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Description of a New Species, Redescription of Some Species of Terrestrial Isopod Crustaceans from Hokuriku District, Central Japan, and New Records Including a Scarcely Known from Hokuriku Districte

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北陸地方で発見された陸産等脚目甲殻類の１新種の記載，数種の再記載および北陸初記録種等

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北陸地方４県の陸産等脚目甲殻類の１新種，数種の再記載および北陸初記録種，殆ど知られていない種など８種を記録する．新潟市から採集されたヒトザトワラジムシ属の１種を*Mongoloniscus echigoensis* sp.nov.（和名：エチゴサトワラジムシ（新称））として記載した．本種は富山県から知られているニイカワサトワラジムシ*Mongoloniscus arvus* Nunomura と最も類似しているが，(1) オスの第６胸脚基節腹側先端が大きく膨出していること，(2) オス第７胸脚腕節が膨らむこと，(3) オスの第１腹肢外肢先端に半円状のへこみと４本の剛毛があり、その内肢先端が外側に湾曲していること，(4) オスの第６，７胸肢の基節と座節の内側に細毛が密生していることなどで区別される．また，Arcangeli (1927) が*Porcellio* (*Lucasius*) *mazzarellii* として記載した種は*Lucasioides* 属とすべきものとし，図示されていない形質を中心に再記載を行い，和名に「モノノフハヤシワラジムシ（新称)」を提唱した．そのほか複数の金沢市中心部の庭園だけから見つかったセグロコシビロダンゴムシをはじめ，アジアモリワラジムシ，ハナビロハマワラジムシ，シンジコフナムシ，キタフナムシを記録した．また，金沢市から１個体だけが発見されたヒメワラジムシ科の１種は種名および属名を決定できなかったが，いくつかの形質を記載した．

Key words：description, *Lucasioides mazzarellii*, *Mongoloniscus echigoensis*, morphology, new Japanese name, new locality, northern limit
キーワード：記載，モノノフハヤシワラジムシ，エチゴサトワラジムシ，形質，新和名，新産地，北限

Hitherto, the taxonomy of terrestrial isopod crustaceans in Hokuriku District on the Sea of Japan side of Honshu Island has been ignored. Hokuriku District (Fig.1), comprising prefectures Fukui, Ishikawa, Toyama, and Niigata, is located on the Sea of Japan side of Central Honshu.

During the last fifteen years, I conducted research in Hokuriku District. In addition, I had opportunities to examine not a few specimens that had been brought by scientists. As a result of my survey, I reported eight species new to Hokuriku or hardly known in this district, including two species of Ligiidae, one species of Detonidae, two species of Philosciidae, two species of Agnaridae, and one species of Armadillidae. The studied specimens will be deposited at the Toyama Science Museum, and some from Fukui Prefecture at the Fukui City Museum of Natural History.

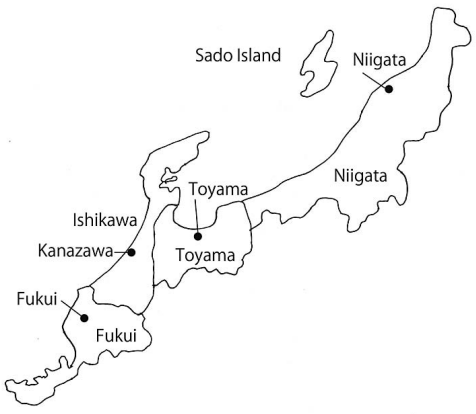

Fig.1 Map of Hokuriku District.
Hokuriku District is located on the Sea of Japan side of central Honshu. The district comprises four prefectures: Fukui, Ishikawa, Toyama, and Niigata.

Order Isopoda
Suborder Oniscidea
Family Agnaridae Schmidt, 2003
***Mongoloniscus echigoensis,* n.sp.**
(Japanese name: Echigo - sato - warajimushi, new)
(Figs. 2 - 4)

Material examined: 1♂(holotype, 6.2 mm in body length) and 5♀♀(1 ovigerous♀, allotype, 9.8 mm in body length, 4♀♀, paratypes, 6.6～8.9 mm in body length, Fukusima-gata, Mae-shinden, Kita-ku, Niigata-shi, Niigata (37.91278 N, 139.2377E), 28, May 2017, coll. Noboru Nunomura. The type series is deposited at the Toyama Science Museum:

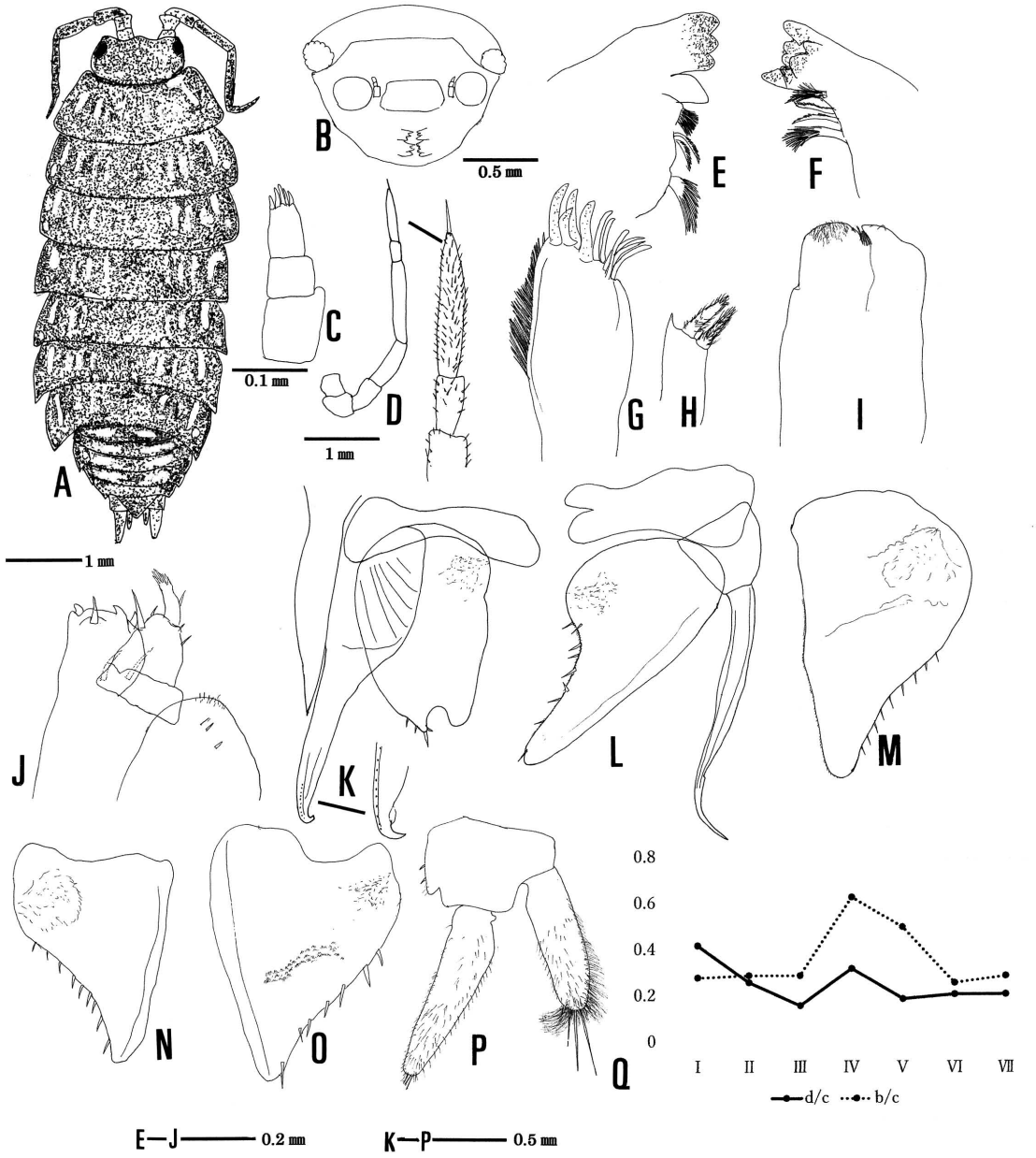

Fig. 2 *Mongoloniscus echigoensis,* n.sp.
A, Dorsal view; B, Head from frontal view; C, Antennule; D, Antenna; E, Right mandible; F, Left mandible; G, Lateral lobe of maxillula; H, Mesial endite of the same; I, Maxilla; J, Maxilliped; K, Pleopod I; L, Pleopod 2; M, pleopod 3; N, Pleopod 4; O, Pleopod 5; P, Uropod; Q, Position of noduli laterales (All, Holotype male).

holotype (TOYA-Cr 23778), allotype(TOYA-Cr 23779) and 4 paratypes (TOYA-Cr 23780～23783).

Diagnosis: *Mongoloniscus* species characterized by acutely protruded ventro-distal margin of basis of male sixth pereopod; expanded carpus of male seventh pereopods; male first pleopod with bent apical margin of endopod of male first pleopod and semicircular concavity bearing 4 setae of the same; triangular telson with right-angled tip.

Description of male: Body (Fig.2A) 2.4 times as long as it is wide. Color dark brown with a longitudinal paler pattern along the lateral margin and many paler irregular patterns on the posterolateral area of both sides of each pereonite. Body surface smooth. Cephalon (Fig.2B) with lateral lobe rounded only slightly protruding compared with frontal lamina. Frontal lamina trapezoidal. Eyes rather large, with 50-55 ommatidia. Posterolateral angle of pereonites 1-3 acute angled without any concavity. That of pereonite 4 right-angled and protruded; those of pereonites 5-7 acute-angled. Noduli laterales on pereopods 2-7 located near the lateral border (Fig.2Q). Gland pores lack all the pereonites. Pleon, rather abruptly narrower than pereion. Telson triangular, tip triangular, without concavity, 0.6 times as long as wide, tip right-angled.

Antenna (Fig.2C) composed of 3 segments: a terminal segment with 5～6 aesthetascs at the tip. Antenna (Fig.2D), reaching the posterior part of the second pereonal somite; second flagellar segment 2.6 times as long as first. Right mandible (Fig.2E): pars incisiva with 3 teeth; lacinia mobilis not chitinized forming a single tooth; 4 hairy bristles; pars molaris representing a tuft of setae. Left mandible (Fig.2F) : pars incisiva with 3 teeth; lacinia mobilis with 2 teeth; hairy bristles: pars molaris with 2 teeth and lacinia mobilis not chitinized, 5 hairy bristles; pars molaris representing a tuft of setae. Maxillula: lateral endite (Fig.2G) with 10 (4+6) relatively long simple teeth on the terminal area; mesial endite (Fig.2H) with 2 hairy bristles and an acute tip. Maxilla as Fig.2I. Maxilliped (Fig.2J): endite with 4 acute claws and a strong seta; palp three-segmented; first with 2 strong teeth, second segment with a strong seta and 3-weaker setae.

Pereopod 1 (Fig.3A): merus with 15-16 strong teeth on ventral area; carpus 2.0 times as long as long as wide, with 19-20 strong setae including several bifid ones on ventral margin; antennal brushes area relatively wide. Pereopod 2 (Fig.3B): merus with 11-12 strong teeth on ventral margin; carpus 2.3 times as long as wide; carpus not

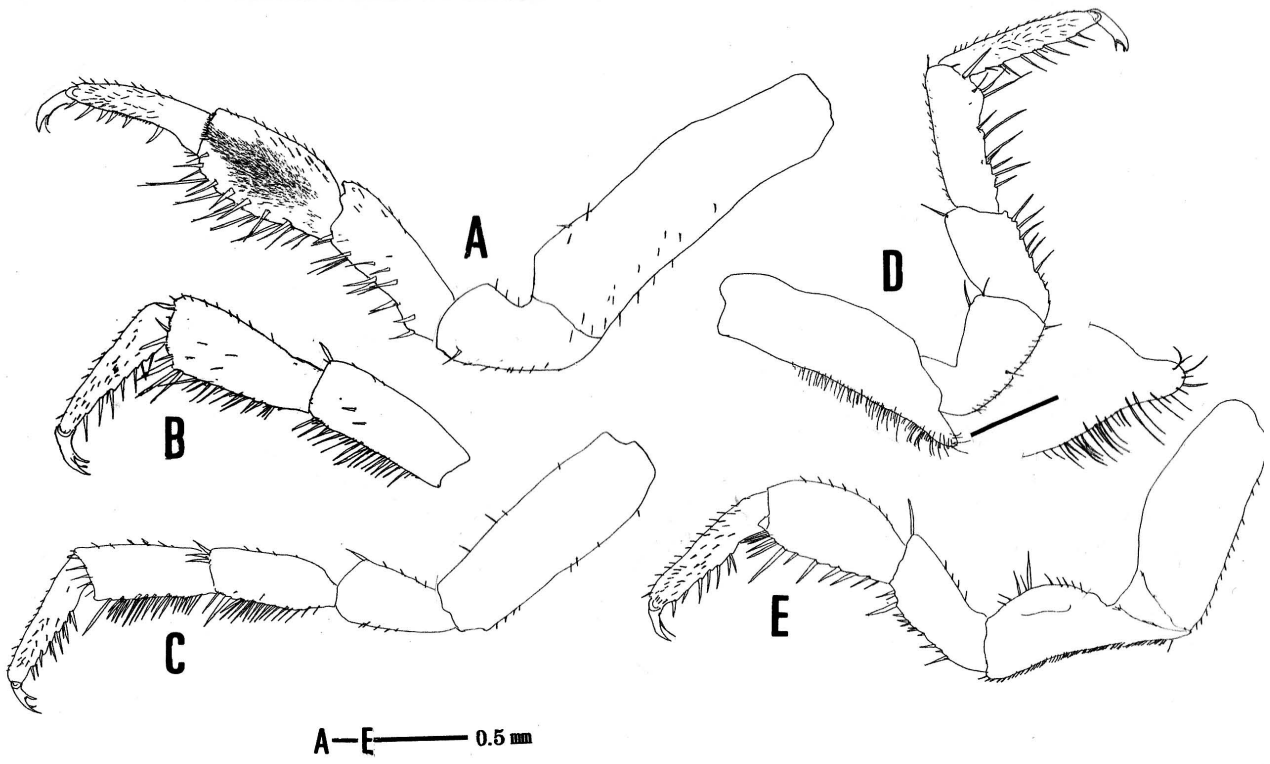

Fig.3 *Mongoloniscus echigoensis*, n.sp.
A, Pereopod 1; B, Merus to dactylus of pereopod 2; C, Pereopod 3; D, Pereopod 6; E, Pereopod 7 (All, Holotype male).

protruded, 2.0 times as long as wide, with 20 setae on ventral side. Pereopods (Fig.3C) 2-5 similar in shape: merus with 11～12 strong teeth on ventral margin; carpus 2.0～2.1 times as wide long as long a as wide, with about 20 setae on ventral margin. Pereopod 6 (Fig.3D): basis with strongly protruded ventro-distal angle, with many short setae around there and distal half of ventral margin. Pereopod 7 (Fig.3E): basis with many fine setae on ventral margin; ischium with many fine setae on ventral margin; carpus, slightly expanded, 0.6 times as wide as carpus.

Genital apophyse (Fig.2K) slender. Pleopod 1(Fig.2K): endopod tapering towards the tip; which is recurving outwards at apical area, with a series of setae along the spermatic furrows; exopod 1.5 times as long as wide, with a semicircular concavity and 4 setae on distal area. Pleopod 2 (Fig.2L): endopod slender tapering toward the tip, longer than exopod; exopod elongated, 2.1 times as long as wide, outer margin slightly concave, with 9 setae. Pleopod 3 (Fig.2M): exopod with 9-10 setae. Pleopod 4 (Fig.2N): exopod with 9 setae. Pleopod 5 (Fig.2O); exopod triangular, 0.95 times as long as wide, with 8-9 setae on outer margin and fine hair on the lateral margin. Uropod (Fig.2P), endopod 3.5 times as long as wide, with dense setae on inner and distal margins 4 strong teeth; exopod 1.3 times as long as endopod.

Females (only features different from males). Pereopods 2-5 (Fig.4A, B), with fewer setae than males. Pereopod 6 (Fig.4C) without protrusion on the distal margin of basis, nor dense setae on ventral side of ischium. Pereopod 7 (Fig.4D) similar to that of male. Pleopod 1 (Fig.4E) elliptical, 0.6 times as long as wide, with 4 setae on the mesial-distal end. Pleopod 2 : exopod triangular, a little longer than wide, with 5 setae on outer margin. Pleopods 3-5 (Fig.4 G-I) a little shorter than those of male.

Habitat: This species occurs in the litter of park and lakeside forest.

Etymology: "Echigo" is old name of equivalent to area excluding Sado of Niigata Prefecture which includes the type locality.

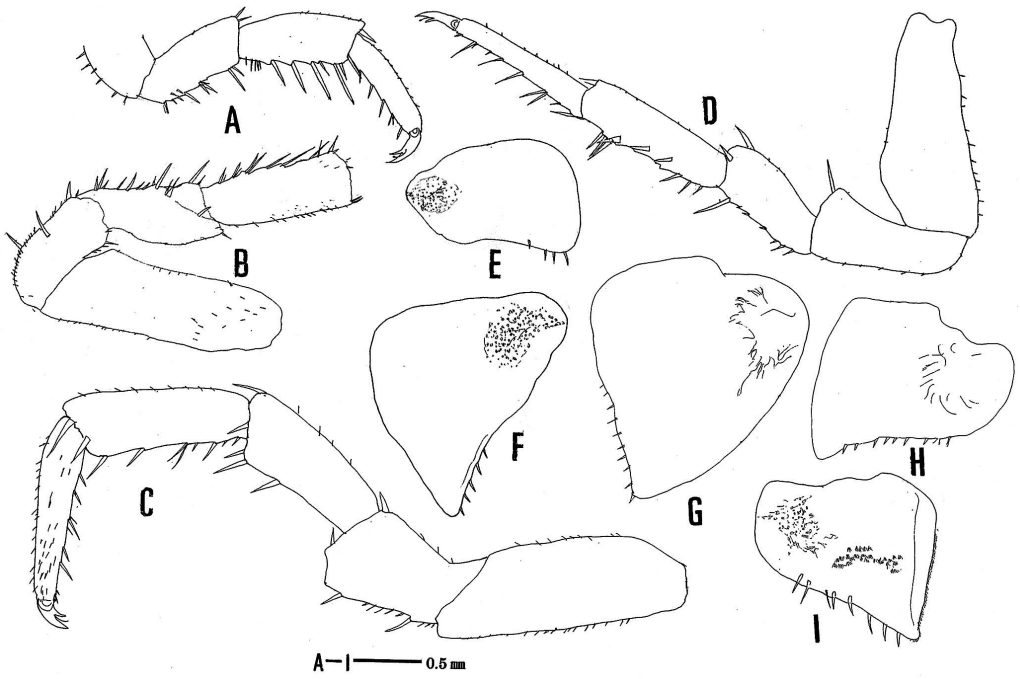

Fig.4 *Mongoloniscus echigoensis*, n.sp.
A, Pereopod 2; B, Basis to carpus of pereopod 3; C, Pereopod 6 ; D, Pereopod 7; E-I, Exopods of pleopods 1-5 (All, Paratype female).

Remarks: The present new species is most closely morphologically aligned to *Mongoloniscus arvus* (Nunomura 2010), but differs in the following features: (1) acutely protruded ventro-distal margin of the basis of male sixth

pereopod, (2) expanded external margin of the carpus of male seventh pereopods, (3) presence of semicircular concavity and 4 setae on exopod of male first pleopod, (4) recurved apical margin of endopod of the same and (5) presence of dense setae on basis of pereopod 7.

The present new species is also morphologically allied to the common species, *Mongoloniscus koreanus* Verhoeff, 1930, but differs in: (1) acutely protruded dorso-posterior margin of ischium of male sixth pereopod, (2) shorter first flagellar segment of second antenna, (3) deeper concavity and presence of setae on exopod of apical part of male first pleopod, (4) fewer setae on outer margin of exopod of male second pleopod, and (5) presence of dense setae on basis of pereopod and (6) nearer position to lateral border of pereonal somite.

Lucasioides mazzarellii (Arcangeli, 1927)
(Japanese name: Mononofu-hayashi-warajimushi, new)
(Figs.5-7)

Porcellio (*Lucasius*) *Mazzarellii*: Arcangeli, 1927: 226-228, Fig.7.

Protracheoniscus (*Lucasioides*) *mazzarellii*: Arcangeli, 1952: p.298.

Protracheoniscus mazzarellii (Arcangeli, 1927): Schmalfuss, 2003: p.229.

Material examined: 5♂♂7♀♀, Asuwayama-Park, 1chome, Asuwa, Fukui-shi, Fukui, 10, Nov. 2022, coll. Noboru Nunomura; 1♂1♀, Nishi-bochi Park, Asuwayama-Park, 1chome, Asuwa, Fukui-shi, Fukui, 1, Oct. 2000, coll. Yoshiaki Nishikawa; 1♂, 12m, Izumi, (near Tai-misaki), Tsuruga-shi, near Cape Tai-misaki, 10, Nov. 2022, coll. Noboru Nunomura; 7♂♂ 21♀♀ (including 20 ovigerous), Shiroyama-Park, Kotoshiro, Takahama-cho, Fukui, 1, Oct. 20, coll. Noboru Nunomura; 3♂♂2♀♀, Sekumi (alt.12m), Wakasa-cho, Fukui, 11, Nov., 2022, coll. Noboru Nunomura; 2♂♂5♀♀, Tsunegame (alt.30m), Wakasa-cho, Fukui, 11, Nov., 2022, coll. Noboru Nunomura; 1♀, Ichinami-cho (alt.104m), *Cryptomeria-forest*, near to Echizen Miyama's Spa), 12, Nov., 2022, coll. Noboru Nunomura.

Description of male: Body (Fig.5A) 2.1 times as long as wide. Body relatively flat (Fig.5Q). Color dark brown with a pair of paler patterns. Dorsal surface with many granules. Medial part of the anterior margin of the cephalon (Fig.5B) triangular anterodistal margin was strongly developed. Eyes rather small, with 22-25 ommatidia. Posterolateral part of pereonite 1 sinuated. Noduli laterales (Fig.5P) on pereonites 2-4, situated farther from the lateral margin than on pereonites 1 and 5-7. Pseudotacheae of exopods on all pleopods weak. Gland pores lack all the pereonites.

Antennule (Fig.5C) composed of 3 segments: a terminal segment with 6 aesthetascs at the tip. Antenna (Fig.5D), reaching the posterior part of the second pleonite backward, flagellum two-segmented; second segment 2.1 times as long as wide in length. Right mandible (Fig.5E): pars incisiva with 3 teeth, lacinia mobilis not chitinized, 4 hairy bristles. Left mandible (Fig.5F): pars incisiva with 3 teeth; lacinia mobilis with 2 teeth 4 hairy bristle; pars molaris represents a single plumose seta. Maxillula (Fig.6G): lateral endite with 4+6 simple teeth, mesial endite with 2 large penicils, and an acute point at the distal corner. Maxilla (Fig.5H) apically bilobed, with rathe narrow. Maxilliped (Fig.5I) endite with 3 cusps and a strong tooth.

Pereopod 1 (Fig.6A): carpus with relatively narrow antennal brushes area on lateral bears long brush-like setae on ventral margin; propodus with a series of small setae on basal half and 3 stronger setae on distal half of ventral margin of propodus. Pereopods 2-3 (Fig.6 B-C):merus and carpus with dense setae on ventral margin: carpus without obvious expansion. Pereopods 4-5 (Fig.6 D-F): carpus with 6-7 stronger setae and many setae on the ventral margin. Pereopod 7(Fig.6 G) without conspicuously expanded protrusion on any segments; ischium with concaved area.

Pleopod 1 (Fig.5 J): endopod with apical part bent outwards; exopod oval, 1.5 times as long as wide, with apical part bearing setae. Pleopod 2 (Fig.6 K): endopod tapering toward the tip; exopod elongated, 2.1 times as long as wide, outer margin slightly concave 5 setae. Pleopod 3 (Fig.5 L): exopod triangular, 1.6 times as long as with 9 strong setae on outer margin. Pleopod 4: (Fig.5 M): exopod triangular, 1.3 times as long as with 9～10 strong setae on outer margin. Pleopod 5: (Fig.5 N): exopod, triangular, 2.3 times as long as with 8 setae on outer margin

and bearing fine on lateral margin. Uropod (Fig.5O) endopod slender, 6.7 times as long as wide: exopod 3.5 as long as wide and 1.6 times longer than endopod.

Female (only features different from those of males): Pereopods 2-3 (Fig.7A), with fewer setae on the ventral margin of the merus and carpus. Pereopod 7 (Fig.7B), without concavity of the ischium. Pleopod 1 (Fig.7C): exopod

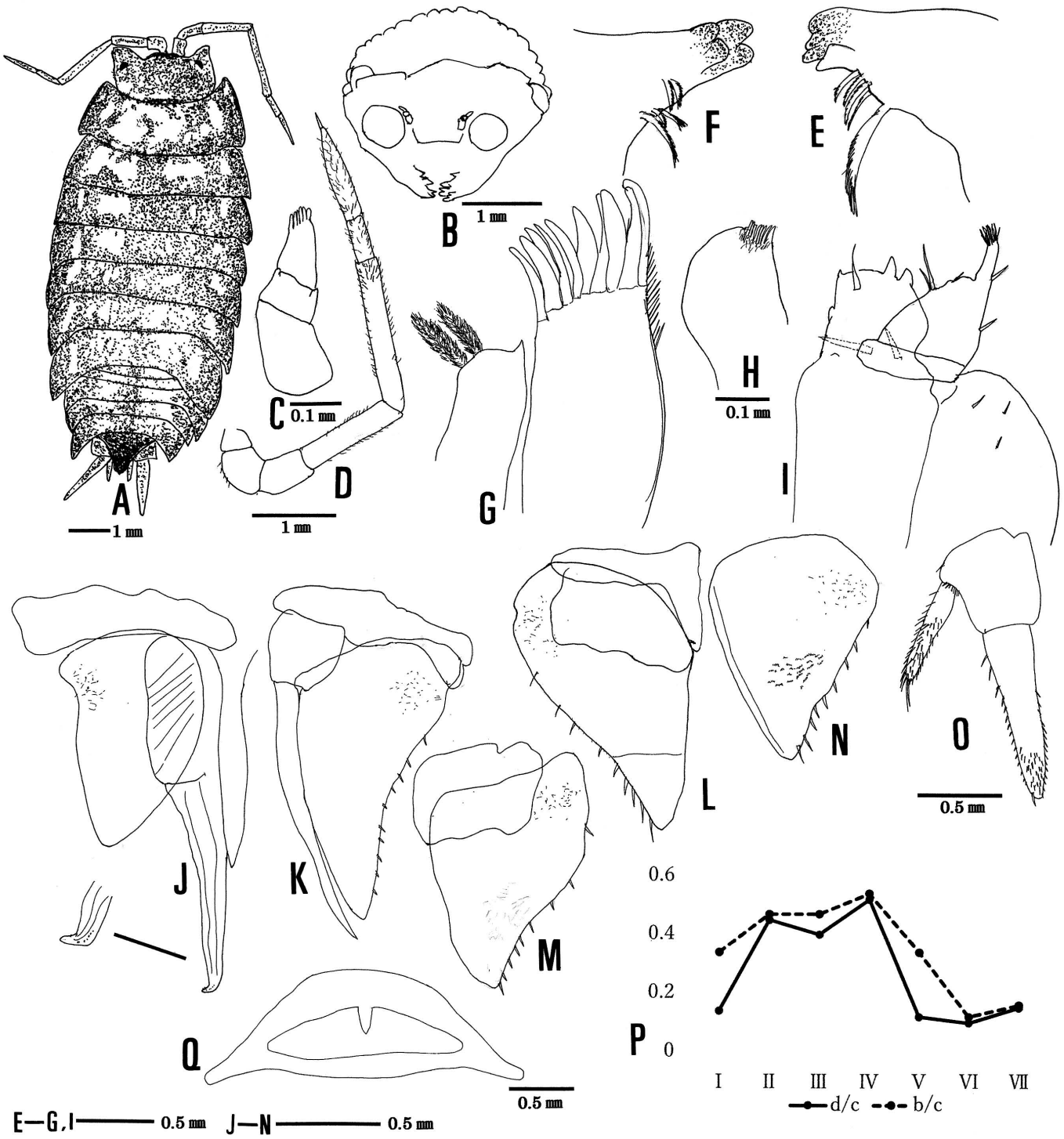

Fig.5 ***Lucasioides mazzarellii*** **(Arcangeli, 1927).**
A, Dorsal view; B, Head from front; C, Antennule; D, Antenna; E, Right mandible; F, Left mandible; G, Maxillula; H, Maxilla; I, Maxilliped; J, Pleopod I; K, Pleopod 2; L, Pleopod 3; M, Pleopod 4; N, Exopod of pleopod 5; O, Uropod; P, Position of noduli laterales; Q, Transverse section of the third pereonite (All, Male from Kotoshiro, Ooi-cho, Fukui).

elliptical, 0.85 times as long as wide, with 11 setae on outer margin. Pleopod 2(Fig.7D) exopod as long as wide, with 11 setae on the outer margin. Brooded female with 13～15 eggs in her brood pouch.

Remarks: Arcangeli (1927) described *Porcellio* (*Lucasius*) *Mazzarellii* based on specimens from the Pacific areas of central and western Honshu (Atami, Okitsu, Nara, Kobe, Shimonoseki, etc.) and Kyushu (Nagasaki, Kagoshima, Kumamoto, and Kirishima). Arcangeli (1952) re-described this species as *Protracheoniscus* (*Lucasioides*) *mazzarellii*. However, some features of this species are yet to be illustrated and of this species described. Recently, I examined specimens from several localities in Fukui Prefecture. This may be the first record of this species from Hokuriku District, and I have redescribed it based on several specimens from Fukui Prefecture. Both the original description of Arcangeli (1927) and my observations collected from several localities in Fukui agree with the diagnosis of the genus Lucasioides (Kwon,1933), not to Protracheoniscus (Verhoeff, 1917), because this species has a granulated dorsum and triangular median lobe of cephalon noduli laterales on pereonites 2-4 farther from the lateral margin than those on pereonites 1 and 5-7, the posterolateral area of pereonite sinuated. A new Japanese name, "Mononofu-hayashi-warajimushi", has been proposed for this species.

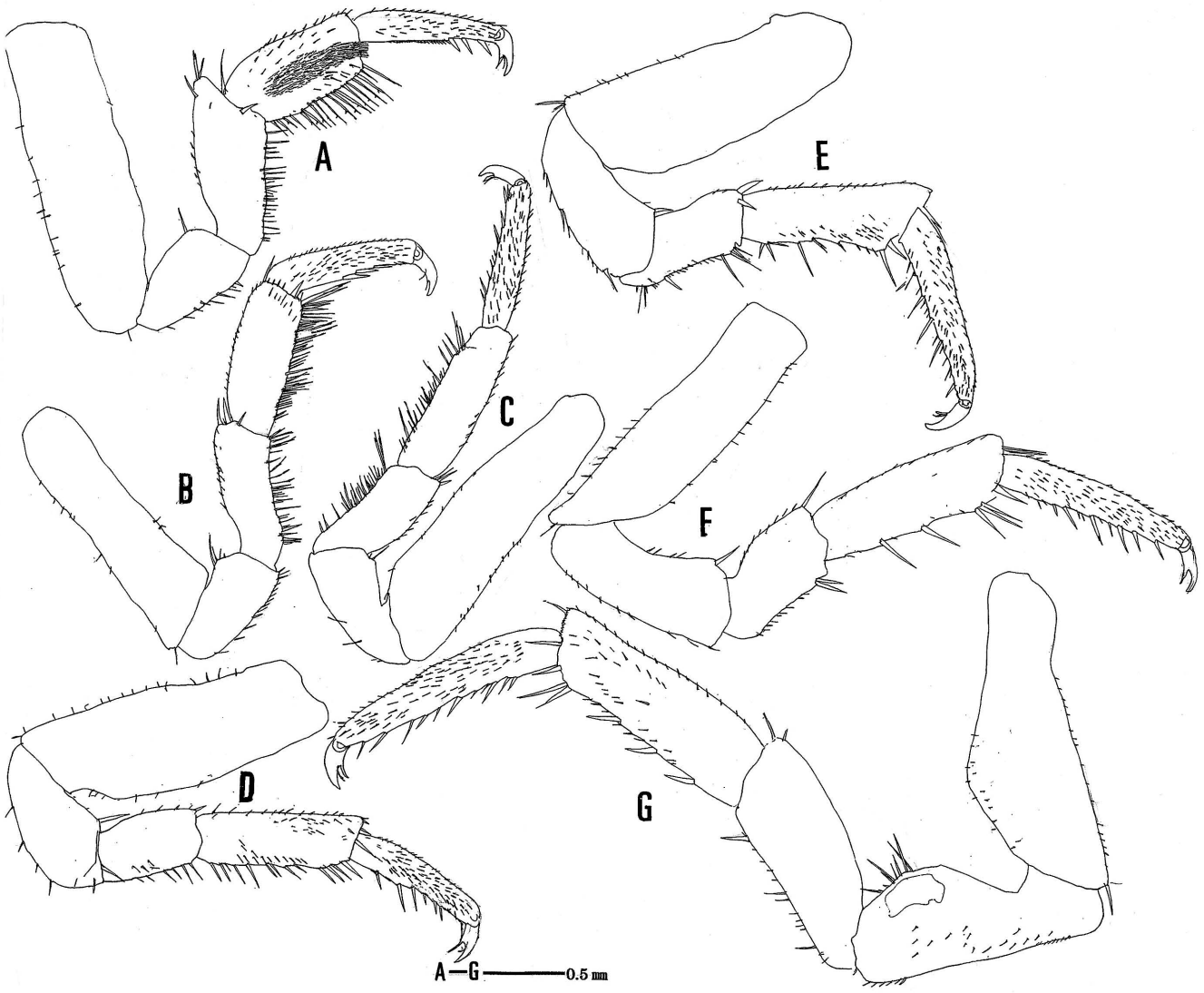

Fig.6 *Lucasioides mazzarellii* (Arcangeli, 1927).
A-G, Pereopods 1-7 in male (All, Male from Kotoshiro, Ooi-cho, Fukui).

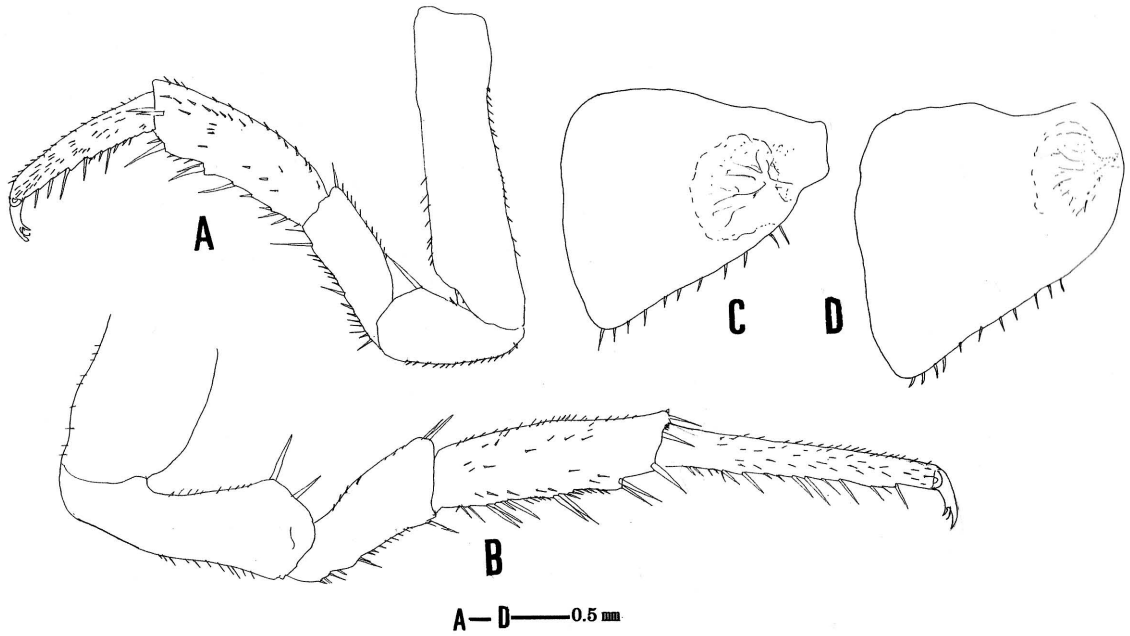

Fig.7 *Lucasioides mazzarellii* (Arcangeli, 1927).
A, Pereopod 3; B, Pereopod 7; C-D, Exopods of pleopods 1-2 (All, Female from Kotoshiro, Ooi-cho, Fukui).

Family Armadillidae Brandt, 1831

Venezillo dorsalis (Iwamoto, 1943)

(Japanese name: Seguro-koshibiro-dangomushi)

Armadillo dorsalis Iwamoto, 1943, p.30-31, Fig.33-24.

Not *Sphaerillo dorsalis* (Iwamoto) (mis-identification) Nunomura, 1990, 13-15, Fig.243.

Not *Venezillo dorsalis* (Iwamoto) (mis-identification) Nunomura, 1999, p, 614, 624.

Not *Spherillo* sp. Nunomura, 2015, pp.37, 55, 69.

Material examined (Date from the same localities in 2021-2023 were abbreviated): 5♂♂11♀♀, campus of Kanazawa University, Marunouchi, Kanazawa-shi, 16 June, 1986, coll. Kiyoshi Ishii; 1♂8♀♀, Oyama Jinja Shrine Garde, Oyama-cho, Kanazawa-shi, Ishikawa, 12 May, 2023, coll. Shun' ichi Yoshimichi; 7♀♀, Shofukaku-Garden, Honda-machi, Kanazawa-shi, Ishikaswa,8 May 2023, coll. Shun' ichi Yoshimichi; 2♂♂3♀♀, Tsuji-ke Garden, Teramachi, Kanazawa-shi, Ishikawa, 22 May 2023, coll. Shun' ichi Yoshimichi; 8♀♀, Sugita-ke Garden, Kikukawa, Kanazawa-shi, Ishikawa, 31 Aug. 2022, coll. Shun' ichi Yoshimichi; 2 ♀♀, Hiraki-ke Garden, Kikukawa, Kanazawa-shi, Ishikawa, 15 May, 2023, coll. Shun' ichi Yoshimichi; 1♂7♀♀, Senda-ke Garden, Kanazawa-shi, Ishikawa, 15 July 2021, coll. Shun' ichi Yoshimichi; 7♀♀, Nishi-ke Garden, Naga-machi, Kanazawa-shi, Ishikawa, 15 July 2021, coll. Shun' ichi Yoshimichi; 2♂♂9♀♀, Shinren-sha Temple Garden, Yamanoue-machi, Kanazawa-shi, Ishikawa, 28 July 2021, coll. Shun' ichi Yoshimichi.

Remarks: This species was found in several gardens in the central part of Kanazawa-shi for the first time. Meanwhile, all data already recorded for Sphaerillo dorsalis sensu Nunomura (1990) and *Venezillo dorsalis* sensu Nunomura (1999, 2003) were misidentified. Perhaps these should have been treated as *Spherillo* sp. (Japanese name "Shikkoku koshibiro-dangomush")

Family Philosciidae Kinahan, 1857
Genus Burmoniscus Collinge, 1916
Burmoniscus kathmandius (Schmalfuss, 1983)
(Japanese name: Ajia-mori-warajimushi)

Materials examined: 3♂♂11♀♀, Yachi, Awara-shi, Fukui, 5, Nov. 2020, coll. Noboru Nunomura.

Remarks: This species has a wide distribution ranging from Nepal to Japan. Hitherto, the northmost limit was Takashima, Shiga (Nunomura, 2021). This record is the northern limit of the genus.

Philosciidae sp.
(Fig.8)

Materials examined: 1♂, Oyama Jinja Shrine Garden, Oyama-cho, Kanazawa-shi, Ishikawa, 12 May, 2023, coll. Shunichi Yoshimichi.

Description: Body (Fig.8A) 3.2 times as long as pereonite 3 or 4 widest part. Color white. Cephalon round and rather large, occupying 18% of the whole length. Eyes lacking

Pereonal somite subequal length. Lateral margin of pereonal somites 1-3 right-angled, and those of pereonal somites 4-7 acute angled, and the posterior one, the stronger. Each pleonal segment is subequal in length. Noduli laterales(Fig.8 Q) of each pereonal somite near the lateral margin. Pleon abruptly narrower than pereion. Telson triangular.

Antenna (Fig.8B), reaching the second pereopod, flagellum, as long as the fifth peduncular segment, with 3 flagellar segments subequal in length. Left mandible (Fig.8C) : Pars incisiva with 3 teeth; lacinia mobils with 2 teeth. Proceusus molaris representing a tuft of setae. Maxillula (Fig.8 D) with 9 (4+5) teeth on the lateral endite. Maxilla as Fig.8 E. Maxilliped (Fig.8F): endite rectangular, palp rather slender, palp narrow with a group of setae.

Pereopod 1 (Fig.8F): carpus with a rather wide antennal brush area and 6 long setae bearing trifurcated head on ventral margin, Pereopods 2-7 (Fig.8H-J) similar in shape.

Genital apophyse (Fig.8K), rather slender fusiform. Pleopod 1 (Fig.8K): endopod rather stout, apical part slightly bent outward; exopod hemi-sercular. Pleopod 2 (Fig.8M): endopod long; exopod 1.5 times as long as wide, with a seta near apical tip. Pleopod 3 (Fig.8N): exopod triangular, with 3 setae on outer margin. Pleopod 5 (Fig.8 O): exopod triangular, with 5 setae on outer margin and series of oblique fine setae on lateral surface. Uropod long (Fig.8O), exopod twice as long as endopod.

Remarks: This specimen morphologically resembles *Pseudophiloscia shimojanai*, *P. haradai*, and *P. tsukamotoi* in terms of body shape, color, shape of the maxillulae, absence of eyes, and trifurcate setae on the ventral margin of the carpus. It also resembles *P. donanensis* and *P. okinawaensis*, except for having eyes.

However, based on the redefinition by Leistikow (1998), *Pseudophiloscia* exhibits two noduli laterals on each side of the pereonal somite and 10 teeth on the lateral endite of maxillula. Because the above-mentioned five species and the present specimen have a single noduli lateralis and 9 teeth on the lateral endite of the maxillula, they do not belong to *Pseudophiloscia*. It is also possible that the examined specimens belong to the genus *Pseudotyphloscia* (Verhoeff,1939). However, the species could not be identified because only a single specimen was available.

Family Detonidae Budde-Lund, 1904
Armadilloniscus brevinaseus Nunomura, 1984
(Japanese name: Hanabiro-hama-warajimushi)

Materials examined: 1♂3♀♀, Senagou, Koshino-nagahama, Sado-shi, Niigata,19 June, 2022, coll. Noboru Nunomura; 3♀♀, Miyazaki, Asahi-machi, Toyama, coll. Noboru Nunomura; 15♀♀, Kataiwa-machi, Suzu-shi, Ishikawa, 5 Sep. 2019, coll. Noboru Nunomura; 2♀♀, Ossaka, Noto-cho, Ishikawa, 30 Aug. 2022, coll. Noboru Nunomura; 1♀ Kami-osawa, Wajima-shi, Ishikawa, 5 Aug. 1987, coll. Noboru Nunomura.

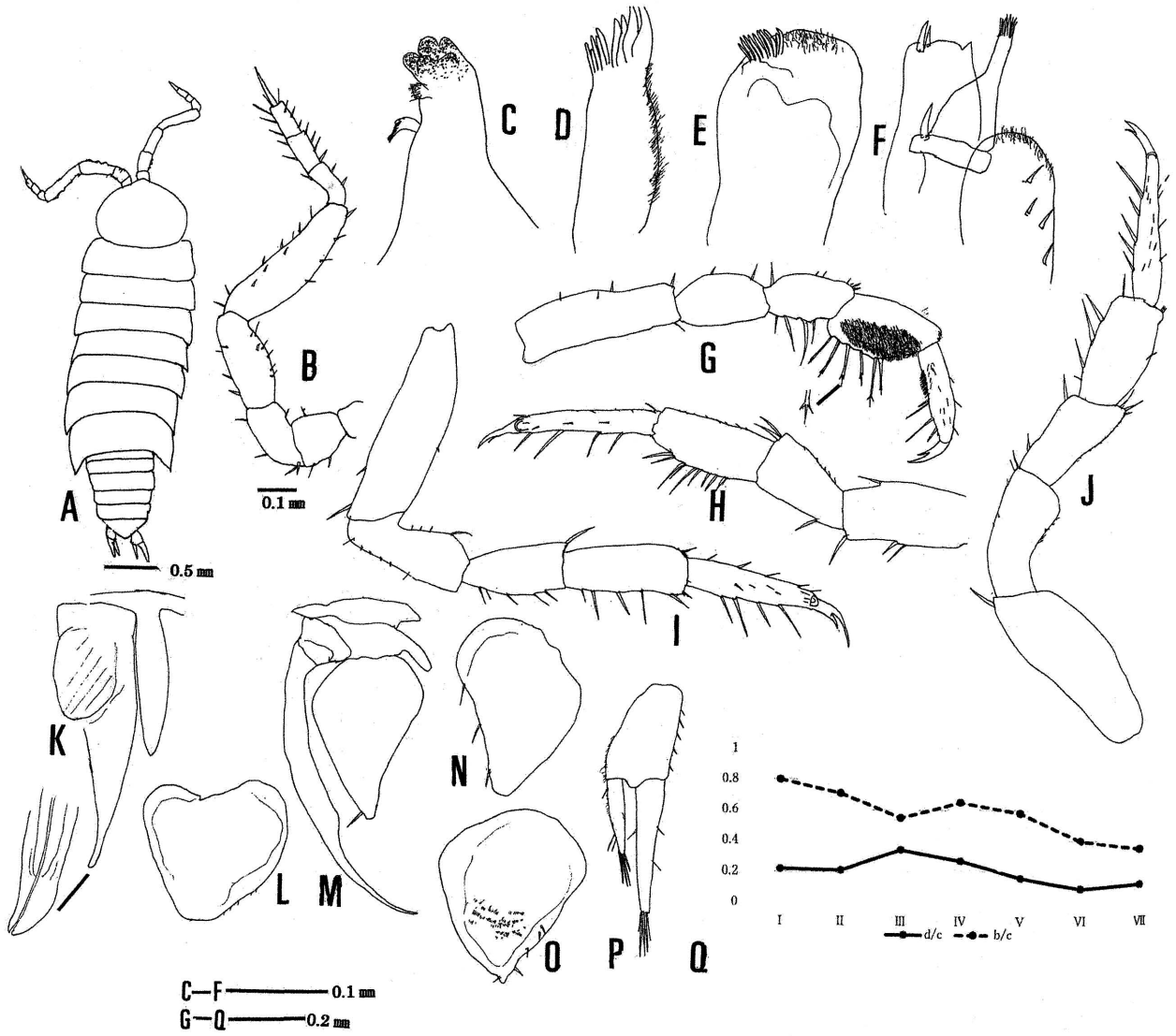

Fig. 8 Philosciidae sp.

A, Dorsal view; B, Second antenna; C, Left mandible; D, Lateral endite of maxillula; E, Maxilla; F, Maxilliped; G, First pereopod; H, Fifth pereopod; I, Sixth pereopod; J, Seventh pereopod; H, Genital apposes and endopod of male first pleopod; L, Exopod of male first pleopod; M, Male second pleopod; N, Third pleopod; O, Fifth pleopod ; P, Uropod; Q, Position of noduli laterales. (All: Male collected from Kanazawa).

Family Ligiidae Leach, 1814

Ligia cinerascens Budde-Lund, 1885

(Japanese name: Kita-funamushi)

Materials examined: 1♂, Kasashima, Kashiwazaki-shi, Niigata, coll. Noboru Nunomura; 1♂1♀, Moroo, Sado-shi, Niigata, coll. Noboru Nunomura; 3♂♂4♀♀, Hegurajima, Wajima, Ishikawa, 6 Aug. 1987, coll. Noboru Nunomura.

Remarks: The specimens examined agreed with the original and succeeding descriptions (Budde-Lund, 1885; Yamanishi, 2011, Nunomura, 1983, Ota *et al.*, 2024) in important features, such as the short antenna and flat stylus of male second pleopod. Itani (2000) previously reported as one of materials of on molecular phylogenetic analysis from Noto. Therefore, strictly, these two records are not the first of Hokuriku. Incidentally, the specimens examined were different from the former descriptions in lack of protuberance of the dactylus of the male first pereopod and the presence of 10 teeth on the lateral endite of the maxillula.

***Ligia shinjiensis* Tsuge, 2008**
(Japanese name: Shinjiko-funamushi)

Materials examined : 1♂, the mouth of the Kado-kawa River, Shinkadokawa, Uozu-shi, Toyama. 7, July 2007. coll. Noboru Nunomura; 1♂3♀♀, Koiji, Noto, Ishikawa, coll. Noboru Nunomura.

Remarks : The aforementioned specimens agreed with the original description; however, males from both localities lacked protuberances of the dactylus of the first male pereopod. Ota *et al.* (2024) reported that this species is distributed not only from the type locality but also from Tottori, Hamanako, Shizuoka, and they also reported that some of the specimens lacked protuberances of the male first pereopods.

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