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Two new species of decapod crustaceans from the middle Miocene Katsuta Group, Japan

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Abstract

Two new decapod crustaceans, *Upogebia striata* sp. nov. (Upogebiidae) and *Philyra miyamotoi* sp. nov. (Leucosiidae), are described from the middle Miocene Katsuta Group in Okayama Prefecture, Japan.

Key words: Crustacea, Decapoda, Miocene, Katsuta Group, Okayama Prefecture, Japan.

Introduction

During the palaeontological survey of the Miocene Katsuta Group, the junior author, SK, has collected many decapod crustacean fossils from this group. Fifteen species in fourteen genera of decapod crustaceans are represented in his collection (Kishimoto, 1995). The purpose of the present paper is to describe two new species of decapods from the Katsuta Group.

All the described specimens are preserved in the Mizunami Fossil Museum (MFM).

Locality and geological note

The described specimen was collected from silty sandstone of the Yoshino Formation of the Katsuta Group exposed at Shinden (=Loc. KT-1 of Karasawa, 1993 and Loc. T.A.-1 of Kishimoto, 1995), Tsuyama City, Okayama Prefecture. According to Yoshimoto (1979), the Katsuta Group chronologically set in the early middle Miocene.

Ohe *et al.* (1986) recognised the *Tellinella-Perna-Vepricardium-Vicaryella* assemblage which indicates the muddy bottom in the inner sublittoral zone from the same locality. Taguchi (1990) listed 56 species of molluscs. Taguchi (1983, 1990, 1992) described tropical molluscs, *Vepricardium okamotoi, Terebralia shibatai*, and *Perna oyamai*, and Karasawa (1992) also described a crab, *Ozius collinsi*, of which an allied recent species is distributed in Kagoshima southwards. These fossils indicate that the Tsuyama area has been laid down under tropical marine conditions at the present day (Taguchi, 1990, 1992 ; Karasawa, 1992).

Systematic descriptions

Infraorder Thalassinidea Latreille, 1831
Superfamily Callianassoidea Dana, 1852
Family Upogebiidae Borradaile, 1903
Genus *Upogebia* Leach, 1814

Type species: By monotypy *Cancer stellatus* Montagu, 1808 (ICZN Opinion 434).



Fig. 1. *Upogebia striata* sp. nov., MFM39014 (holotype), × 1.5, lateral view of right 1st pereiopod.
Fig. 2. *Upogebia striata* sp. nov., MFM39014 (holotype), × 1.5, mesial view of right 1st pereiopod.
Fig. 3. *Upogebia striata* sp. nov., MFM39015 (paratype), × 1.5, outer mould of right and left 1st pereiopods.
Fig. 4. *Philyra miyamotoi* sp. nov., MFM39016 (holotype), × 3.0, dorsal view of carapace.

Upogebia striata sp. nov.
(Figs. 1-3)

Material: MFM39014 (holotype), coll. Kishimoto; MFM39015 (paratype), coll. MFM.

Diagnosis: First pereiopods subchelate, palm elongate with 12 oblique striated ridges and with 6 conical tubercles on mesial surface.

Derivation of name: The specific name is derived from the Latin, *striatus*, meaning striate.

Description: First pereiopods subchelate. Dactylus broken and fixed finger short. Palm elongate, about 3.5 times longer than high; lateral surface with a small tubercle at the base of fixed finger; ventrolateral surface covered with short, small forwardly directed spines; dorsal and ventral margins finely granulate on proximal half; mesial surface covered with 12 oblique striated ridges diminishing in length proximally, 6 conical tubercles succeeding their ridges. Merus short, finely granulate on dorsal and ventral margins.

Discussion: The new species has closely resemblance to *Upogebia mizunamiensis* Karasawa, 1989 from the lower Miocene Akeyo Formation of the Mizunami Group and *Upogebia tanegashimensis* Karasawa and Inoue, 1992 from the middle Miocene Kukinaga Group, but differs in having an elongate palm of the 1st pereiopod with 12 oblique striated ridges and with 6 conical tubercles on the mesial surface, and without granules on the medial part of the lateral surface. Presence of oblique striated ridges on the mesial surface of the palm of the 1st pereiopod readily distinguishes *U. striata* from *Upogebia* sp. from the lower Miocene Mizunami Group (Karasawa, 1989).

Infraorder Brachyura Latreille, 1803
Section Heterotremata Guinot, 1977
Superfamily Leucosioidea Saumauelle, 1819
Family Leucosiidae Saumauelle, 1819
Genus *Philyra* Leach, 1917

Type species: By subsequent designation of H. Milne Edwards, 1827 ; *Cancer globus* Fabricius, 1775 (ICZN Opinion 712).

Philyra miyamotoi sp. nov.
(Fig. 4)

Material: MFM39016 (holotype), coll. Kishimoto.

Diagnosis: Carapace rhomboidal, dorsal surface smooth, strongly convex with poorly defined regions, hepatic facet complete, front shallowly concave with a median projection, anterolateral and posterolateral margins convex with medium-sized granules.

Derivation of name: The specific name is derived from Mr. Junichi Miyamoto, who is our friend and is studying molluscan and decapod fossils from the Cretaceous Izumi Group.

Description: Carapace rhomboidal in outline, as long

as wide. Dorsal surface smooth, strongly convex; frontal region with fine granules in median line. Dorsal regions not defined, only intestinal region poorly defined by shallow, broad grooves. Orbitofrontal margin narrow, about 1/4 times as long as wide; front shallowly concave with a low, median projection; orbit small, concave; postorbital angle sharp, but not reaching supraorbital angle. Hepatic facet complete, dorsal margin marked by fine granules. Anterolateral and posterolateral margins convex, fringed with medium-sized granules.

Discussion: *P. miyamotoi* has close affinity with *Philyra plana* Karasawa, 1989 from the middle Miocene Shukunohora Facies of the Mizunami Group in the dorsal aspects of the carapace, but *P. miyamotoi* has granulated margins of the carapace, a finely granulated line on the frontal region and the front with a low median projection. In the species only intestinal region on the dorsal surface is defined by shallow, broad grooves, whilst in *P. plana*, shallow, broad grooves separate gastrocardiac and intestinal regions from branchial regions.

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中部中新統勝田層群産十脚甲殻類2新種の記載

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要　　旨

岡山県津山市新田の中部中新統勝田層群吉野層より産した十脚甲殻類2種，*Upogebia striata* (Upogebiidae)・*Philyra miyamotoi* (Leucosiidae)を新種として記載する．*Upogebia striata* は下部中新統瑞浪層群明世累層産 *Upogebia mizunamiensis* Karasawa に類似するが，長い掌節と掌節近心面に12条の傾いた隆起線とそれに続く6個の小顆粒列を持つことで識別できる．*Philyra miyamotoi* は中部中新統瑞浪層群宿洞相産 *Philyra plana* Karasawa に似た種であるが，甲の前側縁・後側縁に顆粒を備えること，額域に正中線上に小顆粒があることにより区別される．