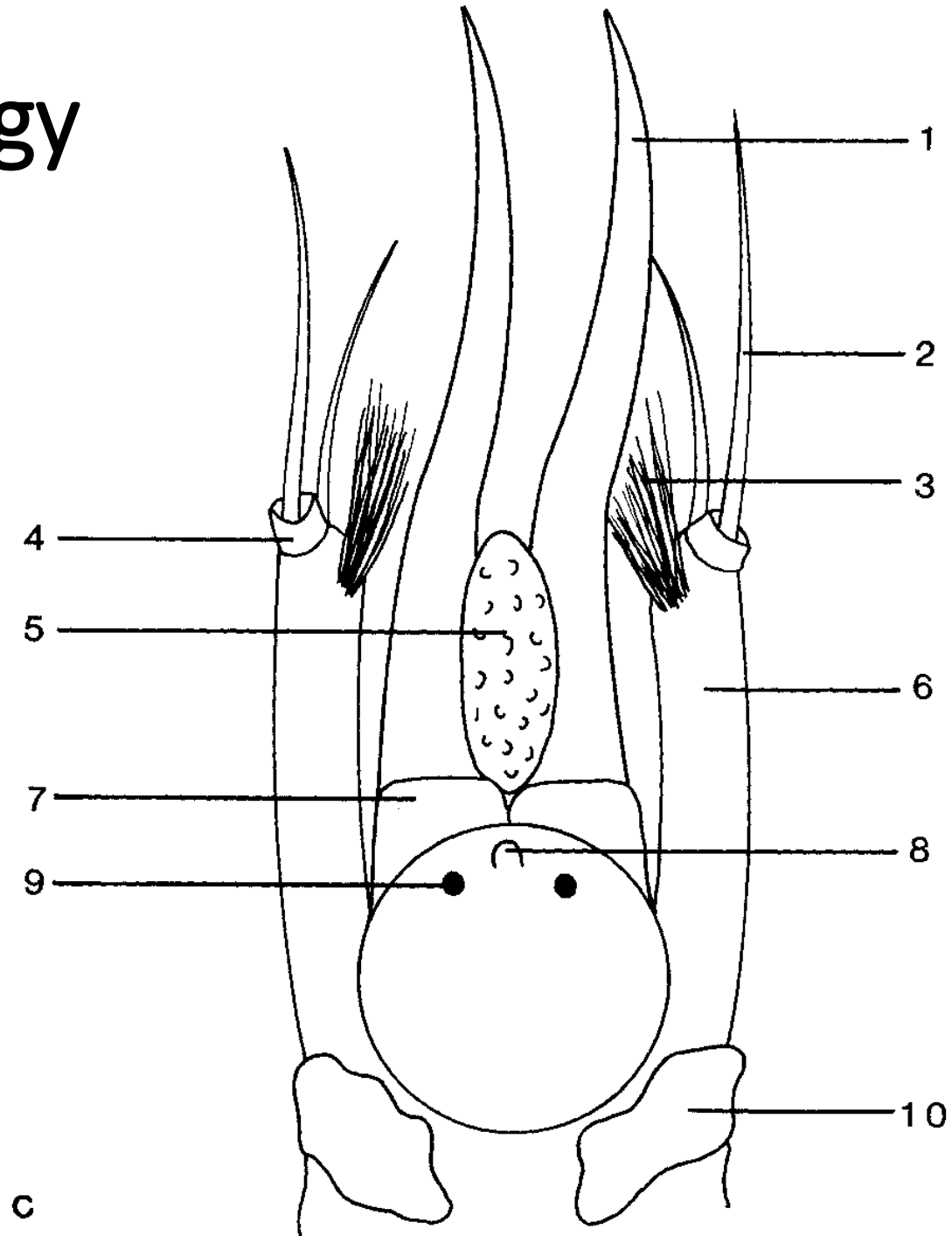
# *Aphrodita*

- WoRMS lists 44 accepted species
- SCAMIT Ed. 13 with 7 species & 1 provisional
- 10 species of *Aphrodita* have been described from California
- 13 species of *Aphrodita* have been reported from California
  - Some questionable synonymies have reduced these numbers to
    - 4 species described from California
    - 7 species reported from California
- *Aphrodita castanea* is accepted by SCAMIT as valid but not by WoRMS

# *Aphrodita* – General Morphology

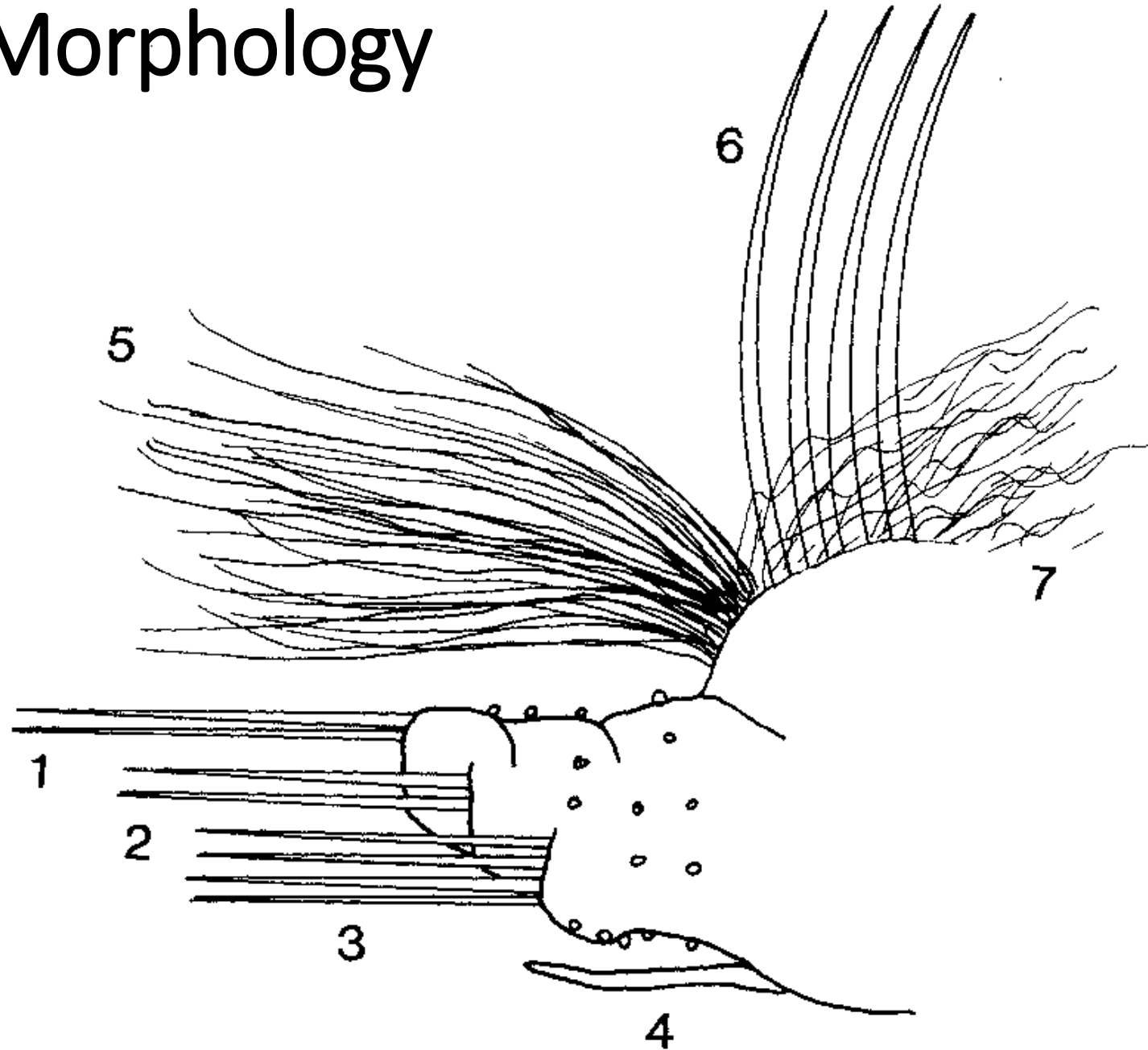


- 1-palp
- 2-tentacular cirrus
- 3-chaetae
- 4-tentaculophore
- 5-facial tubercle
- 6-first parapodia
- 7-palpophore
- 8-median antennae
- 9-eyes
- 10-elytrophore



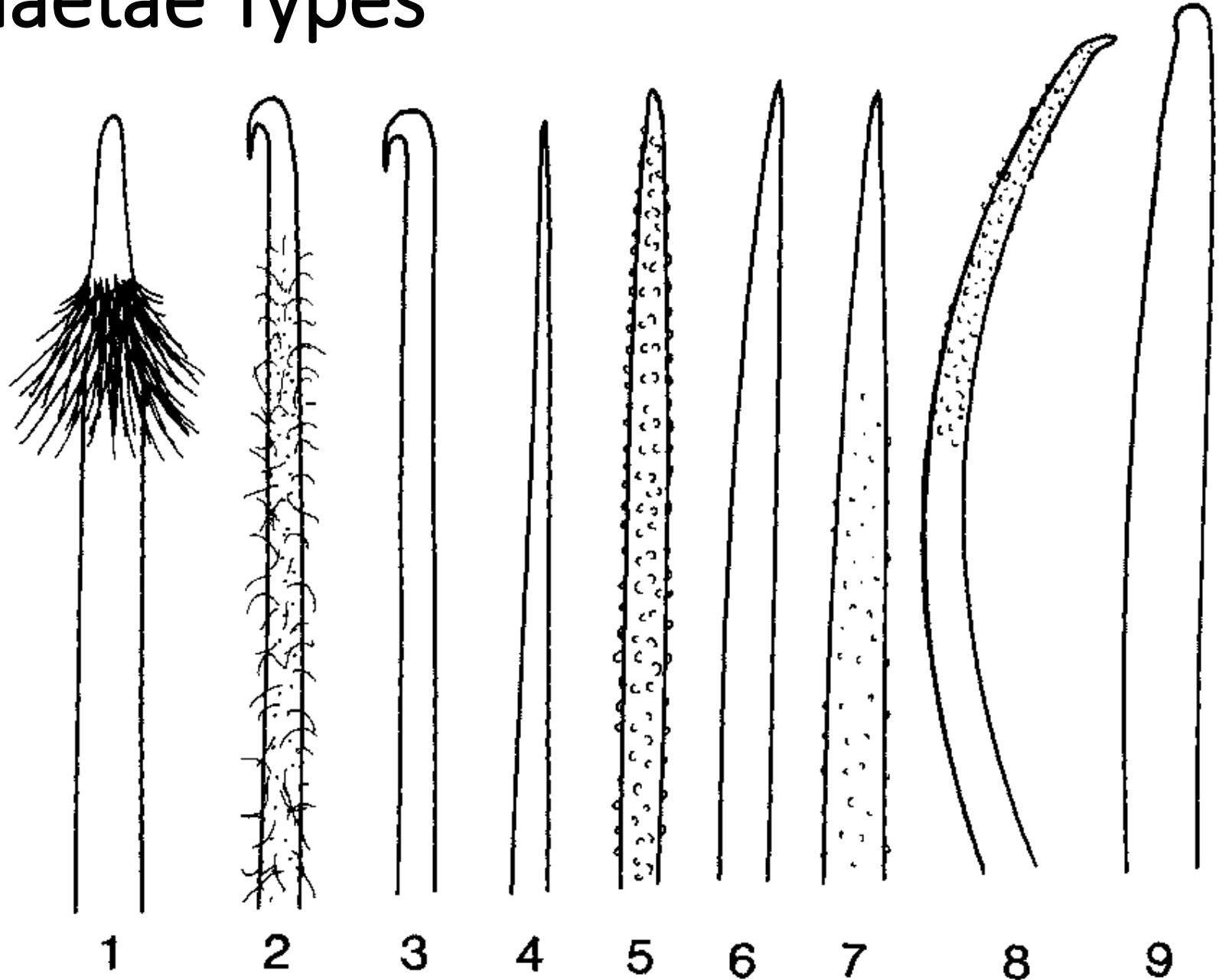
# *Aphrodita* – Parapodia Morphology

- 1-superior neurochaetae
- 2-median neurochaetae
- 3-inferior neurochaetae
- 4-ventral cirri
- 5-capillary notochaetae
- 6-dorsal notochaetae
- 7-felt notochaetae



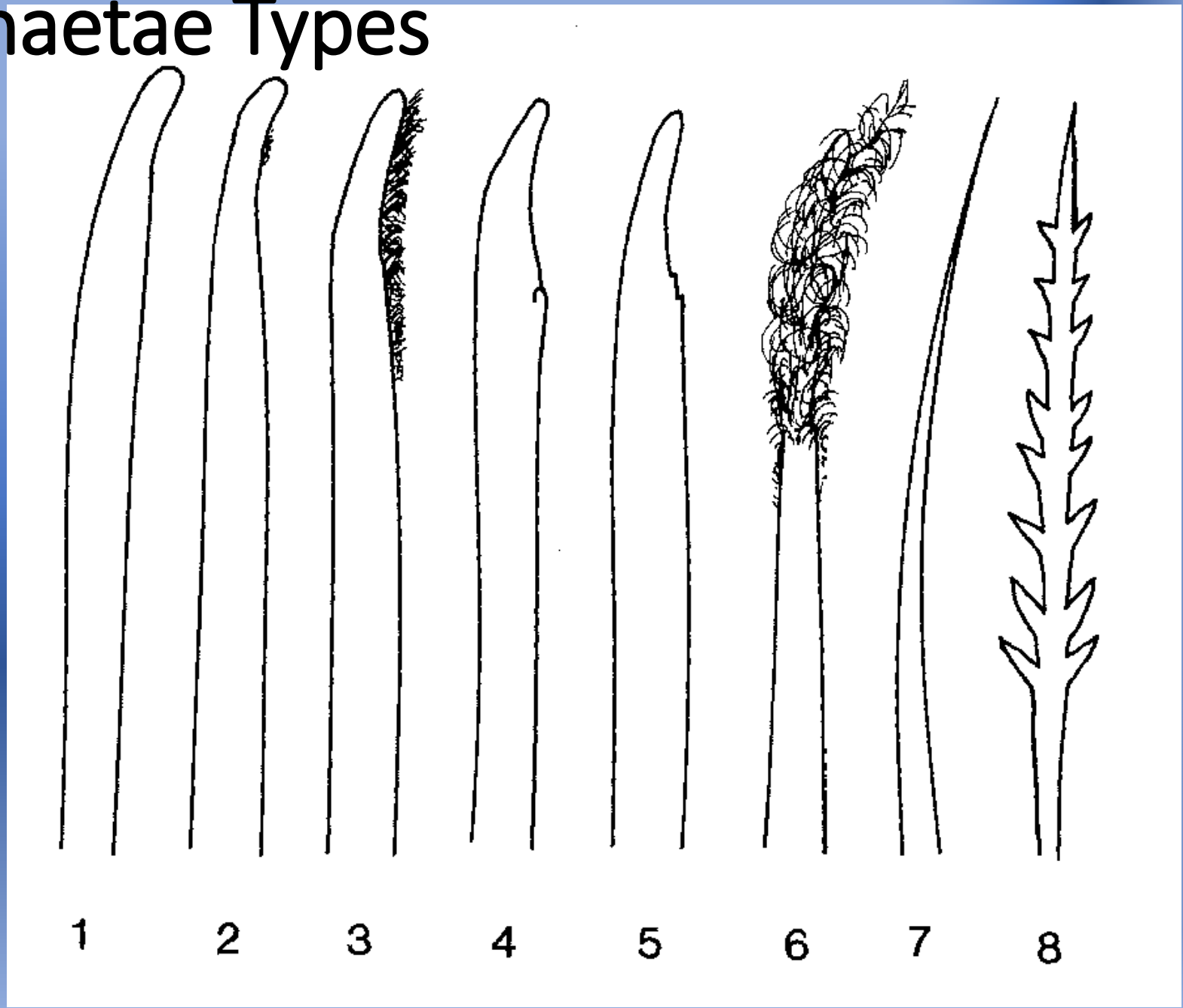
# *Aphrodita* – Notochaetae Types

- 1 – triangular tips with fine hairs
- 2 – hooked tip w/ fine hairs & asperities
- 3 – hooked tip, smooth
- 4 – acicular, smooth
- 5 – acicular w/ asperities
- 6 – spine, smooth
- 7 – spine w/ asperities
- 8 – bent w/ asperities
- 9 – paleal-like, smooth



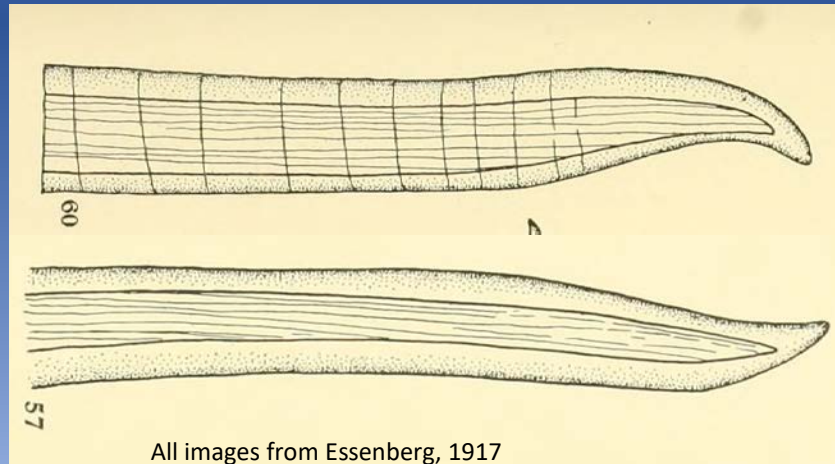
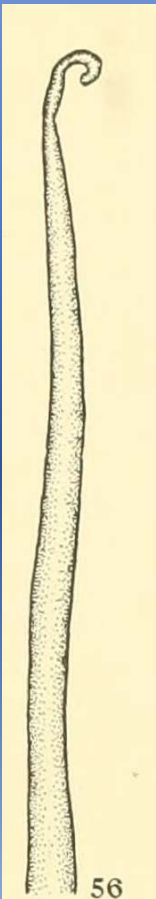
# *Aphrodita* – Neurochaetae Types

- 1 – slightly curved
- 2 – slightly curved w/ small tuft of hair
- 3 – curved w/ plumose margin
- 4 – curved tip w/ small spur
- 5 – curved tip w/ 2 teeth
- 6 – pilose
- 7 – acuminate, tapering
- 8 – bipinnate

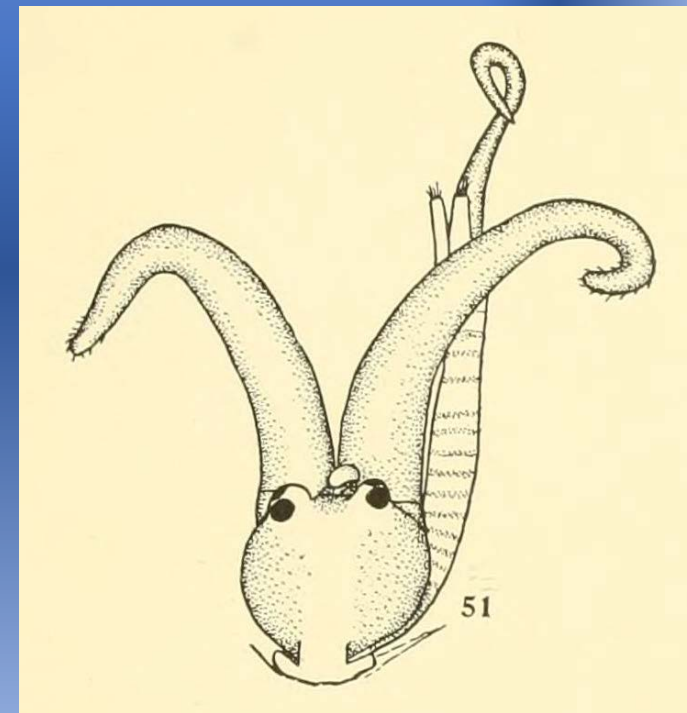


# *Aphrodita brevitentaculata* Essenberg, 1917

- Described from off San Diego in kelp holdfast
- Key characters
  - 2 pairs of large eyes, slightly fused (right)
  - Median antennae short, bends upwards with a bulbous tip (right)
  - Dorsal notochaetae without asperities & hooked tip (left)
  - Neurochaetae with smooth tips, nearly straight (bottom)
  - Felt colorless
  - No reports from LACSD



All images from Essenberg, 1917



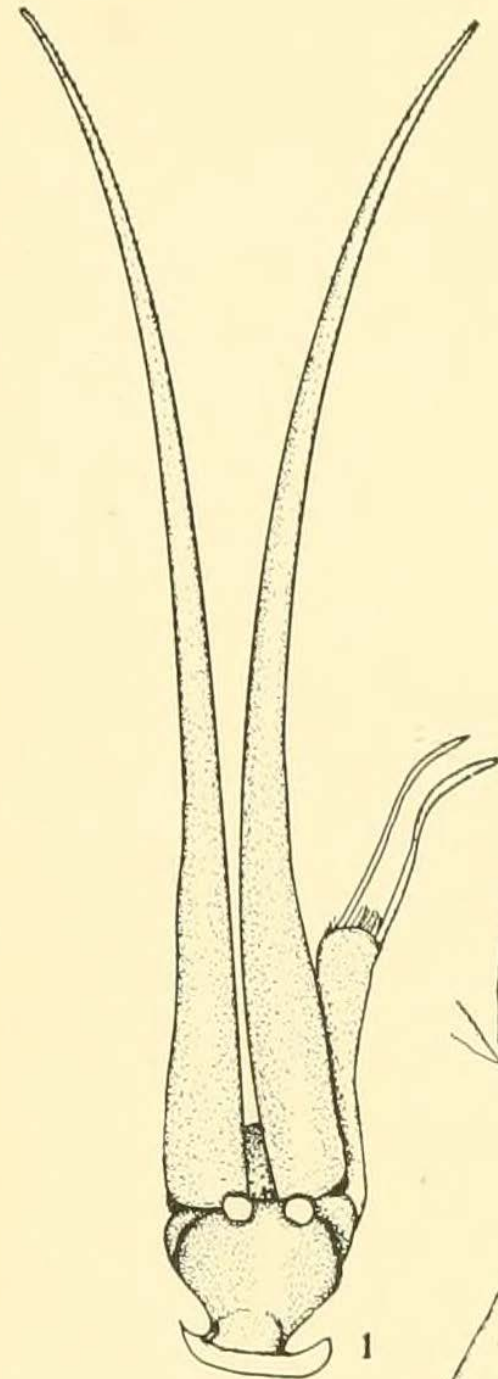
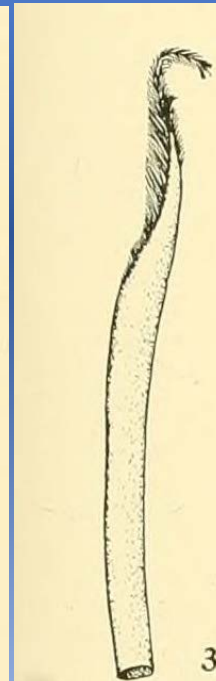
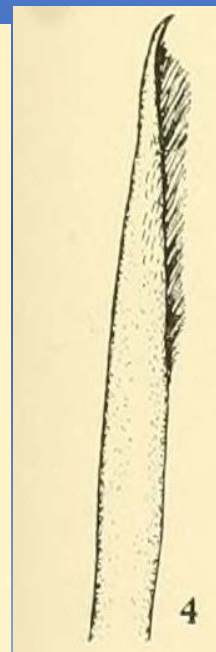
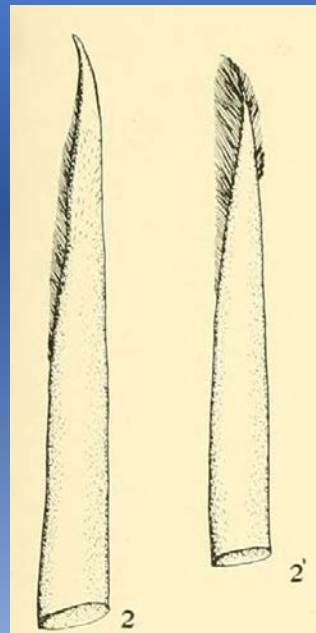
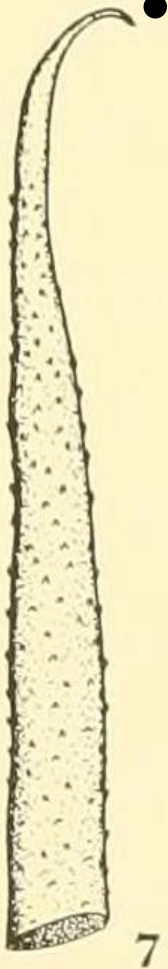


# *Aphrodita longipalpa* Essenberg, 1917

- Described from off La Jolla, CA in 292m

- Key characters

- Eyes not visible or absent <sup>(1)</sup>
- Median antennae short, inserted far anterior on prostomium <sup>(1)</sup>
- Palps very long (~11.5X length of prostomium) <sup>(1)</sup>
- Dorsal notochaetae slightly <sup>(7)</sup> hooked, covered in asperities
- Neurochaetae distally tapered, slightly curved & pilose <sup>(2, 2', 4 & 3)</sup>
- LACSD reports from "A" stations in benthic grabs (305m) and in trawls from 200-305m





# *Aphrodita armifera* Moore, 1910 vs. *Aphrodita raripillata* Essenberg, 1917

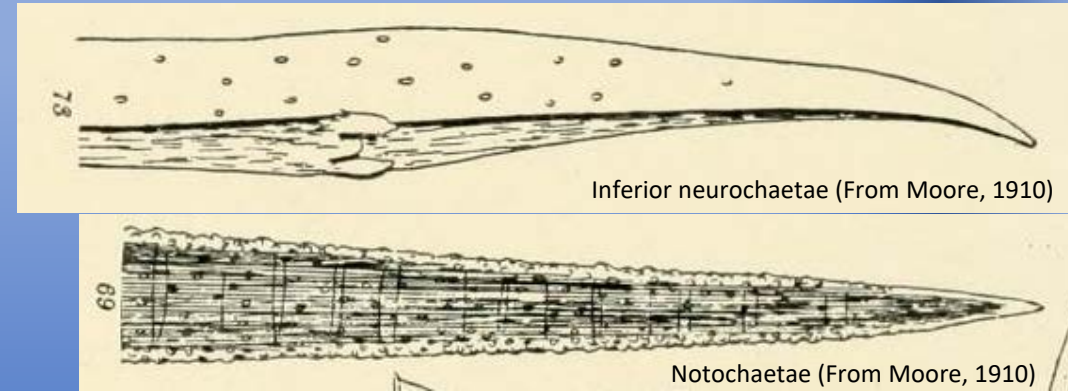
## *Aphrodita armifera*

- Described from Monterey Bay, CA
- 56-80 m
- Key characters
  - Asperites present on dorsal notochaetae
  - Spurs and asperites present on inferior series of neurochaetae
    - LACSD reports from “D” stations in benthic grabs (30m) and from 0-305m in trawls

## *Aphrodita raripillata*

- Described from San Diego, CA
- 27-55 m
- Key characters
  - Asperites present on dorsal notochaetae
  - Spurs and asperites absent on all series of neurochaetae
    - LACSD has possible reports of *A. raripillata* from “D” & “C” stations in benthic grabs (30-61m) and in trawls from 23m

# *Aphrodita armifera* Moore, 1910



- Moore, 1910 description

- Neuropodial setae in the usual three horizontal series. On middle segments the ventral series consists of ... slightly hooked, acute tip and usually bearing a pair of small spurs and a few scattered tubercles.
- Notopodial setae consist of stout, fragile spines and flexible fibers. The former are deep lustrous brown and form a conspicuous bristling armature penetrating the felt ... the hard outer shell is roughened by numerous small tubercles ...

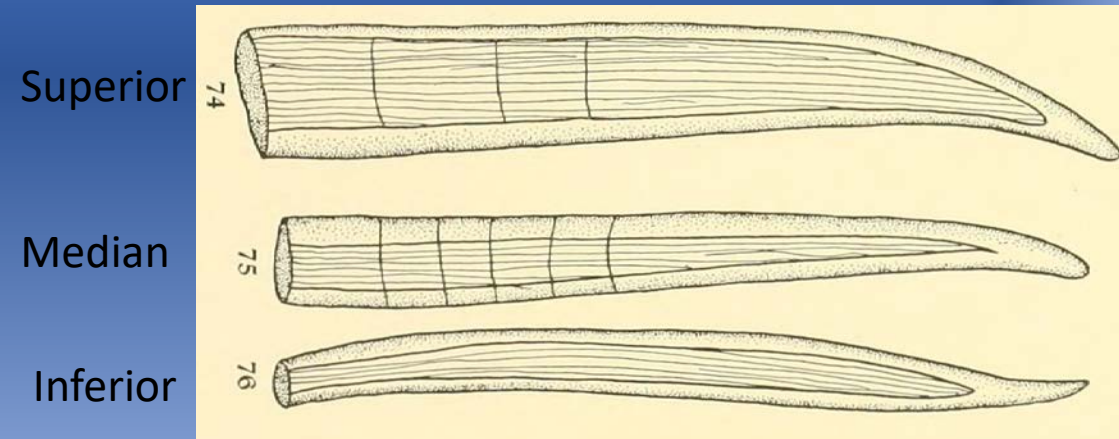
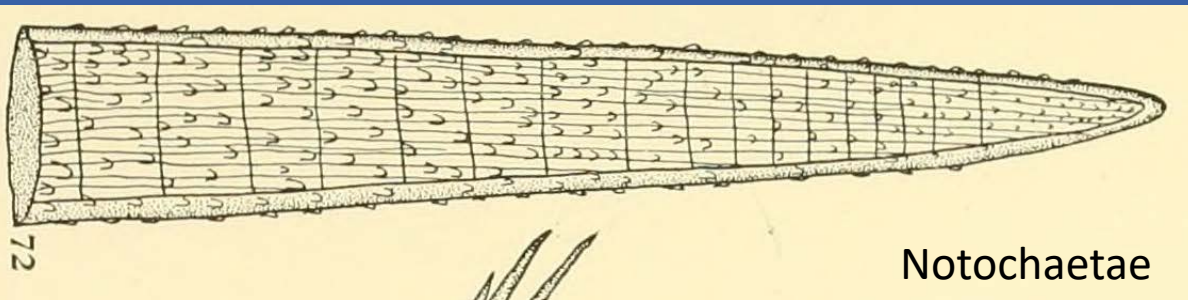
- Hartman, 1939 redescription

- *Aphrodita armifera* is characterized by its heavy, smooth, dorsal notopodial spines ...

# *Aphrodita raripillata* Essenberg, 1917

- Essenberg, 1917 description

- *Aphrodita raripillata* has a great resemblance to *Aphrodita armifera* (Moore, 1910), and is undoubtedly closely related to it. The chief difference is in the structure of the neurosetae. In *Aphrodita armifera* the neurosetae of the ventral series are covered with asperities and have a subterminal spur, while in *A. raripillata* no spur or asperities are seen even under the highest magnification.





**Synonymized** - Hartman, O. 1939. Polychaetous annelids.  
Part I. Aphroditidae to Pisionidae. *Allan Hancock Pacific  
Expeditions*. 7(1): 1-156

- *A. raripillata* Essenberg (1917, p. 413) agrees well with *A. armifera* Moore (1910, p. 371). Both types originated in southern California.
- *A. raripapillata* Essenberg (1917, P. 413) from southern California may be referable to *A. armifera* Moore, although it is not certain that the inferior neuropodial setae have the paired spurs characteristic of the latter. In other respects the descriptions are similar.

# *Aphrodita japonica* Marenzeller, 1879 vs. *Aphrodita cryptommata* Essenberg, 1917

## ***Aphrodita japonica***

- Originally described from Japan
- From depths less than 20 meters
- Key characters
  - Asperites absent from dorsal notochaetae
  - Inferior neurochaetae falcate; smooth or sheathed; or sheath frayed appearing pilose
  - Median antennae with a long style
    - LACSD reports from all benthic depths (30-305m) (most records are from 61-157m) and in trawls from 0-305m

## ***Aphrodita cryptommata***

- Described from Newport, CA
- From 55-185 meters
- Key characters
  - Asperites absent from dorsal notochaetae
  - Inferior neurochaetae without sheaths or pilose tips
  - Median antennae with a short style
    - LACSD has not yet undertaken a review of our *A. japonica* to determine if *A. cryptommata* is present

# *Aphrodita japonica* Marenzeller, 1879

- Described by von Marenzeller in 1879 from southern Japan in depths below 20m



Prostomium with long median antennae (left)

Inferior neurochaetae without sheath or pilose tips (right)

(both images from Marenzeller, 1879)





# *Aphrodita japonica* Marenzeller, 1879 (cont.)

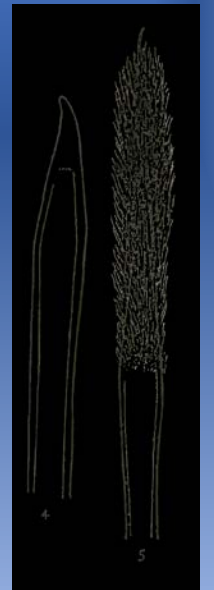
- Moore, 1903 list collections off Japan in 90-306m (45-153 fms.)
  - States “Von Marenzeller describes the ventral spines of his specimen as smooth, a condition which I have assumed to have resulted from the wearing away of the hairs present in all three of the “Albatross” examples.”
  - Moore does not mention the length of the median antennae.
- Moore, 1908 lists collections off Alaska and Canada in 62-480m (31-240 fms.)
  - Length 14-80 mm
  - “The neuropodial setae are unusually prominent and slender and when young their tips are encased in a densely hairy sheath, which later wears away, leaving the point smooth.”

# *Aphrodita japonica* Marenzeller, 1879 (cont.)

- Moore, 1910 lists collections off San Diego in 220-1300m (110-650 fms.); off Santa Rosa & San Miguel Islands in 486-574m (243-287 fms.); off Monterey Bay in 80-298m (40-149 fms.)
  - Specimens were 28 – 155 mm
  - “The neuropodials increase in numbers with age and the densely hairy tips of the young become worn quite smooth on old specimens.”
  - “A characteristic of the species, ..., is the slender, rather long, tapered median tentacular style. This character must be used with caution as the style is sometimes lost or broken...”

# *Aphrodita japonica* Marenzeller, 1879 (cont.)

- Hartman, 1939 lists collections off Ecuador in 14-110m (7-55 fms.); off of Columbia in 100-150m (50-75 fms.); off La Paz, Mexico in 40-48m (20-24 fms.); off of Panama in 60-100m (30-50 fms.); and off Redondo Beach with no depth information.
  - This expanded its range south to Ecuador.
  - Length to 48mm
  - “In some specimens the pilosity is very extensive, in others almost absent, because of the sloughing off of the pilose hood.”
  - Does not mention the median antennae.
    - Images from left to right
      - superior neurochaetae
      - Median neurochaetae with sheath
      - Inferior neurochaetae without pilose hood
      - Inferior neurochaetae with pilose hood

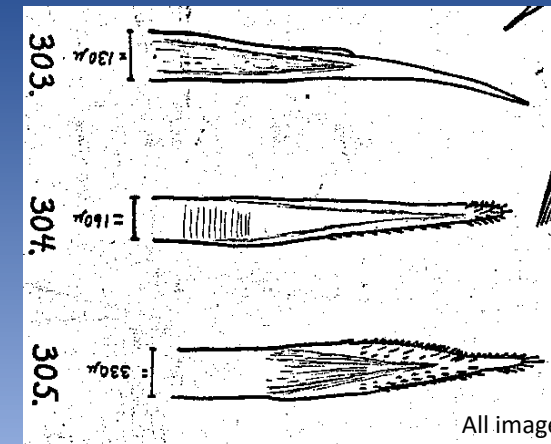
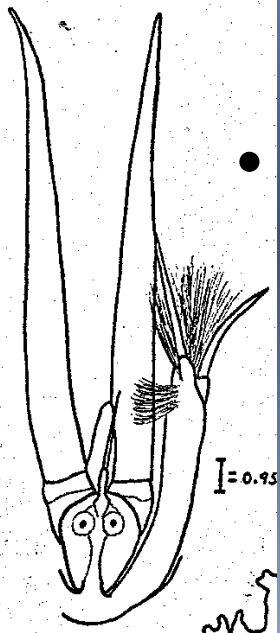




# *Aphrodita japonica* Marenzeller, 1879 (cont.)

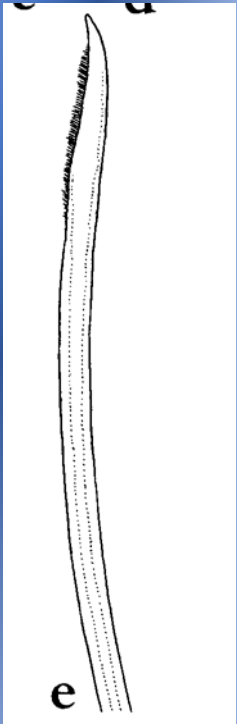
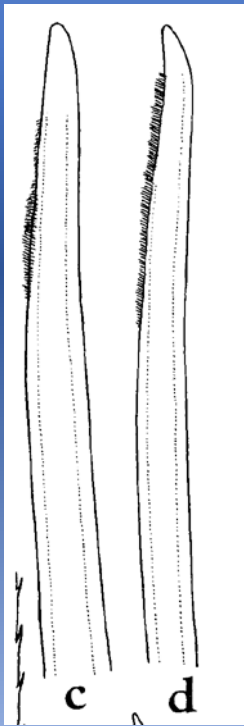
- Pettibone, 1953 lists distribution from northwestern Pacific (Japan to Alaska) & northeastern pacific (Alaska to Ecuador) in depths from 14-1300m (7-650 fms.)
  - Length 30-180 mm
  - “Neurosetae stiff, stout, dark brown to black, straight or slightly curved distally; distal tips with pointed centers with enveloping sheaths which may be quite frayed (pilose), roughened, or mostly lacking.
  - “Median antennae short-approximately the length of prostomium, with ceratophore short, slender, cupped distally; style slender, easily detached.”

- Left – prostomium showing long median antennae
- Top right – median neurochaetae
- Middle right – inferior neurochaetae
- Bottom right – superior neurochaetae

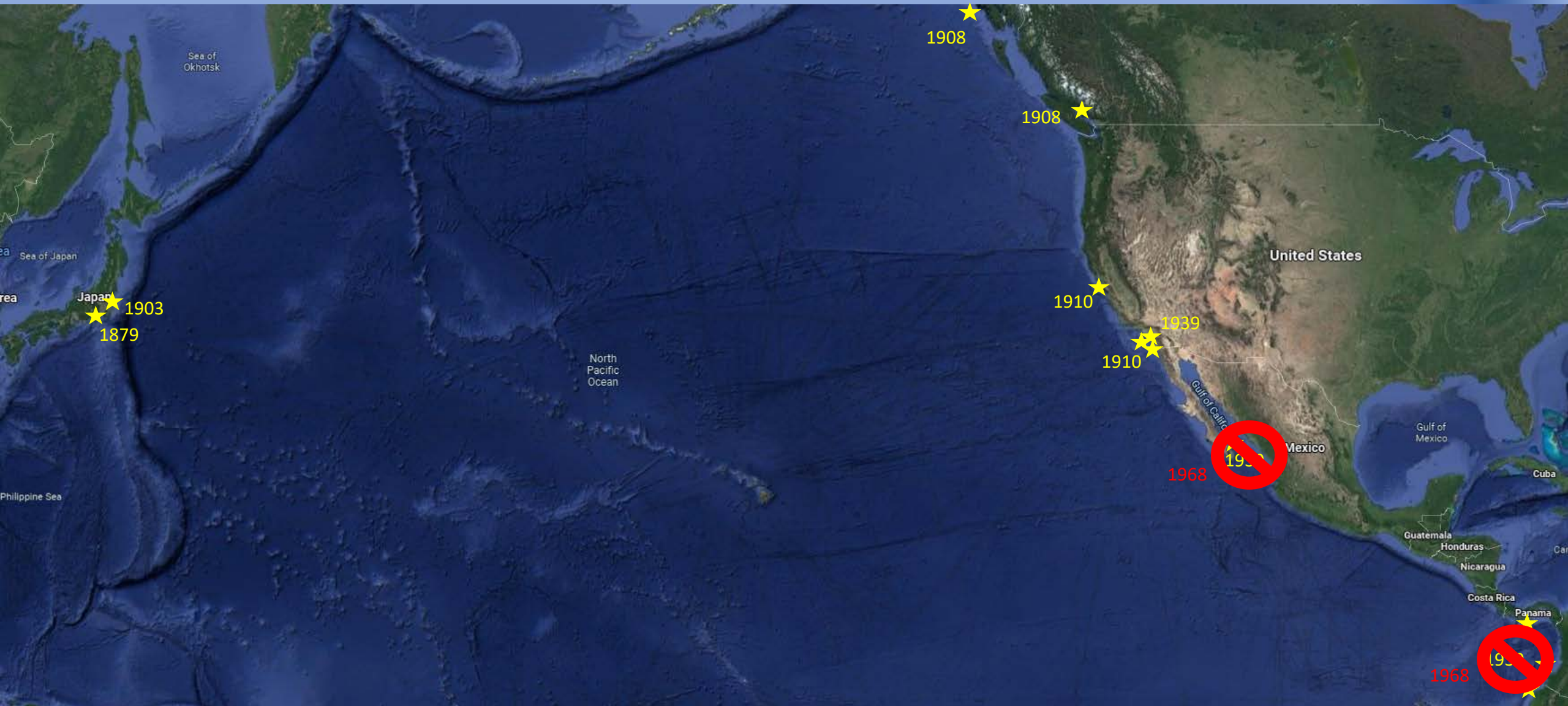


# *Aphrodita japonica* Marenzeller, 1879 (cont.)

- Hartman, 1968 lists the distribution as Japan, Alaska south to southern California; in shallow depths to 150m (75 fms.)
  - Previous depth was up to 1300m based on collections by Moore and Pettibone
- Imajima, 2003 lists the distribution as Japan, Alaska, California
- Examined material that was 27mm long form 71-77m deep
  - “... with 3 tiers of golden brown neurosetae with slightly curved tips and short plumose beard on inner side underneath curve.”
    - Image c – superior neurochaetae
    - Image d – median neurochaetae
    - Image e – inferior neurochaetae



# *Aphrodita japonica* - Distribution

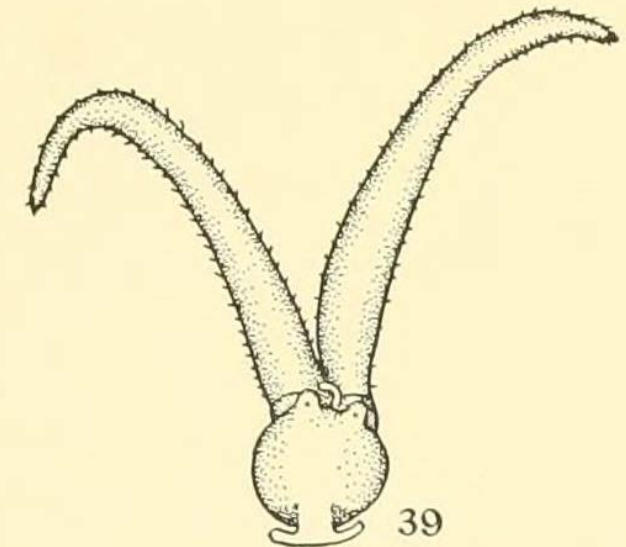
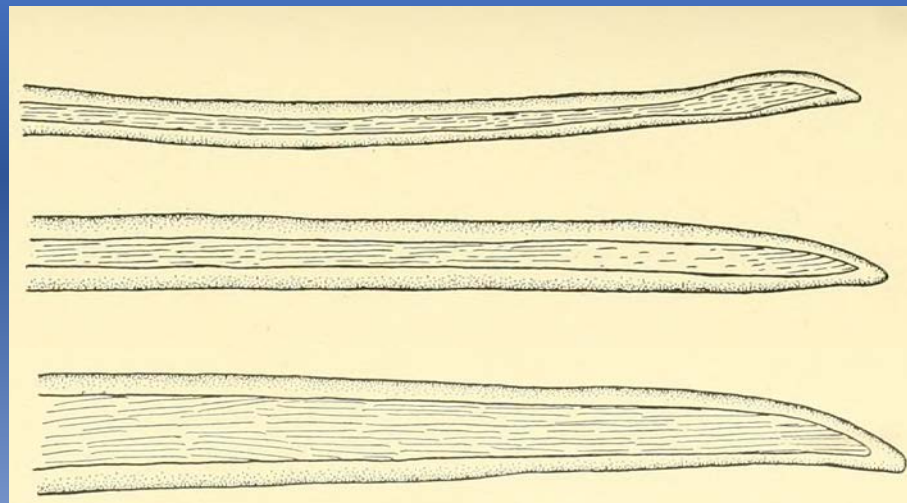




# *Aphrodita cryptomatta* Essenberg, 1917

- Described by Essenberg in 1917 from a trawl off of Newport, CA from 55-185m
  - Specimens were 28 & 29 mm long
  - “The neurosetae are smooth, with abruptly narrowing ends terminating bluntly.”
  - “The median tentacle is very short, consisting of a short ceratophore and a short style.”

- Top right – inferior neurochaetae
- Middle right – median neurochaetae
- Bottom right – superior neurochaetae
- Far right – prostomium showing short antennae



# Synonymized - Hartman, O. 1939. Polychaetous annelids.

Part I. Aphroditidae to Pisionidae. *Allan Hancock Pacific Expeditions*. 7(1): 1-156

- *A. cryptommata* Essenberg (1917, p. 409) must be referred to *A. japonica* Marenzeller (1879, p. 111), one of the commonest species of *Aphrodita* dredged in fairly shallow waters from southern California southward
- The description of *A. cryptommata* Essenberg agrees well with that of *A. japonica* save for the statement that in the former the elytra are squarish along their medial margins. The shape of the elytra is similar, however, if the inner edge be slightly cut away, as sometimes happens when the dorsal felt is cut apart.

# *Aphrodita refulgida* Moore, 1910 vs. *Aphrodita solitaria* Essenberg, 1917

## ***Aphrodita refulgida***

- Described from Monterey Bay, CA
- Key characters
  - Lateral fibers iridescent green
  - Neurochaetae with smooth, nearly straight tips
  - Ocular protuberance hemispherical, nearly touching and projecting anteriorly
    - LACSD reports from “D” stations in benthic grabs (30m) and in trawls from 23-137m

## ***Aphrodita solitaria***

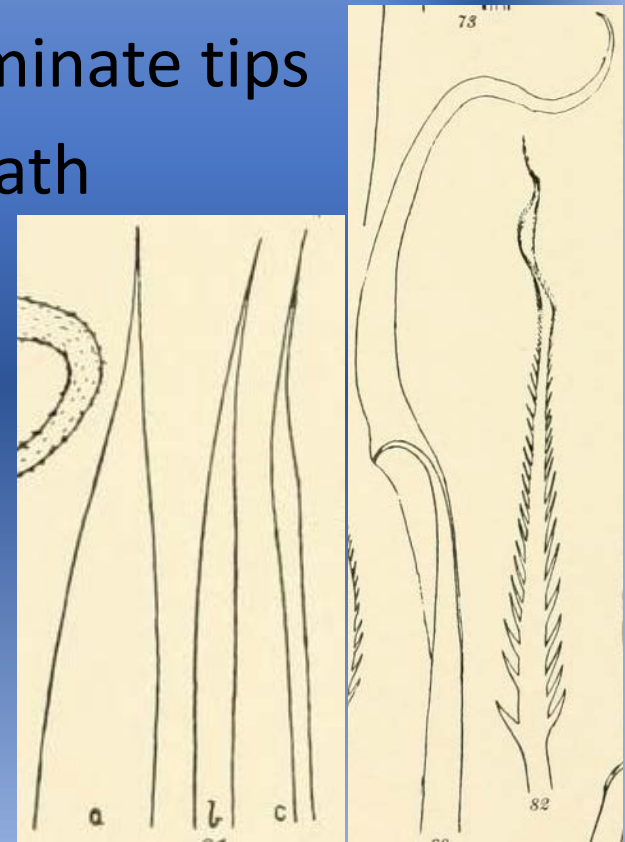
- Described from southern California
- Key characters
  - Lateral fibers colorless
  - Neurochaetae with strongly pilose, straight tips
  - Ocular protuberance inconspicuous
    - LACSD has 3 possible *A. solitaria* from trawls at 305m
    - LACSD has not yet undertaken a review of our *A. refulgida* to determine the presence of *A. solitaria*

# *Aphrodita refulgida* Moore, 1910

- Brilliant green lateral fibers
- Ocular peduncles hemispherical, nearly in contact and projecting over the anterior face
- Neurochaetae smooth, straight, terminating in fine acuminate tips
- Notochaetae strongly hooked, sometimes with long sheath



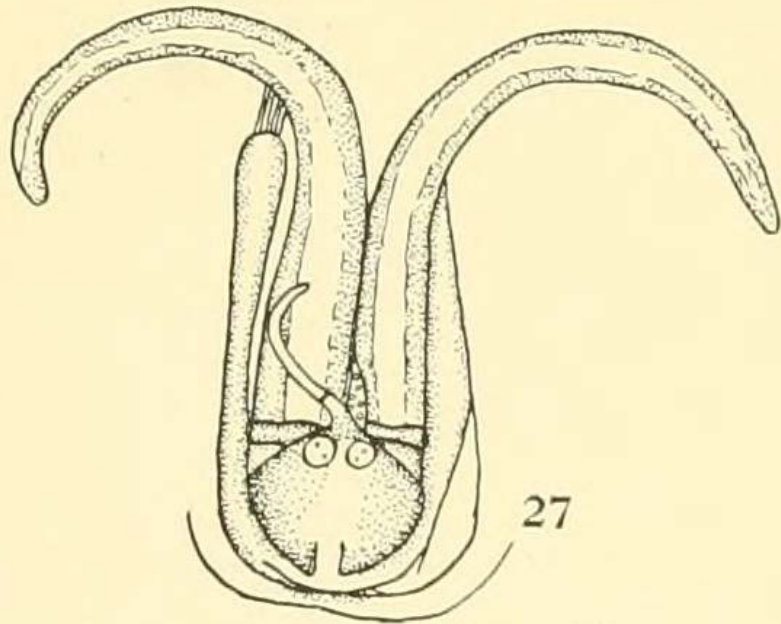
- Left image – prostomium showing ocular protuberance
- Right image (from left to right)
  - Superior neurochaetae
  - Median neurochaetae
  - Inferior neurochaetae
  - Dorsal notochaetae
  - Neurochaetae (chaetiger 2)



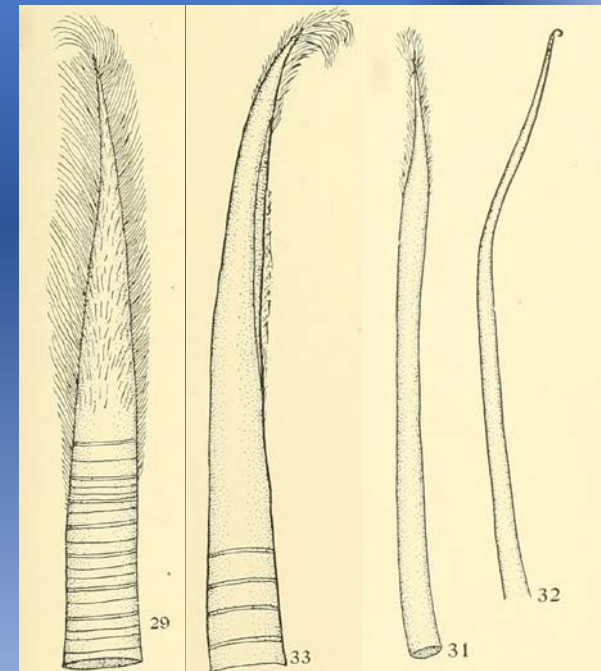


# *Aphrodita solitaria* Essenberg, 1917

- Lateral fibers colorless
- Ocular peduncle inconspicuous
- Neurochaetae with tips strongly pilose
- Notochaetae smooth with fine, strongly curved hook



- Left image – prostomium
- Right image (from left to right)
  - Superior neurochaetae
  - Median neurochaetae
  - Inferior neurochaetae
  - Dorsal notochaetae



**Synonymized** - Hartman, O. 1939. Polychaetous annelids.  
Part I. Aphroditidae to Pisionidae. *Allan Hancock Pacific  
Expeditions*. 7(1): 1-156

- *Aphrodita solitaria* Essenberg (1917, p. 408) may be the same as *A. refulgida* Moore (1910, p. 376). Both have pointed neuropodial setae (pl. 1, figs. 7, 8) in addition to other identical characters, and both probably originate from southern California.
- The description of *A. solitaria* Essenberg agrees reasonably well with Moore's description of *A. refulgida*.

*Aphrodita negligens* Moore, 1905 vs.

*Aphrodita castanea* Moore, 1910 vs.

*Aphrodita californica* Essenberg, 1917

### ***Aphrodita negligens***

- Asperities absent from shaft of notochaetae
- Notochaetae taper gradually to hooked tip
- Neurochaetae with pilose tips
  - LACSD reports from “C” stations in benthic grabs (152m) and in trawls from 61-305m

### ***Aphrodita castanea***

- Asperities present on dorsal side of notochaetae shaft
- Notochaetae with constriction at base of hooked tip
- Neurochaetae with pilose tips
  - LACSD reports in “B”, “C” & “D” stations in benthic grabs (30-152m) and in trawls form 61-305m

### ***Aphrodita californica***

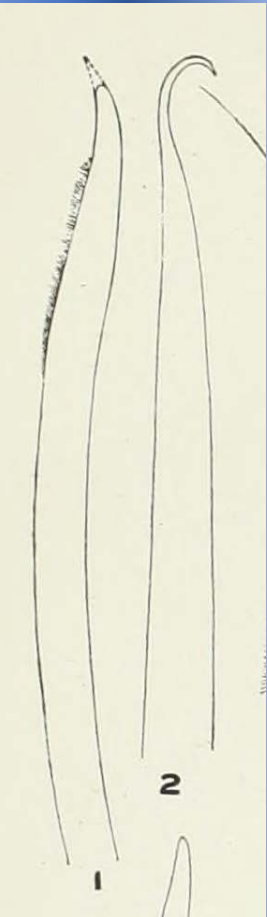
- Asperities absent from shaft of notochaetae
- Notochaetae taper gradually to hooked tip
- Neurochaetae with smooth tips
  - No reports from LACSD

# *Aphrodita negligens* Moore, 1905

- Described from Japan in 62m
- Reported range from Japan to southern California
- Body iridescent
- Ceratophore and style of median antennae short
- Notochaetae hooked
- Neurochaetae pilose

Image 1 – inferior neurochaetae

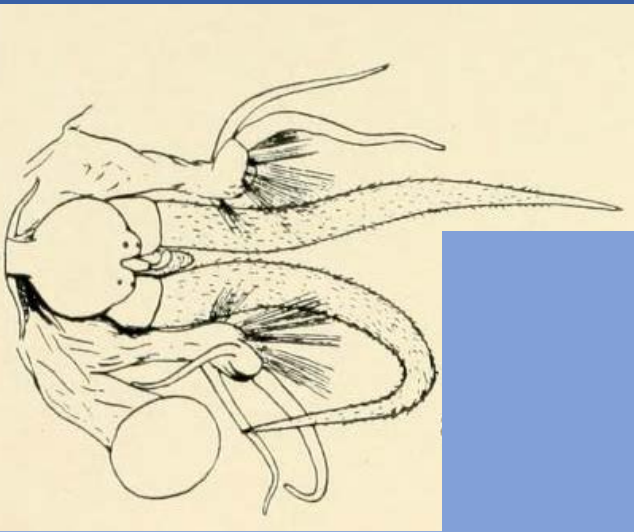
Image 2 - notochaetae



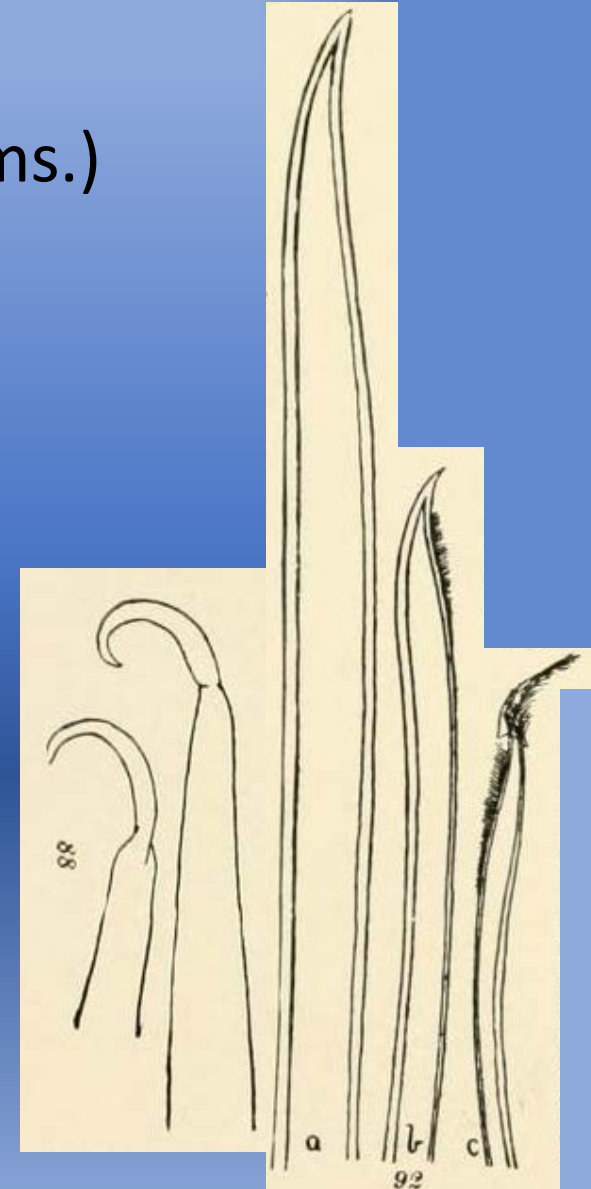


# *Aphrodita castanea* Moore, 1910

- Described from Monterey Bay, CA in 72-618m (36-309 fms.)
- Body gray
- Ceratophore and style of median antennae short
- Notochaetae with constriction at base of hooked tip
- Neurochaetae pilose

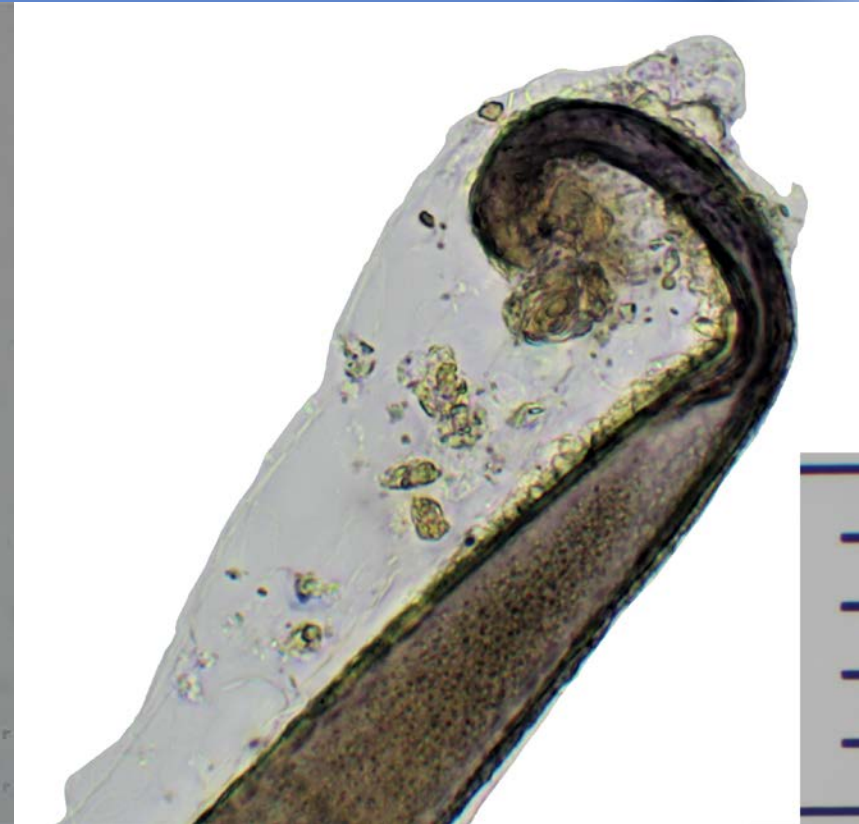


- Left image – prostomium
- Right image (from left to right)
  - Notochaetae with constricted tips
  - Notochaetae with constricted tips (close up)
  - Superior neurochaetae
  - Median neurochaetae
  - Inferior neurochaetae



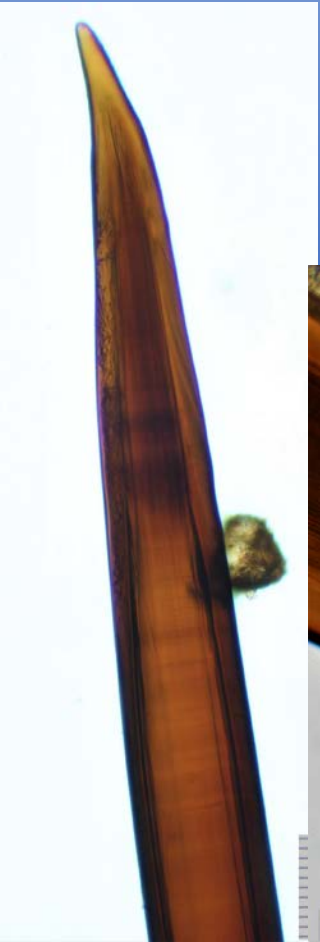
# *Aphrodita castanea* Moore, 1910 (cont.)

- Left – prostomium
- Middle – Asperities on dorsal notochaetae
- Right – Tip of dorsal notochaetae
  - Scale bars 0.05mm (0.01mm)
  - LACSD T5-305
  - Photos by B. Haggin



# *Aphrodita castanea* Moore, 1910 (cont.)

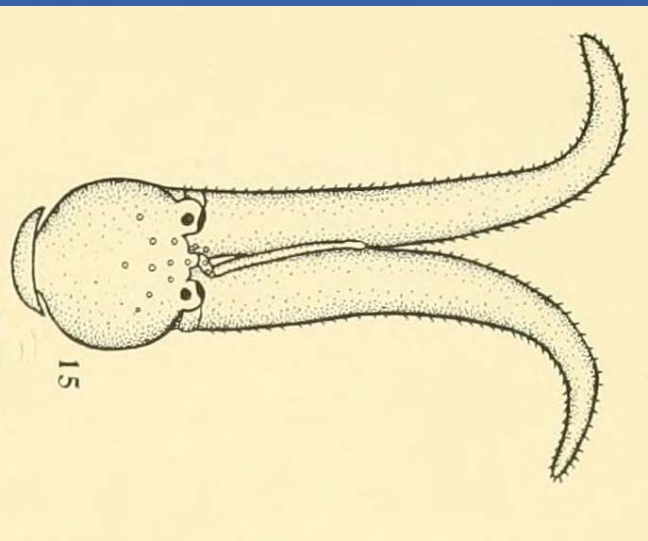
- Left – Superior neurochaetae
- Middle – Median neurochaetae
- Right – Inferior neurochaetae
  - Scale bars Left – 0.01mm; middle & right - 0.05mm (0.01mm)
  - LACSD T5-305
  - Photos by B. Haggin



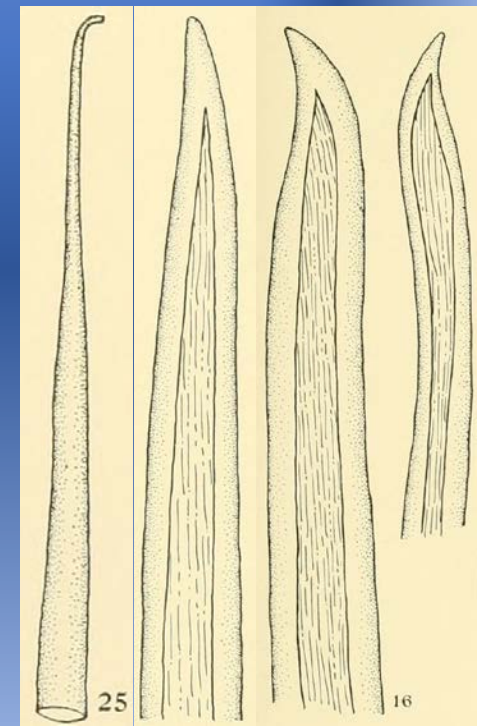


# *Aphrodita californica* Essenberg, 1917

- Described from San Diego, CA in 6m
- Body gray
- Ceratophore prominent and style of median antennae long
- Notochaetae with hooked tip
- Neurochaetae smooth



- Left image – prostomium with long median antennae
- Right image (from left to right)
  - Notochaetae with hooked tip
  - Median neurochaetae
  - Superior neurochaetae
  - Inferior neurochaetae





**Synonymized** - Hartman, O. 1936. Nomenclatural changes involving California polychaete worms. *Journal of the Washington Academy of Sciences*. 26(1): 31-32

- Despite the differences in the median antennae, notochaetae and neurochaetae, in 1936 Hartman synonymized *Aphrodita californica* with *Aphrodita castanea* with no explanation

32 JOURNAL OF THE WASHINGTON ACADEMY OF SCIENCES VOL. 26, NO. 1

*Aphrodita castanea* Moore, 1910 = *A. californica* Essenberg, 1917

**Synonymized** - Pettibone, M. H. 1953. *Some scale-bearing polychaetes of Puget Sound and adjacent waters*. 1-89. University of Washington Press. Seattle.

- Without explanation and despite the differences in body color and characteristics of the notochaetae, Pettibone in 1953 synonymized *Aphrodita castanea* with *Aphrodita negligens*
  - This synonymy also put *Aphrodita californica* in synonymy with *Aphrodita negligens* despite many of the differences noted before

Aphrodita negligens Moore, 1905

Pl. 34, figs. 308-316; pl. 35, figs. 317-324

Aphrodita negligens Moore, 1905: 526-29, pl. 34, figs. 1-2, pl. 35, fig. 31;  
1908: 339; Treadwell, 1914: 178; Berkeley, 1923: 211; Berkeley and  
Berkeley, 1942: 187.

Aphrodita castanea Moore, 1910: 380-85, pl. 32, figs. 85-97, pl. 33,  
fig. 98.

Aphrodita californica Essenberg, 1917a: 406-8, pl. 32, figs. 15-26, pl. 37,  
figs. 79-80.

# *Aphrodita* sp A Rossi, 1978 §

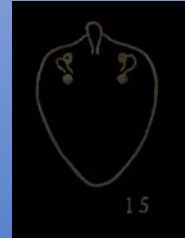
- Description taken from “A Key to the Species of Aphrodita (Polychaeta) from the West Coast of North America” by Mark Rossi
  - No voucher sheet could be found
- Key characters
  - Median antennae cirriform
  - Dorsal notochaetae without asperities, 2X thicker than superior neurochaetae
  - Lateral notochaetae iridescent golden-green
    - No reports from LACSD

# Other *Aphrodita*

- Other possible Aphrodita not currently listed on SCAMIT

- *Aphrodita falcifera* Hartman, 1939

- Cedros Island, Mexico



*Aphrodita falcifera* – prostomium

From Hartman, 1939

- *Aphrodita mexicana* Kudenov, 1975

- Western Mexico (29-38m)

- *Aphrodita parva* Moore, 1905

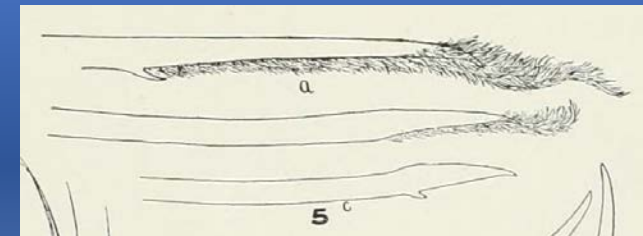
- British Columbia, Canada (200-311m)

- *Aphrodita sonora* Kudenov, 1975

- Gulf of California, Mexico (36m)

*Aphrodita parva* – neurochaetae

From Moore, 1905



*Aphrodita sonora* – prostomium

From Kudenov, 1975



Accepted Name	Authorship	Dorsal Notosetae			Superior Neurosetae		
		Shaft 1- smooth 2-w/ aspertites	Felt 1-does not penetrate 2-penetrates	Noto V. Neuro 1-as thick 2-2X thicker	Spurs 1-not spurred 2-spurred	Shaft 1-smooth 2-w/ asperities	Tips 1-straight 2-curved 3-hooked/falcate 4-pilose 5-acuminate
<i>Aphrodita aphroditoides</i>	(McIntosh, 1885)	1		1	1	1	1
<i>Aphrodita armifera</i>	Moore, 1910	2	2	2	1	1	1
<i>Aphrodita raripillata</i>	Essenberg, 1917	2		1	1	1	2
<i>Aphrodita brevitentaculata</i>	Essenberg, 1917	1	2	1	1	1	3
<i>Aphrodita falcifera</i>	Hartman, 1939	2		1	2	1	3
<i>Aphrodita japonica</i>	Marenzeller, 1879	1		1	1	1	3, 4(sometimes)
<i>Aphrodita cryptommata</i>	Essenberg, 1917	1	2	1	1	1	1
<i>Aphrodita longipalpa</i>	Essenberg, 1917	2	2	1	1	1	2, 4
<i>Aphrodita mexicana</i>	Kudenov, 1975	1	1	1	1	1	1, 4
<i>Aphrodita negligens</i>	Moore, 1905	1	2	1	1	1	3, 4
<i>Aphrodita californica</i>	Essenberg, 1917	1		1	1	1	2
<i>Aphrodita castanea</i>	Moore, 1910	2	2	1	1	1	2, 4
<i>Aphrodita parva</i>	Moore, 1905	2	2	1	1	1	2, 4
<i>Aphrodita refulgida</i>	Moore, 1910	1	2	1	1	1	5
<i>Aphrodita solitaria</i>	Essenberg, 1917	1	2	1	1	1	1, 4
<i>Aphrodita sonorae</i>	Kudenov, 1975	1	2	1	1	1	1, 4
<i>Aphrodita</i> sp A	Rossi, 1978 §	1		2			



Accepted Name	Palps			Median Antenna			Ventrum	Prostomium
	Grooved absent present	1-Sensory Cilia 2-absent 2-fine 3-coarse	1- Length of Prostomium	Ceratophore 1- short 2-prominent 3- papillar	Sytle 1-absent 2-short (<2X) 3- long(>2X)	Style 1-cirriform 2- clavate 3-papillated	Ventral Papillae 1- globular 2-conical, capped 3- conical, uncapped	Shape 1- subglobular 2-globular 3-triangular 4-elliptical
<i>Aphrodita aphroditoides</i>				3	1		1	2
<i>Aphrodita armifera</i>	1	2	6X	1	2	2	1	1
<i>Aphrodita raripillata</i>	1	2	4X	1	2	2	1	1
<i>Aphrodita brevitentaculata</i>	1	2	2.5X	1	2	2	1	1
<i>Aphrodita falcifera</i>				1	2	2		3
<i>Aphrodita japonica</i>	1	1(2-P.O.)	6X	1	3	1	1	2
<i>Aphrodita cryptommata</i>	2	2	5.5X	1	2	1	2	2
<i>Aphrodita longipalpa</i>	1	2	11.5X	1	2		3	1
<i>Aphrodita mexicana</i>		2		3	1			
<i>Aphrodita negligens</i>	1	2	4.5X	1	2	2	1	1
<i>Aphrodita californica</i>	1	2	4X	2	3	3	2	1
<i>Aphrodita castanea</i>	1	2	6.5X	1	2	2	1	1
<i>Aphrodita parva</i>	1	1	5X	1	3	2	1	1
<i>Aphrodita refulgida</i>	1	2	7X	1	3	2	1	4
<i>Aphrodita solitaria</i>	2	2	5X	2	3	1	2	1
<i>Aphrodita sonorae</i>		3	4X	3	1		1	2
<i>Aphrodita</i> sp A					2 or 3	1		

- |  |       |  |
|--|-------|--|
| 1a. Animal greater than 13 mm (½")   | ----- | 2  |
| 1b. Animal less than 13 mm (½")  |       | <i>Aphrodita</i> sp  |
| 2a. (1a) Shafts of dorsal notochaetae with asperities or tubercles.  | ----- | 3  |
| 2b. Shafts of dorsal notochaetae smooth.   | ----- | 6  |
| 3a. (2a) Neurochaetae without spurs, may be ornamented near ends with hairs or hooks or ornamentation lacking.   | ----- | 4  |
| 3b. Neurochaetae (at least inferior series) with spurs near distal end.  |       | <i>Aphrodita armifera</i><br>Moore, 1910<br>(Monterey Bay, CA)   |
| 4a. (3a) Superior neurochaetae with pilose tips.   | ----- | 5  |
| 4b. Superior neurochaetae with smooth, blunt tips.   |       | <i>Aphrodita raripillata</i><br>Essenberg, 1917<br>(San Diego, CA)<br><i>*synonymized w/ A. armifera</i> |
| 5a. (4a) Without eyespots; palps 11.5X length of prostomium.   |       | <i>Aphrodita longipalpa</i><br>Essenberg, 1917<br>(La Jolla, CA)   |
| 5b. Eyespots present; palps 4 - 6.5X length of prostomium; dorsal notochaetae w/ asperities on only convex side of shaft and with abrupt constriction before hooked end. |       | <i>Aphrodita castanea</i><br>Moore, 1910<br>(Monterey Bay, CA)<br><i>*synonymized w/ A. negligens</i>    |



6a. (2b) Dorsal notochaetae as thick as or thinner than superior neurochaetae.	-----	7
6b. Dorsal notochaetae 2X thicker than superior neurochaetae.		<b><i>Aphrodita</i> sp A</b> Rossi, 1978 § (southern CA)
7a. (6a) Inferior neurochaetae with pilose tips (or sheaths frayed, appearing pilose).	-----	8
7b. Inferior neurochaetae without pilose tips.	-----	10
8a. (7a) Median antennae with a long style (>2X length of ceratophore).	-----	9
8b. Median antennae with a short style (<2X length of ceratophore).		<b><i>Aphrodita negligens</i></b> Moore, 1905 (Japan)
9a. (8a) Palps 6X length of prostomium, smooth (local vouchers w/ fine cilia on palps); distal ends of neurochaetae falcate, sparsely pilose, or sheath frayed appearing pilose. <b>** (should be a smaller individual)**</b>		<b><i>Aphrodita japonica</i></b> Marenzeller, 1879 (Japan)
9b. Palps 5X length of prostomium, grooved longitudinally; distal ends of neurochaetae tapering to fine tips, densely pilose.		<b><i>Aphrodita solitaria</i></b> Essenberg, 1917 (southern CA) <i>*synonymized w/ A. refulgida</i>

- 10a. (7b) Superior neurochaetae terminating bluntly, distally falcate or slightly curved. ----- 11
- 10b. Superior neurochaetae terminating in a slender, acuminate tip. *Aphrodita refulgida*  
Moore, 1910  
(Monterey Bay, CA)
- 11a. (10a) Median antennae with a short style (<2X length of ceratophore). ----- 12
- 11b. Median antennae with a long style (>2X length of ceratophore). ----- 13
- 12a. (11a) Palps 2.5X length of prostomium, without longitudinal grooves, sparsely covered by cilia; prostomium slightly wider than long; 2 pairs of large eyes present, slightly fused; ventrum thickly covered with fine papillae. *Aphrodita brevitentaculata*  
Essenberg, 1917  
(San Diego, CA)
- 12b. Palps 5.5X length of prostomium, with longitudinal grooves, covered with fine cilia; prostomium as wide as long; 2 pairs of minute eyes present (usually only the dorsal pair visible dorsally); ventrum covered with prominent capped papillae. *Aphrodita cryptommata*  
Essenberg, 1917  
(Newport, CA)  
\*synonymized w/ *A. japonica*
- 13a. (11b) Median antennae with a prominent ceratophore; prostomium subglobular (width slightly > length); ocular protuberance large, with 2 pairs of eyes, dorsal pair very large; palps 4X length of prostomium. *Aphrodita californica*  
Essenberg, 1917  
(Coronado, CA)  
\*synonymized w/ *A. castanea* & *A. negligens*
- 13b. Median antennae with a short ceratophore; prostomium globular (length slightly > width); ocular protuberance only slightly raised, with 1-2 pairs of eyes; palps 6X length of prostomium. \*\*(should be a larger individual)\*\* *Aphrodita japonica*  
Marenzeller, 1879  
(Japan)

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