

Orijinal araştırma (Original article)

***Stigmaeus ceylani*, a new species of the genus *Stigmaeus* Koch
(Acari: Stigmaeidae) from Turkey**

Türkiye'den *Stigmaeus* Koch (Acari: Stigmaeidae) cinsine bağlı yeni bir tür,
Stigmaeus ceylani

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Summary

In this study a new species of *Stigmaeus* Koch (Acari: Stigmaeidae), *Stigmaeus ceylani* sp. nov., is described and illustrated. Specimens have been collected from the soil and litter under *Punica granatum*, 2014, İskenderun, Hatay, Turkey. Besides, the male, female, deutonymph, protonymph and larva of the species are illustrated in this article.

Key words: Raphignathoidea, Stigmaeidae, *Stigmaeus ceylani* sp. nov., new species, Turkey

Özet

Bu çalışmada *Stigmaeus* Koch (Acari: Stigmaeidae) cinsine ait yeni bir türün *Stigmaeus ceylani* sp. nov. şekilleri çizilerek tanımlanmıştır. Örnekler 2014 yılında Hatay'ın İskenderun ilçesinde nar ağacının (*Punica granatum*) altından alınan döküntü ve topraktan elde edilmişlerdir. Ayrıca, bu türe ait erkek, deutonimf, protonimf ve larvanın da şekilleri çizilerek verilmiştir.

Anahtar sözcükler: Raphignathoidea, Stigmaeidae, *Stigmaeus ceylani* sp. nov., yeni tür, Türkiye

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Introduction

Stigmaeidae is a family within the superfamily Raphignathoidea. These mites live in or on soil, grass, leaf, mulch, lichen, bark, beetle frass, crevices in rock and leaf cavities, and a few of them are parasitic on phlebotomine flies (Ueckermann & Meyer, 1987; Doğan & Ayyıldız, 2003a,b; Akyol & Koç, 2007, 2010; Noei et al., 2007; Dönel & Doğan, 2011; Uluçay & Koç, 2014). Currently this family consists of 32 valid genera and about 500 species (Doğan et al., 2011; Bagheri et al., 2012; Nazari et al., 2012). Up to now *Agistemus* Summers, *Cheyllostigmaeus* Willmann, *Eustigmaeus* Berlese, *Ledermuelleriopsis* Willmann, *Mediolata* Canestrini, *Stigmaeus* Koch, *Prostigmaeus* Kuznetsov, *Storchia* Oudemans, *Villersia* Oudemans, *Zetzellia* Oudemans and *Eryngiopus* Summers have been reported from Turkey (Doğan 2007; Dönel & Doğan 2011; Yeşilayer & Çobanoğlu, 2013). The genus *Stigmaeus* has a worldwide distribution with more than 100 described species. To date, 25 species are reported from Turkey (Doğan, 2007; Akyol & Koç, 2007; Dönel & Doğan, 2011; Özçelik & Doğan, 2011). In this article, *Stigmaeus ceylani* sp. nov. is described as new species. The male, female, deutonymph, protonymph and larva of the species are illustrated.

Materials and Methods

The soil and litter samples taken from mixed habitats in Hatay Province (Turkey), 2014 were brought to the laboratory in nylon bags, and extracted in Berlese funnels for five to seven days. Mites were collected in 70% ethanol. Stigmaeid mites were picked from the samples under a stereomicroscope and mounted on slides in Hoyer's medium. The mite figures were drawn and measured by means of a Leica DM 4000 B research microscope which has a special software (Leica Application Suite Version 3.6.0 – Build:488) in order to get exact measures. The setal nomenclature follows that of Kethley (1990) and Grandjean (1944). The holotype female and paratypes are preserved as slide mounted specimens and deposited in the Acari Collection of Hakkari University, Hakkari, Turkey. All measurements are given in micrometers (μm). Holotype measurements have been used for all body parts and minimum and maximum values of paratypes are given in parenthesis. Measurements of legs have been taken from base of femur to tip of tarsal claw.

Family: Stigmaeidae Oudemans, 1931

Type genus: *Stigmaeus* Koch, 1836

Type species: *Stigmaeus cruentus* Koch, 1836.

***Stigmaeus ceylani* sp. nov.**

Diagnosis

This new species is distinguished in that it has additional shield without setae; no eyes and postocular bodies; its dorsal setae are faintly spinulate; its propodosomal shield with centrally, faintly reticulate; $h_2 > ve = c_2$ and n/m 1.9-2.2; aggenital area with four pairs of setae, ag_1 and ag_2 on the same platelet and ag_3 and ag_4 on the same platelet; ratio $1a:3a:4a$ 1:1.1-1.2:1 and $c_1-c_1:d_1-d_1:e_1-e_1:f_1-f_1$ 1-1.1:1:1.2-1.4:1.3-1.6.

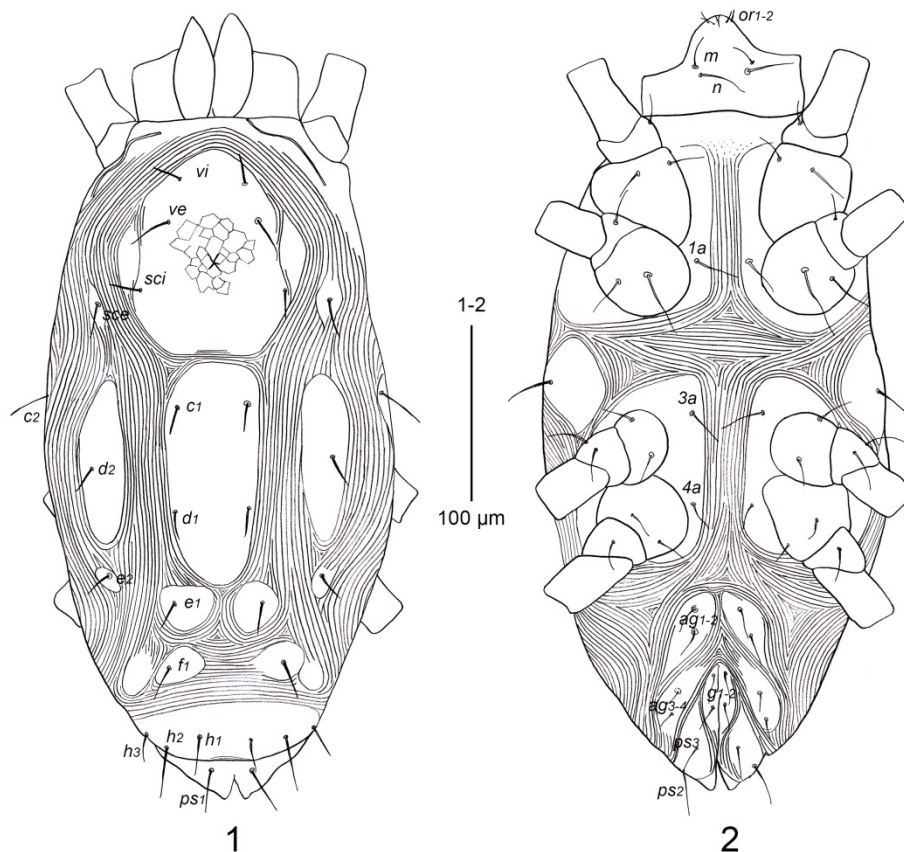
Female (n 9) (Figures 1-8)

Holotype (range of paratypes): Length of body (including gnathosoma) 451 (440-460); width of body 198 (204-231).

Gnathosoma - Length of gnathosoma 64 (61-66); subcapitulum with two pairs of subcapitular setae (m and n), m 21 (21-24), n 40 (41-46) and two pairs of adoral setae, or_1 and or_2 ; distances $m - m$ 32 (30-33), $n - n$ 26 (29-30); ratio $n:m$ 1.9 (1.9-2.2); palp tarsus with 5 simple setae + 1 tridentale eupathidium + 1 solenidion; palp tibia with 2 setae + 1 accessory claw + 1 well-developed claw; palp genu with 1 setae; palp femora with 3 setae; palp trochanter without setae (Figure 7).

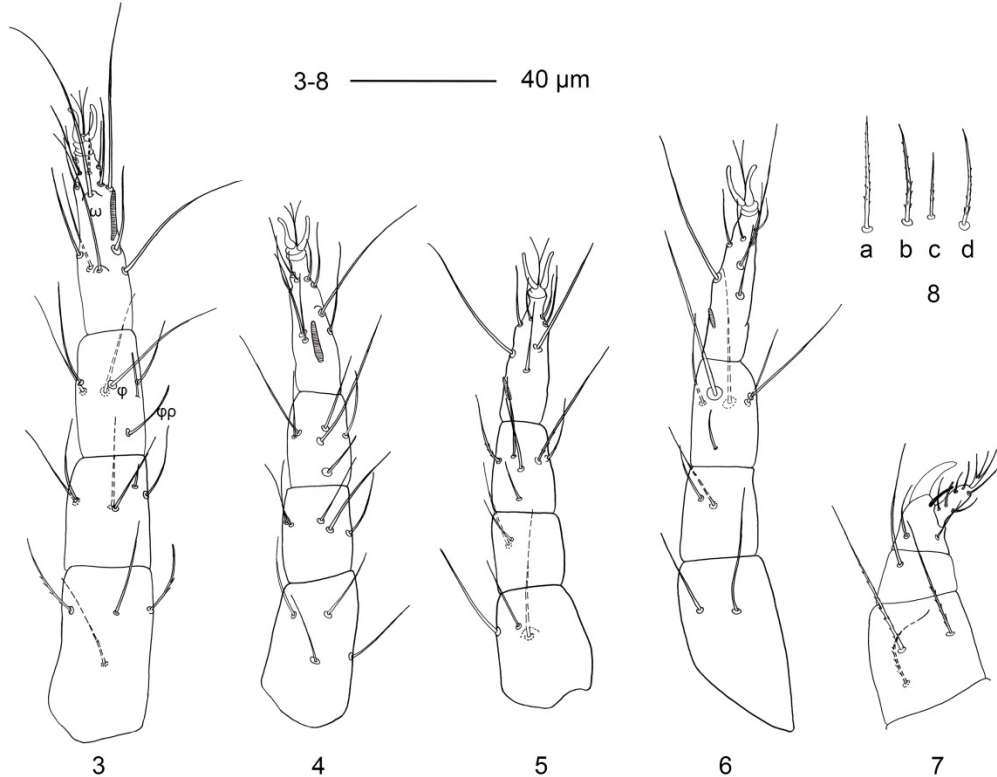
Dorsum (Figure 1) – Propodosomal shield centrally, faintly reticulate with three pairs of setae (*vi*, *ve* and *sci*), eyes and post-ocular bodies absent. Setae *sce* located on small auxiliary shields. Additional a pair of shield without setae next to propodosomal shield. Central shield with two pairs of setae *c*₁ and *d*₁, Setae *c*₂ on humeral shield ventrolaterally. Median zonal shields with one pair of setae *e*₁. Marginal shields with setae *d*₂. Lateral zonal shields with setae *e*₂, Intercalary shields divided, with setae *f*₁. A pair of additional small shield without setae next to intercalary shield. Suranal shield entire, with three pairs of setae *h*₁, *h*₂ and *h*₃. Dorsal body setae faintly spinulate (Figure 8). *h*₂ is the longest dorsal seta, ratio $h_2 > ve = c_2$. Dimensions of setae as follows: *vi* 18 (18-21), *ve* 28 (28-30), *sci* 20 (19-23), *sce* 23 (20-24), *c*₁ 18 (18-21), *c*₂ 28 (25-30), *d*₁ 19 (17-21), *d*₂ 19 (18-21), *e*₁ 18 (18-21), *e*₂ 18 (18-20), *f*₁ 21 (20-25), *h*₁ 22 (22-26), *h*₂ 32 (31-36), *h*₃ 20 (20-23); distances between dorsal setae: *vi*–*vi* 36 (33-41), *ve*–*ve* 50 (48-51), *vi*–*ve* 21 (20-23), *sci*–*sci* 82 (81-88), *sce*–*sce* 131 (139-151), *ve*–*sci* 41 (37-43), *sci*–*sce* 23 (25-32), *c*₁–*c*₁ 39 (43-47), *c*₁–*c*₂ 74 (83-94), *c*₂–*c*₂ 188 (177-219) *c*₁–*d*₁ 59 (57-67), *d*₁–*d*₁ 39 (38-45), *d*₁–*d*₂ 53 (53-67), *d*₁–*e*₁ 51 (49-60), *d*₂–*d*₂ 138 (136-167), *d*₂–*e*₂ 66 (68-78), *e*₁–*e*₁ 49 (47-59), *e*₂–*e*₂ 118 (120-140), *e*₁–*e*₂ 37 (36-55), *e*₁–*f*₁ 33 (30-35), *f*₁–*f*₁ 63 (55-61), *f*₁–*h*₁ 42 (38-42), *h*₁–*h*₁ 26 (24-27), *h*₂–*h*₂ 64 (61-67), *h*₃–*h*₃ 92 (90-97); ratio: *ve*:*sci* 1.4 (1.3-1.5), *c*₂:*c*₁ 1.6 (1.4-1.5). *vi*: *vi*–*vi* 0.5 (0.5), *c*₁: *c*₁–*c*₁ 0.5 (0.4-0.5), *d*₁: *d*₁–*d*₁ 0.5 (0.4-0.5), *e*₁: *e*₁–*e*₁ 0.4 (0.3-0.4), *f*₁: *f*₁–*f*₁ 0.3 (0.4), *h*₁: *h*₁–*h*₁ 0.8 (0.9-1.1), *h*₂: *h*₂–*h*₂ 0.5 (0.5), *h*₃: *h*₃–*h*₃ 0.7 (0.7), *c*₁–*c*₂:*d*₁–*d*₁:*e*₁–*e*₁:*f*₁–*f*₁ 1-1.1:1.1:1.2-1.4:1.3-1.6.

Venter (Figure 2) - Ventral cuticle transversely striate between coxisternal shields II–III; coxisternal regions I–II and III–IV are surrounded by longitudinal striae (Figure 2). Lengths of setae: *1a* 26 (25-27), *3a* 31 (29-36), and *4a* 25 (26-28) and ratio *1a*:*3a*:*4a* 1:1.1-1.2:1. Aggenital area with four pairs of setae, *ag*₁ and *ag*₂ on same platelet *ag*₃ and *ag*₄ on other same platelet, *ag*₁ 21 (20-22), *ag*₂ 19 (19-23), *ag*₃ 19 (18-24) and *ag*₄ 20 (19-25); anogenital valves with two pairs of genital setae and three pairs of pseudanal setae. Measurements of setae *g*₁ 25 (20-28), *g*₂ 23 (22-28), *ps*₁ 27 (24-29), *ps*₂ 26 (23-28) and *ps*₃ 25 (20-24).



Figures 1-2. *Stigmaeus ceylani* sp. nov. (female) - 1. dorsal view, 2. ventral view.

Legs (Figures 3-6) - Length of legs: leg I 172 (154-175), leg II 137 (117-138), leg III 132 (115-135), leg IV 153 (138-162). Setal formulae of leg segments as follows: coxae 2+1a-2-2+3a-2+4a, trochanters 1-1-2-1, femora 4-4-3-2, genua 6κ-5-2-2, tibiae 5+φ+φρ-5+φρ-5+φρ-5+φρ, tarsi 13+ω-9+ω-7+ω-7+ω. Lengths of solenidia: Iω>IIω>IIIω>IVω.



Figures 3-8. *Stigmaeus ceylani* sp. nov. (female) - 3. leg I, 4. leg II, 5. leg III, 6. leg IV, 7. Palp, 8. a) setae h_2 , b) setae c_2 , c) setae vi , d) setae ve e) setae f_1 .

Male (n 7) (Figures 9-15)

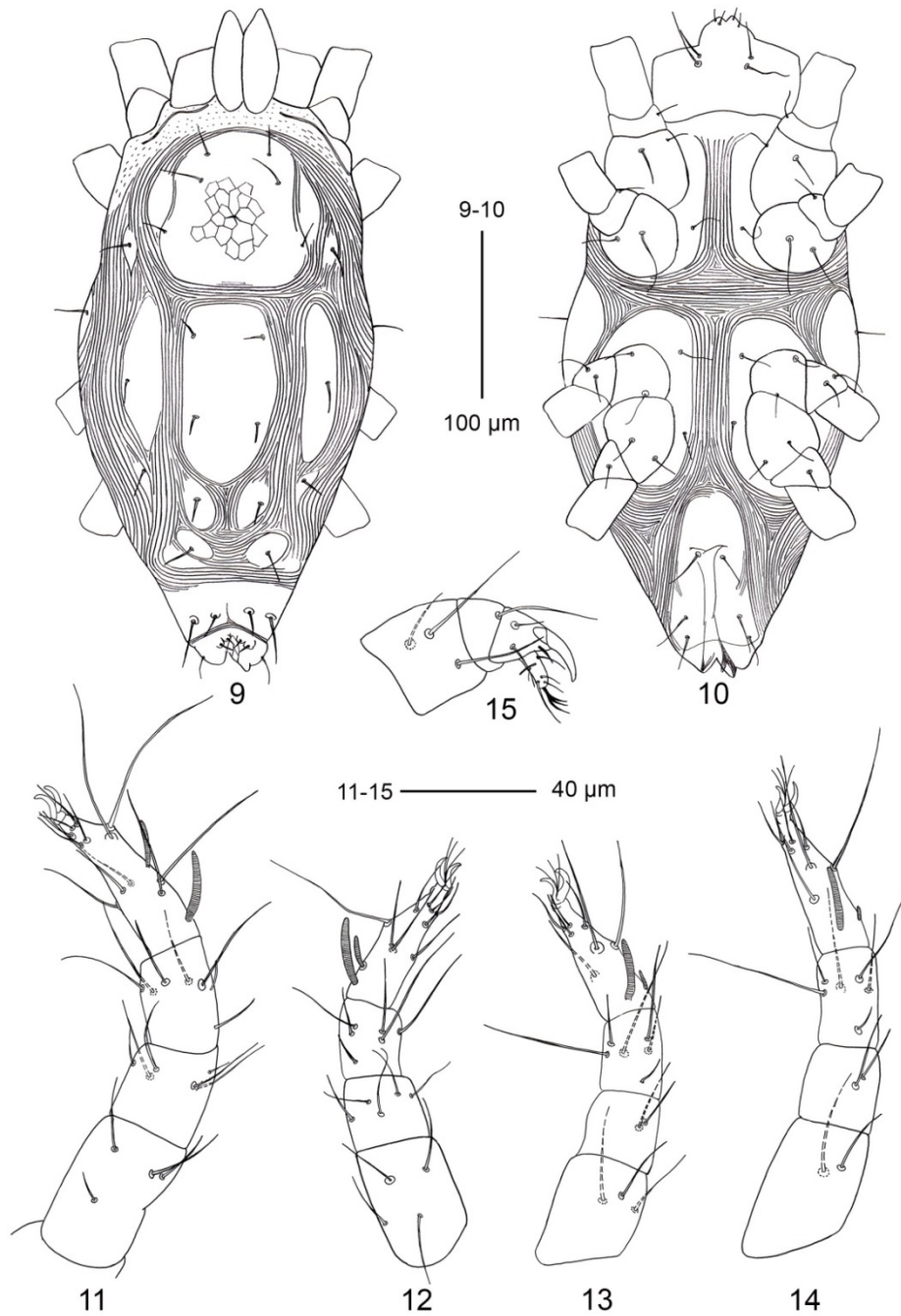
Length of body (including gnathosoma) 375-407; width of body 157-180.

Gnathosoma - Length of gnathosoma 54-59; subcapitulum with two pairs of subcapitular setae (m and n), m 22-24, n 30-37 and two pairs of adoral setae, or_1 and or_2 ; distances $m-m$ 27-32, $n-n$ 22-27; $n:m$ 1.3-1.7; palpal chaetotaxy as in female (Figure 15).

Dorsum (Figure 9) – Propodosomal shield faintly reticulate centrally with three pairs of setae (vi , ve and sci), eyes and post-ocular bodies absent. Setae sce located on small auxiliary shields. Additional a pair of shield without setae next to propodosomal shield. Central shield with two pairs of setae c_1 and d_1 , Setae c_2 on humeral shield ventrolaterally. Median zonal shields with one pair of setae e_1 . Marginal shields with setae d_2 . Lateral zonal shields with setae e_2 , Intercalary shields divided, with setae f_1 . A pair of additional small shield without setae next to intercalary shield. Suranal shield entire, with two pairs of setae h_1 and h_2 . Dorsal body setae faintly spinulate. h_2 is the longest dorsal seta, ratio ve/sci 1.3-1.6. Dimensions of setae as follows: vi 15-18, ve 21-27, sci 16-17, sce 17-19, c_1 13-15, c_2 20-24, d_1 12-13, d_2 14-15, e_1 13-16, e_2 14-15, f_1 15-18, h_1 14-18, h_2 28-31; distances between dorsal setae: $vi-vi$ 31-38, $ve-ve$ 43-47, $vi-ve$ 14-18, $sci-sci$ 72-77, $sce-sce$ 105-121, $ve-sci$ 35-38, $sci-sce$ 17-24, c_1-c_1 34-41, c_1-c_2 62-69, c_2-c_2 143-170, c_1-d_1 49-56, d_1-d_1 32-36, d_1-d_2 41-47, d_1-e_1 37-47, d_2-d_2 105-120, d_2-e_2 49-64, e_1-e_1 30-35, e_2-e_2 84-98, e_1-e_2 28-34, e_1-f_1 25-29, f_1-f_1 40-44, f_1-h_1 33-38, h_1-h_1 17-20, h_2-h_2 39-46; ratio: $vi: vi-vi$ 0.4-0.5, $c_1: c_1-c_1$ 0.4, $d_1: d_1-d_1$ 0.4, $e_1: e_1-e_1$ 0.4-0.5, $f_1: f_1-f_1$ 0.4, $h_1: h_1-h_1$ 0.8-0.9, $h_2: h_2-h_2$ 0.6-0.8, $h_1: h_2$ 0.5-0.6, $c_1-c_1: d_1-d_1: e_1-e_1: f_1-f_1$ 1-1.1:1:0.9-1:1.2-1.3.

Venter (Figure 10) – Ventral view similar to that of the female. Lengths of setae: $1a$ 24-26, $3a$ 25-30, and $4a$ 22-25 and ratio $1a:3a:4a$ 1-1.1:1.1-1.3:1. Aggenital area with two pairs of setae, ag_1 20-24, ag_2 18-22 and ag_3 19-20; anogenital valves with three pairs of pseudanal setae. Measurements of setae ps_1 7-8, ps_2 9-10 and ps_3 19-22.

Legs (Figures 11-14) - Length of legs: leg I 151-164, leg II 120-128, leg III 115-129, leg IV 126-149. Setal formulae of leg segments as in female, but tarsi I-IV with two solenidion each.

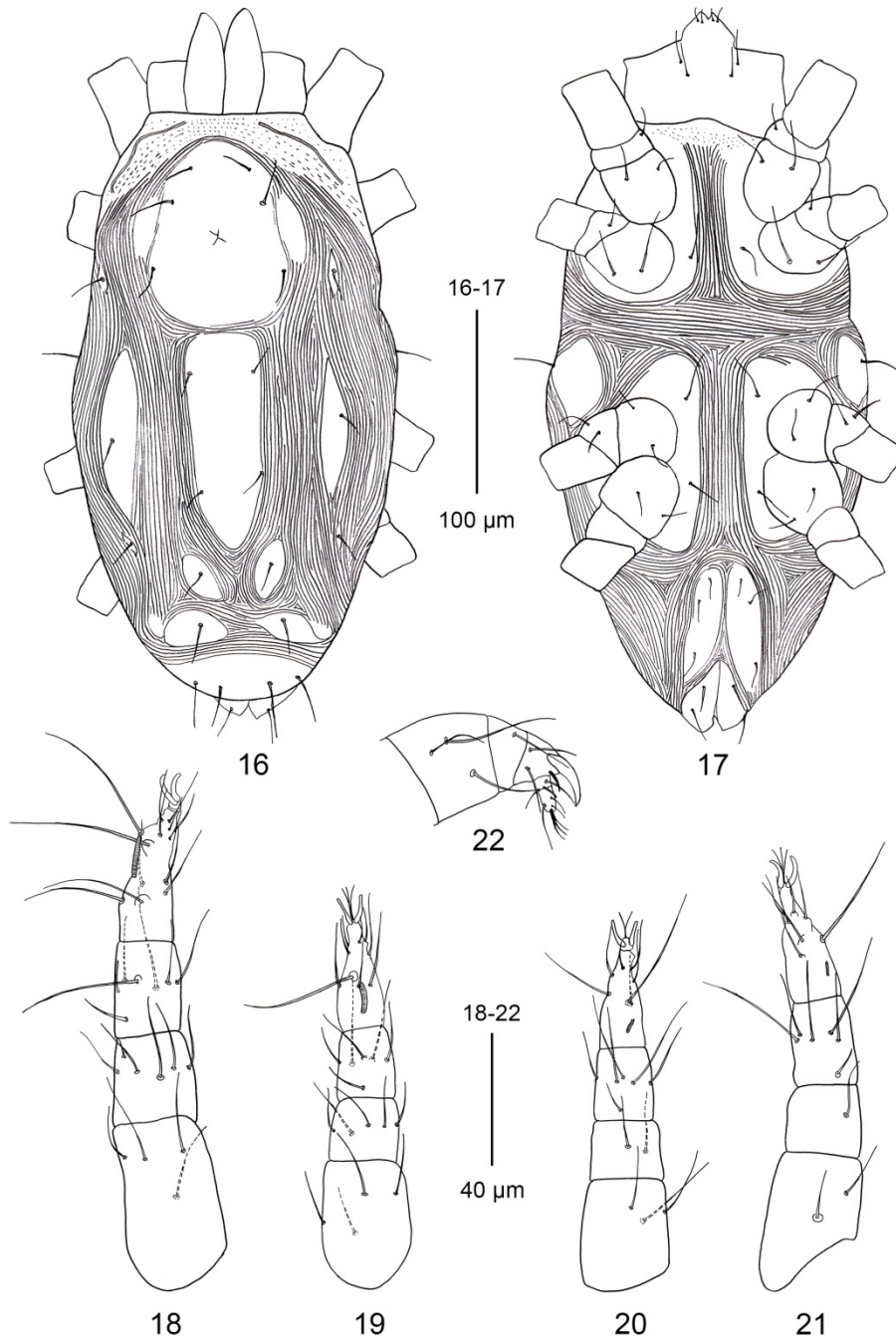


Figures 9-15. *Stigmaeus ceylani* sp. nov. (male) - 9. dorsal view, 10. ventral view, 11. leg I, 12. leg II, 13. leg III, 14. leg IV, 15. Palp.

Deutonymph (n 4) (Figures 16-22)

Length of body (including gnathosoma) 375-405; width of body 173-217.

Gnathosoma - Length of gnathosoma 54-55; subcapitulum with two pairs of subcapitular setae (*m* and *n*), *m* 17-21, *n* 27-30 and two pairs of adoral setae, *or*₁ and *or*₂; distances *m*-*m* 27-29, *n*-*n* 22-26; palpal chaetotaxy as in female (Figure 22).



Figures 16-22. *Stigmaeus ceylani* sp. nov. (deutonymph) - 16. dorsal view, 17. ventral view, 18. leg I, 19. leg II, 20. leg III, 21. leg IV, 22. Palp.

Dorsum (Figure 16) – Propodosomal shield faintly reticulate centrally with three pairs of setae (*vi*, *ve* and *sci*), eyes and post-ocular bodies absent. Setae *sce* located on small auxiliary shields. Additional a pair of shield without setae next to propodosomal shield. Central shield with two pairs of setae *c*₁ and *d*₁, Setae *c*₂ on humeral shield ventrolaterally. Median zonal shields with one pair of setae *e*₁. Marginal shields with setae *d*₂. Lateral zonal shields with setae *e*₂, Intercalary shields divided, with setae *f*₁. A pair of additional small shield without setae next to intercalary shield. Suranal shield entire, with three pairs of setae *h*₁ and *h*₂. No *h*₃ setae. Dorsal body setae faintly spinulate and dorsal setae of deutonymph shorter than those of adult female. Dimensions of setae as follows: *vi* 16-17, *ve* 24-26, *sci* 16-18, *sce* 18-19, *c*₁ 14-15, *c*₂ 23-24, *d*₁ 14-15, *d*₂ 14-16, *e*₁ 15-16, *e*₂ 16-17, *f*₁ 19-21, *h*₁ 21-23, *h*₂ 27-28; distances between dorsal setae: *vi*–*vi* 32-38, *ve*–*ve* 46-49, *vi*–*ve* 17-19, *sci*–*sci* 70-75, *sce*–*sce* 120-136, *sci*–*sce* 23-30, *c*₁–*c*₁ 34-40, *c*₁–*c*₂ 69-93, *c*₂–*c*₂ 167-196, *c*₁–*d*₁ 53-58, *d*₁–*d*₁ 33-37, *d*₁–*d*₂ 55-59, *d*₁–*e*₁ 42-49, *d*₂–*d*₂ 117-146, *d*₂–*e*₂ 62-71, *e*₁–*e*₁ 36-46, *e*₂–*e*₂ 99-134, *e*₁–*e*₂ 30-43, *e*₁–*f*₁ 28-29, *f*₁–*f*₁ 41-46, *f*₁–*h*₁ 29-38, *h*₁–*h*₁ 22-24, *h*₂–*h*₂ 51-54, *h*₁–*h*₂ 13-14.

Venter (Figure 17) - Ventral view similar to that of the female. Lengths of setae: *1a* 20-21, *3a* 23-26, and *4a* 18-22. Aggenital area with three pairs of setae, *ag*₁ and *ag*₂ on same platelet, *ag*₁ 15-17, *ag*₂ 15-16 and *ag*₃ 15-16; anogenital valves with three pairs of pseudanal setae. Measurements of setae *ps*₁ 19-21, *ps*₂ 19-21 and *ps*₃ 18-19.

Legs (Figures 18-21) - Length of legs: leg I 143-150, leg II 110-115, leg III 107-109, leg IV 120-124. Setal formulae of leg segments as follows: coxae 2+*1a*-2-2+*3a*-2+*4a*, trochanters 1-1-2-0, femora 4-4-3-2, genua 5+κ-5-2-1, tibiae 5+φ+φρ-5+φρ-5+φρ-5+φρ, tarsi 13+ω-9+ω-7+ω-7+ω.

Protonymph (n 6) (Figures 23-29)

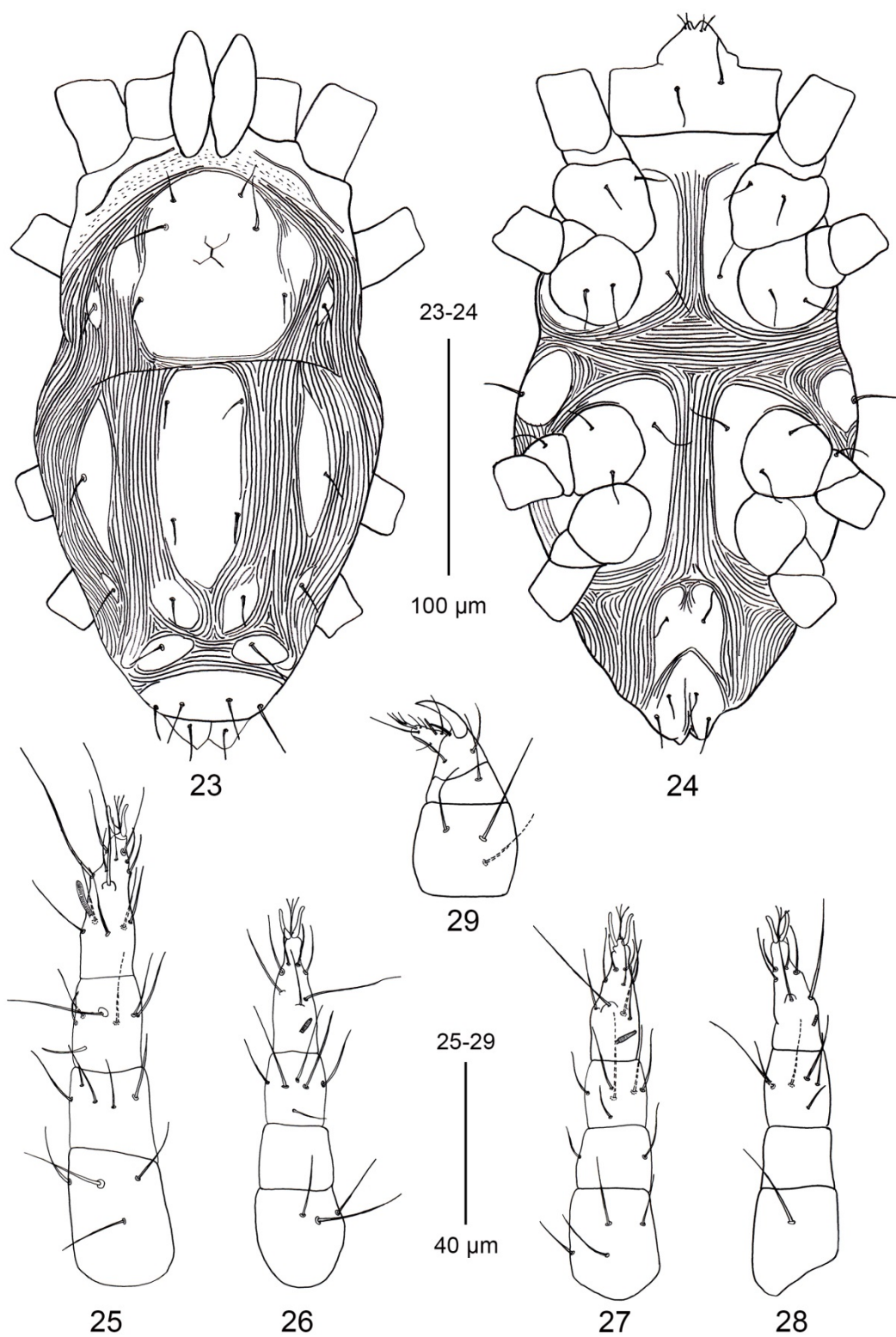
Length of body (including gnathosoma) 271-320; width of body 125-166.

Gnathosoma - Length of gnathosoma 47-49; subcapitulum with one pairs of subcapitular setae *n* 15-18 and two pairs of adoral setae, *or*₁ and *or*₂; distances *n*–*n* 18-22; palpal chaetotaxy as in female (Figure 29).

Dorsum (Figure 23) – Propodosomal shield faintly reticulate centrally with three pairs of setae (*vi*, *ve* and *sci*), eyes and post-ocular bodies absent. Setae *sce* located on small auxiliary shields. Additional a pair of shield without setae next to propodosomal shield. Central shield with two pairs of setae *c*₁ and *d*₁, Setae *c*₂ on humeral shield ventrolaterally. Median zonal shields with one pair of setae *e*₁. Marginal shields with setae *d*₂. Lateral zonal shields with setae *e*₂, Intercalary shields divided, with setae *f*₁. Suranal shield entire, with two pairs of setae *h*₁ and *h*₂. No *h*₃ setae. Dorsal body setae spinulate and dorsal setae of protonymph shorter than those of deutonymph and adult female. Dimensions of setae as follows: *vi* 11-14, *ve* 18-24, *sci* 13-16, *sce* 12-16, *c*₁ 12-14, *c*₂ 17-22, *d*₁ 10-13, *d*₂ 11-14, *e*₁ 13-15, *e*₂ 13-16, *f*₁ 16-20, *h*₁ 17-21, *h*₂ 17-24; distances between dorsal setae: *vi*–*vi* 22-28, *ve*–*ve* 34-42, *vi*–*ve* 11-14, *sci*–*sci* 56-64, *sce*–*sce* 93-109, *ve*–*sci* 29-33, *sci*–*sce* 17-22, *c*₁–*c*₁ 28-32, *c*₁–*c*₂ 54-61, *c*₂–*c*₂ 117-151, *c*₁–*d*₁ 44-50, *d*₁–*d*₁ 23-30, *d*₁–*d*₂ 35-47, *d*₁–*e*₁ 32-38, *d*₂–*d*₂ 84-114, *d*₂–*e*₂ 48-56, *e*₁–*e*₁ 23-35, *e*₂–*e*₂ 60-92, *e*₁–*e*₂ 18-28, *e*₁–*f*₁ 17-22, *f*₁–*f*₁ 31-39, *f*₁–*h*₁ 16-25, *h*₁–*h*₁ 17-18, *h*₂–*h*₂ 37-43, *h*₁–*h*₂ 10-11.

Venter (Figure 24) - Ventral view similar to that of the female. Lengths of setae: *1a* 17-19 and *3a* 20-21. No *4a* setae. Aggenital area with one pairs of setae, *ag*₁ 11-13; anogenital valves with three pairs of pseudanal setae. Measurements of setae *ps*₁ 12-16, *ps*₂ 12-16 and *ps*₃ 11-15.

Legs (Figures 25-28) - Length of legs: leg I 113-125, leg II 88-98, leg III 87-95, leg IV 91-106. Setal formulae of leg segments as follows: coxae 2+*1a*-2-2+*3a*-0, trochanters 0-0-1-0, femora 4-4-3-1, genua 4+κ-2-0-0, tibiae 5+φ+φρ-5+φρ-5+φρ-5+φρ, tarsi 13+ω-9+ω-7+ω-6+ω.

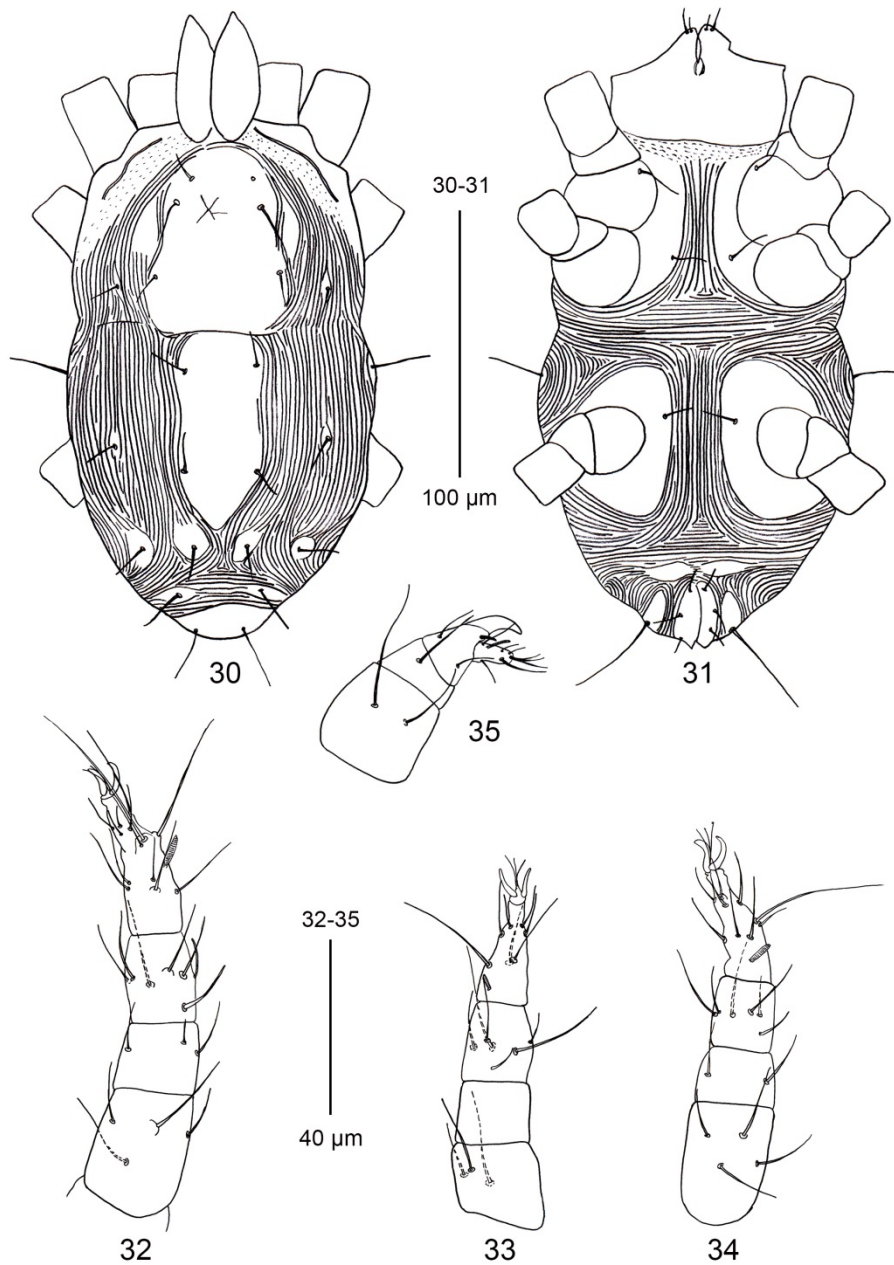


Figures 23-29. *Stigmaeus ceylani* sp. nov. (protonymph) - 23. dorsal view, 24. ventral view, 25. leg I, 26. leg II, 27. leg III, 28. leg IV, 29. Palp.

Larvae (n 5) (Figures 30-35)

Length of body (including gnathosoma) 202-370; width of body 110-155.

Gnathosoma - Length of gnathosoma 43-45; subcapitulum without subcapitular setae *n* and *m* and with two pairs of adoral setae, *or*₁ and *or*₂; palp tarsus with 5 simple setae + 1 tridentate eupathidium + 1 solenidion; palp tibia with 2 setae + 1 accessory claw + 1 well-developed claw; palp genu with 1 setae; palp femora with 2 setae; palp trochanter without setae (Figure 35).



Figures 30-35. *Stigmaeus ceylani* sp. nov. (larva) - 30. dorsal view, 31. ventral view, 32. leg I, 33. leg II, 34. leg III, 35. Palp.

Dorsum (Figure 30) – Propodosomal shield faintly reticulate centrally with three pairs of setae (*vi*, *ve* and *sci*), eyes and post-ocular bodies absent. Setae *sce* located on small auxiliary shields. Additional a pair of shield without setae next to propodosomal shield. Central shield with two pairs of setae *c*₁ and *d*₁, Setae *c*₂ ventrolaterally. Median zonal shields with one pair of setae *e*₁. Marginal shields with setae *d*₂. Lateral zonal shields with setae *e*₂, Intercalary shields divided, with setae *f*₁. Suranal shield entire, with two pairs of setae *h*₁ and *h*₂. No *h*₃ setae. Dimensions of setae as follows: *vi* 13-14, *ve* 23-27, *sci* 14-16, *sce* 14-17, *c*₁ 13-15, *c*₂ 18-24, *d*₁ 13-14, *d*₂ 13-14, *e*₁ 13-15, *e*₂ 13-15, *f*₁ 21-23, *h*₁ 25-30, *h*₂ 46-56; distances between dorsal setae: *vi*–*vi* 22-28, *ve*–*ve* 29-36, *vi*–*ve* 8-10, *sci*–*sci* 46-51, *sce*–*sce* 80-106, *ve*–*sci* 26-29, *sci*–*sce* 17-27, *c*₁–*c*₁ 25-27, *c*₁–*c*₂ 39-66, *c*₂–*c*₂ 104-144, *c*₁–*d*₁ 38-42, *d*₁–*d*₁ 22-26, *d*₁–*e*₁ 26-35, *d*₂–*d*₂ 76-121, *d*₂–*e*₂ 42-52, *e*₁–*e*₁ 19-37, *e*₁–*e*₂ 17-25, *e*₁–*f*₁ 13-23, *f*₁–*h*₁ 10-22, *h*₁–*h*₁ 15-20, *h*₂–*h*₂ 24-37.

Venter (Figure 31) - Ventral view similar to that of the female. Lengths of setae: *1a* 18-23, and *3a* 19-25. No *4a* setae. Aggenital area without setae and with anogenital valves with three pairs of pseudanal setae. Measurements of setae *ps*₁ 7-10, *ps*₂ 11-12 and *ps*₃ 8-10.

Legs (Figures 32-34) – Three pairs of legs. Length of legs: leg I 96-111, leg II 77-88, leg III 83-93. Setal formulae of leg segments as follows: coxae 1+*1a*-0-0+3*a*, trochanters 0-0-0, femora 4-4-3, genua 2+κ-2-0, tibiae 5+φ+φρ-5+φρ-5+φρ, tarsi 13+ω-9+ω-7+ω.

Type Materials

Hatay: İskenderun, 9m, 36° 33' 649" N, 36° 07' 777" E, 30.V.2014, holotype female, from litter and soil under *Punica granatum*. 9 ♀♀, 7 ♂♂, 4 deutonymphs, 6 protonymphs and 5 larvae with the same data.

Etymology

The species is named after Prof. Dr. Ebubekir Ceylan, rector of Hakkari University, Hakkari, Turkey.

Remarks

This new species resembles to *S. shabestariensis* in that it has additional a pair of shield without setae next to propodosomal shield; without eyes; faintly spinulate dorsal seta and similar leg setae chaetotaxy (Haddad Irani-Nejat et al., 2010). But *S. ceylani* can be easily distinguished in that its dorsal setae are longer than those of *S. shabestariensis* (Table 1); propodosomal shield with centrally, faintly reticulate and other dorsal shields smooth (*S. shabestariensis* with all dorsal shields distinctively reticulate); $h_2 > ve = c_2$ (in *S. shabestariensis* $h_2 > ve > c_2$); ratio *n/m* 1.9-2.2, c_2/c_1 1.4-1.6, c_1/c_1-c_1 0.4-0.5, d_1/d_1-d_1 0.4-0.5 and *1a:3a:4a* 1:1.1-1.2:1 (in *S. shabestariensis* *n/m* 1.5, c_2/c_1 1, c_1/c_1-c_1 0.2-0.4, d_1/d_1-d_1 0.3 and *1a:3a:4a* 1.2-1.3:1.3-1.6:1.2-1.9) (Haddad Irani-Nejat et al., 2010).

Stigmaeus ceylani sp. nov. resembles *S. cariae* but it can be distinguished from it in that its suranal shield entire (in *S. cariae* suranal shield is divided); with a pair of additional small shield without setae next to propodosomal shield (*S. cariae* is without additional small shield); aggenital shield is divided, *ag*₁ and *ag*₂ on the same platelet and *ag*₃ and *ag*₄ on the same platelet (in *S. cariae* aggenital shield entire and *ag*₁, *ag*₂, *ag*₃ and *ag*₄ on the same platelet); genua 6κ-5-2-2, tarsi II 9+ω (in *S. cariae* genua 6κ-2-0-1, tarsi II 8+ω); its dorsal setae are different from that of *S. cariae* (Table 1); $h_2 > ve = c_2$ (in *S. cariae* $c_2 > ve > h_2$); ratio c_2/c_1 1.4-1.6, ve/vi 1.4-1.6, ve/sci 1.3-1.5 and sce/sci 1-1.2 (in *S. cariae* ratio c_2/c_1 3.2-3.3, ve/vi 3.1-3.5, ve/sci 2.4-2.7 and sce/sci 2.4) (Khanjani et. al., 2012).

Stigmaeus ceylani sp. nov. resembles *S. kermanshahiensis* but it can be distinguished from it in that its suranal shield is entire (in *S. kermanshahiensis* suranal shield divided); aggenital shield is divided, *ag*₁ and *ag*₂ are on the same platelet and *ag*₃ and *ag*₄ on the same platelet (in *S.*

kermanshahiensis aggenital shield entire and ag_1, ag_2, ag_3 and ag_4 on the same platelet); genua 6κ-5-2-2, tarsi II 9+ω (in *S. kermanshahiensis* genua 6κ-3-0-2, tarsi II 8+ω); its dorsal setae are different from that of *S. kermanshahiensis* (Table 1); $h_2 > ve = c_2$ (in *S. kermanshahiensis* $c_2 > sce > ve$); ratio c_2/c_1 1.4-1.6, ve/vi 1.4-1.6, ve/sci 1.3-1.5, sce/sci 1-1.2, $h_1:h_2$ 0.7, $c_1: c_1-c_1$ 0.4-0.5, $d_1: d_1-d_1$ 0.4-0.5, $e_1: e_1-e_1$ 0.3-0.4, $f_1: f_1-f_1$ 0.3-0.4, (in *S. kermanshahiensis* ratio c_2/c_1 2.2, ve/vi 3.3-3.6, ve/sci 2.7-2.9 and sce/sci 2.9-3.0, $h_1:h_2$ 1-1.1, $c_1: c_1-c_1$ 0.9-1.1, $d_1: d_1-d_1$ 0.9-1.1, $e_1: e_1-e_1$ 0.6-0.7, $f_1: f_1-f_1$ 0.9-1.2) (Khanjani et al., 2012).

Stigmaeus ceylani sp. nov. also resembles *S. additicus* but it can be distinguished in that it is without eyes (in *S. additicus* a pair of eyes located between setae *ve* and *sci*); its dorsal setae different from that of *S. additicus* (Table 1); length of body (including gnathosoma) 440-460 (in *S. additicus* length of body 350-388); propodosomal shield faintly reticulate and other dorsal shields smooth (*S. additicus* with reticulate on dorsal and ventral shields); in *S. additicus* suranal shield recessed anteriorly; aggenital shield divided, ag_1 and ag_2 on the same platelet and ag_3 and ag_4 on the same platelet (in *S. additicus* aggenital shield entire and ag_1, ag_2, ag_3 and ag_4 on the same platelet); ratio n/m 1.9-2.2 (in *S. additicus* ratio n/m 1.3); setae *sce* located on the auxiliary shields and setae e_2 located on the lateral zonal shields (in *S. additicus* setae *sce* and e_2 located on the striated integument) (Dönel & Doğan, 2011).

Table 1. Dorsal setal length variations in three species: *S. shabestariensis* (A), *S. cariae* (B), *S. kermanshahiensis* (C), *S. additicus* (D) and *S. ceylani* (E)

	<i>vi</i>	<i>ve</i>	<i>sci</i>	<i>sce</i>	c_1	c_2	d_1	d_2	e_1	e_2	f_1	h_1	h_2	h_3
A	17-19	19-20	17-19	19-22	10-15	16-21	12-14	13-15	14-16	10-14	16-19.	19-23	28-31	18-21
B	13-14	44-45	18	44-49	17	54-56	16-18	31-36	20-21	18-19	33	24-26	24-28	13-15
C	17-18	60-62	21-23	62-67	30-32	67-70	28-33	53-55	30-32	27-32	44-50	36	33-35	19
D	13-15	18-20	15-18	13-15	13-15	18-20	13-15	13-15	13-15	13-18	13-18	13-15	23-28	15-18
E	18-21	28-30	19-23	20-24	18-21	25-30	17-21	18-21	18-21	18-20	20-25	22-25	31-36	20-23

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