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The Description of Two New Genera and Four New Species of the Terrestrial Talitridae (Crustacea, Amphipoda) from the Ogasawara and Daito Islands, Southern Japan

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Abstract Two new genera of the Talitridae, *Miyamotoia* (with two new species, *M. spinolabrum* and *M. daitoensis*) and *Leptorchestia* (with a new species, *L. biseta*), and a new species, *Morinoia chichijimaensis*, are described from terrestrial habitats of the Ogasawara and Daito Islands, the oceanic islands in southern Japan. Taxonomic comments on *Morinoia* and *Morinoia japonica* are given. *Miyamotoia spinolabrum* displays a peculiar character, robust setae on the upper lips. Keys to talitrid species from the Ogasawara and Daito Islands are given.
Key words: Terrestrial Talitridae, *Miyamotoia*, *Leptorchestia*, *Morinoia*, new genus, new species, Ogasawara Islands, Daito Islands, Japan

Introduction

The Ogasawara (Bonin) Islands, located about 1000 km south of Tokyo (middle of Honshu), are oceanic islands which are composed of three island groups: the Mukojima, Chichijima, and Hahajima Island groups (Figs. 1–2). Morino (1991) reported four species of the Talitridae from these islands: *Platorchestia platensis* (Krøyer, 1845) (possibly *P. pacifica* Miyamoto and Morino, 2004) from supralittoral zones, *P. japonica* (Tattersall, 1922) (now in *Morinoia*) mainly from riparian habitats, and two undescribed species, *Platorchestia* sp. and *Paciforchestia* sp. mostly from forest litter. Morino and Miyamoto (2015a) recorded the occurrence of *Nipponorchestia curvatus* Morino and Miyamoto, 2015, from coastal to inland terrestrial habitats of Chichijima and Hahajima Island groups. Among the above-mentioned undescribed species, *Paciforchestia* sp. was described under the name of *Pyatakovestia boninensis* Morino and Miyamoto, 2015b. Close examination of specimens allocated to *Platorchestia* sp. in Morino (1991) confirmed two new genera with three new species. In addition, studies on *Platorchestia japonica* in Morino (1991) revealed two species belonging to *Morinoia*, one of which is new to science.

The Daito Islands, located about 360 km east of the Okinawa Islands and about 950 km west of the Ogasawara Islands, are uplifted atolls consisted of three small islands: Minami-Daitojima, Kita-Daitojima and Oki-Daitojima Island (Figs. 1, 3). From the Hoshino-do cave of Minami-Daitojima Island, a cave form of talitrid species, *Minamitalitrus zoltani* White, Lowry and Morino, 2013, was described. A study of the material collected from open terrestrial habitats in the Daito Islands brought to light a new species belonging to one of the new genera from the Ogasawara Islands. These two new genera and four new species from the Ogasawara and Daito Islands are described herein.

Fig. 1. Map of Japan, the Ogasawara Islands and the Daitojima Islands.

Materials and Methods

Materials studied were collected by the author or forwarded from many colleagues. The general methodology follows Morino (2014). The specimens were dissected under stereomicroscopes and appendages were illustrated under light microscopes using a drawing tube. The appendages were fixed on permanent slides or deposited in tubes. The body length was measured from the tip of head to the tip of telson along the straightened dorsal margin. The specimens are housed in the collection of the National Museum of Nature and Science, Tsukuba (NSMT-Cr).

Taxonomy

Family Talitridae Rafinesque, 1815

Miyamotoia gen. nov.

[New Japanese name:
Miyamoto-okatobimushi zoku]

Type species. *Miyamotoia spinolabrum* sp. nov.
Additional species. M. daitoensis sp. nov.

Diagnosis. Body size medium to large. Eyes medium. Antenna 1 not reaching end of peduncu-

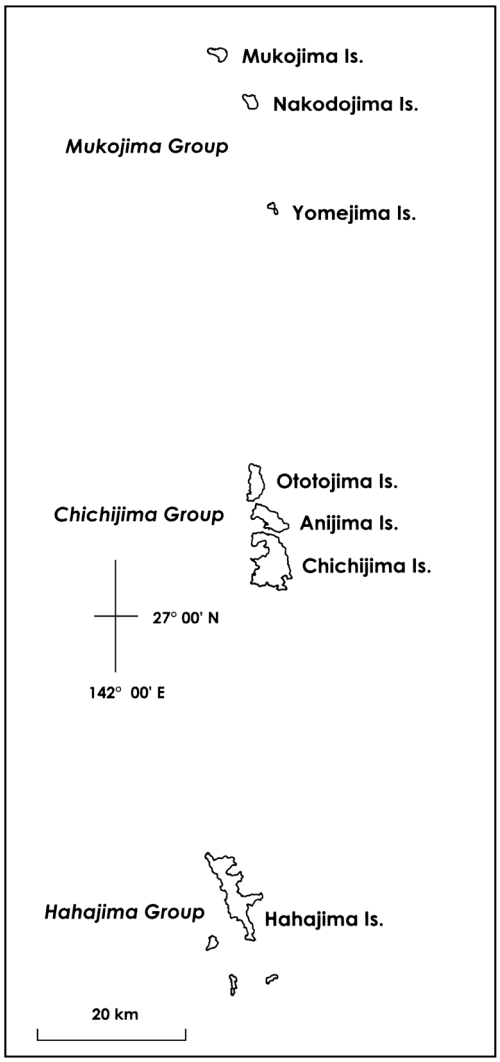

Fig. 2. Map of the Ogasawara Islands.

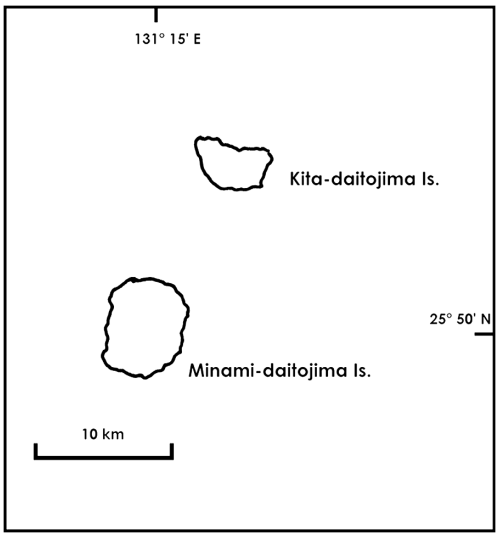

Fig. 3. Map of the Daitojima Islands. (Oki-Daitojima Island is not shown)

lar article 4 of antenna 2; peduncle longer than flagellum. Antenna 2 slender in both sexes, flagellum subequal to or longer than peduncle. Upper lip with robust setae or not. Maxilliped, outer margin of precoxa not stepped, palp article 2 mediodistally lobate, article 3 slender or broad, article 4 reduced, masked by apical robust setae.

Gnathopod 1 in male deeply subchelate, carpus and propodus with pellucid lobe; in female shallowly subchelate, lacking pellucid lobe. Gnathopod 2 in male, propodus powerfully subchelate, dactylus attenuated apically; in female, basis expanded anteriorly, propodus mitten-shaped. Pereopods 3–7 bi-cuspidactylate, propodus locking robust setae developed. Pereopod 4, coxa wider than deep, dactylus weakly pinched. Posterior lobe of coxa on pereopod 6 anteroventrally right-angled (not produced ventrally). Pereopods 6 and 7 slender in both sexes, propodus of pereopod 7, 6–9 times as long as wide. Coxal gill of gnathopod 2 W-shaped, coxal gills of pereopods 3–6 sac-like, convoluted.

Pleonite side plates lacking marginal pits. Pleopods peduncle marginally bare or robust-setose; rami moderately reduced (less than 0.5 times as long as peduncle). Uropod 1, distolateral robust seta on peduncle shorter than subdistal one, outer ramus marginally bare, inner ramus with dorsal and lateral marginal robust setae. Uropod 2, rami subequal in length, outer ramus with dorsal, inner ramus with dorsal and lateral marginal robust setae. Uropod 3, ramus shorter than peduncle. Telson as long as broad, narrowed distally, with 5–10 dorsolateral, lateral and apical robust setae.

Remarks. This new genus is morphologically very close to *Laniporchestia* Lowry and Myers, 2019 and *Morinoia* Lowry and Myers, 2019, in sharing the following characters: the short antenna 1 (not reaching end of peduncular article

4 of antenna 2), the left mandible (5-dentate lacinia), the gnathopod 1 (deeply subchelate in male, shallowly subchelate in female), the maxilliped (mediodistally lobed palp article 2, reduced palp article 4), the mascupod gnathopod 2, bicuspidactylate pereopods 3–7, and the uropod 1 (short distolateral robust seta, marginally bare outer ramus). The slender propodus of pereopod 7 of the new genus indicates a closer relationship with *Laniporchestia* than with *Morinoia*. However, the distally truncate telson and its setae arrangement (elongate robust setae on dorsolateral and short apical robust setae) are peculiar to *Laniporchestia*, by which this genus is distinguished from *Miyamotoia*. The telson of the latter genus is distally narrowed, and its lobe is with dorsolateral, lateral and apical robust setae. *Morinoia* is distinguished from the new genus by the broader propodus on pereopod 6–7 (5.5–6 times as long as wide *vs*. 6–9 times as long as wide), as well as by fewer numbers of flagellar articles on the antenna 1 (3–4 *vs*. 4–6) and the antenna 2 (13–16 *vs*. 14–21).

Etymology. The genus name is dedicated to the late H. Miyamoto, who was an excellent morphologist and contributed much to clarify the fauna of the Talitridae in Taiwan and Japan.

Key to species of *Miyamotoia*

1. Upper lip with robust setae on lateral margins; pleopod rami *ca*. 0.5 times as long as peduncle ..... *M. spinolabrum* n. sp.
—. Upper lip lacking robust setae; pleopod rami *ca*. 0.3 times as long as peduncles ..... *M. daitoensis* n. sp.

Miyamotoia spinolabrum sp. nov.

[New Japanese name: kuchitoge-okatobimushi]
(Figs. 4–5)

Platorchestia sp. Morino, 1991: 232 (part)

Type material. Holotype (NSMT-Cr 26779) female 12.0 mm; Shizukazawa, Hahajima Is., Ogasawara, Tokyo; Feb. 1997; T. Kishimoto coll. Paratype (NSMT-Cr 26780) male 8.8 mm; data as holotype.

Additional materials examined. **Mukojima Island**: 1 ovigerous female, 2 females (NSMT-Cr 26767), 1 female 9.0 mm (NSMT-Cr 26768); Mukojima Is. (humid forest, *Ardisia sieboldii*), Ogasawara, Tokyo; 19 Jul. 1990; K. Tomiyama coll. 1 male 7.0 mm (NSMT-Cr 26769), 1 male 9.0 mm (NSMT-Cr 26770); Mukojima Is. (humid forest, *Ardisia sieboldii*), Ogasawara, Tokyo; 21 Jul. 1990; K. Tomiyama coll. 3 males, 1 female, 1 juvenile (NSMT-Cr 26784); Mukojima Is. (southern part); Ogasawara, Tokyo; 8 Jul. 1997; T. Kishimoto coll. **Anijima Island:** 1 male, 2 ovigerous females (NSMT-Cr 26766); Kanaimisaki, Anijima Is., Ogasawara, Tokyo; 30 Mar. 1990; K. Tomiyama coll. **Chichijima Island:** 5 males, 5 females, 4 juveniles (NSMT-Cr 26771), 1 female 13.0 mm (NSMT-Cr 26772), 4 males, 1 ovigerous female, 7 females, 48 juveniles (NSMT-Cr 26773); Chihiro (bait trap), Chichijima Is., Ogasawara, Tokyo; 17–19 May 1999; T. Matsumoto coll. 1 juvenile (NSMT-Cr 26774); locality as the previous one; 15 Jun. 1999; T. Matsumoto coll. 1 male, 1 female, 1 juvenile (NSMT-Cr 26775), 1 ovigerous female, 1 female (NSMT-Cr 26776); west coast, Chichijima Is., Ogasawara, Tokyo; 22 May 1999; T. Matsumoto coll. 1 female (NSMT-Cr 26785), Nakayama-Toge, Chichijima Is., Ogasawara, Tokyo; Feb. 1997; T. Kishimoto coll. 1 male (NSMT-Cr 26786), Mt. Mikazukiyama, Chichijima Is., Ogasawara, Tokyo; Feb. 1997; K. Murata coll. 2 males, 1 female (NSMT-Cr 26787), Mt. Mikazukiyama (bait trap), Chichijima Is., Ogasawara, Tokyo; 25–29 Apr. 1997; T. Kishimoto coll. **Hahajima Island:** 5 males, 1 female (NSMT-Cr

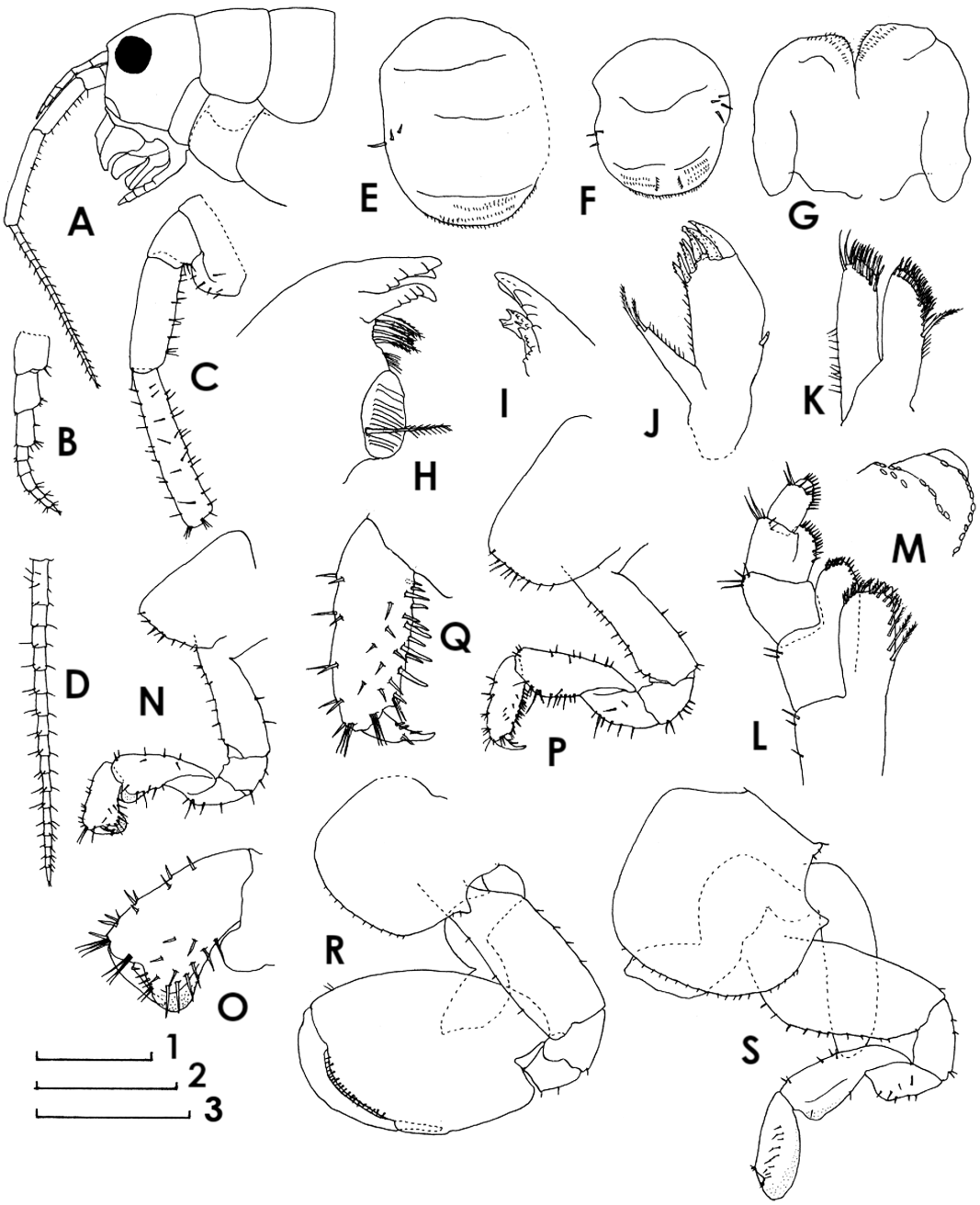

Fig. 4. *Miyamotoia spinolabrum* sp. nov. Female 12.0 mm (holotype), A–E, G–M, P, Q, S; male 8.8 mm (paratype), F, N, O, R. A, head; B, antenna 1; C, antenna 2 (peduncle); D, antenna 2 (flagellum); E, F, upper lip; G, lower lip; H, left mandible; I, right mandible (distal part); J, maxilla 1; K, maxilla 2; L, maxilliped; M, maxilliped (palp articles 3 and 4, setae omitted); N, P, gnathopod 1; O, Q, gnathopod 1 (propodus and dactylus); R, S, gnathopod 2. Scale 1: 0.35 mm for E–G; scale 2: 2.0 mm for A, 1.0 mm for B–D, 0.35 mm for H–L, O, Q, 0.1 mm for M; scale 3: 1.0 mm for N, P, R, S.

26778); data as holotype. 1 female 10.6 mm (NSMT-Cr 26781), Mt. Chibusayama, Hahajima Is., Ogasawara, Tokyo; Feb. 1997; T. Kishimoto coll. 1 male 8.3 mm, 1 female (NSMT-Cr 26777), 1 male 8.5 mm (NSMT-Cr 26782), 1 female, 1 juvenile 7.2 mm (NSMT-Cr 26786); Minamizaki; Hahajima Is., Ogasawara, Tokyo; Feb. 1997; T. Kishimoto coll. 1 female (NSMT-Cr 26783), locality as the previous one; Feb. 1997; K. Murata coll. 8 males, 6 females, 1 juvenile (NSMT-Cr 26788), trail of Mt. Kuwanokiyama (200 m alt., Trunk-Window-Trap at 1.5 m height), Hahajima Is., Ogasawara, Tokyo; 9–17 Jun. 2012; J. Aoki coll. 1 male (NSMT-Cr 26789), Mt. Kokensakiyama (*ca*. 100 m alt., Flight-Intersept-Trap); 8–10 Jun. 2012; J. Aoki coll.

Description of female (holotype 12.0 mm). Body size medium to large. Eyes (Fig. 4A) *ca*. 0.4 times as long as head length. Antenna 1 (Fig. 4A, B) not reaching end of peduncular article 4 of antenna 2, peduncular articles 1–3 subequal in length; flagellum shorter than peduncle, with 6 articles. Antenna 2 (Fig. 4A, C, D) slender, peduncular article 5 subequal to articles 3 and 4 combined, flagellum subequal to peduncle in length, with 19 articles, basal articles 1–3 fused. Upper lip (Fig. 4E) with 3 robust setae on right lateral margin (left margin damaged). Left mandible (Fig. 4H), lacinia mobilis 5-dentate. Maxilliped (Fig. 4A, L, M), outer margin of precoxa not stepped, palp article 2 produced mediodistally, palp article 3 slender, palp article 4 reduced. Right mandible (Fig. 4I), lower lip (Fig. 4G), maxilla 1 (Fig. 4J), maxilla 2 (Fig. 4K) as other talitrid species.

Gnathopod 1 (Fig. 4P, Q) shallowly subchelate, merus-propodus lacking pellucid lobe, posterior margin of carpus and propodus strongly robust-setose; propodus 0.71 times as long as carpus, parallel-sided; palm short, *ca*. 0.3 times as long as dactylus; dactylus not cuspate on anterior margin. Gnathopod 2 (Fig. 4S), basis moderately expanded anteriorly; ischium with pellucid lobe. Pereopods 3–7 bi-cuspidactylate, locking robust setae of propodus medium, seta of pereopod 5 lacking (Fig. 5B, D, G, K). Pereopod 4 (Fig. 5C) shorter than pereopod 3 (Fig. 5A), dactylus (Fig. 5D) pinched. Pereopod 5 (Fig. 5E, F) 0.63 times as long as pereopod 6 (Fig. 5H). Posterior lobe of coxa of pereopod 6 right-angled antero-ventrally. Pereopod 7 (Fig. 5J) as long as pereopod 6, basis weakly expanded posteriorly, carpus and propodus stouter than those of pereopod 6, propodus *ca*. 6 times as long as wide. Coxal gill of gnathopod 2 W-shaped. Coxal gills of pereopods 3–6 sac-like, constricted at middle. Oostegites parallel-sided.

Pleonite side plates (Fig. 5L–N) weakly acuminate posteriorly, posterior margin with 6–9 setae. Pleopods 1–3 (Fig. 5O–Q), peduncle with setae on outer margin, with 2 retinacula; rami moderately reduced, 0.57, 0.51, 0.48 as long as peduncles 1–3, respectively. Uropod 1 (Fig. 5R), peduncle distolateral robust seta shorter than subdistal one, 7 inner and 5 outer marginal robust setae; outer ramus marginally bare, inner ramus with 5 dorsal and 3 lateral marginal robust setae. Uropod 2 (Fig. 5S), peduncle with 2 inner and 5 outer marginal robust setae; outer ramus with 3 marginal robust setae, inner ramus as long as outer ramus, with 3 dorsal and 4 lateral marginal robust setae. Uropod 3 (Fig. 5T), peduncle deep, with 2 dorsal and 2 distal robust setae; ramus slender, 0.67 times as long as peduncle, marginally bare. Telson (Fig. 5U) as long as broad, narrowed distally with dorsal suture line, with dorsolateral, lateral and apical robust setae, 9–10 in number per lobe.

Description of male (paratype 8.8 mm). Antenna 1 flagellum with 5 articles. Antenna 2 slender as that of female, flagellum with 18 articles. Upper lip (Fig. 4F) with 3 or 4 robust setae on lateral margin. Gnathopod 1 (Fig. 4N, O) deeply subchelate, carpus and propodus with distinct pellucid lobe on posterior margin, propodus 0.66 times as long as carpus. Gnathopod 2 (Fig. 4R), propodus palmar margin smoothly curved, dactylus attenuated distally. Pereopod 5, propodus with locking robust seta. Pereopods 6–7 not sexually dimorphic, propodus of pereopod 7, 8.7 times as long as wide. Telson with 5–6 robust setae per lobe.

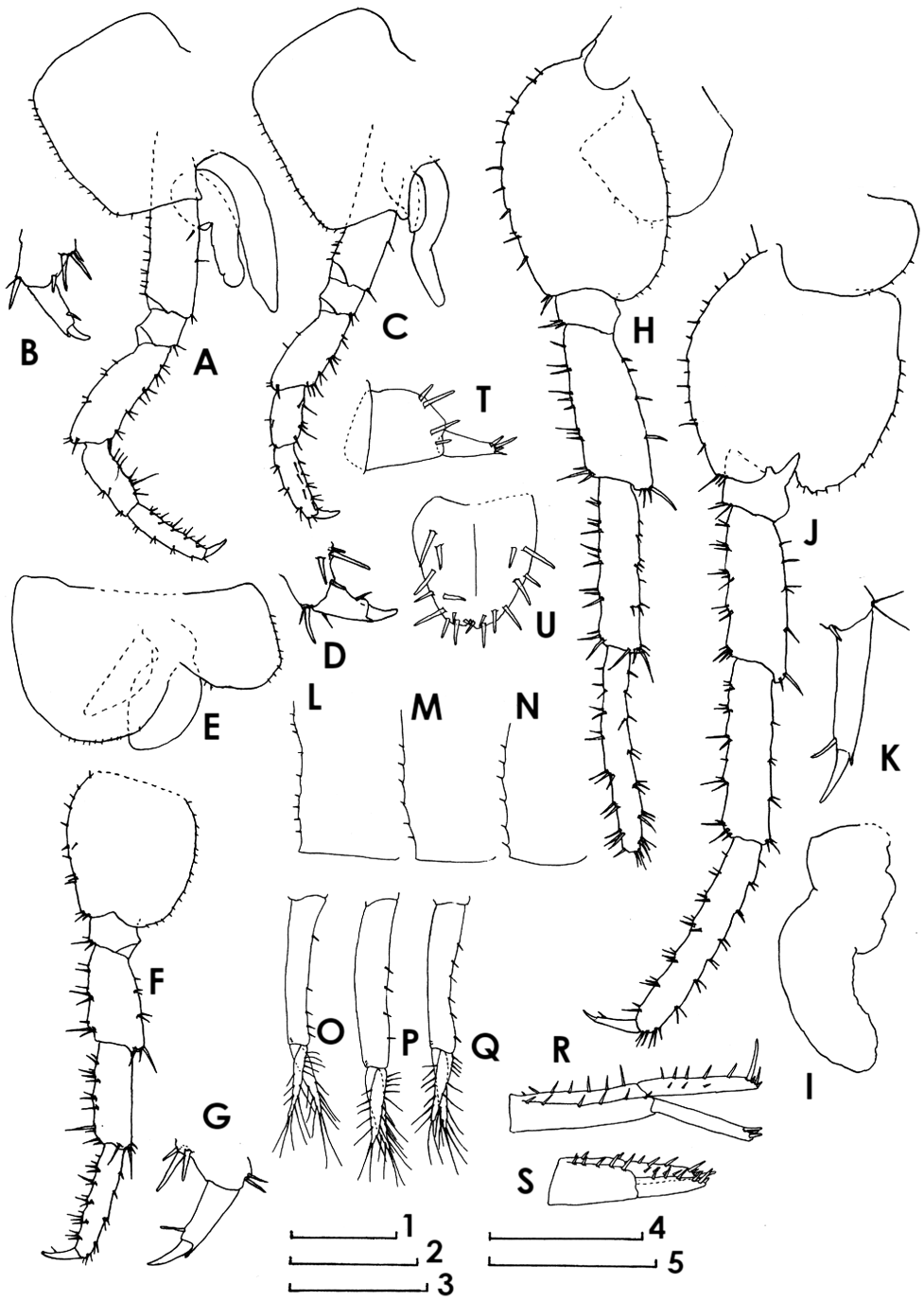

Fig. 5. *Miyamotoia spinolabrum* sp. nov. Female 12.0 mm (holotype). A, C, H, J, pereopods 3, 4, 6, 7; E, pereopod 5 (coxa); F, pereopod 5 (basis–dactylus); B, D, G, K, dactyli of pereopods 3–5, 7; I, coxal gill of pereopod 6; L–N, pleonite side plates 3–1 (right side); O–Q, pleopods 1–3; R–T; uropods 1–3; U, telson. Scale 1: 0.35 mm for T, U; scale 2: 1.0 mm for R, S; scale 3: 1.0 mm for A, C, E, F, H–J, L–N; scale 4: 0.35 mm for B, D, G, K; scale 5: 1.0 mm for O–Q.

Variation. Among five specimens with body length 8.8–13.0 mm, the following variations are confirmed: number of flagellar articles of antenna 1, 5–6; number of flagellar articles of antenna 2, 17–20; number of lateral robust setae on upper lip, 1–4 (5–7 when account on both sides); length ratio of rami to peduncle in pleopods, 0.49–0.52 (means of three pleopods); number of robust setae per telson lobe, 5–10. The values tend to increase with the body length except the number of articles on antenna 1 flagellum and the relative length of pleopod rami.

Etymology. The specific name of this species refers to the robust setose upper lip.

Distribution. This species occurs in terrestrial habitats, including coastal and mountain forests, on Mukojima, Anijima, Chichijima and Hahajima Islands. It is noteworthy that some specimens of this species were collected with the means of Trunk Window Traps at 1.5 m height of trees in Hahajima Island, which indicates the possibility of the occurrence on trunks.

Remarks. This species bears the robust setose upper lip. Within the talitrid genera and species, three sand-hoppers in the southern Hemisphere are known to have robust setae on their upper lips: *Bellorchestia richardsoni* Serejo and Lowry, 2008, *Capeorchestia capensis* (Dana, 1853) (Lowry and Baldanzi, 2016), and *Hermesorchestia alastairi* Hughes and Lowry, 2017. It is apparent that this character distribution is due to convergent evolution, since the robust setae on these sand-hoppers are found on their epistomes and not on the lateral side of the upper lip itself, as in the present species.

Miyamotoia daitoensis sp. nov.
[New Japanese name: Daito-okatobimushi]
(Figs. 6–7)

Type material. Holotype (NSMT-Cr 26792) ovigerous female 11.0 mm; near the mouth of Hoshino-Do cave, Minami-Daitojima Is., Okinawa; 8 Apr. 1999; Y. Inagaki coll. Paratypes, 1 male 7.6 mm (NSMT-Cr 26793), 1 female 9.2 mm (NSMT-Cr 26794), 1 male 7.6 mm (NSMT-Cr 26795); data as holotype.

Additional materials examined. 1 ovigerous female, 1 unsexed, 2 juveniles (NSMT-Cr 26791); data as holotype. 1 female 10.5 mm (NSMT-Cr 26797), 1 male 8.0 mm (NSMT-Cr 26798), 4 males, 1 female, 5 unsexed (NSMT-Cr 26796); near Byobu-iwa (40 m alt., *Machilus thunbergii*, *Cinnamomum yabunikkei*, *Schefflera heptaphylla*), Kita-Daitojima Is., Okinawa; 12 Mar. 1989; J. Aoki coll.

Description of female (holotype 11.0 mm, *head for a paratype NSMT-Cr 26794 9.2 mm)*. As the previous species except the following characters. Body size medium. Eyes (Fig. 6A) small, *ca*. 0.25 times as long as head length. Antenna 1 (Fig. 6B), peduncular articles 1–3 subequal in length, flagellum shorter than peduncle, with 5 articles. Antenna 2 (Fig. 6C) slender, flagellum subequal to peduncle in length, with 21 articles. Upper lip (Fig. 6D) lacking robust setae. Maxilliped damaged. Mandibles (Fig. 6F, G), lower lip (Fig. 6E), maxillae 1, 2 (Fig. 6H, I) as the previous species.

Gnathopod 1 (Fig. 6N, O), propodus 0.75 times as long as carpus, propodus palm short, slanted, *ca*. 0.4 times as long as dactylus. Gnathopod 2 (Fig. 6Q), basis moderately expanded anteriorly, ischium with shallow lobe. Pereopod 4 (Fig. 7C, D), dactylus weakly pinched. Pereopod 5 (Fig. 7E), 0.66 times as long as pereopod 6 (Fig. 7G, H). Pereopod 7 (Fig. 7J, K) as long as pereopod 6, basis produced posteroventrally, propodus slender, *ca*. 8.5 times as long as width. Oostegites of gnathopod 2 – pereopod 4 oblong oval, with simple-tipped setae.

Pleonite side plates (Fig. 7L) acuminate posteriorly, posterior margin with 3–7 setae. Pleopods 1–3 (Fig. 7M–O), peduncles marginally bare; rami reduced, 0.32, 0.27, 0.29 times as long as peduncle for pleopods 1–3, respectively. Uropod 1 (Fig. 7P), peduncle with 5 inner and 5 outer marginal robust setae; inner ramus with 4 dorsal and 2 lateral marginal robust setae. Uropod 2 (Fig. 7Q), peduncle with 4 inner and 3 outer marginal robust setae, inner ramus with 3 dorsal and 3 lateral marginal robust setae, outer ramus with

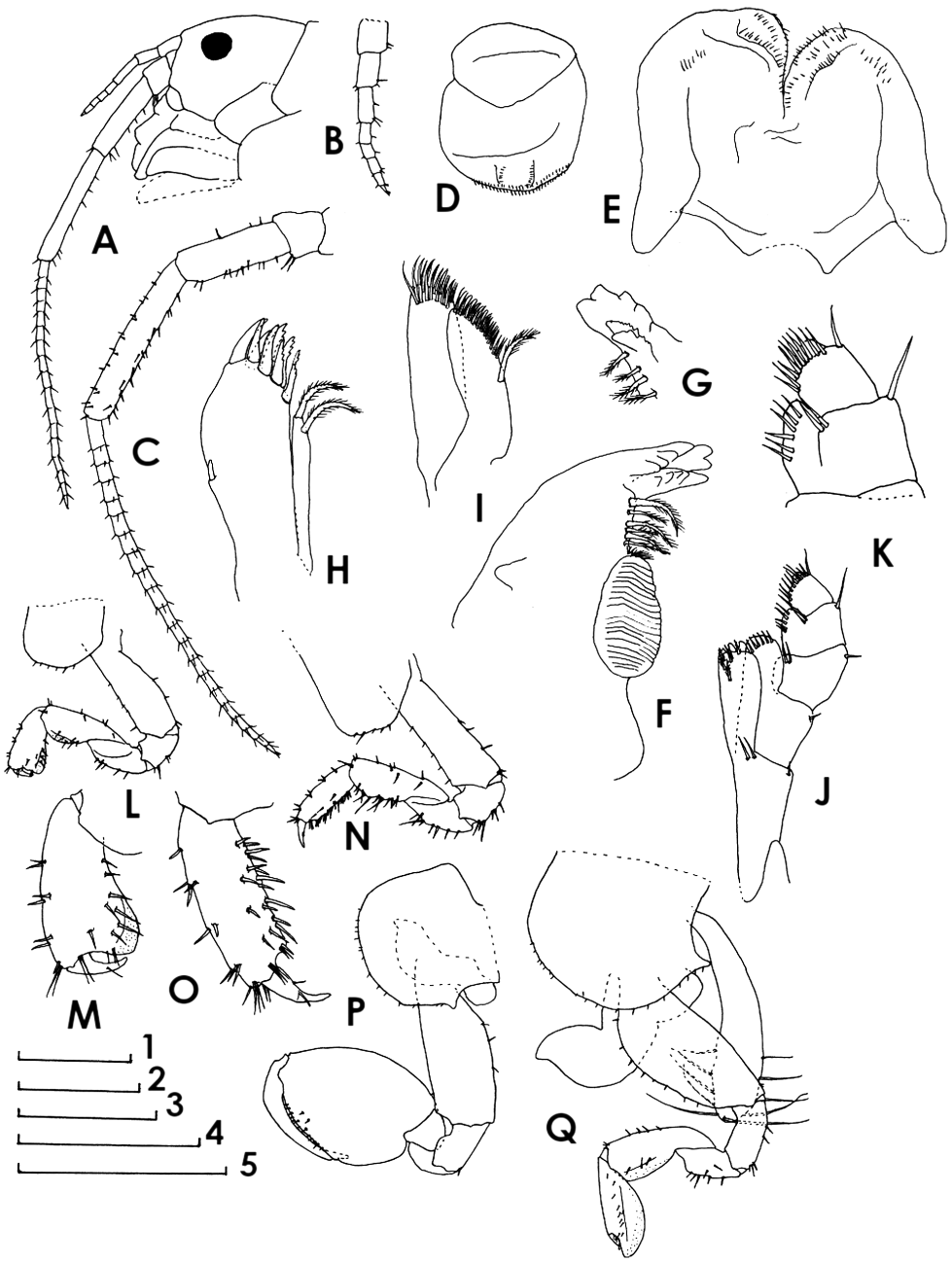

Fig. 6. *Miyamotoia daitoensis* sp. nov. Ovigerous female 11.0 mm (holotype), B–I, N, O, Q; male 7.6 mm (paratype, NSMT-Cr 26793), L, M, P; female 9.2 mm (paratype, NSMT-Cr 26794), A; male 7.6 mm (paratype, NSMT-Cr 26795), J, K. A, head; B, antenna 1; C, antenna 2; D, upper lip; E, lower lip; F, left mandible; G, right mandible (distal part); H, maxilla 1; I, maxilla 2; J, maxilliped; K, distal articles of maxilliped palp; L, N, gnathopod 1; M, O, gnathopod 1 (propodus and dactylus); P, Q, gnathopod 2. Scale 1: 1.0 mm for A, 0.35 mm for D, 0.25 mm for M; scale 2: 1.0 mm for B, C, 0.35 mm for O; scale 3: 1.0 mm for N, Q; scale 4: 1.0 mm for L, P; scale 5: 0.4 mm for E–J, 0.2 mm for K.

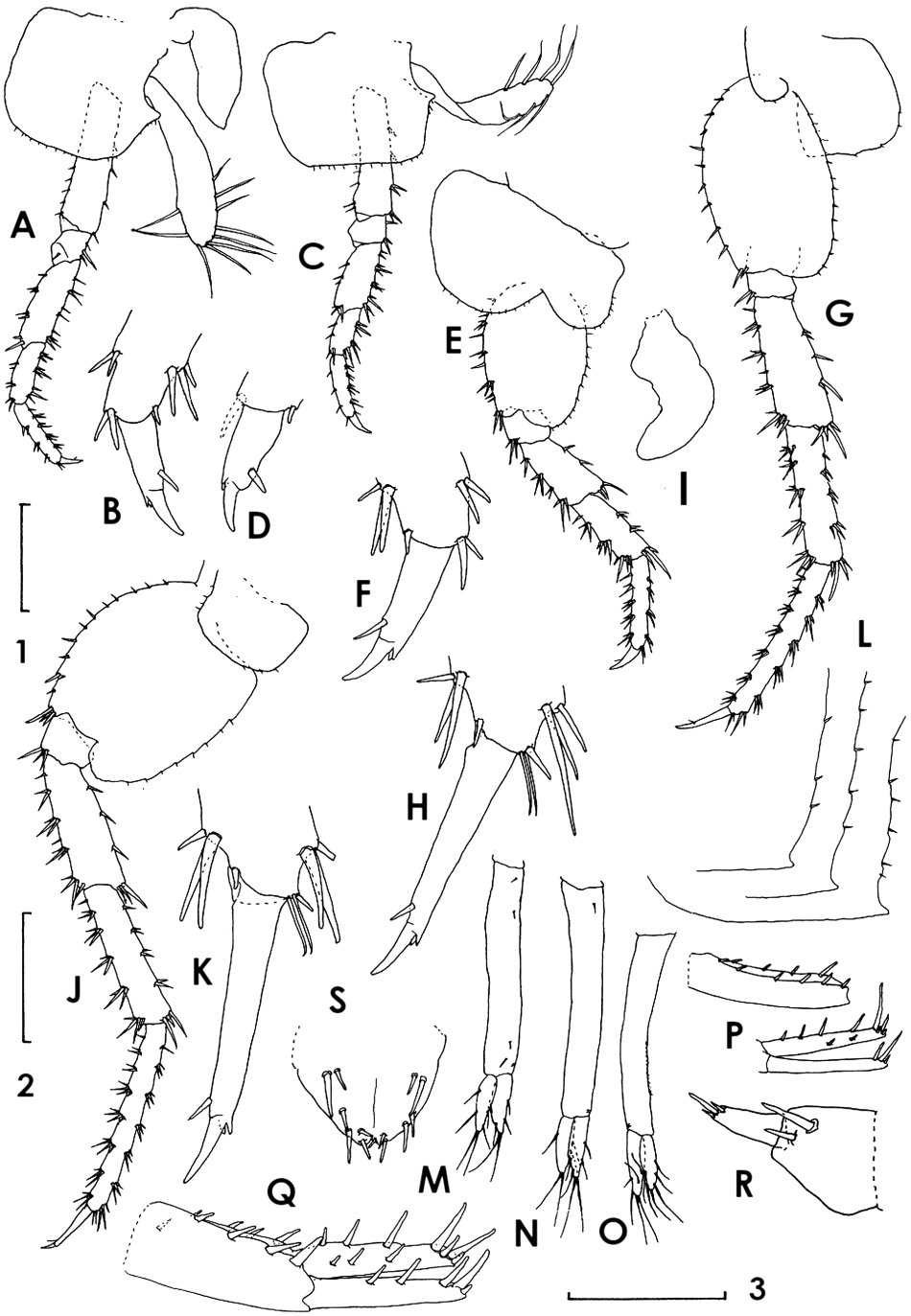

Fig. 7. *Miyamotoia daitoensis* sp. nov. Ovigerous female 11.0 mm (holotype). A, C, E, G, J, pereopods 3–7; B, D, F, H, K, dactyli of pereopods 3–7; I, coxal gill of pereopod 6; L, pleonite side plates 1–3; M–O, pleopods 1–3; P, uropod 1 (peduncle and rami); Q, uropod 2; R, uropod 3; S, telson. Scale 1: 0.5 mm for L–O, Q, 0.35 mm for S; scale 2: 1.0 mm for A, C, E, G, I, J, P, 0.2 mm for B, D, F, H, K; scale 3: 0.35 mm for R.

2 marginal robust setae. Uropod 3 (Fig. 7R), peduncle with 2 robust setae subapically, ramus short, 0.56 times as long as peduncle, marginally bare. Telson (Fig. 7S) narrowed distally with dorsal suture line, with dorsolateral, lateral, and apical robust setae, 6–7 setae per lobe.

Description of male (paratype NMST-Cr 26793 7.6 mm, *maxilliped for paratype NMST-Cr 26795 7.6 mm)*. Antenna 1, flagellum with 4 articles. Antenna 2 slender, with 14 articles. Maxilliped (Fig. 6J, K), palp article 3 broad, article 4 reduced, masked by robust setae. Gnathopod 1 (Fig. 6L, M), pellucid lobe of carpus shallow, propodus with deep pellucid lobe, palm longer than dactylus, propodus 0.78 times as long as carpus, dactylus cusp not clear. Gnathopod 2 (Fig. 6P), dactylus attenuated distally. Pleopod 1, ramus *ca*. 0.25 times as long as peduncle, Telson with 5 robust setae per lobe.

Variation. Among five specimens with body length 7.6–11.0 mm, the following variations were recognized: number of flagellar articles of antenna 2, 14–21, length ratio of rami to peduncle in pleopods 0.25–0.30 (mean of three pleopods); number of robust setae per telson lobe 5–7. The values for the antenna 2 and the telson tend to correlate with the body length.

Etymology. The species name refers to the type locality, the Daitojima Islands.

Distribution. So far known only from terrestrial habitats on Minami-Daito and Kita-Daitojima Islands, Okinawa.

Remarks. A paratype male (NMST-Cr 26795, 7.6 mm) has the propodus on pereopod 7, which is 8.5 times as long as wide. Most of the specimens examined do not have intact maxillipeds. The distinguishing characters of the present new species from *M. spinolabrum* sp. n. are shown in the key.

Leptorchestia gen. nov.

[New Japanese name: Hoso-okatobimushi zoku]

Type species. *Leptorchestia biseta* sp. nov., by monotypy.

Diagnosis. Body size medium to large. Eyes medium. Antenna 1 reaching end of peduncular article 4 of antenna 2, peduncle longer than flagellum; peduncular article 3 longer than article 1 and 2 each. Antenna 2 slender in both sexes, flagellum longer than peduncle. Upper lip lacking robust setae. Lacinia mobilis of left mandible 5-dentate. Maxilliped, outer margin of precoxa not stepped, palp article 2 mediodistally lobate, article 3 slender, article 4 small, distinct.

Gnathopod 1 sexually dimorphic; in male, propodus deeply subchelate, carpus and propodus with pellucid lobe, merus with small pellucid lobe; dactylus not cuspate; in female, propodus weakly subchelate, propodus slightly narrowed distally, palm much shorter than dactylus, carpus and propodus lacking pellucid lobe. Gnathopod 2 in male, propodus powerfully subchelate, propodus palm smoothly curved, dactylus elongate, distally attenuate; in female, basis weakly expanded anteroproximally. Pereopods bi-cuspidactylate, locking robust setae of propodi small, coxa of pereopod 4 much wider than deep, dactylus of pereopod 4 not pinched. Posterior lobe of coxa on pereopod 6 right-angled anteroventrally. Propodi of pereopods 6–7 slender, 8–10 times as long as wide. Coxal gill of gnathopod 2 lobed at middle, coxal gills of pereopods 3–6 sac-like, convoluted.

Pleonite side plates lacking marginal pits; peduncles of pleopods with 2 retinacula; rami slightly reduced, *ca*. 0.5 times as long as peduncles. Uropod 1, peduncle distolateral robust seta shorter than subdistal one, inner ramus with dorsal (and lateral) marginal robust setae, outer ramus with marginal robust setae. Uropod 2, rami of subequal length, inner ramus with dorsal and lateral marginal robust setae, outer ramus with marginal robust setae. Uropod 3, peduncle deep, ramus shorter than peduncle. Telson as long as wide, with dorsolateral, lateral and apical robust setae, 5–8 setae per lobe. Oostegite linguiform, with simple-tipped setae.

Etymology. The name of this genus refers to the slender antenna 2 and propodi of pereopods 6 and 7, with the stem *Orchestia*.

Remarks. The present new genus is charac-

terized by having: 1) the slender antenna 2, slender maxilliped palp article 3, slender pereopods 6 and 7; 2) the male gnathopod 1 with lobed merus; 3) slightly reduced pleopods; and 4) marginally robust-setose outer ramus of uropod 1. The new genus is close to *Cryptorchestia* Lowry and Fanini, 2013, and *Traskorchestia* Bousfield, 1982. However, *Cryptorchestia* is separated from *Leptorchestia* by having a 4-dentate lacinia mobilis on the left mandible and well-developed pleopods (*vs*. 5-dentate lacinia and slightly reduced pleopods), and *Traskorchestia* is distinguished by having well-developed pleopods and curl-tipped oostegite setae (*vs*. slightly reduced pleopods and simple-tipped setae). This new genus also shows similarity to *Kaalorchestia* Lowry and Myers, 2019, which, however, is separable from *Leptorchestia* by the non-lobed merus on male gnathopod 1 and the well-developed pleopods. *Miyamotoia* and *Morinoia* have similarity with *Leptorchestia*, which is different from the former two genera in the lobed merus in male gnathopod 1 and the robust setose outer ramus of the uropod 1.

Leptorchestia biseta sp. nov.
[New Japanese name: Hoso-okatobimushi]
(Figs. 8–9)

Platorchestia sp. Morino, 1991: 232 (part)

Type material. Holotype (NSMT-Cr 26806) male 9.8 mm; Ran-no-sawa, Ototojima Is., Ogasawara, Tokyo; 9 Jul. 1997; T. Kishimoto coll. Paratype (NSMT-Cr 26805) female 16.0 mm; data as holotype.

Additional materials examined. **Ototojima Island:** 1 female 15.5 mm (NSMT-Cr 26804); data as holotype. 1 female 12.5 mm (NSMT-Cr 26802), 1 male 10.0 mm (NSMT-Cr 26803); Ichinotani (humid forest, *Ardisia sieboldii*), Ototojima Is., Ogasawara, Tokyo; 18 Jul. 1990; K. Tomiyama coll. 1 male 9.6 mm (NSMT-Cr 26807), 2 females (NSMT-Cr 26809), near Mt. Hironeyama, Ototojima Is., Ogasawara, Tokyo; Feb. 1997; T. Kishimoto coll. **Anijima Island:** 1 ovigerous female (NSMT-Cr 26800); Anijima Is. (northeast plateau), Ogasawara Is., Tokyo; 28 Mar. 1990; K. Tomiyama coll. 1 male 10.4 mm (NSMT-Cr 26801); Mt. Mikaeriyama (north side), Anijima Is., Ogasawara, Tokyo; 28 Mar. 1990; K. Tomiyama coll. **Chichijima Island:** 1 female (NSMT-Cr 26808); Tatsumidani, Chichijima Is., Ogasawara, Tokyo; Feb. 1997; T. Kishimoto coll. 1 female (NSMT-Cr 26810); Mt. Tsuitateyama, Chichijima Is., Ogasawara, Tokyo; Feb. 1997; T. Kishimoto coll. **Hahajima Island:** 1 male 10.2 mm (NSMT-Cr 26799); Mt. Sekimonyama (*Fagara ailanthoides* forest), Hahajima Is., Ogasawara, Tokyo; 1 Nov. 1977; S. Sato coll.

Description of male (holotype 9.8 mm). Body size medium. Eyes (Fig. 8A) *ca*. 0.4 times as long as head length. Antenna 1 (Fig. 8B), peduncular article 3 slightly longer than article 1 and 2 each, flagellum with 5 articles. Antenna 2 (Fig. 8A, C, D), flagellum 1.2 times as long as peduncle, with 22 articles. Upper lip (Fig. 8E) lacking robust setae. Left mandible (Fig. 8G), lacinia mobilis 5-dentate. Maxilla 1 (Fig. 8I), palp not distinct. Maxilliped (Fig. 8K, L), palp article 3 slender, narrowing distally, palp article 4 distinct. Right mandible (Fig. 8H), lower lip (Fig. 8F), maxilla 2 (Fig. 8J) as other talitrid species.

Gnathopod 1 (Fig. 8M, N), merus with small pellucid lobe, carpus with prominent pellucid lobe, propodus with broad-based pellucid lobe, propodus 0.68 times as long as carpus, dactylus not cuspate. Gnathopod 2 (Fig. 8Q, S), dactylus elongate, exceeding mid-point of posterior margin of propodus. Pereopods 3–7 bi-cuspidactylate, locking robust setae of propodi small (Fig. 9C, H, K for pereopods 4, 6, 7, respectively). Pereopod 4 (Fig. 9B) much shorter than pereopod 3 (Fig. 9A), dactylus not pinched. Pereopod 5 (Fig. 9D), 0.64 times as long as pereopod 6 (Fig. 9E). Posterior lobe of coxa on pereopod 6 (Fig. 9F) right-angled anteroventrally. Pereopod 7 (Fig. 9I, J) slightly longer than pereopod 6, basis weakly expanded posteriorly, not lobed ventrally, propodus of pereopod 7 slender, 9 times as long as wide.

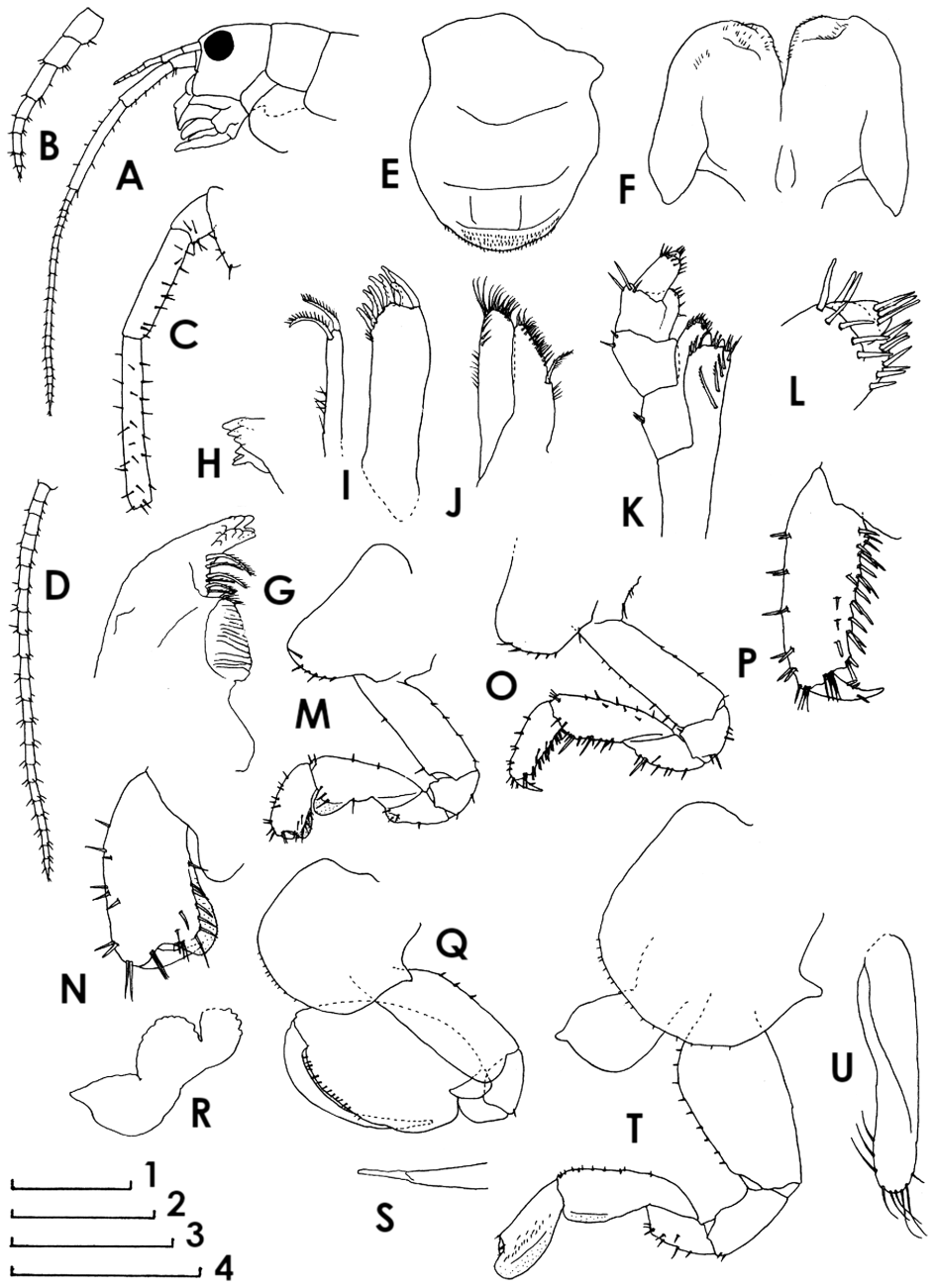

Fig. 8. *Leptorchestia biseta* sp. nov. Male 9.8 mm (holotype), A–N, Q, R, S; female 16.0 mm (paratype), O, P, T, U. A, head; B, antenna 1; C, antenna 2 (peduncle); D, antenna 2 (flagellum); E, upper lip; F, lower lip; G, left mandible; H, right mandible (distal part); I, maxilla 1 (inner plate of NSMT-Cr 26805); J, maxilla 2; K, maxilliped; L, maxilliped (palp article 4); M, O, gnathopod 1; N, P, gnathopod 1 (propodus and dactylus); Q, T, gnathopod 2; R, coxal gill of male gnathopod 2; S, dactylus of male gnathopod 2 (distal part); U, oostegite of gnathopod 2. Scale 1: 0.35 mm for P, 0.25 mm for E–K, N; scale 2: 2.0 mm for A, 1.0 mm for B–D, O, T, U, 0.35 mm for S, 0.075 mm for L; scale 3: 1.0 mm for Q, R; scale 4: 1.0 mm for M.

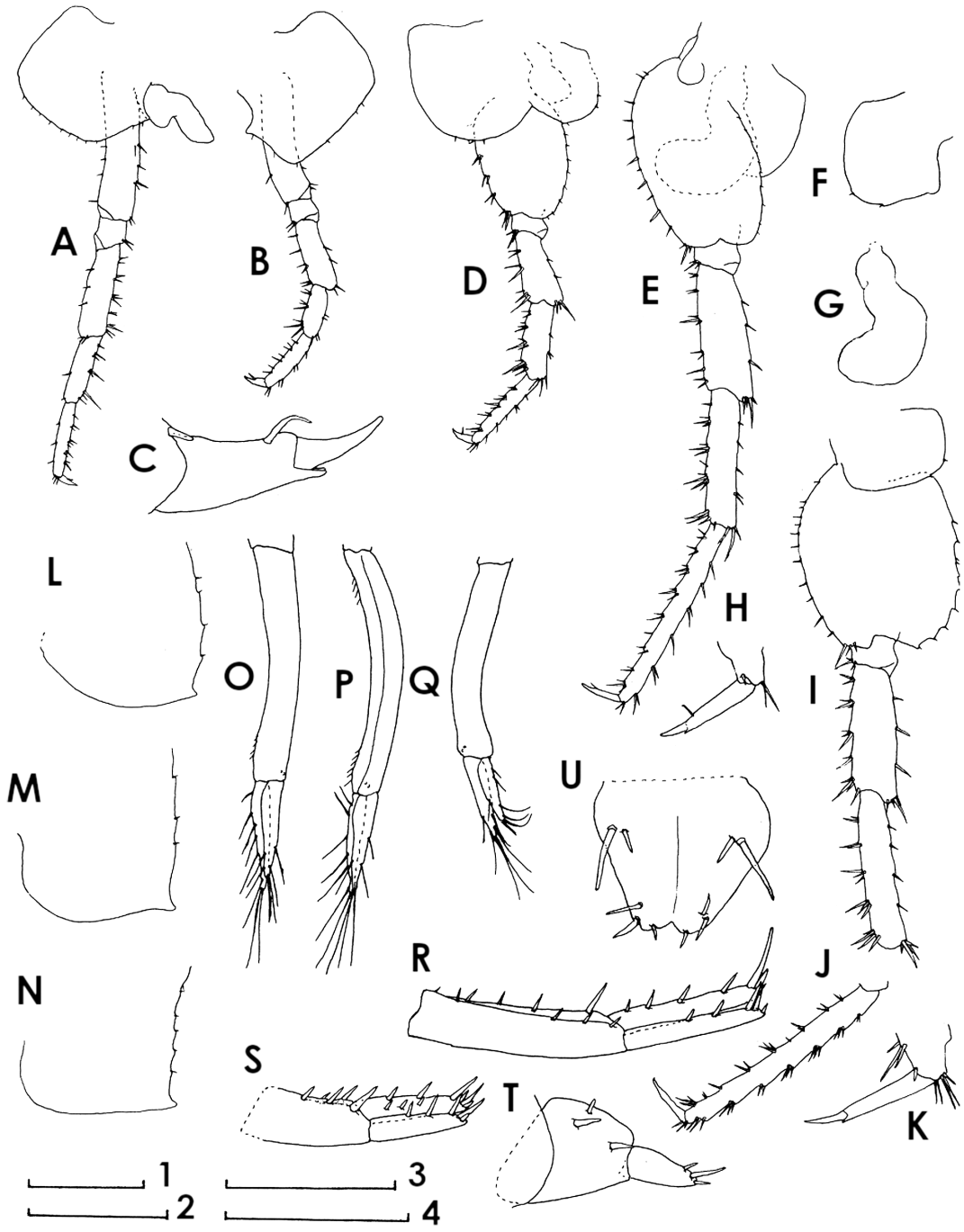

Fig. 9. *Leptorchestia biseta* sp. nov. Male 9.8 mm (holotype). A, B, D, E, pereopods 3–6; C, pereopod 4 (dactylus); F, pereopod 6 (coxa, medial view); G, pereopod 6 (coxal gill); H, pereopod 6 (dactylus); I, pereopod 7 (coxa– carpus); J, pereopod 7 (propodus, dactylus); K, pereopod 7 (dactylus); L–N, pleonite side plates 1–3; O–Q, pleopods 1–3; R–T, uropods 1–3; U, telson. Scale 1: 0.35 mm for H, K; scale 2: 1.0 mm for A, B, D, E–G, I, J, 0.5 mm for O–Q, 0.1 mm for C; scale 3: 1.0 mm for T, U; scale 4: 1.0 mm for L–N, R, S.

Pleonite side plates 1–3 (Fig. 9L–N) weakly acuminate posteriorly, posterior margin with 3–5 setae. Pleopods 1–3 (Fig. 9O–Q), peduncle marginally weakly setose, rami moderately reduced, 0.47, 0.42, 0.42 times as long as respective peduncles. Uropod 1 (Fig. 9R), peduncle with 5 and 3 robust setae on inner and outer margins, respectively, outer ramus with 2 marginal robust setae, inner ramus with 4 dorsal marginal robust setae. Uropod 2 (Fig. 9S), peduncle with 2 + inner, 2 outer marginal robust setae; inner ramus with 2 dorsal, 3 lateral marginal robust setae; outer ramus slightly shorter than outer ramus, with 2 marginal robust setae. Uropod 3 (Fig. 9T), peduncle deep, with 2 dorsal, 1 distal robust seta; ramus 0.59 times as long as peduncle, marginally bare. Telson (Fig. 9U) wider than long, narrowed distally, with dorsal suture line, 2 dorsolateral, and 3 apical robust setae for each lobe.

Description of female (paratype 16.0 mm). Antenna 1, flagellum with 7 articles. Antenna 2, flagellum with 23 articles. Maxilla 1, palp distinct. Gnathopod 1 (Fig. 8O, P), propodus 0.66 times as long as carpus, slightly narrowed distally, palm short *ca*. 0.3 times as long as dactylus. Gnathopod 2 (Fig. 8T), basis weakly expanded anteriorly, merus lacking lobe. Oostegite of gnathopod 2 (Fig. 8U) slender with 9 simple-tipped setae on distal margin. Telson with dorsolateral, lateral and apical robust setae, 7 setae on left lobe.

Variation. In the holotype male, the palp of maxilla 1 is not distinct. However, the paratype female and a male (NSMT-Cr 26803, 10.0 mm) have a distinct palp. Among four specimens with body length 9.8–16.0 mm, the following variations are confirmed: number of flagellar articles of antenna 1, 5–7; number of flagellar articles of antenna 2, 21–27; length ratio of rami to peduncles of pleopods, 0.44–0.55 (mean of three pleopods); number of robust setae per telson lobe, 5–8. For uropod 1, the number of marginal robust setae on outer ramus is relatively stable with 2; the inner ramus has 4–5 dorso-marginal and 0–1 (rarely 2) latero-marginal robust setae.

Etymology. The species name refers to the number of marginal robust setae (2 setae) on the outer ramus of uropod 1.

Distribution. *Leptorchestia biseta* occurs in Ototojima, Anijima, Chichijima and Hahajima Islands, often from under forest litter.

Remarks. The distinguishing characters of this species within the Ogasawara talitrids are shown in the key.

Morinoia Lowry and Myers, 2019

[New Japanese name: Morino okatobimushi zoku]

Morinoia Lowry and Myers, 2019: 61–63, fig. 27.

Remarks. Lowry and Myers (2019) established *Morinoia* to receive non-sexually dimorphic, terrestrial members of *Platorchestia*, which includes *M. paludosus* (Cheng, *et al.*, 2011), *M. humicola* (Martens, 1868) and *M. japonica* (Tattersall, 1922). In the Ogasawara Islands, *M. japonica* has been recorded (Morino, 1991, as *Platorchestia japonica*). A re-examination of the samples assigned to *P. japonica* by Morino (1991) disclosed the occurrence of a new form among *M. japonica*, which is characterized by having a weakly robust-setose outer ramus on the uropod 1. This feature is exceptional for the genus *Morinoia* and suggests an independent genus having a relationship to *Leptorchestia*. However, the other characters are so similar to *Morinoia* and the sample size of the new form is rather small that the new form is retained in this genus by expanding its diagnosis. At the same time, during the present study, characters of *Morinoia* species have been closely compared based on original descriptions or descriptions on materials from type localities, which indicate a few supplemental additions to diagnoses proposed by Lowry and Myers (2019). The revised diagnoses for uropods 1 and 3 are as follows: "Uropod 1, inner ramus with marginal robust setae in 1 or weakly 2 rows, outer ramus marginally bare or weakly robust-setose; Uropod 3, ramus subequal in length or shorter than (up to 0.5 times as long as) peduncle." In what follows, the new form is described under the name of *M.*

chichijimaensis, and character variations of *M. japonica* and its distribution in the Ogasawara Islands are noted.

Morinoia chichijimaensis sp. nov.
[New Japanese name: Chichijima-okatobimushi]
(Figs. 10–12)

Type material. Holotype (NSMT-Cr 26853) male 7.6 mm; Mt. Asahiyama (stream side), Chichijima Is., Ogasawara, Tokyo; 14 Aug. 1989; H. Morino coll. Paratypes, 1 female 10.5 mm (NSMT-Cr 26852), 1 female 9.0 mm (NSMT-Cr 26854); data as holotype.

Additional materials examined. 1 female, 6 juveniles (NSMT-Cr 26831); data as holotype. 1 female (NSMT-Cr 26855); Tatsumi road, Chichijima Is., Ogasawara, Tokyo; Feb. 1997; T. Kishimoto coll.

Description of male (holotype 7.6 mm; head of a paratype female NSMT-Cr 26854 9.0 mm). Body size medium. Eyes (Fig. 10A) *ca*. 0.4 times as long as head length. Antenna 1 (Fig. 10A, B) not reaching end of peduncular article 4 of antenna 2, peduncular article 3 slightly shorter than article 1 and 2 each, flagellum shorter than peduncle, with 3 articles. Antenna 2 (Fig. 10A, C) slender, flagellum subequal to peduncle in length, with 13 articles, basal 2 articles fused. Upper lip (Fig. 10D) lacking robust setae. Left mandible (Fig. 10H), lacinia mobilis 5-dentate. Maxilla 1 (Fig. 10F), palp represented by a tiny prominence. Maxilla 2 (Fig. 10G), medial margins of plates infested by epibionts. Lower lip (Fig. 10E) and right mandible (Fig. 10I) as other talitrid species. Maxilliped (Fig. 10J), palp articles 2 and 3 broad, article 2 with mediodistal lobe, article 4 infested by epibionts.

Gnathopod 1 (Fig. 10K, L), carpus and propodus with pellucid lobe, propodus 0.70 times as long as carpus, palm as long as dactylus, dactylus lacking cusp on anterior margin. Gnathopod 2 (Fig. 11A), dactylus slightly longer than palm, weakly attenuated apically. Pereopods 3–7 bicuspidactylate, locking robust setae of propodus well-developed (Figs. 11D, F, H, L, 12C). Pereopod 4 (Fig. 11E) shorter than pereopod 3 (Fig. 11C), dactylus (Fig. 11F) weakly pinched. Pereopod 5 (Fig. 11G), 0.62 times as long as pereopod 6 (Fig. 11I, J). Posterior lobe of coxa on pereopod 6 right-angled anteroventrally. Bases of pereopods 5 and 6 weakly expanded posteriorly. Pereopod 7 (Fig. 12A, B) as long as pereopod 6, basis moderately expanded posteriorly and ventrally. Propodus of pereopods 7 *ca*. 6 times as long as wide.

Pleonite side plates lacking marginal pits. Pleopods 1–3, peduncle marginally bare, rami well-developed, 0.94 and 1.08 times as long as peduncle of pleopod 1 (Fig. 12D) and pleopod 3 (Fig. 12E), respectively. Uropod 1 (Fig. 12F), peduncle distolateral robust seta shorter than subdistal one, with 3 inner and 4 outer marginal robust setae; inner ramus with 3 dorsal and 2 lateral marginal robust setae; outer ramus slightly shorter than inner ramus, with 1 marginal robust seta. Uropod 2 (Fig. 12G), inner ramus with 2 dorsal and 2 lateral robust setae, outer ramus as long as inner ramus, with 1 marginal seta. Uropod 3 (Fig. 12H), peduncle deep, rectangular, with 3 robust setae distally; ramus short, 0.50 times as long as peduncle, marginally bare. Telson (Fig. 12I) longer than wide, with dorsal suture line, armed with dorsolateral and apical setae, 5–6 setae per lobe.

Description of female (paratype NSMT-Cr 26852 10.5 mm). Antenna 1, flagellum with 4 articles. Antenna 2, flagellum with 14 articles. Gnathopod 1 (Fig. 10M, N), carpus and propodus slender, lacking pellucid lobe, propodus 0.62 times as long as carpus, palm much shorter than dactylus, *ca*. 0.2 times as long as dactylus. Gnathopod 2 (Fig. 11B), basis weakly expanded anteroproximally, merus with pellucid lobe, propodus short, *ca*. 0.5 times as long as carpus. Pereopod 7, propodus *ca*. 7 times as long as wide. Pleopod ramus 0.93 times as long as peduncle. Telson lobe with 5 robust setae.

Variation. The paratype female has a rudimentary, not articulated, palp on the maxilla 1, while the palp of the holotype male is faintly articulated, as other talitrid species. Among three

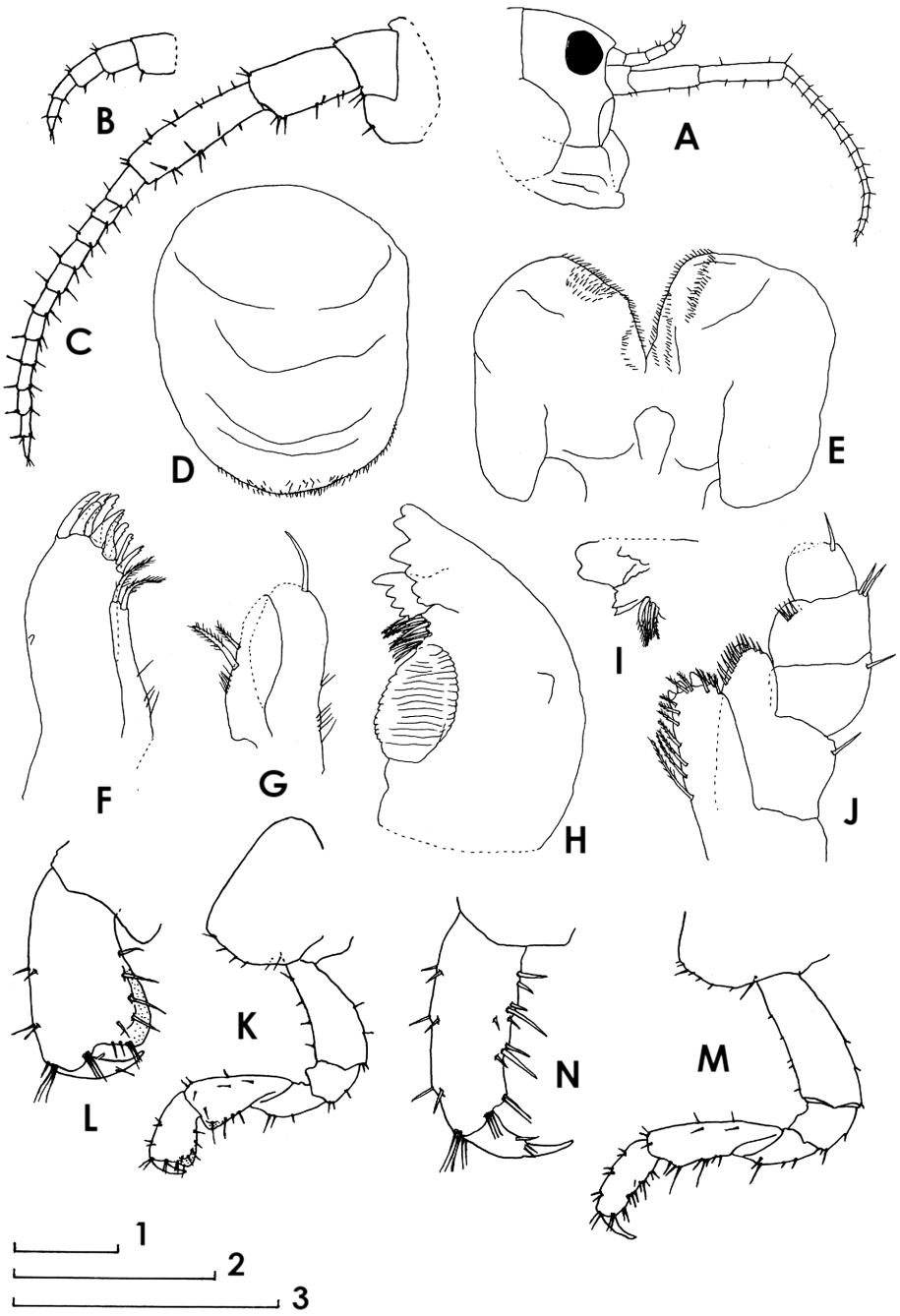

Fig. 10. *Morinoia chichijimaensis* sp. nov. Male 7.6 mm (holotype), B, C, K, L; female 9.0 mm (paratype, NSMT-Cr 26854), A, M and N; female 10.5 mm (paratype, NSMT-Cr 26852), D–J. A, head; B, antenna 1; C, antenna 2; D, upper lip; E, lower lip; F, maxilla 1; G, maxilla 2 (marginal part infested by epibionts); H, left mandible; I, right mandible (distal part); J, maxilliped (distal part infested by epibionts); K, M, gnathopod 1; L, N, gnathopod 1 (propodus and dactylus). Scale 1: 1 mm for A; scale 2: 1 mm for B, C, K, M, 0.4 mm for D–J; scale 3: 0.5 mm for L, N.

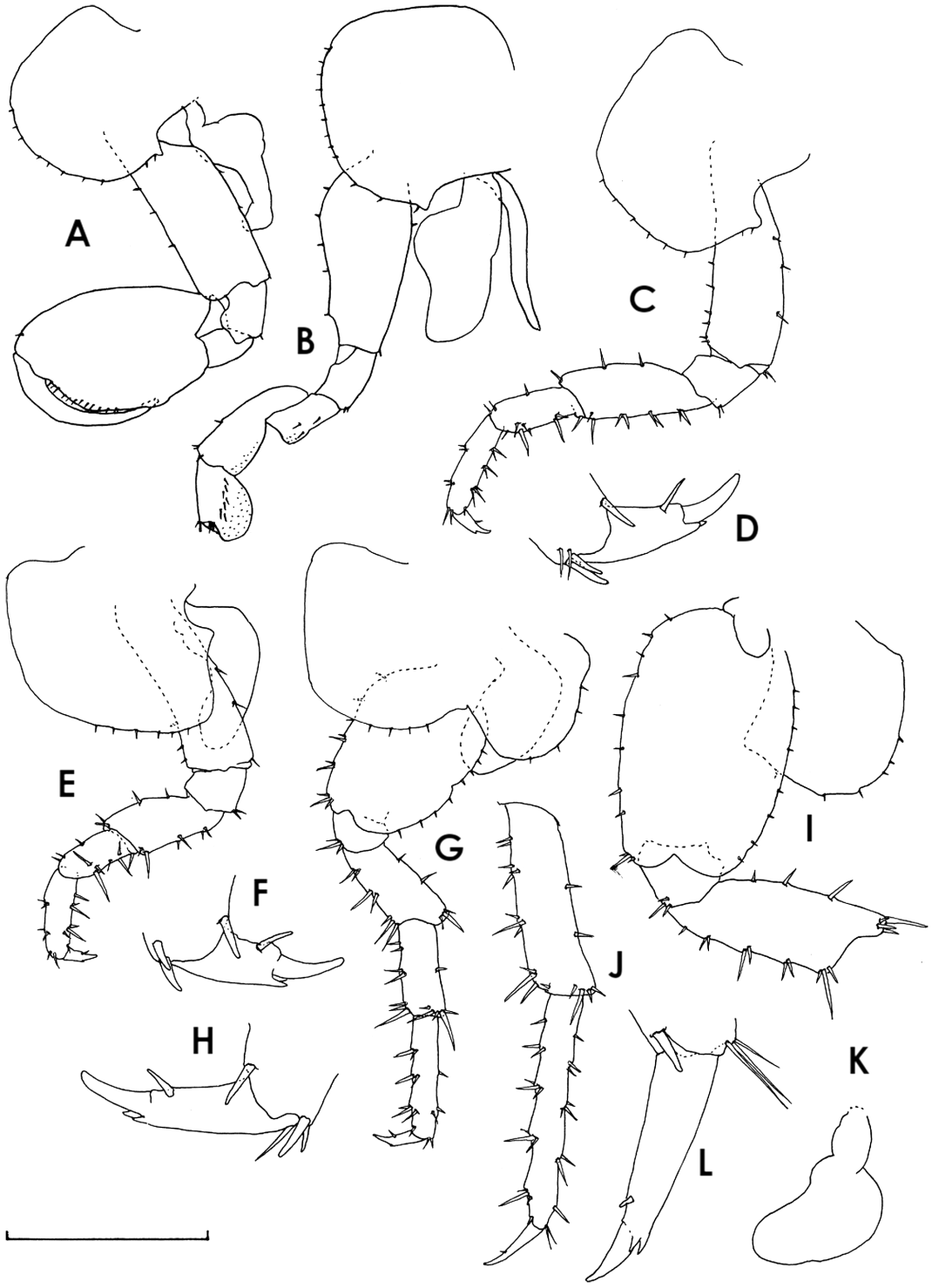

Fig. 11. *Morinoia chichijimaensis* sp. nov. Male 7.6 mm (holotype), A, C–L; female 9.0 mm (paratype, NSMT-Cr 26854), B. A, B, gnathopod 2; C, E, G, I, pereopods 3–6; D, F, H, L, dactyli of pereopods 3–6; J, pereopod 6 (carpus–dactylus); K, coxal gill of pereopod 6. Scale: 1 mm for A, B, 0.8 mm for C, E, G, I–K, 0.2 mm for D, F, H, L.

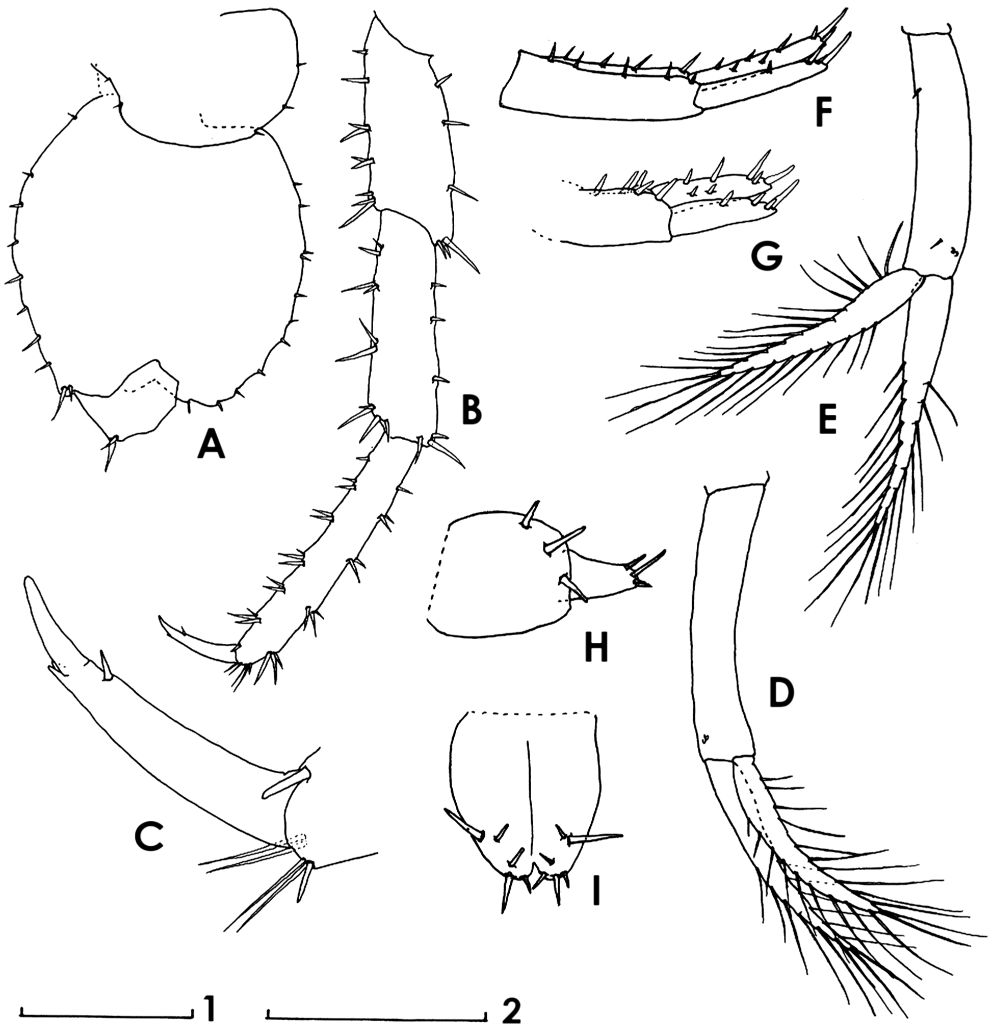

Fig. 12. *Morinoia chichijimaensis* sp. nov. Male 7.6 mm (holotype). A, pereopod 7 (coxa–ischium); B, pereopod 7 (merus–dactylus); C, pereopod 7 (dactylus); D, E, pleopods 1, 3; F–H, uropods 1–3; I, telson. Scale 1: 0.5 mm for D, E, 0.35 mm for I, 0.25 mm for H; scale 2: 1.0 mm for F, 0.8 mm for A, B, G, 0.2 mm for C.

specimens with body length 7.6–10.5 mm, the following variations were confirmed: number of flagellar articles of antenna 1, 3–4; number of flagellar articles on antenna 2, 12–16; length ratio of rami to peduncles in pleopods, 0.89–1.01 (a pleopod or mean of pleopods); number of robust setae per telson lobe, 5–6.

Etymology. The species name refers to the type locality, Chichijima Island.

Distribution. This species occurs in or at the side of streams in Chichijima Islands.

Remarks. This species is most similar to *M. japonica* among the congeneric species in having well-developed pleopods, but clearly distinguished from it by the weakly robust-setose outer ramus on the uropod 1. This character may indicate a relationship of the new species with *Leptorchestia biseta*. However, *L. biseta* bears reduced pleopods (*vs*. well-developed) and 2 or more robust setae (*vs*. a single seta) on the outer ramus of uropod 1.

***Morinoia japonica* (Tattersall, 1922)**
[Japanese name: Nihon-okatobimushi]

Talorchestia japonica Tattersall, 1922, 452–453, Pl. 21, figs. 1–10.
Platorchestia japonica: Bousfield, 1982, 27; Morino and Dai, 1990, 21–26, figs. 9–11; Hou and Li, 2003, 2442–2448, figs. 1–4; Kim and Min, 2010, 93–98, figs. 1–4.
Morinoia japonica: Lowry and Myers, 2019, 61.

Material examined. **Anijima Island:** 1 male 7.5 mm (NSMT-Cr 26821), 1 female 8.3 mm (NSMT-Cr 26822), 14 juveniles (NSMT-Cr 26820); Takino-ura (waterfall basin), Anijima Is., Ogasawara, Tokyo; 13 Aug. 1989; H. Morino coll. **Hahajima Island:** 1 male 8.5 mm (NSMT-Cr 26811), 1 female 10.5 mm (NSMT-Cr 26812), 1 female (NSMT-Cr 26813), 2 males, 4 females, 1 unsexed (NSMT-Cr 26814); Mt. Kuwanoki-yama (damp ground), Hahajima Is., Ogasawara, Tokyo; 13 Apr. 1973; T. Ito coll. 4 males, 6 females, 8 juveniles (NSMT-Cr 26815); near the mouth of Inokumadani Tunnel (freshwater pond), Hahajima Is., Ogasawara, Tokyo; 9 Aug. 1989; H. Morino and N. Hikita coll. 3 males, 11 females, 4 juveniles (NSMT-Cr 26816), 1 male 10.5 mm (NSMT-Cr 26817), 1 female 12.5 mm (NSMT-Cr 26818); trail of Mt. Sekimonyama (stream); Hahajima Is., Ogasawara, Tokyo; 9 Aug. 1989; H. Morino and N. Hikita coll. 2 juveniles (NSMT-Cr 26819); Tonasu coast (under litter, waterfall basin), Hahajima Is., Ogasawara, Tokyo; 10 Aug. 1989; H. Morino and N. Hikita coll. 3 males, 5 females, 1 juvenile (NSMT-Cr 26823), 2 males, 10 females, 1 juvenile (NSMT-Cr 26824), 1 male 7.8 mm (NSMT-Cr 26825), 1 female 8.2 mm (NSMT-Cr 26828), 4 males, 3 females, 1 juvenile (NSMT-Cr 26827); near Nagahama (small stream), Inokumadani, Hahajima Is., Ogasawara, Tokyo; 3 Sept. 2015; K. Satake coll. 2 males, 1 ovigerous female, 1 juvenile (NSMT-Cr 26828), 1 male (NSMT-Cr 26829), 1 male (NSMT-Cr 26830); Nagahama-Hasegawa (small stream), Hahajima Is., Ogasawara, Tokyo; 4 Sept. 2015; K. Satake coll.

Distribution. *Morinoia japonica* is found in Anijima, Hahajima Islands, from the riparian habitats, including damp ground, small streams, ponds, and waterfall basins.

Remarks. This species has been redescribed based on materials from China (Morino and Dai, 1990; Hou and Li, 2003) and South Korea (Kim and Min, 2010). The specimens collected from the type locality (Lake Biwa, Japan) were often utilized to identify the related species (Miyamoto and Morino, 2004; Cheng *et al.*, 2011). The present material from Ogasawara Islands accords with those descriptions and figures. Here variations in selected characters displayed by 6 samples (body length 7.5–12.5 mm) from the Ogasawara Islands are noted. Number of flagellar articles of antenna 1, 3–4; number of flagellar articles 2, 13–16; length ratio of rami to peduncle on pleopods, 0.89–0.94; inner ramus of uropod 1 with 2 rows of marginal robust setae, dorsally 3–5 and laterally 1–5 in number; telson lobe with 5–9 robust setae. Although the latter two values vary highly, they tend to show a higher number of robust setae than those described from other localities, namely, lateral robust setae up to 1, telson lobe with up to 5 robust setae. This species has often been observed swimming in water pools in the Ogasawara Islands.

General remarks

The present study revealed two new genera and four new species from terrestrial, including riparian, habitats of the Ogasawara and Daito Islands, which bring the number of talitrids in the Ogasawara Islands to 6 genera with 7 species (Table 1 and the Keys below). One genus (*Leptorchestia)* and 4 species among them are endemic to these islands. The number of species in each island declines with the distance from the "hub" islands (Chichijima and Hahajima Islands), which suggests that the sampling intensity may be reflected in this trend. Still several islands in the Ogasawara Islands are not explored yet, and their riparian habitats of these islands have not been paid full attention. A future study is needed

Table 1. Talitrid species from the Ogasawara and Daitojima Islands. Asterisks: endemic to these Islands.

Species	eco-type	Ogasawara Islands					Daito Islands		Source
		Mukojima	Ototojima	Anijima	Chichijima	Hahajima	Kita-daito.	Minami-daito.	
Platorchestia pacifica	beach-hoppers				○	○			Hamabe (2017), Morino (unpublished)
Morinoia japonica	riparian-hoppers			○		○			present study
*M. chichijimaensis**	riparian-hoppers				○				present study
Nipponorchestia curvatus	field-hoppers		○		○	○			Morino and Miyamoto (2015a)
*Miyamotoia spinolabrum**	forest-hoppers	○		○	○	○			present study
*M. daitoensis**	field-hoppers						○	○	present study
*Leptorchestia biseta**	forest-hoppers		○	○	○	○			present study
*Pyatakovestia boninensis**	forest-hoppers				○	○			Morino and Miyamoto (2015b), Hamabe (2017)
*Minamitalitrus zoltani**	cave-hoppers							○	White *et al.* (2013)

to fulfill the faunal, ecological, and distributional information which are crucial to understanding the diversity of the terrestrial Talitridae in these Islands.

Occurrence of *Miyamotoia* species in the Daito and the Ogasawara Islands may indicate a closer biogeographical relationship between these two islands than between the Daito and the Okinawa Islands, which are more closely located than between the former two Islands (Fig. 1). Analyses of dispersal ways for terrestrial invertebrates over these oceanic islands might give a cue to this subject.

It is reasonable, when taking the distributional aspects into account, that two new genera, *Miyamotoia* and *Leptorchestia*, are assumed to be phyletically related to *Morinoia*. The peculiar features that the component species exhibit, robust setose outer ramus of uropod 1 (*Leptorchestia biseta*, *Morinoia chichijimaensis*) and robust setose upper lip (*Miyamotoia spinolabrum*) may be examples of variation due to genetic drift in isolated species populations in oceanic islands.

Key to species of the Talitridae from the Ogasawara and Daito Islands

1. Eyes lacking; male gnathopod 2 mitten-shaped……*Minamitalitrus zoltani*.
—. Eyes present; male gnathopod 2 enlarged……2.
2. Merus of male gnathopod 1 with lobe; female gnathopod 1 deeply subchelate; uropod 1, distolateral robust seta large……3.
—. Merus of male gnathopod 1 lacking lobe (or with small lobe); female gnathopod 1 shallowly subchelate; uropod 1, distolateral robust seta small……4.
3. Maxilliped, outer margin of precoxa stepped; pleopod rami 0.3–0.4 times as long as peduncle ……*Pyatakovestia boninensis*.
—. Maxilliped, outer margin of precoxa not stepped; pleopod rami 0.5–0.6 times as long as peduncle ……*Nipponorchestia curvatus*.
4. Antenna 1 reaching end of peduncular article 4 of antenna 2; merus of male gnathopod 1 with small lobe; uropod 1, outer ramus with 2 marginal robust setae……*Leptorchestia biseta*.
—. Antenna 1 not reaching end of peduncular article 4 of antenna 2; merus of male gnathopod 1 lacking lobe; uropod 1, outer ramus marginally bare or with 1 robust seta……5.
5. Antenna 2 and pereopod 7 in male incrassate; palm of male gnathopod 2 with 2 tubercles ……*Platorchestia pacifica*.
—. Antenna 2 and pereopod 7 not incrassate in male; palm of male gnathopod 2 smoothly convexed ……6.
6. Uropod 1, outer ramus with 1 marginal robust seta; pleopod rami 0.9–1.0 times as long as peduncle ……*Morinoia chichijimaensis*.
—. Uropod 1, outer ramus marginally bare……7.
7. Upper lip with robust setae……*Miyamotoia spinolabrum*.
—. Upper lip lacking robust setae……8.
8. Pleopod rami 0.8–0.9 times as long as peduncle……*Morinoia japonica*.
—. Pleopod rami 0.2–0.3 times as long as peduncle……*Miyamotoia daitoensis*.

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References

Bousfield, E. L. 1982. The amphipods superfamily Talitroidea in the northeastern Pacific Region. I. Family Talitridae: systematics and distributional ecology. National Museums of Canada, Publications in Biological Oceanography, No. 11: 1–73.

Cheng, Y.-T., K. Nakazono, Y. K. Lin and B. K. K. Chan 2011. Cryptic diversity of the semi-terrestrial amphipod *Platorchestia japonica* (Tattersall, 1922) (Amphipoda: Talitrida: Talitridae) in Japan and Taiwan with description of a new species. Zootaxa, 2787: 1–18.

Dana, J. D. 1853. Crustacea, Part II. United States Exploring Expedition during the years 1838, 1839, 1840, 1841, 1842, under the command of Charles Wilkes, U.S.N., 14: 689–1618.

Hamabe, K. 2017. Amphipods from Chichijima Island, Ogasawara. Ogasawara Kenkyu Nenpo (Annual Report of Ogasawara Research), Tokyo Metropolitan University, No. 40: 59–72. (In Japanese)

Hou, Z.-E. and S. Li 2003. Terrestrial talitrid amphipods (Crustacea: Amphipoda) from China and Vietnam: studies on the collection of IZCAS. Journal of Natural History, 37 (20): 2441–2460.

Hughes, L. E. and J. K. Lowry 2017. *Hermesorchestia alastairi* gen. et sp. nov. from Australia (Talitridae: Senticaudata: Amphipoda: Crustacea). Zootaxa, 4311 (4): 491–506.

Kim, M.-S. and G.-S. Min 2010. First record of terrestrial

talitrid amphipod (Crustacea: Amphipoda: Talitridae) from Korea. Korean Journal of Systematic Zoology, 26 (1): 93–98.

Krøyer, H. 1845. Karcinologiske Bidrag. Naturhistorisk Tidsskrift, (N.R.) 1: 283–345, pls. 2, 3: 403, 453–638, pls. 6, 7.

Lowry, J. K. and S. Baldanzi 2016. New talitrids from South Africa (Amphipoda, Senticaudata, Talitroidea, Talitridae) with notes on their ecology. Zootaxa, 4144 (2): 151–174.

Lowry, J. K. and L. Fanini 2013. Substrate dependent talitrid amphipods from fragmented beaches on the north coast of Crete (Crustacea, Amphipoda, Talitridae), including a redefinition of the genus *Orchestia* and descriptions of *Orchestia xylino* sp. nov. and *Cryptorchesti*a gen. nov. Zootaxa, 3709 (3): 201–229.

Lowry, J. K. and A. A. Myers 2019. New genera of Talitridae in the revised Superfamily Talitroidea Bulycheva 1957 (Crustacea, Amphipoda, Senticaudata). Zootaxa, 4553 (1): 1–100.

Martens, E. V. 1868. Über einige ostasiatische Süsswasserthiere. Archiv für Naturgeschichte, Berlin, 34: 1–64.

Miyamoto, H. and H. Morino 2004. Taxonomic studies on the Talitridae (Crustacea, Amphipoda) from Taiwan. II. The genus *Platorchestia*. Publications of the Seto Marine Biological Laboratory, 40 (1/2): 67–96.

Morino, H. 1991. Talitridae from the Ogasawara Islands. Report of the Second General Survey on Natural Environment of the Ogasawara (Bonin) Islands. Tokyo Metropolitan University: 231–235. (In Japanese)

Morino, H. 2014. A new land-hopper genus, *Mizuhorchestia*, from Japan (Crustacea, Amphipoda, Talitridae). Bulletin of the National Museum of Nature and Science, Series A, 40 (3): 117–127.

Morino, H. and A.-U. Dai 1990. Three amphipod species (Crustacea) from East China. Publications of the Itako Hydrobiological Station, 4: 7–27.

Morino, H. and H. Miyamoto 2015a. A new land-hopper genus, *Nipponorchestia*, with two new species from Japan (Crustacea, Amphipoda, Talitridae). Bulletin of the National Museum of Nature and Science, Series A, 41 (1): 1–13.

Morino, H. and H. Miyamoto 2015b. Redescription of *Paciforchestia* Bousfield, 1982 and description of *Pyatakovestia* gen. nov. (Crustacea, Amphipoda, Talitridae). Bulletin of the National Museum of Nature and Science, Series A, 41 (2): 105–121.

Rafinesque, C. S. 1815. Analyse de la nature ou tableau de l'univers et des corps organisés. Palerme, 224 pp.

Serejo, C. S. and J. K. Lowry 2008. The coastal Talitridae (Amphipoda: Talitroidea) of southern and western Australia, with comments on *Platorchestia platensis* (Krøyer, 1845). Records of the Australian Museum, 60: 161–206.

Tattersall, W. M. 1922. Zoological results of a tour in the Far East. Amphipoda with notes on an additional species of Isopoda. Memoirs of the Asiatic Society of Bengal, 6: 437–495.

White, K. N., J. K. Lowry and H. Morino 2013. A new cave-dwelling talitrid genus and species from Japan (Crustacea: Amphipoda: Talitridae). Zootaxa, 3682 (2): 240–248.