New Records of Hairworms (Nematomorpha: Gordiida) from Japan

Andreas Schmidt-Rhaesa¹, Hirotaka Nishi², Akifumi S. Tanabe³ and Misako Urabe⁴

¹Zoological Museum and Biocenter Grindel, University of Hamburg, Martin-Luther-King-Platz 3, 20146 Hamburg, Germany
E-mail: andreas.schmidt-rhaesa@uni-hamburg.de
²Toyohashi Museum of Natural History, 1-238 Oana, Oiwa, Toyohashi, 441-3147 Japan
E-mail: nishi.hirotaka@gmail.com
³Division of Ecology and Evolutionary Biology, Graduate School of Life Sciences, Tohoku University, Aramaki-Aza-Aoba 6-3, Aoba-ku, Sendai, 980-8578 Japan
E-mail: astanabe@mail.tains.tohoku.ac.jp
⁴Department of Ecosystem Studies, School of Environmental Sciences, University of Shiga Prefecture, Hassaka-cho 2500, Hikone, 522-8533 Japan
E-mail: urabe@ses.usp.ac.jp

(Received 28 May 2008; Accepted 12 February 2009)

We report new records from Japan for four species of freshwater Nematomorpha (Gordiida). Two species closely, but not exactly, resemble known species and were determined as Gordionus cf. lineatus (Leidy, 1851) and Parachordodes cf. okadai Inoue, 1955. The other two species are Chordodes japonensis Inoue, 1952 and Gordionus chinensis (Villot, 1874). All specimens were identified using scanning electron microscopy, with images given for Gordionus cf. lineatus and Parachordodes cf. okadai.

Key Words: Nematomorpha, Gordiida, horsehair worms, Japan, taxonomy, SEM.

Introduction

Freshwater Nematomorpha (Gordiida) have a life cycle including a free-living phase in freshwater habitats and a parasitic phase in the body cavity of various insect species (Hanelt et al. 2005). There are about 300 species described worldwide. Thirteen species have been reported from Japan (Inoue 1955; Fukui and Inoue 1973; Schmidt-Rhaesa 2004; Ichikawa 2007; Schmidt-Rhaesa and Sato 2009). These are: Gordius fulgur Baird, 1861; G. japonicus Inoue and Fukui, 1953; G. cavernarum Inoue, 1972; G. luteopunctatus Inoue, 1979; G. ogatai Inoue, 1979; Chordodes silvestri Camerano, 1895; C. fukuii Inoue, 1951; C. japonensis Inoue, 1952; Parachordodes lestici Heinze, 1935; P. okadai Inoue, 1955; Paragordionus kawamuraui Yamaguti, 1943; Gordionus chinensis (Villot, 1874); and G. kii Schmidt-Rhaesa and Sato, 2009.

Scanning electron microscopy (SEM) has become a standard method in nematomorph taxonomy, because it documents the relevant cuticular structures most reliably. Among the 13 Japanese species, SEM data are available for Chordodes fukuii, C. japonensis, Paragordionus kawamuraui, Gordionus chinensis, and G. kii (Schmidt-Rhaesa 2004; Schmidt-Rhaesa and Sato 2009). On the bases of a small