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A new species of *Dracoderes* (Kinorhyncha: Dracoderidae) from Korea provides further support for a dracoderid-homalorhagid relationship

VIBE G. THOMSEN[1], HYUN SOO RHO[2], DONGSUNG KIM[3] & MARTIN V. SØRENSEN[1,4]

[1]*Zoological Museum, The Natural History Museum of Denmark, University of Copenhagen, Universitetsparken 15, 2100 Copenhagen, Denmark*
[2]*Dokdo Research Center, Korea Institute of Ocean Science and Technology, Uljin 767-813, Korea*
[3]*Ocean Science Research Department, Korea Institute of Ocean Science and Technology, Ansan 425-600, Korea*
[4]*Corresponding author. Phone +45 3532 1081. E-mail address: mvsorensen@snm.ku.dk*

Abstract

A new kinorhynch species, *Dracoderes nidhug* **nov. sp.**, is described from the East Sea, at 160 m depth, off Uljin, Korea. The new species is the fourth that can be assigned to the genus, and is recognized by the presence of dorsal spines on segments 3 to 9 (alternatingly displaced to more paradorsal positions on segments 3 to 8), subdorsal tubules on segment 2, lateroventral tubules on segments 2, 5 and 10, and lateral accessory tubules on segment 8. The new species shows two longitudinal, intracuticular markings on the ventral side of segment 1, which could be interpret as rudimentary plate joints, corresponding to the articulations found on the sternal plates of segment 1 in species of *Pycnophyes* and *Kinorhynchus*. The finding brings further support to a closer relationship between *Dracoderes* and homalorhagid kinorhynchs.

Key words: *Dracoderes nidhug* **nov. sp.**, Homalorhagida, kinorhynch, meiofauna, taxonomy

Introduction

Dracoderes is one of the 22 kinorhynch genera that are currently recognized. The genus was discovered by Higgins & Shirayama (1990) that found and described *Dracoderes abei* Higgins & Shirayama, 1990 at Mukaishima Yacht Harbor in the Inland Sea of Japan. The genus is well-defined by a series of easily recognizable characters, of which the most prominent is the position of the dorsal spines that are shifted from the usual middorsal position and instead appear alternatingly to the left and to the right of the middorsal line. This feature, combined with the absence of a midterminal spine in adults, segment 1 composed of a closed ring, and remaining ten segments of one tergal and two sternal plates, a neck composed of nine placids and outer oral styles alternating between larger and smaller ones, make it very easy to recognize species of the genus (Higgins & Shirayama, 1990; Sørensen *et al.*, 2012a). Besides the type species of the genus, *D. abei*, the genus accommodates two additional species: *Dracoderes orientalis* Adrianov, 1999 described and only known from a localities near Ulsan on the southern part of the Korean east coast, and *D. gallaicus* Sørensen, Herranz, Rho *et al.*, 2012, that recently was described from localities along the Spanish west and south coast (Adrianov & Malakhov, 1999; Sørensen *et al.*, 2012a).

When Higgins & Shirayama (1990) described the first species of *Dracoderes* they considered affinities between the new genus and Echinoderidae or Centroderidae. To Echinoderidae because of the obvious, but yet superficial, overall resemblance, mainly due to the lack of a midterminal spine in adults, and to Centroderidae due to the reduced number of placids in the neck, and presence of dorsal spines on more than five segments. However, they conclusively rejected both possibilities and erected a new family, Dracoderidae Higgins & Shirayama, 1990 to accommodate the new species and genus. The family was assigned to the order Cyclorhagida that also includes Echinoderidae and Centroderidae, and accommodates the majority of the known kinorhynch biodiversity (see also Adrianov & Malakhov, 1999; Sørensen & Pardos, 2008). More recently, the cyclorhagid affinities of *Dracoderes* have been brought into question. In the description of *D. gallaicus* and the redescription of *D. abei*, Sørensen *et al.* (2012a) re-evaluate the available morphological information from species of *Dracoderes*, and note that the

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