



# Supplementary material: Death and taphonomy of Holocene stromatolites from Lagoa Vermelha, Brazil

**Carolina Neumann Keim<sup>®\*</sup>,<sup>a</sup> and Marcos Farina<sup>a</sup>**

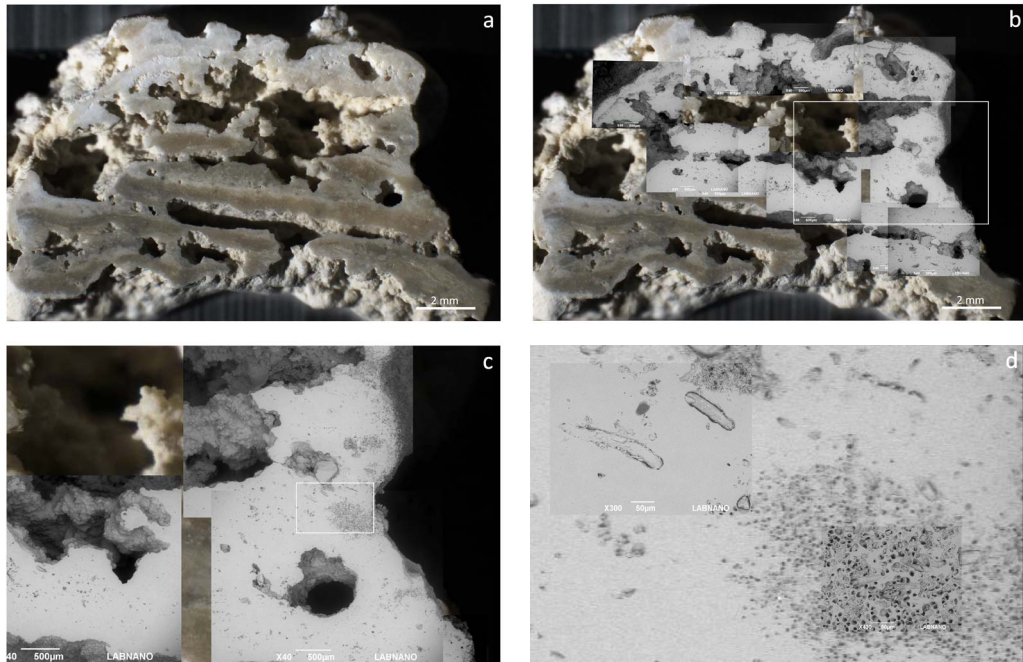
<sup>a</sup> Universidade Federal do Rio de Janeiro, Rio de Janeiro, RJ, Brazil

*Current address:* Instituto de Microbiologia Paulo de Góes, CCS, UFRJ, Av. Carlos  
Chagas Filho, 373, Cidade Universitária, 21941-902, Rio de Janeiro, RJ, Brazil  
(C. N. Keim)

*E-mails:* [cnkeim@micro.ufrj.br](mailto:cnkeim@micro.ufrj.br) (C. N. Keim), [marcos.farina.souza@gmail.com](mailto:marcos.farina.souza@gmail.com)  
(M. Farina)

---

\* Corresponding author.



**Supplementary Figure S1.** Polished stromatolite slab showing part of the stromatolite outer surface (top and right borders of the slab) and inner laminae (laminae at the center and the bottom). (a) Reflected light. (b,c) The same image in “a” superimposed with scanning electron micrographs (SEM) obtained from some areas of the same slab. (b) Compare the laminae of peripheric areas (top and right) with laminae not exposed to the environment (middle and bottom). Peripheric laminae contain abundant tubular holes and are smoother than inner surfaces at the millimeter scale, indicating that their original surfaces could have been corroded by boring microorganisms. The rectangle indicate the area enlarged in “c”. (c) SEM images taken close to the border show microborings and fossilized filaments. The rectangle indicates the area enlarged in “d”. (d) High magnification show details on tubular holes and microorganisms fossilized within them. Use the zoom to observe details in the images. SEM images were obtained at 10 kV using backscattered electrons. The smooth contrast of polished areas indicate homogenous elemental composition [see Keim et al., 2020 for detail on elemental composition of Lagoa Vermelha stromatolites].