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## A new species of the hermit crab genus *Pagurus* Fabricius, 1775 (Crustacea: Decapoda: Anomura: Paguridae) from shallow coastal waters in Japan, with a checklist of the East Asian species of the genus

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### Abstract

A new species of hermit crab of the family Paguridae, *Pagurus rectidactylus*, is described and illustrated on the basis of material from inshore waters in the Seto Inland Sea and the Sea of Japan. It appears closest to *P. quinquelineatus* Komai, 2003, also known from Japan, but is easily distinguished from the latter by the dactylus of the right cheliped almost unarmed or armed only with a few tiny spines or tubercles, instead of dorsal and dorsomesial rows of conspicuous spines, and the more elongate and slender ambulatory legs with more numerous ventral corneous spines on dactyli and propodi. Housing is also different between the two species: the new species exclusively inhabits carcinoecia formed by a hydrozoan *Stylactaria misakiensis* (Iwasa, 1934), whereas *P. quinquelineatus* uses gastropod shells without association with coelenterates. A checklist of East Asian (Japanese Archipelago to Taiwan Island, Far Eastern Russia to northern China) species of *Pagurus* along with general geographical distributions is presented.

**Key words:** hermit crab, *Pagurus*, new species, *quinquelineatus*, *rectidactylus*, Japan

### Introduction

Thanks to the revisionary studies and descriptions of new species published in the last two decades, taxonomy of species of the hermit crab genus *Pagurus* Fabricius, 1775 (Paguridae) occurring in waters around Japanese Archipelago and Taiwan Island has been substantially clarified (Sandberg & McLaughlin 1993; Komai 1994a, 1994b, 1996, 1997, 1998, 1999a, 1999b, 2000a, 2000b, 2003a, 2003b, 2004; McLaughlin & Konishi 1994; McLaughlin & Sandberg 1995; Komai & Imafuku 1996; McLaughlin & Forest 1997; McLaughlin & de Saint Laurent 1998; Komai & Yu 1999; Komai & Yakovlev 2000; McLaughlin & Lemaitre 2000; Komai & McLaughlin 2001; Komai & Osawa 2001; Komai & Mishima 2003; McLaughlin & Asakura 2004; Asakura 2006; Komai & Chan 2006; Komai & Takeda 2006; McLaughlin *et al.* 2007; Komai *et al.* 2011; Osawa 2012). At present, 44 species are known from the area.

During nature watching for public carried out on 2 February 2014 by the Ogaki Museum of Natural Science and Experience Learning at Okadaiou, Okimi, Etajima, Hiroshima Prefecture, seven specimens of an unfamiliar hermit crab, exclusively inhabiting carcinoecia formed by the associated hydrozoan *Stylactaria misakiensis* (Iwasa, 1934) (Cnidaria: Hydractiniidae), were collected by the second author from intertidal to shallow subtidal zone. Since then, four additional specimens have been collected from the same locality by the second and third authors (March and June 2014). Those specimens were submitted to the first author for identification through Dr. N. Nishihara, the director of the Ogaki Museum of Natural Science and Experience Learning. One more specimen, collected at Takahama, Ohi County, Fukui Prefecture, was also available for study. Detailed examination has revealed that these 12 specimens represent a new species of *Pagurus*, described herein as *P. rectidactylus* **n. sp.** The new species appears closest to *P. quinquelineatus* Komai, 2003 in both morphology and coloration, but characters

- Pagurus tabataorum* Osawa, 2012: Japan (Ryukyu Islands); 68 m (Osawa 2012; Arima 2014).
- Pagurus townsendi* (Benedict, 1892): Alaska, Aleutian Islands, Japan (Hokkaido to Chiba Prefecture); 310–1031 m (McLaughlin 1974; Komai 1993; Komatsu & Komai 2009).
- Pagurus trigonocheirus* (Stimpson, 1858): Arctic Ocean, Chukchi Sea, Bering Sea, Aleutian Islands, Kamchatka, Kuril Islands, Sea of Okhotsk, Sea of Japan, Japanese Pacific coast (Hokkaido to Chiba Prefecture); subtidal to 497 m (McLaughlin 1974; Asakura 2006; Komatsu & Komai 2009).
- Pagurus undosus* (Benedict, 1892): Chukchi Sea, Bering Sea, Aleutian Islands, Sea of Okhotsk, Sea of Japan, northern Japan (Hokkaido); intertidal to 64 m (McLaughlin 1974; Komai 1994a; Arima 2014).

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