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Lower Buntsandstein (approx. 251–249 million years ago)

Rogenstein - Formation under Desert Conditions

Rogenstein owes its name to its striking resemblance to fish roe. The small spherical grains within the rock are called ooids – although they have nothing to do with fish eggs. Ooids formed in shallow waters of warm seas or lakes. Constant wave action caused them to roll along the seafloor, while carbonate layers were deposited around a small nucleus, layer by layer – similar to the formation of a pearl. This process required water that was highly supersaturated with carbonates.

The ooids usually reach diameters of only a few millimetres, rarely up to one centimetre. Over time, they became cemented together and formed a solid limestone known as Rogenstein. This rock developed at a time when what is now northern Germany was located close to the equator. The deposits point to a large, landlocked saline lake under a dry desert climate – a world completely different from today.

Sandstone, siltstone and claystone bedding with interbedded Rogenstein layers – a geological archive documenting changing depositional conditions.

Did you know?

Each tiny sphere in Rogenstein is like a miniature building block. It formed because it was constantly rolled back and forth in the water. Without waves, there would be no round grains – and no Rogenstein.

Why do stones become round when they move, but remain angular when they stay still?