

A New species of the genus *Hondoniscus* (Crustacea: Isopoda: Trichoniscidae) from Mt. Ureira-san, Iwate-ken, Northern Japan*

Noboru Nunomura¹⁾, Takashi Komatsu²⁾

¹⁾ Noto Marine Laboratory, Institute of Nature and Environmental Technology, Kanazawa University,
Ogi, Noto-cho, Ishikawa 927-0553, Japan

²⁾ National Museum of Nature and Science, Tokyo, 4-1-1, Amakubo, Tsukuba-shi, Ibaraki 305-0005, Japan

岩手県岩泉町宇霊羅山から発見されたホンドウラジムシ属の1新種*

布村 昇¹⁾, 小松 貴²⁾

¹⁾ 金沢大学環日本海域環境研究センター 臨海実験施設 927-0553 石川県鳳珠郡能登町小木

²⁾ 国立科学博物館 305-0005 茨城県つくば市天久保9-1-1

Key words : Isopoda, Trichoniscidae, *Hondoniscus ureirensis*, taxonomy, new species

キーワード : 等脚目, ナガラジムシ科, ウレイラワラジムシ, 分類学, 新種

岩手県宇霊羅山から発見されたホンドウラジムシ属*Hondoniscus*の1種を新種*Hondoniscus ureirensis* (和名新称: ウレイラワラジムシ)として記載した。本種は至近の鍾乳洞「龍泉洞」から知られる同属の固有種ホンドウラジムシ*H. kitakamiensis*と最も似るが、目があることのほか、第1触角先端に感覚剛毛数が多いこと、第2触角第5柄節側縁が波状であること、頭部の前方側縁の拡張部が発達していること、大顎の可動葉片の歯の数が少ないこと、第2触角鞭が長く、4節の分節がはっきり確認できること、第1小顎基節内葉の歯の数が少ないこと、オスの第1腹肢内肢の先端に多数の毛が先端半分だけに密生していること、同外肢が丸く膨らんでいること、オスの第2腹肢内肢は先端だけが細くなっていること、同外肢の幅が広く丸いこと、尾肢外肢が太いこと等で区別される。また、本新種は山形県最上から知られているモガミワラジムシ*H. mogamiensis*とも類似するが、前述の形質に加え、第7胸脚の剛毛が多く、特に腕節内面に長い剛毛があること、オスの第1腹肢内肢の先端に多数の毛があること等で区別される。

本新種のタイプシリーズは富山市科学博物館に保管される。

Hitherto, two species of the genus *Hondoniscus* (Isopoda: Trichoniscidae) have been reported exclusively from some caves in Tohoku District, northern Honshu, Japan: *Hondoniscus kitakamiensis* Vandel, 1968 (Type locality: Ryûsendô cave in Iwate-ken) and *H. mogamiensis* Nunomura, 1990 (Type locality: Suiginoiri-mine cave in Yamagata-ken). Both of them are known as hypogean species such as showing pigment-less and eye-less body.

Recently, the junior author had a collecting trip to obtain new more materials of endangered species, *H. kitakamiensis* in Iwate-ken, and collected two small pigments-less isopods from underground (upper hypogean zone) in Mt. Ureira-san, near Ryûsendô cave where *H. kitakamiensis* has inhabited. To identify them, the specimens were sent to the senior authors for examination. As a result, these specimens are a new species of the genus *Hondoniscus*.

*Contributions from Toyama Science Museum, No. 527

***Hondoniscus ureirensis* n. sp.**

(Figs. 1-2)

Material examined: 1♂ (holotype, 2.9 mm in body length) and 1♀ (allotype, 3.0 mm in body length, posterior part broken), underground of on the mountainside of Mt. Ureira, Iwaizumi-cho, Iwate-ken, 39° 85. N, 141° 78. E, alt. 284 m, 13 June, 2015, coll. Takashi Komatsu. Holotype (TOYA Cr-23587) and allotype (TOYA Cr-23588) will be deposited at Toyama Science Museum.

Description: Body (Fig. 1A) 2.5 times as long as wide. Color white. Cephalon with a low and round medial process of antero-lateral angle. Eyes present, each with 7-8 ommatidea, but each not distinctly and strictly discerned. Dorsal surface of pereonal somite with much hair. Pleon abruptly narrower than pereonal somite. Each pleonal segment subequal in length. Posterior part of pleotelson truncated.

Antennule (Fig. 1B) with 3 segments: terminal segment with 6-8 aesthetascs at the tip. Antenna (Fig. 1C) with 5 peduncular segments and 4 flagellar segments: mutual length of five peduncular segments is approximately 8 : 10 : 4 : 4 : 3; flagellum with sinuate line and mutual length of four segments is approximately 5 : 6 : 2 : 1. Left mandible (Fig. 1D): pars incisiva with 3 teeth; lacinia mobilis with 2 teeth; 2 setae and a seta; processus molaris wide, with a long seta. Right maxillula (Fig. 1E): pars incisiva with 3 teeth; lacinia mobilis chitinized with teeth and 2 plumose setae; processus molaris wide. Maxillula (Fig. 1F) mesial lobe with 3 plumose setae; lateral endite with 10 simple teeth. Maxilla (Fig. 1G) slender, with much hair. Maxilliped (Fig. 1H): endite slender, tapering towards the tip, with a seta the tip and many setae; palp with long robust; epipodite elliptical.

Pereopod 1 (Fig. 2A) basis without seta; ischium with 2 setae on inner margin; merus with 2 seta on inner margin and a seta at outer distal angle; carpus with 3 setae on inner margin; propodus with a setae and several denticles on inner margin.

Pereopods 2-6 (Fig. 2 B-G) similar each other: basis with setae at inner distal angle; ischium with 2 setae on inner margin; merus with 2-4 setae on inner margin; carpus with 2-3 setae on inner margin; propodus with a seta on middle area of inner margin.

Pereopod 7 similar to proceeding ones, but carpus with a relatively long seta on inner margin.

Penes (Fig I J) fusiform, 3.4 times as long as wide, with an acute tip. Pleopod 1 in male (Fig. 2H): sympod rectangular, 5 times as wide as long: endopod 2-segmented, distal segment slender, with many fine setae on distal half; exopod round.

Pleopod 2 in male (Fig. 2 I and J): sympod 6 times as wide as long; endopod 2-segmented, distal segment tapering towards the tip, with a semicircular lappet near the tip on right pleopod 2 but lacking in left one; exopod elliptical.

Exopod of pleopod 4 (Fig. 2K): rectangular. Exopod of pleopod 5 (Fig. 2L): triangular. Unfortunately, pleopod 3 broken and missing.

Uropod (Fig. 2M): sympod stout, 1.3 times as long as wide: endopod conical; exopod conical, a little longer than endopod.

Environments and ecological notes: The collecting site of *H. ureirensis* specimens is about 2.5 km from the southwest of Ryûsendô cave, the type locality of *H. kitakamiensis*. There are some streams along the precipitous surface of the mountain. The streams are surrounded by various forests, so the environment is quite shaded throughout the day. The junior author climbed to one of the head of the streams and dug the ground around there by iron claw bar.

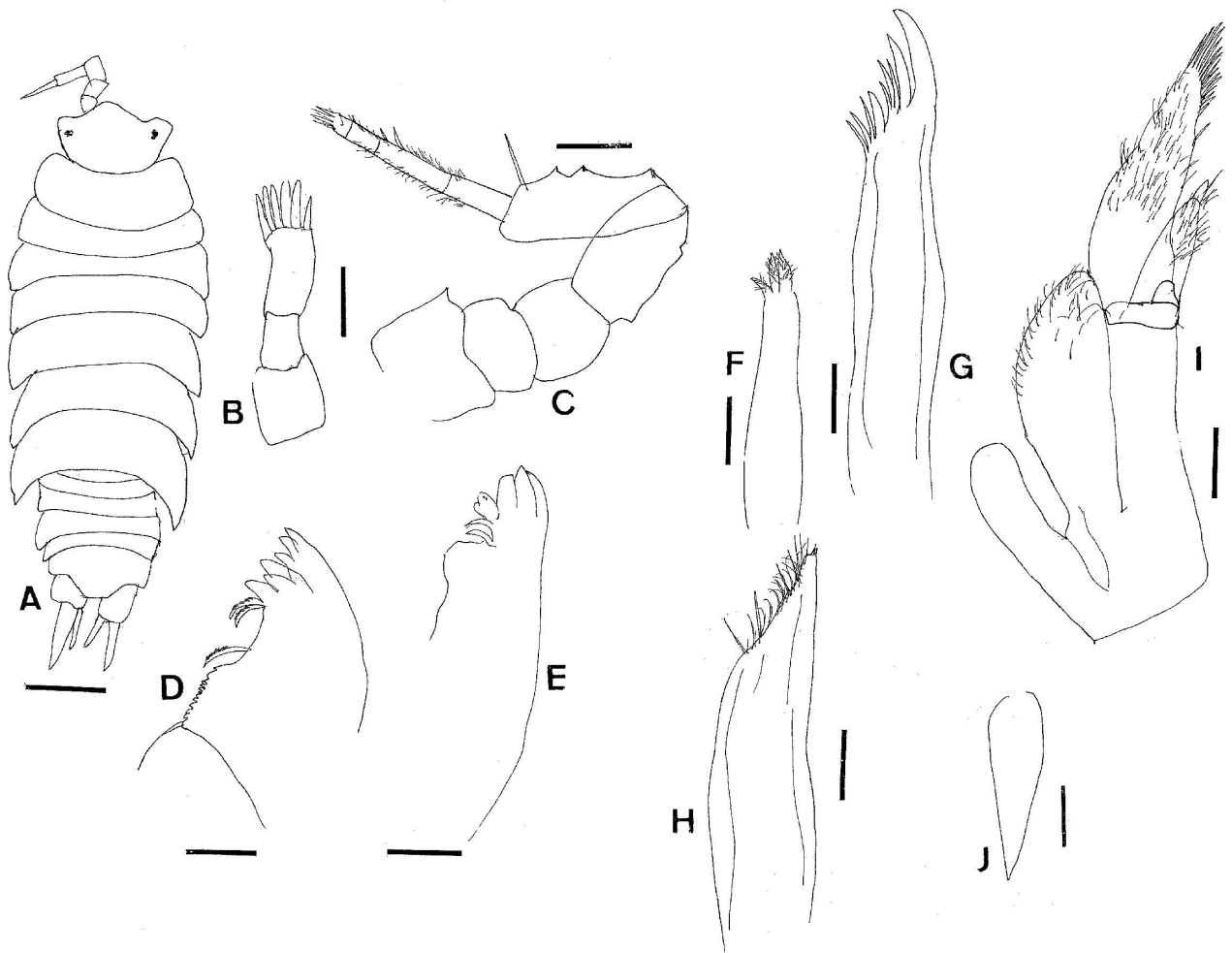


Fig.1 *Hondoniscus ureirensis* n. sp. (Holotype, male).

A: Dorsal view, B: Antennule, C: Antenna, D: Left mandible, E: Right mandible, F: Mesial endite of Maxillula, G: Lateral endite of the same, H: Maxilla, I: Maxilliped, J: Penes. Scale bars show A: 0.5 mm, B, D-I: 0.05 mm, C and J: 0.1mm.

(30 cm in length). When the ground was dug at about 1 m underground, two specimens of *H. ureirensis* were found within rock grike. The environment of the rock grike was quite wet. The moving of living individuals was very slowly. After picking out from wet rock grike, the specimens rapidly wasted away by drying.

Etymology: The epithet "Ureira" is a name of mountain where the type locality is included.

Remarks: Unfortunately only two specimens were available to us and some appendages of both specimens were broken. The present new species is most closely allied to *H. kitakamiensis*, but the former is separated from the latter in the following features: (1) presence of eyes, (2) numerous setae at the tip of antennule, (3) longer and more distinctly segmented flagellum of antenna, (4) sinuate margin of fifth peduncular margin of antenna, (5) stronger projection of antero-lateral area of cephalon, (6) less numerous denticles on lacinia mobilis of right mandible, (7) absence of setae on basal half of male first pleopod, (8) rounder exopod of male first pleopod, (9) narrower distal part of endopod of male second pleopod, (10) longer exopod of male second pleopod, (11) stouter uropod al endopod and (12) presence of lappet-like structure on male second pleopod, but this may not be a stable feature.

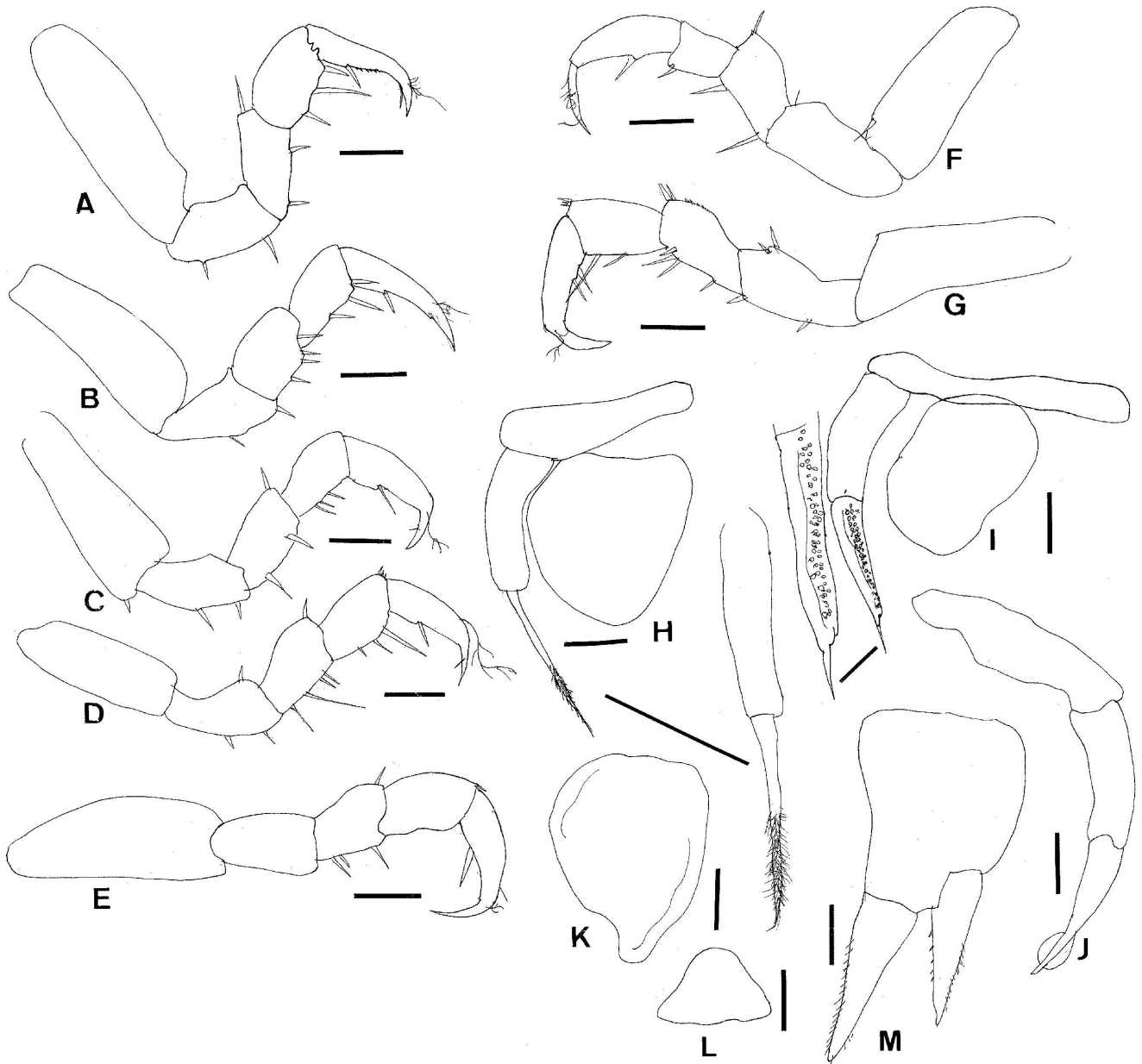


Fig. 2 *Hondoniscus ureirensis* n. sp. (Holotype, male).

A: Pereopod 1, B: Pereopod 2, C: Pereopod 3, D: Pereopod 4, E: Pereopod 5, F: Pereopod 6, G: Pereopod 7, H: Pleopod 1, I: Pleopod 2 (right), J: Pleopod 2 (left), K: Exopod of exopod 4, L: Exopod of exopod 5, M: Uropod. All the scale bars show 0.1 mm.

The present new species is separated from the another species, *H. mogamiensis*, in the following features; (1) presence of eyes, (2) numerous setae at the tip of antennule, (3) longer and more distinctly segmented flagellum of antenna, (4) sinuate margin of fifth peduncular margin of antenna, (5) stronger projection of antero-lateral area of cephalon, (6) less numerous teeth of right mandible, (7) less numerous teeth of left mandible, (8) less numerous setae of maxillula, (9) more setae of carpus and merus of seventh pereopod, (10) shorter segment of second pleopod, (11) presence of dense setae on distal half of male first pleopod, (12) rounder exopod of male first pleopod, (13) narrower distal part of endopod of male second pleopod, (14) longer exopod of male second pleopod, (15) stouter uropodal endopod and (16) presence of lappet-like structure on male second pleopod, but this may not be stable.

We will discuss the characteristics of this species. Among the present new species and above-mentioned other 2 species, the present new species has more primitive features such as having eyes, relatively distinctly, hairy maxilliped, because the genus *Hondoniscus* may have derived from the surface environments.

Acknowledgment

This work was supported by Japan Society for the Promotion of Science KAKENHI Grant number 14J00931 to the junior author.

References

- Nunomura, N. (1983) Studies on the terrestrial isopod crustaceans in Japan, I. Taxonomy of the families Ligiidae, Trichoniscidae and Olbrinidae. *Bulletin of the Toyama Science Museum*, 5: 23-68.
- Nunomura, N. (1990) Studies on the terrestrial isopod crustaceans in Japan V. Taxonomy of the families Armadillidiidae, Armadillidae and Tylidae, with taxonomic supplements to some other families. *Bulletin of the Toyama Science Museum*, 13:1- 58.
- Vandel, A. (1968) Les premiers isopodes terrestres et cavernicoles découverts dans l'Archipel Nippon. *Bulletin of the National Science Museum Tokyo*, 11: 351-362.

