

Kurze Originalmitteilungen

Hypogeoppia dungeri, a new species of the Oppiellinae (Acari, Oribatida, Oppiidae)

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With 3 Figures

While determining alcohol preserved material originating from the Neiße valley from 1988, an as yet unknown species of Oppiellinae (Acari, Oribatida) was found. It was possible to identify this species 23 times from different sites. These sites are: Fq (a *Picea abies* stand with mor humus form, nearly free of surface vegetation, 4 meters above the average water level of the Neiße river) and Lx (a slope, 20 m above the bottom of the Neiße valley, Arunco-Aceretum; the majority of the specimens was found here). Next to *Micropia minus* (Paoli, 1908) it was at times the only oribatid mite found in deeper soil layers (5 – 10 cm depth). This is to date the northernmost finding of the normally thermophilous genus *Hypogeoppia*.

Hypogeoppia dungeri sp. n.

Types: Holotype: 1 female (soil core, between 5 cm and 10 cm depth) and 20 paratypes in glycerol are deposited in the oribatid collection of the Staatliches Museum für Naturkunde Görlitz, Saxonia

Locus typicus: Germany, Neiße valley near Görlitz, from a soil core, taken in a spruce plantation, 21st April 1988, in glycerol preserved, leg. H.-J. Schulz.

Diagnosis

Size 210 µm; colour yellowish brown; 1 pair of approximately reverse u-shaped apophyses on the anterior border of notogaster; tri-dentated rostrum; 5 pairs of genital setae; reticulated epimerae 3 + 4; setae 3b + 4b divided + 4c ramified on lateral tip of discidium.

Description

Measurements: length 210 μm (200 μm [3♀, 1♂], 205 μm [2♀], 210 μm [17♀], width 100 μm).
Colour: yellowish brown.

Cuticle: dorsal region smooth, epimeral region: epimerae 3 + 4 reticulated with a meshlike network of large polygonal patterns (meshes 10 μm), epimer III laterally with small transparent nodules.

Prodorsum: shorter than hysterosoma (0,8 x length of notogaster); rostrum tri-dentated with tapering triangular rostral teeth, rostral incisions relatively wide; all prodorsal setae setiform, exobothridial setae comparatively very long (2,75 μm), interbothridial setae short, all the other prodorsal setae medium long; lamellar costulae (1,5 μm long) s-shaped with the lower curve covered by a chitinous membrane. The lamellar setae arising from a chitinous sclerite; interlamellar crests originate from the bothridium but do not meet the lamellar costula directly. The short interlamellar setae insert on the propodosoma beneath the lower end of the costulae; the very long glabrous exobothridial setae insert on strongly developed apophyses lateral in front of the bothridium and run parallel to the crest towards the lamellar costulae (fig. 3a). The pectinate sensilli have 7 - 8 long branches and sit in normal oppiid bothridia. The knoblike interbothridial ridges are connected transversally by a chitinous plica; that is the anterior part of the sejugal enantiophysis.

Notogaster (fig. 1a): On the anterior border one pair of reverse u-shaped apophyses, shape is variable; notogaster convex; with 10 gastronomic setae inserting in 2 somewhat parallel longitudinal rows. The first 3 pairs of setae in ta - te - ti position. The upright setae ta inserting lateral to the apophyses, and inside of lyrifissures ia on the anterior border of notogaster. Setae ta medium long, smooth and bend sideways after the first fifth of its length. Setae r3 are the longest gastronomic setae, straight, projecting sideward. Four pairs of lyrifissures are recognizable on the notogaster.

Lateral aspect: acaetabulae I-III at the same level, acetabula IV displaced a bit towards the lateral border of notogaster, dorsal sejugal furrow drop-shaped.

Epimeral region (fig. 1b): epimeral chaetotactic formula 3 - 1 - 3 - 3, Epimerae 1 and 2 smooth, epimerae 3 and 4 reticulated in a large polygonal mesh-like network (meshes 10 μm), epimera 3 with small transparent nodules. Epimeral setae 1c insert on a separate chitinous ridge, 4a insert on the border of apodema 4. Apodema 4 only weakly sclerotised. Epimeral setae 3b and 4b divided, 4c insert on the tip of discidium and is ramified.

Anogenital region (fig. 1b): one pair of adgenital setae in central position between oval genital (length: 2,2 - 2,5 μm) and anal plates (length: 3,5 - 3,75 μm). Five pairs of genital setae, g1 being somewhat longer than the other genital setae; anal plates with two pairs of anal ones, three pairs of adanal ones; setae ad3 anterior to the front border of anal plates and very minute. A distinct variability exists in this species. Especially the reverse u-shaped apophyses vary a bit in their shape, as does the excision between them.

Affinities

This species probably has to be inserted into the genus *Hypogeoppia*, because all by SUBIAS (1981) given features fit and there are a lot of similarities with the members of this genus. But the definition of *Hypogeoppia* is still unclear and a more detailed study with a following redescription is in need. Especially much similarities exist with *Hypogeoppia hypogeum* (Paoli, 1908), I refer to the redescription by MAHUNKA (1966) and two specimens, I kindly got from his collections. *Hypogeoppia hypogea*, which has a naso only, its rostrum is not really tridentate, has a size of 287 - 315 μm and, no one pair of apophyses at the anterior part of notogaster. At the specimens I got for examination, there were the lamellar costulae with the lower curve covered by a chitinous membrane too. The interlamellar setae seemed to be very long, just reaching the anterior border of notogaster. In his redescription MAHUNKA (1966) writes:

“Rostral apex pointed, prodorsum with characteristically shaped lamella, lamellar hairs arising in their apices, strongly ciliate. Interlamellar hair also ciliate. Exostigmatal hair also very long, flagelliform. Sensillus broadening, slightly falcate, external margin with 6 - 8 thin lateral branches. A characteristically shaped excision on anterior margin of notogaster. This latter with 10 pairs of hairs, all of equal length, thin.”

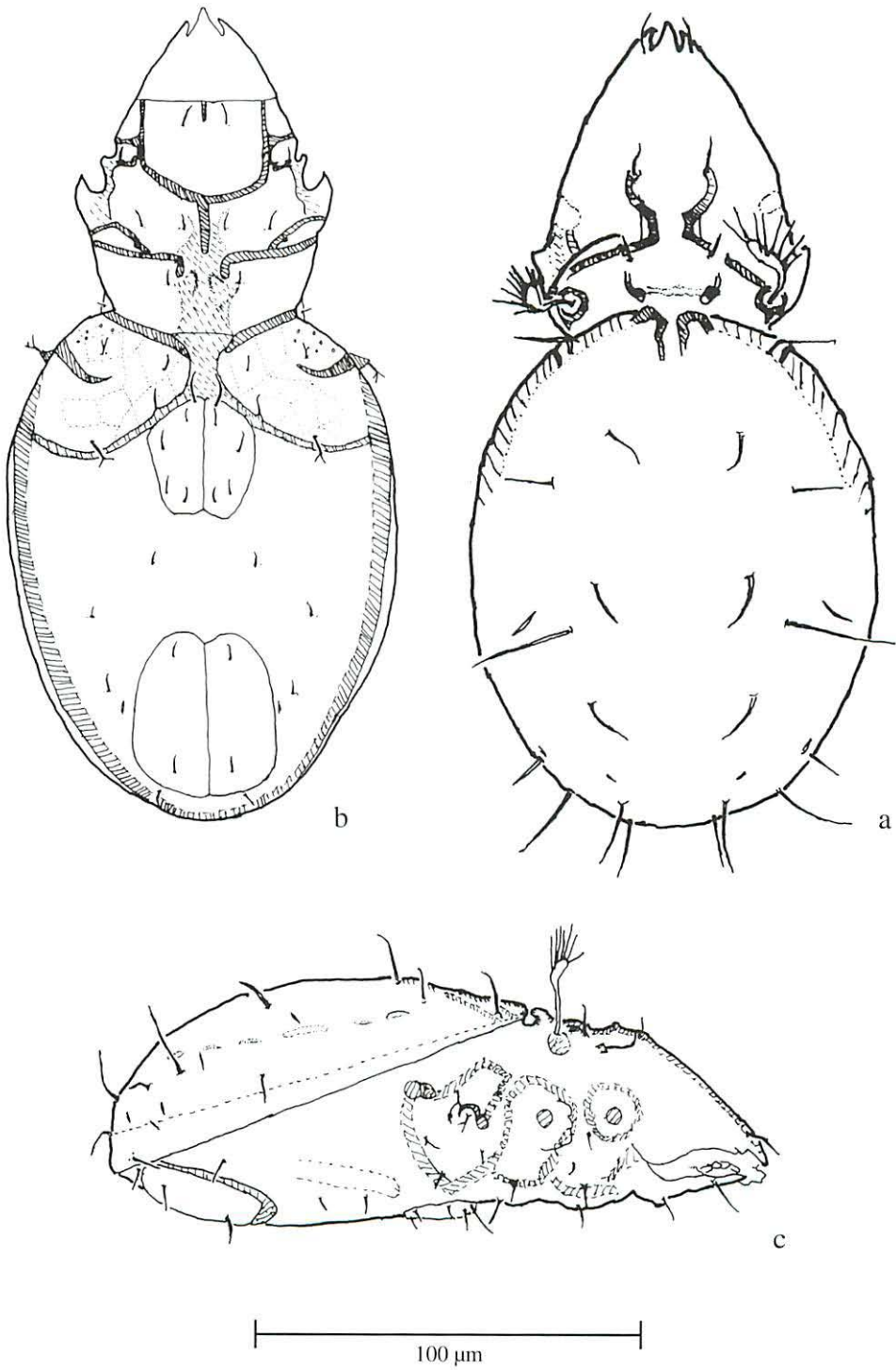


fig. 1 a – dorsal view, b – ventral view, c – lateral view of the species

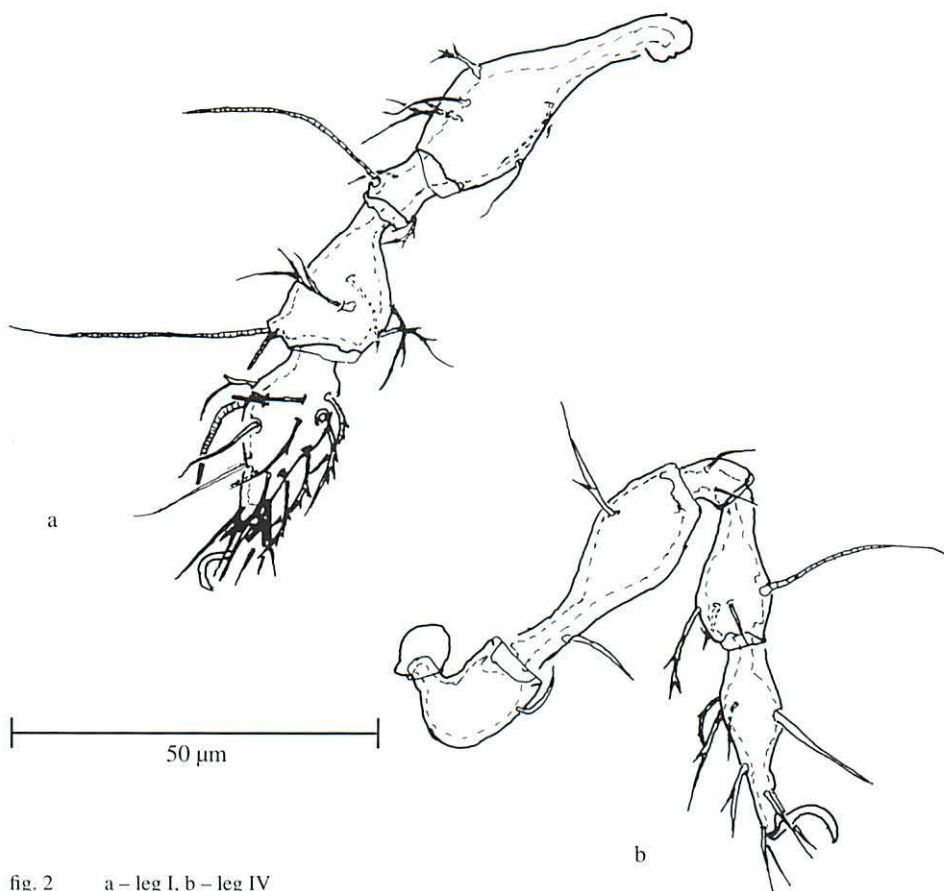


fig. 2 a – leg I, b – leg IV

At *Hypogeoppia terricola* Subias, 1981, *H. festoneata* Moraza & Moreno, 1988 and *Hypogeoppia terricola salamanticensis* Morell-Zandalinas, 1987 there are **two pairs** of tubercels at the anterior border of notogaster. *Hypogeoppia terricola* and *Hypogeoppia festoneata* seem to me to be a single species, since their epimeral setae 3b and 4b are divided as well, the epimerae 3 and 4 reticulated with a mesh-like network of large polyform shapes, so the only difference is in size (0,21 mm versus 0,24 mm). This is thus a new synonym (syn. n.). *Hypogeoppia exempta* (Mihelčič, 1959) also possesses one pair of tubercels at the anterior border of the notogaster, but is larger (300 μm) and lamellar costulae are divided with the lamellar setae standing directly on the proterosoma and the rostral setae insert on a crest originating from the lamellae. The sensilli are round with 6 rami, the innermost being the shortest. At the original description, the exobothridial setae also seem to be long.

From the genus *Berniniella*, the species *Berniniella sigma* (Sellnick, 1951) is the most similar one, explaining its having been previously placed in the genus *Hypogeoppia*. The similarities with *B. sigma* are the following: the tridentate rostrum with very similar points of insertion of rostral setae, some nodules above acetabulum 3 with a mesh net of oval to polyform meshes on the posterior epimeral region, and the size (210 μm). On the prodorsum there further are to be mentioned the

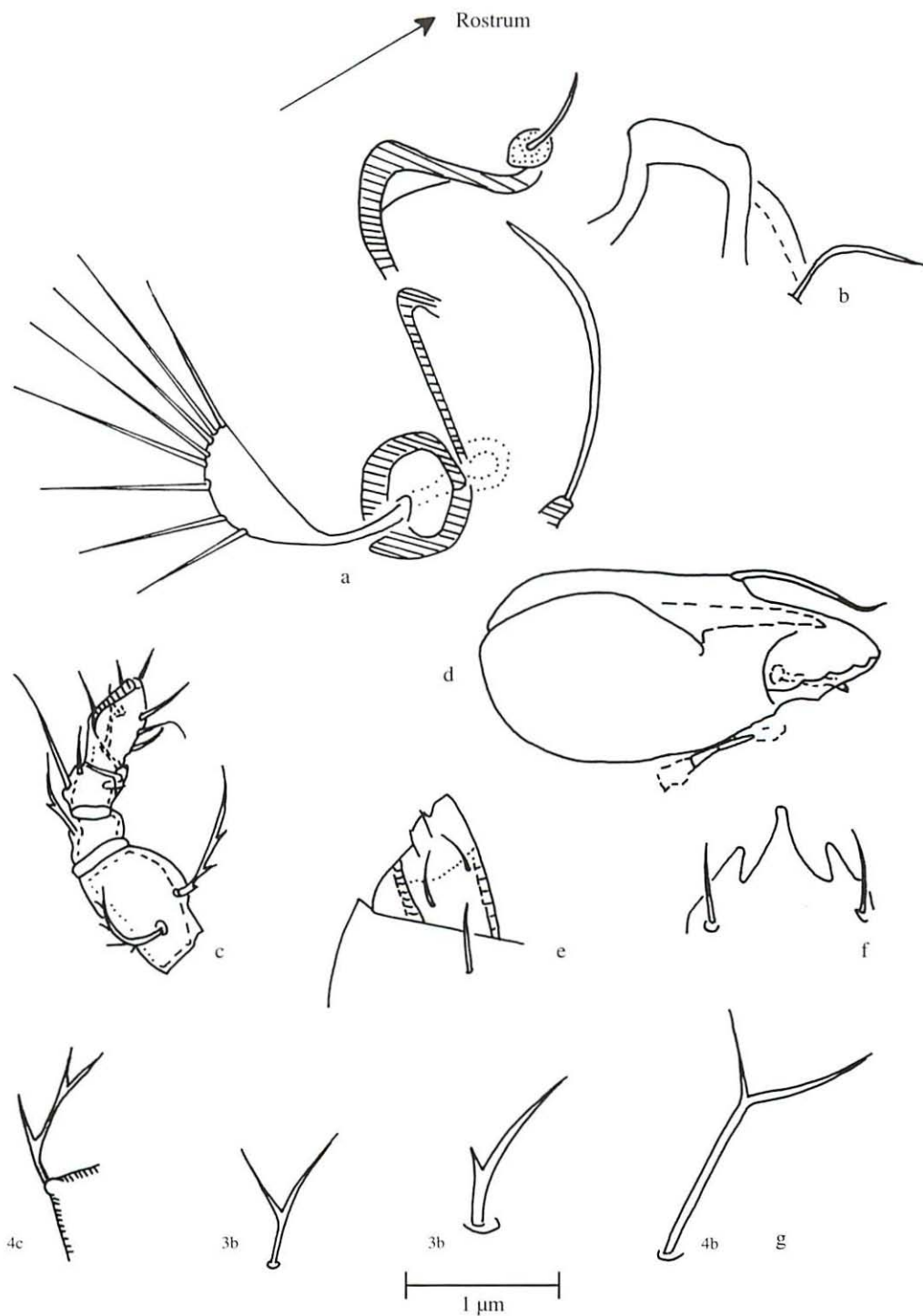


fig. 3 a – lamellar complex, b – apophysis on notogaster with seta ta, c – pedipalpus, d – chelicera, e – rutellum, f – rostrum, g: epimeral setae 3b, 4b, and 4c

lower bows of the lamellar costulae covered by a chitinous membrane, and not at least, the pedipalpus with its 7 tarsal seate. In *H. dungeri*, however, the pedipalpal tarsus has a distinct solenidium.

Very similar to *Berniniella sigma* is also *Oppiella signata* Schwalbe, 1989. It does not belong to *Oppiella* (*Oppiella*) sensu Subias & P. Balogh, 1989, is really intermediate between *Berniniella sigma* and *Dissorhina ornata* (hence the name). The sensilli, which are very similar to *H. dungeri* resemble to *Berniniella sigma*. The lamellar setae insert on separate chitinous sclerits and are poorly developed. This species has 5 genital setae, with g1 being the longest, like it is in species of *Dissorhina* and *Hypogeoppia*. Rostral setae at *Oppiella signata* insert near to each other on a small naso, like in the genus *Dissorhina* and the anterior margin of notogaster is with a median protruding chitinous plate, as well as *Dissorhina tricarinatoides* (Dubinina et al. 1966). *Dissorhina tricarinatoides* (Dr. Miko kindly sent me some drawings) has pectinate sensilli and is very similar to *Oppiella signata*, but it does not have costulae, its rostral setae insert very near to each other on the anterior half of a somewhat rhombic naso. Because of the poorly developed setae ta (c2), the rostral setae near to each other on a small naso and the same shape of sensillus like *Dissorhina tricarinatoides* (see: SUBIAS & P. BALOGH, 1989: 377) *Oppiella signata* has to be inserted to the genus *Dissorhina*: *Dissorhina signata* n. comb.

Derivatio nominis

I dedicate the new species to my esteemed teacher in soil biology Prof. Dr. Wolfram Dunger, who celebrated his 65th birthday in October 1994.

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