

Discoveries on graptolites by X-ray studies

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The X-ray method has been used for analysing pyritized graptolites with the purpose of finding traces of the unknown soft parts. The investigated material comprises mainly Llandoveryan graptolites from Bornholm, Denmark, which occur in dark grey shales and frequently are pyritized. The graptolites are generally uniformly filled with pyrite throughout the rhabdosomes. However, at a few horizons from the *cyphus* Zone, pyrite is observed specially concentrated in the distal part of the thecal tubes, both in diplograptids and monograptids. In other specimens from the same horizon pyrite is found in rounded concentrations just outside the thecal apertures. Continuous extraskelatal pyrite is rare, but is nevertheless found (preferably around the distal parts of some *Retiolites* rhabdosomes). The pyrite replacements within the thecae and outside the thecal mouths have almost equal form and size throughout each rhabdosome, and may have replaced decaying soft parts. However, with the present material it has not been possible to clarify any exact structures.

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