

Supplementary Information

Characterization of pustular mats and related *Rivularia*-rich laminations in oncoids from the Laguna Negra lake (Argentina)

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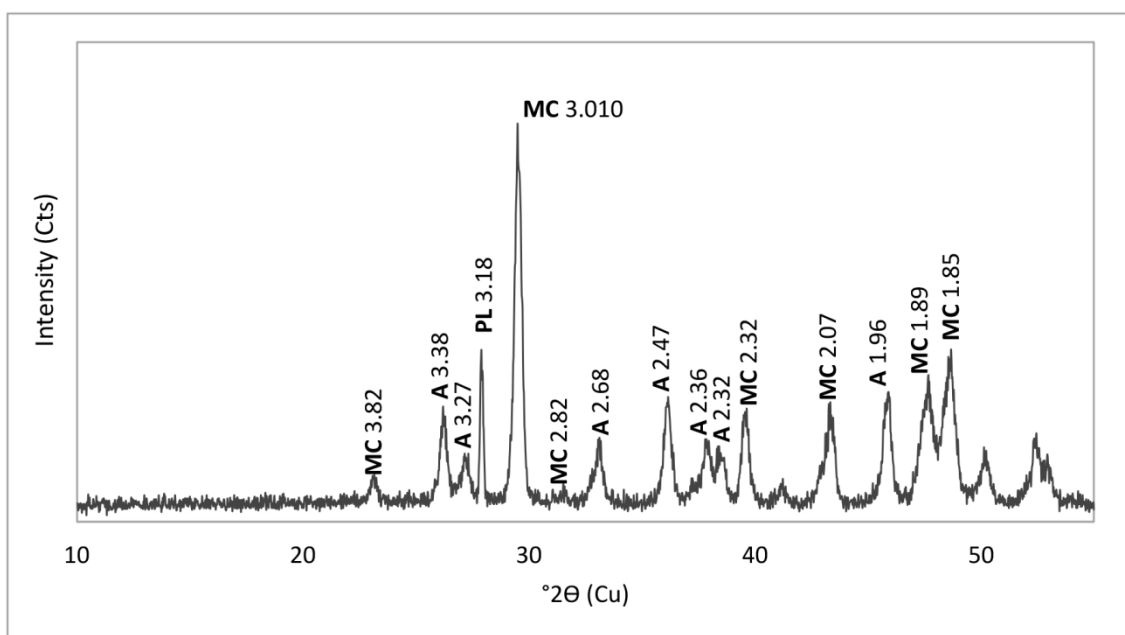
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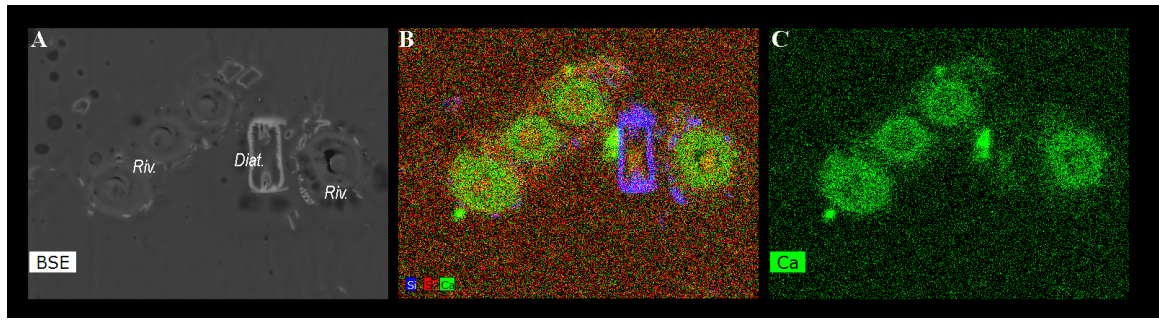
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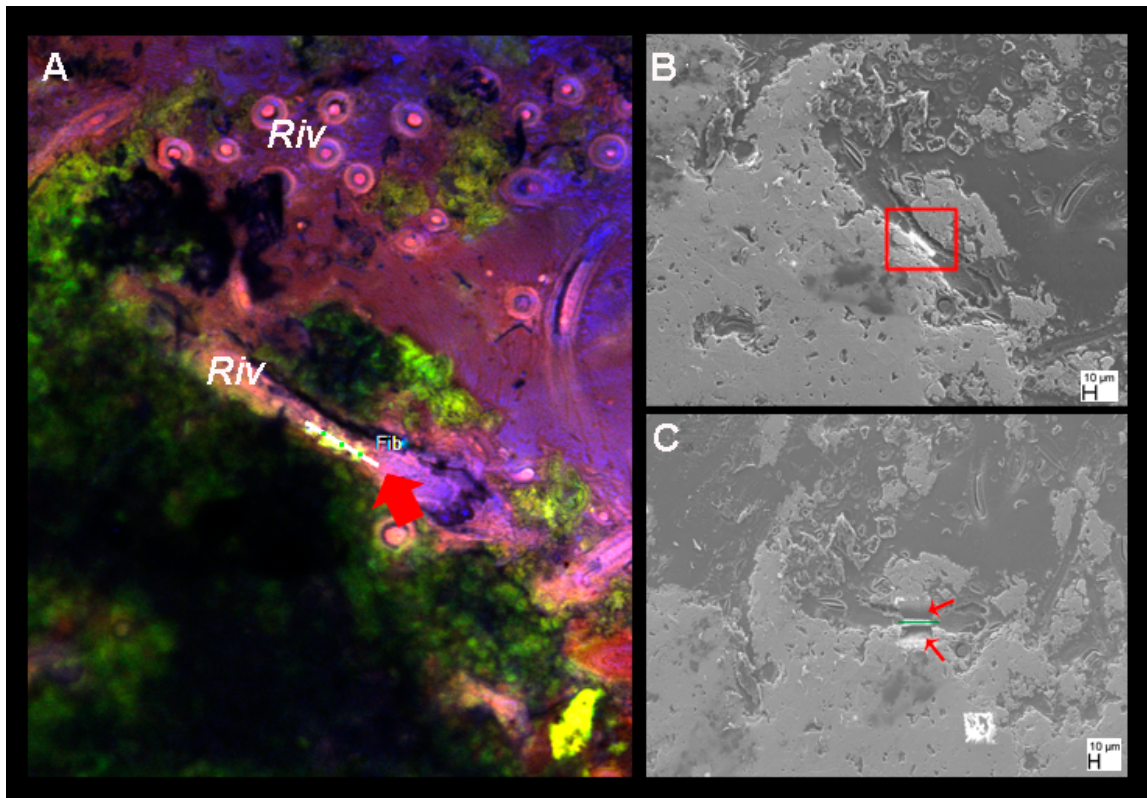
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Supplementary Figure S1: X-ray powder diffractogram obtained on the BP mat showing mainly Mg-rich calcite (MC), aragonite (A) as well as few plagioclases (PL). “Cts” stands for counts.



Supplementary Figure S2: (A) SEM image in backscattered electron mode of a cross-section of resin-embedded BP mat showing *Rivularia* filaments (*Riv.*) close to diatoms (*Diat.*). (B) Associated composite EDS map merging Ca (in green), Si (in blue), and S (in red). Ca distribution is presented individually in (C). It shows preferential accumulations of Ca in the *Rivularia* filaments compared to its surrounding.



Supplementary Figure S3: (A) CLSM image of a resin-embedded BP mat stained with Syto[®]9 (green) and highlighting free Ca in the surrounding of the *Rivularia* filaments (*Riv*). Red arrow shows the calcein-stained place between the sheath and the cell where a platinum coating was deposited for FIB milling. (B) SEM image showing the platinum (in the middle of the red square) already deposited on the filament. (C) SEM image showing the orientation of the milled area (green line) with excavations on both sides indicated by red arrows.