

Isognomon alatus (Flat Tree Oyster)

Order: Pterioida (Pearl and Winged Oysters)

Class: Bivalvia (Clams, Oysters and Mussels)

Phylum: Mollusca (Molluscs)



Fig. 1. Flat tree oyster, *Isognomon alatus*.

[http://www.sms.si.edu/irlspec/Isognomon_alatus.htm, downloaded 9 March 2016]

TRAITS. The flat tree oyster has two thin irregularly-shaped valves (shells) connected by a long straight hinge (Fig. 1). The outside of the shells is rough, with a pattern of concentric rings and loose flakes. They vary from purplish black to pale brownish orange in colour (Wikipedia, 2016). The inside of the shell is cream, shaded with a purplish brown, and shiny. The shells may grow to 75-95mm in length and 40-50mm in height, and are attached to a substrate such as mangrove roots (Fig. 2) with tough and fibrous byssus threads.

DISTRIBUTION. The flat tree oyster can be found in many areas such as the Caribbean Sea and Gulf of Mexico, along the coasts of Central and northern South America and the Antilles (SeaLifeBase, 2016) (Fig. 3).

HABITAT AND ACTIVITY. They are found on the roots of mangroves and on shallow rocky areas with depths of up to 15m. They are also found on rocks in areas of high sedimentation and rock ledges in coral reefs, forming mats of hundreds of individual animals (Fig. 4). The flat tree oyster can also be seen growing on the shells of other species of oyster.

FOOD AND FEEDING. They are filter feeders, and their diet consists of plankton and small organic particles. This process occurs by water being drawn into its shell and passed through its gills which extracts small organic particles and plankton which are ingested (Wikipedia, 2016).

POPULATION AND ECOLOGY. The flat tree oyster is quite abundant and can be found in large groups mainly in areas of high salinity and at intertidal and sub-tidal surfaces of mangrove roots, of the red mangrove in particular. At shallow depths many small flat tree oysters can be found but at the deeper regions, fewer but larger ones are found. Due to their habitat being intertidal they are usually found on steep microhabitat gradients, meaning that the habitat changes over short distances. The effect of this is that flat tree oysters just centimetres apart are exposed to drastically different conditions such as desiccation, thermal stress, different times to feed, and overcrowding due to population density. These conditions cause the differences seen in shell morphology, therefore *Isognomon alatus* is known as hyper-variable.

REPRODUCTION. Breeding occurs when the salinity of the water is lowered, usually after heavy rainfall. They exhibit external fertilization in the water column, after mass spawning occurs amongst the adult oysters in an area whereby their gametes are liberated all at the same time. The larvae are planktonic, and pass through several developmental stages (SeaLifeBase, 2016). When they eventually settle on the seabed they undergo metamorphosis. After metamorphosis occurs they use the byssus threads to attach themselves as miniature adults.

BEHAVIOUR. They attach themselves onto rocks and mangrove trees when mature using byssus threads. Byssus thread is secreted by the flat tree oyster which forms a group of strong filaments which are used to attach themselves to hard surfaces. The shells are closed when exposed above water, and open to filter feed when submerged by the tides.

APPLIED ECOLOGY. They are not listed by IUCN. In the tropical islands such as the Bahamas the flat tree oyster is one of the tourist attractions amongst many other marine organisms. The flat tree oyster is sometimes removed from its natural habitat to be taken back home with tourists as a souvenir. In some places it is illegal to do so and if caught they can be charged. They are not endangered even though some people eat them, but this species is not collected as much as other molluscs such as conchs.

REFERENCES

- Marine Biology Research (2009). Ecophenotypic variation the Flat Tree Oyster, *Isognomon alatus* (Bivalvia: *Isognomonidae*), across a tidal microhabitat gradient.
http://www.academia.edu/6727862/Ecophenotypic_variation_in_the_Flat_Tree_Oyster_Isognomon_alatus_Bivalvia_Isognomonidae_across_a_tidal_microhabitat_gradient, downloaded 8th March 2016.
- SeaLifeBase (2016). Reproduction of *Isognomon alatus*.
<http://www.sealifebase.org/Reproduction/FishReproSummary.php?ID=47713&GenusName=Isognomon&SpeciesName=alatus&fc=1838&StockCode=30061>, download 6th March 2016.

Smithsonian Marine Station at Fort Pierce (2016). *Isognomon alatus*.

http://www.sms.si.edu/irlspec/Isognomon_alatus.htm , downloaded 8th March 2016.

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Fig. 2. *Isognomon alatus* attached to roots of the red mangrove.

[<http://www.backyardnature.net/mexnat/oyster.htm> downloaded 9 March 2016]

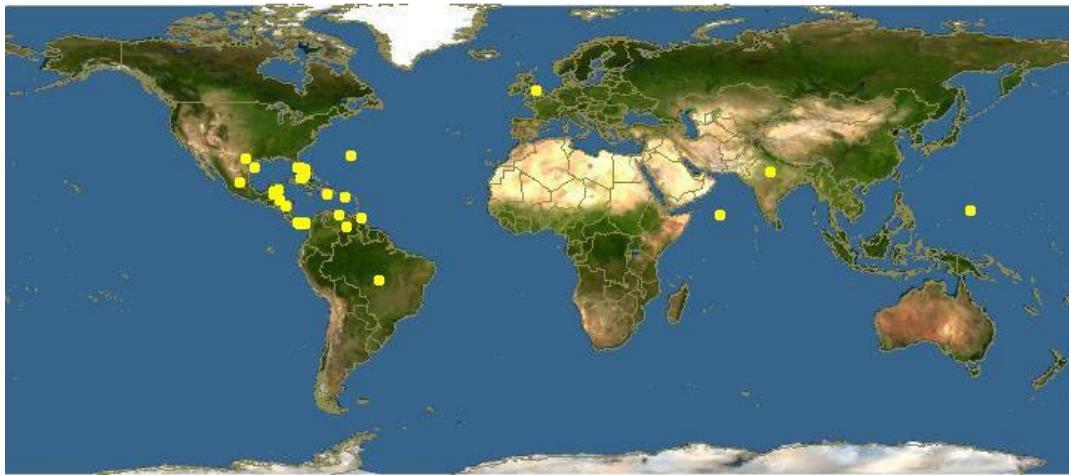


Fig. 3. The distribution of *Isognomon alatus*.

[<http://www.discoverlife.org/mp/20q?search=Isognomon+alatus> downloaded 9 March 2016]

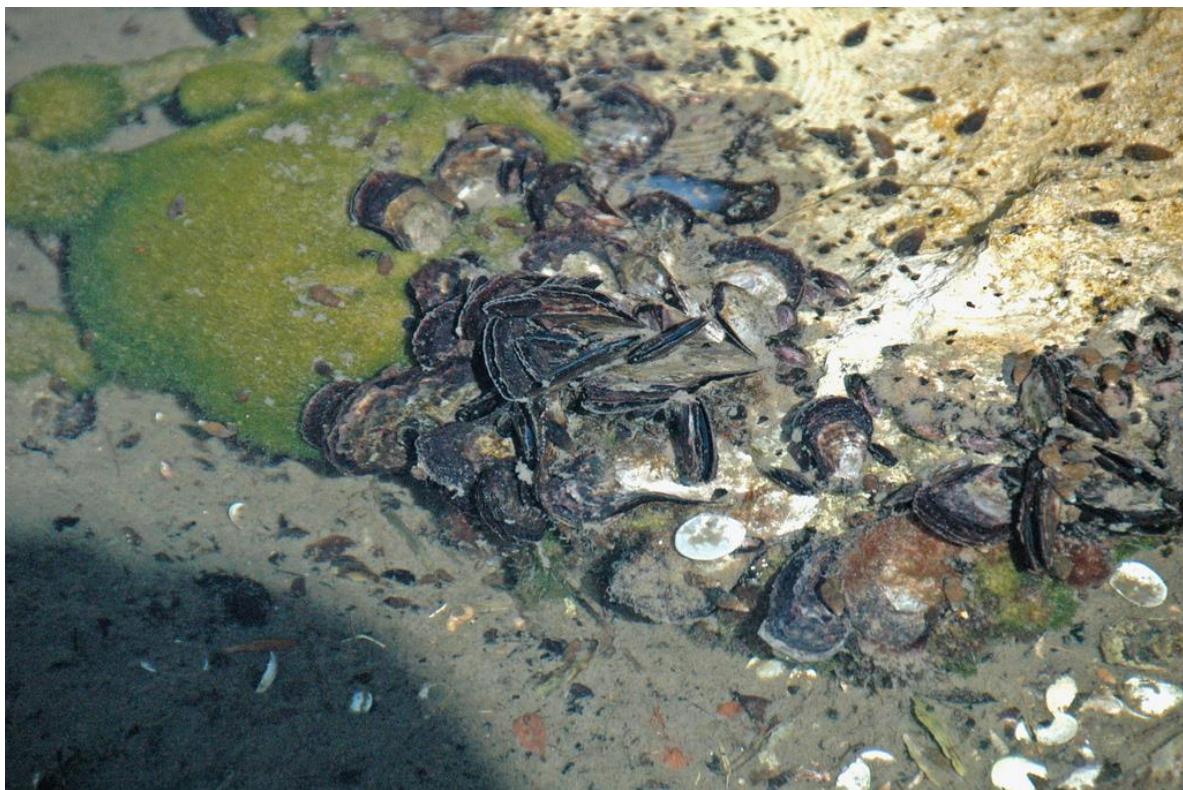


Fig. 4. *Isognomon alatus* attached to rocks in an area of high sedimentation.

[<http://www.snorkelstj.com/flat-tree-oyster.html>, downloaded 8 March 2016]