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The preliminary data on the Aeronian (Silurian) machaerids from Lithuania (Baltic Basin)

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Machaerids are stem-Lophotrochozoans, closely related to the Annelids, and known from the Early Ordovician to Middle Permian. Machaerids is a group of worm-like benthic marine, bilaterally symmetrical, armoured invertebrate. Their body is covered by an external scleritome. The scleritome is imbricated of longitudinally arranged series of plates or sclerites. Completely articulated specimens of machaeridians are very rare, yet the systematic position of machaerids is controversial. Machaeridians had been assigned to different groups, such as barnacles, mollusks, echinoderms and annelids. The latter is prevailing, however their exact place within the annelids still remains unresolved.

New findings of disarticulated Silurian machaerids have been recorded in western Lithuania, Geniai-1 core. This well has been drilled with exploration purposes regarding the Cambrian oil reservoir; therefore the biggest part of the Silurian core has not been collected. The exceptions are some parts of the Llandovery and Ludlow, which have partially recovered well core, but the identification of the precise stratigraphical position is complicated.

Disarticulated sclerites of machaeridians have been found at the 1756.4 m depth, in the argillite, together with some graptolites and brachiopods. Several rhabdosome fragments of Normalograptus scalaris (Hisinger) were found together with the machaenid sclerites as well. N. scalaris has wide biostratigraphical distribution from the Rhudanian to the lower part of Telychian, which comprises the convolutus – triangulates graptolite biozones, corresponding to the 1756.8 – 1756 m depth. Convolutus – triangulates biozones represent Aeronian, and the machaeridian sclerites come from this interval, together with the Jonsea grayi (Davidson) brachiopod shells, which are very common and correspond to the BA 5-6 benthic assemblage, as well as do the graptolites found together.

In previous studies, two orders of machaerids have been recognized: the Lepidocoleoorpha and the Turrilepadomorpha. Former descriptions of machaerids are based on complete articulated scleritons. Disarticulated sclerites are described under the open nomenclature, followed by a comparison with presviously know taxa. All the sclerites were preserved individually, i.e. disarticulated, and are heart-shaped with blunt apexes. The rugae form concentric semi-circles in the apical region of the lateral area, which curves strongly upwards. Based on the morphology of the sclerites, and the form of the rugae, these machaeridians can be assined to the Family Plumulitidae (Order Turrilepadomorpha).