



**LOS ANGELES COUNTY
SANITATION DISTRICTS**
Converting Waste Into Resources

Voucher Sheet

B. Haggin

July 2026



P-Code – P132

ITI – none assigned

Cossura brunnea Fauchald, 1972

Synonyms: none

Family: Cossuridae

Infraclass: Scolecida

Subclass: Sedentaria

Class: Polychaeta

Phylum: Annelida

Diagnostic Characters: (*sensu* Fauchald {1972} & Hilbig {1996})

- Prostomium broadly triangular
- Branchial filament arising from middle of chaetiger 3 (Images A & H)
- Thorax with 16 – 18 chaetigers
 - Unsure if this includes transitional chaetigers
- Pygidium with 3 very long pygidial cirri (Image G)
- Often with brown pigmentation when preserved

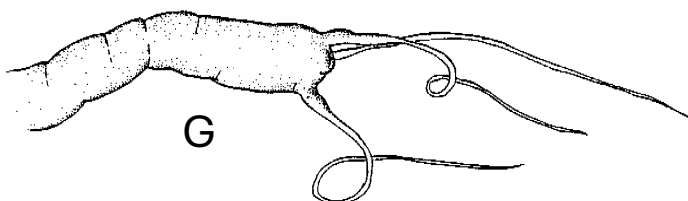
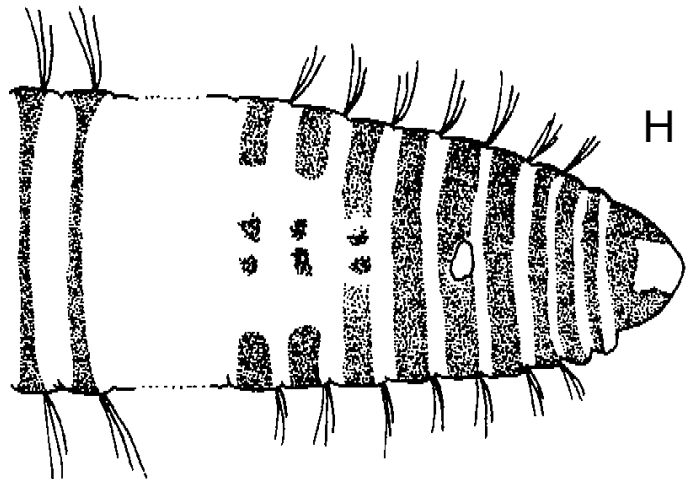
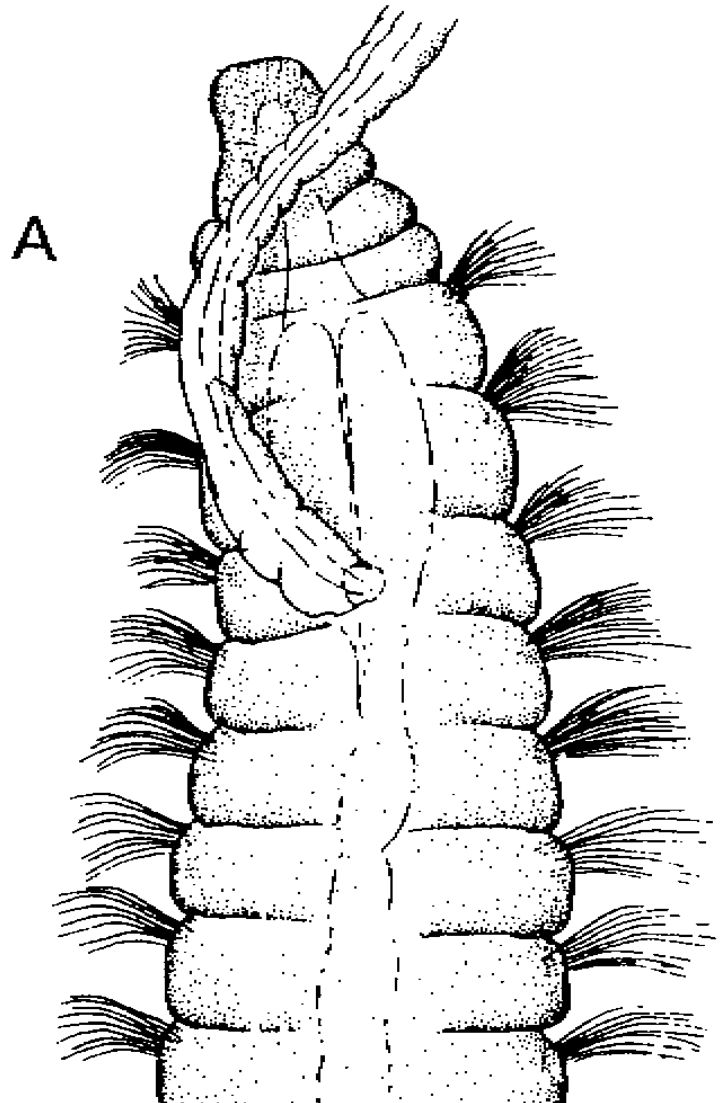
Pigmentation/Methyl Green Stain Pattern: (*sensu* Fauchald {1972} & Hilbig {1996})

- Color in alcohol light to mottled dark brown
 - Pigmentation concentrated in anterior thorax (Hilbig)
 - Has a dark pigment pattern over the median and posterior parts of the body (Fauchald)
- Sides and posterior of prostomium staining, leaving large area unstained (Image H)
- Broad dorsal bands through chaetiger 4, breaking into dorsolateral & poorly defined middorsal patches (Image H)
 - Becoming continuous but narrow bands in anterior abdomen, becoming ventrolateral & midventral patches (Images H & I)
- Lateral stain connects behind chaetal fascicle (Image J)

Material Examined:

No specimens available for examination

All images modified from Hilbig (1996)

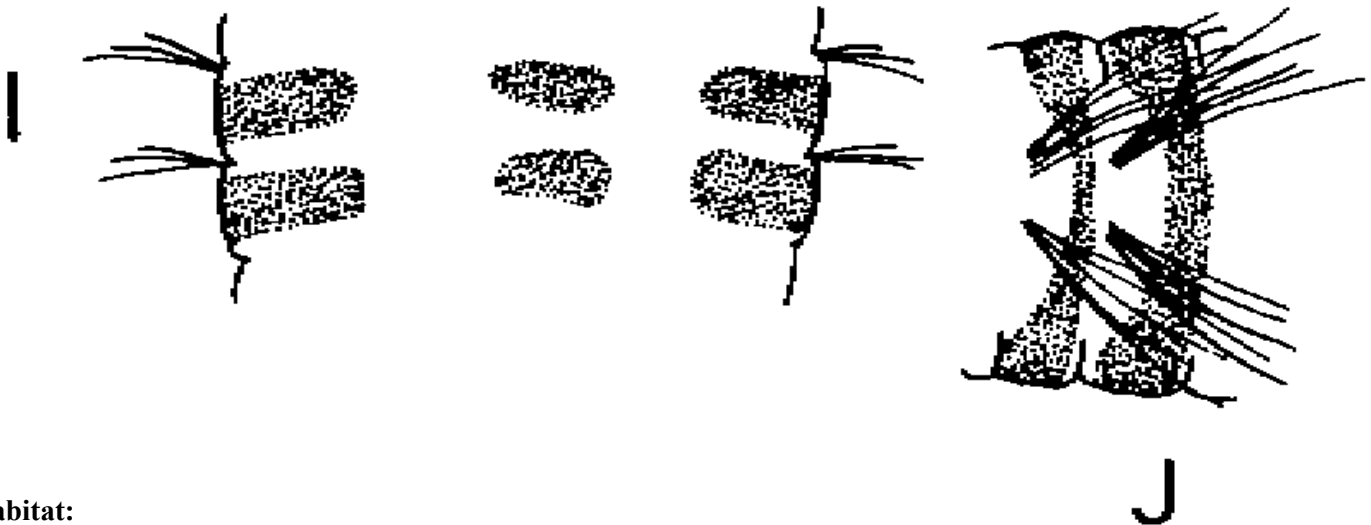




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Habitat:

Cossura brunnea was originally described from the Gulf of California off Isla Tortuga from a depth of 1793m in mixed sediments. In the Pacific it has a range from Oregon to western Mexico and in the Atlantic from New England to North Carolina. This is a deep-water organism found from 1600-2200m and is likely only to be encountered during Bight surveys.

Similar Species:

Cossura bansei Hilbig, 1996—*Cossura bansei* is similar to *Cossura brunnea* in having the branchial filament inserted posterior to the chaetal fascicle of chaetiger 3. The two species differ in most other respects. *Cossura bansei* has 20-31 thoracic chaetigers while *Cossura brunnea* has only 16-18 thoracic chaetigers. *Cossura bansei* has thoracic stain patches that do not connect laterally behind the chaetal fascicle, and the stain pattern of the posterior thoracic segments remains as dorso- and ventrolateral patches, not becoming bands across the dorsum. *Cossura brunnea* has thoracic stain patches that connect laterally behind the chaetal fascicle, and the dorsum of posterior thoracic segments has thin continuous bands. *Cossura bansei* is a shelf and upper slope animal, reported from 23-301m.

Cossura candida Hartman, 1955—*Cossura candida* is similar to *Cossura brunnea* in the insertion of the branchial filament posterior to the 3rd chaetal fascicle, and in having dorso- and ventrolateral stain patches that connect laterally behind the chaetal fascicles. The two differ in the number of thoracic chaetigers, 24-35 in *C. candida* and only 16-18 in *C. brunnea*. The abdomen of *Cossura candida* does not retain stain but *Cossura brunnea* retains narrow dorsal bands in the anterior abdomen. The type of *Cossura candida* is from 14 m inside Los Angeles Harbor but has been reported down to 2478m.

Cossura modica Fauchald & Hancock, 1981—*Cossura modica* is the only local cossurid with its branchial filament inserted on the 4th chaetiger. *Cossura modica* has 14-26 thoracic chaetigers compared to 16-18 in *Cossura brunnea*, though it is unclear if the counts of thoracic chaetigers include transitional chaetigers so the range of *Cossura brunnea* may increase the overlap. *Cossura modica* and *C. brunnea* both have lateral stain that connects behind the chaetal fascicle. The pygidial cirri of *Cossura modica* are short while the pygidial cirri of *Cossura brunnea* are very long. *Cossura modica* was described from deep-water off Oregon and has a reported depth range of 985-2955m.



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Similar Species:

Cossura pygodactylata Jones, 1956—*Cossura pygodactylata* is similar to *Cossura brunnea* in the number of thoracic chaetigers, 13-21 in *C. pygodactylata*, usually 17-18, and 16-18 in *C. brunnea*. The two species differ in the insertion of the branchial filament, the posterior of chaetiger 2 in *C. pygodactylata* and the middle of chaetiger 3 in *C. brunnea*. If specimens are complete, *Cossura pygodactylata* has 3 long anal cirri and 6-10 short pairs of short cirri on the pygidium. *Cossura brunnea* lacks the additional short cirri. *Cossura pygodactylata* has scattered dorso- and ventrolateral stain patches in the thorax that do not connect laterally behind the chaetal fascicle while they are very dark and connect laterally in *Cossura brunnea*. *Cossura pygodactylata* was originally described from San Francisco Bay and has a reported range of 1-2720m and spans the North Pacific from Japan to central California and the North Atlantic from South Carolina to western France. See additional comments on the *Cossura pygodactylata* voucher sheet.

Cossura rostrata Fauchald, 1972—*Cossura brunnea* is most similar to *Cossura rostrata* in having the branchial filament inserted on chaetiger 3, however it is inserted in the middle of the segment, posterior to the chaetal fascicle, rather than anterior to it as in *Cossura rostrata*. The anterior thoracic stain is also similar in both species, having an intense, alternating banded appearance, and lateral stain that connects laterally behind the chaetal fascicle. The two begin to differ in the posterior thorax where *Cossura rostrata* has a continuous ventral band and a mid-dorsal gap while the ventrum of *Cossura brunnea* has mid-ventral patches and the dorsum has thin continuous bands. The two species also differ in the number of thoracic chaetigers, with *Cossura rostrata* having 29-36 and *Cossura brunnea* having only 16-18 thoracic chaetigers. *Cossura rostrata* has been reported from Oregon to western Mexico from 6-3348m. See additional comments on the *Cossura rostrata* voucher sheet.

Cossura sp A SCAMIT, 2025 §—*Cossura* sp A differs from *Cossura brunnea* in most respects. *Cossura* sp A has 24-30 thoracic chaetigers, has the branchial filament arising from the intersegmental furrow of chaetigers 2 & 3, the thoracic stain patches do not connect laterally behind the chaetal fascicle, and the stain pattern of the posterior thoracic segments remains as dorso- and ventrolateral patches, not becoming bands across the dorsum. *Cossura brunnea* has only 16-18 thoracic chaetigers, has the branchial filament inserted in the middle of chaetiger 3, posterior to the chaetal fascicle, the thoracic stain patches connect laterally behind the chaetal fascicle, and the posterior thoracic segments have ventrum has mid-ventral patches and the dorsum has thin continuous bands. *Cossura* sp A is reported from 8-305m.

Cossura sp LA2 Haggin, 2025 §—*Cossura* sp LA2 differs from *Cossura brunnea* in having the branchial filament inserted anterior to the 3rd chaetal fascicle rather than in the middle of chaetiger 3, posterior to the chaetal fascicle as in *Cossura brunnea*. The anterior thoracic stain is also different between the species, having a dark prostomium, unstained peristomium and lightly staining pre-branchial region in *Cossura* sp LA2 and dorso- and ventrolateral stain patches that do not connect laterally behind the chaetal fascicles, compared to an intense, alternating banded appearance, and lateral stain that connects laterally behind the chaetal fascicle in *Cossura brunnea*. They also differ in the stain of the posterior thorax, with a continuous dorsal and ventral band leaving only a lateral gap in *Cossura* sp LA2 and mid-ventral patches and a dorsum with thin continuous bands in *Cossura brunnea*. The two species also differ in the number of thoracic chaetigers, with *Cossura brunnea* having only 16-18 thoracic chaetigers compared to 32-33 in *Cossura* sp LA2. *Cossura* sp LA2 is currently known only from bays and harbors, being report from 8m in LA/LB Harbor and 7m from Newport Bay.



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Discussion:

The most recent diagnosis of the genus *Cossura* was given by Liñero-Arana & Díaz-Díaz (2010) and is provided below.

Diagnosis: Prostomium pointed or rounded anteriorly or with well developed anterior lateral horns. Peristomium subdivided by a dorsal transverse furrow. Single branchial filament arising middorsally between segments 2 and 5. Simple capillary bilimbate or hirsute and heavy sickle-shape setae.

None of the descriptions for *Cossura brunnea* include counts of transitional chaetigers in the thorax so it is unclear if the thorax of *C. brunnea* has only 16-18 chaetigers or if it should have more. Characters such as location of branchial filament insertion and methyl green stain patterns should be used to distinguish this organism until additional material can be evaluated.

Cossura brunnea is an extremely deep-water organism with a restricted depth range of 1600-2200m. Local reports must have come from a Bight survey and would represent a depth expansion of at least 700m. This record should be confirmed for continued inclusion in the SCAMIT Species List.

Anterior fragments of less than 35 chaetigers, or even whole animals with inconclusive stain patterns should be identified as *Cossura* sp. The P-code assigned is a generic code assigned to all members of the genus.

References:

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Fauchald, K. & Hancock, D. R. 1981. Deep-Water Polychaetes from a Transect off Central Oregon. *Allan Hancock Foundation Monograph* 11: 1-73.

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Liñero-Arana, I. & Díaz-Díaz, O. 2010. A new species of Cossuridae (Annelida: Polychaeta) from Venezuela. *Interciencia* 35(10): 789-792.

Rowe, R. C. 1995. *Cossura* species of Pt. Loma. *SCAMIT Handout*.

Other Literature Consulted:

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Version History:

Version 1.0 – Voucher sheet created (16JUL2026 – BMH)