

NEW SPECIES OF ZERCONID MITES (ACARI, GAMASIDA, ZERCONIDAE) FROM TURKEY

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ACARI
TAXONOMY
NEW SPECIES
ZERCONIDAE
TURKEY

ACARIENS
TAXONOMIE
ESPÈCES NOUVELLES
ZERCONIDAE
TURQUIE

SUMMARY: Two new zerconid species, *Zercon burdurensis* and *Z. serratus*, from Turkey are described and illustrated.

RÉSUMÉ : Deux nouvelles espèces de zerconides, *Zercon burdurensis* et *Z. serratus*, de Turquie sont décrites.

INTRODUCTION

Zerconid mites occur in humus and litter of woodlands, in grassland, heathland and among mosses and lichens. Until now, 22 species of *Zercon* have been recorded from Turkey (BŁASZAK, 1979; URHAN & AYYILDZ, 1994a, 1994b, 1996a, 1996b, 1996c; URHAN, 1997a, 1997b). During studies of the family Zerconidae in Turkey, I found two new species of the genus *Zercon*. This paper deals with their description. Morphological terminology used in the descriptions follows that of SELLNICK (1958) and BŁASZAK (1974). Type material is deposited at the Zoological Museum of Atatürk University (Turkey).

SYSTEMATICS

Zercon C. L. Koch, 1836

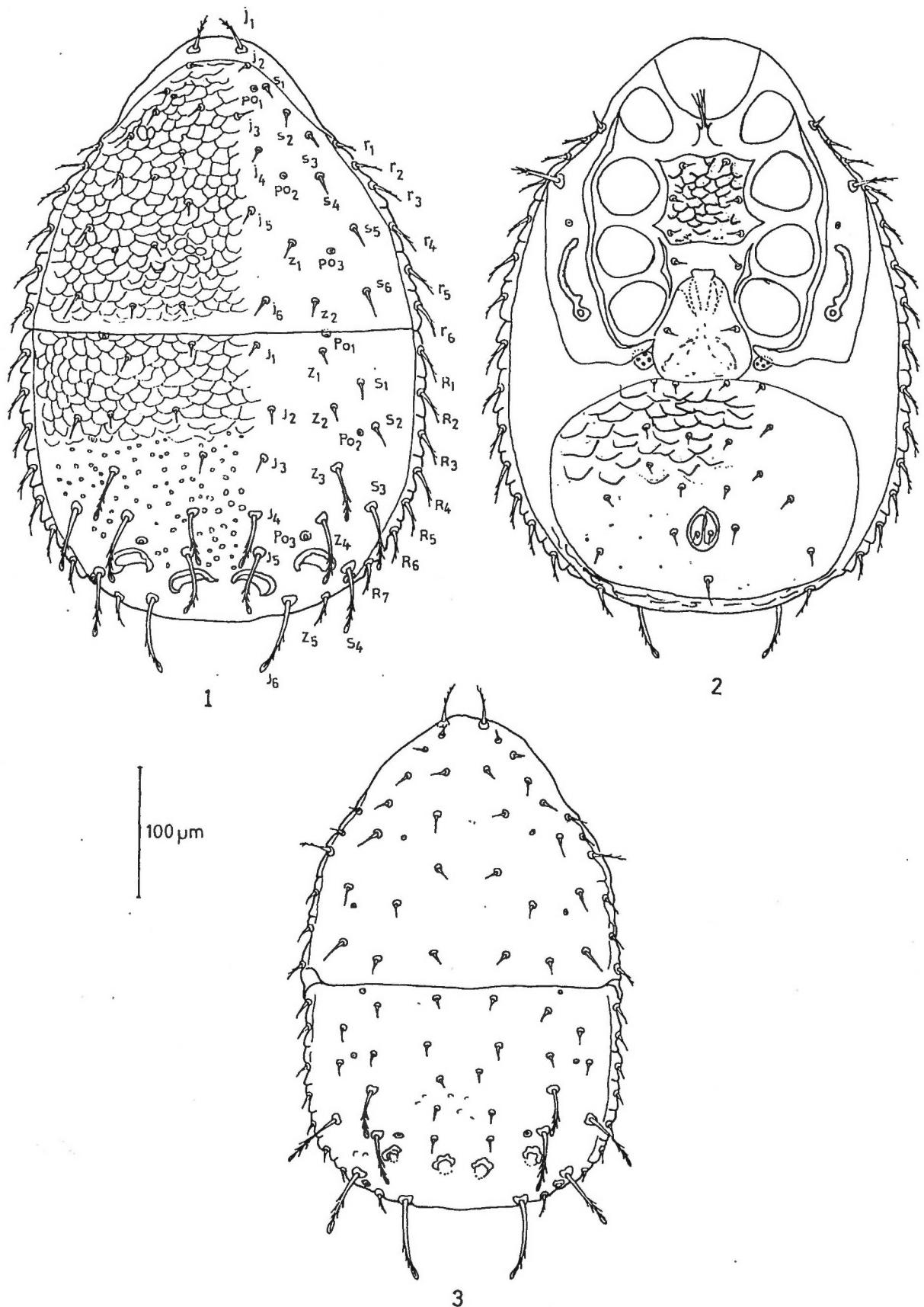
Zercon burdurensis sp.nov.

(FIGS 1–3)

FEMALE (Figs 1–2). Length of idiosoma (excluding gnathosoma) in holotype 457 µm, width 327 µm. Measurements of 22 paratypes: length 455 (439–467) µm, width 330 (310–340) µm.

Dorsal setae (Fig 1). On the podonotum seta J_1 pilose, all marginal setae of podonotum delicately barbed. Remaining setae of podonotum short and smooth. Opisthonotal setae J_1 – J_3 short and smooth. Setae J_4 – J_6 long, terminally broadened with hyaline

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FIGS 1-3: *Zercon burdurensis* sp.nov.

1.—Female: dorsal view of idiosoma. 2.—Female: ventral view of idiosoma. 3.—Deutonymph: dorsal view of idiosoma.

ending. Seta J_4 reaches to beyond insertion of seta J_5 . Seta J_5 reaches to insertion of seta J_6 and posterior margin of opisthonotum. Setae J_6 lie 110 μm apart from one another. Setae Z_1 and Z_2 short and smooth. Setae Z_3 and Z_4 similar to seta J_6 . Seta Z_3 reaches to insertion of seta Z_4 . Seta Z_4 does not reach posterior margin of opisthonotum. Seta Z_5 delicately barbed. Distance between setae Z_5-J_6 30 μm . Setae S_1 and S_2 short and smooth. Setae S_3 and S_4 similar to seta J_6 . All marginal setae of opisthonotum similar to seta Z_5 . Length of opisthonotal setae and distance between setae within longitudinal rows are as follows:

S_1 -17	Z_1 -13	J_1 -13
37	43	53
S_2 -23	Z_2 -17	J_2 -13
60	43	43
S_3 -50	Z_3 -47	J_3 -13
50	40	40
S_4 -50	Z_4 -53	J_4 -43
	60	30
Z_5 -27	J_5 -47	40
		J_6 -53

Pore Po_1 located anteroantiaxially to the insertion of seta Z_1 . Pore Po_2 lies under the line connecting setae Z_2-S_2 . Pore Po_3 lies slightly under the line connecting setae Z_4-J_5 above the inner corners of the outside dorsal cavities. Pore Po_4 located behind of seta S_4 .

Ornamentation of dorsal shields shown in Fig. 1. Posterior dorsal cavities strikingly large and strongly sclerotized.

Tectum; conspicuous, with a long bifurcate central tine and deeply denticulate lateral tines.

Chaetotaxy and shape of peritremal shields typical for the genus. Adgenital shields composed of four pores are present. On the anterior margin of ventro-anal shield four setae (Fig. 2).

Chelicerae characteristic for the genus *Zercon*.

DEUTONYMPH (Fig. 3). Length of idiosoma (excluding gnathosoma) in 2 paratypes 367 (350–383) μm , width 246 (237–254) μm . Podonotal setae j_1 , r_3 and r_6 delicately barbed, remaining setae of podonotum smooth. Opisthonotal setae J_1-J_5 , Z_1-Z_2 and S_1-S_2 short and smooth. Setae J_6 , Z_3-Z_4 and S_3-S_4 long, terminally broadened with hyaline ending. Seta Z_3 reaches to base of seta Z_4 . Seta Z_5 delicately barbed.

Distance between setae J_6-J_6 and Z_5-J_6 90 μm . and 19 μm , respectively. Pore Po_3 lies on the line connecting setae Z_4-J_5 . Length of opisthonotal setae and distance between setae within longitudinal rows as follows:

S_1 -15 (13-17)	Z_1 -10	J_1 -10
27 (23-33)	38 (33-43)	37
S_2 -15 (13-17)	Z_2 -10	J_2 -10
37 (30-43)	24 (20-27)	22 (17-27)
S_3 -48 (43-53)	Z_3 -35 (30-40)	J_3 -8 (7-10)
37 (30-43)	28 (23-33)	27 (20-33)
S_4 -52 (50-53)	Z_4 -53	J_4 -8 (7-10)
	43 (33-53)	22 (20-23)
	Z_5 -17	J_5 -8 (7-10)
		44 (37-50)
		J_6 -64 (60-67)

TYPE MATERIAL. Holotype female; paratypes 22 females, 2 deutonymphs: Turkey, Burdur, Insuyu cave, 1200 m, 3 May 1994. Sample of litter and soil under *Pyrus elaeagnifolia* and *Quercus* sp. in garden at the entrance of the Insuyu cave.

REMARKS. *Zercon burdurensis* is most closely related to *Zercon insperatus* Błaszk, 1979 and *Z. peltatus* C.L. Koch, 1836. They may be distinguished according to the following table 1.

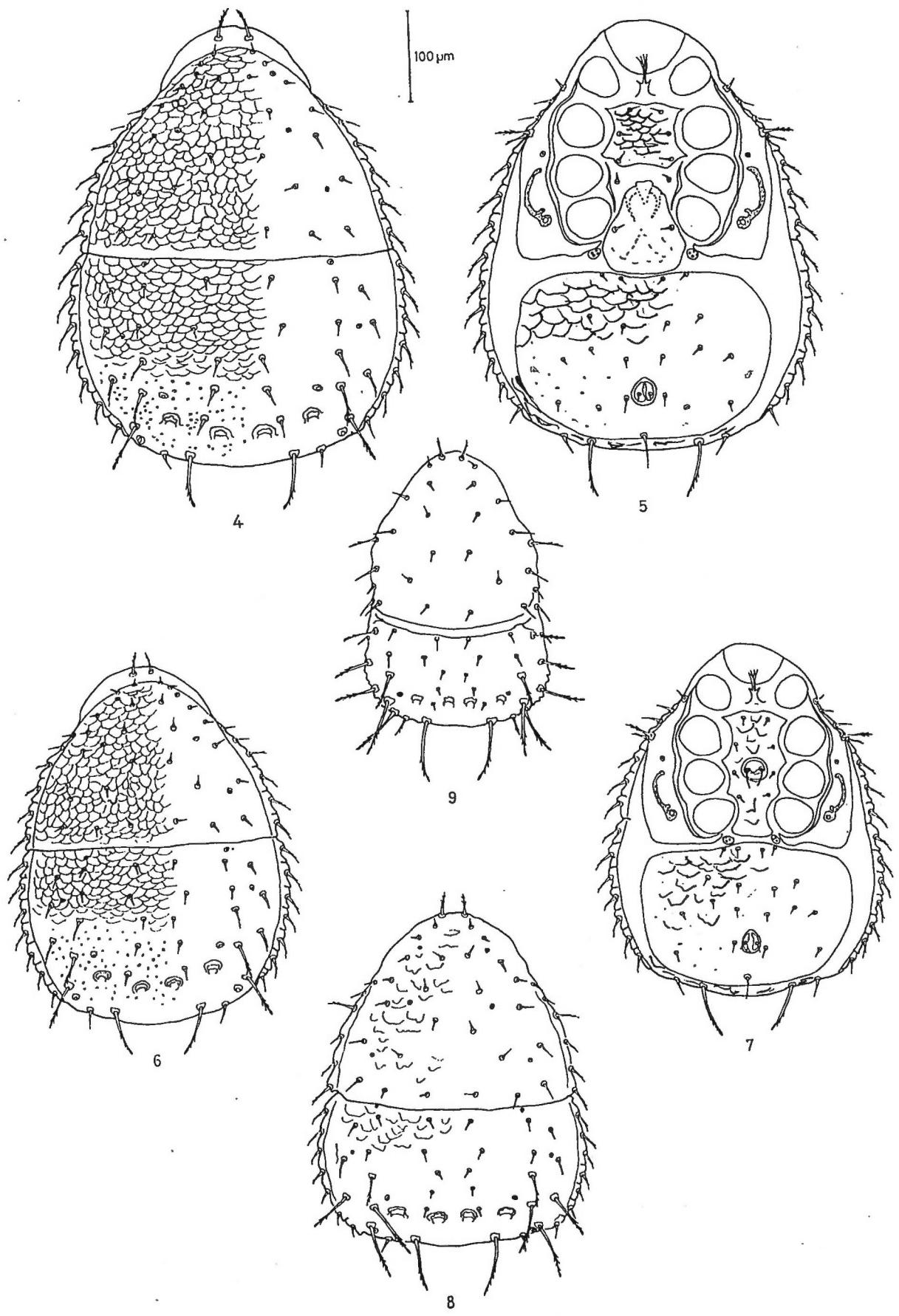
ETYMOLOGY. The new species is named after the type locality, Burdur (Turkey).

Zercon serratus sp. nov.

(FIGS 4–9)

FEMALE (Figs 4–5). Length of idiosoma (excluding gnathosoma) in holotype 483 μm , width 383 μm . Measurements of 36 paratypes: length 476 (440–513) μm , width 386 (367–423) μm .

Dorsal setae (Fig. 4). Podonotal setae j_1 pilose, r_3-r_6 delicately barbed. The remaining setae of podonotum smooth. Opisthonotal setae J_1-J_5 , Z_1-Z_2 , Z_5 and S_1-S_2 smooth. Seta J_6 long, terminally broadened with hyaline ending. Setae J_6 lie 117 μm apart from one another. Setae Z_3 and Z_4 long and feathered. Seta Z_3 does not reach to base of seta Z_4 . Seta Z_4 does not reach posterior margin of opisthonotum. Distance between setae Z_5-J_6 33 μm . Seta S_3 pilose and does not reach margin of opisthonotum.



FIGS 4-9: *Zercon serratus* sp.nov.

	<i>Z. insperatus</i>	<i>Z. peltatus</i>	<i>Z. burdurensis</i>
Setae on anterior margin of ventro-anal shield	one pair	two pairs	two pairs
Seta S_2	barbed.	smooth	smooth
long setae of opisthonotum	Barbed, with hyaline ending	Feathered, without hyaline ending	Barbed, with hyaline ending
Seta Z_5	smooth	smooth	delicately barbed
Seta J_3	does not reach insertion of J_4	reaches insertion of J_4	does not reach insertion of J_4
Seta J_5	does not reach insertion of seta J_6 and posterior margin of opisthonotum	does not reach insertion of seta J_6 and posterior margin of opisthonotum	reaches insertion of seta J_6 and posterior margin of opisthonotum
Dorsal cavities	distinct and well sclerotized	distinct and well sclerotized	strikingly large and strongly sclerotized

TABLE 1

Seta S_4 similar to seta J_6 . Setae R_1-R_6 delicately barbed, seta R_7 smooth. Length of opisthonotal setae and distance between setae within longitudinal rows are as follows:

$S_1\text{-}20$	$Z_1\text{-}17$	$J_1\text{-}17$
37	43	53
$S_2\text{-}20$	$Z_2\text{-}17$	$J_2\text{-}17$
57	37	40
$S_3\text{-}30$	$Z_3\text{-}30$	$J_3\text{-}23$
53	37	33
$S_4\text{-}53$	$Z_4\text{-}33$	$J_4\text{-}23$
70	33	
$Z_5\text{-}17$	$J_5\text{-}23$	
40		
	$J_6\text{-}57$	

Pore Po_1 located above the insertion of seta Z_1 . Pore Po_2 lies slightly below the line connecting setae Z_2-S_2 . Pore Po_3 lies on the line connecting setae Z_4-J_4 shifted toward seta Z_4 . Pore Po_4 located behind of seta S_4 .

Ornamentation of dorsal shields shown in Fig. 4. Posterior dorsal cavities distinct and well sclerotized.

Tectum conspicuous, with a long bifurcate central tine and deeply denticulate lateral tines.

Chaetotaxy and shape of peritremal shields typical for the genus. Adgenital shields composed of four or three pores are present. On the anterior margin of ventro-anal shield four setae (Fig. 5).

Chelicerae characteristic for the genus *Zercon*.

MALE (Figs 6–7). Idiosoma (excluding gnathosoma) in 13 specimens 375 (350–394) µm long, 302

(293–307) µm wide. Setae, pores and sculpture of podo — and opisthonotum as in female. Distances between setae J_6-J_6 and Z_5-J_6 94 µm and 27 µm, respectively. Length of opisthonotal setae and distance between setae within longitudinal rows as follows:

$S_1\text{-}16$ (13-17)	$Z_1\text{-}13$	$J_1\text{-}14$ (13-17)
32 (30-33)	29 (27-30)	35 (33-37)
$S_2\text{-}17$	$Z_2\text{-}13$	$J_2\text{-}14$ (13-17)
36 (30-40)	24 (20-27)	28 (20-33)
$S_3\text{-}23$	$Z_3\text{-}21$ (20-23)	$J_3\text{-}16$ (13-17)
43 (37-50)	34 (27-40)	24 (20-27)
$S_4\text{-}52$ (50-53)	$Z_4\text{-}29$ (27-30)	$J_4\text{-}16$ (13-17)
	54 (43-63)	25 (20-33)
	$Z_5\text{-}21$ (17-23)	$J_5\text{-}16$ (13-17)
		36 (30-40)
		$J_6\text{-}53$

DEUTONYMPH (Fig. 8). Length of idiosoma (excluding gnathosoma) in 3 paratypes: 383 (367–400) µm, width 307 (300–317) µm. Podonotal setae j1 pilose, r3, r5–r6 delicately barbed, remainder smooth. Opisthonotal setae J_1-J_5 , Z_1-Z_2 , Z_5 and S_1-S_2 short and smooth. Setae J_6 long, terminally broadened with hyaline ending and lying 91 µm apart from one another. Setae Z_3 long and pilose. Seta Z_3 reaches to the base of seta Z_4 . Seta Z_4 similar to seta J_6 and reaches to posterior margin of opisthonotum. Distance between setae Z_5-J_6 29 µm. Setae S_3 and S_4 similar to seta J_6 . Seta S_3 exceeds opisthonotum margin of half length. Setae R_1-R_4 delicately barbed, the remainder of this row smooth. Pore Po_3 lies above the line connecting setae Z_4-J_4 . Length of opisthonotal setae

and distance between setae within longitudinal rows as follows:

S₁-17	Z₁-10	J₁-13
35 (33-37)	39 (37-40)	37 (33-40)
S₂-21 (20-23)	Z₂-10	J₂-13
45 (43-47)	26 (23-27)	24 (20-27)
S₃-51 (50-53)	Z₃-43 (40-47)	J₃-10
42 (40-43)	39 (37-40)	25 (23-27)
S₄-61 (57-63)	Z₄-56 (53-63)	J₄-8 (7-10)
	46 (37-53)	32 (27-37)
	Z₅-20 (17-23)	J₅-8 (7-10)
		37 (33-40)
		J₆-66 (60-70)

PROTONYMPH (Fig. 9). Length of idiosoma (excluding gnathosoma) in 1 paratype 303 µm, width 207 µm. Podonotal setae j1 and r3 pilose, the remainder smooth. Opisthonotal setae J₁-J₅ and Z₁-Z₂ smooth, seta Z₅ delicately barbed. Remaining setae of opisthonotum long and terminally broadened with hyaline ending. Pore Po₃ lies on the line connecting setae Z₄-J₄. Length of opishonotal setae and distance between setae within longitudinal rows as follows:

S₁-33	Z₁-10	J₁-10
30	23	27
S₂-43	Z₂-10	J₂-10
30	23	23
S₃-53	Z₃-40	J₃-7
30	30	20
S₄-60	Z₄-60	J₄-7
		23
		20
	Z₅-27	J₅-7
		23
		J₆-70

TYPE MATERIAL. Holotype female; paratypes 23 females, 7 males, 3 deutonymphs and 1 protonymph: Turkey, Trabzon, Araklı, Yeşilce village, 200 m, 1.7.1995. Sample of litter and soil in a coniferous forest (mostly *Pinus* sp.). Other paratypes (14 females, 5 males) from Turkey, Trabzon, Araklı, Yeşilce village, 200 m, 1.7.1995. Sample of litter and soil under *Corylus avellana* and *Malus sylvestris* in a garden.

REMARKS. *Zercon serratus* is most closely related to *Zercon storkani* Halaskova, 1969 and *Z. ovalis* Balan, 1992. They may be distinguished according to the following table 2:

	<i>Z. storkani</i>	<i>Z. ovalis</i>	<i>Z. serratus</i>
Seta j2	pilose	smooth	smooth
Setae J ₄ -J ₅	smooth	barbed	smooth
Seta Z ₃	reaches base of Z ₄	does not reach base of Z ₄	does not reach base of Z ₄
Seta Z ₄	terminally broadened with hyaline ending	terminally broadened with hyaline ending	feathered
Seta S ₂	smooth	barbed, with hyaline ending	smooth
Seta S ₃	pilose and exceeds margin of opisthonotum	terminally broadened with hyaline ending	pilose and does not reach margin of opisthonotum
Posterior part of opisthonotum	smooth	covered with delicate puncta	covered with delicate puncta

TABLE 2

ETYMOLOGY. The specific epithet refers to the fact that margin of dorsal shield is serrate in the adults.

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