Abstract

The decomposition of land snail shell is a complex process involving a number of factors and influences, including the characteristics of conchs themselves. In particular, it is the shell size with which the progress and the rate of degradation are tightly bound. Post-mortem changes begin with the loss of the original colour and, in the case of transparent species, by the opacification of the shell wall. Subsequently, the periostracum disruption and dissolution of calcium layers occur. However, this sequence may be reversed for some small species (e.g. *Columella aspera*, *Nesovitrea hammonis*). Animals mechanically destroy empty shells, humic acids from the substrate cause their artificial dyeing. Fungal mycelium or colonies of *Streptomyces* grow on the surface of the conchs. The plant roots are also involved in shell decomposition.

While degradation of large shells starts with periostracum disruption and subsequent ostracal dissolution, periostracum of small shells persists even after dissolution of ostracal layers. The phenomenon is caused by high resistance of the periostraca of small species. In the case of large shells, periostracum has primarily a “building” function during shell formation, and sometimes it is flaking off already during the snail’s life. For small species, it is an important part of the conch and increases its durability, which is also reflected in a different course of shell decomposition.

The shell size affects highly the rate of decomposition: small shells disappear very quickly, depending on the habitat type in order of months. On the contrary, large shells could persist for several years. The habitat influence is also very important. Acid and humid sites promote rapid decomposition; in dry and basic woods shells are kept relatively unchanged for several years. A unique and site-specific combination of the above-mentioned damage types, so called taphonomic signature, is created.

Although the decomposition of the shells is a complex process, empty shells can provide valuable information and must not be overlooked.