Gelliodes fibrosa

(Wilson, 1925)

Gray encrusting sponge

Phylum Porifera
Class Demospongiae
Order Haplosclerida
Family Niphatidae

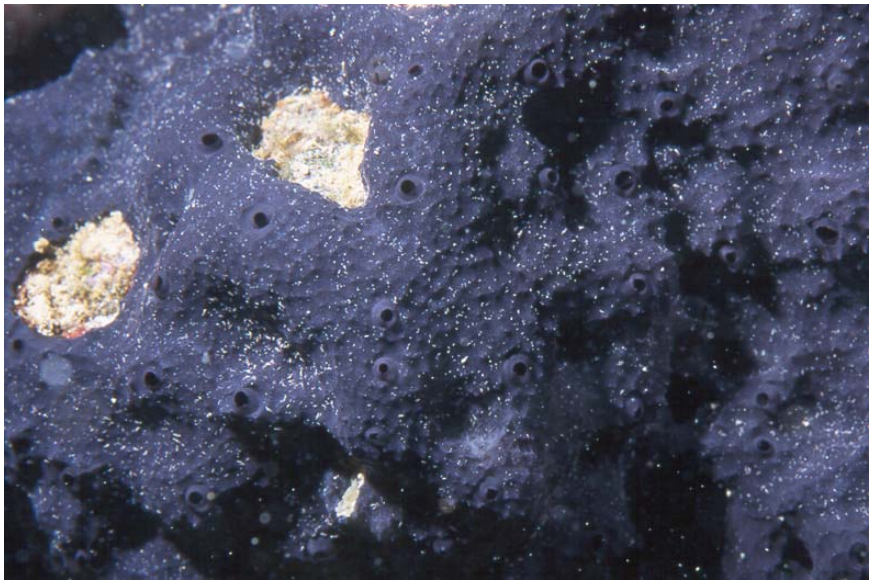


Photo by R. DeFelice

Description

Growth Form

Most commonly occurring morphology is a thickly encrusting mat with anastomosing and meandering branches, some branches may be erect.

Color

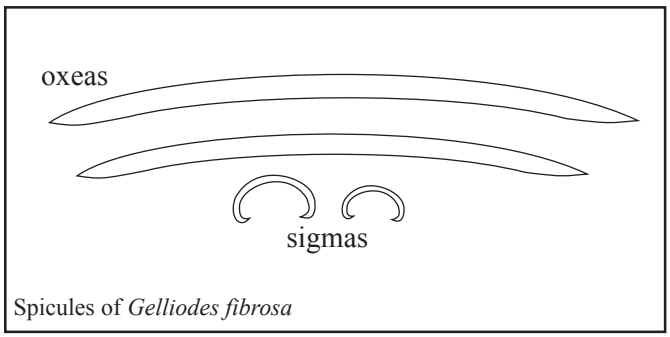
Exterior color is blue-gray, interior grayish beige.

Texture and Surface Features

Spongy, fibrous, elastic, tough. Surface is variable, smooth to irregularly conulose, with protruding tufts of fibers.

Spicules

Megascleres: curved oxeas (160-180 μm)
Microscleres: small sigmas (15 μm)



Spicules of *Gelliodes fibrosa*

Habitat

In the Hawaiian Islands, *G. fibrosa* is mainly restricted to shallow-water fouling communities (i.e. pier pilings, floating docks) of the major harbors or associated disturbed habitats (i.e. dredged channels and artificial lagoons) on Oahu, Kauai and Maui. In Kaneohe Bay, *G. fibrosa* is found on patch reefs in southeast corner of the Bay as well as the fouling community on Coconut Island floating docks. On patch reefs, it is typically found encrusting the shaded underside of plate corals.

Branching morphology of *Gelliodes fibrosa* (photo R. DeFelice).

Gelliodes fibrosa

Distribution

Hawaiian Islands

Oahu - leeward coast harbors, and Kaneohe Bay
Maui - Kahului Harbor
Kauai - Nawiliwili Harbor

Native Range

Philippines

Present Distribution

Philippines, main Hawaiian Islands, and possibly Guam

Mechanism of introduction

Unintentional introduction, as fouling on ships' hulls

Impact

Fouling organism. Ecological impact unstudied, but observations suggest competition for space with native invertebrates. Possible threat to corals in protected habitats, such as Kaneohe Bay.

Ecology

Feeding

Sponges are filter feeders, continuously circulating water through their bodies. Microscopic food particles are removed from water by specialized collar cells. Digestion is intracellular (phagocytosis and pinocytosis).

Reproduction

Like most sponges, *G. fibrosa* is probably capable of asexual reproduction by fragmentation of the adult. Details regarding sexual reproduction of this species are unknown. (See **Reproduction** of *Sigmadocia caerulea* for general description of sponge reproduction.)

Remarks

Although the holotype remains to be examined, spiculation and skeletal details of the Hawaiian specimens agree well with *Gelliodes fibrosa* (Wilson 1925) first described from the Philippines and then later by de Laubenfels (1935). This species is not recorded elsewhere to date in the Indo-Pacific except the Philippines. This sponge was found to be abundant in 1997 on hull of a floating dry-dock in Pearl Harbor, Oahu brought from the Philippines in 1992. *G. fibrosa* was also recently transported to Guam (1999) on the hull of the very same dry-dock, but it's current population status there is unknown.

We consider this abundant and conspicuous species to be nonindigenous and it's presence in the Hawaiian Islands to be the result of a recent unintentional introduction, probably as fouling on the hull of a ship or floating dry-dock. It currently occurs in areas that have been extensively surveyed by sponge experts de Laubenfels (1940s and 50s) and Bergquist (1960s), and could not have been overlooked. It has become established in Pearl and Honolulu Harbors and Kaneohe Bay (Oahu), Kahului Harbor (Maui), and Nawiliwili Harbors (Kauai). It was not yet present in harbors on the island of Hawaii when surveys were conducted there in 1996.

References

De Laubenfels, M.W. 1935. A collection of sponges from Puerto Galera, Mindoro, Philippine Islands. Phil. J. Sci. 156(3):327-336.