



<http://dx.doi.org/10.11646/zootaxa.3949.1.4>

<http://zoobank.org/urn:lsid:zoobank.org:pub:22266A34-5663-4180-91F3-814AA12D8ABE>

## Three new species of the *Eriopisa* group (Crustacea: Amphipoda: Eriopisidae) from Japan, with the description of a new genus

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### Abstract

Three new species of the *Eriopisa* group (Crustacea: Amphipoda: Eriopisidae) are described from coastal areas in Japan. *Paraflagitopisa* **gen. nov.** is established with *P. excavata* **sp. nov.** as its type species. This new genus is characterized by (1) entire lateral cephalic lobe, (2) unfused flagellum of antenna 2, (3) 3-articulated mandibular palp, (4) carpus of gnathopod 1 longer than propodus, (5) transverse palm of gnathopod 1, and (6) slender outer ramus of uropod 3 with long second article, and can be distinguished from the closely related genus, *Flagitopisa*, by the article 2 of mandibular palp longer than article 3, the undilated bases of pereopods 3–4, and the slender inner ramus of uropod 3. *Psammogammarus lobatus* **sp. nov.** is characterized by (1) male gnathopod 2 with excavated palm, (2) posterodistally projected bases of pereopods 5–7, (3) quadrate posteroventral corner of pleonal epimeron 3, (4) short inner ramus of uropod 3, and (5) article 2 of uropod 3 outer ramus longer than article 1. *Victoriopisa wadai* **sp. nov.** has the following characters: (1) eyes absent, (2) peduncle of antenna 1 not heavily setose, (3) accessory flagellum with 1–2 articles, (4) flagellum of antenna 2 composed of 2 long and 3 short articles, (5) gnathopod 2 in both sexes with excavated palm, (6) merus of pereopod 7 moderately expanded, and (7) ventral margin of pleonite 2 slightly setose. Key to species of the *Eriopisa* group in Japan is provided.

**Key words:** Crustacea, Amphipoda, Eriopisidae, *Paraflagitopisa*, *Psammogammarus*, *Victoriopisa*, coastal areas, Japan, new species, new genus

### Introduction

The amphipod family Eriopisidae was established by Lowry & Myers (2013), and is characterized by the second gnathopods which are similar between males and females and the endopod (=inner ramus) of uropod 3 that is minute or shorter than the exopod (=outer ramus). This family is divided into two groups, the *Eriopisa* group and the *Eriopisella* group, in the presence or absence of the extraordinarily developed second article of the outer ramus of uropod 3, respectively. The *Eriopisa* group includes nine genera (Lowry & Myers, 2013): *Confodiopisa* G.S. Karaman, 1984; *Eriopisa* Stebbing, 1890; *Flagitopisa* G.S. Karaman, 1984; *Impertiopisa* G.S. Karaman, 1984; *Nedsia* J.L. Barnard & Williams, 1995; *Psammogammarus* S.L. Karaman, 1955; *Tunisopisa* Stock, 1980; *Victoriopisa* G.S. Karaman & J.L. Barnard, 1979; *Vocitopisa* G.S. Karaman, 1984. Key to genera of the group except for *Nedsia* was provided by G.S. Karaman (1984).

Status of the included genera has been controversial. *Confodiopisa*, *Flagitopisa* and *Impertiopisa* were synonymized with *Psammogammarus* by Stock & Sanchez (1987), van der Ham & Vonk (2003) analyzed the *Eriopisa* group phylogenetically and stated “*Psammogammarus* is a junior synonym of *Eriopisa*”, and Sawicki *et al.* (2005) reinstated *Flagitopisa*. However, recent taxonomic papers on *Psammogammarus* (Tomikawa *et al.* 2010; Vonk *et al.* 2011; Jaume *et al.* 2013) recognized *Psammogammarus* as a valid genus and *Confodiopisa* and *Impertiopisa* as synonymized genera; therefore I follow the papers in the present study.

In Japan, three species of the group were hitherto recorded: *Eriopisa elongata* (Bruzelius, 1859) from the Seto Inland Sea (Nagata 1965), *Victoriopisa ryukyensis* Morino, 1991 from Okinawa Island, and *Psammogammarus mawatarii* Tomikawa *et al.*, 2010 from Kuchinoerabu Island. The locality of *Eriopisa elongata* by Nagata (1965) is relatively near to the collecting sites of the present study and a detailed comparison between the species is needed.

## Literature cited

- Barnard, J.L. & Barnard, C.M. (1983) *Freshwater Amphipoda of the World, I. Evolutionary Patterns and II. Handbook of Bibliography*. Hayfield Associates, Mt. Vernon, Virginia, 830 pp.
- Barnard, J.L. & Williams, W.D. (1995) The taxonomy of Amphipoda (Crustacea) from Australian fresh waters: Part 2. *Records of the Australian Museum*, 47, 161–201.  
<http://dx.doi.org/10.3853/j.0067-1975.47.1995.236>
- Bruzelius, R.M. (1859) Bidrag till k annedomen om skandinavians Amphipoda Gammaridea. *Kongliga Svenska Vetenskaps-Akademiens Handlingar*, new series, 3, 1–104. [4 plates]
- Chilton, C. (1921) Fauna of the Chilka Lake. Amphipoda. *Memoires of the Indian Museum*, 5, 519–558.
- Dang, N.T. & Le, H.A. (2005) New data on the gammaridean Amphipoda species composition of the Vietnam nearshore waters. *Journal of Biology, Vietnamese Academy of Science and Technology*, 27 (2), 1–7. [in Vietnamese with English abstract]
- Jaume, D., Iliffe, T.M. & van der Ham, J.L. (2013) A new *Psammogammarus* (Amphipoda: Eriopisidae) from anchialine pools on the Exuma Cays, Bahamas. *Zootaxa*, 3700 (1), 48–64.  
<http://dx.doi.org/10.11646/zootaxa.3700.1.2>
- Karaman, G.S. (1984) Revision of *Eriopisa*-complex of genera (Gammaridea) (Contribution to the knowledge of the Amphipoda 139). *Poljoprivreda i  umarstvo, Titograd*, 30, 39–72.
- Karaman, G.S. & Barnard, J.L. (1979) Classificatory revisions in gammaridean Amphipoda (Crustacea), part 1. *Proceedings of the Biological Society of Washington*, 92, 106–165.
- Karaman, S.L. (1955)  ber einige Amphipoden des Grundwassers der Jugoslavischen Meeresk ste. *Acta Musei Macedonici Scientiarum Naturalium, Skopje*, 2, 223–242.
- Lim, J.H.C., Azman, B.A.R. & Othman, B.H.R. (2010) Melitoid amphipods of the genera *Ceradocus* Costa, 1853 and *Victoriopisa* Karaman and Barnard, 1979 (Crustacea: Amphipoda: Maeridae) from the South China Sea, Malaysia. *Zootaxa*, 2348, 23–39.
- Lowry, J.K. & Myers, A.A. (2013) A phylogeny and classification of Senticaudata subord. nov. (Crustacea: Amphipoda). *Zootaxa*, 3610 (1), 1–80.  
<http://dx.doi.org/10.11646/zootaxa.3610.1.1>
- Lowry, J.K. & Stoddart, H.E. (2003) *Zoological Catalogue of Australia. Vol. 19.2B. Crustacea: Malacostraca: Peracarida: Amphipoda, Cumacea, Mysidacea*. CSIRO Publishing, Melbourne, 531 pp.
- Morino, H. (1991) Gammaridean amphipods (Crustacea) from brackish waters of Okinawa Island. *Publications of Itako Hydrobiological Station*, 5, 13–26.
- Nagata, K. (1965) Studies on marine gammaridean Amphipoda of the Seto Inland Sea. III. *Publications of the Seto Marine Biological Laboratory*, 13, 291–326.
- Ortiz, M. & Lalana, R.R. (1989) Una nueva especie de anfipodo del complejo *Eriopisa* (Amphipoda, Gammaridea), de aguas cubanas. *Revista de Investigaciones Marinas*, 10, 233–237.
- Sawicki, T.R., Holsinger, J.R. & Sket, B. (2005) Redescription of the subterranean amphipod crustacean *Flagitopisa philippensis* (Hadzioidea: Melitidae), with notes on its unique morphology and clarification of the taxonomic status of *Psammogammarus fluviatilis*. *Raffles Bulletin of Zoology*, 53, 59–68.
- Stebbing, T.R.R. (1890) The right generic names of some Amphipoda. *Annals and Magazine of Natural History*, series 6, 5, 192–194.  
<http://dx.doi.org/10.1080/00222939009460805>
- Stock, J.H. (1980) Amsterdam Expeditions to the West Indian Islands, report 8. A new cave amphipod (Crustacea) from Cura ao: *Psammogammarus caesicolus* n. sp. *Bijdragen tot de Dierkunde*, 50, 375–386.
- Stock, J.H. & Sanchez, E. (1987) Stygofauna of the Canary Island, 7. *Psammogammarus initialis* n. sp., a new mediolittoral interstitial amphipod crustacean from Tenerife. *Stygologia*, 3, 264–277.
- Tomikawa, K., Kakui, K. & Yamasaki, H. (2010) A new species of *Psammogammarus* (Amphipoda: Melitidae) from Kuchinoerabu Island, Japan, with a note on its feeding habits. *Zoological Science*, 27, 615–626.  
<http://dx.doi.org/10.2108/zsj.27.615>
- van der Ham, J.L. & Vonk, R. (2003) A phylogenetic analysis of the *Eriopisa* complex (Crustacea: Amphipoda: Melitidae) and a new species from beach interstitia in Venezuela. *Journal of Natural History*, 37, 779–796.  
<http://dx.doi.org/10.1080/00222930110108344>
- Vonk, R., Hoeksema, B.W. & Jaume, D. (2011) A new marine interstitial *Psammogammarus* (Crustacea, Amphipoda, Melitidae) from Gura Ici Island, off western Halmahera (North Moluccas, Indonesia), and an overview of the genus. *ZooKeys*, 128, 53–73.  
<http://dx.doi.org/10.3897/zookeys.128.1661>