

A NEW SUBGENUS AND SPECIES OF THE GENUS *PREMICRODISPUS* (ACARI: HETEROSTIGMATINA: MICRODISPIDAE) FROM CRIMEA

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ABSTRACT: A new monotypic subgenus *Premicrodispus* (*Premicrodispoides*) subgen. n. with the type species *P. (Premicrodispoides) punctatus* sp. n., collected from algal debris on the shore of the Black Sea in Crimea is described. A key to the subgenera of the genus *Premicrodispus* Cross, 1965 is provided.

KEY WORDS: *Premicrodispus*, Microdispidae, new subgenus, new species, seashore, Cape Martyan, Crimea

INTRODUCTION

The genus *Premicrodispus* Cross, 1965 (Acari: Pygmephoroida: Microdispidae) currently includes two subgenera: *Premicrodispus* with 27 described species, and the monotypic subgenus *Premicrodispulus* (Khaustov 2006; Khaustov 2009; Khaustov and Chydyrov 2010). During our study of mites inhabiting algal debris on the shore of the Black Sea of the Cape Martyan Nature Reserve (Crimea, Ukraine), a new species belonging to an undescribed subgenus of the genus *Premicrodispus* was found. This paper describes the new subgenus, *Premicrodispus* (*Premicrodispoides*) subgen. n., and the new species *P. (Premicrodispoides) punctatus* sp. n.

MATERIALS AND METHODS

Mites were collected from algal debris of the supralittoral of the Black Sea in the Cape Martyan Nature Reserve (Crimea, Ukraine) using Tullgren funnels, and mounted in Hoyer's medium. In the description, the terminology of the idiosoma and legs follows Lindquist (1986). The nomenclature of subcapitular and cheliceral setae follows Grandjean (1944, 1947), respectively. The systematics of Pygmephoroida follows Khaustov (2004, 2008). All measurements are given in micrometers (μm) for the holotype and 5 paratypes (in parentheses). In the description of leg chaetotaxy, the number of solenidia is given in parentheses. Mites were photographed using a Tucsen 3.0 digital camera.

SYSTEMATICS

Family Microdispidae Cross, 1965

Genus *Premicrodispus* Cross, 1965

Subgenus *Premicrodispoides* Khaustov et Maslov subgen. n.

Type species: *Premicrodispus* (*Premicrodispoides*) *punctatus* Khaustov et Maslov sp. n.

Description. Female. Gnathosomal capsule about 2 times longer than width. Dorsal gnatho-

soma with one pair of cheliceral setae *cha*. Dorsal medial apodeme not developed. Ventral gnathosoma with one pair of setae *m*. Palps short, with setae *dFe* and *dGe* dorsolaterally, one tiny solenidion and accessory setigenous structure ventrally, and terminated with small claw. Pharyngeal pump 2 relatively short and striated, pharyngeal pump 3 distinctly longer than pharyngeal pump 2, pharyngeal pump 1 vestigial.

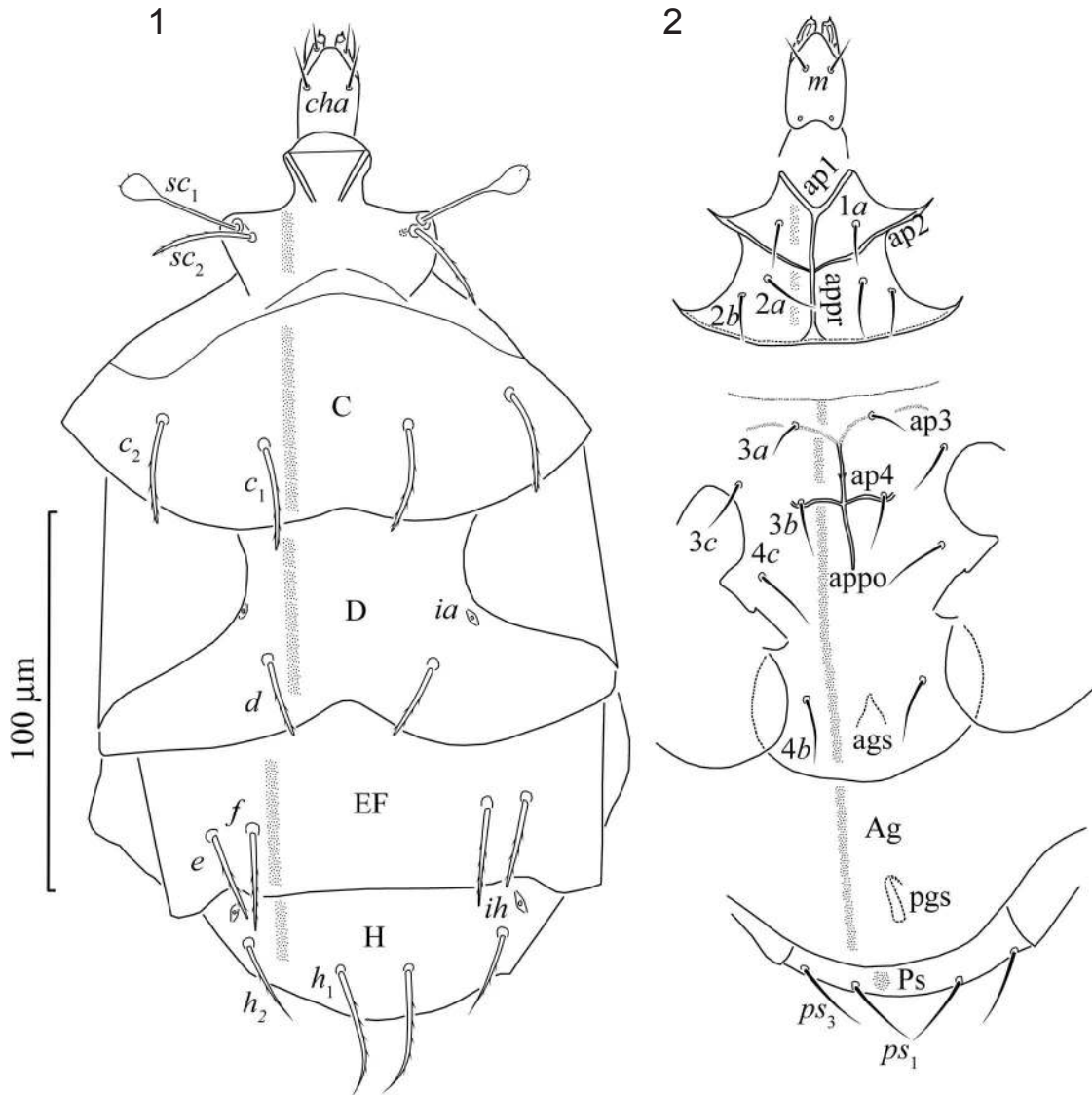
Idiosomal dorsum. Prodorsum with 1 pair of setae *sc*₂, a pair of clavate trichobothria *sc*₁ and pair of long and narrow stigmata (Figs 1, 8). Two pairs of rhombic cupules (*ia*, *ih*) present on tergites D and H respectively.

Idiosomal venter. Coxal fields I with 1 pair of setae *1a*, setae *1b* absent; coxal fields II with two pairs of setae. Apodemes 2 joined with presternal apodeme. Apodemes 3 weakly developed, diffuse; apodemes 4 relatively short and reach only bases of setae *3b*. Apodemes 5 absent. Anterior margin of poststernal plate indistinct, without lobe. Setae of posterior sternal plate smooth, relatively short. Posterior margin of posterior sternal plate divided into 3 parts; median part forms distinct lobe. Two pairs of simple pseudanal setae *ps*₁ and *ps*₃ present. Posterior genital sclerite small, elongate.

Legs. Leg I. Tibiotarsus of leg I cylindrical, without claw. Setal formula: Tr1–Fe3–Ge4–TiTa15(4), setae *s* absent. Leg II. Setal formula: Tr1–Fe3–Ge3–Ti4(1)–Ta6(1). Tarsus with simple claws. Leg III. Setal formula: Tr1–Fe2–Ge2–Ti4(1)–Ta6. Claws as on leg II. Leg IV. Setal formula: Tr1–Fe2–Ge1–Ti4(1)–Ta6. Claws well developed, simple, empodium well developed.

Male and larva unknown.

Diagnosis. The new subgenus differs from other subgenera of the genus *Premicrodispus* by the long and narrow stigmata (oval in *Premicrodispus* and *Premicrodispulus*), pharyngeal pump 3 distinctly longer than pharyngeal pump 2 (pharyn-



Figs 1–2. *Premicrodispus (Premicrodispoides) punctatus* sp. n., female: 1 — dorsum, 2 — venter.

geal pump 3 always considerably shorter than pharyngeal pump 2 or vestigial in *Premicrodispus* and *Premicrodispulus*), the absence of setae 1b (present in all other microdispid mites), and the absence of a lobe on the indistinct anterior margin of the poststernal plate (with more or less developed lobe on the anterior margin of the poststernal plate in *Premicrodispus* and *Premicrodispulus*). From *Premicrodispulus* it also differs by the presence of 4 and 3 setae on genua I and II, respectively (3 and 1 in *Premicrodispulus*).

Species included. The new subgenus currently includes only one species, *Premicrodispus (Premicrodispoides) punctatus* Khaustov et Maslov sp. n.

Distribution and habitat. The type species of the subgenus *Premicrodispoides* is known only from Crimea, Ukraine. Adult females of *P. (Pre-*

microdispoides) punctatus are found in algal debris of the supralittoral of the Black Sea.

Etymology. The subgeneric name is derived from the name of the genus, *Premicrodispus*.

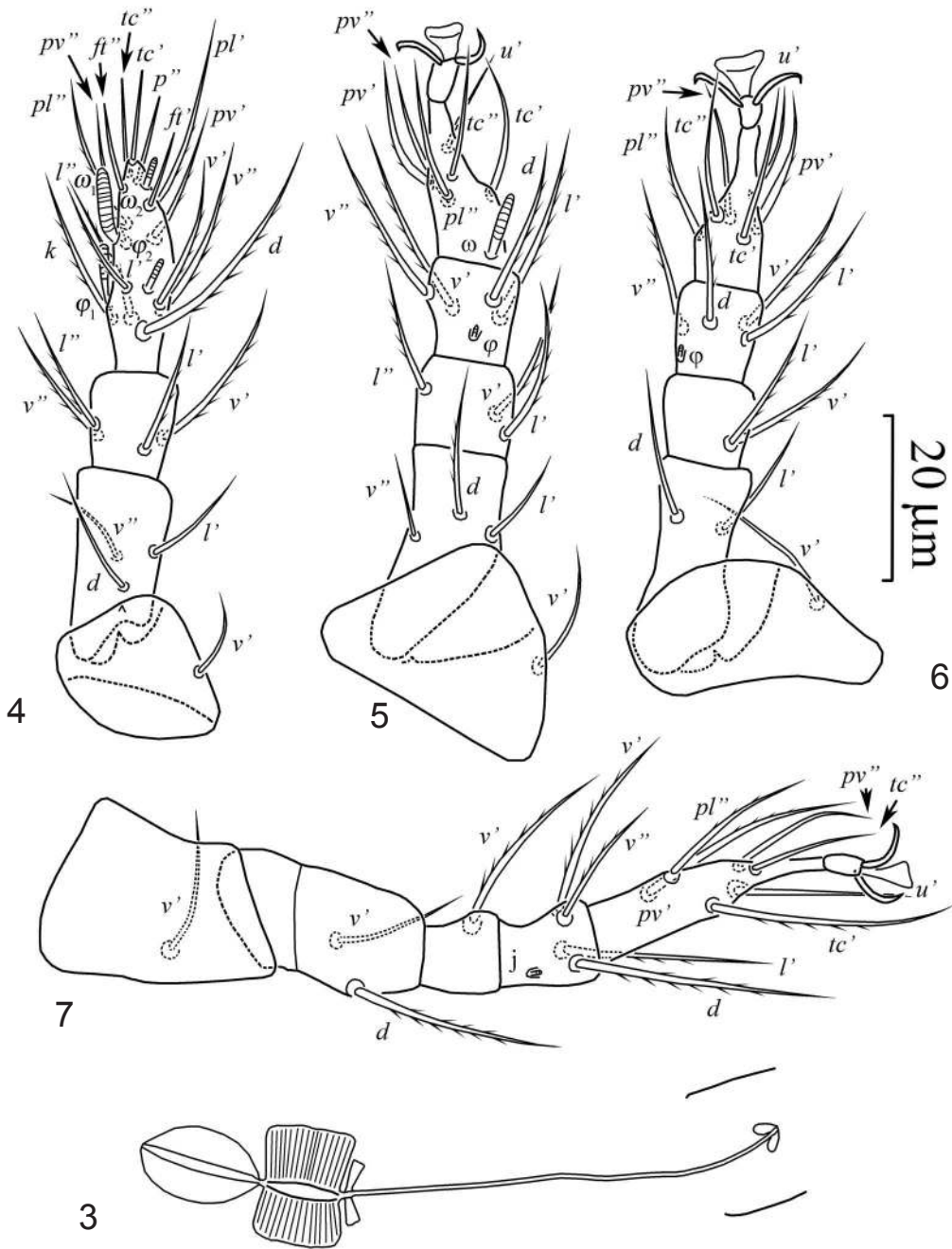
***Premicrodispus (Premicrodispoides) punctatus* Khaustov et Maslov sp. n.**

Figs 1–10

Description. Female. Idiosomal length: 225 (223–237), maximum width 132 (126–136).

Gnathosoma (Figs 1–2). Length of gnathosomal capsule 27 (27–32), width 16 (16–17). Posterior margin of gnathosomal capsule ventrally weakly concave. Accessory setigenous structure relatively small. Pharyngeal pumps as on fig. 3.

Idiosomal dorsum (Fig. 1). All tergites with numerous small dimples. All dorsal setae barbed. Setae h_1 and h_2 pointed, other dorsal setae blunt-

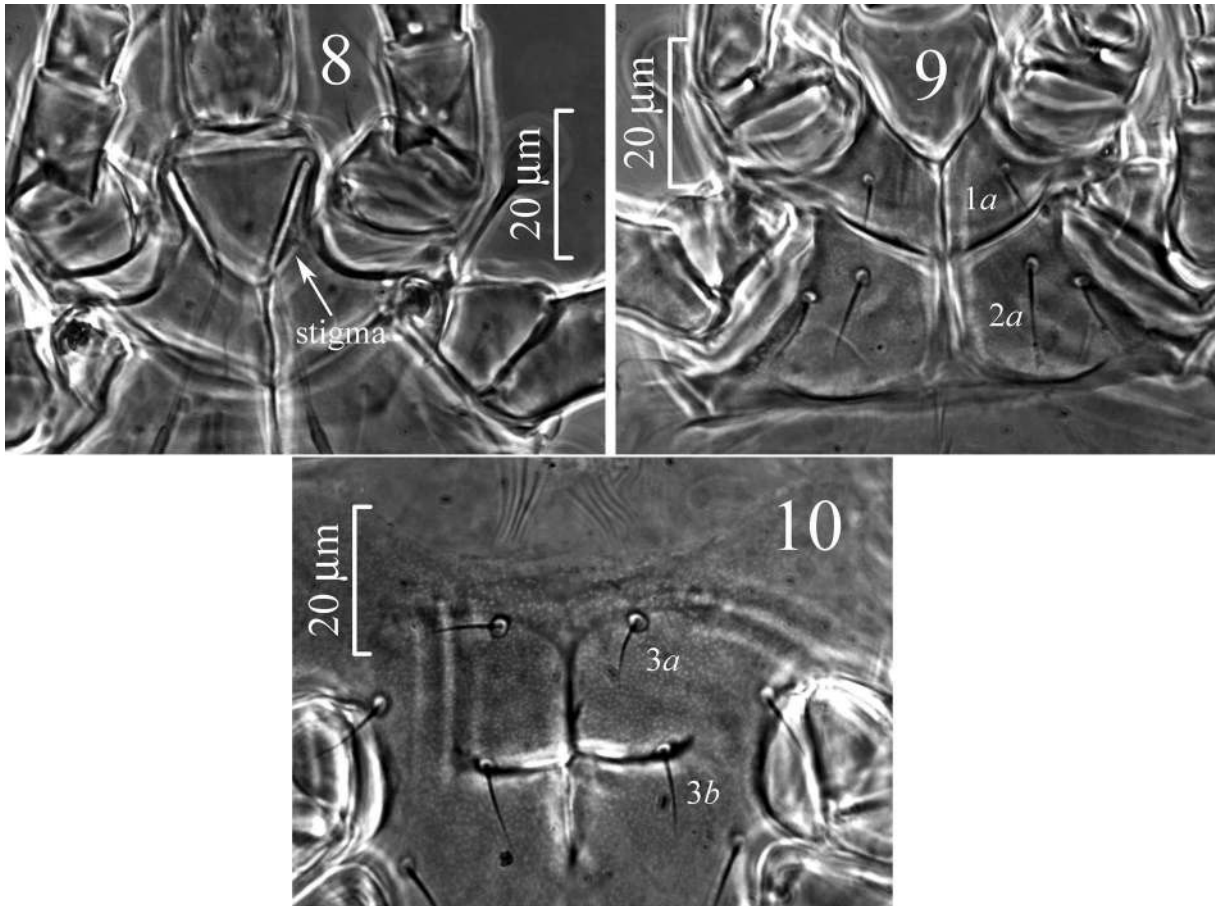


Figs 3–7. *Premicrodispus (Premicrodispoides) punctatus* sp. n., female: 3 — pharyngeal pumps, 4–7 — legs I–IV, respectively.

ended. Posterior margins of tergites C and D distinctly concave. Length of dorsal setae: sc_2 28 (28–29), c_1 28 (28–29), c_2 28 (28–33), d 23 (23–25), e 21 (21–25), f 29 (28–33), h_1 36 (35–37), h_2 27 (25–29). Distances between dorsal setae: sc_2-sc_2 41 (38–41), c_1-c_1 37 (37–40), c_1-c_2 27 (27–31), $d-d$ 42 (42–52), $e-f$ 9 (9–14), $f-f$ 61 (61–64), h_1-h_1 16 (16–21), h_1-h_2 26 (23–26). Trichobothrium with long thin stem, distally spherical, with several barbs.

Idiosomal venter (Figs 2, 9, 10). All ventral setae smooth and pointed. All ventral plates with nu-

merous small dimples. Apodemes 1 well developed and joined with presternal apodeme, apodemes 2 well developed and joined with presternal apodeme; sejugal apodeme weakly developed; apodemes 3 weakly developed, diffuse. Apodemes 4 well sclerotized and joined with poststernal apodeme. Anterior margin of poststernal plate with “rough” and unclear border (Fig. 10). Posterior margin of aggenital plate rounded. Length of ventral setae: $1a$ 12 (11–13), $2a$ 16 (16–18), $2b$ 13 (13–15), $3a$ 10 (10–12), $3b$ 14 (14–15), $3c$ 13 (13–14), $4b$ 21 (19–22), $4c$ 16 (16–18), ps_1 18 (18–19), ps_3 17 (17–19).



Figs 8–10. *Premicrodispus (Premicrodispoides) punctatus* sp. n., female: 8 — stigmata, 9 — coxal fields I and II, 10 — anterior part of poststernal plate.

Legs (Figs 4–7). All leg setae pointed, except blunt-ended tarsal eupathidia. Leg I (Fig. 4). Solenidion ω_1 10 (9–10) finger-shaped, solenidia ω_2 4 (3–4) and φ_2 5 (4–5) baculiform. Solenidion φ_1 7 (7–8) clavate. Leg II (Fig. 5). Solenidion ω 9 (9–10) finger-shaped. Solenidion φ very small, situated in shallow depression. Leg III as on fig. 6. Solenidion φ very small, situated in shallow depression. Leg IV (Fig. 7). Solenidion φ very small, situated in shallow depression.

Type material. Female holotype, slide No. SM010913, UKRAINE, Crimea, Cape Martyan Nature Reserve, algal debris on supralittoral of Black Sea, 44°30'N, 34°14'E, 1 September 2013, coll. S.I. Maslov; paratypes: 15 females, with same data as holotype.

Type depositories. The holotype deposited at the collection of the Nikita Botanical Gardens — National Scientific Centre, Yalta, Ukraine; one paratype is at the collection of Zoological Institute of Russian Academy of Sciences, St.-Petersburg, Russia; other paratypes deposited together with the holotype.

Etymology. The name of new species refers to the presence of numerous dimples on dorsal and ventral plates.

**Key to the subgenera of the genus
*Premicrodispus***

(females)

1. Genu I with 4 setae, genu II with 3 setae 2
— Genu I with 3 setae, genu II with 1 setae
..... *Premicrodispulus*
Khaustov et Chydyrov, 2010
2. Coxal fields I with 2 pairs of setae, pharyngeal pump 2 much longer than pharyngeal pump 3, stigmata oval *Premicrodispus* s. str.
— Coxal fields I with 1 pair of setae, pharyngeal pump 2 distinctly shorter than pharyngeal pump 3, stigmata long and narrow
..... *Premicrodispoides* subgen. n.

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REFERENCES

- Grandjean, F. 1944. Observations sur les Acariens de la famille des Stigmaeidae. *Archives des Sciences physiques et naturelles*, 26: 103–131.
- Grandjean, F. 1947. L'origine pileuse des mors et la chaetotaxie de la mandibule chez les Acariens actinochitineux. *Comptes rendus des séances de l'Académie des Sciences*, 224: 1251–1254.
- Khaustov, A.A. 2004. [Mites of the family Neopygmephoridae Cross, 1965 stat. n. and their position in Heterostigmata]. In: Yu.S. Balashov (Ed.). VIII Rossiyskoe Akarologicheskoe Soveshchanie, St.-Petersburg. Zoologichesky Institut RAN, St.-Petersburg, p. 137. [in Russian]
- Khaustov, A.A. 2006. A review of the genera *Premicrodispus* Cross, 1965 and *Dolichodispus* gen. nov. (Acari: Microdispidae) of Crimea. *Acarina*, 14 (2): 155–174.
- Khaustov, A.A. 2008. *Mites of the family Scutacaridae of Eastern Palaearctic*. Akademperiodyka, Kiev, Ukraine, 291 pp.
- Khaustov, A.A. 2009. A new genus and three new species of the mite family Microdispidae (Acari: Heterostigmata) from Crimea. *Acarina*, 17 (1): 65–73.
- Khaustov, A.A. and Chydyrov, P.R. 2010. [Five new species and a new subgenus of *Premicrodispus* mites (Acari, Heterostigmata, Microdispidae) from Turkmenistan]. *Zoologichesky zhurnal*, 89 (5): 545–558. [In Russian]
- Lindquist, E.E. 1986. The world genera of Tarsonemidae (Acari: Heterostigmata): a morphological, phylogenetic, and systematic revision, with a reclassification of family-group taxa in Heterostigmata. *Memoirs of Entomological Society of Canada*, 136: 1–517.