Agaricia agaricites (Lettuce Coral)

Order: Scleractinia (Stony Corals)
Class: Anthozoa (Corals and Sea Anemones)
Phylum: Cnidaria (Corals, Sea Anemones and Jellyfish)

Fig. 1. Lettuce coral, *Agaricia agaricites*.
[http://www.advancedaquarist.com/2007/12/aafeature2, downloaded 15 April 2015]

TRAITS. *Agaricia agaricites* exists in colonies of various shapes and sizes, depending on the type of waters, the depth of the water and the velocity of water flow in which they inhabit. Their goblets (cups housing the polyps or coral-forming animals) are approximately 1-1.6mm wide with a deep columella (central column) that is barely detectable with approximately 16 septa (radial divisions). *A. agaricites* are sensitive to numerous environmental conditions such as the intensity of light and influence of the currents which causes them to develop a crust over the free edges. Rough waters produce colonies that are very small and are spherical in shape. *A. agaricites* vary in colour such as greenish brown, yellow and light brown (Fig. 1).

DISTRIBUTION. *Agaricia agaricites* is common in the waters of the Caribbean, tropical Western Atlantic, Gulf of Mexico, Southern Florida, Cuba, Jamaica, Puerto Rico, Lesser Antilles, Costa Rica and Brazil. It ranges over 2,500,000 square kilometres.

HABITAT AND ACTIVITY. *Agaricia agaricites* occur in all reef environments ranging from shallow back reef habitats, lagoons, channels, reef platforms, sea grass beds, and fore reefs. This species ranges in depth to approximately 75m. Brown colonies were most abundant below 30m, and orange colonies in the 5-35m range. Each colony illustrated a change in shape due to the various depths they are found in (Van Morsel, 1983).

FOOD AND FEEDING. Water motion (velocity) determines the feeding rates of *Agaricia agaricites* which grow in three forms (Fig. 2); bifacial (double-sided, Fig. 3), horizontal unifacial (single-sided), and vertical unifacial. These shapes result from water motion (currents) in which they are found and are related to depth. Bifacial colonies are found at greater depths where there is the least amount of water movement, and is adapted to be opposite to water flow rather than parallel to water flow (Kristmanson and Wildish, 1997). Unifacial forms have higher feeding rates at higher flow velocities whereas bifacial forms feed best at lower velocities. When prey (food) is scarce they conserve their energy by withdrawing the polyps, however if velocity of water is too high the polyps are also withdrawn as a means of preventing any damage. The optimum water velocity rate for *A. agaricites* is 20cm/s.

POPULATION ECOLOGY. *Agaricia agaricites* colonies may remain fixed at one size, or they can grow or shrink. Reproduction was found to be sexual and asexual via the process of fission. This species has a mean annual growth of less than 2cm, and a large percentage of the population was found to be in the same size class from season to season. Only a minor proportion of the colonies increased in size, and another manifestation of slow growth was that they could also shrink to a smaller size class. This shrinking may signify a succession of harsh periods, but it can also be caused by fission of the colony and asexual reproduction.

REPRODUCTION. *Agaricia agaricites* can reproduce both asexually by fission and sexually. *A. agaricites* shed their planulae larvae in spring and summer, during periods of notable rise in sea temperature. They started releasing larvae when they reach a size of 108mm, and smaller colonies use all their energy for growth, rejuvenation and competition. Some colonies with a growth of 24mm a year tended to not reproduce until after 4-5 years of growth.

APPLIED ECOLOGY. *Agaricia agaricites* are a listed species in the IUCN red list of threatened species (Aronson et al., 2008). The reason *A. agarcites* are in harm is due to the disease called the white plague. White plague increases the mortality rate of these corals. Severe climate changes such as temperature change and ocean acidification are also factors which increase the mortality rate of corals since it causes bleaching. Hurricanes, sedimentation, pollution and the black band disease are environmental threats to the region in which *A. agaricites* are found.

REFERENCES

Aronson, R., Bruckner, A., Moore, J., Precht, B. & E. Weil (2008). *Agaricia agaricites*. The IUCN Red List of Threatened Species. Version 2014.3. <www.iucnredlist.org>. Downloaded on 01 April 2015.

Kristmanson, D., Wildish, D. (1997). *Benthic Suspension Feeders and Flow*. New York: Cambridge University Press.

Van Morsel, G. (1983), *Reproductive strategies in two closely related stony corals (Agaricia, Scleractinia*). Vol. 24: 99-112. Accessed on 29 March 2015. www.int-res.com/articles/meps/24/m024p099.pdf

Author: Kasturi Rampersad

Posted online: 2015

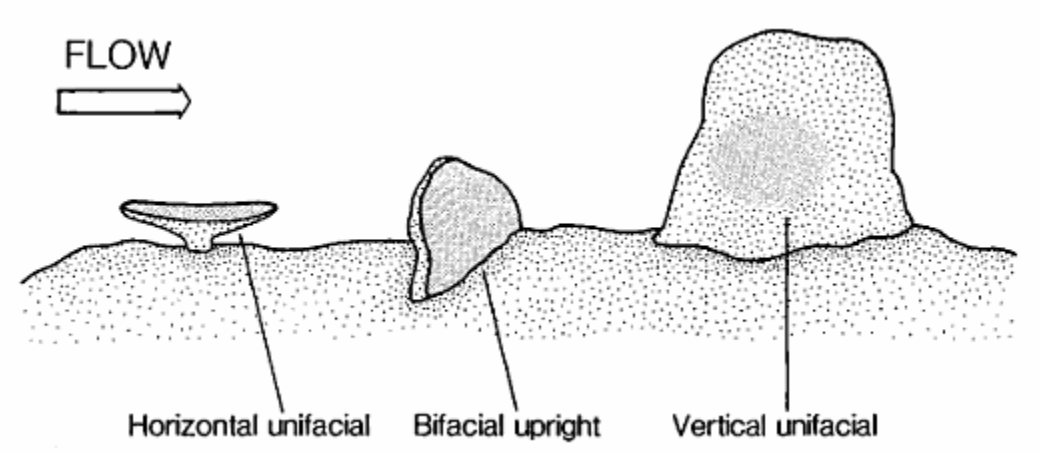

Fig. 2. Different shapes of coral growth.

[https://books.google.tt/books?id=8BECMiZraW4C&dq=agaricia+agaricites+food+and+feeding&source=gbs_navlinks_s, downloaded 29 March 2015]

Fig. 3. *Agaricia agaricites* upright bifacial form.

[http://www.advancedaquarist.com/2007/12/aafeature2 downloaded 02 April 2015]