Ophelia assimilis

A sand worm

Phylum: Annelida
Class: Polychaeta
Order: Opheliida
Family: Ophelidae

Description

Size: Individuals up to 33 mm in length and 4 mm in width (Hartman 1969). The described specimen (Fig. 1) was 22 mm in length.
Color: Specimens collected in Coos Bay are white or pink iridescent.
General Morphology: Fusiform (cigar-shaped) and weakly segmented, with 33 setigers (Blake and Ruff 2007).
Body: Unlike in other Opheliids, the body of *Ophelia assimilis* is not clearly regionated, although anterior ten setigers are abranchiate (Fauchald 1977; Blake and Ruff 2007).

Anterior: Anterior region inflated slightly. Ventral depression present, but not a true groove (Fig. 2). Prostomium pointed and triangular (Fig. 1).

Trunk: A mid-ventral groove is present from setiger eight to posterior (*Ophelia*, Fauchald 1977) (Fig. 2).

Posterior: Last three setigers with paired prominent dorsolateral ridges (Hartman 1969) (Fig. 3). Pygidium consists of a pair of large ventral lobes and about 11 smaller subglobular lobes in two crescents above the anal pore (Hartman 1969) (Fig. 3).

Parapodia: Low folds, biramous. Parapodia on first setiger are small and inconspicuous while the remaining setigers are larger. Interramal pores present. Middle parapodia ventrolateral and with crenulated branchiae (Fig. 4).
Setae (chaetae): All capillary and simple (Opheliidae, Fauchald 1977). Notosetae longer than neurosetae (Hartman 1969) (Fig. 4).
Eyes/Eyespots: None.
Anterior Appendages: None.
Branchiae: No branchiae on first 10 setigers or four posterior-most setigers (postbranchiate) between which there are 19 branchiate setigers (Fig. 1). The branchiae often disintegrate in preservation.
Burrow/Tube: *Ophelia assimilis* is an active burrower and does not inhabit a permanent burrow.
Pharynx: Bears an eversible and sack-like proboscis (not shown) which is unarmed and probably used for digging (Dales 1967).
Genitalia:
Nephridia: Six pairs of nephridiopores present on setigers 11–16 (branchial segments 2–7) (not shown).

Possible Misidentifications

Among the Opheliidae, there are at least six genera in our area, all of which are sand or mud dwellers with limited segmentation, simple prostomia, biramous parapodia and capillary setae.

Travisia spp. are cigar-shaped, without a ventral groove, but with branchiae and their posterior parapodia have large lobes.

Polyophthalmus spp. have a ventral groove along the whole body length, no branchiae but lateral eyes. They have a short anal tube with small anal cirri (Fauchald 1977).

Ophelia spp. have a fusiform body morphology, inflated anterior and posterior ventral groove. They generally have branchiae on setigers 8–10.

Armandia spp. have a ventral groove along the whole body length, cirriform branchiae, lateral eyes and a long slender anal tube with paired long and internally attached ventral cirri and shorter dorsal cirri. *Armandia brevis* is the only local species in the genus *Armandia*.

Thoracophelia (= *Euzonus*) spp. live on clean sandy beaches and have three distinct body regions, an inflated anterior set off from the thoracic region with a marked

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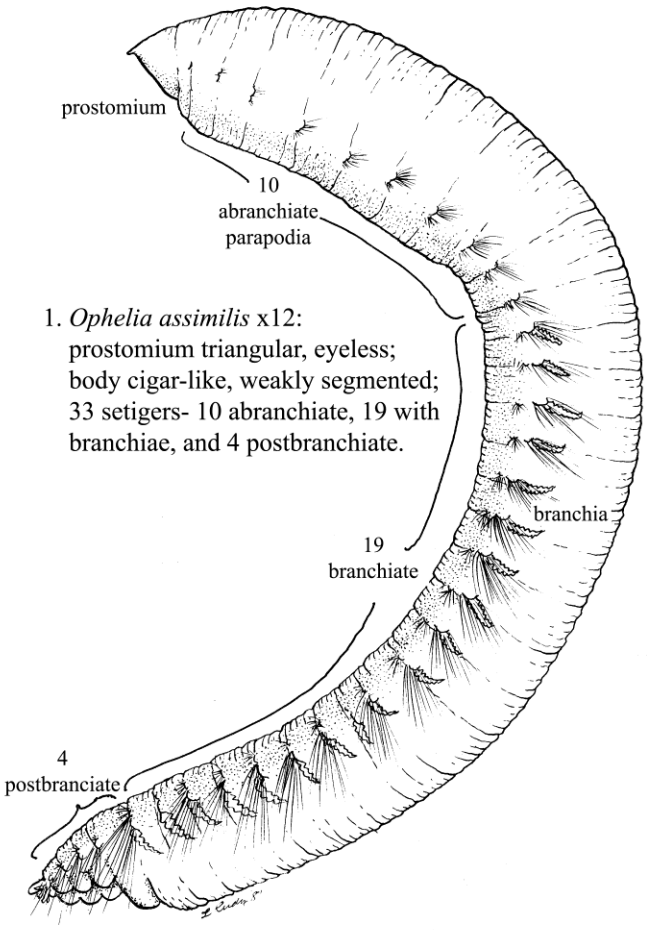
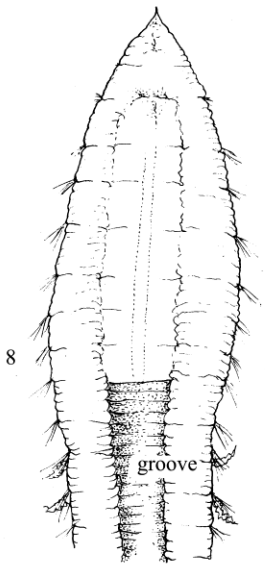
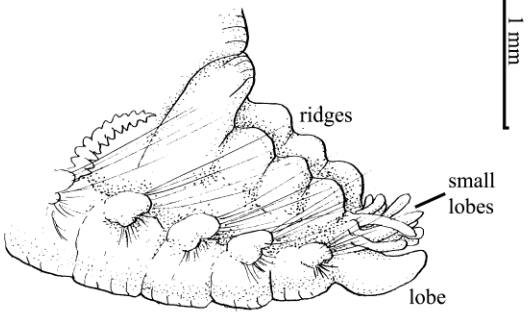
Ophelia assimilis



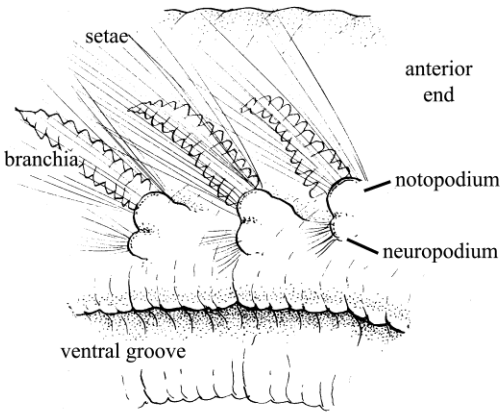
1. *Ophelia assimilis* x12:
prostomium triangular, eyeless;
body cigar-like, weakly segmented;
33 setigers- 10 abranchiate, 19 with
branchiae, and 4 postbranchiate.



2. Deep groove (anterior,
ventral view) x12: from setiger 8.



3. Pygidium (lateral view) x30:
3 dorsolateral ridges; a pair of
ventral lobes; smaller lobes above.



4. Some medial parapodia x30:
biramous parapodia, long notosetae;
crenulated branchiae.

constriction and a narrow posterior with branchiae and a ventral groove.

Ophelina (= *Ammotrypane*) spp. are recognizable by a ventral groove along the whole body length (Fauchald 1977), cirriform branchiae only on posterior setigers, no lateral eyes and a long narrow anal tube with two internally attached ventral cirri (ibid). Two species occur in our area: *O. assimilis* and *O. pulchella* (Blake and Ruff 2007). *Ophelia pulchella* has 38 setigers, is 19–23 mm long. This species can be recognized from *O. assimilis*; it has nine abranchiate anterior setigers, rather than 10 (Hartman 1969). It has a long conical prostomium and long flowing tufts of setae.

Ecological Information

Range: Type locality is Pacific Grove, California. Known range includes Oregon to California.
Local Distribution: Coos Bay, near bay mouth and Netarts Bay (Stout 1976).
Habitat: Clean sandy beaches. In Coos Bay, on spit near bay mouth in nearly marine conditions. Often found where current is strong (Wilson 1948).
Salinity: Found in full strength seawater (salinity 30).
Temperature:
Tidal Level: Intertidal, occurring at mid tide level where it is uncovered several hours each tide (England, Wilson 1948).
Associates: The razor clam, *Siliqua patula,* and olive snails (Olivellidae).
Abundance: Not common, but can be abundant locally and may have a narrowly dense distribution as in other local Opheliidae species.

Life-History Information

Reproduction: Eggs and sperm spawned into water. In similar species *O. bicornis* ripe eggs are dark green/brown.
Larva: Little is known about the larvae of *O. assimilis*. The larvae of *O. bicornis*, however, are trochophores with wide prototrohc and fairly short pelagic duration; metamorphosis occurs by day 19 as larvae attach to substrate by four anal papillae and parapodial lobes (Wilson 1948).
Juvenile:
Longevity:
Growth Rate:
Food:
Predators:
Behavior:

Bibliography

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