

***Carinoma hamanako* sp. nov. (Nemertea: Palaeonemertea),
the First Representative of the Genus
from the Northwest Pacific**

Hiroshi Kajihara¹, Hiroshi Yamasaki² and Sónia C. S. Andrade³

¹Faculty of Science, Hokkaido University, Sapporo 060-0810, Japan

E-mail: kazi@mail.sci.hokudai.ac.jp

²Graduate School of Science, Hokkaido University, Sapporo 060-0810, Japan

³Museum of Comparative Zoology, Department of Organismic and Evolutionary Biology,
Harvard University, 26 Oxford Street, Cambridge, MA 02138, USA

(Received 21 January 2011; Accepted 20 April 2011)

Carinoma hamanako sp. nov., the ninth member of the genus, is described based on three specimens collected in Lake Hamana, Shizuoka Prefecture, Pacific coast of Honshu, Japan. The new species can be distinguished from its congeners by the blind-ending rhynchocoelic villar vessels, the lateral rhynchocoel vessels rejoining the lateral vessels, the unbranched excretory canals, the situation of the posterior part of the mid-dorsal nerve within the longitudinal muscle layer of the body wall, and the absence of a vascular plexus in the foregut region. A phylogenetic analysis based on the nuclear 28S rRNA and mitochondrial cytochrome *c* oxidase subunit I genes shows that *C. hamanako* sp. nov. forms a clade with two congeners, *C. mutabile* Griffin, 1898 and *C. tremaphoros* Thompson, 1900, thus supporting the generic placement of the new species.

Key Words: Nemertea, palaeonemertean, Japan, taxonomy, anatomical description, molecular phylogeny, new species.

Introduction

Palaeonemerteans, or Palaeonemertea s. lat., comprise a likely paraphyletic assemblage of basal clades within the phylum Nemertea, with one group, the hubrechtellids, being a sister group of the Heteronemertea, and the latter two together constituting a monophyletic Pilidiophora (Thollessen and Norenburg 2003). So far, 110 species in Palaeonemertea s. str., i.e. excluding the 15 species of Hubrechtellidae, are known worldwide (Gibson 1995; Kajihara 2006; Kajihara *et al.* 2008).

The palaeonemertean (s. lat.) fauna of Japanese waters has been studied by Takakura (1898, 1922), Yamaoka (1940), Iwata (1951, 1952, 1954a, b, 1957), Senz (1997), and Kajihara (2006); 14 species in seven genera are currently known, including hubrechtellids (reviewed by Kajihara 2007), but no member of the genus *Carinoma* Oudemans, 1885 has been reported from this region. In the present paper we describe a new species of *Carinoma*, the ninth member of the genus, representing the first record of *Carinoma* from the Northwest Pacific. In addition, its phylogenetic position is evaluated based on DNA sequence data from two molecular markers