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New species of genus *Folsomia* (Collembola: Isotomidae) from Siberia

Новый вид рода *Folsomia* (Collembola: Isotomidae) из Сибири

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КЛЮЧЕВЫЕ СЛОВА: Collembola, Isotomidae, *Folsomia*, новый вид.

ABSTRACT. *Folsomia vasilyevi* **sp.n.** is described from Taimyr and Sibirskiye Uvaly. The new species differs from *F.diplophthalma* (Axelson, 1902) mostly by more setae on anterior side of manubrium and fewer setae on anterior furcal subcoxa.

РЕЗЮМЕ. Описывается *Folsomia vasilyevi* **sp.n.** из Таймыра и Сибирских Увалов. От *F.diplophthalma* (Axelson, 1902) новый вид в основном отличается большим числом хет на передней поверхности манубрия и меньшим — на передней фуркальной субкоксе.

Members of *Folsomia* belonging to '*sexoculata*' group are frequent component of some collembolan communities in Asia. Unlike species of the other groups of the genus they ovoid litter of forest, rich zonal tundra and normal alpine biotopes. They live in different sites but share the only common characteristic, which is possible to call the preference to pessimal conditions. Members of '*sexoculata*' gr. inhabit dry forests (*volgensis* Martynova, 1967), colder sites of tundra and alpine zones (*microchaeta* Agrell, 1939, *altamomtana* Yosii, 1971, *kirgisica* Martynova, 1973), sea littoral [*sexoculata* (Tullberg, 1871), *norvegica* Altner, 1963] and rich organic substrata [*diplophthalma* (Axelson, 1902), *similis* Bagnall, 1939]. During the course of our study of fauna of Isotomidae of Russia we found a new species of the group preferring pioneer soils of sand carier, one more a pessimal site.

Folsomia vasilyevi Berezina & Potapov **sp.n.**
Figs 1–8.

Material. Holotype: adult ♀. Russia, West Siberia, Khanty-Mansiysky AO, Sibirskiye Uvaly, near Noyabr'sk, soil of left sand carier, 20.07.1999. Leg. O. Berezina. Paratypes: 15 specimens on slides from the same place. Kept in Moscow State Pedagogical University (holotype and 9 paratypes) and Zoological Institute in St.-Petersburg (5 paratypes).

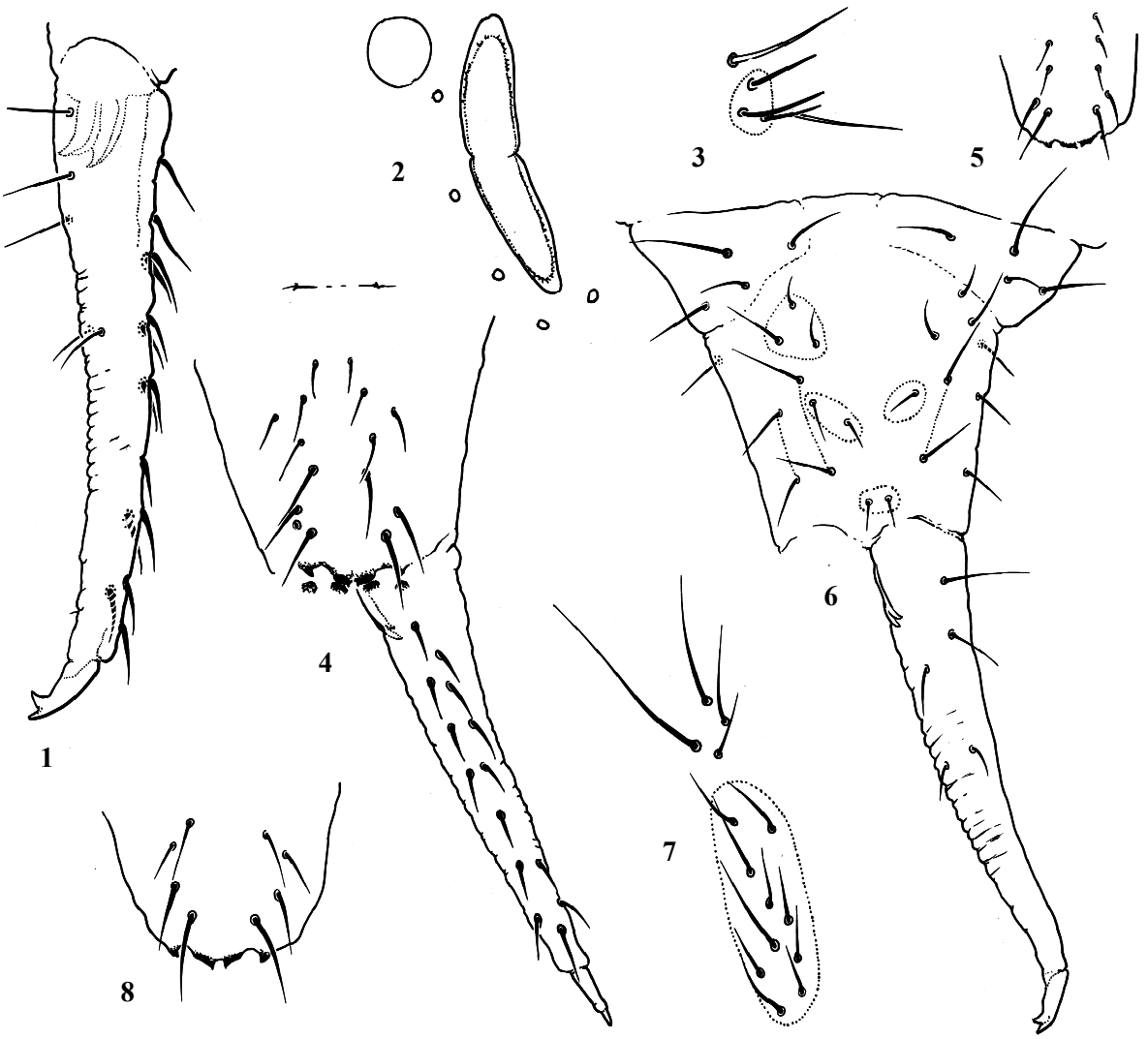
Other material: Russia, Nothern Siberia, Western Taimyr, Ragozinka River, soil of meadow on upper part of slope, 20.08.1983. Leg. A. Babenko.

DESCRIPTION. Size 1.0–1.3 mm. No pigment on body. Body of normal shape for the genus. Cuticle with thin hexagonal preliminary granulation ("smooth") on the most part of the body, areas of more rugose granulation form bands and spots at the posterior edges of tergites and head and along medial line of the body. 1+1 unpigmented large ocelli, ratio ocellus diameter:PAO length as 3.5–4.0 (Fig. 2). PAO narrowly elliptical, constricted; a little longer than Ant.I width and 1.7–2.0 as long as inner unguis length of Leg 3. Maxillary outer lobe with 4 sublobal hairs, maxillary palp bifurcate. Labral formula as 4/5,5,4. Labium with 5 usual papillae (*A–E*), full set of guard setae, 3 proximal and 4 basomedian setae. Ventral side of a head with 4–5+4–5 postlabial setae. *Ant*.1 with 3 basal microsensilla (*bms*) (2 dorsal and 1 ventral), and 3 ventral sensilla (*s*) (Fig. 3), *Ant*.2 with 3 *bms* and 1 laterodistal *s*, *Ant*.3 with 1 *bms* and 5 distal *s* (including 1 lateral). Sensilla on *Ant*.4 weakly differentiated.

Sensillar formula as 4,3/2,2,2,3,5 (*s*), 1,0/1,0,0 (*ms*). Tergal sensilla as long as common setae and hardly distinguishable in some specimens, their arrangement as common for '*sexoculata*' group. Medial sensilla on all tergites situated in mid-tergal position, on *Abd*.I between *Mac*1 and *Mac*2, on Abd.II and III between *Mac*2 and *Mac*3, closer to *Mac*2. On *Abd*.V 4 dorsal sensilla nearly equal. Macrosetae smooth and short, *Mac*1 on *Abd*.I–III hardly differentiated, 1,1/3,3,3 in number, medial ones on *Abd*.V 2.0–2.7 as long as mucro and 1.8–2.6 times shorter than dens. Thorax without ventral setae.

Unguis of normal shape, with lateral and without inner teeth. Empodial appendage about twice shorter than unguis. Tibiotarsi 1–3 with some additional setae, i.e. more than 21–21–22 setae respectively. Tibiotarsal tenent setae pointed. Male spurs (*x* and B_5) on *Ti*.3 thinner than other setae. Ventral tube with 4+4 laterodistal and 6(7) posterior setae. Tenaculum with 4+4 teeth and 1 seta. Anterior furcal subcoxae with 10–13, posterior one with 4 setae (Fig. 7). Anterior side of manubrium with 7–8+7–8 setae, rarely with 6 or 9 setae on one side, four or three pairs in more distal position stronger than others (Fig. 4). Posterior side of manubrium with 4+4 laterobasal, 6–7+6–7 central, 2+2 distal, and 2 apical setae. With 1+1 setae on lateral edges (Fig. 6). According to notation of Fjellberg [2005] the chaetotaxy is to be described as *a*1+*m*2+*M*1+*M*2+*L*1+*L*2+*l*2+3*pr*, sometimes seta *m*1 present. Dens with 14–15 anterior

Abbreviations: PAO — postantennal organ, *Ant*.1–4 — antennal segments, *Th*.II–III — thoracic segments II and III, *Abd*.I–VI — abdominal segments I–VI, *s* — sensillum, *ms* – microsensillum, *bms* — basal microsensillum on antennal segments, *Mac* 1,2,3 — macrosetae of abdominal tergites, Leg 1,2,3 — first, second and third pairs of legs.



Figs 1–8. *F. vasilyevi* **sp.n.** (1–7) and *F. diplophthalma* (8). 1 — dens, 2 — PAO and ocellus, 3 — sensilla of *Ant.1*, 4, 6 — furca, anterior (4) and posterior (6) views, 5 — manubrium in juvenile specimen of 0.7 mm length, 7 — anterior (encircled) and posterior subcoxa, 8 — manubrium, anterior view.

Рис. 1–8. *F. vasilyevi* **sp.n.** (1–7) и *F. diplophthalma* (8). 1 — денс, 2 — ПАО и глазок, 3 — сенсилла на *Ant.1*, 4, 6 — фурка, спереди (4) и сзади (6), 5 — манубриум у ювенильной особи с длиной тела 0,7 мм, 7 — передняя (encircled) и задняя субкоксы, 8 — манубриум, спереди.

setae (rarely 13 or 16), arranged normally as 1,2,2,2,2,1,2,3. Posterior side of dens crenulated and with 5 normal setae (3 basal and 2 at the middle), in addition, one minute seta near mucro can usually be observed (Figs 1, 6). Mucro bidentate. Ratio of manubrium : dens : mucro = 4.0–5.0 : 4.9–6.1 : 1.

DIAGNOSIS. Due to the position of abdominal sensilla and 3 sensilla on *Ant.1* the new species belongs to '*sexoculata*'-group sensu Potapov, 2001. One pair of ocelli, 4+4 laterodistal setae on ventral tube, and presence of lateral teeth on unguis are shared with *F. diplophthalma*. We have studied the specimens of *F. diplophthalma* from eight localities in Russia (Karelia, Mari El Republic, Arkhangelsk Area, Komi Republic, Taimyr, Putorana Plateau, lower Yana, lower Indigirka, middle Yenisey) and found two significant differences between these species. *F. vasilyevi* **sp.n.** differs in 7–8+7–8 setae on anterior side of manubrium (vs. 4+4, rarely 5+5) and 10–13 setae on anterior furcal subcoxa (vs. 14–16). Besides, *F. vasilyevi* **sp.n.** has ocelli unpigmented (with black pigment in *F. diplophthalma*), and prefers dry open biotopes (*F. diplophthalma* inhabits damp and nitrophilous sites). Juvenile specimens of *F. vasilyevi* **sp.n.** bear fewer setae on manubrium (one variant is shown on Fig. 5) then they can hardly be separated from adult specimens of *F. diplophthalma*, in the latters setae arranged more compact, unlike in new species.

DISTRIBUTION. Known only from two localities.

ETYMOLOGY. The species was named after the Sergey Vasilyev, soil and bog researcher and the organizer of the scientific project to study the catenas of Sibirskiye Uvaly.

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