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Author: Kontschán, Jenő

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## ***Urodepressa guatemalaensis* gen. nov, sp. nov., a new remarkable genus and species from Guatemala (Acari: Uropodina: Urodinychidae)**

Jenő Kotschán

Plant Protection Institute, Centre for Agricultural Research, Hungarian Academy of Sciences, H-1525 Budapest, P.O. Box 102, Hungary. E-mail: kotschan.jeno@agrar.mta.hu

**Abstract:** A new, monotypic genus (*Urodepressa* gen. nov.) is described from females and males of *Urodepressa guatemalaensis* sp. nov. collected in Guatemala. The new genus belongs to the family Urodinychidae Berlese, 1917 due to the shape of its gnathosomal appendages, but differs from the other previously described genera in this family by the presence of a large dorsal depression, by the shape of its dorsal and ventral setae and by the unusual hook-like anterior process on the female genital shield.

**Keywords:** Taxonomy - new taxa - Central-America.

### **INTRODUCTION**

The Uropodina mites constitute a characteristic and important component of the soil mesofauna all around the world. The highest diversity of this group can be found in the tropical regions, especially in the Neotropics where numerous endemic genera (like *Baloghjkaszabia* Hirschmann, 1973; *Kaszabjbaloghia* Hirschmann, 1973; *Tetrsejaspis* Sellnick, 1941; *Clausiadinychus* Sellnick, 1930; etc.) were discovered (Wiśniewski, 1993).

Regarding the number of species of Uropodina mites known from the different Neotropical countries (Wiśniewski, 1993), Guatemala is one of the poorly studied countries of the region with less than 20 species reported up to now (Wiśniewski, 1993).

In the present paper I would like to add more information about the Uropodina of the Neotropical region and the description of a new genus collected in Guatemala.

### **MATERIAL AND METHODS**

The specimens examined were cleared in lactic acid and the drawings were made with the aid of a drawing tube mounted on a Leica 1000 compound microscope. All specimens are stored in ethanol and deposited in the Natural History Museum of Geneva. Abbreviations: h = hypostomal setae, St = sternal setae, p = pores, lf = lyriiform fissures. All measurements and the scales in the figures are given in micrometres (µm).

### **TAXONOMY**

#### ***Urodepressa* gen. nov.**

**Diagnosis:** Idiosoma subpentagonal, with anterior vertex and humeral projections. Posterior margin with deep and concave incision. Marginal and dorsal shields completely separated. Dorsal shield with a large rectangular depression, anterior part of depression shallow, posterior part deep. All dorsal setae wide, phylliform or lanceolate and marginally serrate, setae j1 longer and more robust than other ones. Eight pairs of very long and marginally serrate setae situated on dorsal and marginal shields and arranged in three groups. Prestigmatic part of peritreme narrow and V-shaped. Genital shield of female with a hook-like anterior process. Sternal setae small, smooth and needle-like. Hypostomal setae h2 robust, h1 long, smooth and needle-like, h2, h3 and h4 with lateral spines. Chelicerae with internal sclerotized node. Tarsi of leg I without claws.

**Type species:** *Urodepressa guatemalaensis* sp. nov.

**Etymology:** The name of the new genus refers to the large depression on the dorsal idiosoma. The gender of the new genus name is feminine.

**Notes:** On the basis of the apically pilose internal malae, the smooth and needle-like setae h1, the robust setae h2, the presence of an internal sclerotized node on the chelicerae and the absence of tarsal claws on leg I, I place the new genus into the family Urodinychidae

Berlese, 1917. The concept of the family Urodinychidae follows by Mašán (2001), Beaulieu *et al.* (2011) and Kontschán (2013). According to these papers, the Urodinychidae differ from the Dinychidae Berlese, 1916 by the presence of leg grooves which are not developed in the Dinychidae (Kontschán, 2013). The new genus differs from the other previously described genera in this family by the presence of a large dorsal depression, by the shape of dorsal and ventral setae and by the unusual hook-like anterior process on the female genital shield.

***Urodepressa guatemalaensis* sp. nov.**

Figs 1-16

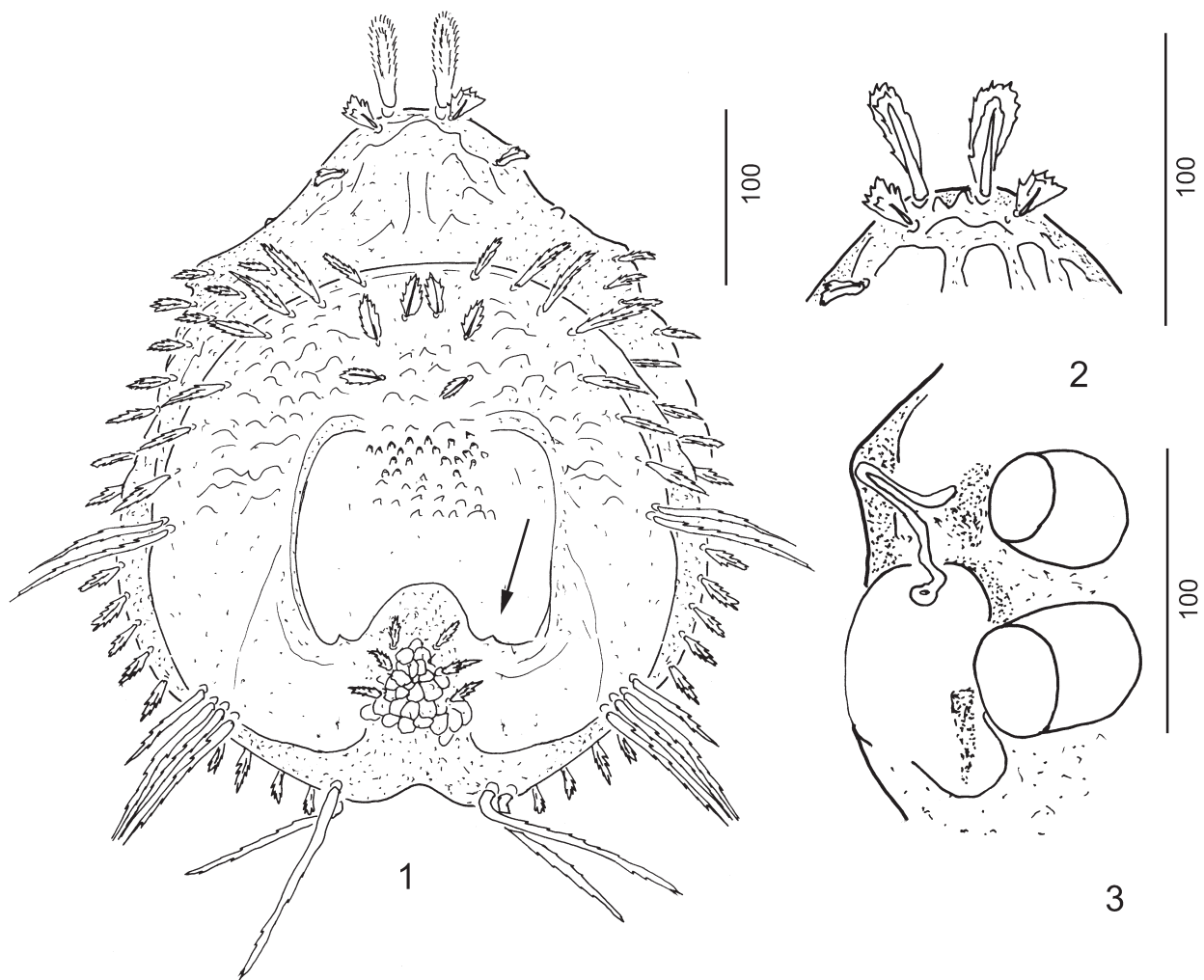
**Holotype:** MHNG; female; Guatemala, Tikal (app. Winkler); 28-29 December 1975; leg. A. de Chambrier.

**Paratypes:** MHNG; two females and seven males with same data as for holotype.

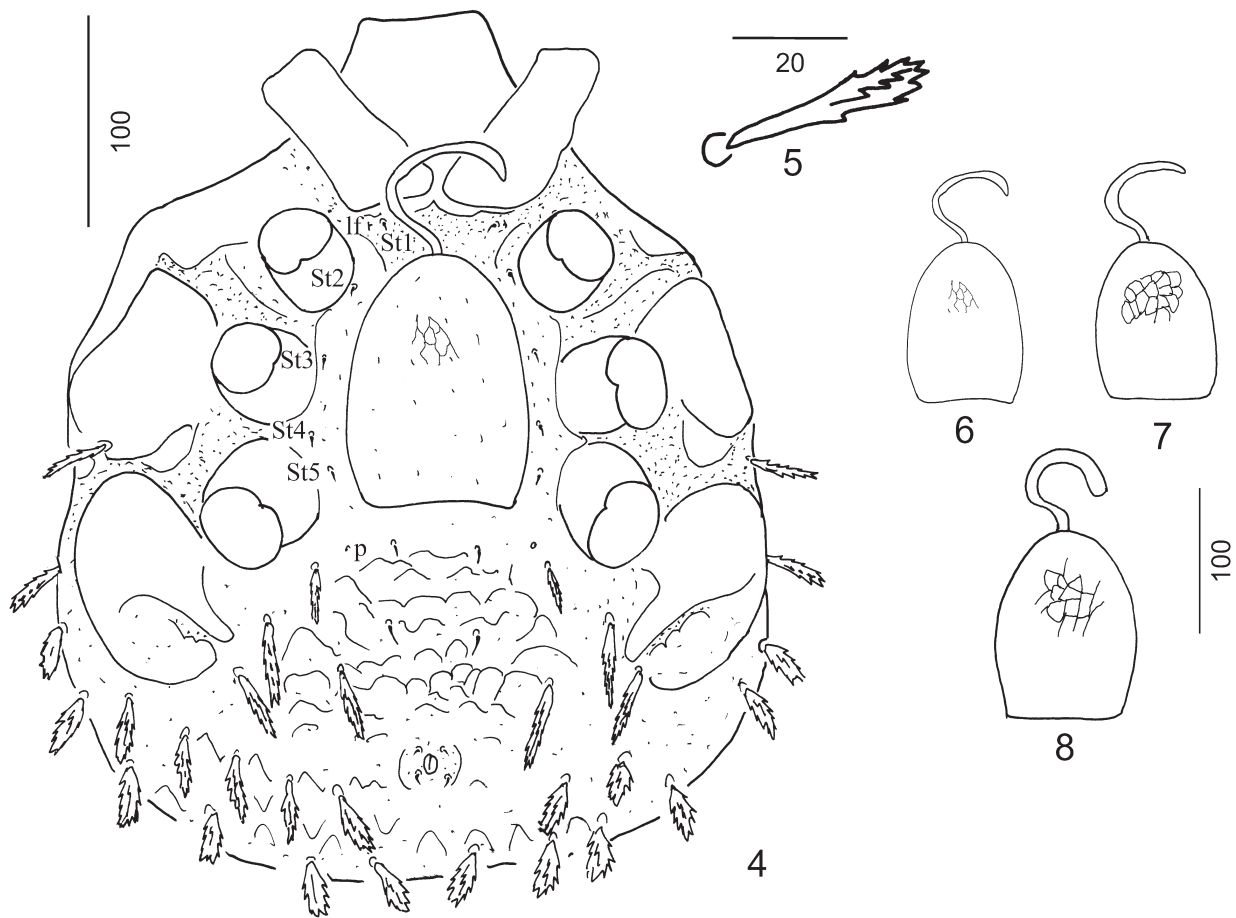
**Diagnosis:** See diagnosis of genus.

**Description of females:** Length of idiosoma 370-410, width 340-350 (n=3). Idiosoma subpentagonal, with anterior vertex and humeral projections. Posterior margin with deep and concave incision. Color yellowish brown.

**Dorsal side of idiosoma** (Fig. 1): Seven pairs of short (about 22-42), phylliform and marginally serrate setae placed on anterior margin dorsal shield. Eight pairs of longer (about 60-120), narrow and marginally serrate setae in groups (2-4-2) situated on lateral, caudal-lateral margins of dorsal shield and caudal part of marginal shield. A large, rectangular depression (about 110-120×130-145) situated in central area of dorsal shield. Anterior part of dorsal depression shallow, with small oval pits on its surface; posterior part deeper, with posterior margin reversely U-shaped. Medial posteriormost surface with flat elevation bearing two small triangular structures. Dorsal surface of elevated region bearing three pairs of short (about 18-25), phylliform marginal



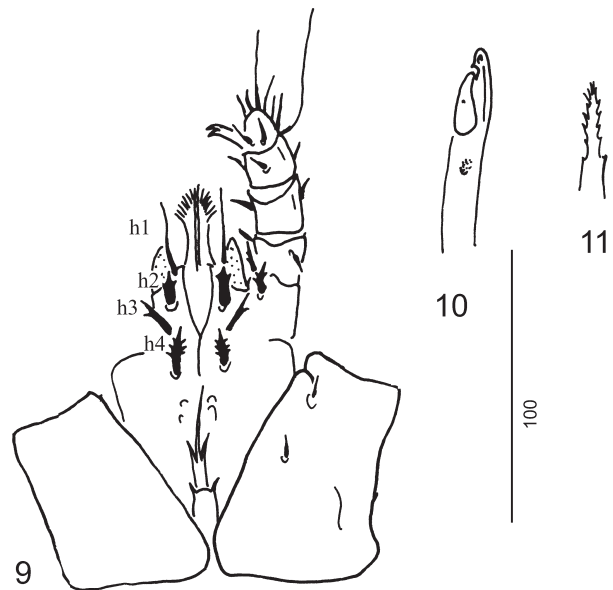
Figs 1-3. *Urodepressa guatemalaensis* gen. nov., sp. nov., female holotype. (1) Body in dorsal view (arrow indicates a triangular appendage). (2) Apical part of dorsal idiosoma. (3) Peritreme.



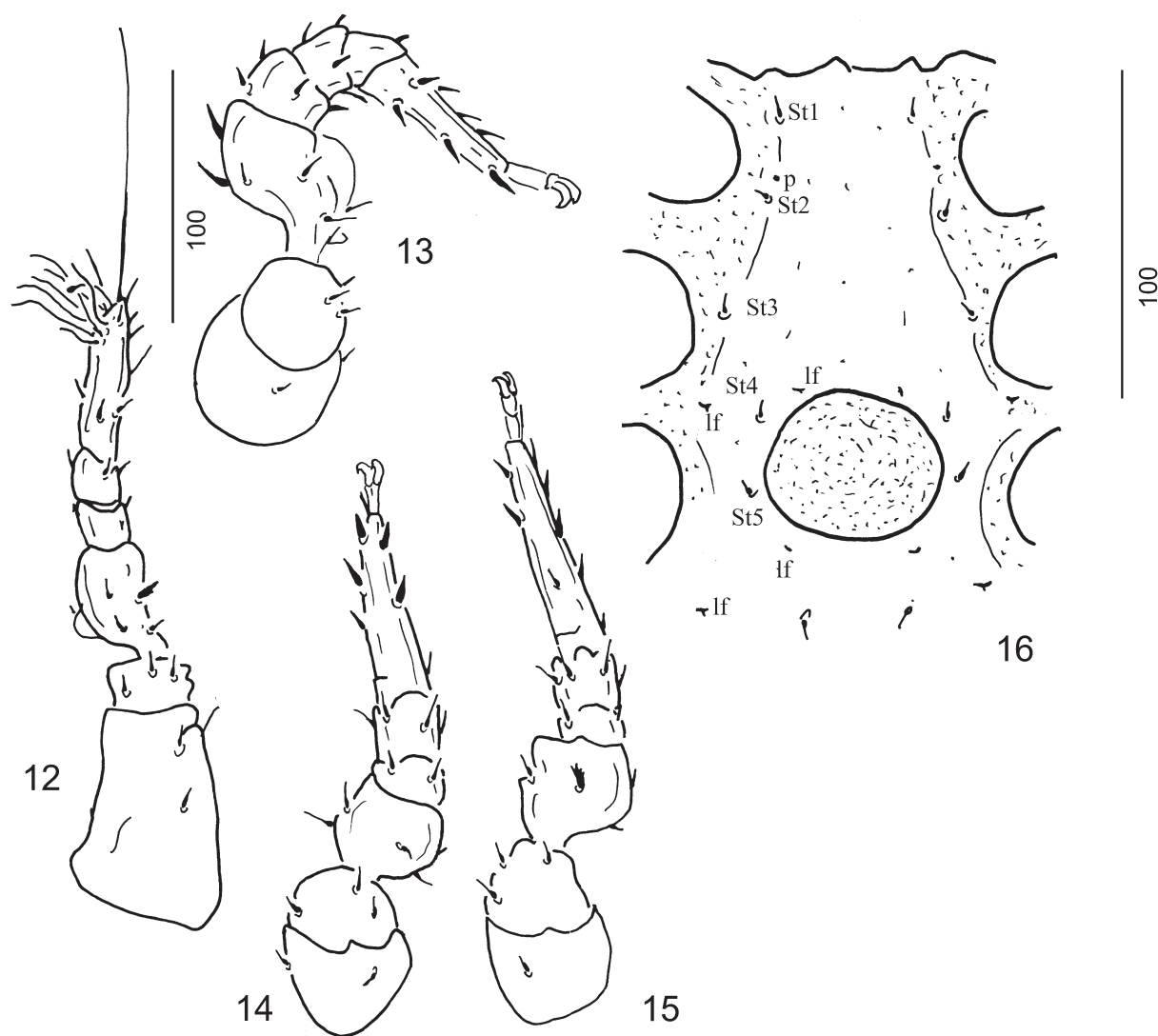
Figs 4-8. *Urodepressa guatemalaensis* gen. nov., sp. nov., female holotype (4-6) and female paratypes (7-8). (4) Body in ventral view. (5) Ventral seta. (6-8) Genital shields.

setae and covered by web-like sculptural pattern. Surface of anterior area of dorsal shield covered by reticulate sculptural pattern. Marginal shield with numerous (20-21) short (about 30-40), phylliform marginal setae, its surface covered by reticulate sculptural pattern, setae j1 longer and wider (about 55-60) than other setae on marginal shield (Fig. 2).

*Ventral side of idiosoma* (Fig. 4): Base of tritosternum narrow, with two anterolateral spines; tritosternal laciniae three-tined, tines smooth and pointed, central tine moderately elongate (Fig. 9). Sternal shield without sculptural pattern. All sternal setae short (about 6-8), smooth and needle-like. Sternal setae St1 situated close to anterior margin of sternal shield, St2 at level of central area of coxae II, St3 at level of anterior margin of coxae III, St4 at level of anterior margin of coxae IV and St5 at level of central area of coxae IV. One pair of lyriform fissures situated close to St1, one pair of pores placed close to first pair of needle-like ventral setae. Two pairs of ventral setae posterior to genital shield minute (about 7-10), smooth and needle-like, other ventral setae longer (about 25-35), slightly broadened medially, phylliform,



Figs 9-11. *Urodepressa guatemalaensis* gen. nov., sp. nov., female holotype. (9) Ventral view of coxae I, gnathosoma, tritosternum and palp. (10) Lateral view of chelicera. (11) Epistome.



Figs 12-16. *Urodepressa guatemalaensis* gen. nov., sp. nov., female holotype (12-15) and male paratype (16). (12) Leg I. (13) Leg II. (14) Leg III. (15) Leg IV (all legs in ventral view). (16) Intercoxal area.

with marginal serration (Fig. 5). Surface of ventral shield covered by reticulate sculptural pattern. Anal opening small (about  $9-10 \times 6-7$ ), two pairs of adanal setae minute (about 4-6), smooth and needle-like. Postanal seta absent. Genital shield large (about  $110-120 \times 80-85$ ), scutiform, with reticulate surface and with a large, hook-like anterior process (Figs 6-8). Stigmata situated between coxae II and III. Prestigmatic part of peritremes V-shaped, poststigmatic part absent (Fig. 3). Pedofossae relatively deep, their surface smooth.

*Gnathosoma* (Fig. 9): Corniculi horn-like, internal malae twice as long as corniculi and apically pilose. Hypostomal setae h1 longer (about 26-28 in length), smooth and needle-like; h2 shorter (about 14-16), robust and laterally with one pair of subapical spines; h3 narrower (about 16-18 in length), with unpaired subapical spine; h4 robust (about 17-20 in length), with distal lateral margins well

spinose. Palp trochanter bearing two ventral seta with serrate margins. Other setae on palp smooth and needle-like. Epistome lanceolate, densely serrate on lateral margins (Fig. 11). Chelicerae with one tooth on fixed digit, fixed digit longer than movable digit, one pit-like sensory organ situated in central part of movable digit and one on apical part of fixed digit. Internal sclerotized node present (Fig. 10).

*Legs* (Figs 12-15): Leg I 240-250 long, leg II 270-280, leg III 240-255, leg IV 230-240. Legs I without claws. Most setae on legs needle-like, a few spine-like and serrate setae present on all legs.

**Description of males:** Length of idiosoma 410-430, width 340-370 ( $n=6$ ). Shape same as in females.

*Dorsal side of idiosoma:* Ornamentation and chaetotaxy of dorsal shield as in female.



*Ventral side of idiosoma*: Ornamentation and chaetotaxy of ventral shield as in female. Sternal shield without sculptural pattern (Fig. 16). Sternal setae smooth and needle-like (about 5-7 long), St1 situated close to anterior margins of sternal shield, St2 at level of posterior margin of coxae II, St3 at level of central area of coxae III, St4 and St5 situated lateral to genital shield. One pair of pores situated between St2 and St3, two pairs of lyriform fissures close to St4 and two other pairs close to first needle-like ventral setae. Genital shield rounded, slightly wider than long (about 45-48×50-55 in dimension) and situated between coxae IV. Other characters as in female. Larva and nymphs unknown.

**Etymology**: The name of the new species refers to the country where the type specimens were collected.

## DISCUSSION

Large cavities on the body are not an unknown feature within the suborder Uropodina. Large cavities can be seen in the caudal part of the dorsal idiosoma of the genera *Hutufeideria* (Kontschán, 2011) and *Jedediella* (see Kontschán, 2016 and Kontschán & Starý, 2012), and in some cases this is visible on the ventral side of the body in some genera (like: *Depressorotunda* Kontschán, 2010 and *Didepressorotunda* Kontschán, 2010) of the family Rotundabaloghiidae Kontschán, 2010. Currently we do not have any information about the function of these large depressions on the body of these mites. Soil and other particles have never been observed in these cavity-like depressions, therefore they may not play any role in camouflage. They may play a role in chemical communication or during mating.

The anterior process on the female genital shield is a rarely observed character in Uropodina mites. Usually it is a small, spine-like projection in some species of *Uroobovella* Berlese, 1903 or a long and spear-like process in members of the genus *Nenteria* Oudemans, 1915 (Mašán, 2001). Extreme forms of this character are very rarely found: two anterior projections of the genital shield were described in the genera *Capricornella* Błoszyk *et al.*, 2017 and *Crinitodiscus* Sellnick, 1931 (Błoszyk *et al.*, 2017; Kontschán, 2015), but till today a hook-shaped anterior process on the female genital shield was never observed.

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