Journal of Species Research 15(1):17-21, 2026
https://doi.org/10.12651/JSR.2026.15.1.017

Open Access

First record of the genus *Lycaea* (Amphipoda, Hyperiidea, Lycaeidae) from Ulleungdo Island, Korea, with description of newly recorded species, *Lycaea pulex*

June Kim and Young-Hyo Kim*

Department of Biological Sciences, Dankook University, Cheonan 31116, Republic of Korea

**Correspondent: yhkim@dankook.ac.kr*

This study aims to discover and document amphipods from Korea, contributing to the clarification of the Korean amphipod taxonomy. As part of this effort, a newly recorded species of the lycaeid amphipod genus *Lycaea* Dana, 1852 was collected during a survey of Ulleungdo Island, Korea, conducted in the spring of 2023. The newly recorded species, *Lycaea pulex* Marion, 1874, is characterized by the structure of the propodus on both gnathopods and the inner ramus of uropod 2. This species is morphologically similar to *L. bovallii* Chevreux, 1900, *L. intermedia*, Zeidler, 2021, and *L. vincentii* Stebbing, 1888. However, it can be distinguished from its congeners by differences in peduncular article 3 of antenna 1, the length ratio of pereopod 4, and the morphology of the inner ramus of uropod 2. To date, only one species of the family Lycaeidae, *Simorhynchotus antennarius* (Claus, 1871) has been recorded in Korea. This study represents the first record of the genus *Lycaea* in Korean waters. Additionally, a key to species of the family Lycaeidae from Korean waters is provided.

Keywords: Crustacea, hyperiid, lycaeid, plankton, taxonomy

All content in the Journal of Species Research (JSR), published by the National Institute of Biological Resources (NIBR), is Open Access, meaning it is freely accessible online to everyone without fees or the need for authors' permission. Open Access articles are automatically archived in the Korea Institute of Science and Technology Information (KISTI)'s Open Access repository, AccessON. All JSR content is published and distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License (CC BY-NC-ND 4.0). This license permits non-commercial use, distribution, and reproduction in any medium, provided the original author and source are properly credited. However, no modifications or derivative works are allowed.

Introduction

The family Lycaeidae Claus, 1879 can be distinguished from other families within the superfamily Platysceloidea Spence Bate, 1863 by fused inner ramus of uropod 3 and fused urosomites 2–3 with telson (Zeidler, 2016). To date, two genera within the family Lycaeidae, *Lycaea* Dana, 1852 and *Simorhynchotus* Stebbing, 1888 have been recorded worldwide (Horton *et al*., 2025). The genus *Lycaea* consists of ten species and is characterized by a rounded head in both males and females (Zeidler, 2021). The genus *Simorhynchotus* remains monotypic and is distinguished by a rounded head in females, and a slightly produced head in males.

The genus *Lycaea* still presents many taxonomic challenges that require resolution (Zeidler, 2016). It has been studied by various scholars, beginning with Dana, 1879, followed by Harbison, Vinogradov, and others. Harbison and Madin (1976) and Vinogradov *et al*. (1982; 1996) attempted to resolve some of the taxonomic issues within the genus and compiled a key to *Lycaea* species. However, due to the limited availability of specimens and references in the study by Harbison and Madin (1976), discrepancies remain between their findings and those of Vinogradov *et al*. (1982; 1996) (Zeidler, 2016). The genera *Pseudolycaea* Claus, 1879 and *Metalycaea* Stephensen, 1925 have been synonymized with *Lycaea*. As a result, following the synonymization of species within the genus *Lycaea*, a total of ten species are currently recognized worldwide. Recently, Zeidler (2021) provided descriptions and illustrations for

©2026 National Institute of Biological Resources.
This article was authored by [June Kim and Young-Hyo Kim] and is published by the National Institute of Biological Resources under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License (CC BY-NC-ND 4.0). Non-commercial use, distribution, and reproduction in any medium are permitted, provided the original authors are properly credited and the work is not modified in any way.

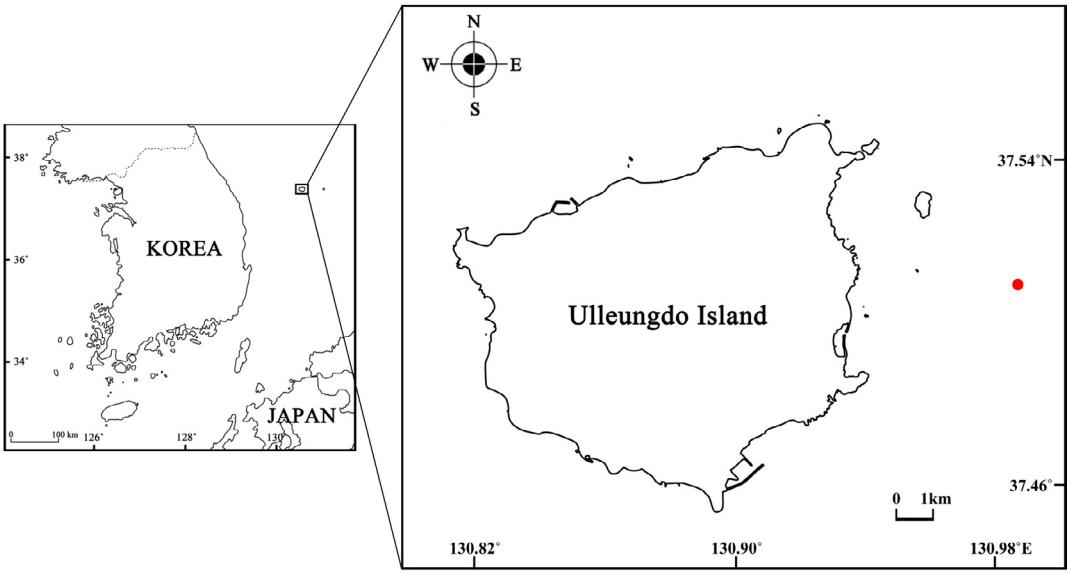

Fig. 1. Distribution of the *Lycaea pulex* (●: Ulleungdo Island).

all species, along with a key to *Lycaea* species.

Currently, only one genus and one species of Lycaeidae have been recorded in Korean waters: *Simorhynchotus antennarius* (Claus, 1871) (Yoo, 1972). In contrast, a total of six species belonging to two genera have been reported from Chinese waters adjacent to Korea, including five species of *Lycaea* and one species of *Simorhynchotus* (Shih and Chen, 1995; Lin *et al*., 1996). Although the genus *Lycaea* Dana, 1852 had not previously been recorded in Korea, specimens of *Lycaea* were collected during a survey conducted around Ulleungdo Island, Korea, in the spring of 2023 (Fig. 1). This paper represents the first record of the genus *Lycaea* in Korea, adding a newly recorded species to the Korean hyperiid amphipod fauna. Furthermore, this study also provides a key for identifying species of the family Lycaeidae found in Korean waters.

Materials and Methods

Specimens were collected using a conical net from subtidal waters around Ulleungdo Island, Korea (Fig. 1). The specimens were fixed in 95% ethanol and dissected in glycerol on Cobb's aluminum hole slides. The materials were examined under stereoscopic microscope (Olympus SZX 10) and compound microscope (Olympus BX 51). Drawings and measurements were made with the aid of a drawing tube and line drawings were produced using the program Clip Studio Paint (Celsys, Japan). Body length was measured from the tip of the rostrum to the end of the urosome, along the dorsal parabolic line of the body. The examined specimens are deposited at the Marine Biodiversity institute of Korea (MABIK) in Seocheon, Korea.

Systematic Accounts

Order Amphipoda Latreille, 1816
Suborder Hyperiidea H. Milne Edwards, 1830
Superfamily Platysceloidea Spence Bate, 1862
Family Lycaeidae Claus, 1879
Genus *Lycaea* Dana, 1852 이리옆새우속 (신칭)

***Lycaea pulex* Marion, 1874 (Figs. 2, 3)**
이리옆새우 (신칭)

Lycaea pulex Marion, 1874: 13, pl. 2, fig. 2; Stebbing, 1888: 1567; Harbison and Madin, 1976: 167, figs. 1B, 3C, 4E; Madin and Harbison, 1977: 455, fig. 4; Vinogradov *et al*., 1982: 382; Vinogradov *et al*., 1996: 472; Zeidler, 2016: 48, figs. 18–20; Zeidler, 2021: 34, figs. 16–17.

Lycaea robusta Claus, 1879: 186; Harbison and Madin, 1976: 169.

Lycaea similis Claus, 1879: 185; Harbison and Madin, 1976: 169.

Lycaea pauli Stebbing, 1888: 1566; Harbison and Madin, 1976: 169.

Material examined. 1♂, dissected (appendages on one slide), MABIK CR00259138, Ulleung Island, 37°30′29″ N, 130°58′11″E, 24 May 2023 by KW Kim.

Description. Adult male (MABIK CR00259138), body (Figs. 2, 3A) 8.9 mm long, dorsally smooth. Head ovate, slightly deeper than long, length slightly longer than pereonites 1–3 combined; eyes well developed, covering most of head, grouped in one field on each side of head. Urosomite 2 fused with urosomite 3.

Antenna 1 (Fig. 3B), peduncular article 3 expanded with-

Fig. 2. *Lycaea pulex* Marion, 1874, adult male, 8.9 mm, habitus. Scale bar = 1.0 mm.

out anterodistal corner, posterodistal corner slightly produced, flagellum 3-articulate, terminal article with 3 setules. Antenna 2 (Fig. 3C) elongate, strongly zig-zagged, 4-articulate, most articles fold back on each other.

Gnathopod 1 (Fig. 3D) characteristic in form, carpochelate; basis expanded, subrectangular, anterior margin with pouch; ischium short, 0.27× basis; merus short, 0.93× ischium; carpus trapezoidal, 1.74× merus, anterior margin convex, posterodistal corner acutely produced and serrulated along its margin; propodus subrectangular, 1.19× carpus, anterior margin convex, palm short, transverse; dactylus falcate, relatively slender, 0.53× propodus.

Gnathopod 2 (Fig. 3E) similar to gnathopod 1, but basis elongate.

Pereopod 3 (Fig. 3F) slender; coxa expanded, wider than long; basis elongate, slender, subrectangular; ischium short, 0.18× basis, anterior margin concave; merus 2.91× ischium, anteroproximal margin slightly concave; carpus subrectangular, 0.83× merus; propodus slender, slightly narrowing distally, 1.15× carpus; dactylus falcate, short, 0.21× propodus.

Pereopod 4 (Fig. 3G) similar to pereopod 3, but slightly elongated.

Pereopod 5 (Fig. 3H), basis elongate-ovate, expanded posteriorly; ischium trapezoidal, short, 0.27× basis, posterior margin concave; merus elongate, moderate, 2.24× ischium; carpus subrectangular, 0.85× merus; propodus relatively slender, 1.21× carpus; dactylus narrow, falcate, short, 0.16× propodus.

Pereopod 6 (Fig. 3I) similar to pereopod 5, but merus to propodus shorter, carpus and propodus, anterior margins with serrulation.

Pereopod 7 (Fig. 3J) short, reduced in size, all articles present; basis large, subovate, expanded posteriorly; ischium short, 0.13× basis; merus short, 1.06× ischium; carpus subrectangular, 1.31× merus; propodus 0.93× carpus, anterodistal corner produced, posterior margin slightly curved; dactylus falcate, relatively short and slender, 0.27× propodus.

Uropod 1 (Fig. 3K), peduncle subrectangular, widening distally, lateral margin with serration; outer ramus lanceolate, 0.52× peduncle, medial and lateral margins with serration; inner ramus lanceolate, subequal in length to outer ramus, medial and lateral margins with serration.

Uropod 2 (Fig. 3K) shorter than uropod 1, peduncle subrectangular, widening distally, medial margin with serration; outer ramus lanceolate, 0.87× peduncle, medial margin with serration; inner ramus characteristic in form, lanceolate, 1.33× outer ramus, medial and lateral margins with serration.

Uropod 3 (Fig. 3K) shorter than uropod 2, peduncle fused with inner ramus; outer ramus lanceolate, slender, 1.83× peduncle, medial margin with serration; inner ramus lanceolate, 1.51× outer ramus, lateral and medial margins with serration.

Telson (Fig. 3K) fused with urosomite 3, entire, elongate, isosceles triangle in shape, unarmed.

Distribution. Worldwide.

Remarks. *Lycaea pulex* Marion, 1874 is similar to *L. bovallii* Chevreux, 1900, *L. intermedia*, Zeidler, 2021, and *L. vincentii* Stebbing, 1888 in having produced posterodistal corner on the carpus of gnathopods 1–2. However, *L. pulex* can be distinguished from its congeners by the following features (different characteristics of *L. bovallii*, *L. intermedia*, and *L. vincentii* in brackets): 1) in males, peduncular article 3 of antenna 1 without anterodistal corner (vs. with anterodistal corner in *L. bovallii* and *L. vincentii*); 2) gnathopods 1–2, posterodistal corner with serrulation (vs. without serrulation in *L. intermedia*); 3) pereopod 4, dactylus short, about 0.2× propodus (vs. more than 0.4× propodus in *L. bovallii* and *L. vincentii*); 4) uropod 1, outer ramus moderate, about 0.5× peduncle (vs. short, about 0.3× outer ramus in *L. bovallii*, *L. intermedia*, and *L. vincentii*); and 5) uropod 2, inner ramus articulated with peduncle (vs. fused in *L. bovallii* and *L. intermedia*). Our specimen is accorded with the original descriptions provided by Marion (1874) and later revisions by Zeidler (2016; 2021).

Key to species of the family Lycaeidae from Korean waters

– Head slightly produced and pointed in male, rounded in female; gnathopod 1 simple; uropod 2, inner ramus fused with peduncle ····· ····· *Simorhynchotus antennarius* (Claus, 1871)

– Head rounded in male and female; gnathopod 1 subchelate; uropod 2, inner ramus articulated with peduncle····· ····· *Lycaea pulex* Marion, 1874

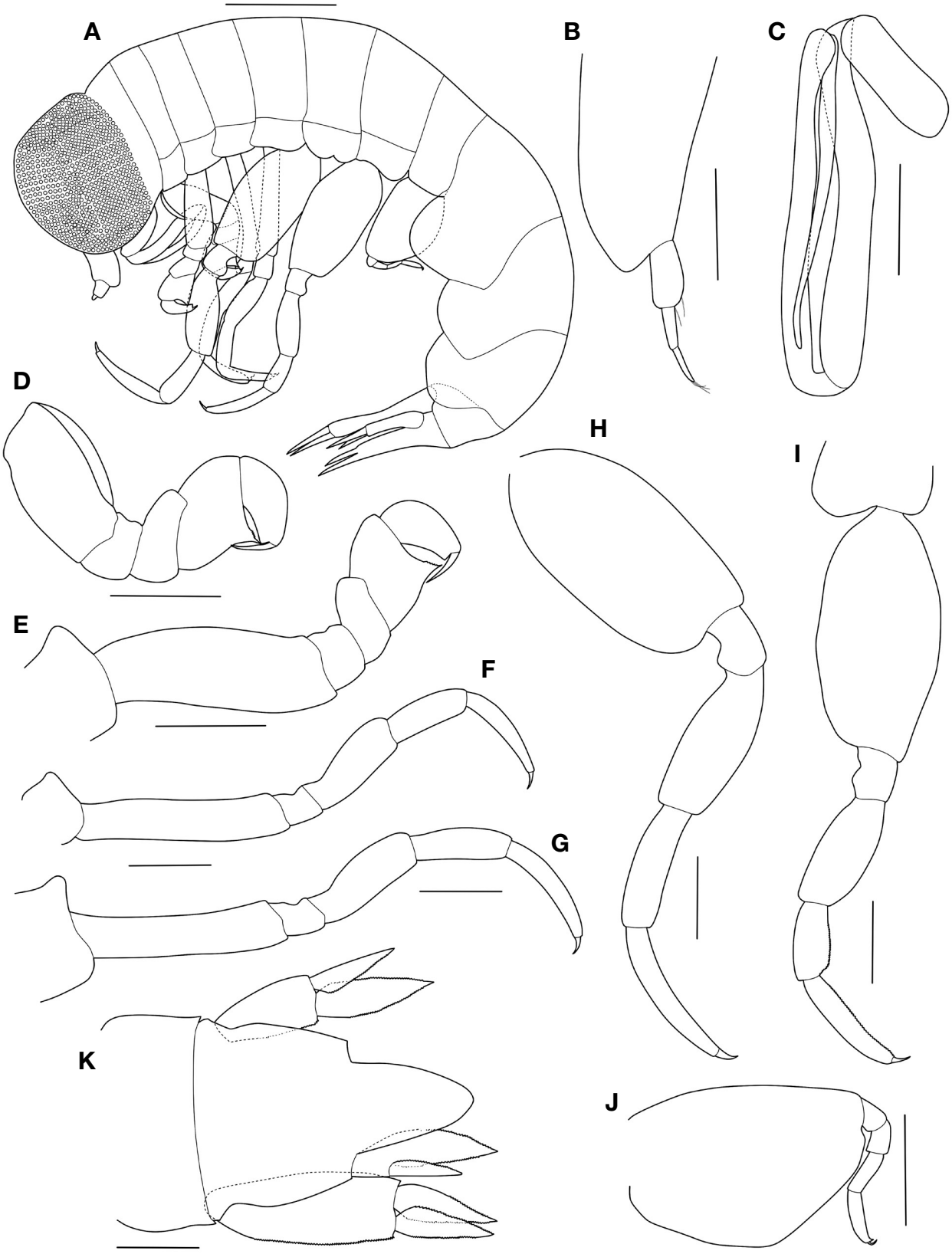

Fig. 3. *Lycaea pulex* Marion, 1874, adult male, 8.9 mm. A, habitus, lateral; B, antenna 1; C, antenna 2; D, gnathopod 1; E, gnathopod 2; F, pereopod 3; G, pereopod 4; H, pereopod 5; I, pereopod 6; J, pereopod 7; K, urosomites, uropods and telson, dorsal. Scale bars: A = 1.0 mm; C−K = 0.4 mm; B = 0.2 mm.

Conflicts of Interest

The authors of this paper have no affiliation with any interests and are solely responsible for the paper.

Acknowledgements

This work was supported by the management of Marine Fishery Bio-resources Center (2025) funded by the National Marine Biodiversity Institute of Korea (MABIK).

References

Claus, C. 1871. Untersuchungen über den Bau und der Verwandtschaft der Hyperiden. Nachrichten von der Königliche Gesellschaft der Wissenschaften und der Georg-Augustus-Universität zu Göttingen, Yahre 1871:149-157.

Claus, C. 1879. Die Gattungen und Arten der Platysceliden in Systematischer Übersicht. Arbeiten aus dem Zoologischen Institut der Universität zu Wien und der Zoologischen Station Triest 2:1-52.

Harbison, G.R. and L.P. Madin. 1976. Description of the female *Lycaea nasuta* Claus, 1879 with an illustrated key to the species of *Lycaea* Dana, 1852 (Amphipoda: Hyperiidea). Bulletin of Marine Science 26(2):165-171.

Horton, T., J. Lowry, C. De Broyer, D. Bellan-Santini, C.O. Coleman, L. Corbari, M.J. Costello, M. Daneliya, J.C. Dauvin, C. Fišer, R. Gasca, M. Grabowski, J.M. Guerra-García, E. Hendrycks, L. Hughes, D. Jaume, K. Jazdzewski, Y.H. Kim, R. King, T. Krapp-Schickel, S. LeCroy, A.N. Lörz, T. Mamos, A.R. Senna, C. Serejo, B. Sket, J.F. Souza-Filho, A.H. Tandberg, J.D. Thomas, M. Thurston, W. Vader, R. Väinölä, R. Vonk, K. White and W. Zeidler. 2025. World Amphipoda Database. Lycaeidae Claus, 1879 [World Register of Marine Species: WoRMS - World Register of Marine Species - Lycaeidae Claus, 1879, accessed 16 March 2025].

Lin, J., M. Chen and R. Chen,. 1996. The species diversity of planktonic Amphipoda in China Seas. Chinese Biodiversity 4(4):228-234.

Madin, L.P. and G.R. Harbison. 1977. The associations of Amphipoda Hyperiidea with gelatinous zooplankton I. Associations with Salpidae. Deep-Sea Research 24:449-463. https://doi.org/10.1016/0146-6291(77)90483-0

Marion, A.F. 1874. Recherches sur les animaux inférieurs du golfe de Marseille. Descriptions des Crustacés Amphipodes parasites des salpes. Annales des Sciences naturelle, 6 séries Zoologie et Paléontologie, Série 5 17:1-19, pls. 1-2.

Shih, C.T. and Q.C. Chen. 1995. Zooplankton of China Seas (2) The Hyperiidea (Crustacea: Amphipoda). China Ocean Press, Beijing. 295 pp.

Stebbing, T.R.R. 1888. Report on the Amphipoda collected by H.M.S. Challenger during the years 1873-1876. Report on the Scientific Results of the Voyage of H.M.S. Challenger during the years 1873-76. Zoology 29:1-1737.

Vinogradov, M.E., A.F. Volkov and T.N. Semenova. 1982. Amfipody-Giperiidy (Amphipoda: Hyperiidea) Mirovogo Okeanea. Akademiya Nauk SSSR, Opredeliteli po Faune SSSR No. 132. Akademiya Nauk SSSR, Leningrad, 492 pp.

Vinogradov, M.E., A.F. Volkov and T.N. Semenova. 1996. Hyperiid Amphipods (Amphipoda, Hyperiidea) of the World Oceans. Smithsonian Institution Libraries, D. Siegel-Causey, Scientific Editor, Washington D.C. and Oxonian Press Pvy. Ltd., New Delhi. 632 pp.

Yoo, K.I. 1972. Faunal studies on the amphipods of Korea. Ministry of Science and Technology. R-72-82, Floral studies on some taxa of plants and faunal studies on some taxa of animals in Korea. Ministry of Science and Technology, Seoul. pp. 163-181.

Zeidler, W. 2016. A review of the families and genera of the superfamily PLATYSCELOIDEA Bowman & Gruner, 1973 (Crustacea: Amphipoda: Hyperiidea), together with keys to the families, genera and species. Zootaxa 4192(1):1-136. https://doi.org/10.11646/zootaxa.4192.1.1

Zeidler, W. 2021. Review of the hyperiidean amphipod family Lycaeidae Claus, 1879 (Crustacea: Amphipoda: Hyperiidea). Zootaxa 5081(1):1-59. https://doi.org/10.11646/zootaxa.5081.1.1

Submitted: April 25, 2025
First revised: June 10, 2025
Second revised: June 27, 2025
Accepted: July 14, 2025