What is boring? - Arctic reef structures as a habitat for boring organisms

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The coralline red algal species Lithothamnion glaciale forms rigid frameworks of magnesium calcite. These so-called rhodoliths cover large areas of the Svalbard shelf (Fig. 1). Drilled by boring mussels, many rhodoliths become hollow ecospheres and their interior is intensely colonized by benthic macro- and megafauna.

But is the calcified skeleton of Arctic rhodoliths itself also a habitat for endolithic microorganisms?

Based on a non-destructive 3D visualization via μCT (Fig. 2) we investigate rhodoliths from different water depths. Therefore, samples are cut off from chosen rhodoliths with a diamond rock saw (Fig. 3). So far, we found two different dendritic microboring in the dead parts as well as in the living tissue of a rhodolith sampled in 25 m water depth (Fig. 4). The morphology of these microboring matches with the ichnogenera Pyrodendrina arctica and Pyrodendrina villosa (first described by Wisshak 2017 for cold waters). These results highlight the importance of the rhodolith dominated ecosystems in the Svalbard shelf area as a substrate for the Arctic microboring community.