



New digeneans (Opcoelidae) from hydrothermal vent fishes in the south eastern Pacific Ocean, including one new genus and five new species

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Abstract

A new genus and five new species of digeneans are reported from fishes at hydrothermal vent sites in the South East Pacific Rise region. *Biospeedotrema* n. gen. (Opcoelidae: Stenakrinae) is distinguished from other stenakrines by the more or less symmetrical testicular configuration, with the uterus passing between the testes, sometimes distinctly into the post-testicular region. *Biospeedotrema jolliveti* n. gen., n. sp. from *Ventichthys biospeedoi* (Ophidiidae) is distinguished by the vitelline fields which extend only slightly into the post-testicular region, the intestinal bifurcation is dorsal to the ventral sucker, the genital pore is slightly dextrally submedian or median, the cirrus sac is short and the caeca are broad and overlap the testes, usually reaching into the post-testicular region. *Biospeedotrema parajolliveti* n. sp. from *Thermichthys hollisi* differs from *Biospeedotrema jolliveti* in being squat, always just wider than long, the tegument is wrinkled, the testes are lobate, and the caeca only just reach to the testes. *Biospeedotrema biospeedoi* n. sp. from *T. hollisi* differs from its congeners in its body-shape, uterine extent posterior to the testes and the small vitellarium. *Caudotestis ventichthysi* n. sp. (Opcoelidae: Stenakrinae) from *V. biospeedoi* is distinguished from its five congeners in various combinations of caecal length, cirrus sac length, internal seminal vesicle shape, vitelline extent and distribution, forebody length and egg-size. *Buticulotrema thermichthysi* n. sp. (Opcoelidae: Opcoelininae) from *T. hollisi* (Bythitidae) is distinguished from its only congener by its very long, very strongly muscular oesophagus, bifurcating dorsally to the posterior part of the ventral sucker, the long, narrow pars prostatica and distal male duct and the sinistral genital pore at the level of the pharynx. The phylogenetic position for three of these species, *Buticulotrema thermichthysi*, *Biospeedotrema jolliveti* and *Biospeedotrema biospeedoi*, is assessed based on *ssrDNA* and *lsrDNA* sequences, which verify the position of these species in the Opcoelidae.

Key words: *Buticulotrema*, *Biospeedotrema*, *Caudotestis*, *Thermichthys*, *Ventichthys*, South East Pacific Rise, nuclear rDNA sequences

Introduction

The oceanographic cruise Biospeedo, conducted in the south-east Pacific in April/May 2004, aimed to increase our understanding of biodiversity patterns of a poorly explored but important ridge crossroads between biogeographic vent provinces (Jollivet *et al.* 2004).

Virtually nothing is known of the digeneans in the hydrothermal vent fauna. De Buron & Morand (2002a, b, 2004) mentioned undetermined digeneans in two sites, the East Pacific Rise and Mid-Atlantic Ridge, but no further information, such as host, was given. This paper, therefore, is the first to describe the digeneans found in vent fishes.

Material and methods

Fishes were caught using a fish cage trap deposited near vent fields using the submersible *Nautilie* (Jollivet *et al.*

limited number of fish families reported around hydrothermal vents. The most reported fish family from the vent region is the perciform family Zoarcidae (Biscoito *et al.* 2002). This family is frequently found to harbour digeneans in shallow water, so it is likely that a distinct vent-associated digenean fauna awaits discovery.

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