

Provenance of natural chalk used in ground layers of the Bohemian Gothic paintings determined by nanofossils

LILIAN ŠVÁBENICKÁ¹ and RADKA ŠEFCŮ²

¹Czech Geological Survey, Klárov 131/3, 118 21 Prague 1, Czech Republic; lilian.svabenicka@geology.cz

²National Gallery in Prague, Staroměstské nám. 12, 110 15 Prague 1, Czech Republic

Nanofossil content found in the chalk ground layers on Bohemian panel paintings created from the 14th to the 16th century was studied from the collection of National Gallery Prague. The work was focused on markers that offered information about the place of origin of natural chalk. Pieces of painting were disintegrated in a drop of H₂O₂ and studied by light microscope.

Nanofossils proved that sediments did not come from Bohemia. Most of samples, for example from paintings of the Master of the Vyšší Brod Cycle (ca. 1345) or Master of the Litoměřice Altarpiece (ca. 1515) contained similar assemblages (Švábenická et al. 2017). *Arkhangelskiella maastrichtiana* and *Cribrosphaerella daniae* indicate Maastrichtian, *Prediscosphaera stoveri* gives evidence for cold waters, Boreal province, and genus *Lucianorhabdus* shows on a shallow sea. So, the chalk was deposited during Maastrichtian in the epicontinental sea of North European Platform. In Middle Ages, it had to be imported along the Elbe from N and NW Europe, nowadays N Germany or Denmark. Restores of artworks call it Rügen chalk. Scarce *Micula murus*, low latitude species found in chalk ground layer under silvering (Master of the Puchner Arc) indicates the influence from the Tethyan realm and may demonstrate region located more southwards. This natural

chalk was probably imported from SW France over the Alps and restores call it Champagne chalk.

The source of natural chalk considerably influences the property of the chalk thus playing an important role for the choice of the particular material for its use in the ground layers under gilding or under color layers painting even within one artwork or in one workshop. The practice of using the different sediments of natural chalk may be characteristic for the workshop practice.

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References

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