

Shell of the Month

by Dr. Rick Batt

Turbo (Lunatica) marmoratus Linnaeus, 1758 (Green Turban)

The Green Turban (*Turbo marmoratus* Linnaeus, 1758) is the largest species in the family Turbinidae, a large family of Tropical to Subtropical snails that have a usually thick top-shaped shell made of aragonite (nacre). The shell's nearly circular aperture can be closed off with a heavy calcareous operculum. The animal has an oval foot that is squared in the front, and the head has a veil between two long tentacles with eyes on short stalks at their base. The radula is well-developed, and is used to graze on marine algae.

The Green Turban inhabits Tropical reef areas from the east coast of Africa across to the western Pacific Ocean, where it is found in the Philippines as well as Okinawa, northern Australia, and as far east as Fiji. It is often found on rubble bottoms at depths ranging from about 4 to 20 meters (13 to 66 feet).

The heavy shell of a Green Turban has a short spire of relatively few whorls. The body whorl is massive, with an angular shoulder that usually bears a nodose keel. Between the shoulder and the suture this whorl is flattened; the rest of the body whorl is more rounded but often bears a second, weaker keel. The color is typically a dull grayish green with spiral bands usually marked with white and brown. The large aperture is pearly white, and the heavy, shelly operculum is convex and smooth on the outside and flat with a spiral horny later on the inner surface. A typical Green Turban shell may be about 180 mm (about 7 inches) in size, but specimens can range from less than 100 mm (4 inches) to more than 250 mm (10 inches).

The first picture shows a few specimens of *Turbo marmoratus* in my collection (US quarter for scale): 172 mm (6.8 inches) from Luzon, Philippines; 159 mm (about 6 inches) from Zanzibar, Africa; and (below) a 43 mm (1.7 inch) baby shell from Okinawa. The second picture shows two views of an unusually large specimen (241 mm or 9.5 inches) from the Philippines.





The Green Turban has long been commercially important. Early monarchs in Scandinavia had these shells mounted in silver and studded with gems for royal drinking cups. The very thick layer of nacre (aragonite) has been one of the major sources of the “mother of pearl” cut into buttons, ornaments, and inlay material for furniture and jewelry. The large, heavy operculum has been used as a paper-weight. The meat of the animal is important in the diet of many fishermen throughout its range, and some Japanese chefs cut it up when making chop suey. The Green Turban was once common, but over-exploitation has put a toll on its populations, so programs have begun to reintroduce it and increase its numbers.

There is one other species of Turban Shell that can rival *Turbo marmoratus* in size. *Turbo (Dinassovica) jourdani* Kiener, 1839 (Jourdan’s Turban) inhabits more temperate waters along the rocky coasts of southern and western Australia. The shell has a moderately high spire of several rounded, nearly smooth whorls separated by impressed sutures. The color is reddish brown with a white aperture. Shells of this species are typically between about 75 mm and 230 mm (3 to 9 inches) in size, but specimens as large as 252 mm (nearly 10 inches) have been reported. Two specimens of *Turbo jourdani* are shown in the next picture: 160 mm (6.2 inches) from off Fremantle, Western Australia; and 252 mm (nearly 10 inches) from Augusta in southwestern Australia.



Two other, smaller species of Turban, formerly placed with *Turbo jourdani* in the subgenus *Disassovica*, are now placed with *Turbo marmoratus* in the subgenus *Lunatica*. *Turbo imperialis* Gmelin, 1791 (Imperial Turban) lives in Tropical waters from the east coast of Africa and Madagascar to Mauritius, and is typically between 50 and 125 mm (2 to 5 inches) in size. *Turbo militaris* Reeve, 1848 (Military Turban) is a more Temperate-water species from eastern and southeastern Australia and is usually between 50 and 100 mm (2 to 4 inches) in size. The final picture shows: *Turbo imperialis* from southern Madagascar (130 mm or 5.1 inches); and two specimens of *Turbo militaris* from New South Wales, Australia (46.5 mm and 113 mm: 1.8 inches and 4.4 inches).

