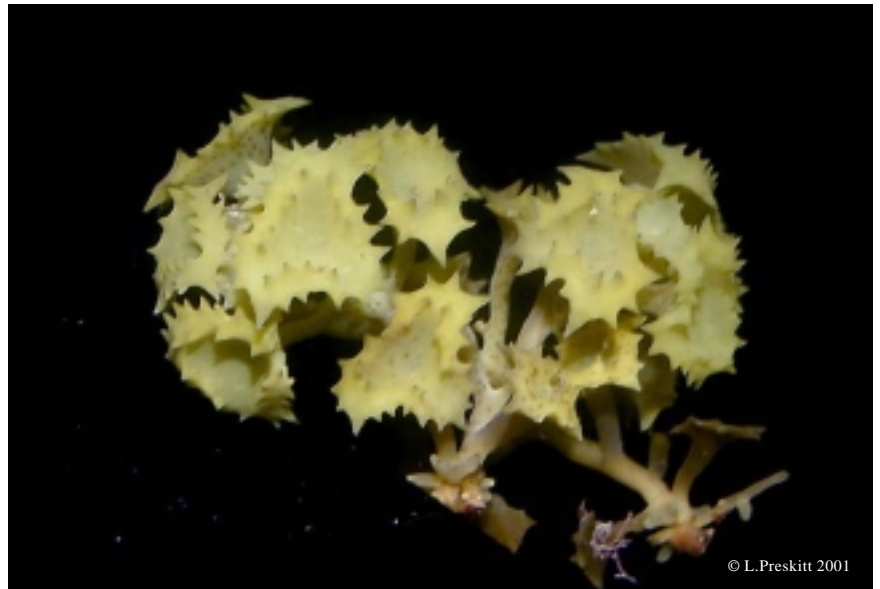


Turbinaria ornata

(Turner) J. Agardh 1821

Turbinaria ornata is commonly found in small clusters attached to rocks and benches intertidally. Blooms do occur, and large areas both intertidally and subtidally will be covered with this hard, thick alga.

Division Phaeophyta
 Class Phaeophyceae
 Order Fucales
 Family Sargassaceae
 Genus *Turbinaria*



© L.Preskitt 2001

IDENTIFYING FEATURES

DESCRIPTION

Stiff, erect plant, 2 -20 cm tall when reproductive. Blades conical, hard, thick, with double row of stiff spines around the irregularly triangular margin of the blade when viewing from above. Holdfast bears one terete, erect portion and basal portion is conical or irregular, usually with several unbranched or dichotomously branched root-like structures growing from basal area of the erect axes.

Plant is usually isolated or in small groups, but occasionally forms large, low mats in high intertidal. Rhizoids common in upper intertidal.

COLOR

Mostly light yellowish brown to dark brown with dark brown spots.

HABITAT

Very common. Found mid intertidal to at least 30 m deep. Grows in a variety of habitats including rocky intertidal, tide pools, intertidal benches, reef flats and deeper water.



© L.Preskitt 2001

DISTRIBUTION

HAWAI'I

O'ahu, Moloka'i, Lana'i, Maui, and Hawai'i.

WORLDWIDE

Widely distributed in tropical and subtropical areas of central and western Pacific, Indian Ocean.

MECHANISM OF INTRODUCTION

Indigenous to Hawai'i.

ECOLOGY/IMPACT

Turbinaria ornata is a very common brown alga found intertidally on Hawaiian reefs and throughout the Pacific and Indian Ocean. It is normally found in small clusters attached to the crevices of basalt rocks in high wave action areas as well as in the crevices of coral heads at 20-30 meters deep. The morphological characteristics of this alga enable it to survive extreme environmental conditions. The alga's tough thallus is able to withstand the high energy hydrodynamics of the intertidal environment as well as resist herbivory. The strong holdfast provides a stable grasp on the substrate and is capable of recolonization if the thalli are removed. The species has also exhibited seasonal changes. The thalli of *T. ornata* are often scoured from the holdfast in the winter season, and the remaining viable holdfast propagates new blades.

T. ornata successfully reproduces from either sexual reproduction or fragmentation. Fragments of the stolon and blade can attach to the substrate and initiate new plants.

T. ornata is considered an invasive elsewhere in the world where it often dominates subtidal and reef crest environments normally inhabited by *Sargassum* species. It is a potential invasive even in its native habitat in Hawai'i. This species has shown very successful tendencies in areas near development with high nutrients and high water motion.

REFERENCES

- Abbott, I.A., 2001. Unpublished manuscript.
- Magruder, W.H., and J.W. Hunt, 1979. Seaweeds of Hawai'i. Oriental Publ. Co., Honolulu, Hawai'i.
- Russell, D. J. and G. H. Balazs, 2000. Identification manual for dietary vegetation of the Hawaiian green turtle, *Chelonia mydas*. NOAA TM-NMFS-SWFSC-294. 49 pp.

WEB LINKS

Virtual Herbarium. <http://www.botany.hawaii.edu/reefalgae/brownskey.htm>

Frondose Algae of Waikiki.
<http://www.botany.hawaii.edu/reefalgae/>