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A NEW SPECIES, *KRIVOLUTSKIHEL PAENNATA SP. N.*, FROM THE EASTERN MEDITERRANEAN AND NEW DATA FOR *K. PUBESCENS* GORDEEVA, 1980 (COSMOCHTHONIIDAE, ACARINA, ORIBATIDA)

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SUMMARY: A new species of oribatid mite, *Krivolutskiella pennata* Gordeeva, Penttinen & Petrova sp. n., is described. This species differs from the type species *Krivolutskiella pubescens* Gordeeva, 1980 by the form of all the notogastral setae. A brief description of the type species and diagnosis of this genus are presented. The work is mainly based on data obtained by Scanning Electron Microscope (SEM).


INTRODUCTION

The genus *Krivolutskiella* with type species *K. pubescens* Gordeeva, 1980 has been described from the Canary Islands, western Mediterranean. Later this species has been reported from southeast Spain (KAHWASH et al., 1989). At present it seems that distribution of this species is limited to the western part of Mediterranean.

The second species to the genus has been found now in the eastern part of Mediterranean. A new species, *Krivolutskiella pennata* Gordeeva, Penttinen & Petrova sp. n. is described in this article. In addition, a brief description of the type species, *K. pubescens* Gordeeva, 1980 based on SEM investigation is given. Also, a few changes to the diagnosis of the genus *Krivolutskiella* Gordeeva, 1980 are established.

The chaetotaxic notations and other characters follow the terminology of Grandjean (1962). The illustrations have been made with the aid of a camera lucida attached to a compound microscope and the microphotographs with a SEM (JEOL JSM-5200).

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Figs. 1-6. *Krivolatuskiella pubescens*. 1. — Dorsal view of body. 2. — Setae e2 & f2. 3. — Lateral view of prodorsum. 4. — Dorsal view of prodorsum. 5. — Prodorsal setae (m & n) and notogastral setae (c1–c3 & d1). 6. — Dorsal setae of leg II.
Diagnosis and description

Krivolutskiella Gordeeva, 1980

Type-species Krivolutskiella pubescens
Gordeeva, 1980

Diagnosis. Notogaster with three transversal furrows, forming four shields. All notogastral setae dilated; setae c wide, the smallest setae d1 and d2 leaf-like, setae e and f long and foliate, setae h & p short and wide; h1 & h2 and p1 & p2 slightly convex, setae h3 and p3 flat. Genital plate with 10 pairs of setae on both anal- and adanal plates with 4 pairs of setae. Formula of claws (leg I – leg IV): 2·3·3·3.

Krivolutskiella pubescens Gordeeva, 1980
(Figs. 1-6)

Description. Measurement of holotype: 180 × 110 μm. Rostrum with small fenestrations, rounded. Rostral seta (ro), lamellar seta (la), and anterior exobothridial seta (exa) brush-like with long, sharp bristles. Interlamellar seta (in) fan-shaped with long, furcate secondary bristles. Posterior exobothridial seta (exp) slightly foliote with short bristles. Sensillus (ss) long with brush-like head.

Setae c1, c2 & c3 wider than long, asymmetrically bifurcate, c2 elongate, sharp-pointed and with small, rough cilia dorsally. Lateral margins of setae c serrated with rough cilia.

Setae d1 and d2 short, leaf-like, laterally serrated with smooth stalks.

Setae e and f long, leaf-like with flexible apices, margins with long secondary setae. Setae f1 & f2 with threadlike secondary setae, which are especially long on internal margins. Dorsally densely covered by short cilia and reinforced by rough mid-rib and transverse ramifications.

Setae h1, h2 & h3 leaf-like, with ribs and covered by rough cilia, h3 > h2 > h1. Setae p1 & p2 fan-shaped, with slightly convex serrated blades, dorsally smooth, ventrally covered with ramose cilia.

Epimeral plates I-II medially separate, III – IV medially partly joined. Aggenital plate present, 10 pairs of genital setae, both anal- and adanal plates each with 4 pairs of densely ciliate setae.


Types. Holotype (♀), Spain, Gran Canaria, 1969, V. D. Gordeev leg., deposited in the Laboratory of Biocentration, Severtsov Institute, Evolutional Morphology and Ecology of Animals, Moscow, Russia. Paratype, one ex. with the same data, deposited in the Zoological Museum, University of Turku, Finland.

Other material studied. Spain, Isla Grosa (Murcia), (UTM: 30SYG08), soil under Salsola oppositifolia, February 1976, two exx., L. Subias leg., deposited in the Zoological Museum of the University of Turku.

Distribution. Palaearctic.

Krivolutskiella pennata Gordeeva,
Pettinen & Petrova sp. n.
(Figs. 7-19)

Description. Measurements: 240 × 125 μm (holotype), 240-138 μm (paratype). Rostrum with longitudinal lines of small fenestrations, its apex round and curved down. Prodorsal setae wide, with short stalks. Dorsally ro and la with long, furcate cilia, laterally smooth. Seta la bifurcate and asymmetric, their anterior branches longer and stronger than posterior branches. In fan-shaped with long bi- or trifurcate secondary bristles on margins. Setae exa large, densely covered by long, furcate secondary bristles, exp short and slightly foliote. Sensillus (ss) wide from ½ to the length to the apex. Head of ss narrow, margins with long dense secondary bristles.

Notogaster separated into four unequal shields (NA, NM1, NM2 and PY). NA as long as NM1 and NM2 together. NM1 = NM2. NA + NM1 + NM2 = 113 PY (pygidium).

All the notogastral setae wide and cover almost the whole of the dorsal surface of the hysterosoma. Setae c round (not furcate), margins with two rows of rough cilia. Sizes of setae c increase from c1 to c4. Setae d1 and d2 short, leaf-like with smooth stalk and serrated edges, d1·d2 < d1 · d2.

Two pairs of long, feather-like setae e and f on anterior borders of NM2 and PY respectively. Rough, longitudinal midribs and thinner
ramifications on blades. Transverse and lateral branches of the setae $e_1$ & $f_2$ and especially $e_2$ covered by rough and spiny bristles. The lateral margins of setae $e_1$ parallel and apex sharply pointed. Seta $e_2$ wider than $e_1$. Seta $e_2$ and $f_2$ taper sharply towards apices. Seta $f_1$ widest and longest, flexible, with very long flagelliform secondary ciliate.

Seta $h_1$, $h_2$, $p_1$ & $p_2$ comparatively short, wide, slightly convex and serrated. Dorsally smooth, laterally covered by bi- and triramose secondary bristles.


**Diagnosis.** New species *K. pennata* sp. n. differs from *K. pubescens* Gordeeva, 1980 by the form and structures of all the notogastral setae.

**Distribution.** Turkmenistan, Turkey and Greece (Rhodes).


**Localities in Turkey and Greece.** Turkey, Ismeler, grass, moss and lichen on slope 3 June1995 R. Niemi & E. Gordeeva, one ex. on SEM stub., Ismeler, litter of *Arbutus unedo* on top of mount, 3-6.1995 R. Niemi & E. Gordeeva, one ex., Turkey Marmaris, Turunc, moss, lichen and grass on sea-side 5 m a.s.l., 18.5.1995 M.Yli-Pietila leg., four exx., Greece, Rhodes, litter of *Pinus halepensis*, 1.6.1996 leg. R. Niemi, one ex.

**Distribution.** Palaearctic.

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**DISCUSSION**

This paper is the third article to provide new information about oribatids in the nests of termites (*Anacanthotermes ahngerianus* Juc.) in southwestern Turkmenistan (Gordeeva et al., 1996 & 1998). These studies indicate that the proportion of primitive oribatid species in the termite nests is significant. Some species — such as *Sphaerochthonius spectabilis* Gordeeva, Niemi & Petraova-Nikitina, 1996 — has been found only in termite nests, but other species can also live outside the nests. *Krivolutskiella pennata* sp. n. belongs to this group. We found it first in the material of termite nests and later in the soil and litter samples from southwestern Turkey and the island of Rhodes (Greece).

**REFERENCES**


