
Erratic flint provenance at Krems-Wachtberg, Austria

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Résumé

Recently, a systematic large scale investigation of Scandinavian flint applying the Multi Layered Chert Sourcing Approach (MLA) achieved clear source assignment of Maastrichtian and Danian primary flint deposits. Provenance studies of secondary beach gravel and – even potentiated – material from glacial deposits transported as far south as the enigmatic "flint line" are significantly more challenging undertakings. The European "flint-line" marks the southernmost expansion of erratic, i.e. glacially moved, flint. During different Ice Age events, chiefly Elster and Saale, glaciers distributed resistant flint nodules from Scandinavia as far south as Central Germany, Northern Bohemia and Moravia, and southwestern Poland. Hence, especially terminal moraines in those areas constituted important sources of erratic flint in prehistoric times, since material was accumulated and enriched in those glacial features. Since different glaciation maxima occurred during different chronological stages, the "flint-line" is no homogeneous horizon. Every ice flow extended in a specific direction, which suggests a recognizable variation of flint types based on the original position from which material was absorbed by the glacier. However, very little work has been done concerning this issue, although erratic flint constitutes a major problem for provenance studies on a large scale.

Using the extensive database from our Scandinavian flint sourcing project, we focused on a case from Palaeolithic Lower Austria to tackle this problem in a pioneering attempt sourcing erratic flint. Like other comparable sites in the Austrian Danube region, the Upper Palaeolithic (Gravettian) site of Krems-Wachtberg, which has gained international fame due to the discovery of three infant burials, contains a rich lithic assemblage containing whitish patinated erratic flint implements. Ten selected erratic flint tools were investigated according to the MLA flint sourcing technique applying visual, microscopic and geochemical analyses using Laser Ablation Inductively Coupled Mass Spectrometry (LA-ICP-MS) coupled with Compositional Data Analysis (CODA) in order to reconstruct their original source environment in the Scandinavian realm. Applying concepts of bedload research, including the recognition of the TGC (=Theoretic Gravel Center) of specific ice flows creating particular moraines, we attempt to locate the potential depositional catchment area of the Krems-Wachtberg finds, and hence a Palaeolithic source area at the flint-line. Our results can be

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used for economic considerations concerning far-distance raw material procurement strategies of Gravettian hunter-gatherer societies.

Mots-Clés: Multi, Layered, Chert, Sourcing, Approach, LA, ICP, MS, CODA, erratic flint, Krems, Wachtberg, Gravettian, raw material procurement