# Collections at the Swedish Museum of Natural History: Case Studies for Innovative Palaeoecological Outcomes

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The Swedish Museum of Natural History (NRM) is a major research institute with invaluable collections of >10 million specimens constituting an archive of the natural world. The collections have a broad taxonomic, temporal and spatial coverage and include several unique collections, such as the Linnaean 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 that facilitate high-quality research on the collections and in related fields. The research departments at NRM employ c. 150 researchers and curators.

Digitization is a time-consuming process but becomes considerably more motivating if concrete examples of practical scientific results can be illustrated and presented. In this case-study, a specific fossil assemblage from the Swedish Museum of Natural History, was selected based on its potential for providing interesting and illustrative palaeoecological patterns. As an example, a fossil Ordovician reef complex from central Sweden was selected. When registration of the several thousand specimens was completed, the statistical analyses showed interesting faunal differences between the various parts of the reef complex. In another example, fossil plant assemblages from several localities from the southernmost province of Sweden, and hosted in the NRM collections were selected. These fossils derived from successions spanning the Triassic-Jurassic boundary and also revealed interesting diversity patterns and extinction levels once digitized. We argue that the palaeoecological differences highlighted in these two case studies when visualized through photographs and colorful charts and graphics, significantly increase the incentive for digitization.