



***Voragonema tatsunoko* (Trachymedusae: Rhopalonematidae),
a new species of benthopelagic medusa, host to the hyperiid amphipod
Mimonectes spandli (Physosomata: Mimonectidae)**

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Abstract

Large numbers of a distinctive trachymedusa were observed at 1967 m depth just above the bottom in Suruga Bay, Japan, during a dive by the crewed submersible *Shinkai 2000* in April 2002. Two individuals were collected and proved to be an undescribed species, herein described as *Voragonema tatsunoko* **sp. nov.** This species is characterised by the number (9) and shape of the centripetal canals. An immature male hyperiid amphipod, *Mimonectes spandli* Stephensen and Pirlot, 1931, was observed attached to the subumbrella of one of the individuals adjacent to a gonad. This is the first record identifying an association between another organism and *M. spandli* and is the first record of this amphipod species outside of the Atlantic Ocean.

Key words: Jellyfish, submersible, *Shinkai 2000*, Cnidaria, trachymedusa, new species, Suruga Bay, Japan, commensal amphipod

Introduction

Benthopelagic zones around the world are largely unstudied due to the difficulties in towing nets close to the sea floor and little is consequently known about the composition and dynamics of benthic boundary layer communities. Recently the benthic boundary layer has been receiving attention for the important role it plays as the site of biogeochemical fluxes and transformations between the benthic and pelagic oceanic compartments (Marcus & Boero 1998; Raffaelli *et al.* 2003, Gili *et al.* 2006). The existence of a rich fauna and a high biomass of pelagic organisms near the deep-sea floor has been illustrated during the last decade, mainly using crewed submersibles and remotely-operated vehicles (*e.g.*, Lindsay *et al.* 1999; Miyake *et al.* 2002; Toyokawa *et al.* 2003; Miyake *et al.* 2004), and although these faunas are well-known in a few selected marine areas (Angel 1990), more remains unknown than known (Bucklin *et al.* 2010). There seems to be a tendency for the deep-sea benthopelagic fauna to be distinct and perhaps more diverse than the overlying bathy- and mesopelagic faunas (Childress *et al.* 1989).

One of the most neglected components of the fauna inhabiting the deep-sea benthic boundary layer appears to be the gelatinous zooplankton. The use of new observation techniques such as submersibles, remotely operated vehicles, and underwater cameras has allowed documentation of the near-bottom gelatinous fauna in a way that was previously impossible (Larson *et al.* 1992; Matsumoto *et al.* 1997). One of the most conspicuous organisms of the deep-sea fauna, the medusae, may develop dense concentrations near the bottom (Smith 1982; Lindsay *et al.* 1999; Miyake *et al.* 2002; Toyokawa *et al.* 2003; Miyake *et al.* 2004) with populations quite different, in comparison with the better-known mesopelagic ones (Mackie 1985). In