



## Peanut worms of the phylum Sipuncula from the Nha Trang Bay (South China Sea) with a key to species

ANDREY V. ADRIANOV<sup>1,2</sup> & ANASTASSYA S. MAIOROVA<sup>1,2</sup>

<sup>1</sup>A.V. Zhirmunsky Institute of Marine Biology, Far East Branch of Russian Academy of Sciences, Vladivostok 690041, Russia.  
E-mail: avadr@hotmail.com

<sup>2</sup>Far Eastern Federal University, Vladivostok 690091, Russia

### Abstract

Sipunculan worms from the Vietnamese waters are still poorly investigated, while they are well known from Chinese and Taiwanese waters of the South China Sea. During the years 2008–2010, therefore, we collected sipunculans from Nha Trang Bay in South Vietnam. Twenty species of peanut worms representing eleven genera and five families of the phylum Sipuncula are recognized from more than one thousand individuals collected from various biotopes. Fifteen species are new records for Nha Trang Bay with *Nephasoma pellucidum* being a new record for the South China Sea. Species accounts include the most important taxonomic characters as well as quantitative characteristics, distributions, and specific biotope data. All species were illustrated in living conditions with everted introvert and tentacular apparatus. Accordingly, a key up to species level is provided.

**Key words:** *Sipunculus*, *Siphonosoma*, *Nephasoma*, *Thysanocardia*, *Themiste*, *Antillesoma*, *Apionsoma*, *Phascolosoma*, *Aspidosiphon*, *Lithacrosiphon*, *Cloeosiphon*, Vietnam, Indo-West Pacific

### Introduction

Sipunculans are a group of marine nonsegmented coelomate worms in the rank of animal phylum Sipuncula. The phylum consists of two classes—Phascolosomatidea and Sipunculidea, representatives of which differ in the structure of the tentacular apparatus (see Cutler, 1994; Adrianov *et al.*, 2006). To date, after several taxonomic revisions, the phylum Sipuncula comprises about 150 valid species (see Cutler, 1994).

Despite the fact that the greatest species diversity of sipunculans occurs in the Indo-West-Pacific, guides to the sipunculans from this region are completely lacking and only fragmentary information on the regional fauna is available. Most sipunculan species are reported from the South China Sea (see Fisher, 1923; Leroy, 1942; Dawydoff, 1952; Chen, 1963; Murina, 1964, 1974, 1989, 2007; Li, 1982, 1983, 1984, 1985 a,b, 1989; Li *et al.*, 1990, 1992 a,b, 1993; Zhou & Li, 1993; Pagola-Carte & Saiz Salinas, 1996, 2000; Maiorova & Adrianov, 2010).

The general list of species of the entire South China Sea compiled from data of available literature (see Pagola-Carte & Saiz Salinas, 1996) includes 45 species supplemented with the most complete bibliography concerning the sipunculan collections in this region of the World Ocean. Taking into account taxonomic revisions (see Cutler, 1994), only 34 out of the listed species are considered to be valid and most were described from Chinese waters (Gulf of Tonkin) (Pagola-Carte & Saiz Salinas, 1996). According to Murina (1989, 2007), the fauna of the South China Sea, including the Gulf of Tonkin, comprises only 25 valid sipunculan species belonging to 11 genera and 6 families.

The most well studied regions in the South China Sea are waters of China and Taiwan. In the course of the Chinese-German Expedition during 1990–1992, 17 species were described from Hainan Island, which together with previous findings comprises 21 species in its fauna (see Pagola-Carte, Saiz Salinas, 2000), whereas 26 sipunculan species are known from Taiwan waters (see Sato, 1939; Hsueh *et al.*, 2006; Zhou *et al.*, 2007; Hsueh & Kuo, 2009).

In contrast, waters of Vietnam are only scarcely investigated. In a regional account for waters of South Vietnam, Murina (1989) listed 19 species of sipunculans representing 8 genera and 4 families. Only 8 sipunculan spe-