

Parchment worm

Phylum Annelida
Class Polychaeta
Family Chaetopteridae

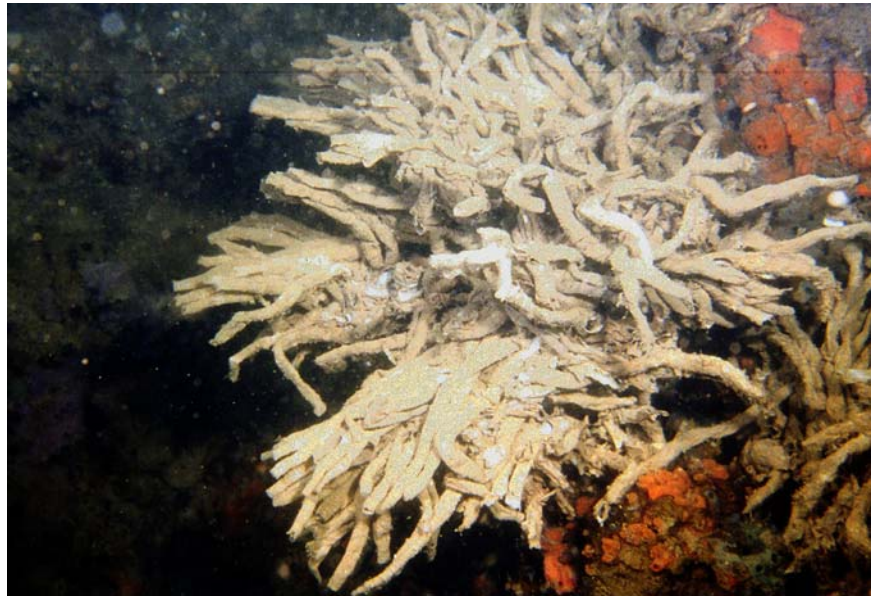
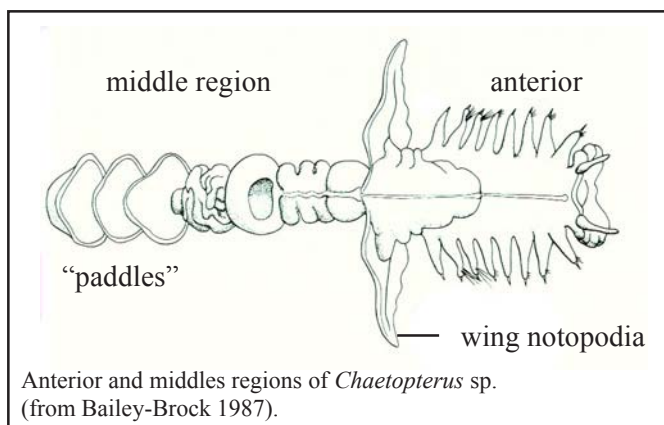


Photo J. Hoover

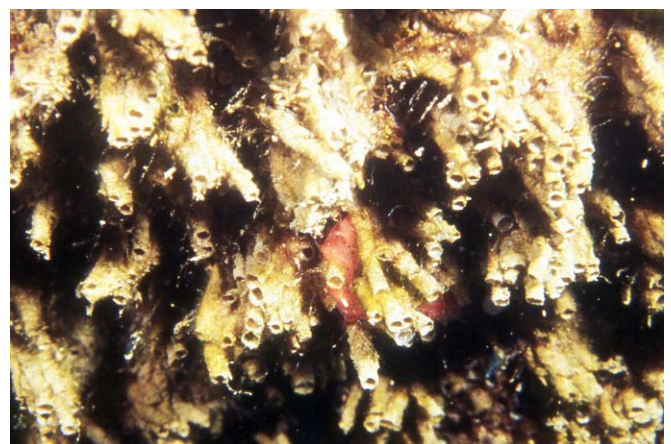
DESCRIPTION

These large worms live in tough tubes (often described as parchment-like) that are usually coated with fine mud. The body of this species is divided into 3 regions. The anterior region has 8 to 12 segments and a pair of short, tapered palps and a pair of eyes. The middle region is made up of segments, the second of which has a pair of winglike notopodia; the third, fourth and fifth have fan-shaped paddles. The posterior region has 9 to 20 or more segments bearing sticklike notopodia with knobbed ends. The middle and posterior regions are green or black. Tubes are approximately 8 to 12 cm long and 0.5 cm to 1 cm wide (from Bailey-Brock 1987).



HABITAT

Aggregations typically occur in shallow, silty water attached to solid substrates such as rock, coral rubble, and pier pilings, but can occasionally be found in a variety of reef habitats. Clumps of worms tubes are also found partially buried in sediments in protected areas.



Close-up of *Chaetopterus* tubes (photo J. Hoover).

DISTRIBUTION

HAWAIIAN ISLANDS

Throughout main Hawaiian Islands, especially in harbors and embayments

NATIVE RANGE

Unknown

PRESENT DISTRIBUTION

Probably worldwide in warm and temperate seas

MECHANISM OF INTRODUCTION

Unintentional, as fouling on ships' hulls or planktonic larvae in ballast water

IMPACT

Fouling organism. Ecological impact unstudied, but observations suggest competition for space with other invertebrates. In some areas (e.g., Pearl Harbor), *Chaetopterus* can form dense monospecific aggregations which undoubtedly affect the abundance and distribution of animals in the habitat.

ECOLOGY

Feeding

Chaetopterus live in irregularly U-shaped tubes through which they pump water, filtering out organic particles with a mucus bag that acts as a sieve. Nodopodial paddles create the water current through the tube, while other segments bear suckers to help anchor the worm in position. When the mucus bag becomes clogged with particles, it is rolled into a ball, passed to the mouth by a ciliary tract and ingested, then a new bag is produced.

Reproduction

Certainly contributing to its success as an invader is the chaetopterids power of regeneration. Any single segment from among the first 14 can regenerate anteriorly and posteriorly to produce a complete worm. Chaetopterid worms are dioecious (having separate sexes). Gametes arise from proliferation of cells from the peritoneum, these cells are released into the coelom where they mature, before being released. After a short time in the plankton, the trochophore larvae settle and mature.

REMARKS

Bailey-Brock (1976) noted that *Chaetopterus* sp. was abundant in Kaneohe Bay on the alga *Dictyosphaeria cavernosa*. Bailey-Brock (1987, as *C. variopedatus*) noted it was also "a frequent component of fouling communities". Coles et al. (1999) record its continued presence in Pearl Harbor (1996 collections). It was not, curiously, reported in Hartman (1966) nor in the works of Edmondson, covering the biota of the Islands up to the 1940s. It may have been introduced during or after World War II, or indeed even much later in the 1960s or early 1970s. We regard it as cryptogenic.

REFERENCES

- Bailey-Brock, J.H. 1976. Habitats of tubicolous polychaetes from the Hawaiian Islands. *Pacific Science*. 30:69-81.
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- Hartman, O. 1966. Polychaetous annelids of the Hawaiian Islands. *Occ. Pap. B.P. Bish. Mus.* 33(11): 163-252.