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Review of the millipede genus *Yasudatyta* Shear & Tsurusaki, 1995 new to the fauna of Russia, with description of new species from the Kurile Islands (Diplopoda, Chordeumatida, Conotylidae)

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Abstract

The diplopod genus *Yasudatyta* Shear & Tsurusaki, 1995 is new to the fauna of Russia, due to the discovery of *Y. kurilensis* **sp. nov.** from Kurile Islands. The genus is currently represented by four species, i.e. *Y. yasudai* Shear & Tsurusaki, 1995, *Y. hidakaensis* Shear & Tsurusaki, 1995, *Y. shariensis* Shear & Tsurusaki, 1995, all from Japan, and *Y. kurilensis* **sp. nov.** from the Kurile Islands, Russia, described here. All known species of the genus are keyed, including the new species.

Key words: millipedes, chordeumatids, taxonomy, new species, description, key, Russia, Japan

Introduction

Yasudatyta Shear & Tsurusaki, 1995 is one of the smaller diplopod genera. It was described from the northern Japanese island of Hokkaido along with three species (Shear and Tsurusaki 1995). Apart from the descriptions this publication contains discussion on the taxonomic relationships of some Conotylidae and of an Asian, not North American, origin for the family, as well as a distribution map of the three Japanese species of *Yasudatyta* in Hokkaido and adjacent islands. These species have not been recollected since.

The diplopod material from the Kurile Islands appears to be particularly important, for it contains species of *Yasudatyta* new to science and the genus is new to the fauna of Russia. The present paper provides a description of the new species, a list of *Yasudatyta* species occurring in Japan and a key to all species of the genus (including the new species).

Material and methods

Material treated here has been shared between the collections of the Institute of Biology and Soil Science of the Far Eastern Branch of the Russian Academy of Sciences, Vladivostok, Russia (IBSS) and Zoological Museum, State University of Moscow, Russia (ZMUM), as indicated in the text.

Specimens were kept in 70–75% ethanol. In the process of studying the material, the gonopods and some other parts were dissected from the males and females and mounted in glycerin as temporary micropreparations. Specimens were studied and illustrated using standard stereomicroscopic and drawing equipment. Coloration of the specimens is described from alcohol material. SEM micrographs were prepared at the Centre of Collective Use “Biotechnology and Gene Engineering” of the Institute of Biology and Soil Science, Far Eastern Branch, Russian Academy of Sciences, Vladivostok, Russia using a Zeiss Evo 40 scanning electron microscope. Mounts for SEM were made through air-drying after transfer to acetone via 96% alcohol, mounting on stubs, and coating with gold. After examination, SEM material was removed from stubs and returned to alcohol.

Taxonomic part

Yasudatyta hidakaensis Shear & Tsurusaki, 1995

Yasudatyta hidakaensis Shear & Tsurusaki 1995: 104–105, figs 20–28, map 1.

Distribution. Japan (Hokkaido Island).

Remarks. The species is known only from the original collection from the alpine zone of Mt. Poroshiri (at altitude of 2,050 m a.s.l.), Hokkaido Island, Japan.

Yasudatyta kurilensis sp. nov.

Figs 1–11

Material examined. *Holotype*: 1 male (ZMUM: p2651), Russia, Kuriles, Kunashir Island, environs of cordon Alekhino, coniferous forest, litter, 6.VI 2011, leg. A. Matalin, I. Melnik. *Paratypes*: 1 male, 1 female (IBSS), 1 female (ZMUM: 1 f p2652), Russia, Kuriles, Kunashir Island, environs of cordon Andreevskii, *Ulmus* forest, litter, 23.V 2011, leg. A. Matalin, I. Melnik; 1 female (ZMUM: 1 f p2653), Russia, Kuriles, Kunashir Island, mouth of Ozernaya River, litter, 43°53'06'' N, 145°27'44'' E, 25.VII 2011, leg. K. Makarov; 1 male (IBSS), Russia, Kuriles, Shikotan Island, southern part, Tserkovnaya Bay, 25–30.V 2012, leg. Yu.N. Sundukov.

Diagnosis. Differs from congeners mainly in the structure of the anterior gonopod, with a caudal, thin, hook-shaped process in the distal portion of the anterior coxite and by the form of the posterior coxite posterior flagellar branch and fimbriate branch at its base as well as by the structure of the posterior gonopod ventral, long, curved coxal process and a short process placed at its base on the front surface of the coxa, directed forward.

Description. Male. Length 10–11 mm, width 0.9–1.0 mm. Coloration in alcohol white, with a pattern of light-brown marbled spots and bands on dorsum and upper portions of lateral sides. Posterior edge of metazonites dorsally with a transverse light-brown thin undulating band. Coloration more intense in anterior and posterior body parts. Head brown, its anterior portion lighter. Legs white, with brownish distal parts. Antennae brown. Eyes black.

Body with 30 segments. Head covered with sparse setae. Epicranial suture inconspicuous. 18–20 ocelli in a trapeziform eye patch. Antennae long and slender. Collum elliptical. Diplosegments subcylindrical, with metazonites swollen and laterally projecting. Metazonital setae slender, acute, short. Macrochaetae in a transverse row on segments 28–29, as an extended triangle on preceding segments. Macrochaetae on segments 1–3(4) longer than those on subsequent segments.

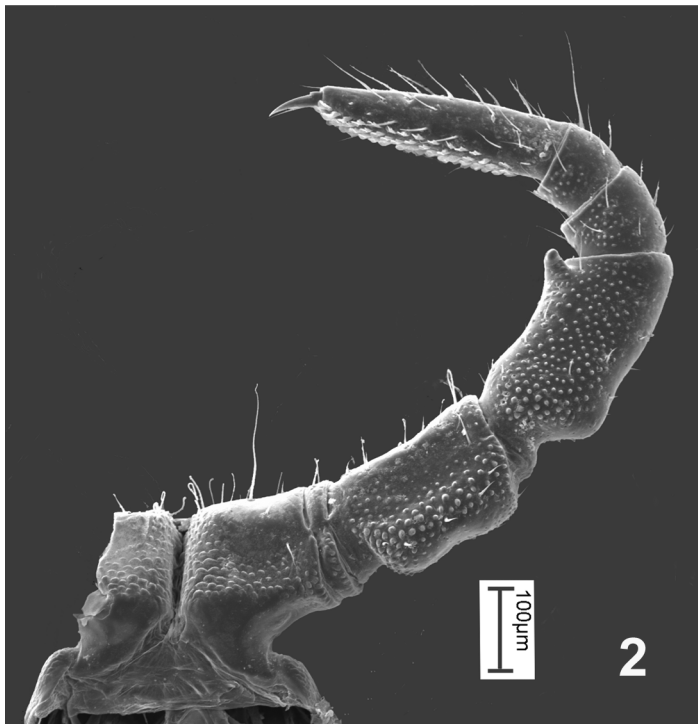
Legs 1 and 2 reduced in size, each with tarsal brushes and strong long setae on ventral surface of tibia and postfemur. Legs 3 (Fig. 1) and 4 (Fig. 2) slightly enlarged, each femur with distal, cylindrical knob mesally. Legs 5–7 approaching normal size. Starting from legs 3, walking legs with funnel-shaped tarsal papillae gradually missing toward end of body (tarsal papillae of midbody legs occupying 2/3 length of tarsus i.e. space near claw free from papillae; ultimate legs without tarsal papillae); claw at base (including leg pairs 1 and 2, 10 and 11) (Fig. 3) with small additional claw dorsally and a thin setiform claw ventrally. Additional dorsal and ventral claws gradually growing reduced towards posterior body end; at least claws of ultimate legs devoid of these claws. Legs 10 (Fig. 4) with coxal glands, in addition, each coxa with low finger-shaped process. Legs 11 without coxal glands and other modifications, of normal size.

Anterior gonopods as in figs 5–6. Anterior coxite (**ac**) subtriangular with slender elongate distal part, deep fossa laterally at base and thin hook-like process (**h**) arising from caudal surface. Front flagellar branch (**fb**) smooth and long, about length of anterior coxite. Posterior coxite (**pc**) with blunt apex and dense cuticular spinules on posterior surface, about half length of anterior coxite. Posterior flagellar branch (**pb**) with thickened base and flagelliform distal part covered with cuticular fringe in the middle portion frontally. Subtriangular deeply fimbriate branch (**b**) with elongate distal part located at the base of **pb**.

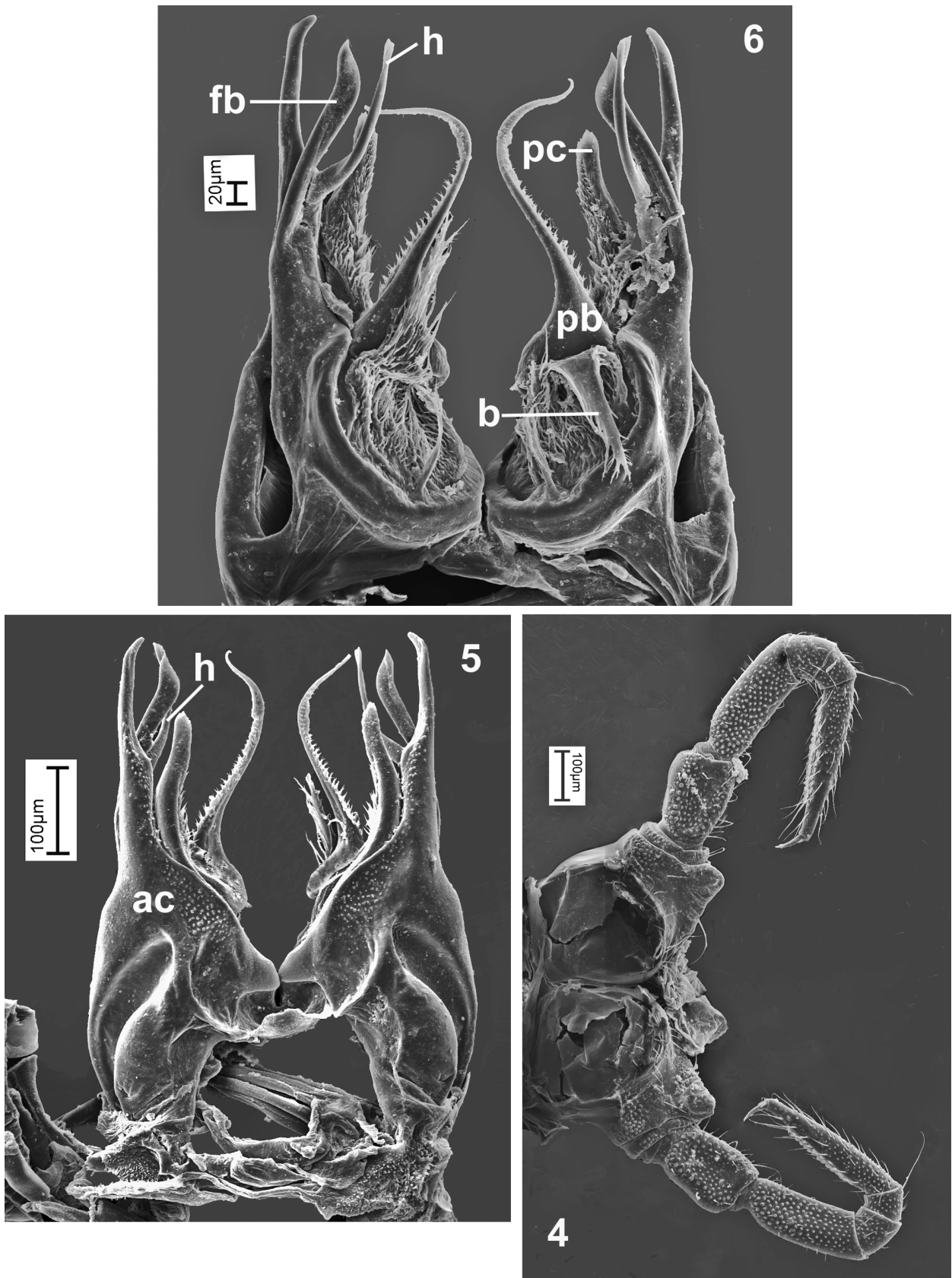
Posterior gonopods (Figs 7–8, 11) each with two (long and short) processes of coxa; ventral long coxal process (**lp**) curved anterior, its apex with fovea; short process (**sp**) placed at base of long process on front surface of coxa, directed forward with sheaf of setae (Fig. 7). Posterior surface of posterior gonopod coxa without additional processes (Figs 8, 11). Prefemur without lobes; apical article ovoid, swollen.

Female. Length 10–11 mm, width 1.0 mm. Body with 30 segments. 18–20 ocelli. Nonsexual characters as in male. Vulvae as in Figs 9–10. These photos show vulvae of two different females.

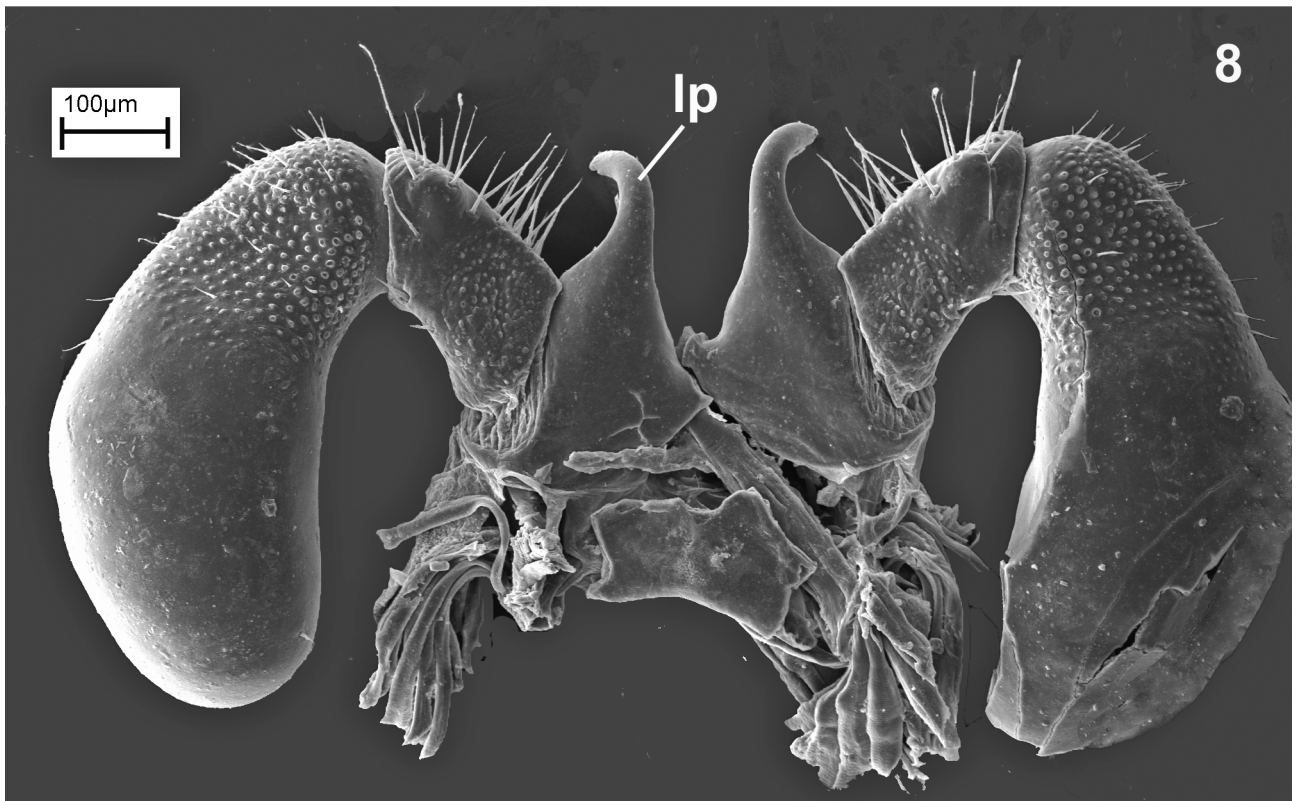
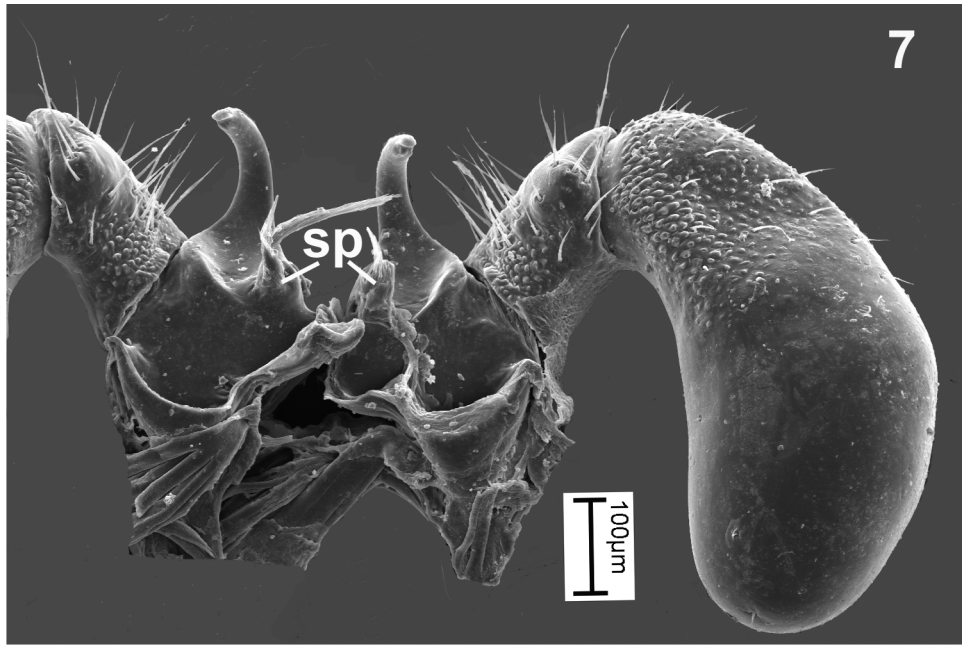
Name. The specific epithet refers to the *terra typica* (Kurile Islands).



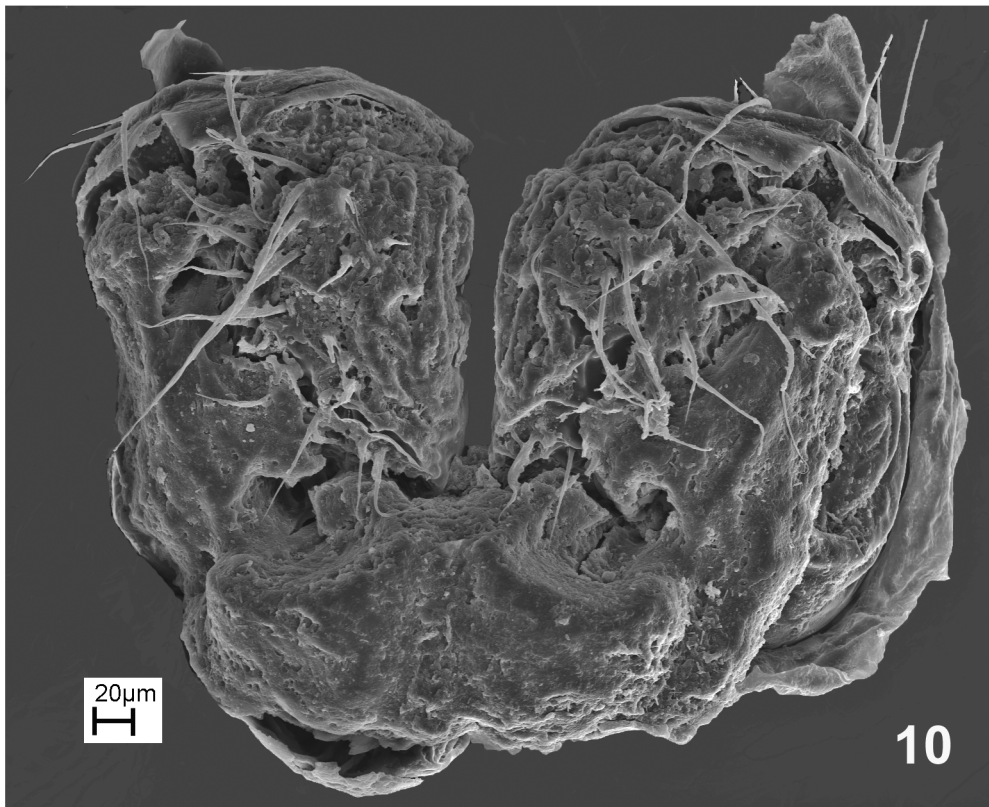
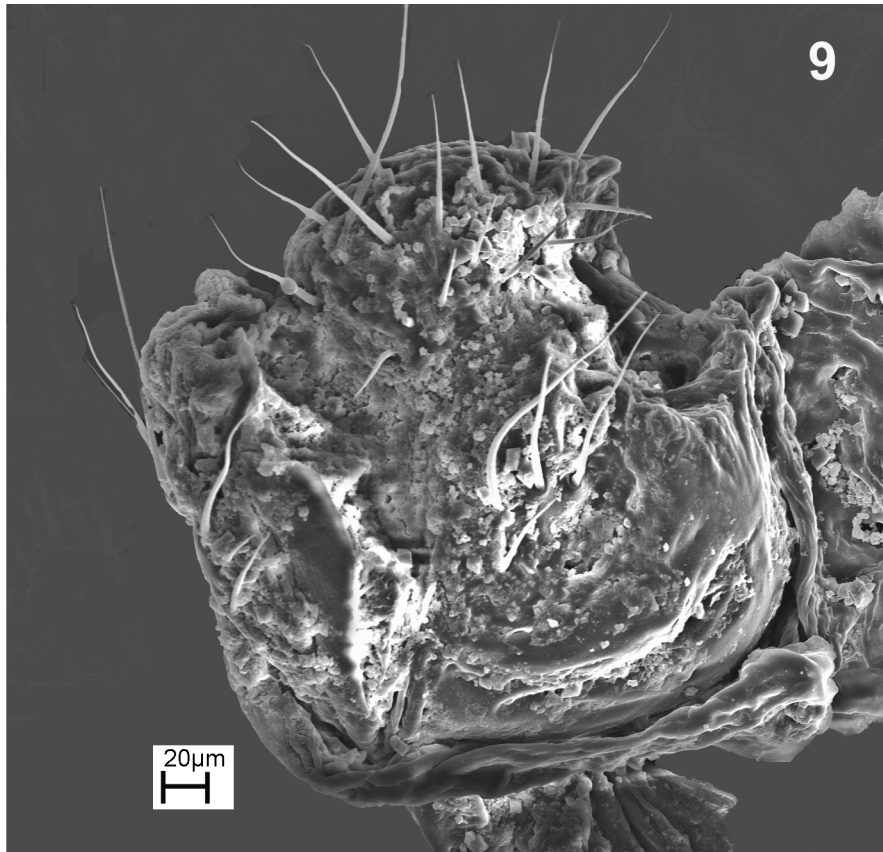
FIGURES 1–3. *Yasudatyia kurilensis* sp. nov., male paratype. 1, leg pair 3; 2, leg 4; 3, claw of leg 10 (ventral thin setiform claw not conspicuous).



FIGURES 4–6. *Yasudatyta kurilensis* sp. nov., male paratype. 4, leg pair 10; 5, anterior gonopods, front view; 6, anterior gonopods, caudal view; **ac**, anterior coxite; **h**, hook-like process of anterior coxite; **fb**, front flagellar branch; **pc**, posterior coxite; **pb**, posterior flagellar branch; **b**, subtriangular deeply fimbriate branch.



FIGURES 7–8. *Yasudatyia kurilensis* **sp. nov.**, male paratype. 7, posterior gonopods, front view; 8, posterior gonopods, caudal view (the gonopods have crack in the middle); **lp**, ventral long coxal process of posterior gonopod; **sp**, short process of posterior gonopod.



FIGURES 9–10. *Yasudatyta kurilensis* sp. nov., female paratype. 9, right vulva, caudal view; 10, vulvae, caudal view.

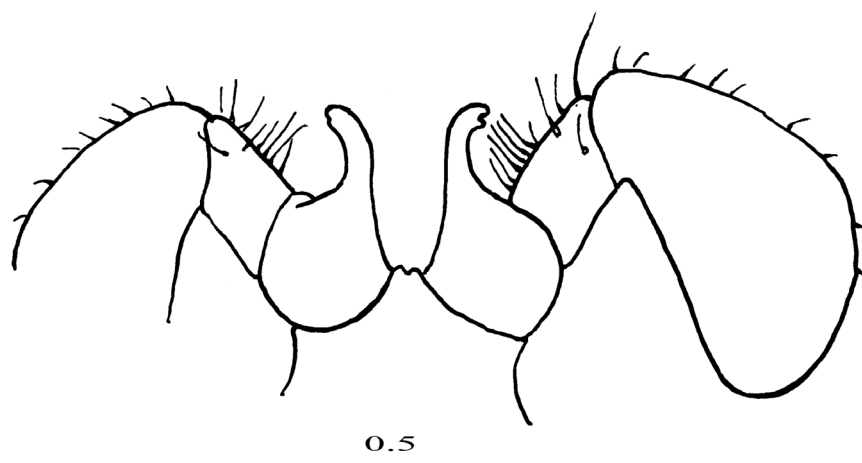


FIGURE 11. *Yasudatyta kurilensis* sp. nov., male paratype. Posterior gonopods, caudal view. Scale in mm.

***Yasudatyta shariensis* Shear & Tsurusaki, 1995**

Yasudatyta shariensis Shear & Tsurusaki 1995: 103, figs 10–19, map 1.

Distribution. Japan (Hokkaido Island).

Remarks. Originally described from Mt. Shari (at altitude of 1,200 m a.s.l.), Hokkaido Island, Japan, this species has not been collected since.

***Yasudatyta yasudai* Shear & Tsurusaki, 1995**

Yasudatyta yasudai Shear & Tsurusaki 1995: 102–103, figs 1–9, map 1.

Distribution. Japan (Hokkaido Island).

Remarks. This species is known only from the original description from Mt. Yōtei and Mt. Rishiri, Hokkaido Island, Japan. It was collected at altitude of 1,100–1,700 m a.s.l.

Key to the species

- 1(2) Posterior gonopod coxa with two curved anteriorly slender processes *Y. shariensis*
- 2(1) Posterior gonopod coxa different 3
- 3(4) Anterior gonopod posterior coxite curved posteriorly at tips, bearing complex cuticular branches. *Y. yasudai*
- 4(3) Anterior gonopod posterior coxite different 5
- 5(6) Tip of anterior gonopod posterior coxite acute *Y. hidakaensis*
- 6(5) Tip of anterior gonopod posterior coxite rounded *Y. kurilensis* sp. nov.

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References

- Shear, W.A. & Tsurusaki, N. (1995) Japanese chordeumatid millipeds. III. *Yasudatyta*, a new genus of alpine conotylid millipeds (Diplopoda, Chordeumatida, Conotylidae). *Myriapodologica*, 3 (11), 97–106.