

Orange sponge

Phylum Porifera
 Class Demospongiae
 Order Poecilosclerida
 Family Mycalidae



Photo by J. Hoover

DESCRIPTION

Growth Morphology

Thickly encrusting, cushions to lobate-massive. Individuals can grow quite large, up to 1 m diameter and 0.5m thick or larger.

Color

External color bright red-orange, internal same.

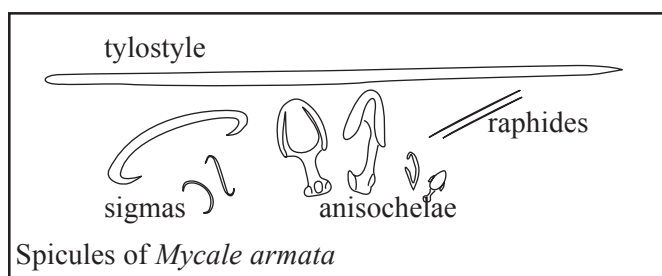
Texture and Surface Features

Sponge is firm, but compressible, tearing easily. Oscules are large and conspicuous with raised membranous lip, scattered evenly over surface. Surface is uneven, but smooth with large “keyhole” ostia. The interior is cavernous, and often packed with small ophiuroids (*Ophiactis* cf. *savignyi*).

Spicules

Megascleres: tylostyles

Microscleres: sigmas (2 sizes), palmate anisochelae (2 sizes), and raphides.

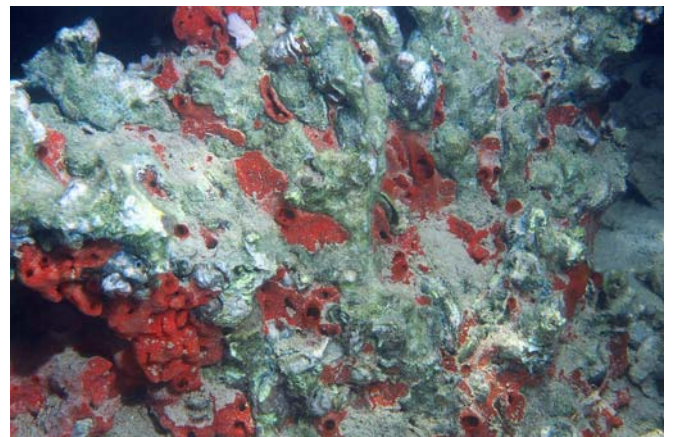


Spicules of *Mycale armata*

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HABITAT

In the Hawaiian Islands, *M. armata* is mainly restricted to shallow-water fouling communities (i.e. pier pilings, floating docks) of the major harbors on Oahu or associated disturbed habitats (i.e. dredged channels and artificial lagoons). In Kaneohe Bay, *M. armata* is found on patch reefs in southeast corner of the bay as well as the fouling community on Coconut Island floating docks.



Mycale armata in Kaneohe Bay permeating dead *Porites compressa* head (photo R. DeFelice)

DISTRIBUTION

HAWAIIAN ISLANDS

Oahu – Pearl Harbor, Honolulu Harbor, Keehi Lagoon, Barber’s Point Harbor, and Kaneohe Bay.

Maui – Kahului Harbor.

NATIVE RANGE

Australia (GBR); Torres Straits; Indo-Malay region

PRESENT DISTRIBUTION

Native range, and main Hawaiian Islands

MECHANISM OF INTRODUCTION

Unintentional introduction, most likely as fouling on ships’ hull.

IMPACT

Fouling organism. Ecological impact unstudied, but observations suggests competition for space with native sponge and coral species. In Kaneohe Bay, this sponge appears to be overgrowing some coral on patch reefs, especially *Porites compressa*.

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.

Reproduction

Like most sponges, *M. armata* is probably capable of asexual reproduction by fragmentation. Details regarding sexual reproduction of this species are unstudied.

REMARKS

Mycale armata is considered to be a recently unintentionally introduced species to Hawaii due to its sudden appearance in the islands. This bright orange sponge is the largest, most conspicuous sponge in the harbors of Oahu and in Kaneohe Bay, where the most extensive surveys of sponges in the Hawaiian Islands were conducted. It is very difficult to imagine this species could have been overlooked by these experienced researchers.

Unlike the other alien sponges reported here, which appear to be relatively benign introductions, this species may present a real threat to the lagoon-patch reef communities of Kaneohe Bay (see [Impact](#)).

REFERECES

- Bergquist, P. R. 1967. Additions to the sponge fauna of the Hawaiian Islands. *Micronesica*. 3: 159-174.
- de Laubenfels, M. W. 1950. The sponges of Kaneohe Bay, Oahu. *Pac. Sci.* 4(1): 3-36.