



<http://dx.doi.org/10.11646/zootaxa.4018.3.6>

<http://zoobank.org/urn:lsid:zoobank.org:pub:B60BAB3C-DA63-47BB-BBF1-FBC5B9D55EC0>

## A new genus and family of copepods (Crustacea: Copepoda) parasitic on polychaetes of the genus *Jasmineira* Langerhans, 1880 (family Sabellidae) in the northeastern Atlantic

GEOFF A. BOXSHALL<sup>1</sup>, MYLES O'REILLY<sup>2</sup>, ANDREY SIKORSKI<sup>3</sup> & REBECCA SUMMERFIELD<sup>1</sup>

<sup>1</sup>Department of Life Sciences, Natural History Museum, Cromwell Road, London SW7 5BD, UK. E-mail: [g.boxshall@nhm.ac.uk](mailto:g.boxshall@nhm.ac.uk)

<sup>2</sup>Scottish Environment Protection Agency, Angus Smith Building, 6 Parklands Avenue, Eurocentral, Holytown, North Lanarkshire ML1 4WQ, Scotland

<sup>3</sup>Akvaplan-niva AS, Framsenteret, P.O. Box 6606 Langnes, N-9296 Tromsø, Norway

### Abstract

A new genus and species of copepod, *Jasmineiricola mackiei* n. gen. et n. sp., parasitic on at least three species of the sabellid polychaete genus *Jasmineira* Langerhans, 1880 is described. The adult female is mesoparasitic, living with part of its body (the endosoma) embedded within the host and part (the ectosoma) protruding through the host's body wall. The endosoma consists of a well defined head region carried anteriorly on the trunk which has paired lateral lobes housing the ovaries. The head bears a rosette-like array of eight slender lobes, which are probably derived from the mouthparts. The only limbs present on the trunk are the subchelate maxillipeds positioned immediately posterior to the head. The ectosoma consists of a posterior genito-abdominal lobe bearing paired genital apertures. The male is unknown. The new genus cannot be placed in any of the five existing families of mesoparasitic copepods on polychaete hosts and is treated as the type of a new monotypic family, the Jasmineiricolidae. The new species occurs over a depth range from 19 to 279 m, and is widely distributed from UK coastal waters to Norwegian waters inside the Arctic Circle.

**Key words:** Polychaete host, mesoparasite, copepod, new family, micro-CT

### Introduction

Copepods live in association with virtually every other marine metazoan phylum (Huys & Boxshall 1991), but even in the relatively well-studied seas around Europe, the diversity of copepods utilizing polychaetes as hosts has been significantly underestimated. Focussing only on the nereicoliform copepods, Kim *et al.* (2013) described three new genera and six new species of the family Clausiidae Giesbrecht, 1895, four new species of the family Nereicolidae Claus, 1875, one new species of the family Spiophanicolidae Ho, 1984, and one highly derived new genus and species, *Notomasticola frondosus* Kim, Sikorski, O'Reilly & Boxshall, 2013, which could not be placed in any existing family.

In addition to the nereicoliform families, there are five families of mesoparasitic copepods which have adult females that are highly transformed and live partially embedded in their polychaete hosts (Boxshall & Halsey 2004); the Bradophilidae Marchenkov, 2002, Herpyllobiidae Hansen, 1892, Phyllocolidae Delamare Deboutteville & Laubier, 1961, Saccopsidae Lützen, 1964 and Xenocoelomatidae Bresciani & Lützen, 1966. Females of the family Herpyllobiidae have a bipartite body comprising an ectosoma lying external to the body wall of the host, and an endosoma which lies within the host (Lützen 1964a). The ectosoma is essentially a reproductive tagma containing the ovaries and carrying the paired egg sacs while the endosoma absorbs nutrients from the host and is a trophic tagma. Adult females in the families Bradophilidae and Phyllocolidae have a similar gross morphology, although in the latter the endosoma takes the form of a pair of elongate rootlets (Marchenkov 2002; Laubier 1961). Females of the Xenocoelomatidae are more deeply embedded within the host, with adults of *Aphanodomus* Wilson, 1924 for example, maintaining only a small aperture through the host's body wall through which paired egg sacs are extruded (Bresciani & Lützen 1974). In contrast, the adult females of *Melinnacheres* M.