Shell repair in *Conus*

Cone snails, even though predators, are they also prey of other animals as reptiles, octopuses, rays, fishes, crustaceans, gastropods (also congeneres). Octopuses and other gastropods drill the shell leaving small rounded holes. Fishes, crustaceans and reptiles catch the shell by opposite surfaces and squeeze until it breaks. Other crustaceans, as flame boxes crabs, peel the prey breaking up the shell piece by piece at the aperture. Damage may also results by the impact with rocks during a storm. The attack by a triggerfish with crushing dentitions or by a lobster with big claws, if it isn't lethal for the cone, persists indelible as a scar on the surface of the shell, unless it is hidden by a further whorl. Usually the scar or the broken lip are filled by new material and the rebuilt part connects in rather uniform way with the pre-existent one in colour pattern and ornamentation. Some time happens that the surface repaired shows different than before.

Recently I got two specimens that display in plain way this situation. The shell of *Conus floridulus* was at first smooth. The regenerated part after the strike has the surface covered by tubercles spirally placed. The opposite appears in *Conus muriculatus*. The surface was tubercled in origin; the repaired body whorl shows weak ridges instead tubercles and the colour of the bands is faded.

The observation of these two specimens lead to conclude that both characters, smooth and rough surface, are inherent in the genotype of the animal and they manifest by a different phenotype in specific environmental and physiologic conditions.

References

Kohn, A. J., 1992. *Conus striatus* survives attacks by gonodactyloyd!

Kohn, A. J., Myers, E. R. & Meenakshi, V. R., 1979. Interior remodeling of the shell by a gastropod mollusc.

Lindström, A., 2005. Shell repair is a response to attempted predation in some Paleozoic and younger Gastropods.

C. floridulus 19.2 mm

C. muriculatus 24.4 mm