

# Geochemical investigations to genesis of flint in santonian limestone formations from Lägerdorf (SW-Holstein/Germany)

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A geochemical profile vertical to three flint layers (F 29 - F 31 according to the stratigraphy given by ERNST\*), 1963) in the Senonensis biozone of santonian/campanian limestone formations from Lägerdorf (SW-Holstein) has been investigated. The fraction soluble in hydrochloric acid has been analyzed for Na<sub>2</sub>O, K<sub>2</sub>O, CaO, MgO, SrO, MnO, Al<sub>2</sub>O<sub>3</sub>, SO<sub>3</sub> and P<sub>2</sub>O<sub>3</sub>. Moreover the total contents of CaO, MgO, SrO, BaO, MnO, Fe<sub>2</sub>O<sub>3</sub>, SiO<sub>2</sub>, Corg, and loss of ignition have been determined. The results have been investigated statistically in order to find possible 'relicted illustrations' of the mechanism(s) of flint-genesis. A sufficient correlation to the flint-layers has only been found for strontium (and less marked for barium), which is distributed symmetrically with maxima (minima) between flint horizons:

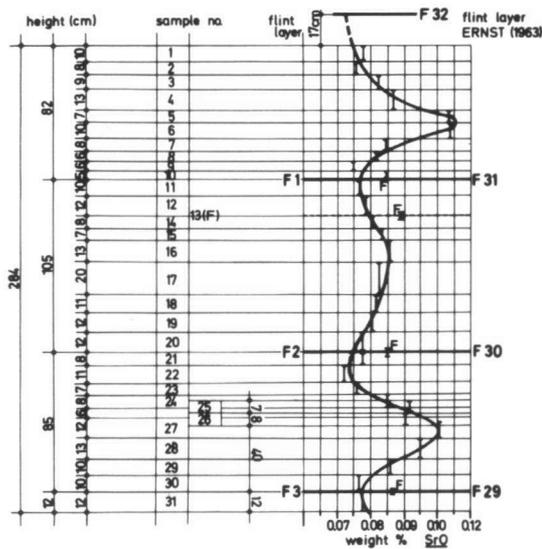


Fig. 1: Strontium distribution vertical to four flint layers

Because of the dominating importance of strontium as a useful parameter for diagenetic processes (maximal solution turnover at flint levels) and according to the distribution of all other limestone components unrelated to the flint layers and other mineralogical and geological observations it is concluded, that the flints in our profile are formed during early diagenetic, oscillating processes from organic silica, former homogeneously embedded in the lime. Moreover there are indications pointing to epigenetic causes of the stratified arrangement of these siliceous concretions.

*(No one process can account for all the occurrences of amorphous and crystalline silica, and each locality must be studied in the light of its own evidence'*

F. W. CLARKE, Data of Geochemistry, p. 544 (1966)

\*) ERNST, G., Mitt. Geol. Staatsinst. Hamburg, 32, pp. 71-127 (1963)