Collections at the Swedish Museum of Natural History – case studies for innovative palaeoecological outcomes

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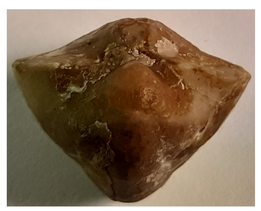
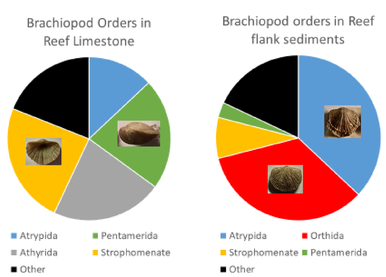
The Swedish Museum of Natural History, Stockholm, Sweden (NRM)
is a major research institute with collections of over 10 million specimens. The collections have a broad taxonomic, temporal and spatial coverage and include several unique collections, such as the Linneus Herbarium, Sino-Swedish fossil plant collection, and the Environmental Specimen Bank. State-of-the-art laboratories enable high-resolution microscopy, elaborate geochemical and isotope analyses, mineral spectroscopy, and DNA sequencing The research departments at NRM employ 150 researchers and curators.

Box 1: Reef dwelling brachiopods



Brachiopod faunas from the Ordovician of Dalarna, Sweden differs dramatically between the reef core and the flank sediments, both in terms of taxonomic composition and shape



We argue that the palaeo-ecological differences highlighted in these two case studies when visualized through photographs and colorful charts and graphics, significantly increase the incentive for registration and digitization

Digitization and palaeoecology

Digitization is a time-consuming process but becomes considerably more motivating if concrete examples of practical scientific results can be illustrated and presented.

1: Ordovician brachiopods. In a case-study (Box 1), a fossil Ordovician reef complex from central Sweden was selected based on its potential for providing interesting and illustrative palaeoecological patterns. When registration of the 40.000 specimens was completed, statistical analyses showed interesting faunal differences between the various parts of the reef complex.

Box 2: Fossil plant assemblages

In another example, fossil plants derived from successions spanning the Triassic-Jurassic boundary from Skåne, Sweden also revealed interesting diversity and extinction patterns once digitized and reconstructed.

Left: *Fieldwork in Skåne, Sweden collecting Triassic and Jurassic fossil plants for the Swedish Museum of Naturalhistory, for the collections and for science. The material is labelled, registered, photographed and subsequently statistical information relevant for biodiversity studies is extracted.* ***Middle****: Fossil seed-fern-like Thinnfeldia (ca. 6 cm long),* ***Right****: Suggested reconstruction of Thinnfeldia*

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