

Bivalve-barnacle pseudoplanktonic colonisation of wood from the Toarcian, Lower Jurassic, Strawberry Bank Lagerstätte, Somerset, UK

Crispin T.S. Little, Andy Gale, Matt Williams, Øyvind Hammer and Vincent Fernandez
Acta Palaeontologica Polonica 68 (1) 2023: 133-142 doi:<https://doi.org/10.4202/app.01018.2022>

Pseudoplankton are organisms that are adapted for a mode of life attached to floating objects. In modern oceans common examples are lepadid barnacles, which attach themselves to man-made and natural objects, especially wood logs. In the fossil record, pseudoplankton examples are commonly found in black shales, such as the lower Toarcian *Posidonia* Shale Formation of Germany. Here there are occasional large logs of fossil wood covered in specimens of the inoceramid bivalve *Pseudomytiloides dubius*, with or without specimens of the pentacrinid crinoid *Seirocrinus subangularis*. Some *Posidonia* Shale logs show evidence of for intra-species succession with younger *S. subangularis* specimens attached onto the stems of older ones. Another example of pseudoplankton from the *Posidonia* Shale is the occurrence of the numerous disarticulated specimens of the phosphatic-shelled eolepadid barnacle *Toarcolepas mutans* associated with a piece of fossil wood, which constitutes the oldest example of pseudoplanktonic barnacles in the fossil record. Here we report a limestone concretion from the lower Toarcian Strawberry Bank Lagerstätte (Ilminster, Somerset, UK) that preserves a piece of fossil wood with a pseudoplanktonic colony comprising at least a hundred specimens of *T. mutans* that attached onto a layer of *P. dubius* bivalves, that had already attached onto the wood. This is one of very few examples of temporal succession for pseudoplankton in the Toarcian and is also unusual in being preserved in a mixed carbonate-siliciclastic facies, rather than a black shale. The occurrence of *T. mutans* in the Strawberry Bank Lagerstätte concretion represents the second record of the species and also the equal oldest example of pseudoplanktonic barnacles in the fossil record.

Key words: Bivalvia, Cirripedia, Crinoidea, fossil wood, pseudoplankton, Strawberry Bank Lagerstätte, Toarcian, Early Jurassic, UK.

Crispin T.S. Little [earcts1@leeds.ac.uk; ORCID: <https://orcid.org/0000-0002-1917-4460>], School of Earth and Environment, University of Leeds, Woodhouse Lane, Leeds LS2 9JT, UK; Life Sciences Department, Natural History Museum, London, Cromwell Road, London SW7 5BD, UK. Andy Gale [andy.gale@port.ac.uk; ORCID: <https://orcid.org/0000-0002-2075-3689>], School of Earth and Environmental Sciences, University of Portsmouth, Burnaby Building, Burnaby Road, Portsmouth PO1 3QL, UK; Earth Sciences Department, Natural History

Museum, London, Cromwell Road, London SW7 5BD, UK. Matt Williams [matt.williams@brlsi.org ; ORCID: <https://orcid.org/0000-0001-7409-2655>], Bath Royal Literary and Scientific Institution, 16-18 Queen Square, Bath BA1 2HN, UK. Øyvind Hammer [oyvind.hammer@nhm.uio.no; ORCID: <https://orcid.org/0000-0001-9951-0630>], Natural History Museum, University of Oslo, Postboks 1172, Blindern, 0318 Oslo, Norway. Vincent Fernandez [vinfernand@gmail.com; ORCID: <https://orcid.org/0000-0002-8315-1458>], Imaging and Analysis Centre, Natural History Museum, London, Cromwell Road, London SW7 5BD, UK; European Synchrotron Radiation Facility, 71 Avenue des Martyrs, 38000 Grenoble, France.

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 \(1,283.9 kB\)](#) |

 [Supplementary file \(607.6 kB\)](#)