Biostratigraphy and depositional palaeoenvironment of the Cretaceous - Paleogene sediments of the Skole Unit in the Handzlówka area based on foraminiferal assemblages

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Foraminiferal assemblages of the Cretaceous - Paleogene of the Skole Unit are very rich and diverse, contain planktonic foraminifers, which are not often described from turbidite facies of the Carpathians according to the recent studies by Gasiński & Uchman (2009, 2011) and Gasiński *et al*., (2013). Standard biozonation of Late Cretaceous- Paleogene based on planktonic foraminifera has been established (Caron, 1985; Robaszynski & Caron, 1995; Premoli-Silva & Rettori, 2002, Ogg & Hinnov, 2012). The aim of this study was micropalaeontological analysis: identification of foraminiferal assemblages, and age estimates with biozone resolution (HRS) of the samples from the Skole Unit in the Handzlówka area. Additionally, particularly important seems to be the location of the Skole Unit near the transitional zone between the Boreal and Tethyan bioprovinces (Gasiński, 1997; Marcinowski & Gasiński, 2002).

46 samples from 14 outcrops were collected from the selected section, which are mainly representing turbiditic type of sediments. As a result, 44 species of agglutinated, calcareous benthic and planktonic foraminifers were identified, dating the studied samples as Campanian – Maastrichtian, which corresponds to the Globotruncanita elevata – Globotruncana ventricosa – Rodotruncana calcarata – Globotruncanella havanensis – Globotruncana aegyptica – Gansserina gansseri – Contusotruncana contuse – R. fructicosa standard biozones. The most important and diagnostic specimens were analysed using scanning electron microscopy (SEM) in the Laboratory of Emission Scanning Microscopy and Microanalysis field of the Institute of Geological Sciences of the Jagiellonian University (Fig 1).

Based on the field observations, lithological description have been prepared, including sedimentological features as well as tectonic structures. Based on foraminiferal assemblages the palaeoenvironmental condition of the studied deposits has been estimated to the upper - middle part of the continental slope. The tests of some specimens of foraminifers are slightly corroded which can be interpreted as probably dissolution effect causing by the by the foraminiferal lysocline.

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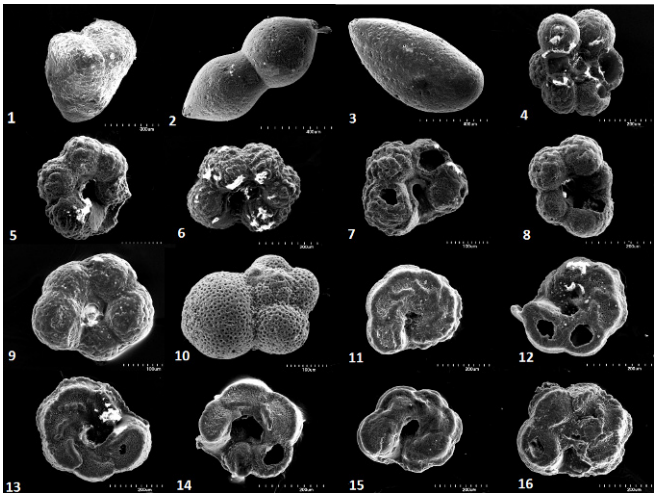

Fig.1.: 1 – Dorothia oxycona (Reuss), 2 – Glandulina sp., 3 – Lenticulina sp., 4 – Archaeoglobigerina sp., 5 – Rugoglobigerina sp., 6 – Rugoglobogerina rugosa (Plummer), 7 – Rugoglobigerina sp. – dissolution effect, 8 – Rugoglobigerina sp., 9 – Hedbergella sp., 10 –Hedbergella holmdelensis Olsson, 11 – Globotruncana linneiana ((d'Orbigny)), 12 – Globotruncana arca (Cushman) – dissolution effect, 13 – Globotruncana arca (Cushman), 14 – Globotruncana linneiana ((d'Orbigny)) – dissolution effect, 15, 16 – Globotruncana arca (Cushman) – dissolution effect.