Study of the inertial Mass in the Statocysts of the terrestrial Gastropods distributed in Georgia

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The statocyst of mollusks is analogous to the labyrinth of vertebrates. It is involved in righting and compensatory reflexes and spatial orientation [1,2,3]. Note that these reactions are possible because the statocyst, like any other organ of balance, contains some inertial mass (solid inclusions of endogenous or exogenous origin). In gastropods the statocyst has a form of relatively large single statoliths or aggregations of numerous, considerably smaller statokonia, which grow in increment layers of mineral-organic origin.

The aim of this work was to study of the inertial mass in the statocysts of the terrestrial Gastropods distributed in Georgia using the light, transmission and scanning electron microscopy.

Experiments were carried out on pulmonate snail *Helix lucorum, Deroceras reticulatum* and prosobranch land snail *Pomatias rivulare*. It has been shown that no less than 400 - 600 statoconia are contained in statocysts *H. lucorum* and *D.reticulatum*. Hence, according to the morphometric measurements of 32% statoconia form small fraction, 63% average and 5% coarse fractions. Majority of statoconia are of oval shape and have smooth surface. Each statoconium in its central part has a formation of spherical shape of 1.5 μ in diameter, a sort of nucleus or nucleus surrounded by concentric structures. Most statoconia were oval. The latter are characterized by various shapes and are structured around small cores or composed of small statokonia united by common increment layers. The statolith of P. *rivulare* is mainly of spherical, rarely ellipsoidal shape. In adult species the diameter of statolith can reach 200 μ. For morphometry statoliths determined their diameter, perimeter, area, volume and formfactor. Internal structure was studied in thin sections, as well as fragments of statoliths obtained in their mechanical breakage. With the growth of snails increases its weight and size of the shell. The larger the snail, the bigger the statocyst and thus statolith. Asymmetry was found in the size of statoliths. Even in the same snail right and left statoliths differ in their morphometric parameters. Statolith of the snails' *Pomatias rivulare* consists of a core and layers in the form of hollow spherical structures, the number of which increases with the growth of the animals. The main mineral element, giving the weight of inertial mass – is calcium carbonate, in the form of aragonite crystals that fill the frame of organic nature.

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Reference:

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