



<http://dx.doi.org/10.11646/zootaxa.3745.4.2>

<http://zoobank.org/urn:lsid:zoobank.org:pub:ADFA37A5-9547-4ED2-A0DB-A308117C7ECE>

Two interstitial species of the genus *Semicytherura* (Crustacea: Ostracoda) from Japan, with notes on their microhabitats

SHINNOSUKE YAMADA^{1,2} & HAYATO TANAKA¹

¹Institute of Geosciences, Faculty of Science, Shizuoka University, Oya 836, Suruga-ku, Shizuoka City, Shizuoka Prefecture, 422-8529, Japan

²Corresponding author. E-mail: shinno_976@hotmail.com

Abstract

A new interstitial ostracod, *Semicytherura uzushio* sp. nov., is described from the southwest of Japan, and the details of the carapace characters of *Semicytherura mukaishimensis* Okubo, 1980 are redescribed. *Semicytherura uzushio* and *S. mukaishimensis* live interstitially in the intertidal and infralittoral zones, respectively. They have the smallest carapaces among the known *Semicytherura* species, comparable to those of other interstitial ostracods. It is thought that most of the small species belonging to this genus have an interstitial life style in marine sediments.

Key words: Podocopida, Cytheroidea, Cytheruridae, carapace size, lamella of prismatic layer, new species

Introduction

The genus *Semicytherura* Wagner, 1957 (type species: *Semicytherura nigrescens* (Baird, 1838)) was established based on carapace characters; namely the broad inner calcified lamella and the tooth arrangement of the hingement. This inner calcified lamella is the most important taxonomic character of this genus, because this lamella has a prismatic structure (Yamada *et al.* 2004) distinguished anatomically from the outer lamella cuticle. About thirty species have been described in this genus from Japan and its adjacent seas (Yamada & Tsukagoshi 2010), and one interstitial species *S. sagittiformis* was identified from a sandy beach in central Japan (Yamada & Tanaka 2011). Most *Semicytherura* species have an epibenthic life style in the rocky shore, inner bay and infralittoral zone (Hanai 1957; Okubo 1980; Yamada *et al.* 2005), while some small species are considered to live interstitially in coarse sandy substrates (Wilkinson & Williams 2004; Yamada & Tanaka 2011). It is important for our understanding of the adaptation to an interstitial niche to describe taxonomic characters and ecology of interstitially living species (Gottwald 1983; Danielopol & Bonaduce 1990; Higashi & Tsukagoshi 2012).

In this paper, one new interstitial *Semicytherura* species from the southwest Japan is proposed. The detailed carapace characters of *S. mukaishimensis* Okubo, 1980, with the comments on its microhabitat are here redescribed, because the carapace microstructure (i.e., the distribution of pore systems) of *S. mukaishimensis* and its life style have never been reported hitherto.

Material and methods

The material used in this study was collected from the intertidal zone of the pebble beach in Tosaki, Awajishima Island, Hyogo Prefecture (34°24'12"N, 134°66'01"E) on September 24th 2010, and the infralittoral zone of the sandy beach in Arahama, Kanagawa Prefecture (35°15'85"N, 139°61'10"E) on July 7th 2012 (Fig. 1). Sandy sediment from the interstitial zone (10 cm below the surface) was taken with a scoop after digging down to sea water level during low tide. The sand sample was immediately washed several times in a bucket of freshwater, and the supernatant was then strained through a 25 µm mesh sieve. The specimens were picked out from the sample under a stereo-binocular microscope (SZH-10, OLYMPUS) and fixed in 70 % ethanol.

Acknowledgements

We thank Mr. Yasuhisa Kondo for his kind help in sampling and Prof. Akira Tsukagoshi for the facilities made available for this work. Thanks are also due to the staff members of Misaki Marine Biological Station (University of Tokyo) for various facilities given to the authors. We are grateful to Dr. Simone Brandão and Dr. Ian Wilkinson for their helpful comments on this manuscript.

References

- Baird, W. (1838) The natural history of the British Entomostraca Part 4. *Magazine of Zoology and Botany*, 2, 132–144.
- Baird, W. (1850) *The natural history of British Entomostraca*. The Ray Society, London, 364 pp.
- Danielopol, D.L. & Bonaduce, G. (1990) Origin and distribution of the interstitial species group *Xestoleberis arcturi* Triebel (Ostracoda, Crustacea). *Courier Forschungsinstitut Senckenberg*, 123, 69–86.
- Gottwald, J. (1983) Interstitielle Fauna von Galapagos. XXX. Podocopida 1 (Ostracoda). *Mikrofauna Meeresboden*, 90, 1–187.
- Hanai, T. (1957) Study on the Ostracoda from Japan: III. Subfamilies Cytherurinae G. W. Müller (emend. G. O. Sars 1925) and Cytheropterinae n. subfam. *Journal of the Faculty of Science, University of Tokyo*, Sec. II, 11, 11–36.
- Hartmann, G. (1991) Ostracoden von Hawaii, insbesondere aus dem marinen Interstitial. *Helgoländer Meeresuntersuchungen*, 45, 165–198.
<http://dx.doi.org/10.1007/bf02365641>
- Higashi, R. & Tsukagoshi, A. (2012) Two new species of the interstitial genus *Parvocythere* (Crustacea, Ostracoda, Cytheroidea) from Japan: an example of morphological variation. *ZooKeys*, 193, 27–48.
<http://dx.doi.org/10.3897/zookeys.193.2842>
- Ikeya, N. & Hanai, T. (1982) Ecology of recent ostracods in the Hamana-ko region, the Pacific coast of Japan. *The University Museum, The University of Tokyo, Bulletin*, 20, 15–59.
- Ikeya, N. & Suzuki, C. (1992) Distributional patterns of modern ostracodes off Shimane Peninsula, southwestern Japan Sea. *Reports of Faculty of Science, Shizuoka University*, 26, 91–137.
- Ikeya, N., Okubo, I., Kitazato, H. & Ueda, H. (1985) Shizuoka (Pleistocene and living Ostracoda, shallow marine, brackish and fresh water). In: Committee of 9th International Symposium on Ostracoda (Ed.), *Guidebook of Excursion for the 9th International Symposium on Ostracoda*. Shizuoka University Press, Shizuoka, pp. 1–32.
- Ishizaki, K. (1981) Ostracoda from the East China Sea. *The Science Reports of the Tohoku University, Sendai, Second Series (Geology)*, 51, 37–65.
- Müller, G.W. (1894) Die Ostracoden des Golfes von Neapel und der angrenzenden Meeres-Abschnitte. *Fauna und Flora des Golfes von Neapel und der Angrenzenden Meeres-Abschnitte. Herausgegeben von der Zoologischen Station zu Neapel*, 21, 1–404.
<http://dx.doi.org/10.5962/bhl.title.11517>
- Okubo, I. (1980) Six species of the subfamily Cytherurinae Müller, 1894, in the Inland Sea, Japan (Ostracoda). *Publication of the Seto Marine Biological Laboratory*, 25, 7–26.
- Sars, G.O. (1866) Oversigt af Norges marine Ostracoder. *Forhandlinger i videnskabs-selskabet i Christiania*, 1865, 1–130.
- Tanaka, H. & Tsukagoshi, A. (2010) Two new interstitial species of the genus *Parapolycope* (Crustacea: Ostracoda) from central Japan. *Zootaxa*, 2500, 39–57.
- Wagner, C.W. (1957) *Sur les Ostracodes du Quaternaire Récent des Pays-Bas et leur Utilisation dans l'Étude Géologique des Dépôts Holocènes*. Mouton, Amsterdam, 259 pp.
- Wilkinson, I.P. & Williams, M. (2004) An interstitial Ostracoda from a beach-sand habitat in Keawe'ula Bay, northern Hawaii. *Revista Española de Micropaleontología*, 36, 101–108.
- Yajima, M. (1988) Preliminary notes on the Japanese Miocene Ostracoda. In: Hanai, T., Ikeya, N. & Ishizaki, K. (Eds.), *Evolutionary Biology of Ostracoda*. Kodansha, Tokyo, pp. 1073–1085.
- Yamada, S. & Tanaka, H. (2011) First Report of an Interstitial *Semicytherura* (Crustacea: Ostracoda: Cytheruridae: Cytherurinae): a New Species from Central Japan. *Species Diversity*, 16, 49–63.
- Yamada, S. & Tsukagoshi, A. (2010) Two new species of the genus *Semicytherura* (Podocopa: Ostracoda) from Akkeshi Bay, Hokkaido, Japan, with comments on the speciation and related species. *Zoological Science*, 27, 292–302.
<http://dx.doi.org/10.2108/zsj.27.292>
- Yamada, S., Tsukagoshi, A. & Ikeya, N. (2004) Ultrastructure of the carapace in some *Semicytherura* species (Ostracoda: Crustacea). *Micropaleontology*, 50, 381–389.
<http://dx.doi.org/10.2113/50.4.381>
- Yamada, S., Tsukagoshi, A. & Ikeya, N. (2005) Taxonomy, morphology and speciation of the *Semicytherura henryhowei* group. *Hydrobiologia*, 538, 243–265.
<http://dx.doi.org/10.1007/s10750-004-4970-4>
- Yamane, K. (1998) Recent ostracode assemblages from Hiuchi-nada Bay, Seto Inland, Sea of Japan. *The Reports of Ehime Prefectural Science Museum*, 3, 19–59.