

Two new water mite species of the genus *Torrenticola* Piersig, 1896 from Russia (Acariformes: Torrenticolidae)

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Illustrated descriptions of two water mite species, *Torrenticola amplexoides* sp. n. (female) from the North Caucasus and *T. abbreviatella* sp. n. (male) from flowing waters of European Russia, are given.

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Nomenclature of the body setae follows Tuzovskij (1987).

***Torrenticola* (*Torrenticola*) *amplexoides* sp. n.** (Figs 1-8)

Holotype. ♀, **Russia**, *Krasnodar Prov.*, Seversky Distr., 2 km upstream of vill. Ubinskaya, 16.VI.1976 (coll. P.V. Tuzovskij). Slide no. 2015 is deposited at the Institute for Biology of Inland Waters.

Description. Female (Figs 1-8). Colour brown. Body flat and oval; humeral angles not expressed (Fig. 1). Frontal margin of body almost straight. Anteromedial and anterolateral plates not fused with dorsal shield. Posterior margin of anteromedial plates straight, their anterior margin convex; posterior margin of anterolateral plates convex. Dorsal shield large, with wide peripheral part covered by thin wrinkled membrane. Central part of dorsal shield bearing one pair of setae (Sci); peripheral part with two pairs of setae (Li and Si). Dorsal shield and both pairs of anterior plates with fine porous sculpture. Two areas of rough sculpture present at level of setae Sci, between them. Bases of setae Fch and Fp situated between eyes, closely spaced. Setae Ve, Oe, He, Le and all five pairs of lyriform organs situated at lateral edges of body.

Coxal shield occupying about 4/5 of body length (Fig. 2). Coxae of legs I forming U-shaped groove. Medial part of coxae I three times as long as sutural line between coxae II. External genital organ situated in centre of ventral body surface. Distance between posterior margin of genital organ and posterior end of body almost twice the length of genital flaps. All genital acetabulae of equal length, separated from each other. Genital flaps widened in anterior part. Posterior furrows

(rudiments of posterior sutural line of coxae IV) short, curved. Glandularia Sce with opening at level of posterior margins of genital flaps. Bases of setae Pi close to posterior margin of coxal shield. Anal opening situated slightly anterior to setae Ci.

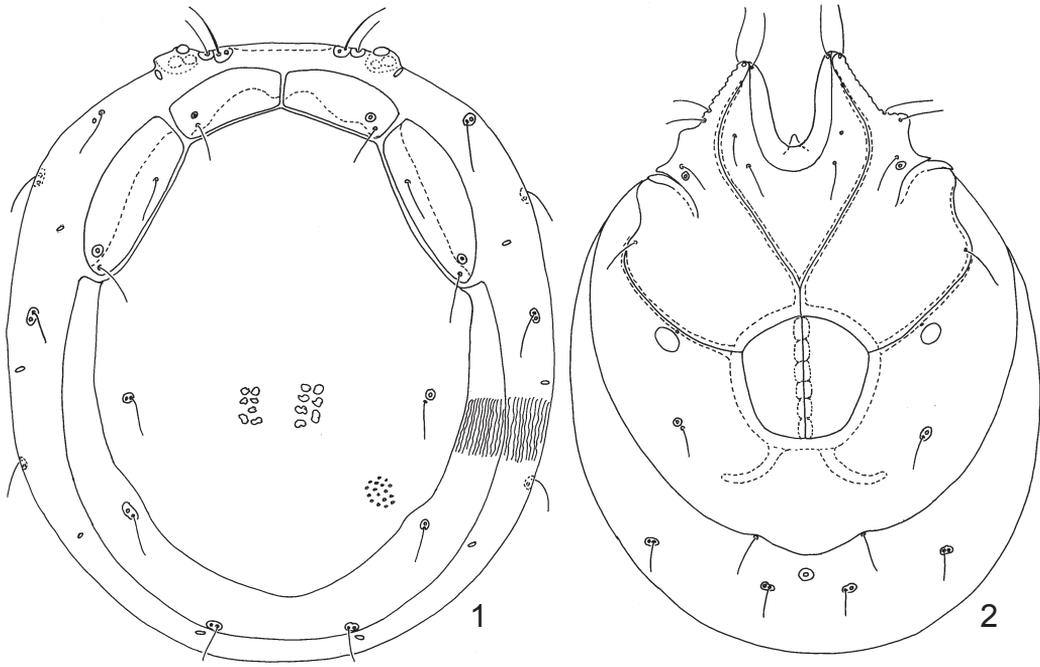
Rostrum long, hardly shorter than basal part of hypostomal plate (Fig. 3). Ventral margins of rostrum and of basal part of hypostomal plate parallel to each other.

Basal segment of chelicera (Fig. 4) very long, its anterior part slightly thickened. Stylet of chelicera with sharpened apex and fine teeth on its concave part.

Pedipalp trochanter (Fig. 5) very short, with one dorsodistal seta. Pedipalp femur large, with one ventral and five dorsal setae of approximately equal length. Pedipalp genu with four setae, dorsodistal one longer and thicker than other dorsal setae. Ventral seta of pedipalp genu twice as long as ventral seta of pedipalp femur. Both femur and genu of pedipalp bearing one small ventrodistal projection with flat apex. Pedipalp tibia shorter than femur, with convex dorsal side and well-expressed ventral conical projection bearing four thin setae of different lengths. Palp tarsus short, only slightly longer than wide.

Tibia and tarsus of leg I (Fig. 6) with thin setae only. Tarsus of leg I slightly thickened medially. First five segments of legs II-IV mainly with thick setae; tarsi of these legs gradually thickened distally (Fig. 7). Ambulacra (Fig. 8) with long outer claw, apex of claw sharp. Inner claw slightly shorter than outer one, with roundish apex. Ventral margin of claw plate concave.

Measurements, in µm. Length of body, 600; its width, 535; length of anteromedial plates, 115; their width, 50; length of anterolateral plates, 170;



Figs 1, 2. *Torrenticola amplexoides* sp. n., female: **1**, dorsal surface; **2**, ventral surface.

their width, 65; length of dorsal shield, 480; its width, 360; length of medial part of coxae I, 125; length of sutural line between coxae II, 42; length of genital flaps, 150; their width, 75; length of hypostomal plate, 290; length of basal segment of chelicera, 280; length of stylet of chelicera, 55; lengths of pedipalp segments: 35, 102, 60, 90, 15; lengths of segments of legs: I – 40, 65, 78, 90, 105, 85; II – 48, 70, 72, 95, 110, 115; III – 55, 70, 78, 110, 140, 130; IV – 110, 95, 120, 140, 160, 160.

Male unknown.

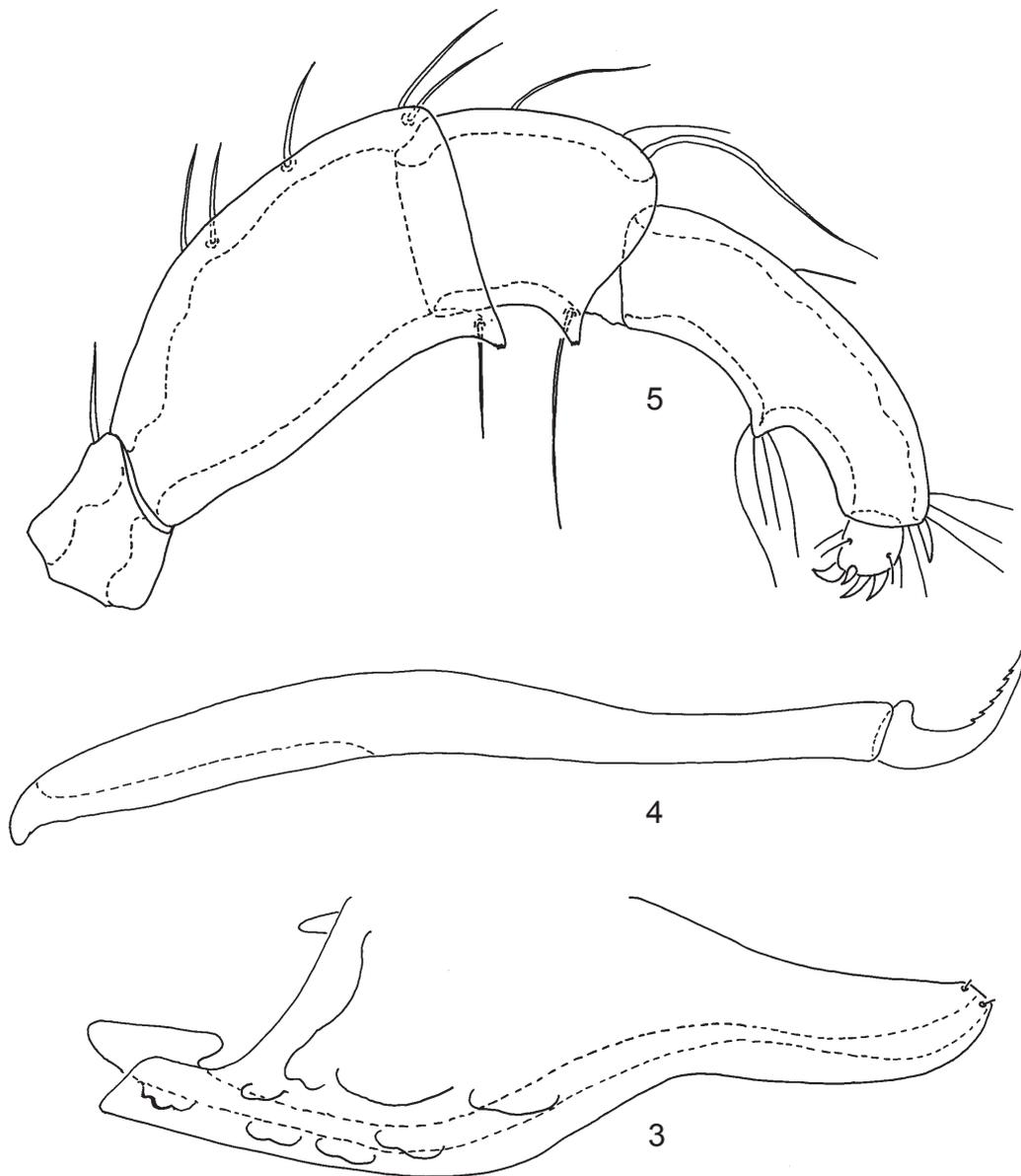
Comparison. The new species is similar to *Torrenticola amplexa* (Koenike, 1908). The morphology of all developmental stages of *T. amplexa* is investigated in detail (Tuzovskij, 1981). In *T. amplexoides*, the frontal body margin is straight, anterolateral plates are not fused with the dorsal shield, the anal opening is situated anterior to setae Ci, and bases of setae Pi are on the posterior margin of the coxal shield. On the contrary, adults of *T. amplexa* are characterized by the concave frontal body margin, lateral plates fused with the dorsal shield, the anal opening situated posterior to setae Ci, bases of setae Pi and the posterior margin of the coxal shield separated by a wide interval.

***Torrenticola (Torrenticola) abbreviatella* sp. n.**
(Figs 9-16)

Holotype. ♂, **Russia**, *Komi Republic*, Pizhma River (tributary of Pechora River), 11.VIII.1959 (coll. O.S. Tsember). Slide no. 6387 is deposited at the Institute for Biology of Inland Waters.

Paratype. 1 ♂, **Russia**, *Arkhangelsk Prov.*, Onega River, 23.VII.1986 (coll. O.S. Tsember), deposited with holotype.

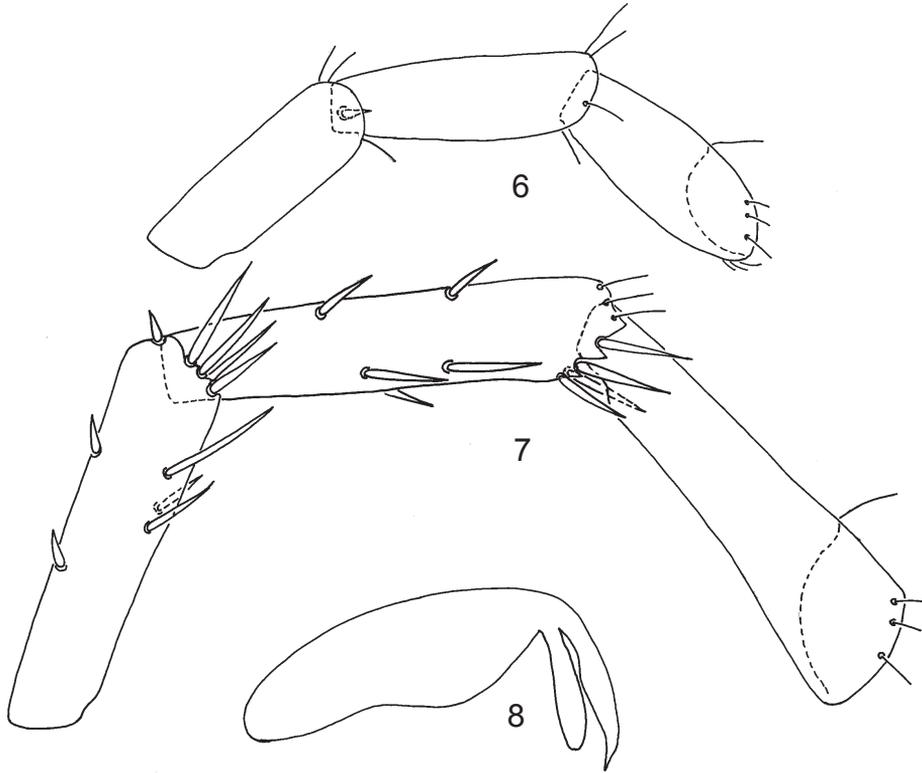
Description. Male (Figs 9-16). Body flat, oval, with distinct anterolateral angles (Fig. 9). Frontal body margin straight, with small median process. Anteromedial plates free; anterolateral plates fused with dorsal shield. Sutural line between lateral plates and central part of dorsal shield well expressed, being indistinct on border with its peripheral part. Dorsal shield very large, covering most part of dorsum surface. Central part of dorsal shield with only one pair of setae (Sci) located approximately at its middle. Peripheral part of dorsal shield moderate in size, with two pairs of setae (Li, Si). Dorsal shield and both pairs of plates with fine porous sculpture. Two areas of rough sculpture located in posterior part of dorsal shield, approximately equally spaced from setae Sci and Li. All other dorsal setae and lyriform organs in positions typical for genus *Torrenticola*.



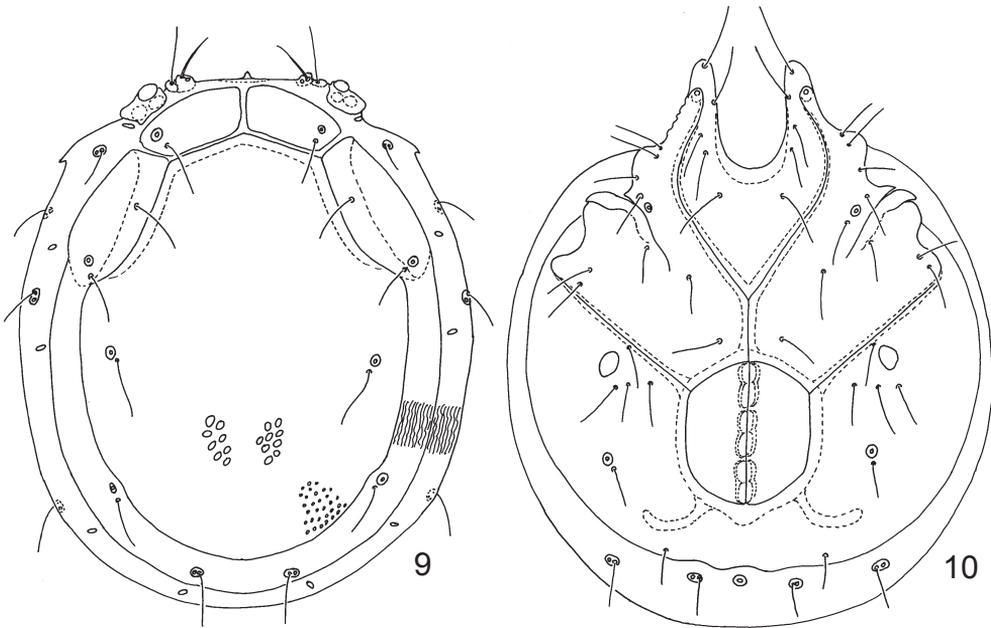
Figs 3-5. *Torrenticola amplexoides* sp. n., female: 3, hypostomal plate (lateral view); 4, chelicera (lateral view); 5, pedipalp (medial view).

Coxal shield very large, occupying about 9/10 of body length (Fig. 10). Coxae I forming wide and deep U-shaped groove. Medial part of coxae I twice as long as sutural line between coxae II. External genital organ large, situated in posterior half of ventral surface of body. Distance between posterior margin of genital organ and posterior end of body less than length of genital flaps. Glandularia See with opening situated slightly behind the middle of

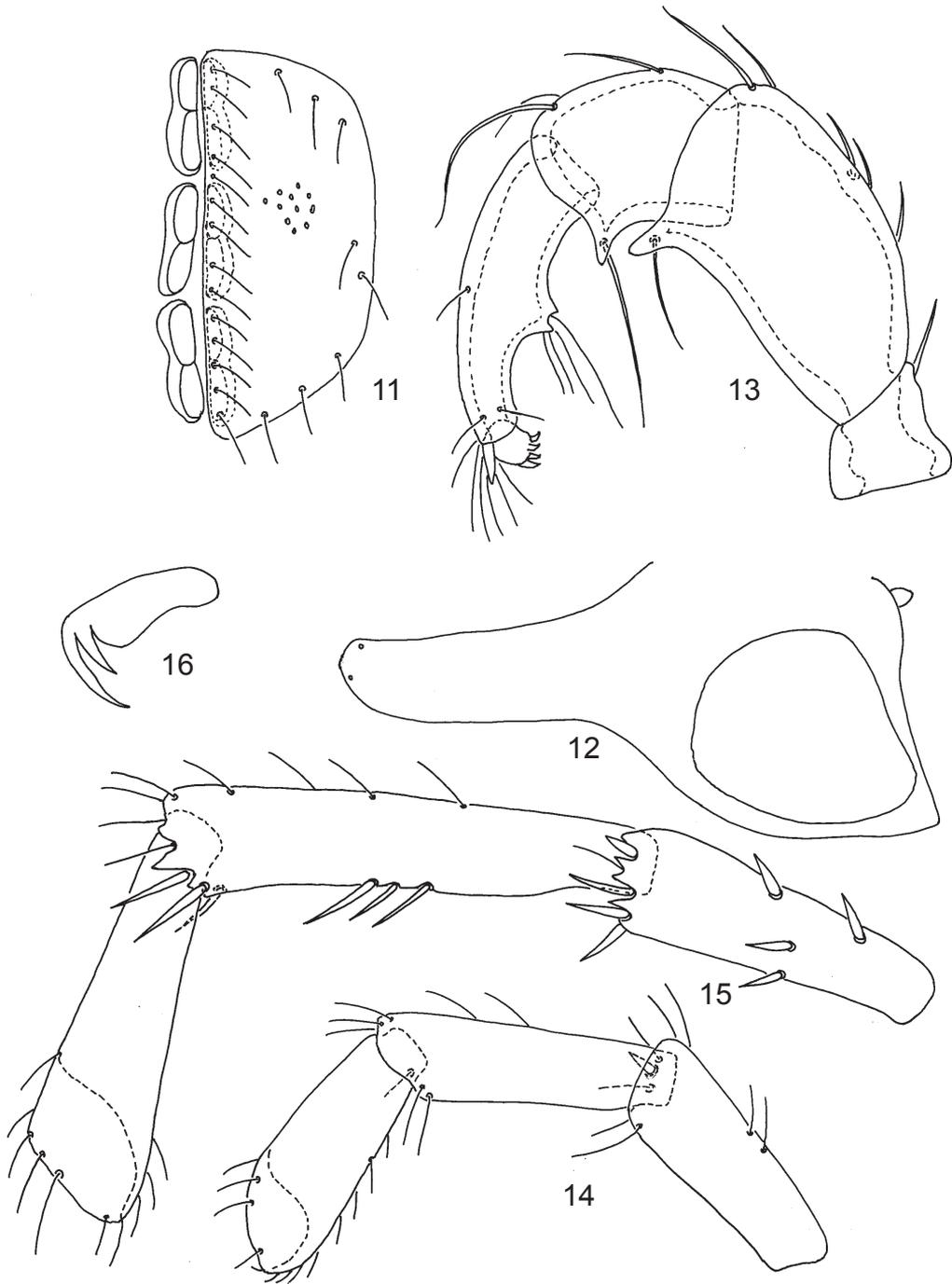
genital flaps. Posterior furrows of coxae IV short, curved. Bases of setae Pi on posterior margin of coxal shield. Anal opening situated at level of setae Ci, very close to posterior margin of coxal shield. Inner and outer margins of genital flaps parallel to each other (Fig. 11), each flap with 15-18 medial and 8-10 thin lateral setae. All genital acetabulae equal in length, arranged in pairs, forming 3 groups on each side.



Figs 6-8. *Torrenticola amplexoides* sp. n., female: 6, genu, tibia and tarsus of leg I; 7, genu, tibia and tarsus of leg IV; 8, ambulacrum.



Figs 9-10. *Torrenticola abbreviatella* sp. n., male: 9, dorsal surface; 10, ventral surface.



Figs 11-16. *Torrenticola abbreviatella* sp. n., male: **11**, left genital flap and acetabulae; **12**, hypostomal plate (lateral view); **13**, pedipalp (medial view); **14**, genu, tibia and tarsus of leg I; **15**, genu, tibia and tarsus of leg IV; **16**, ambulacrum.

Rostrum long (Fig. 12). Ventral margin of rostrum and that of basal part of hypostomal plate parallel to each other.

Pedipalp trochanter (Fig. 13) short, with one dorsodistal seta. Pedipalp femur large, with one ventrodistal and five dorsal setae. Pedipalp genu with four setae, distal ones (one ventral and one dorsal) longest and thickest. Ventrodistal seta of pedipalp genu 1.5 times as long as ventrodistal seta of pedipalp femur. Conical ventrodistal projections of pedipalp femur and genu of moderate size, first one larger than second. Pedipalp tibia with uniformly convex dorsal margin and well-expressed ventral projection, forming 2 tubercles and bearing 4 setae of different length. Dorsodistal spine of pedipalp tibia only hardly shorter than pedipalp tarsus.

Distal segments of leg I (Fig. 14) slightly thickened distally and provided only with thin setae. First five segments of legs II-IV mainly with thick setae; tarsi of these legs distinctly thickened distally (Fig. 15). Ambulacra with a long plate having concave ventral margin (Fig. 16). Outer claw of ambulacra 1.5 times as long as inner claw; both claws with sharpened apex.

Measurements, in μm . Length of body, 570-630; its width, 470-520; length of anteromedial plates, 110-115; their width, 50-55; length of anterolateral plates, 165-175; their width, 65-80; length of dorsal shield, 500-545; its width, 365-410; length of medial part of coxae I, 120-130; length of sutural line between coxae II, 70-80; length of genital flaps, 165-170; their width, 65-70; lengths of pedipalp segments: 33, 90, 55-60, 85-90, 15; lengths of segments of legs: I – 50-55, 90-95, 95-100, 100-105, 90-95, 85-90; II – 50-60, 90-95, 75-80, 90-95, 115-120, 115-125; III – 60-65, 80-90, 80-85, 115-120, 140-155, 140-145; IV – 85-115, 110-130, 110-115, 140-155, 165-170, 155-180.

Female unknown.

Comparison. The new species is similar to *Torrenticola abbreviata* (Sokolow, 1934). *T. abbreviatella* is characterized by the following features: presence of anterolateral angles of the body, well-expressed peripheral part of the dorsal shield, the anal opening not fused with posterior margin of the coxal shield, and developed posterior furrows on the coxal shield. On the contrary, in *T. abbreviata* the body has no anterolateral angles, peripheral part of the dorsal shield is strongly reduced, the anal opening is situated on the posterior margin of the coxal shield, and posterior furrows on the coxal shield are absent (Sokolow, 1934, 1940).

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