

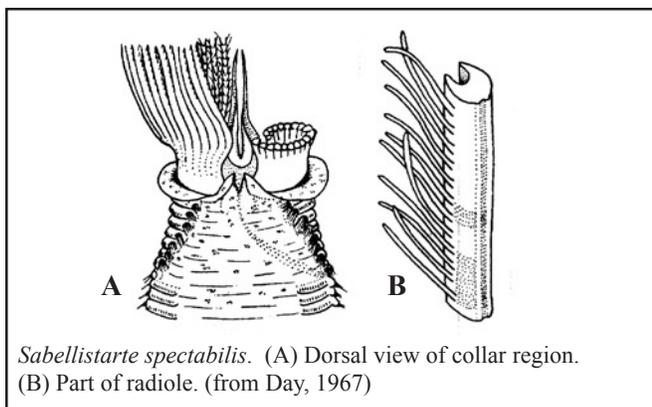
## Featherduster worm, Fan worm

Phylum Annelida  
Class Polychaeta  
Family Sabellidae



### DESCRIPTION

This large species attains 80 mm or more in length and 10 to 12 mm in width. The entire body of the worm is buff colored with flecks of purple pigment. These worms inhabit tough, leathery tubes covered with fine mud. Radioles (branched tentacles) lack stylodes (small finger-like projections on the tentacles of some sabellids) and eyespots and are patterned with dark brown and buff bands. There is a pair of long, slender palps and a 4-lobed collar. These worms are very conspicuous on reef flats and harbor structures because of their large size and banded pattern of the branchial crowns (from Bailey-Brock, 1987).



### HABITAT

Abundant on Oahu's south shore reefs, and in Pearl Harbor and Kaneohe Bay at shallow depths, especially in dredged areas that receive silt-laden waters. Also found in pockets and crevices in the reef flat. It is especially abundant along the edges of reefs that have been dredged, as at Ala Moana and Fort Kamehameha, Oahu; it may be an indicator of waters with high sediment content (Bailey-Brock, 1976). Reported from a wide variety of coastal habitats (e.g., in holes, crevices, and matted algae at outer reef edges of rocky shores, from interstices of the coral *Pocillopora meandrina*; from under boulders in quiet water, in crevices in lava, in open coast tide pools, and from tidal channels exposed to heavy surf).

### DISTRIBUTION

#### HAWAIIAN ISLANDS

Shallow water throughout main islands

#### NATIVE RANGE

Red Sea and Indo-Pacific

#### PRESENT DISTRIBUTION

Western Africa, Red Sea, India, Indo-Pacific, Japan, New Caledonia, Hawaiian Islands

#### MECHANISM OF INTRODUCTION

Unintentional, probably as fouling on ships hull.

## IMPACT

Fouling organism and popular aquarium species.  
Ecological impact unstudied, but most likely minimal.

## ECOLOGY

### Feeding

Sabellids are suspension feeders. Cilia on the tentacles create a current that draws water and food particles to the worm. The particles are captured, sorted, and carried with mucus along a series of tracts and grooves to the mouth. Large particles are stored for use in tube building.

### Reproduction

Sabellid worms can reproduce asexually by fragmentation, and can also regenerate lost body parts, including the large branchial crown. These 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. Fertilization is external, and after a short time in the plankton, the trochophore larva settles and matures.

## REMARKS

This large and distinctive sabellid, has had a complex taxonomic history. It is not noted in the Hawaiian biota until after World War II. There is no material in Bishop Museum collections prior to 1946, nor is there any mention of it in the literature until 1966. It does not appear (either by name or by description) in Edmondson's books (1933, 1946), nor is it mentioned in the early fouling studies of Pearl Harbor, an environment with which Edmondson was very familiar.

On the assumption that such a large fouling species would not be overlooked, we treat it here as introduced. Since 1966, it has been treated in the Hawaiian literature as *Sabellastarte sanctijosephi*, a species originally described from the Red Sea and regarded as occurring

from western Africa to the Indo-Pacific and up to Japan (Day, 1967). Hartman (1966) also synonymized *S. punctata* under *S. sanctijosephi*, the former species having been collected during the Albatross expedition in 1902 at Puata Bay and Waialea, Oahu (Hartman, 1966, as *S. indica*). Hartman (1966) noted that R. W. Hiatt collected it in 1946 at Halape, Hawaii, from a wide variety of coastal habitats. It has since been widely reported throughout the main islands.

Knight-Jones (pers. comm.) has revised the taxonomy of this worm as shown above, assigning the name *S. spectabilis* (originally described from the Philippines) to the large Hawaiian worm and resurrecting *S. punctata* as a distinct, smaller species. With this resolution, the 1902 records dissolve; in addition, it is not clear which of the above records — which range from harbor fouling habitats to open coast reef sites — would be reassignable to which species. We tentatively interpret the harbor and dredged channel populations, at least, to represent *S. spectabilis*.

## REFERENCES

- Bailey-Brock, J.H. 1976. Habitats of tubicolous polychaetes from the Hawaiian Islands. *Pacific Science*. 30:69-81.
- Bailey-Brock, J.H. 1987. Phylum Annelida. in: Reef and Shore Fauna of Hawaii, Section 2: Platyhelminthes through Phoronida and Section 3: Sipuncula through Annelida, D.M. Devaney and L.G. Eldredge (eds). Bishop Mus. Spec. Pub. 64(1 and 3): 216-454.
- Day, J.H. 1967. A monograph of the Polychaeta of Southern Africa. Part 1 and 2. *British Mus. Nat. Hist*, London.
- Edmondson, C.H. 1933. Reef and Shore Fauna of Hawaii. B.P. Bishop Mus. Spec. Pub. 22.
- Edmondson, C.H. 1946. Reef and Shore Fauna of Hawaii, 2nd ed. B.P. Bishop Mus. Spec. Pub. 22.
- Hartman, O. 1966. Polychaetous annelids of the Hawaiian Islands. *Occ. Pap. B.P. Bishop Mus.* 33(11): 163-252.