

CORRESPONDENCE

A new species of *Spherillo* Dana from China (Isopoda: Oniscidea)

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Abstract *Spherillo hailuogouensis* **sp. nov.** is described from Hailuogou National Glaciers Forest Park, China. The new species can be diagnosed by the apical part of the male pleopod endopod 1 bearing four spinules near middle and four well-developed denticles on outer margin. Type specimens are deposited in the Insect Museum, Jiangxi Agricultural University, Nanchang, P. R. China.

Key words Isopoda, Oniscidea, *Spherillo*, new species, China.

The genus *Spherillo* was established by Dana (1853), and *Spherillo vittensis* Dana, 1853 was subsequent designated as type species (Lehtinen *et al.*, 1998). The typical characters of the genus were given by Kwon & Taiti (1993). To date, the genus contains 66 species with an African, Australian, Oriental and Palaearctic Regions distribution; mostly occur in Australian and Oriental Regions (Schmalfuss, 2003). Prior to this study, 7 species, namely *S. menglunensis* Dai & Cai, *S. montivagus* (Verhoeff), *S. nanjingensis* Tang, Gui & Wu, *S. nomurai* Nunomura & Xie, *S. opacus* (Verhoeff), *S. orientalis* Kwon & Taiti and *S. raffaielei* (Arcangeli), were recorded from China (Verhoeff, 1942; Kwon & Taiti, 1993; Tang *et al.*, 1994; Dai & Cai, 1998; Nunomura & Xie, 2000). In the present paper, *Spherillo hailuogouensis* **sp. nov.** is described as new to science.

Specimens were collected in the mountain forest of Hailuogou National Glaciers Forest Park, which is located in the south-eastern fringe of Tibetan Plateau, south-western China. The specimens were preserved in 95% ethanol and kept in a refrigerator. The whole specimens were examined in propylene glycol, and the appendages were dissected and slide-mounted in neutral balsam. The drawings were made using a digital camera DV320 OPTPro2010_Ch attached to a digital microscope Optec BK-DM320. All the examined specimens are deposited in the Insect Museum, Jiangxi Agricultural University, Nanchang, China (JXAUM).

Order Isopoda Latreille, 1817

Suborder Oniscidea Latreille, 1829

Family Armadillidae Brandt & Ratzeburg, 1831

Genus *Spherillo* Dana, 1853

***Spherillo hailuogouensis* sp. nov.** (Figs 1–21)

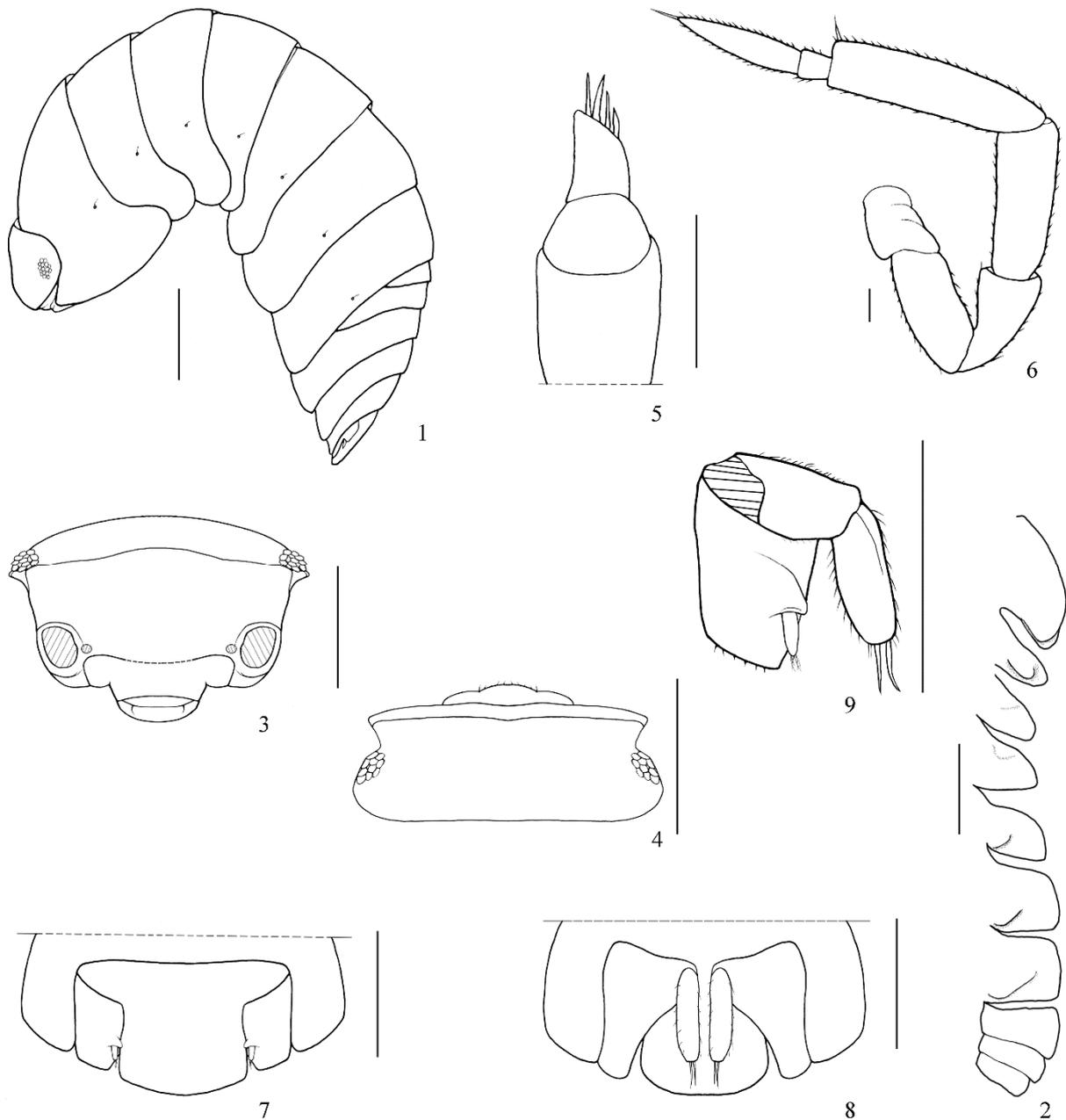
Diagnosis. Putative autapomorphic characteristics can be recognized by the apical part of the male pleopod endopod 1 bearing four spinules near middle and four well-developed denticles on outer margin (Fig. 17).

Description. Maximum body length of males 7.0 mm, of females 13.0 mm, coloration pale brown, dorsum smooth. Whole body able to roll up into a ball, each pereonite with one nodulus lateralis per side, noduli laterales nearly on the same line and far from lateral margin of pereonites (Fig. 1).

urn:lsid:zoobank.org:pub:816E2408-A188-49F8-8DCB-F3E0B84466CF

Received 19 October 2016, accepted 24 August 2017

Executive editor: Fuqiang Chen



Figures 1–9. *Spherillo hailuogouensis* sp. nov., male. 1–2. Paratype. 3–10. Holotype. 1. Whole body in lateral view. 2. Epimera of pereonites and pleonites 3–5 in ventral view. 3. Cephalon in frontal view. 4. Cephalon in dorsal view. 5. Antennule in dorsal view. 6. Antenna in dorsal view. 7. Telson and uropods in dorsal view. 8. Telson and uropods in ventral view. 9. Uropod. Scale bars: 1–4=1.0 mm; 5–6=0.1 mm, 7–9=0.5 mm.

Pereonites (Fig. 2). Pereonite 1 with distal margin regularly curved, 2 with large ventral tooth, 3 and 4 with transversal thickening, 5–7 with lobe on ventral surface of epimera.

Cephalon (Figs 3–4) with frontal shield slightly turned above the vertex with nearly straight margin in dorsal view.

Antennule (Fig. 5) of three articles with apex bearing four aesthetascs.

Antenna (Fig. 6) with fifth article equipped with long seta at distal margin; flagellum with the second article approximately five times as long as the first article.

Telson (Figs 7–8) with quadrangular distal part, distal part about half as wide as basal part.

Uropod (Fig. 9) with trapezoidal protopod; exopod short, about one third as long as endopod.

Left mandible (Fig. 10) with two-toothed incisor; lacinia mobilis subrectangular; two penicils between lacinia mobilis and molar penicil; molar penicil consisting of several plumose setae arising from a single stem. Right mandible (Fig. 11) with two-toothed incisor and lacinia mobilis, nearly triangular; two penicils between lacinia mobilis and molar penicil; molar



Figures 10–21. *Spherillo hailuogouensis* sp. nov., holotype, male. 10–11. Dorsal view. 12–21. Ventral view. 10. Left mandible. 11. Right mandible. 12. Maxillule. 13. Maxilla. 14. Maxilliped. 15. Pereopod 1. 16. Pereopod 7. 17. Pleopod 1. 18. Pleopod 2. 19. Pleopod 3 exopod. 20. Pleopod 4 exopod. 21. Pleopod 5 exopod. Scale bars: 10–14=0.1 mm; 15–21=0.5 mm.

penicil consisting of several plumose setae arising from a single stem.

Maxillule (Fig. 12) with inner lobe bearing two stout setose penicils; outer lobe ending with ten simple teeth of various sizes.

Maxilla (Fig. 13) imperfectly divided into two lobes; inner lobe with several sensilla.

Maxilliped (Fig. 14) with endite narrowing towards three apical penicils, apical margin with an ovate process at inner angle; palpus three-jointed, two of the joints indistinctly delimited, one large seta per joint.

Male pereopods. Pereopod 1 (Fig. 15) merus has densely tiny setae and two large setae on sternal margin; carpus scattered with setae laterally; propodus bearing four large setae. Pereopod 7 (Fig. 16) basis with a setose depression on distal part of sternal margin; sternal margins of merus, carpus and propodus scattered with well-developed setae.

Male pleopods. Pleopods 1–5 with polyspiracular covered lungs. Pleopod 1 (Fig. 17) exopod with a rounded outer lobe; endopod tapering to blunted rounded apex, apical part with four spinules near middle and four well-developed denticles on outer margin. Pleopod 2 (Fig. 18) exopod elongated, with concave outer margin; endopod nearly as long as exopod, gradually narrowing towards pointed tip. Pleopod exopods 3–5 as in Figs 19–21.

Material examined. Holotype, ♂, China, Sichuan Province, Luding County, Hailuoguo National Glaciers Forest Park (29°38.2092'N, 102°07.2491'E; elev. 1540 m), 6 August 2014, leg. Weichun Li (No. L15098). Paratypes. 8♂, 10♀, same data as the holotype (Nos. L201501–L201518).

Habitat. The type locality is on the valley terrace in a secondary forest, and the dominant plants consist of *Alnus cremastogyne* Burkill and shrubs. The species was found under a thick layer of the *A. cremastogyne* leaf-litter.

Etymology. The new species is named after its type locality Hailuoguo, a national glacier forest park located in the south-eastern fringe of the Tibetan Plateau, south-western China.

Remarks. This species is assigned to the genus *Spherillo* based upon the following characters: the body is able to roll up into a ball, all the noduli laterales are far and at the same distance from the lateral margin of pereonites (Fig. 1); the epimera of pereonites 1–7 with ventral lobes (Fig. 2); the hour-glass-shaped telson (Fig. 7), and the uropodal protopod having a short exopod inserted dorsally below a tooth (Fig. 9).

Spherillo hailuogouensis sp. nov. is morphologically close to *S. orientalis* Kwon & Taiti, 1993, *S. raffaelei* (Arcangeli, 1927) and *S. nanjingensis* Tang, Hong & Tian, 1994, but can be distinguished by the male pleopod 1 exopod with a round posterior lobe; endopod having four spinules near middle and four well-developed denticles on outer margin at apical part (Fig. 17). In *S. orientalis*, the pleopod 1 exopod with a nearly triangular posterior lobe and some spines on outer and medial margin, endopod without special modifications (Kwon & Taiti, 1993: 74, fig. 313). In *S. raffaelei*, the pleopod 1 exopod without conspicuous posterior lobe, endopod bearing many spinules near middle and a line of denticles near outer margin (Kwon & Taiti, 1993: 73, fig. 299). In *S. nanjingensis* Tang, Gui & Wu, the pleopod 1 exopod with a subtriangular posterior lobe, endopod bearing six denticles on outer margin (Tang *et al.*, 1994: 72, fig. 2).

Funding The study was supported by the National Natural Science Foundation of China (31601885) and Doctoral Foundation of Jiangxi Agricultural University (9232303272).

Acknowledgments I am grateful to Dr. N. Nunomura (Kanazawa University, Japan), Dr. C. Schmidt (Senckenberg Naturhistorische Sammlungen Dresden, Germany), Dr. S. Taiti (Istituto per lo Studio degli Ecosistemi, Italy) and Dr. D. H. Kwon (Inje University, Korea) for providing important references and generous help. Special thanks are given to Dr. Kashani G. M (University of Zanjan, Iran) and two anonymous reviewers for their insightful suggestions on the manuscript.

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