



The Jurassic of Svalbard, Sedimentology, Stratigraphy and Paleontology

Maayke Koevoets and Øyvind Hammer

Norway (m.j.koevoets@nhm.uio.no)

During the Mesozoic the landmass now known as Svalbard drifted from 45°N to 65°N. The average global temperature was significantly higher, disabling the formation of icecaps at the poles, resulting in a higher sea-level. At the time the location now known as Svalbard was covered by a shallow ocean and mostly marine, organic rich, black shales, interrupted by possibly deltaic sediments were deposited. These sediments are rich in invertebrate fossils. A general description of the Agardhfjellet formation, spanning the middle to upper Jurassic, was made by Dypvik in 1991. Wierzbowski (1989) described some ammonites in detail from the Kimmeridgian. It is not known if the fauna extends further up or down in the formation. Since 2004 the Museum of Natural History of Oslo has been active in Spitsbergen Svalbard. Extensive and detailed sedimentological and stratigraphic research was never conducted as the focus lay on vertebrate fossils. A detailed sedimentological analysis, description and correlation to other Jurassic Formations (such as the Kimmeridge Shales, Hekkingen Formation and draupne Formation) is essential to better understand the circumstances where the black organic-rich shales (a highly potential source rock) were deposited in and to be able to predict their occurrences. Included in this description is taxonomy, taphonomy and the stratigraphic development of invertebrate fauna to pinpoint the age of the sediments.