

## Bryozoan-lithothamnium Szydłowiec Sandstones from the Subsilesian Nappe (Outer Carpathians, Poland)

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Bryozoan-lithothamnium Szydłowiec Sandstones were described by Książkiewicz (1951) as a sandstone complex belonged to the Subsilesian Nappe that builds the Szydłowiec hill (recently named Goryczkowiec hill). The hill is located in southern part of Wadowice town, northerly of Gorzeń Dolny village. Szydłowiec Sandstones, Paleocene in age, are a lithostratigraphic division of the Subsilesian Series. They are overlaid by the Paleocene Gorzeń Sandstones and presumably underlied by the Cretaceous variegated marls. The Szydłowiec Sandstones are predominate by thick-bedded coarse grained and conglomeratic sandstones. Occasionally conglomerates occur there. The sandstone complexes are intercalated by not numerous thin layers of shales or thin- and medium-bedded shaly-sandstone flysch. The sandstones are usually cemented by carbonate matrix. In the grain composition of sandstones quartz predominate, others are represented by metamorphic and magmatic rocks, as well as sedimentary rocks, mainly organodetritic limestones. The limestones often are rich of *Lithothamnium* and *Bryozoa* remnants, as well as occasionally oyster scarps and echinoid prickles. The age of the Szydłowiec Sandstones have been previously estimated as the Maastrichtian.

The Paleocene age of the Szydłowiec Sandstones was definitively estimated on the base of the last micropaleontological investigations of foraminiferal assemblages performed by Waśkowska. These assemblages include mainly agglutinated forms of foraminifera known from deep sea flysch deposits. Admixtures of calcareous forms in different samples are various. Foraminiferal assemblages from the stratotype section of the Szydłowiec Sandstones represent the Paleocene *Rzehakina fissistomata* biozone with the typical Paleocene taxon *Rzehakina fissistomata* (Grzybowski) occasionally accompanied by *Haplophragmoides mjaatliukae* (Maslakova) - species also indicating the Paleocene age. Besides of these in the assemblages occur cosmopolitan Maastrichtian-Paleocene as well as Senonian-Eocene forms.

Up to now geological interpretations included the Szydłowiec and Gorzeń sandstones to the individual thrust-sheet, differed as tectonic element of the Subsilesian Nappe. In Wadowice this structure should thrust northward over the next tectonic element of the Subsilesian Nappe. In Gorzeń village it is thrust over by the Silesian Nappe. Actual authors' discernment not excludes dissimilar interpretation. It let suppose that the Szydłowiec and Gorzeń sandstone body don't build an independent thrust-sheet, but represent large olistholit within Early Miocene olistostrome that form here the highest lithostratigraphic level of the Subsilesian Series. The olistostrome developed in the lithostratigraphic section above the Oligocene-Early Miocene Krosno beds was emerged since tectonic movements that formed the Outer Carpathian accretionary prism. Discussed olistostrome take here geological position analogical to the Andrychów Klippes, also emerged as chaotic deposits.