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# *Armandia brevis*

Phylum: Annelida

Class: Polychaeta, Sedentaria, Scolecida

Order:

Family: Opheliidae

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**Taxonomy:** *Armandia bioculata* (Hartman 1948), once thought to be a separate species, was synonymised with *A. brevis* in 1975 (Blake).

## Description

**Size:** Individuals 7–25 mm in length and 1–1.5 mm in width (Hermans 1977). The illustrated specimen is 1–2 cm in length (Fig. 1).

**Color:** Pale flesh color to orange red, rather transparent.

**General Morphology:** With 29–30 segments, body slender and somewhat stiff (personal communication, R. Boomer) and tapers dramatically at anterior and posterior.

**Body:** Recognizable by a ventral groove, sleek body and lateral eyespots.

**Anterior:** Prostomium cone-shaped and sharply pointed, with small terminal palpode, nuchal organs (Fig. 3) and three prostomial eyes (Hermans 1977).

**Trunk:** A distinct ventral groove runs the entire body length (Fig. 1).

**Posterior:** Pygidium elongated and pointed with a long and unpaired cirrus and eight short papillae (Blake and Ruff 2007) (Fig. 4).

**Parapodia:** Small biramous parapodia are present on 29 setigers (Blake and Ruff 2007).

**Setae (chaetae):** Bundles of chaetae on noto- and neuropodia are simple and colorless (Hermans 1977). Notosetae are twice as long as neurosetae.

**Eyes/Eyespots:** Three eyes on prostomium (Hermans 1977). Eleven pairs of dark eyespots exist laterally on body segments 7–17. They are dark, paired and located near the branchiae (Fig. 2).

**Anterior Appendages:** Anterior feeding palps present (Fig. 3).

**Branchiae:** Present from the second segment posterior, cirriform (1 mm in length) and simple. Branchiae curl dorsally (Hermans 1977).

**Burrow/Tube:** *Armandia brevis* is an active burrower and does not inhabit a permanent burrow.

**Pharynx:** Proboscis is used to ingest particle and is slipper-shaped and tongue-like (Hermans 1977).

**Genitalia:** Small slits that only open when spawning (Hermans 1977).

**Nephridia:** Eleven pairs in segments 14–24, nephridiopores lacking (Hermans 1977).

## 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.

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

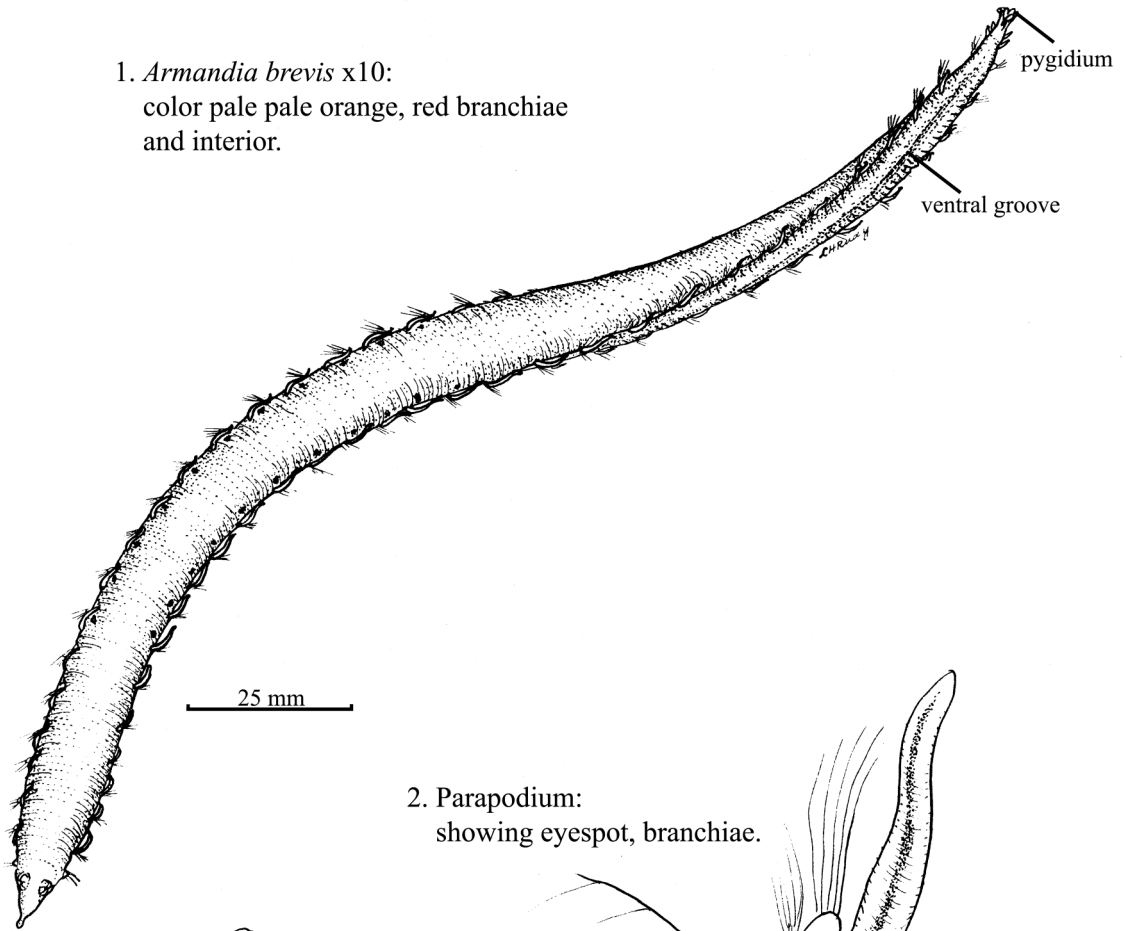
*Ophelina* (= *Ammotrypane*) spp. have a ventral groove along the whole body length (Fauchald 1977), cirriform branchiae only on posterior setigers, no lateral eyes and a long narrow anal tube with two internally attached ventral cirri (ibid).

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

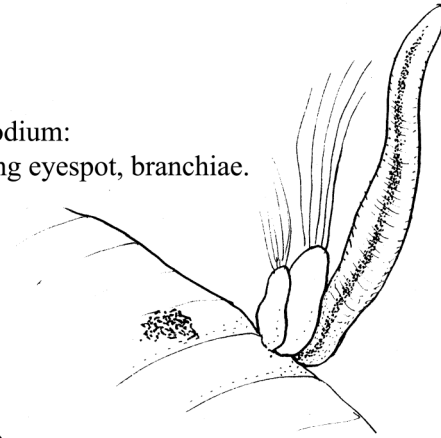
*Polyophthalmus* spp. have a ventral groove along the whole body length, no bran-

# Armandia brevis

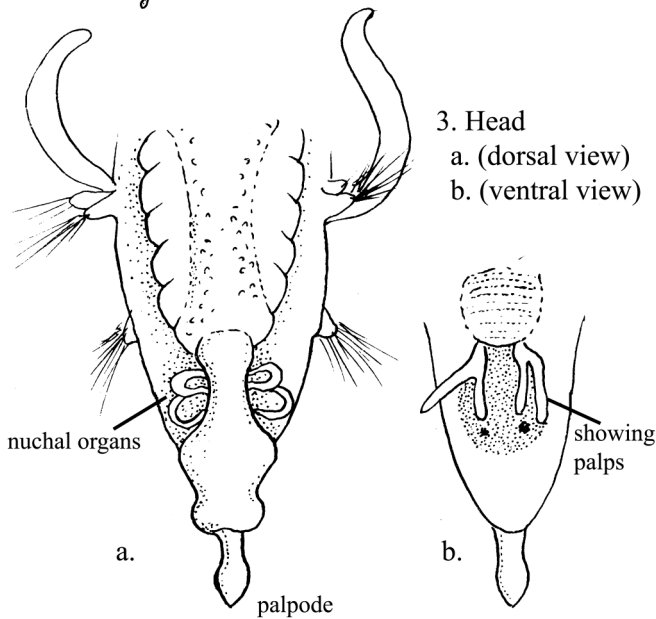
1. *Armandia brevis* x10:  
color pale pale orange, red branchiae  
and interior.



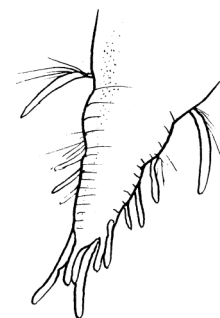
2. Parapodium:  
showing eyespot, branchiae.



3. Head  
a. (dorsal view)  
b. (ventral view)



4. Pygidium (dorsal view):  
with long cirri.



chiae 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. can be differentiated from other genera by 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*.

### Ecological Information

**Range:** Type locality is Alaska and the known range now extends to California.

**Local Distribution:** Found in South Slough of Coos Bay and at Cape Arago (Hartman and Reish 1950).

**Habitat:** Sandy mud (e.g. Metcalf Preserve on South Slough) and loose sand (Ricketts and Calvin 1971).

**Salinity:**

**Temperature:**

**Tidal Level:** Shore to 73 m in Alaska and +0.36 m in Coos Bay (South Slough) and Puget Sound (Woodin 1974).

**Associates:** *Pista pacifica* and other small polychaetes as well as the amphipod *Corophium brevis*.

**Abundance:** 720/m (Hartman 1944) in Mitchell Bay (San Juan Islands, WA) (Woodin 1974).

### Life-History Information

**Reproduction:** Ripe epitokous individuals free spawn gametes at night in April–November (WA, Woodin 1974; Hermans 1977) which are fertilized in the water column. Newly fertilized eggs are spherical and 50 µm in diameter, undergo classic spiral cleavage and become swimming blastulae after 12 hours (11–13°C, Hermans

1977).

**Larva:** Planktotrophic trochophore larvae develop in less than two days and are competent to metamorphose after 3–7 weeks (20 segments, Hermans 1977). See Hermans 1977 for description of larval development and metamorphosis.

**Juvenile:** Growth is rapid where nine segments are added and reproduction begins six weeks post settlement (Fernald et al. 1987).

**Longevity:** Individuals reach sexual maturity at six weeks at which point they spawn and die (Hermans 1977; Fernald et al. 1987).

**Growth Rate:** Up to 2–3 generations per summer (Hermans 1966).

**Food:** A deposit feeder (Hermans 1966), ingesting sediment while burrowing with an eversible pharynx (Ruppert et al. 2004).

**Predators:** *Cancer magister*.

**Behavior:** As is true for other members of the Opheliidae, *A. brevis* is an active and rapid burrower, usually within 3 cm of the surface, a behavior which aids in escape from predators. Individuals can swim through loose sand as rapidly as some worms are able to swim in water (MacGinitie 1935 in Ricketts and Calvin 1952).

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