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A New Humicolous Species of *Plutomurus* (Collembola, Tomoceridae) from Hokkaido, North Japan

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Synopsis A new collembolan belonging to the genus *Plutomurus* YOSII, 1956, is described and illustrated from Hokkaido, North Japan, under the name of *P. borealis*. It is not a cave species, and differs very clearly from edaphic *Plutomurus edaphicus* YOSII, 1967.

Plutomurus borealis sp. nov.

(Figs. 1–9)

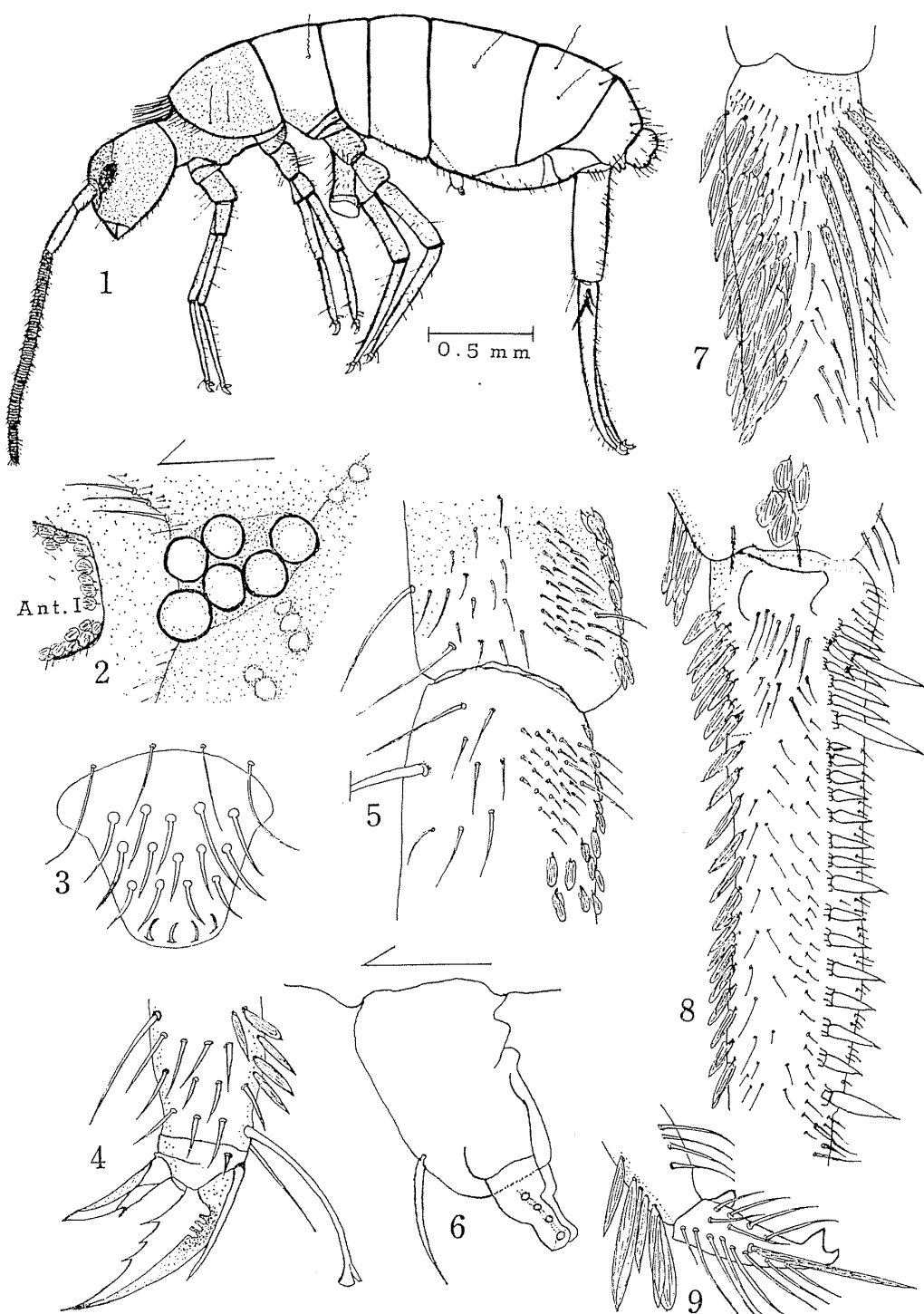
Body colour generally pale yellow, antennal segments III and IV blue violet. Eye-patch black. Head, mesothorax, lateral side of metathorax, ventral tube, legs excepting femur and claw in typical examples are deeply purplish. Body densely clothed with scales excepting antennal segments III–IV and sparsely with setae. Bothriotrichae medio-laterally 2+2 on the anterior margin of mesothorax, postero-laterally 1+1 on metathorax, medio-laterally 1+1 on abd. III, and medio-laterally 2+2 on abd. IV (Fig. 1).

Head: Antennae rather short, about half the length of head and trunk together. Eye-patch black, with 6+6 eyes (Fig. 2). Labral setae as 4/5, 5/4, with 4 recurving marginal spinules (Fig. 3). Mandible with 4 or 5 bluntly pointed teeth.

Thorax: Distinctly longer than head. Claw slender, slightly curved at apex, with 3 or 4 minute inner teeth of which the basal most one is relatively large. Empodial appendage broad, lanceolate, with one inner tooth, 2/3 the length of claw. Tenent hair stout, distinctly spatulate at apex, as long as the inner margin of claw (Fig. 4). Trochanteral organ of hindlegs well developed both on trochanter and femur, with more than 30–36/26–30 small setae (Fig. 5). Tibiotarsal spiny setae 0, 1, 1.

Abdomen: Longer than head and thorax together. Ventral tube multisetose, 2 or 3 setae of posterior face longer than others. Tenaculum with 4 barbs on each ramus, corpus not scaled and with only a seta (Fig. 6). Dentes long, converging, with 4 or 5 prominent outer basal setae (Fig. 7). Dental spines simple, uncoloured and arranged as 6–10/10–15, I (Fig. 8). Mucro rather short, with apical and sub-apical teeth, with a basal tooth without corner toothlet, and without any intermittent teeth. Mucro with numerous setae, of which the strong outerlateral one is longer than mucro (Fig. 9).

Body length: 2.5 to 3.3 mm except for antennae.



Figs. 1-9. *Plutomurus borealis* sp. nov. — 1, Habitus from lateral side; 2, eyes; 3, labrum; 4, hind leg; 5, trochanteral organ; 6, tenaculum; 7, outer basal dental setae; 8, dental spines; 9, mucro.

Proportions: Body length: antennae, 4.9: 2; antennal segment I: II: III: IV, 10: 16: 57: 15; antennae: head diagonal, 2.2: 1; head diagonal: mesothorax: metathorax, 45: 35: 22; thorax: abdomen, 5: 12; abdominal segment I: II: III: IV: V: VI, 18: 22: 40: 30: 19: 9; antennal segment IV: inner margin of hind claw, 15: 4; inner margin of hind claw: hind empodial appendage: ocellus, 16: 13: 11; inner margin of hind claw: tenent hair, 16: 19; antennae: furca, 1: 1; manubrium: dens: mucro, 9.5: 14: 1; mucro: long setae: bothriotricha, 16: 10: 11.

Holotype: Katsukumi, Tsubetsu-chô, Shari-gun, Hokkaido, (1 ex. 31-VIII-1975), J. OHNISHI leg., taken from litter and upper soil layer of an artificial forest of *Picea abies*. The holotype mounted in HOYER's solution on slide glass (No. 2,635) is deposited in the Department of Zoology, National Science Museum (Nat. His.), Tokyo.

Other specimens examined. Summit and mountainside of Mt. Daisengen-dake, Fukushima-chô, (22 exs. 4~5-VIII-1976), J. OHNISHI leg.; mountainside of Mt. Eniwa-dake, Chitose-shi, (1 ex. 1-X-1976), Y. SUMA leg.; head of the Nukabira River, Biratori-chô, (2 exs. 1-VIII-1972), Y. SUMA leg.; mountainside of Mt. Petegari-dake, Shizunai-chô, (1 ex. 28-VII-1973), J. OHNISHI leg.; head of the Bisei River, Memuro-chô, (1 ex. 17-VII-1976), Y. SUMA leg.; lakeside of Chôbushi, Toyokoro-chô, (1 ex. 18-VII-1976), Y. SUMA leg.; Urimaku, Shikaoi-chô, (1 ex. 6-X-1974), J. OHNISHI leg.; mountainside of Mt. Oakan-dake, Akan-chô, (8 exs. 20-VI-1971, 15-IX-1971), Y. SUMA leg.; Sohkodai, Akan-chô, (2 exs. 16-VIII-1974), Y. SUMA leg.; Wakoto Peninsula, Teshikaga-chô, (4 exs. 5-VIII-1974), Y. SUMA leg.; lakeside of Mashû, Teshikaga-chô, (2 exs. 30-IX-1974), Y. SUMA leg.; Onnenai, Tsurui-mura, (16 exs. 9-VII-1972, 21-IV-1974, 13-X-1974, 3-XI-1974, 2-V-1976, 22-V-1977, 26-VI-1977, 23-XI-1977), Y. SUMA and J. OHNISHI leg.; Miyazima-zaki, Tsurui-mura, (7 exs. 8-VII-1973), Y. SUMA leg.; Kirakotan-zaki, Tsurui-mura, (3 exs. 27-IX-1974), Y. SUMA and J. OHNISHI leg.; lakeside of Sirarutoro, Shibe-chô, (13 exs. 16-VII-1972), Y. SUMA leg.; Futatsu-yama, Shibe-chô, (1 ex. 24-IX-1973), M. OKADA leg.; Tokotan, Akkeshi-chô, (12 exs. 28~29-VI-1980), Y. SUMA and J. OHNISHI leg.; Tomata, Akkeshi-chô, (1 ex. 28-IX-1980), Y. SUMA leg.; Shunkuni-tai, Nemuro-shi, (1 ex. 24-IX-1975), J. OHNISHI leg.; summit and mountainside of Mt. Musa-dake, Nakashibetsu-chô, (2 exs. 1-X-1972), Y. SUMA leg.; Haimatsu-hara, Rausu-chô, (4 exs. 6-IX-1972), Y. SUMA leg.; lakeside of Shiretoko-goko, Shari-chô, (6 exs. 15-IX-1976), Y. SUMA leg.; lakeside of Chimikeppu, Tsubetsu-chô, (2 exs. 7-VIII-1977), Y. SUMA leg.; Bohgakudai, Biei-chô, (4 exs. 1-VIII-1971), Y. SUMA leg.; summit of Mt. Chûbetsu-dake, Kamikawa-chô, (1 ex. 26-VII-1973), Y. SUMA leg.

Remarks. The present species is distributed in litter and upper soil layer of the forest (of *Fagus crenata*, *Quercus mongolica* var. *grosseserrata*, *Betula ermanii*, *Alnus japonica*, *Pterocarya rhoifolia*, *Abies sachalinensis*, *Picea glehnii*, *Picea abies*, and *Pinus pumila*), and the moor (of *Sphagnum* sp., and *Carex* sp.). It is the second species included in edaphic *Plutomurus*, which has been found to be widely distributed

known as *P. edaphicus* YOSII. The present species resembles *P. edaphicus* YOSII, 1967, in possessing 1) labral setae 4/5,5,4, 2) full number of eyes (6+6) and 3) spatulate tenent hairs, but differs from the latter in the following characters.

	<i>P. edaphicus</i>	<i>P. borealis</i> sp. nov.
Trochanteral organs	10/15	30-36/26-30
Setae of corpus	2	1
Ratio of furcal parts	4: 5: 1	9.5: 14: 1
Dental spine formula	5-8/5, I, 2, I.	6-10/10-15, I.
Large outer setae on proximal dens	2	4-5

Besides, this species has no outer basal and intermittent mucronal teeth, while *P. edaphicus* has both of them.

Distribution. Japan (Hokkaido).

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References

- UCHIDA, H., 1940. Some Japanese cavernicolous springtails. *Bull. Tokyo Sci. Mus.*, (3): 1-5.
 YOSII, R., 1939. Two new species of tomocerid collembola from caves of Japan. *Annot. zool. Japan*, **18**: 177-181.
 ——— 1956. Monographie zur Höhlencollembole Japans. *Contr. Biol. Lab. Kyoto Univ.*, (3): 1-109.
 ——— 1966. Results of the speleological survey of South Korea 1966, IV, Cave collembola of South Korea. *Bull. Nat. Sci. Mus. Tokyo*, (9): 451-561.
 ——— 1967. Studies on the collembolan family Tomoceridae, with special reference to Japanese forms. *Control. Biol. Lab. Kyoto Univ.*, (2): 1-54.