

## ***Parastylodactylus matsuzawai* sp.n. (Caridea: Stylodactylidae), a new shrimp from Japanese waters**

**R.N. Burukovsky**

*Kaliningrad State Technical University, Kaliningrad 236000, Russia.  
e-mail: burukovsky@klgtu.ru*

**ABSTRACT:** *Parastylodactylus matsuzawai* sp.n., is described from Japanese waters and is close to *P. semblatae* Cleva, 1990. Both species feature rounded pleura of abdominal somites, a tiny supraorbital spine, and five pairs of dorsal spines on telson. It differs from *P. semblatae* by the armature of the dorsal side of the rostrum (30–39 spines in *P. semblatae* vs. 23 in *P. matsuzawai* sp.n.), by the length of the antennular peduncles (1/3 of scaphocerite length in *P. semblatae* vs. 1/2 in *P. matsuzawai* sp.n.), as well as by the morphology and armature of the pereopods 3–5. In *P. semblatae* the ischio-meral suture is only present in pereopods 5, while in *P. matsuzawai* sp.n. it is present in pereopods 4 and 5. *P. matsuzawai* sp.n. lacks a proximal spine on the ischiomerus of the 3<sup>rd</sup> pereopods, which are armed with a single subdistal spine; the ischiomera of 4<sup>th</sup> pereopods have 3 spines, those of 5<sup>th</sup> pereopods 2 spines (subdistal and median), whereas *P. semblatae* has only one subdistal spine on the 4<sup>th</sup> pereopods and 3 spines in the distal 1/2 of ischiomerus of the 5<sup>th</sup> pereopods. The new species is also more reddish than *P. semblatae*.

**KEY WORDS:** *Parastylodactylus matsuzawai* sp.n., new species, Japan.

## ***Parastylodactylus matsuzawai* sp.n. (Caridea: Stylodactylidae) — новая креветка из вод Японии**

**Р.Н. Буруковский**

*Калининградский государственный технический университет, Советский пр., 1. Калининград 236000, Россия.  
e-mail: burukovsky@klgtu.ru*

**РЕЗЮМЕ:** *Parastylodactylus matsuzawai* sp.n. из вод Японии среди других видов рода ближе всего к *P. semblatae* Cleva, 1990, так как имеет закругленные плевры абдоминальных сегментов, крошечный супраорбитальный шипик и 5 пар шипов на тельсоне. От *P. semblatae* отличается вооружением дорсальной стороны роострума (30–39 дорсальных шипов у *P. semblatae* и 23 — у *P. matsuzawai* sp.n.), длиной антеннулярного стебелька (у *P. semblatae* достигает трети длины скафоцерита, у *P. matsuzawai* sp.n. — его половины), а так же строением и вооружением переопод 3–5. У *P. semblatae* шов на месте исхио-мерального слияния заметен лишь на переоподах 5, а у *P. matsuzawai* sp.n. — и на переоподах 4. У *P. matsuzawai* sp.n. отсутствует проксимальный шип на исхиомерусе переопод 3, вооруженных единственным субдистальным шипом, исхиомерусы переопод 4 несут 3, а переопод 5 — 2 шипа

(субдистальный и медиальный), тогда как у *P. semblatae* на переоподах 4 имеется лишь 1 субдистальный, а на переподах 5 — три шипа в дистальной половине исхиомеруса.

КЛЮЧЕВЫЕ СЛОВА: *Parastylodactylus matsuzawai* sp.n., новый вид, Япония.

## Introduction

A new species of the shrimp family Stylo-dactylidae has been found while studying shrimp collections from Japanese waters stored in the Forschungsinstitut und Naturmuseum Senckenberg (FIS), Frankfurt-am-Main, Germany, and is described in this paper.

Carapace length (CL,  $\pm 0.1$  mm) was measured from the rear margin of the orbits to the posterior margin of the carapace. All other measurements were done according to the scheme of Cleva (1990).

## Systematic account

*Parastylodactylus matsuzawai* sp.n.

Figs 1, 2.

MATERIAL. Holotype. Ovigerous ♀, CL 5.1 mm (SMF 34747); Pacific Ocean, Japan, Kochi-province, off None, north of Cape Muroto on east coast (ca 33°26,4' N; 134°17,1' E), 200 m depth, received from Kochi Prefectural Deep Sea water Laboratory by K. Matsuzawa on January 17, 1996, donated by Keisuke Matsuzawa (Muroto-shi, Japan) to FIS in January 2005.

DESCRIPTION. Body surface not pubescent, but some setae present between rostral teeth. Rostrum long, 1.3 times carapace length, almost equal to length of scaphocerites, vertically oval in cross section; rostral plate not developed, its proximal part nearly horizontal, distal part slightly curving upwards; dorsal side and post-rostral ridge with densely-set, 23 similar size mobile teeth (Fig. 1A), 6 posteriormost behind orbit, foremost and rearmost slightly smaller than the others, ventral side with 5 mobile subequal spines on medium third, anterior 2 larger and more widely spaced (Fig. 1E).

Carapace smooth, a few shallow, lateral, hepatic grooves present; tiny post-orbital, post-antennal and branchiostegal spines present (Fig. 1A).

Pleurae of abdominal somites rounded. Lateral sides and ventral corners of 6<sup>th</sup> somite pointed (Fig. 1B). Telson length about 1.5 times 6<sup>th</sup> abdominal somite length, 3 times as long as its maximum width; distal end triangular, acute pointed; a bunch of long dorsal, proximal setae, followed by a shallow groove along the middle of telson's middle side, 5 pairs of mobile spines arranged in two rows, one on each side of the midline; each posterolateral corner bearing a short, stout, mobile spine, followed by a pair of strong spines, outer spine stouter and longer than inner spine (Fig. 1F).

Scaphocerites long, very narrow, narrowing distally, 1.2 times CL, almost 7 times their maximum width, armed with strong distal teeth exceeding terminal part of scaphocerite plate. Eyes well developed, cornea main part occupying most of ventral eye surface, accessory part (ocellus) situated on dorsal side of eyestalk, touching main part; 9 long setae on border between main part of cornea and ocellus (Fig. 1D; setae omitted).

Distal edge of 3<sup>rd</sup> segment of antennal peduncle almost reaching middle of scaphocerite. Stylocerite short and wide, outer side ending in a needle-like, sharp tip which almost reaches middle of antennular peduncle 1<sup>st</sup> segment (Fig. 1C). Maxilliped 3 elongated, overreaching distal end of scaphocerite by about 1/6 of last segment's length. Pereopods 1 and 2 very similar in morphology and length: elongated, clearly overreaching distal end of scaphocerite, pereopod 1 by 1/2 of its chela length, pereopod 2 by 1/3 of its chela length (Fig. 1G). Pereopods 3–5 elongated, reaching to the middle of scaphocerite. Morphology and armature of pereopod 3–5 variable. Ischium and merus of pereopod 3 completely fused, without suture; distal end of ischiomerus with one spine (Fig. 1H); a suture present at ischium and merus articulation of

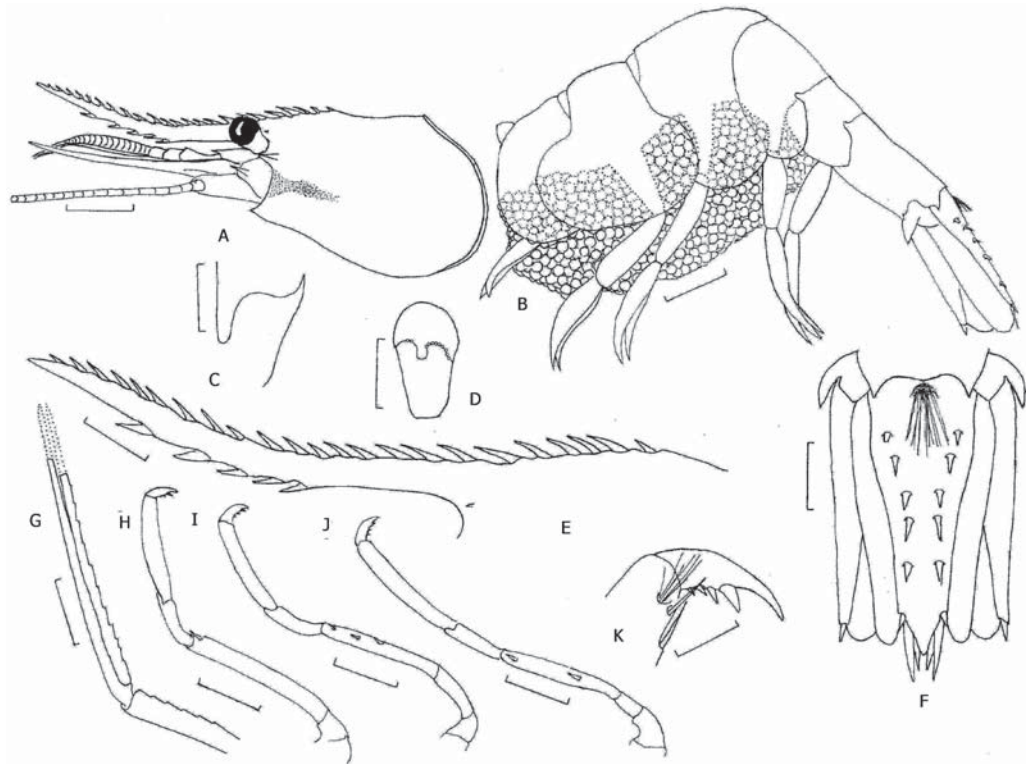


Fig. 1. *Parastylodactylus matsuzawai* sp.n. Holotype, female.

A — cephalothorax, lateral view (setae omitted); B — abdomen, lateral view; C — stylocerite, view from above; D — eye, view from above; E — rostrum and postrostral ridge, lateral view; F — telson and uropods, view from above; G — chela of pereopod 2, lateral view; H — pereopod 3, lateral view; I — pereopod 4, lateral view; J — pereopod 5, lateral view; K — dactylus of pereopod 4, lateral view. Scales (mm): A, B, H, I, J — 2; D, E, F, G — 1; D, K — 0.5.

Рис. 1. *Parastylodactylus matsuzawai* sp.n. Голотип, самка.

A — цефалоторакс, вид сбоку (щетинки не изображены); B — abdomen, вид сбоку; C — стилоцерит, вид сверху; D — глаз, вид сверху; E — рostrum и постростральный гребень; F — тельсон и уropоды, вид сверху; G — клешня pereopod 2, вид сбоку; H — pereopod 3, вид сбоку; I — pereopod 4, вид сбоку; J — pereopod 5, вид сбоку; K — дактилус pereopod 4, вид сбоку. Масштаб (мм): A, B, H, I, J — 2; D, E, F, G — 1; D, K — 0,5.

pereopod 5 (Fig.1J); distal half of ischium of pereopod 4 with 3 ventral spines (Fig. 1 D); ischium of pereopod 5 with 1 distal and 1 medial spines (Fig. 1J). Dactyls of pereopod 3–5 of similar morphology: short, about  $\frac{1}{4}$  propodus length, flexor margin with one large, movable, subdistal spine, and three much smaller also movable spines gradually decreasing in size proximally (Fig. 1K).

REMARKS (Differential diagnosis). The new species has short, wide, and pointed stylocerites. According to Holthuis (1993: 85, key to genera), this would set the new species apart from *Stylodactyloides* and *Stylodactylus*. Dif-

ferentiation between *Parastylodactylus* and *Neostylodactylus*, however, raises a problem. Because only a female is available, presence or absence of arthrobranchs in males (a diagnostic character between the two later genera, see Hayashi, Miyake, 1968) cannot be used. Carapace length of the specimen examined exceeds 4 mm (5.1 mm), a character indicating that it should belong to *Parastylodactylus* (see Cleve, 1990; Holthuis, 1993). However, this classification is not based on firm ground, because a size character alone cannot be decisive for generic classification. Assignment of the new species to *Parastylodactylus* should therefore be



Fig. 2. *Parastylodactylus matsuzawai* sp.n. Holotype, female. Color in life (courtesy of K. Matsuzawa).  
Рис. 2. *Parastylodactylus matsuzawai* sp.n. Голотип, самка. Прижизненная окраска (любезность К. Мацузава).

regarded as preliminary until males become available. Among the species of this genus, *P. matsuzawai* sp.n. is closest to *P. semblatae* Cleva, 1990. In both species the abdominal segments have rounded pleurae, there is a tiny supraorbital spine, and five pairs of dorsal spines on the telson. However, they differ from each other by the armature of the dorsal edge of the rostrum (30–39 spines in *P. semblatae* and 23 spines in *P. matsuzawai* sp.n.), by the length of the antennular peduncle ( $2/3$  scaphocerite length in *P. semblatae*, and  $1/2$  in the new species), as well as by the morphology and armature of the pereopod 3–5. The ischiomeral suture can be seen on pereopod 5 only in *P. semblatae*, and in both pereopods 4 and 5 in the new species. *P. matsuzawai* sp.n. also lacks a proximal spine on the ischiomerus of pereopod 3 and there is only one subdistal spine. The ischiomera of pereopod 4 have three, whereas in *P. semblatae* the ischiomera of pereopod 4 there is a single subdistal spine,

The color in live of *P. matsuzawai* sp.n. (Fig. 2) is very similar to that of *P. semblatae* (photos provided by K. Matsuzawa). In the latter the antennulae, postorbital ridge and its surround-

ings, branchiostegal, cardinal, and lower part of pleural region of carapace are of yellow earth color, like fresh rust. The remaining body is pinkish with pale, almost whitish spots (Cleva, 1993: 133, fig. 18c). Comparatively, *P. matsuzawai* sp.n. has a more intensive red coloration with a whitish meandering pattern on the cephalothorax. The red color is more intensive around the lower margin of the branchiostegite and at the base of the rostrum, the latter being pale. The lateral faces of the carapace are paler red. A conspicuous double spot surrounded by deep red margins is present close to the posterolateral corner of the branchiostegite. The abdomen is more uniformly red with a slight patchy pattern.

**ETYMOLOGY.** The species is named in honour of its collector, Keisuke Matsuzawa (Muroto-shi, Japan), whose splendid collection of deepwater decapods is now stored at the Senckenberg Museum, together with his invaluable collection of slides taken from live or freshly dead specimens.

**DISTRIBUTION.** Japan, north of Cape Muroto, 200 m.

## Acknowledgements

This work was carried out thanks to an invitation by the Senckenberg Research Institute in order to work on shrimp collections stored at the Crustacea Section of this institute. I would like to express my sincere gratitude to my colleague Prof. Michael Türkay and to his technical assistant Andreas Allspach and other collaborators of the section for excellent working conditions, open-heartedness and pleasure I had working with them. I also am very grateful to my friends Dr. V. Laptikhovskiy (Falkland Isl.) and Dr. V. Spiridonov (Moscow), who translated my original Russian manuscript into English, and also to Dr. J. Poupin who read the manuscript and has made the important remarks.

## References

- Cleva R. 1990 Les genres et les espèces indo-ouest-pacifiques de Stylodactylidae. 3. Crustacea Decapoda // A. Crosnier (ed.). Résultats des Campagnes MUSORSTOM, Volume 6. Mémoires du Muséum national d'Histoire naturelle. Nouvelle Série. Série A, Zoologie. Vol.145. P.71–136.
- Hayashi K.-I., Miyake S. 1968. Notes on the family Stylodactylidae with the description of a new genus *Neostylodactylus* // J. Faculty of Agriculture, Kyushu University. Vol.14. No.4. P.583–611.
- Holthuis L.B. 1993. The recent genera of Caridean and Stenopodidean shrimps (Crustacea, Decapoda) with appendix on order Amphionidacea. Leiden (Nationaal Natuurhistorisch Museum). 328 pp.

*Responsible editors E. N. Temereva,  
K.G. Mikhailov*