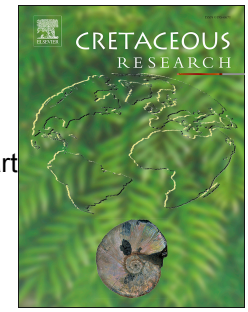
Accepted Manuscript



Burial history of a folded cretaceous succession – A case study from the southern part of Kilen, eastern north Greenland

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PII: S0195-6671(17)30296-3

DOI: 10.1016/j.cretres.2018.03.007

Reference: YCRES 3827

To appear in: *Cretaceous Research*

Received Date: 16 June 2017

Revised Date: 21 December 2017

Accepted Date: 9 March 2018

Please cite this article as: Pedersen, G.K., Lauridsen, B.W., Svennevig, K., Bojesen-Koefoed, Jø.A., Nøhr-Hansen, H., Alsen, P., Burial history of a folded cretaceous succession – A case study from the southern part of Kilen, eastern north Greenland, *Cretaceous Research* (2018), doi: 10.1016/j.cretres.2018.03.007.

Burial history of a folded Cretaceous succession – a case study from the southern part of Kilen, eastern North Greenland

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Keywords: Burial temperatures; palynomorphs; macrofossils; structural geology; Wandel Sea Basin

Abstract

Kilen is a semi-nunatak in the Flade Isblink icecap in eastern North Greenland with exposures of Mesozoic sedimentary rocks, which are part of the Wandel Sea Basin. Cretaceous marine mudstones and interbedded sandstones of the Galadriel Fjeld and Sølverbæk formations are thrusted and folded in large open folds at Gåseslette in the southeastern part of Kilen. Steeply dipping strata, reflecting parasitic folds and small-scale thrusts, are exposed in low cliffs along a c. 9 km NNW–SSE stretch of the Sølverbæk river. The present study is a case study of the thermal history of these outcrops, called the Sølverbæk section. The burial temperatures are calculated from vitrinite reflectance (R_o) values. T_{max}-measurements from Rock-Eval type pyrolysis correlate with the R_o-values. The latter reflects the large-scale folds with higher temperatures in anticlines and lower in synclines. The sedimentary successions are dated on basis of dinoflagellate cysts, inoceramid bivalves and ammonites. The dataset demonstrate a correlation between the T_{max} -