

A new attachment trace of a verrucid barnacle on Pliocene bivalve shells, Santa Maria Island, Azores

Alfred Uchman, Max Wissak, Patrícia Madeira, Carlos S. Melo, Claudia Sacchetti, Gonçalo Castela Ávila, and Sérgio P. Ávila

Acta Palaeontologica Polonica 70 (1), 2025: 143-157 doi:10.4202/app.01222.2024

A new attachment trace belonging to the ichnogenus *Centrichnus* has been recognized on bivalve shells in a Pliocene coquina of the Pedra-que-Pica section in Santa Maria Island (Azores Archipelago). The new ichnospecies *Centrichnus dentatus* isp. nov. is characterized by an elliptical outline, bounded by a groove and/or a series of pits, and by having a more or less pronounced central to off-center depression surrounded by a flat area. Based on these new findings, the diagnosis of the ichnogenus *Centrichnus* is emended, as is the diagnosis of the ichnofamily Centrichnidae. The new trace fossil was produced by the barnacle *Verruca spengleri*, which was found in direct association with the trace. Some specimens of *Centrichnus dentatus* isp. nov. were found cross-cut by phoronid borings (*Talpina* isp.) or clionaid sponge borings (*Entobia* isp.), and they co-occur with polychaete borings (*Maeandropolydora* isp.) and bivalve borings (*Gastrochaenolites* isp.). The traces belong to the *Gnathichnus* ichnofacies, which refers to the early colonization of hard substrates taking place within months, even though the recorded ichnocoenoses suggest longer exposure and colonization by several generations of cirripeds, lasting several years rather than months.

Key words: Cirripedia, *Centrichnus*, bioerosion, ichnotaxonomy, etching trace, Azores, Portugal.

Alfred Uchman [alfred.uchman@uj.edu.pl; ORCID: <https://orcid.org/0000-0002-0591-777X>] (corresponding author), Institute of Geological Sciences, Jagiellonian University, Gronostajowa 3a, PL-30-387 Kraków, Poland. Max Wissak [max.wisshak@senckenberg.de; ORCID: <https://orcid.org/0001-7531-3317>], Senckenberg am Meer, Marine Research Department, Südstrand 40, 26382 Wilhelmshaven, Germany. Patrícia Madeira [patricia.ga.madeira@uac.pt; ORCID: <https://orcid.org/0003-4356-9769>] and Carlos S. Melo [csmelo@ciencias.ulisboa.pt; ORCID: <http://orcid.org/0001-7825-3858>], CIBIO-Açores, Research Centre in Biodiversity and Genetic Resources, InBio Associate Laboratory, MPB-Marine Palaeobiogeography Lab, University of the Azores; Faculty of Sciences and Technology, Rua da Mãe de Deus, 9500 321 Ponta Delgada, Portugal; UNESCO Chair – Land Within Sea: Biodiversity &

Sustainability in Atlantic Islands, University of the Azores, Rua da Mãe de Deus, 9500 321 Ponta Delgada, Portugal. Claudia Sachetti [claudia.sacchetti@cibio.up.pt; ORCID: <https://orcid.org/0000-0002-3225-3139>] and Gonçalo Castela Ávila [goncalorenteavila@gmail.com; ORCID: <https://orcid.org/0009-0009-5361-3015>], CIBIO-Açores, Research Centre in Biodiversity and Genetic Resources, InBio Associate Laboratory, MPB-Marine PalaeoBiogeography Lab, University of the Azores; Faculty of Sciences and Technology, Rua da Mãe de Deus, 9500 321 Ponta Delgada, Portugal. Sérgio P. Ávila [avila@uac.pt; ORCID: <http://orcid.org/0000-0003-4317-3051>], CIBIO-Açores, Research Centre in Biodiversity and Genetic Resources, InBio Associate Laboratory, BIOPOLIS Program in Genomics, Biodiversity and Land Planning; UNESCO Chair – Land Within Sea: Biodiversity & Sustainability in Atlantic Islands, University of the Azores; MPB-Marine PalaeoBiogeography Lab, University of the Azores; and Faculty of Sciences and Technology, Rua da Mãe de Deus, 9500 321 Ponta Delgada, Portugal.

This is an open-access article distributed under the terms of the Creative Commons Attribution License (for details please see creativecommons.org), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

 [Full text \(3,190.6 kB\)](#)