

RESURRECTION OF THE GENUS *MICHERDZINSKIIOBOVELLA*
HIRSCHMANN, 1989, WITH THE DESCRIPTION OF
M. PETOFII SP. N. FROM SINGAPORE
(ACARI: MESOSTIGMATA: URODINYCHIDAE)

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The genus *Micherdzinskiiohovella* Hirschmann, 1989 (Mesostigmata: Uropodina: Uropodinychidae) is resurrected for species of the *Uroobovella micherdzinskii*-group. This genus differs from the other taxa of the *Uroobovella* sensu lato based on the shape of body, the first gnathosomal setae, the peritreme and the number of the ventral setae. All species from the *Uroobovella micherdzinskii*-group are moved to the genus *Micherdzinskiiohovella*, as *M. japonica* (Hiramatsu et Hirschmann, 1977) comb. n., *M. levigata* (Hirschmann et Hiramatsu, 1990) comb. n., *M. makilingensis* (Hirschmann et Hiramatsu, 1990) comb. n., *M. mitakensis* (Hiramatsu et Hirschmann, 1977) comb. n., *M. pauxilla* (Hiramatsu, 1981) comb. n., *M. pauxillaoidea* (Hirschmann, 1981) comb. n., *M. similimitakensis* (Hirschmann, 1981) comb. n., *M. topali* (Hirschmann, 1981) comb. n., and *M. multisetosa* (Kontschán et Starý, 2011) comb. n. A new species (*M. petofii* sp. n.) is described, based on one female and four males collected from Singapore. The new species differs from the congeners in the length and shape of the ventral setae.

Key words: Uropodina, new species, taxonomy, identification key, Oriental region.

INTRODUCTION

Werner Hirschmann, the well-known specialist of the Uropodina mites, with his co-author Irene Zirngiebl-Nicol described an unusual *Uroobovella* Berlese, 1903 species in 1972 from Vietnam as *Uroobovella micherdzinskii* Hirschmann et Zirngiebl-Nicol, 1972. Later, more similar species were described from Japan, Vietnam and New Guinea (HIRAMATSU & HIRSCHMANN 1977, HIRAMATSU 1981, HIRSCHMANN 1981, HIRSCHMANN & HIRAMATSU 1990, and KONTSCHÁN & STARÝ 2011). The systematic position of these mites was questionable for many years. HIRSCHMANN (1979a) did not list them within the

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known ca. 1200 Uropodina species in his summarizing work, therefore neither genus nor species-group was established for this species (HIRSCHMANN 1979b). Ten years later, in the revision of the genus *Uroobovella*, HIRSCHMANN (1989) established a new species group for these species, as *Uroobovella micherdzinskii*-group. Also, he described the monotypic genus *Micherdzinskiobovella* Hirschmann, 1989, with the type species *Uroobovella micherdzinskii*. Therefore, *U. micherdzinskii* was classified in the *Uroobovella micherdzinskii* species-group, and in the genus *Micherdzinskiobovella*, as well.

During the investigation of the *Uroobovella micherdzinskii*-group we stated that the species of the group differs in several characteristics from the other *Uroobovella*, therefore, we resurrect this genus for the members of the previous *Uroobovella micherdzinskii*-group.

During the last few years, the first author spent numerous weeks in the Natural History Museum of Geneva to study the diversity of Uropodina from tropical soils. In Oriental soil samples, he found a new mite species, which belongs to the newly erected genus and it is being described now.

MATERIAL AND METHODS

Specimens investigated were cleared in lactic acid for two weeks and investigated with Leica 1000 scientific microscope with drawing tube on half covered slides. The photos were taken with Keyence 5000 digital microscope. Specimens examined are stored in 70% ethanol and deposited in the Natural History Museum, Geneva (NHMG). Measurements are given in micrometers (μm).

TAXONOMY

Family Urodinychidae Berlese, 1917

Remarks. We provisionally keep the position of genus in the family Urodinychidae on the basis of the following characters: setae *h1* long; chelicerae with internal sclerotized node and without mushroom- or flower-shaped sensory organ on fixed digit; corniculi smooth apically. But all taxa of this family need revision.

Genus *Micherdzinskiobovella* Hirschmann, 1989

Micherdzinskiobovella Hirschmann, 1989: 136.

Uroobovella micherdzinskii-group – Hirschmann, 1989: 136.

Type species. *Uroobovella micherdzinskii* Hirschmann et ZIRNGIEBL-NICOL, 1972 by original designation.

Diagnosis. Idiosoma oval, dorsally little domed, marginal and dorsal shields fused anteriorly. All dorsal setae short and smooth. Caudal inner margin of marginal shield undulate. Five pairs of sternal setae smooth and needle-like. Genital shield of female linguliform, anterior margin situated between coxae II. Prestigmatid part of peritreme long and M-shaped or divided into a short hook-like and a long V-shaped branches. Poststigmatid part short. Tritosternum with vase-like base, apically serrate, its laciniae subdivided into several branches. Hypostomal setae *h1* phylliform, broad in central part, *h2* short and robust, *h3* and *h4* narrow, smooth or marginally serrate. Palptrochanter setae *v1* serrate, *v2* smooth or serrate. Corniculi small and horn-like, internal malae short and smooth. Movable digit of chelicerae shorter than fixed digit, both digits bearing a small central tooth. Internal sclerotized node associated with levanton tendon present. Leg I with ambulacral claws; leg setae smooth.

Remarks. The phylliform and centrally broadened hypostomal setae *h1* is a very rarely observed character within the Uropodina mites. Similar character state is also visible on the species of the genus *Trigonuropoda* Trägårdh, 1952 sensu lato (see HIRSCHMANN 1993), especially in the species of *Trigonuropoda difoveolata*-group (HIRSCHMANN & HIRAMATSU 1990a). These species have strongly sclerotized idiosoma, the inner margin of marginal shield undulate, and the setae *h1* apically wider than the central part. On the other hand, the cillibid species, *Australlocilliba kuchtaorum* Athias-Binche et Błoszyk, 1988 has also similar hypostomal *h1* setae. The *Australlocilliba kuchtaorum* species belongs to the family Cillibidae, where the internal sclerotized node associated with levanton tendon is absent on chelicerae, and species of this genus bears anterior process on female genital shield, contrary to the *Micherdzinskiiovellla* species, where female genital shields do not have any apical processes.

Notes. This genus was not listed in HALLIDAY'S (2015) catalogue of the Uropodina genera. However, when HIRSCHMANN (1989) listed all species in the description of *Uroobovella micherdzinskii*-group and description of the genus *Micherdzinskiiovellla*, only the type species were explicitly mentioned as members of this genus, therefore, we list all of the other species here as new combinations.

LIST OF THE KNOWN *MICHERDZINSKIIOBOVELLA* SPECIES

Micherdzinskiiovellla japonica (Hiramatsu et Hirschmann, 1977) comb. n.

Uroobovella japonica Hiramatsu et Hirschmann, 1977: 37–38.

Occurrence and biology: This species was collected from leaf litter in Japan (HIRAMATSU & HIRSCHMANN 1977).

Micherdzinskiobovella levigata (Hirschmann et Hiramatsu, 1990) comb. n.

Urobovella levigata Hirschmann et Hiramatsu, 1990b: 88, 91.

Occurrence and biology: This species was collected from leaf litter in the Philippines (HIRSCHMANN & HIRAMATSU 1990b).

Micherdzinskiobovella makilingensis (Hirschmann et Hiramatsu, 1990) comb. n.

Urobovella makilingensis Hirschmann et Hiramatsu, 1990b: 88, 91.

Occurrence and biology: This species was collected from leaf litter in the Philippines (HIRSCHMANN & HIRAMATSU 1990b).

Micherdzinskiobovella micherdzinskii (Hirschmann et Zirngiebl-Nicol, 1972)

Urobovella micherdzinskii Hirschmann & Zirngiebl-Nicol, 1972: 114–115.

Occurrence and biology: This species was collected from soil in Vietnam (HIRSCHMANN & ZIRNGIEBL-NICOL 1972).

Micherdzinskiobovella mitakensis (Hiramatsu et Hirschmann, 1977) comb. n.

Urobovella mitakensis Hiramatsu et Hirschmann, 1977: 38–39.

Occurrence and biology: This species was collected from leaf litter in Japan (HIRAMATSU & HIRSCHMANN 1977).

Micherdzinskiobovella pauxilla (Hiramatsu, 1981) comb. n.

Urobovella pauxilla Hiramatsu, 1981 (in HIRAMATSU & HIRSCHMANN 1981): 110–111.

Occurrence and biology: This species was collected in New Guinea, its habitat is unknown (HIRAMATSU & HIRSCHMANN 1981).

Micherdzinskiobovella pauxillaoides (Hirschmann, 1981) comb. n.

Urobovella pauxillaoides Hirschmann, 1981 (in HIRAMATSU & HIRSCHMANN 1981): 111.

Occurrence and biology: This species was collected in Vietnam, its habitat is unknown (HIRAMATSU & HIRSCHMANN 1981).

Micherdzinskiobovella similimitakensis (Hirschmann, 1981) comb. n.

Urobovella similimitakensis Hirschmann, 1981 (in HIRAMATSU & HIRSCHMANN 1981): 111.

Occurrence and biology: This species was collected in Vietnam, its habitat is unknown (HIRAMATSU & HIRSCHMANN 1981).

Micherdzinskiobovella topali (Hirschmann, 1981) comb. n.

Uroobovella topali Hirschmann, 1981 (in HIRAMATSU & HIRSCHMANN 1981): 111–112.

Occurrence and biology: This species was collected in Vietnam, its habitat is unknown (HIRAMATSU & HIRSCHMANN 1981).

Micherdzinskiobovella multisetosa (Kontschán et Starý, 2011) comb. n.

Uroobovella multisetosa Kontschán et Starý, 2011: 10–12.

Occurrence and biology: This species was collected from soil and leaf litter in Vietnam (KONTSCHÁN & STARÝ 2011).

***Micherdzinskiobovella petofii* sp. n.**

<http://zoobank.org/1A06D7F7-8A30-4FBD-A2E2-6C43091F2C68>

(Figs 1–16)

Material examined – Holotype. Female. “SHBH/4 Singapour, NNW MacRichie Reservoir, teste de forêt primaire entoures forest secondaire en debut de Camptosperma prélevemal de sol40 m, 21. XI. 1996, B. Hauser coll.”. Paratypes. Four males, with same collection data as those for holotype.

Diagnosis – Dorsal and ventral idiosoma without sculptural pattern. Ventral setae long and smooth. Dorsal setae short and smooth. Genital shield of female scutiform, its surface smooth, only some dots visible at level of *st4*.

Description – *Female* (n = 1). Shape of idiosoma oval, color yellowish brown, flat. Length of idiosoma 630, width at level of coxae IV 540.

Dorsal idiosoma (Figs 1, 13 and 16). Marginal and dorsal shields fused anterolaterally. Surface of dorsal shield without sculptural pattern. More than 35 pairs of dorsal setae short and smooth (*ca* 9–16). Dorsal shield bears 5–6 pairs of poroids and lyriform fissures. Surface of marginal shield smooth, without any sculptural pattern. Marginal shield bears 15–16 pairs of long (*ca* 9–12) and smooth setae on central area, and more than 45 pairs of short (*ca* 6–7) and smooth setae close to outer margin of this shield. Five pairs of poroids and lyriform fissures situated on marginal shield, caudal inner margin of marginal shield undulate.

Ventral idiosoma (Figs 2, 14). Five pairs of sternal setae short (*ca* 6–9), needle-like and smooth. Setae *st1* inserted at level of anterior margin of coxae II, *st2* at level of mid-coxae II, *st3* and *st4* at level of mid-coxae III, *st5* close to basal margin of genital shield. Sternal shield smooth, one pairs of poroids and one pairs lyrifissures situated close to *st1*, one and one pair of poroids close to *st2* and *st3*, and some poroids close to inner margin of coxae IV. Nine pairs of ventral setae anterior to anal opening narrow and long (*ca* 28–43). Ten pairs of ventral setae posterior to anal opening short (*ca* 15–19) and robust. First pair of adanal setae (*ad1*) longer (*ca* 20–23) than second pair (*ad2*) (*ca* 15–16). Postanal setae similar in shape and length to ventral setae posterior to anal opening. Anal plate rounded, *ca* 23 long and *ca* 20 wide. Genital shield linguliform, length 120, basal width 71 situated between coxae II and IV; majority of surface of genital shield smooth, only some dots situated at level of

coxae III. Stigmata situated at level of coxae II. Poststigmatid part of peritremes short and curved, prestigmatid part long and M-shaped (Fig. 15). Metapodal line presented. Pedofossae deep, their surface smooth, with separate furrow for tarsi IV. Tritosternum with vase-like base, laciniae divided several smooth branches. (Fig. 3).

Gnathosoma (Fig. 4). Corniculi smooth and horn-like, internal malae smooth, shorter than corniculi. Hypostomal setae *h1* long (ca 120–23), phylliform and centrally broadened. Setae *h2* very short (ca 4–5), *h3* and *h4* ca 12–14 long, *h3* smooth, *h4* marginally serrate. Chelicerae with internal sclerotized nodes (Fig. 6). Fixed digit of chelicerae (ca 43–45) slightly longer than movable digit (ca 39–40); movable digits of chelicerae bearing a large tooth, fixed digit without any teeth. Palp trochanter setae *v1* longer (ca 23–24) and smooth, *v2* shorter (ca 14–15) and trifurcated. Other setae on palp segments smooth. Palp apotele bifurcate (Fig. 5). Epistome apically pilose.

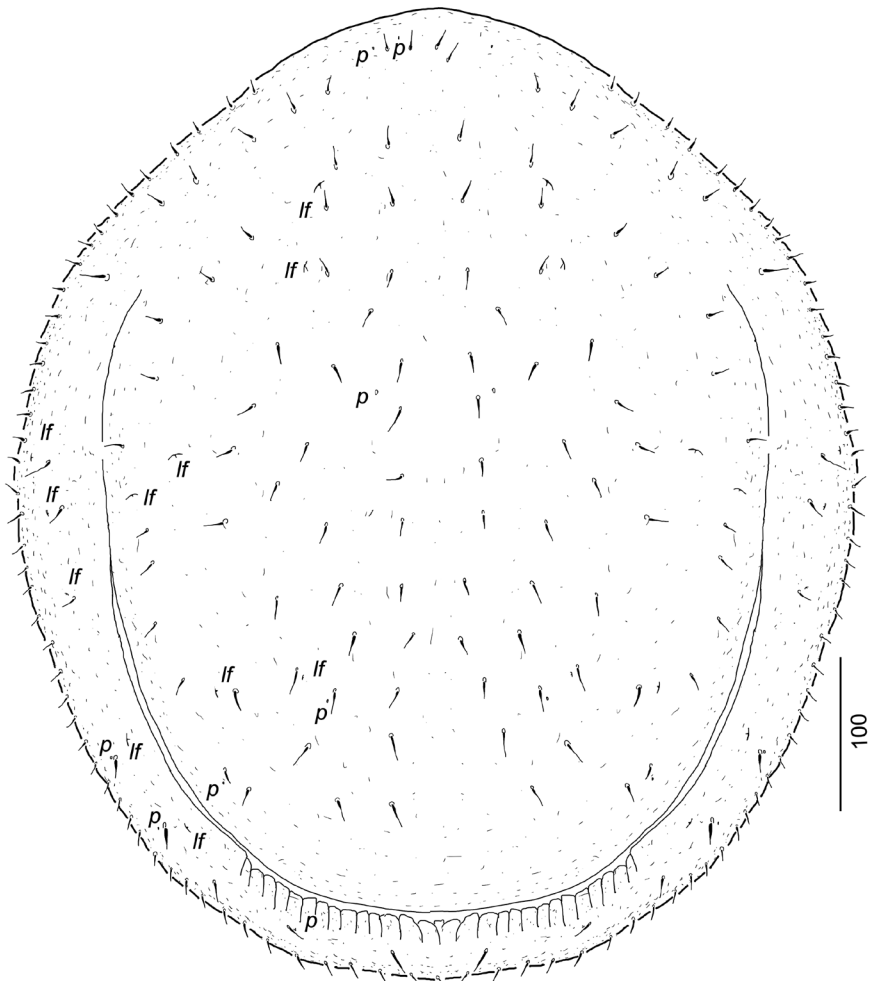


Fig. 1. *Micherdzinskiibovella petofii* sp. n., holotype, female, dorsal view

Legs. Length of legs (from base of coxae to apex of tarsi): I 250–256, II 245–253, III 305–310, IV 310–315. Leg I with ambulacral claws; majority of setae on all legs smooth and needle-like, except some setae on ventral part of tarsi II–IV (Figs 7–10).

Male ($n = 3$). Body 590–630 long and 490–540 wide.

Dorsal idiosoma. As in female.

Ventral idiosoma. Intercoxal area, with sternal setae and genital shield, as in Figure 11. Sternal setae *ca* 5–9 long, smooth and needle-like. Setae *st1* inserted at level of anterior margin of coxae II, *st2* at level of mid-coxae II, *st3* at level of mid-coxae III, *st4* close to anterior margin of genital shield, *st5* close to basal margin of genital shield. Surface of sternal shield without any sculptural pattern. One pair of lyriform fissure situated close to anterior margin of sternal shield, other one pair situated close to lateral margin of genital opening. On pair of

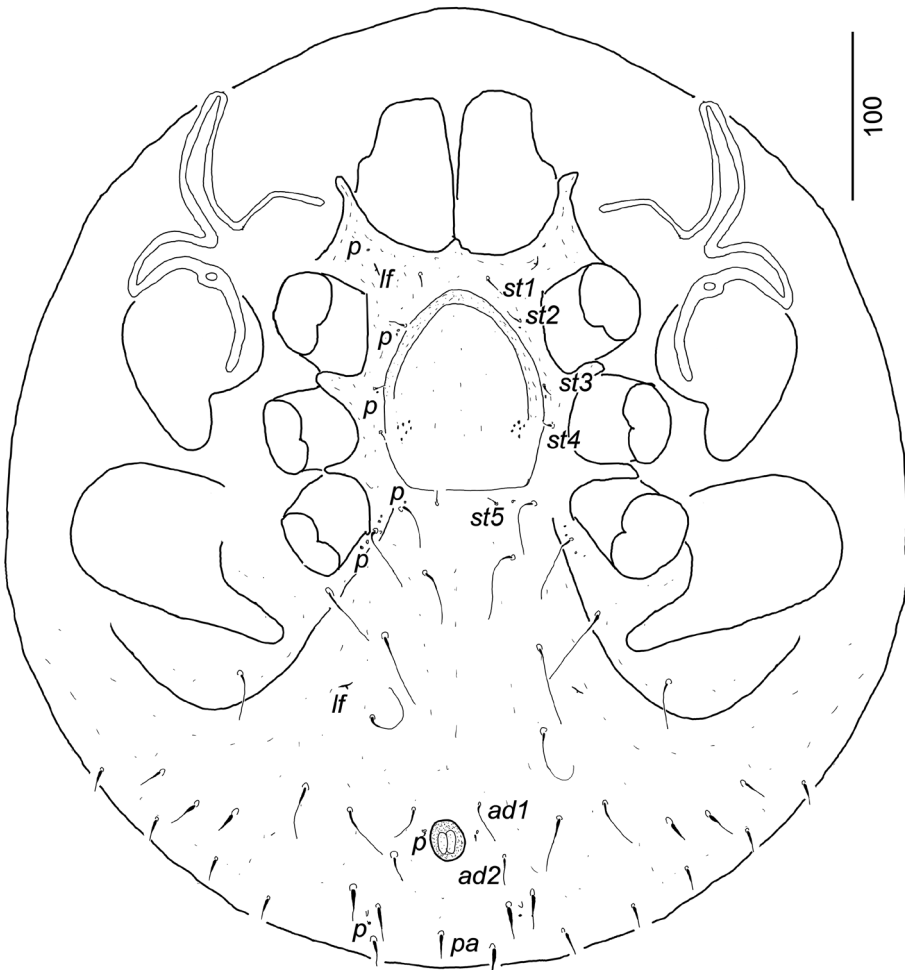
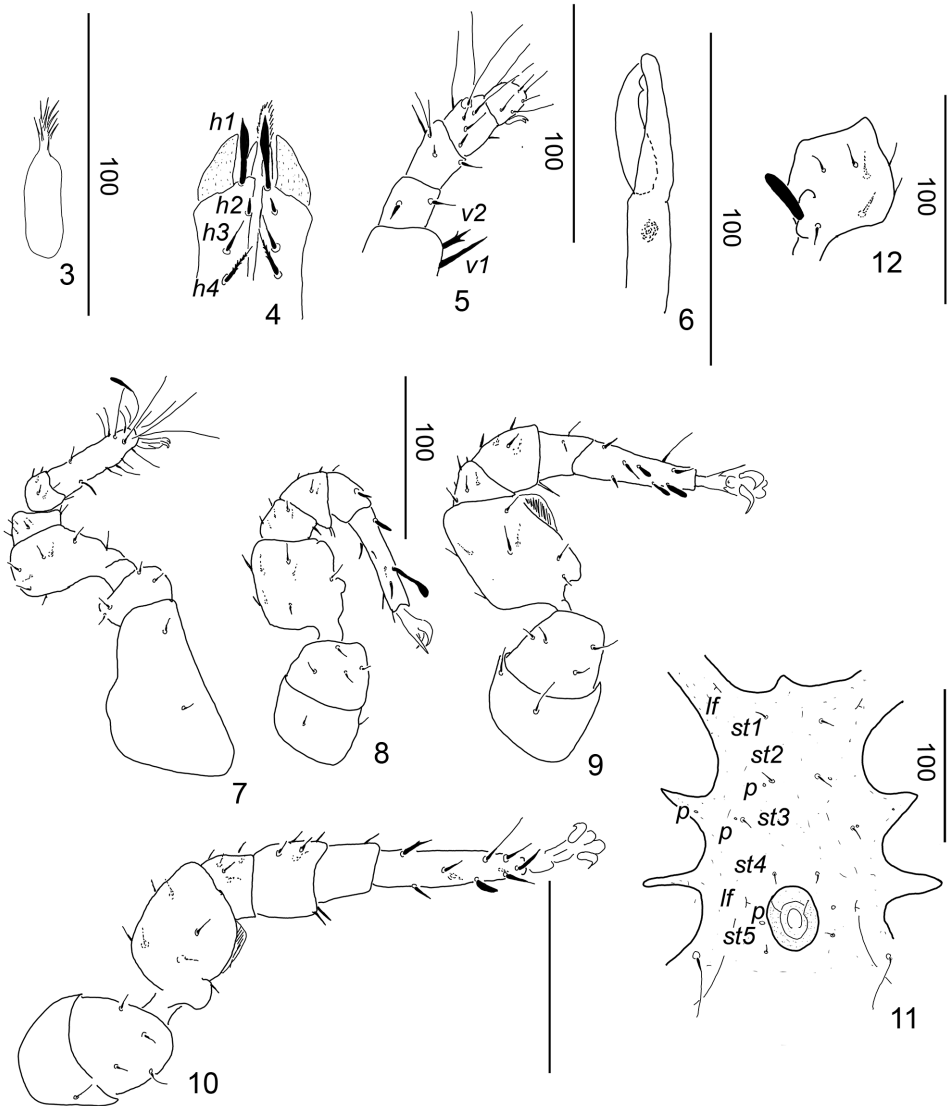


Fig. 2. *Micherdzinskiobovella petofii* sp. n., holotype, female, ventral view

poroid situated close to *st2*, and other one close to *st3*, third close to inner margin of coxae III and last pair close to genital opening. Genital shield rounded, slightly longer than wide (ca 41–44 × 30–33) and situated between coxae IV (Fig. 11). Other characters as in female.



Figs 3–10. *Micherdzinskiibovella petofii* sp. n.: 3–10 = holotype, female: 3 = tritosternum, 4 = gnathosoma in ventral view, 5 = palp in lateral view, 6 = chelicera in lateral view, 7 = leg I in ventrolateral view, 8 = leg II in ventrolateral view, 9 = leg III in ventrolateral view, 10 = leg IV in ventrolateral view; 11–12 = male, paratype: 11 = intercoxal area of, 12 = femur II of male paratype

Developmental stages. Unknown.

Etymology – The species name is dedicated to Sándor Petőfi (1823–1849), the famous national poet of Hungary to commemorate the 200th anniversary of his birth.

Remarks – Only four known *Micherdzinskiobovella* species were described without sculptural patterns (*M. levigata*, *M. makilingensis*, *M. multisetosa*, and *M. pauxillaoides*). However, these species have short ventral setae anterior to the anal opening, contrary to the new species, which has long ventral setae anterior to the anal opening (see the key).



Figs 13–16. Photos of *Micherdzinskiobovella petofii* sp. n., holotype, female: 13 = idiosoma in dorsal view, 14 = idiosoma in ventral view, 15 = peritrema and female genital shield, 16 = idiosoma in lateral view

KEY TO THE KNOWN *MICHERDZINSKIIOBOVELLA* SPECIES

- | | | |
|---|---|-------------------------|
| 1 | Dorsal, ventral and female genital shield without sculptural pattern | 2 |
| – | Dorsal, ventral and female genital shield without sculptural pattern | 6 |
| 2 | Poststigmatid part of peritreme with divided into a short hook-like and a long V-shaped branches | 4 |
| – | Poststigmatid part of peritreme M-shaped, not divided into two branches | 3 |
| 3 | Ventral setae anterior to anal opening short | <i>M. pauxillaoides</i> |
| – | Ventral setae anterior to anal opening long | <i>M. petofii</i> |
| 4 | Ventral setae anterior to anal opening very short, shorter than half of distance between two next setae | <i>M. levigata</i> |
| – | Ventral setae anterior to anal opening long, longer than half of distance between two next setae | 5 |
| 5 | Setae on caudal area of ventral shield wider than other ventral setae | <i>M. multisetosa</i> |
| – | Setae on caudal area of ventral shield similar in shape to other ventral setae | <i>M. makilingensis</i> |
| 6 | Genital shield of female with oval pits | 8 |
| – | Genital shield of female without oval pits | 7 |
| 7 | Genital shield of female longer, apically rounded and linguliform | <i>M. pauxilla</i> |
| – | Genital shield of female shorter, apically a bit peaky and scutiform | <i>M. japonica</i> |
| 8 | Central area elevated from neighboring region | <i>M. topali</i> |
| – | Central area not elevated from neighboring region | 9 |
| 9 | Caudal part of dorsal shield with web-like sculptural pattern | <i>M. mitakensis</i> |
| – | Caudal part of dorsal shield without web-like sculptural pattern | 10 |

- 10 Majority of area of the female genital shield covered by oval pits
M. similimitakensis
- Minority of area of the female genital (only on basal part) shield covered
by oval pits *M. micherdzinskii*

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