

A review of the Neotropical family Tetrasejaspidae (Acari: Uropodina) with descriptions of three new species

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Abstract. The species of the family Tetrasejaspidae Hirschmann, 1979 are listed. Three species new to sciences are described and illustrated. Diagnoses and occurrences of all the hitherto known species are given, and a key to all species is presented. With 30 figures.

The genus *Tetrasejaspis* was described by Sellnick (1941) on the basis of a new Venezuelan species; *Tetrasejaspis dinychooides*. Later Hirschmann (1973 a) described eight new *Tetrasejaspis* species collected by the Hungarian Soil Zoological Expeditions to South-America. In another work, Hirschmann (1973b) gave a short key to all the then known *Tetrasejaspis* species.

Subsequently, Hirschmann (1979) redefined the families and genera of his Uropodina system (Gangsystematik) and placed the *Tetrasejaspis* species in the newly erected family Tetrasejaspidae. Unfortunately a diagnosis of the family had not been presented in this work, and later neither Hirschmann nor his co-workers mentioned this family again (Hirschmann, 1993; Wiśniewski, 1993 a, b; Wiśniewski & Hirschmann, 1993).

More than ten years later, Huțu (1991) described two new species from Venezuela, and recently Kontschán (2007) mentioned several Venezuelan Uropodid mites, including a new and a previously known *Tetrasejaspis* species. In the same year Vazquez and Klompen (2007) reported an unidentified *Tetrasejaspis* species from Mexico extending the known distribution of this South American family to Central America as well.

Surveying the “Berlese” samples of the Hungarian Natural History Museum collected in different parts of South and Central America, I have found four *Tetrasejaspis* species, of which three proved to be new to science and are herewith described.

MATERIAL AND METHODS

The specimens were studied with traditional methods. Lactic acid was used to clear the specimens. Drawings were made with camera lucida. The investigated type and other specimens are stored on slides and deposited in the Soil Zoology Collections of the Hungarian Natural History Museum (HNHM). All measurements are given in micrometers (μm).

TETRASEJASPIDAE Hirschmann, 1979

Diagnosis. Idiosoma pear-like. Dorsal and marginal shields fused on their anterior margin. Scalloping can be found between the marginal and dorsal shields. All dorsal setae long and smooth. Postdorsal shield present and subdivided into three parts by females and not divided by males. Genital shields of females are large, oval, quadrangular or pentagonal. Their anterior margin between coxae 4, other parts placed on ventral shield. Genital shields of males are rounded and placed between the posterior margins of coxae 4. All ventral setae very long, smooth and needle-like.

Gnathosoma: Corniculi horn-like, laciniae long, apical part with two short branches. Hypostomal setae are the follows: h1 long, smooth or with some spines, h2 two times shorter than h1, their margins with spines, h3 similar to h2. Setae h4 shorter than h3 and distally serrated. Epistome subdivided into two branches at its apical part, margins with several short spines. Basal part of epistome with some strong spines. Base of tri-

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to sternum wide, covered by coxae 1. Laciniae of tritosternum subdivided into two longer and two shorter branches. Chelicerae with nodes, processus hyalinus on digitus fixus is finger-form. Legs with wide, smooth or distally serrated setae.

Type genus: Tetrsejaspis Sellnick, 1941.

Distribution. All tetrsejaspid species occur in tropical Central and South America; there are records from Venezuela, Bolivia, and Brazil. Here are presented the first records for Costa Rica and Ecuador.

Systematic position. I have to agree with Hirschmann's (1979) conception. The *Tetrsejaspis* species do not belong to the family Uropodidae, because the base of tritosternum wide and covered by coxae 1 (see the superfamily Polyaspidioidea). These characters distinguish Tetrsejaspidae from the superfamily Uropodoidea (which includes the family Uropodidae) where the base of tritosternum narrow and not covered by coxae 1 (Krantz, 1970).

***Tetrsejaspis* Sellnick, 1941**

Tetrsejaspis Sellnick: 1941 p. 145.

Tetrsejaspis: Hirschmann 1973 pp. 88-89.

Diagnosis. See the family.

Distribution. See the family.

Type species: Tetrsejaspis dinychooides Sellnick, 1941.

Remarks. Up till now 12 species are known including the three which are described in the present work.

***Tetrsejaspis dinychooides* Sellnick, 1941**

Tetrsejaspis dinychooides Sellnick: 1941: 145-156.

Tetrsejaspis dinychooides: Kontschán 2007 p. 337. figs p. 338.

Diagnosis (after Kontschán, 2007). Dorsal shield with alveolar ornamentation between setae j. Sternal shield without ornamentation. St2 very long, St4-5 short, St3 very short. St3 and St4 situated near to the anterior margin of genital

shield. Ventral setae as long as St2. Sternal and ventral shields without ornamentation. Genital shield of female large, rounded, without ornamentation.

Distribution. Venezuela.

***Tetrsejaspis muranyii* Kontschán, 2007**

Tetrsejaspis muranyii Kontschán: 2007 pp. 338-339. figs p. 338.

Diagnosis (after Kontschán 2007). The lateral part of dorsal shield smooth, central part with alveolar ornamentation. Central part of postdorsal shield without setae, but a pair of setiform setae can be seen on its posterior margin. Both lateral parts of postdorsal shield with one setiform seta. Sternal shield without ornamentation. The first sternal setae are shorter than others, all sternal setae smooth and setiform. Ventral setae are very long, smooth and setiform. Alveolar ornamentation can be seen on apical part of anal region. Genital shield large, rounded (length: width = 1:1), without ornamentation.

Distribution. Venezuela.

***Tetrsejaspis carlosbordoni* Huțu, 1991**

Tetrsejaspis carlosbordoni Huțu: 1991 pp. 28-31, figs. pp. 29-30.

Diagnosis (after Huțu 1991). Ornamentation of the lateral part of dorsal shield is lacking, central part with alveolar pattern. Central part of postdorsal shield without setae, but a pair of setiform setae can be found near its posterior margin. Both lateral parts of postdorsal shield with one setiform seta. Sternal shield without ornamentation. The first sternal setae as short as St2 and St3, and St5 shorter than St1, St4 long, all sternal setae smooth and setiform. Ventral setae are very long, smooth and setiform. Alveolar ornamentation can be seen on apical part of anal region. Genital shield large, rounded (length: width = 1:3), without ornamentation.

Distribution. Venezuela.

***Tetrsejaspis decui* Huțu, 1991**

Tetrsejaspis decui Huțu: 1991 pp.31-33. figs p. 32.

Diagnosis (after Huțu 1991). Lateral part of dorsal shield without pattern, central part with small alveolar ornamentation. Central part of postdorsal shield without setae, two lateral parts of postdorsal shield with a pair of setiform seta. Sternal shield without ornamentation. All sternal setae short, smooth and needle-like. Ventral setae very long, smooth and setiform. Genital shield large, quadrangular, with web-like ornamentation.

Distribution. Venezuela.

***Tetrsejaspis baloghi* Hirschmann, 1973**

(Figs 1–2)

Tetrsejaspis baloghi Hirschmann: 1973 pp. 93, fig. 31.

Material examined. Holotype: male, on slide BRB 35f. Brazil, leg. J. Balogh, “Manaus, Amazonas State, INPA Schutzwald, 21.9.1967. dunes, fechtes Fallaub des Urwaldes.“

Diagnosis. Dorsal and marginal shields with alveolar patten. Postdorsal shield subdivided to two parts, which with two pairs of needle-like setae. Surface of postdorsal shield lacking. Sternal and ventral shields ornamented by alveolar pattern. All sternal setae short, smooth and needle-like. Ventral setae are very long, smooth and setiform. Genital shield oval and placed between coxae 4.

Distribution. Brazil.

Remark. This species is known only by males.

***Tetrsejaspis baloghisimilis* Hirschmann, 1973**

(Fig. 3)

Tetrsejaspis baloghisimilis Hirschmann: 1973 p. 91, fig. 30.

Material examined. Holotype: female, on slide BRB35d. Brazil, leg. J. Balogh, “Manaus, Amazonas Staat, INPA Schutzwald, 21.9.1967. Dünnes, fechtes Fallaub des Urwaldes.“

Diagnosis: Dorsal shield with alveolar pattern on its central part and web-like pattern on its lateral parts. Postdorsal shield subdivided into three parts, central part withing a pair of needle-like setae, and one-one smooth and needle-like setae placed on the lateral parts. Sternal shield without ornamentation, ventral shield with reticulate pattern. All sternal setae short, smooth and needle-like. Ventral setae very long, smooth and setiform. Genital shield quadrangular and with alveolar ornamentation.

Distribution. Brazil and Bolivia.

***Tetrsejaspis mahunkai* Hirschmann, 1973**

(Figs 4–5)

Tetrsejaspis mahunkai Hirschmann: 1973 pp. 94, fig. 32.

Material examined. Holotype: female. There is no further information on the slide. The collection date and locality of the holotype are missing from the description as well.

Diagnosis. Dorsal shield with reticulate pattern. Postdorsal shield subdivided into three parts, setae lacking on central part, and two-two smooth and needle-like setae placed on the lateral parts. Sternal shield without ornamentation, ventral shield with reticulate pattern. Most of the sternal setae short, smooth and needle-like, apart from St2, which three times longer than other sternal setae. Ventral setae very long, smooth and setiform. Genital shield oval and with alveolar ornamentation.

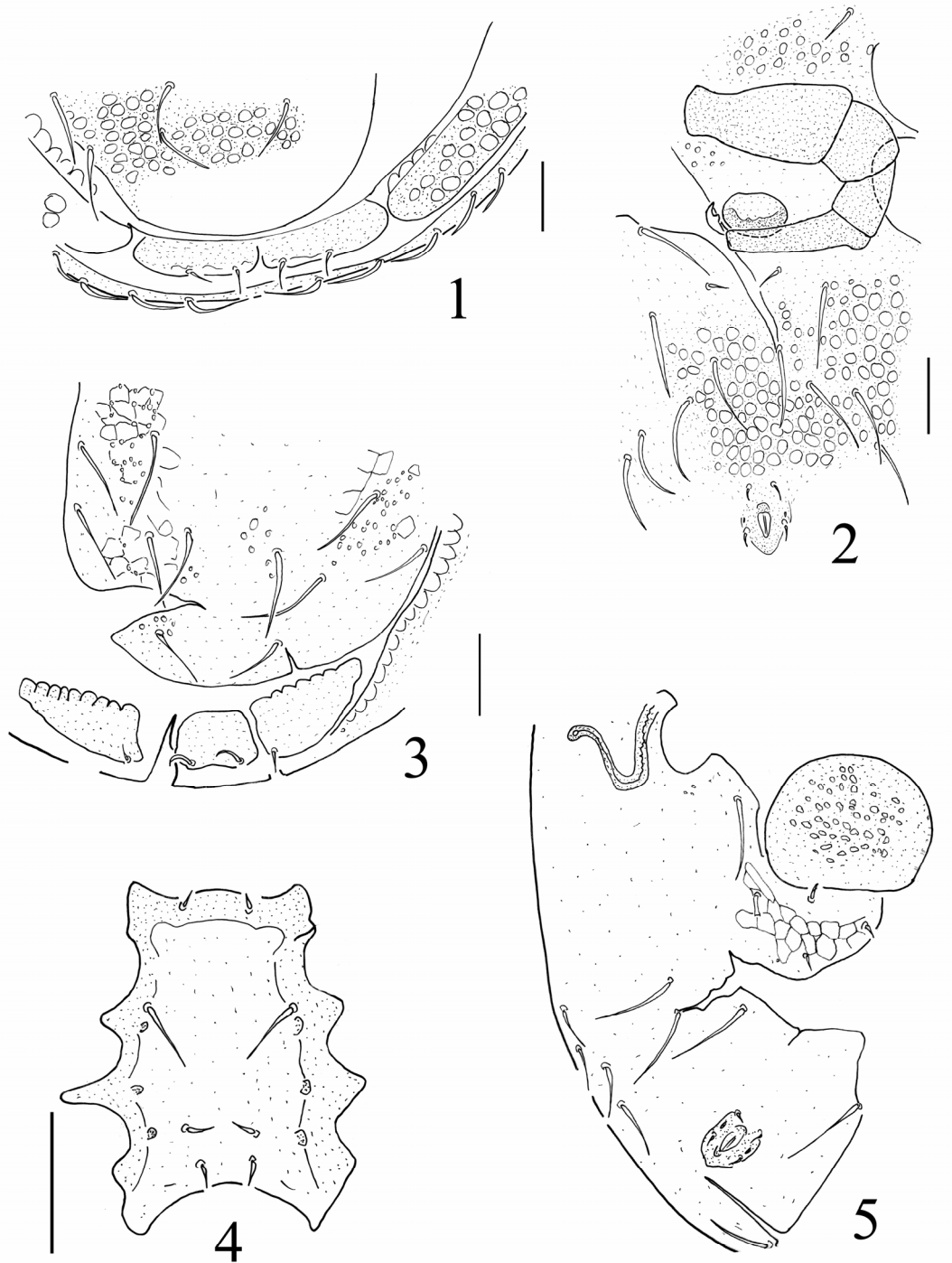
Distribution. Bolivia.

***Tetrsejaspis kaszabi* Hirschmann, 1973**

(Figs 6–7)

Tetrsejaspis kaszabi Hirschmann: 1973 pp. 98, fig. 35.

Material examined. Holotype: female. There is no further information on the slide. The collection date and locality of the holotype are missing from the description as well.



Figures 1–5. *Tetrsejaspis* species. 1–2 = *Tetrsejaspis baloghi* Hirschmann, 1973, 1 = postdorsal region, 2 = ventroanal region; 3 = postdorsal region of *Tetrsejaspis baloghisimilis* Hirschmann, 1973; 4–5 = *Tetrsejaspis mahunkai* Hirschmann, 1973, 4 = sternal shield, 5 = ventral region (scale: 100 μ m)

Diagnosis. Dorsal shield without ornamentation, only small alveolar patterns can be seen between setae j. Postdorsal shield subdivided into three parts, central part without setae, although a pair setae can be found near its posterior margin, and one-one smooth and needle-like setae placed on the lateral parts. Sternal and ventral shields without ornamentation. St3 and St4 short smooth and needle-like, St1 three times longer than St3, St2 four times longer than St3. Ventral setae very long, smooth and setiform. Genital shield oval and without ornamentation.

Distribution. Bolivia.

***Tetrsejaspis sellnicki* Hirschmann, 1973**

(Fig. 8)

Tetrsejaspis sellnicki Hirschmann: 1973 pp. 97, fig. 34.

Material examined. Holotype: female, on slide BRB17a. Brazil, "Fazenda Agua Azul, Maranhao Staat, Serra do Gurupi, NW von Imperatriz; 9.9.1967. Feuchtes Fallaub vom Ufer des Brejo Creeks, Boden angehängt mit Ästen, vom Wasser getragen; leg. J. Balogh".

Diagnosis. Dorsal shield without ornamentation. Postdorsal shield subdivided into three parts and without setae. Sternal and ventral shields without ornamentation. St3 1.5 times shorter than St1 and St2, St4 two times longer than St2 and St1. Ventral setae very long, smooth and setiform. Genital shield pentagonal or triangular and without ornamentation.

Distribution. Brazil and Bolivia.

***Tetrsejaspis eustructura* Hirschmann, 1973**

(Fig. 9)

Tetrsejaspis eustructura Hirschmann: 1973 pp. 99, fig. 37.

Material examined. Holotype: female, on slide BRB28b. Brazil, "Belém, Pará Staat, Icourassi; 18.9.1967. Primärer Urwald, in der Nähe des Flusses, aber oberhalb des Hochwasserstandes; modernes Fallaub; leg. J. Balogh".

Diagnosis. Dorsal shield with reticulate ornamentation. Postdorsal shield subdivided into three parts. Central part with a pair of needle-like setae, and one-one smooth and needle-like setae placed on the lateral parts. Sternal and ventral shields without ornamentation. Sternal setae short, St1 with spines, other sternal setae smooth. Ventral setae very long, smooth and setiform. Genital shield quadrangular and with alveolar ornamentation.

Distribution. Brazil.

***Tetrsejaspis zicsii* Hirschmann, 1973**

Tetrsejaspis zicsii Hirschmann: 1973 pp. 96, fig. 33.

Remarks. The adult specimens of this species are unknown. Only the larva and nymphs are described, perhaps this stage belongs to an other known species therefore the validity of this name in question.

Distribution. Bolivia.

***Tetrsejaspis serrata* Hirschmann, 1973**

(Figs 10-11)

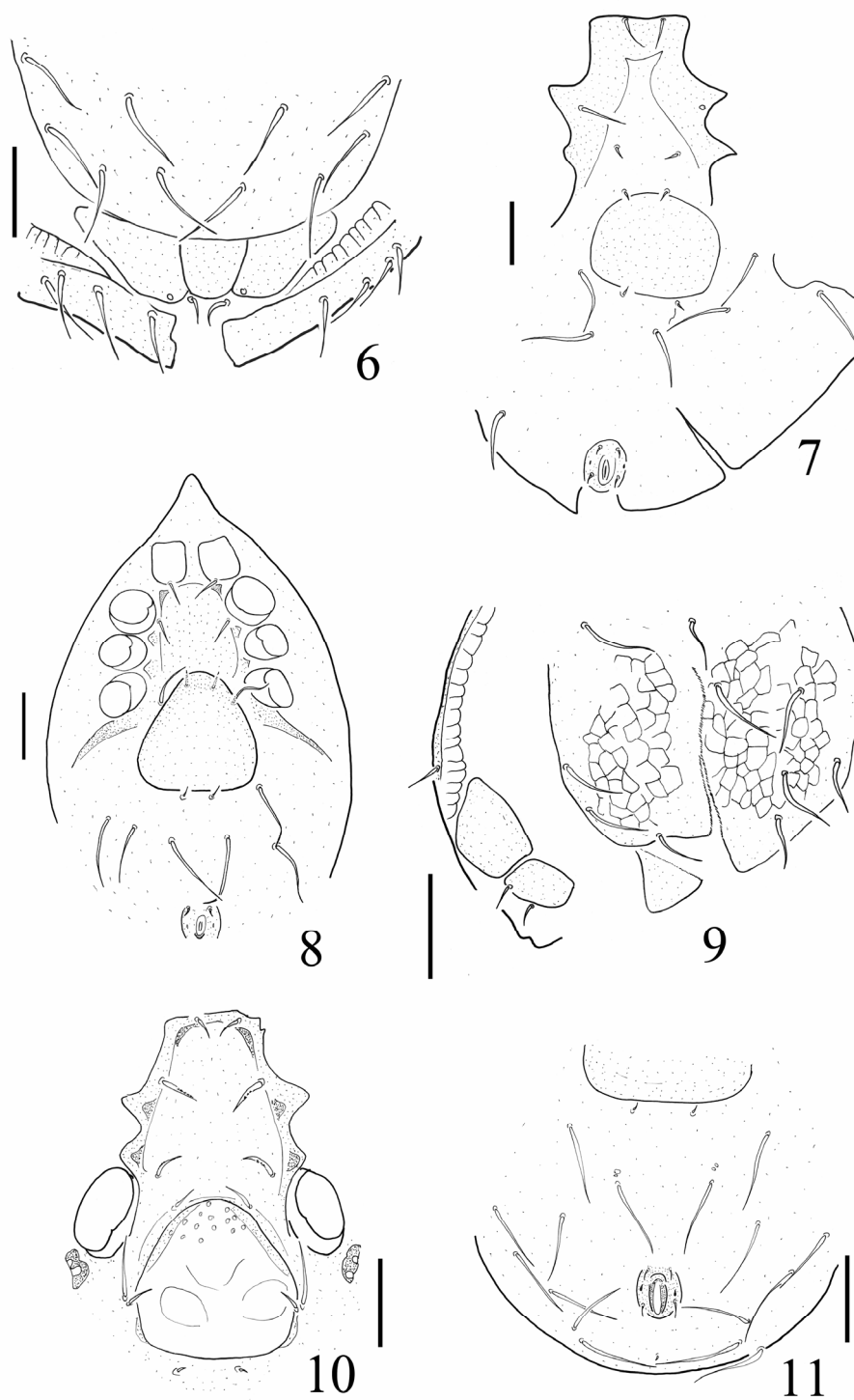
Tetrsejaspis serrata Hirschmann: 1973 pp. 99, fig. 36.

Material examined. One male and four females ECU 1987 B36. Ecuador, Chimborazo SW, Loma Yanausha, 4000 m, Cushion-plants from grazed area, 03.04.1987. leg. I. Loksa & A. Zicsi.

Diagnosis. Dorsal shield with reticulate ornamentation. Postdorsal shield subdivided into three parts and without setae. Sternal and ventral shields without ornamentation. Sternal setae short, St2 and St3 with spines on their margin, other sternal setae smooth. Ventral setae very long, smooth and setiform. Genital shield triangular and with alveolar ornamentation on its anterior part.

Distribution. Bolivia and Ecuador.

Remarks. This is the first record of this species from Ecuador.



Figures 6–11. Characteristics of *Tetrsejaspis* species. 6–7 = *Tetrsejaspis kaszabi* Hirschmann, 1973, 6 = caudal region, 7 = ventral region; 8 = ventral view of *Tetrsejaspis sellnicki* Hirschmann, 1973; caudal region of *Tetrsejaspis eustructura* Hirschmann, 1973; 10–11 = *Tetrsejaspis serrata* Hirschmann, 1973, 10 = sternal region, 11 = ventral region (scale: 100 μ m)

***Tetrasejaspis alveolaris* n. sp.**

(Figs 12–16)

Material examined. Holotype: female. 1987 ECU B128, Ecuador, Antisana volcano, road leading W, downwards to Pintag, 3000 m, soil and litter from below shrubs, about 50 m above stream level, 17.04.1987. leg. I. Loksa & A. Zicsi. Paratype: locality and date same as holotype.

Diagnosis. Anterior region of sternal shield with alveolar pattern. Alveolar ornamentation can be found on several parts of ventral- and dorsal shield as well. Caudal setae placed near to the anterior margin of marginal shield. Postdorsal shield without ornamentation and setae. Genital shield of female large, triangular and with alveolar pattern.

Description. Female. Idiosoma pear-like, 850–820 long, 470–460 wide (n=2).

Dorsal side (Fig. 12). Surface of the lateral part of dorsal shield is smooth, central part with alveolar ornamentation. All dorsal setae long, smooth and setiform. Postdorsal shield subdivided into three parts, without ornamentation and setae. Marginal shield smooth, all setae on marginal shield, smooth setiform and half as long as the dorsal setae. Marginal setae are similar to dorsal setae, but three times shorter than dorsal setae. Scalloping can be found between the marginal and dorsal shields (Fig. 13). Two pairs of caudal setae placed near to the anterior margin of marginal shield (Fig. 14).

Ventral side (Fig. 15). Sternal shield with alveolar ornamentation on its anterior region. First sternal setae (St1) near the anterior margin of sternal shield, St2 absent, St3 and St4 near to level of coxae 4. StX and StY are near to central part of genital shield. All sternal setae smooth and needle-like, StX three times longer than the other sternal setae. St5 near to the posterior margin of genital shield. All ventral setae long, smooth and needle-like. Near the basis of ventral setae there is alveolar ornamentation. Two pairs of adanal setae very short, smooth and needle-like.

Genital shield large, triangular, without processes and with alveolar pattern.

Peritreme and stigmata not clearly visible (covered by coxae 1 and 2).

Gnathosoma. Not clearly visible (covered by coxae 1).

Legs with serrated setae (Fig. 16).

Male, deuteronymph and protonymph are unknown.

Etymology. The name of new species refers to the ornamentation of the anterior region of sternal shield.

***Tetrasejaspis ecuadorensis* n. sp.**

(Figs 17–22)

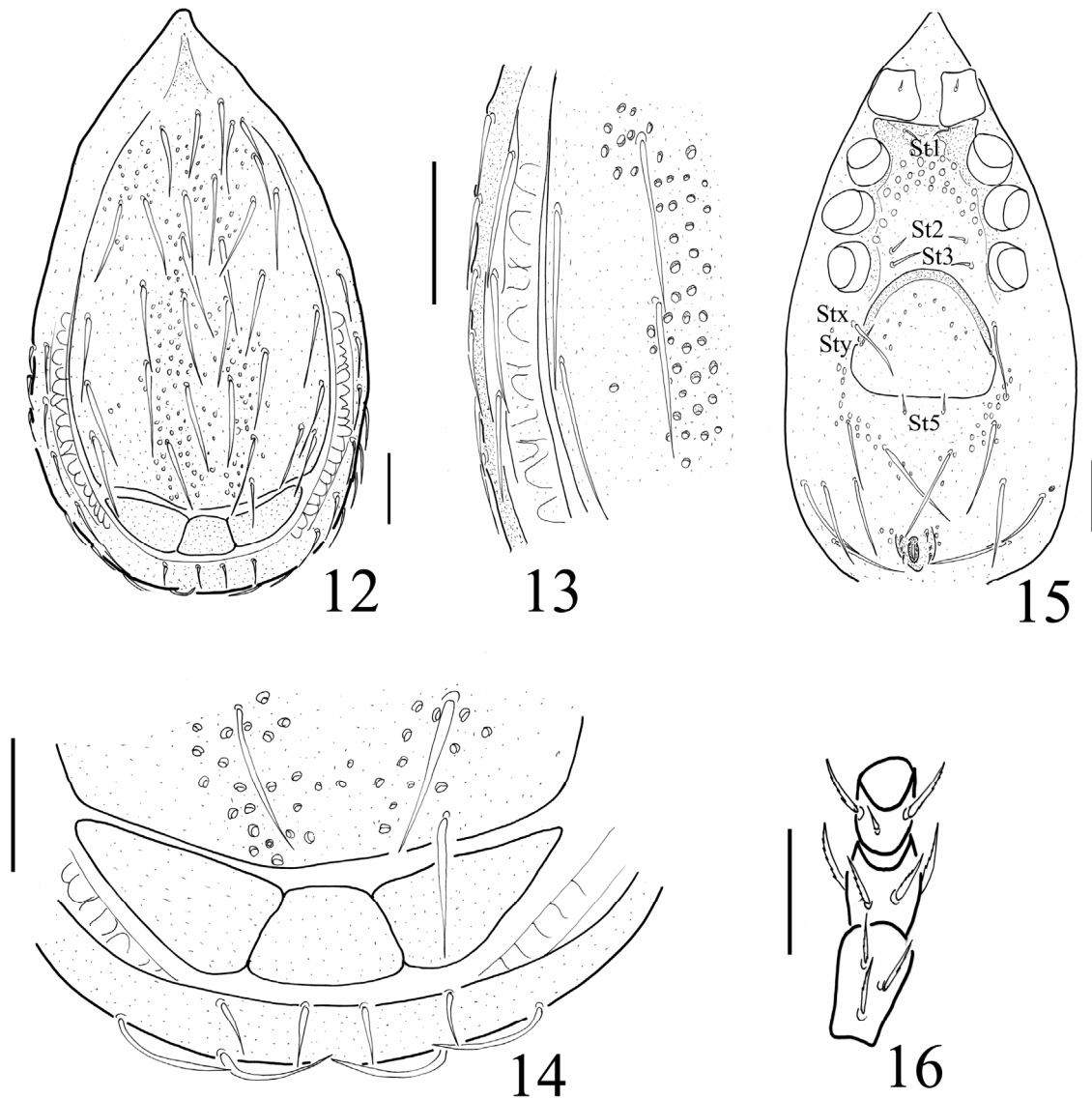
Material examined. Holotype: female. ECU 1987 B151, Pichincha Agua volcano (Prov. Pichincha), 4000 m, soil and litter from below bushes on a rock rim of a rock wall of S exposure, 19.04.1987. leg. I. Loksa & A. Zicsi. Paratypes: three females and one male. Locality and date same as holotype.

Diagnosis. Posterior region of sternal shield with alveolar pattern. Alveolar ornamentation can be found on several parts of ventral and dorsal shields. Caudal setae placed near anterior margin of marginal shield. Postdorsal shield without ornamentation and setae. Genital shield of female large, triangular and with alveolar pattern.

Description. Female. Idiosoma pear-like, 880–850 long, 480–460 wide (n=4).

Dorsal side (Fig. 17). Surface of the lateral part of dorsal shield is smooth, central part with alveolar ornamentation. All dorsal setae long, smooth and setiform. Postdorsal shield subdivided into three parts, without ornamentation and setae. Marginal shield smooth, all setae on marginal shield smooth and setiform, half as long as the dorsal setae. Marginal setae similar to dorsal setae, but three times shorter than dorsal setae. Scalloping can be found between the marginal and dorsal shields (Fig. 18). Two pairs of caudal setae placed near the anterior margin of marginal shield.

Ventral side (Fig. 19). Sternal shield with alveolar ornamentation on its posterior region.



Figures 12–16. *Tetrsejaspis alveolaris* n. sp. 12 = dorsal view, 13 = marginal and dorsal setae, 14 = postdorsal shield, 15 = ventral view, 16 = setae of leg 1. (scale: 100 μ m)

First sternal setae (St1) placed near anterior margin of sternal shield, St2 near posterior margin of coxae 2, St3 and St4 can be found near level of coxae 4. St1 and St2 two times longer than St3 and St4. StX and StY are near central part of genital shield. All sternal setae smooth and needle-like, StX 3 times longer than St3 and St4. St5

placed near posterior margin of genital shield. All ventral setae long, smooth and needle-like. Near the basis of ventral setae can be seen alveolar ornamentation. Two pairs of adanal setae very short, smooth and needle-like.

Genital shield large, triangular, without processes and with alveolar pattern.

Peritreme hook-likie, stigmata placed near level of coxae 4 (Fig. 20).

Gnathosoma. Not clearly visible (covered by coxae 1).

Legs with serrated setae.

Male. Idiosoma pear-like, 780 long, 460 wide (n=1). Dorsal and marginal shields and setae similar to female, but postdorsal shield absent, caudal setae on caudal part of marginal shield (Fig. 21). Ventral side: Position and size of sternal setae similar to female, but StY absent and St3 placed near anterior margin of coxae 4. Position and size of ventral setae are similar to female. Genital shield can be seen near posterior margin of coxae 4, its shape is oval (Fig. 22).

Deuteronymph and protonymph unknown.

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

***Tetrasejaspis bloszyki* n. sp.**

(Figs 23–29)

Material examined. Holotype: female. Cr93 B104, Costa-Rica, Arenal, rain forest, litter and soil, 16.01.1993. leg. J. Balogh. Paratypes: female locality and date same as holotype. Two males and one female Cr93 B112, Costa-Rica, Arenal, secondary rain forest, litter, 16.01.1993. leg. J. Balogh.

Diagnosis. Sternal and genital shields without pattern. Alveolar ornamentation can be found only on dorsal shield. Genital shield of female large, rectangular and not with alveolar pattern.

Description. Female. Idiosoma pear-like, 690–650 long, 370–340 wide (n=3).

Deuteronymph and protonymph unknown.

Dorsal side (Fig. 23). Surface of the lateral part of dorsal shield is smooth, central part with only alveolar ornamentation. All dorsal setae long, smooth and setiform. Postdorsal shield subdivided into three parts, without ornamentation and setae. Marginal shield smooth, all setae on marginal shield smooth and setiform, 0.5 times shorter than dorsal setae. Marginal setae are si-

milar to dorsal setae, but three times shorter than dorsal setae. Scalloping absent between the marginal and dorsal shields (Fig. 24). Two pairs of caudal setae near the anterior margin of marginal shield (Fig. 25).

Ventral side (Fig. 26): Sternal shield without pattern. First sternal setae (St1) placed near to the anterior margin of sternal shield, St2 near posterior margin of coxae 2, St3 near the level of coxae 4 and St4 near the anterior margin of genital shield. St1 and St2 three times longer than St3 and St4. StX and StY are near the central part of genital shield, StZ placed near the anterior margin of genital shield. All sternal setae smooth and needle-like, StX three times longer than St3 and St4. St5 placed near to the posterior margin of genital shield. All ventral setae long, smooth and needle-like. Ventral shield without ornamentation. Two pairs of adanal setae very short, smooth and needle-like, postanal setae similar to adanal setae.

Genital shield large, rectangular, without processes and pattern.

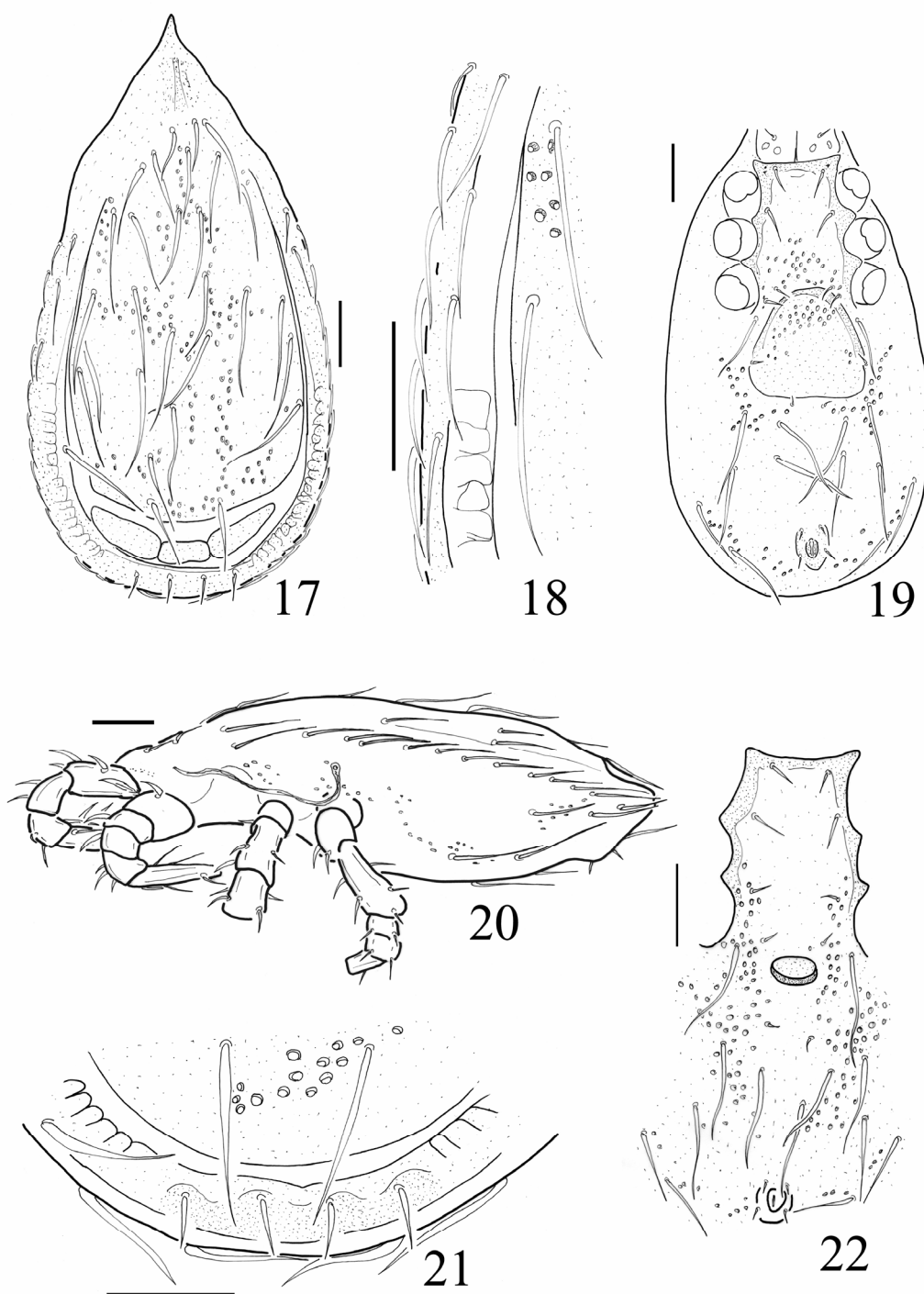
Peritreme and stigmata not clearly visible (covered by coxae 2 and 3).

Gnathosoma (Fig. 27). Corniculi horn-like, laciniae long and smooth. Hypostomal setae are follows: h1 long, smooth and needle-like, h2, h3 and h4 four times shorter than h1 and its margin serrated. Epistome and chelicerae not clearly visible. Tritosternum with wide basis, laciniae smooth and with tow long and two short branches.

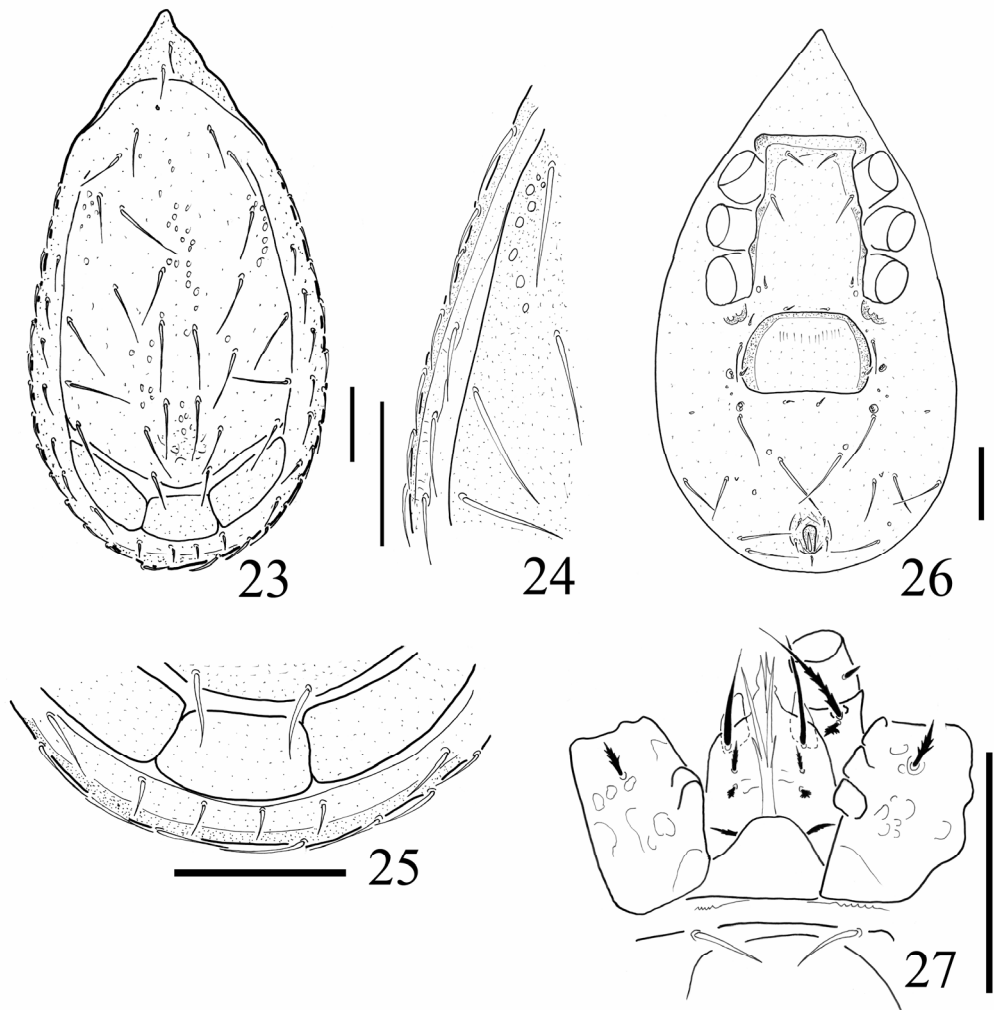
Legs with serrated setae.

Male. Idiosoma pear-like, 650–610 long, 340–310 wide (n=2). Dorsal, postdorsal and marginal shields and setae similar to female. Well sclerotised region can be seen near the posterior margin of dorsal shield (Fig. 28). Ventral side: Position and size of sternal setae similar to female, but StY absent and St3 placed near the central part of coxae 4. Position and size of ventral setae are similar to female. Genital shield can be found near the posterior margin of coxae 4, its shape is oval (Fig. 29).

Etymology. I dedicate the new species to Prof. Dr. Jerzy Błoszyk, the renowned Polish acarologist.



Figures 17–22. *Tetrsejaspis ecuadorensis* n. sp., 17 = dorsal view of female, 18 = marginal and dorsal setae, 19 = ventral view, 20 = lateral view, 21 = postdorsal region of caudal region of male, 22 = sternal and ventral region of male (scale: 100 μ m)



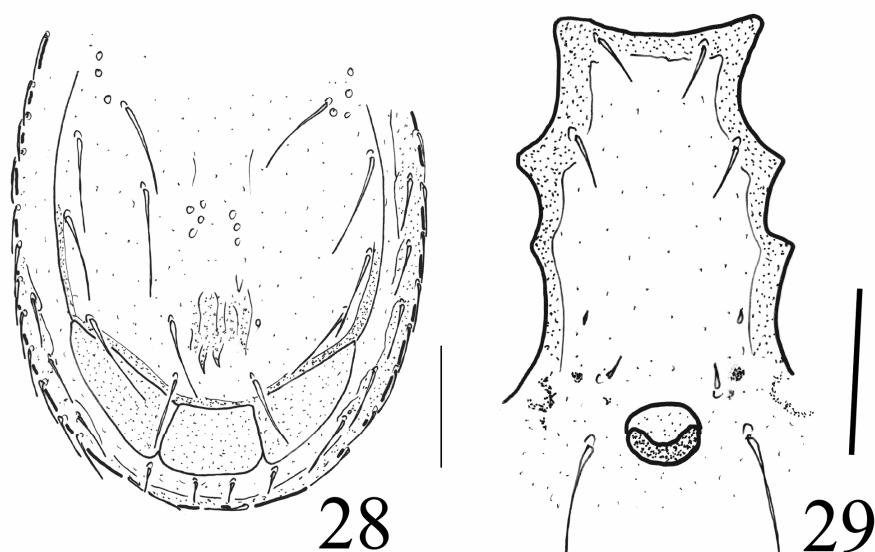
Figures 23–27. *Tetrsejaspis bloszyki* n. sp. female, 23 = dorsal view, 24 = marginal and dorsal setae, 25 = postdorsal shield, 26 = ventral view, 27 = ventral view of gnathosoma (scale: 100 μ m)

DISCUSSION

The species of the family Tetrsejaspidae show a typical Neotropical distribution (Fig. 30). Their most northern occurrence is on the southern part of Mexico (Vazquez & Klompen, 2007) and the southernmost record is from Bolivia (Hirschmann, 1973 a). Presumably the species of this family live in most of the counties of Central America and northern South-America, though the occurrences from these regions have not been recorded yet. From the Caribbean region, where

several Uropodina mites are listed hitherto no Tetrsejapsid species were mentioned (Błoszyk & Athias-Binche, 1986; Fox, 1948; Huțu, 1977; Kontschán, 2004; Sellnick, 1930, 1963, 1970, 1973).

Tetrsejaspis species can be found in natural vegetations (e.g. cloudy rain forest or paramo) and in disturbed habitats (e.g. coffee or citrus plantations) as well. Most of the *Tetrsejaspis* species occur only in soil and leaf litter, there are no records yet from the canopy.



Figures 28–29. *Tetrasejaspis bloszyki* n. sp. male, 28 = caudal region, 29 = sternal shield (scale: 100 μ m)

Key to species (females)

- | | |
|---|--|
| <p>1 (8) Genital shield rectangular
 2 (7) Genital shield with ornamentation
 3 (4) Ornamentation of genital shield reticulate
 <i>T. decui</i> Hutu, 1991
 4 (3) Ornamentation of genital shield alveolar
 5 (6) Ventral shield with reticulate pattern
 <i>T. baloghismilis</i> Hirschmann, 1973
 6 (5) Ventral shield without ornamentation
 <i>T. eustructura</i> Hirschmann, 1973
 7 (2) Genital shield without ornamentation
 <i>T. bloszyki</i> n. sp.
 8 (1) Genital shield oval
 9 (14) Genital shield with ornamentation
 10 (11) Margin of St2 and St3 serrated
 <i>T. serrata</i> Hirschmann, 1973
 11 (10) Margin of St2 and St3 smooth
 12 (13) Alveolar ornamentation on the anterior
 region of sternal shield
 <i>T. alveolaris</i> n. sp.</p> | <p>13 (12) Alveolar pattern on the posterior region of
 sternal shield
 <i>T. ecuadorensis</i> n. sp.
 14 (9) Genital shield without ornamentation
 15 (16) Genital shield wider than long (3:1)
 <i>T. carlosbordoni</i> Hutu, 1991
 16 (15) Genital shield as wide as long (1:1)
 17 (18) Setae St2 longer than St1
 <i>T. dinychoides</i> Sellnick, 1941
 18 (17) Setae St2 as long as St1
 19 (20) St4 longer than than St3
 <i>T. sellnicki</i> Hirschmann, 1973
 20 (19) St4 as long as St3
 21 (22) St1 and St2 longer than St3 and St4
 <i>T. kaszabi</i> Hirschmann, 1973
 22 (21) St1 and St2 as long as St3 and St4
 <i>T. muranyii</i> Kontschán, 2007</p> |
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Remarks. *T. baloghi* is missing from this key, because this species is known only by male. Likewise *T. zicsi* is not included because the adult stage of this species is unknown.

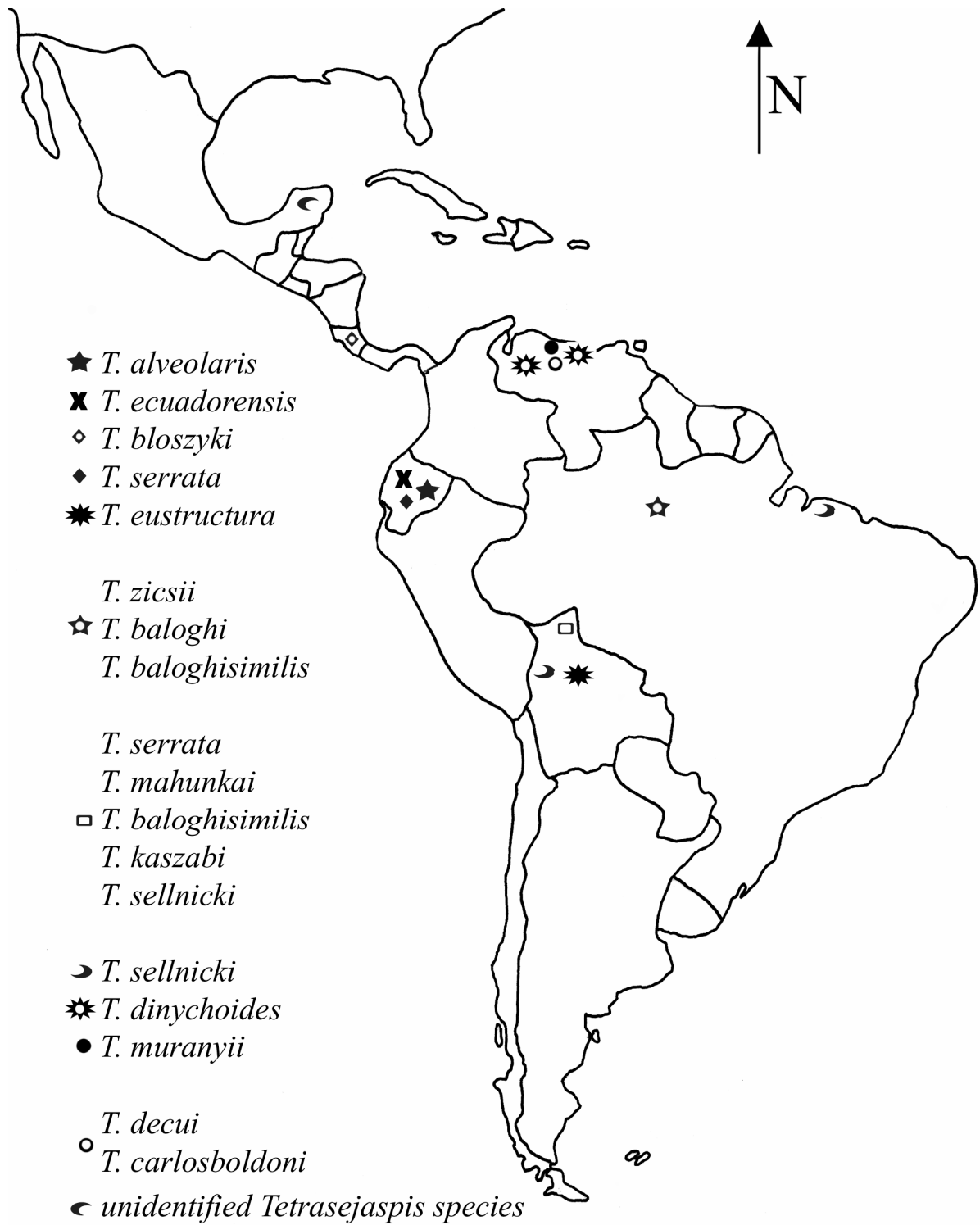


Figure 30. Distribution of *Tetrsejaspis* species in Central and South America

REFERENCES

- FOX, I. (1948): New Uropodid Mites Associated with Rats in Puerto Rico. *Entomological News*, **59(7)**: 469–174.
- HIRSCHMANN W. (1973 a): Gänge, Teilgänge, Stadien von 8 neuen *Tetrasejaspis*-Arten (Dinychini, Uropodinae). *Acarologie*, **19**: 91–100.
- HIRSCHMANN W. (1973 b): Die Adulten der Gattung *Tetrasejaspis* Sellnick 1941 und Bestimmungstabelle von 8 Adulten (Dinychini, Uropodinae). *Acarologie*, **19**: 88–90.
- BŁOSZYK, J. & ATHIAS-BINCHE, F. (1986): *Cyllibula (Wagenaaria) jakubi* n. subgen., n. sp., from Caribbean Islands (Anactinotrichoda: Uropodina). *International Journal of Acarology*, **12(3)**: 163–170.
- HIRSCHMANN, W. (1979): Stadienfamilien und Stadiengattungen der Atrichopygidiina, erstellt im Vergleich zum Gangsystem Hirschmann, 1979. *Acarologie*, **26**: 57–68.
- HIRSCHMANN, W. (1993) Bestimmungstabellen der Uropodiden der Erde, Atlas der Ganggattungen der Atrichopygidiina. *Acarologie*, **40**: 371–429.
- HUȚU, M. (1977): *Neue Uropodiden-Arten aus Cuba*. In: Orghidan, T., Núñez Jiménez, A., Decout, V., Negrea, Șt., Viña Bayés, N. (eds): *Résultats des Expéditions biospéologiques Cubano-Roumaines à Cuba*. Editura Academiei republicii Socialiste Romania, București, pp. 185–195.
- KONTSCHÁN, J. (2005): New *Rotundabaloghia* Hirschmann, 1975 species (Acari: Mesostigmata: Uropodina) from the Dominican Republic. *Annales Historico-naturales Musei Nationalis Hungarici*, **97**: 241–249.
- KONTSCHÁN, J. (2007): Uropodina mites (Acari: Mesostigmata) from Venezuela, with descriptions of four new species. *Acta Zoologica Academiae Scientiarum Hungaricae*, **53(4)**: 335–346.
- KRANTZ, G. W. (1970): *A manual of Acarology*. Oregon State University, Corvallis, Oregon, pp. 1–335.
- SELLNICK, M. (1930): Eine neue Milbe von Martinique (Acar. Uropod.). *Zoologischer Anzeiger*, **91(5/8)**: 168–180.
- SELLNICK, M. (1941): Eine neue südamerikanische Milbe. *Zoologischer Anzeiger*, **135 (7/8)**: 145–156.
- SELLNICK, M. (1963): Karibische Landmilben I. Uropodina. *Studies on the Fauna of Curacao and other caribbean Islands*, **16**: 1–58.
- SELLNICK, M. (1970): Eine neue Milbe von Trinidad. *Acarologia*, **12(2)**: 253–258.
- SELLNICK, M. (1973): Karibische Landmilben II. Uropodina. *Studies on the Fauna of Curaçao and other Caribbean Islands*, **43**: 143–171.
- VÁZQUEZ, M. M. & KLOMPEN H. (2007): New records of Uropodina mites from México, Guatemala, Belize and Costa Rica. *Dugesiana*, **14(1)**: 27–37
- WIŚNIEWSKI, J. (1993 a): Die Uropodiden der Erde nach Zoogeographischen Regionen und Subregionen geordnet (Mit Angabe der Lande). *Acarologie*, **40**: 221–291.
- WIŚNIEWSKI, J. (1993 b): Alphabetisches Verzeichnis der Uropodiden (Gattungen, Arten, Synonyma). *Acarologie*, **40**: 371–429.
- WIŚNIEWSKI, J. & HIRSCHMANN, W. (1993): Katalog der Ganggattungen, Untergattungen, Gruppen und Arten der Uropodiden der Erde. *Acarologie*, **40**: 1–220.