Redefinition of the genus *Krczaldania* Sasa, 1961 stat. nov. (Acari: Heterostigmata: Pygmephoroidea) with notes on its generic synonyms and redescription of *Pygmephorus primitivus* Krczal, 1959

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**Abstract**

The subgenus *Allositeroptes* Livshits, Mitrofanov and Sharonov, 1986 of the genus *Siteroptes* Amerling (Acari: Pygmephoridae) is considered as junior synonym of *Krczaldania* Sasa, 1961 stat. nov. The subgenus *Krczaldania* Sasa, 1961 is redefined and elevated to a generic rank. The type species of the genus *Krczaldania* - *Pygmephorus primitivus* Krczal, 1959, is redescribed based on material from Crimea, Ukraine. A key to the known species of the genus *Krczaldania* is provided.

**Key words**: Pygmephoridae, *Krczaldania*, new synonyms, redescription

**Introduction**

Sasa (1961) in his review of the mite genus *Pygmephorus* Kramer sensu Krczal, 1959 (Acari: Pygmephoridae) created the subgenus *Krczaldania* with type species *Pygmephorus primitivus* Krczal, 1959. Mahunka (1970a) considered *Krczaldania* as a junior synonym of *Siteroptes* Amerling. Livshits et al. (1986) created the subgenus *Allositeroptes* Livshits, Mitrofanov and Sharonov, 1986 in the genus *Siteroptes*, with type species *Pygmephorus primitivus*. In my opinion *Krczaldania* is a genuine genus and because both *Allositeroptes* and *Krczaldania* have the same type species, *Allositeroptes* should be considered a junior synonym of *Krczaldania*.

The purpose of this paper is to redefine the genus *Krczaldania*, to redescribe *K. primitiva* (Krczal, 1959) and provide new synonymy for this genus.

**Material and methods**

The material available for this study was collected from soil in Crimea using Berlese funnels without heating, and mounted on slides in Hoyer's medium. In the description, the terminology of idiosoma and legs follows Lindquist (1986). The nomenclature of subcapitular setae follows Grandjean (1944), and the designation of cheliceral setae follows Grandjean (1947). The system of Pygmephoroidea follows Khaustov (2004, 2008). All measurements are given in micrometers (μm). In descriptions of leg chaetotaxy the number of solenidia is given in parenthesis.
Systematics

Family Pygmephoridae Cross, 1965

Genus *Krczaldania* Sasa, 1961 stat. nov.


Type species: *Pygmephorus primitivus* Krczal, 1959

**Diagnosis** (Female)

*Gnathosoma.* Gnathosomal capsule prognathous, dorsally with three pairs of setae (*cha, chb, pp*). Ventral gnathosoma with one pair of subcapitular setae *m*. Palps freely articulated with gnathosomal capsule, with setae *dFe* and *dGe* dorsolaterally, one small solenidion and accessory setigenous structure ventrally and terminated with small claw.

*Idiosomal dorsum.* Prodorsum with three pairs of normal setae (*v1, v2, sc2*), pair of capitulate trichobothria (*sc1*), and a pair of elongate stigmata. Setae *e* absent from tergite EF.

*Idiosomal venter.* Coxisternal plates I with three pairs of setae (*1a, 1b, 1c*). Setae *1b* bifurcate. Coxisternal plates II with two pairs of setae (*2a, 2c*); setae *2b* absent. Coxisternal plates III with three pairs of setae (*3a, 3b, 3c*). Coxisternal plates IV with two pairs of setae (*4a, 4b*); setae *4c* absent. Posterior margin of posterior sternal plate entire. Pseudanal plate with three pairs of setae (*ps1-3*), surrounded by, but not united with, plate H.

**Legs.** Leg I. Tibia and tarsus separated. Tarsus with simple claw. Setal formula: *Tr1(v')-Fe4(d, l', l'', v')-Ge4(l', l'', v', v'')-Ti6(2)(d, l', l'', v', v'', kζ, φ1, φ2)-Ta13(2)(p'ζ, p''ζ, tc'ζ, tc''ζ, fi'ζ, fi''ζ, pl', pl'', u', u'', s, pv', pv'', ω1, ω2). Setae *dFeI* long, setiform, weakly barbed. Leg II. Tarsus with simple sickle-like claws and large empodium. Setal formula: *Tr1(v')-Fe3(d, l', v'')-Ge2(l', v')-Ti4(1)(d, l', v'', φ)-Ta7(1)(u', u'', pv', pv'', tc', tc'', pl'', ω). Seta *l''* on genu is absent. Leg III. Claws of same shape as on tarsus II. Setal formula: *Tr1(v')-Fe2(d, v')-Ge2(l', v')-Ti4(1)(d, l', v', v'', φ)-Ta7(u', u'', pv', pv'', tc', tc'', pl''). Leg IV. Tarsus thin, with two small simple claws and small empodium. Setal formula: *Tr1(v')-Fe2(d, v')-Ge1(v')-Ti4(1)(d, l', v', v'', φ)-Ta6(u', pv', pv'', tc', tc'', pl'').

Male and larva unknown.


Mites of the genus *Krczaldania* inhabit soil and forest litter. Phoretic females and phoresy unknown.

*Krczaldania primitiva* (Krczal, 1959)

Figs. 1–6.

**Description** (Female)
Gnathosoma (Figs. 1–2). Setae pp needle-like. Setae chb distinctly longer than cha. Dorsal medial apodeme not evident. Setae dGe distinctly longer than dFe.

Idiosomal dorsum (Fig. 1). Idiosomal length 238, width 133. All dorsal plates smooth. All dorsal setae weakly barbed. Length of dorsal setae: \( v_1 25, v_2 42, sc_2 130, c_1 100, c_2 154, d 135, f 143, h_1 137, h_2 58 \). Distances between dorsal setae: \( v_1-v_1 22, v_2-v_2 30, sc_2-sc_2 25, c_1-c_1 40, c_1-c_2 28, d-d 40, f-f 48, h_1-h_1 22, h_1-h_2 11 \).

Idiosomal venter (Fig. 2). All ventral setae smooth. Setae 1b bifurcate. Setae 3a, 3b, and 4a needle-like, blunt-ended. All ventral plates smooth. Ap1 and ap2 well developed and joined with pre sternal apodeme (appr), sejugal apodeme indistinct. Apodemes 3 weakly developed, diffuse, arch-like. Apodemes 4 (ap4) weakly sclerotized in central part and strong medially and laterally, long and joined with poststernal (appo) apodeme, apodemes 5 absent. Posterior margin of posterior sternal plate straight. Bases of pseudanal setae situated close to each other. Setae ps1 and ps2 subequal and distinctly shorter than ps3. Length of ventral setae: 1a 12, 1b 15, 1c 24, 2a 17, 2c 15, 3a 12, 3b 14, 3c 15, 4a 16, 4b, 24, ps1 10, ps2 10, ps3 20.


Legs (Figs. 3–6). Leg I (Fig. 3). Solenidia ω1 (10) > ω2 (5), both baculiform. Solenidia φ1 (7) > φ2 (5), φ1 clavate, φ2 baculiform. Setae l’FeI obtuse. Leg II (Fig. 5). Tarsus with simple sickle-like claws and large empodium. Solenidion ω (8) lanceolate, solenidion φ (5) baculiform. Setae l’FeII obtuse. Leg III (Fig. 6). Claws of same shape as on tarsus II. Solenidion φ (4) baculiform. Setae v’FeIII obtuse. Leg IV (Fig. 4). Tarsus relatively short, with two well developed simple claws and small
empodium. Solenidion φ (2) very small. Setae dFeIV obtuse at the tip. Setae dFeIV and dTiIV very long.


Male and larva unknown.

Material examined
Remarks

The type material of Pygmephorus primitivus was not available for study. The available specimen of this species from Crimea well agrees with original description of Krczal (1959) in all details.

Discussion

Livshits et al. (1986) placed two species in the subgenus Allositeroptes: Siteroptes (A.) primitivus (Krczal, 1959) and S. (A.) tameri Sebastianov and Abo-Korah, 1984. They also considered S. longisetosus Mahunka, 1970 as a junior synonym of S. primitivus without studying the type material. My study of the type specimen of S. tameri revealed that it belongs to the subgenus Siteroptes sensu stricto and must be excluded from Krczaldania. Synonymization of Krczaldania primitiva and K. longisetosa (Mahunka, 1970) comb. nov. is doubtful because K. primitiva was described from Europe and K. longisetosa from Brasil (Mahunka, 1970b) and well separable by morphological characters. In my opinion K. primitiva and K. longisetosa are separate species, and their differential characters are summarized in the key provided below. Kaliszewski (1988) created the genus Diroptes Kaliszewski, 1988 with type species Siteroptes vetus Rack, 1965 and placed Siteroptes longisetosus Mahunka, 1970 in this genus. On my opinion Siteroptes longisetosus must be excluded from Diroptes because type species of the genus Diroptes has two pairs of setae on coxisternal plates I (1c absent) and well developed setae e, while Krczaldania has three pairs of setae on coxisternal plates I and setae e absent.

The genus Krczaldania Sasa is most similar to the genus Siteroptes Amerling, both genera characterized by the absence of setae e. However species of the genus Siteroptes have characteristic very long and narrow body (shorter in Krczaldania), setae 4c always present and setae 4a absent (vs. 4c absent and 4a present in Krczaldania).


Key to the species of the genus Krczaldania (females)¹

1. Setae c₁ and c₂ subequal, setae h₂ less than two times shorter than f, bases of setae ps₂ and ps₃ separated by short distance, setae ps₁₂ about three times shorter than ps₃, setae dFeIV distinctly shorter than dTiIV .................................................................

.................................................. K. longisetosa (Mahunka, 1970) comb. nov., Brasil

- Setae c₁ distinctly shorter than c₂, setae h₂ more than two times shorter than f, bases of setae ps₂ and ps₃ situated close to each other, setae ps₁₂ about two times shorter than ps₃, setae dFeIV and dTiIV subequal......... K. primitiva (Krczal, 1959), Europe

¹ The characters of K. longisetosa are taken from original description of this species.
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References


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