

ON THE GENUS *SUNIUS* STEPHENS, 1829 OF TURKEY
VII. TWO NEW MICROPTEROUS SPECIES FROM SOUTHERN
ANATOLIA (COLEOPTERA: STAPHYLINIDAE, PAEDERINAE)

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Two new species of *Sunius* Stephens (Coleoptera: Staphylinidae, Paederinae) from southern Anatolia are described, illustrated and distinguished from related congeners: *Sunius orgeli* sp. n. (Niğde) and *Sunius cercii* sp. n. (Konya and Karaman). Some specimens of the new species were collected with subterranean pitfall traps in the mesovoid shallow substratum. Additional records of three species of *Sunius* from Turkey are reported. The genus is now represented in Turkey by 41 species, 37 of them are endemic.

Keywords: Coleoptera, Staphylinidae, Paederinae, *Sunius*, Turkey, new species.

INTRODUCTION

The genus *Sunius* contains 140 species in the Palearctic region, and 127 of these are known from the Western Palearctic region and Middle Asia (ASSING 2008, 2017, SCHÜLKE & SMETANA 2015). Up to the present, 39 species of the genus *Sunius* have been recorded from Turkey (ANLAŞ 2018b), representing approximately 1/3 of the Palearctic *Sunius* fauna. Nevertheless, it is still an underestimate of the *Sunius* diversity of the country. Among Turkish *Sunius* there are 35 montane endemics restricted in their distribution to particular mountain ranges, like the Taurus and mountains of western Anatolia.

Two undescribed species apparently representing local montane endemics of this genus, were recently collected in the Taurus mountain range in southern Anatolia. These two species are here described under the names *Sunius orgeli* sp. n. (Niğde province) and *S. cercii* sp. n. (Konya and Karaman provinces). Some specimens of the new species were collected with a subterranean pitfall trap in the mesovoid shallow substratum (MSS). This shows that the MSS trap method can be used to collect *Sunius* specimens. The genus is now represented in Turkey by 41 species, 37 of which are endemic.

MATERIAL AND METHODS

The present paper is based on material collected during a recent field study in the southern Anatolia, in Spring 2018. The morphological studies were conducted using a Steiner 508 microscope (Zeiss, Germany). Photographs of the habitus, forebody and aedeagus of the studied species were taken with a digital camera (Zeiss Axiocam ERC5s). All photo-

graphs were edited with the Helicon Focus v. 6, and Coreldraw X5 software. The map was made using the software Google Earth Pro (2019).

Nomenclature of the terminalia and the style of the description follow ASSING (2008). Head length was measured from the anterior margin of the frons to the posterior margin of the head, length of the pronotum was measured along the median line, elytral length was measured at the suture from the apex of the scutellum to the posterior margin of the elytra. The length of the median lobe of the aedeagus was measured from the apex of the ventral process to the base of the capsule. The material referred to in this study is stored in the Alaşehir Zoological Museum, Manisa, Turkey (AZMM) and in Natural History Museum, Oslo, Norway (NHMO).

TAXONOMY

***Sunius orgeli* sp. n.** (Figs 1–8, 17)

Type material – Holotype: TURKEY: ♂, “TR. Niğde, Bor, Halaç 8 km NE, Pozanti Dağı, 37°51'28"N, 34°48'01"E, 1960 m, 12.IV.2018, leg. Örgel & Yaman / Holotypus ♂, *Sunius orgeli* sp. n. det. S. Anlaş 2019” (AZMM). Paratypes: 3 ♂, 2 ♀, same data as holotype (1 ♂, 1 ♀, by MSS traps) (AZMM, NHMO).

Description – Habitus as in Fig. 1. Small species, body length 2.6–2.8 mm. Colouration: forebody uniformly reddish or reddish yellow; elytra slightly darker, abdomen dark brown, with the paratergites paler brown; legs yellowish-brown; antennae reddish-brown.

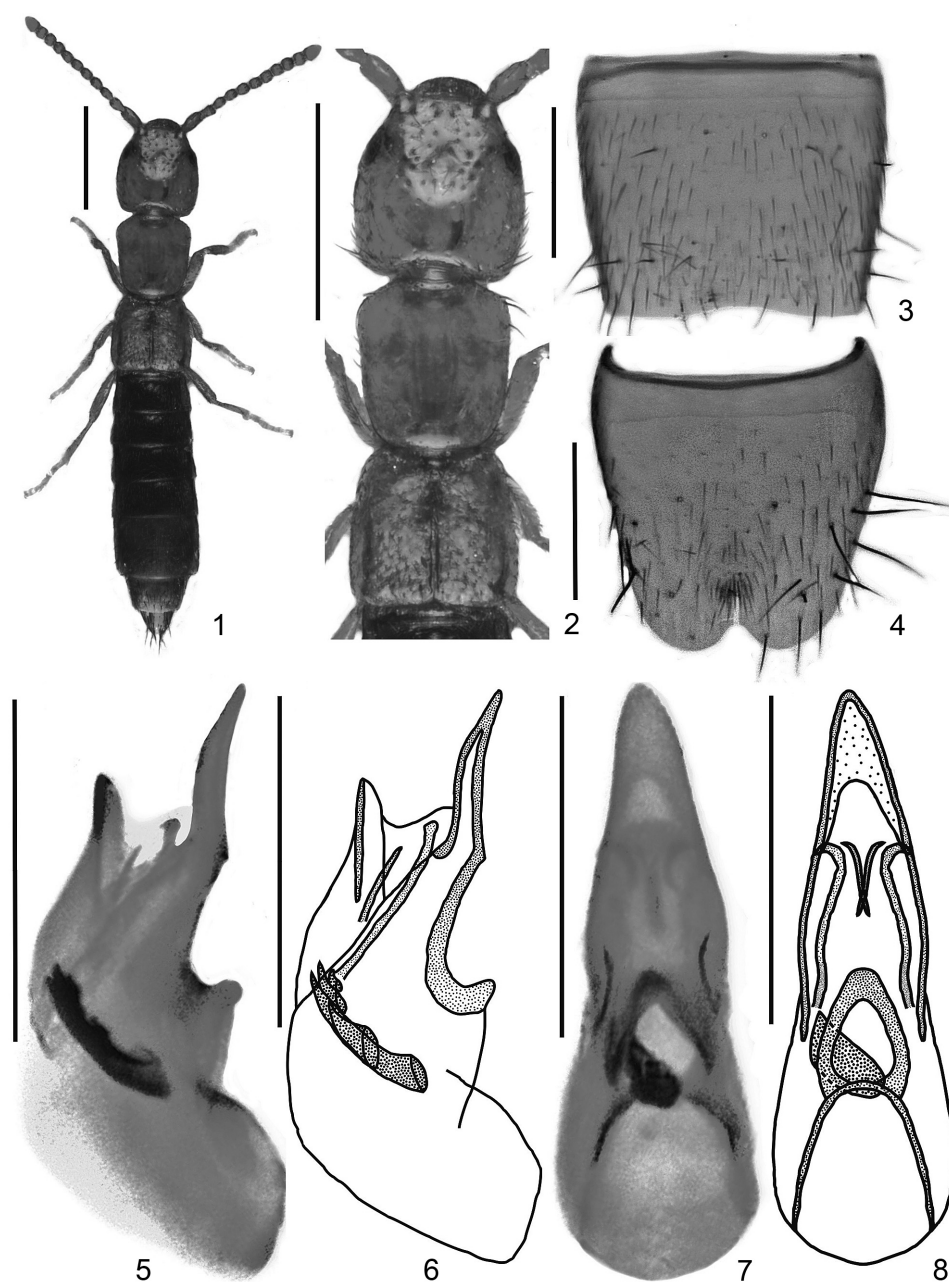
Head weakly oblong (Figs 1–2), approximately 1.05–1.10 times as long as wide; lateral margins in dorsal view straight and slightly diverging posteriad; punctuation coarse, irregular, and sparse, in lateral area slightly denser than in medio-dorsal area; pubescence short and brownish but not dense; microsculpture absent, eyes very small (Fig. 2), slightly projecting from lateral outline of head, postocular region in dorsal view approximately 2.5–3.0 times as long as eyes. Antennae moderately slender, approximately 0.70–0.75 mm long.

Pronotum approximately 0.90 times as wide as head (Figs 1–2), and about 1.05 times as long as wide; lateral margins subparallel and diverging posteriad in dorsal view; microsculpture absent; punctuation somewhat coarser, medial line impunctate, slightly smaller and denser than that of head; pubescence similar to that of head, but slightly denser and well-defined than that; lateral margin of pronotum with several brown blackish setae.

Elytra approximately as wide as pronotum (Figs 1–2) and at suture about 0.75–0.80 times as long as pronotum; punctuation weakly granulose, and finer and denser than that of pronotum and head; microsculpture invisible; pubescence black or dark brown, more distinct than that of head and pronotum. Hind wings completely reduced.

Abdomen wider than elytra (Fig. 1), approximately 1.05–1.10 times as wide as elytra, widest at segments VI–VII; punctuation dense and fine; microsculpture shallow; pubescence brown and sparse; posterior margin of tergite VII without palisade fringe.

♂: sternite VII in posterior median area slightly concave and without modified setae, (Fig. 3); posterior margin of sternite VIII with relatively wide emargination, posteriorly with median cluster of very weak pubescence, with smaller tubercle (Fig. 4); aedeagus approximately 0.34–0.37 mm long, shaped as in Figs 5–8, with apical portion of ventral process dentate, slender and longer in lateral view; internal sac with a series of four mixed large and small spines.



Figs 1–8. Details of *Sunius orgeli* sp. n.: 1 = habitus; 2 = forebody; 3 = male sternite VII, 4 = male sternite VIII, 5–6 = aedeagus, lateral view, 7–8 = aedeagus, ventral view. Scale bars: 0.5 mm (1–2); 0.2 mm (3–8)

Etymology – The species is dedicated to Semih Örgel, Manisa, who collected some of the type specimens of this new species.

Comparative notes – The species is distinguished from all its congeners by the male sexual characters, especially by the ventral process of the aedeagus, which is of different shape, particularly in lateral view. Based on the similar morphology of the male primary and secondary sexual characters, the new species is closely related to *S. tauricus* Anlaş, 2018 (Karaman, Yüğük Hill), *S. tuberiventris* Assing, 2001 (Mersin, Sertavul pass) *S. wunderlei* Assing, 2001 (Mersin, Gülnar) and *S. balkarensis* Assing, 2001 (Mersin, Çamlıyayla). The new species is readily separated from these species as follows:

From *S. tauricus* by the presence of a tubercle on abdominal sternite VIII (in *S. tauricus*: sternite VIII in posterior median area without tubercle), by the slender ventral process of the aedeagus in lateral view, by the different shape and the series of four spines in the internal sac (in *S. tauricus*: internal sac with a series of six mixed large and small spines).

From *S. tuberiventris* by the slender and more flat ventral process of the aedeagus in lateral view, by the more distinct dentate apical portion of the ventral process in lateral view; by the narrower and shorter ventral process of the aedeagus in ventral view, by the differently shaped spines in the internal sac (in *S. tuberiventris*: internal sac with row of four relatively small spines).

From *S. wunderlei* by the more flat ventral process of the aedeagus in lateral view, by the more distinct dentate apical portion of the ventral process in lateral view; by the narrower ventral process of the aedeagus in ventral view, by the shorter pubescence on the posterior median tubercle in sternite VIII.

From *S. balkarensis* by the slender and longer ventral process of the aedeagus in lateral view; by the more distinct dentate apical portion of the ventral process in lateral view; by the narrower and longer ventral process of the aedeagus in ventral view.

For descriptions, illustrations and distributions of these species see ASSING (2001), ANLAŞ (2018a) and Figure 17.

Distribution and bionomics – The new species was collected on the Pozanti Mountain, in Niğde province. The specimens were found under stones and some of them were collected with a subterranean pitfall trap in a calcareous grassland at an altitude of 1960 m.

***Sunius cercii* sp. n.**
(Figs 9–16, 17)

Type material – Holotype: TURKEY: ♂, “TR. Konya, Hadim, Çiftepınar 5 km S, 36°58'21"N, 32°41'05"E, 1990 m, 03.V.2018, leg. Örgel & Yaman / Holotypus ♂, *Sunius cercii* sp. n. det. S. Anlaş 2019” (AZMM). Paratypes: 3 ♂, 11 ♀, same data as holotype (AZMM,

NHMO). TURKEY: 1 ♂, 10 ♀, TR. Karaman, Ermenek, Balkusan, 36°48'43"N, 32°53'35"E, 1890 m, 02.V.2018, by MSS traps, leg. Örgel & Yaman (AZMM, NHMO).

Etymology – The specific epithet honors Barış Çerci, Ankara, a specialist on Heteroptera, who has carried out important entomological researches in Turkey.

Description – Habitus as in Fig. 9. Small species, body length 2.4–2.7 mm, similar to *S. orgeli*, but distinguished as follows:

Head oblong (Figs 9–10), approximately 1.20–1.25 times as long as wide; antennae approximately 0.68–0.74 mm long. Pronotum approximately 0.95 times as wide as head (Figs 9–10). Elytra (Figs 9–10) slightly (approximately 1.05 times) wider than pronotum and at suture about 0.70–0.75 times as long as pronotum. Abdomen approximately as wide as elytra (Fig. 9).

♂: sternite VII in posterior median area very slightly concave and without modified setae, (Fig. 11); posterior margin of sternite VIII with relatively wide emargination, posteriorly with median cluster of very weak pubescence, without tubercle (Fig. 12); aedeagus approximately 0.32–0.35 mm long, shaped as in Figs 13–16, with apical portion of ventral process dentate, with broader and stouter ventral process in lateral view; internal sac with a series of six mixed large and small spines.

Comparative notes – The species can be distinguished from all its congeners by the different shape of the ventral process of the aedeagus and by the shape of the spines of the internal sac. Based on the similar morphology of the male primary and secondary sexual characters, the new species is closely related to *S. yamani* Anlaş, 2018 (Konya, Derebucak), *S. ulcerosus* Assing, 2011 (Isparta, Dedegöl Mountains) and *S. brachati* Assing, 2003 (Antalya, Finike). The new species is readily separated from these species as follows:

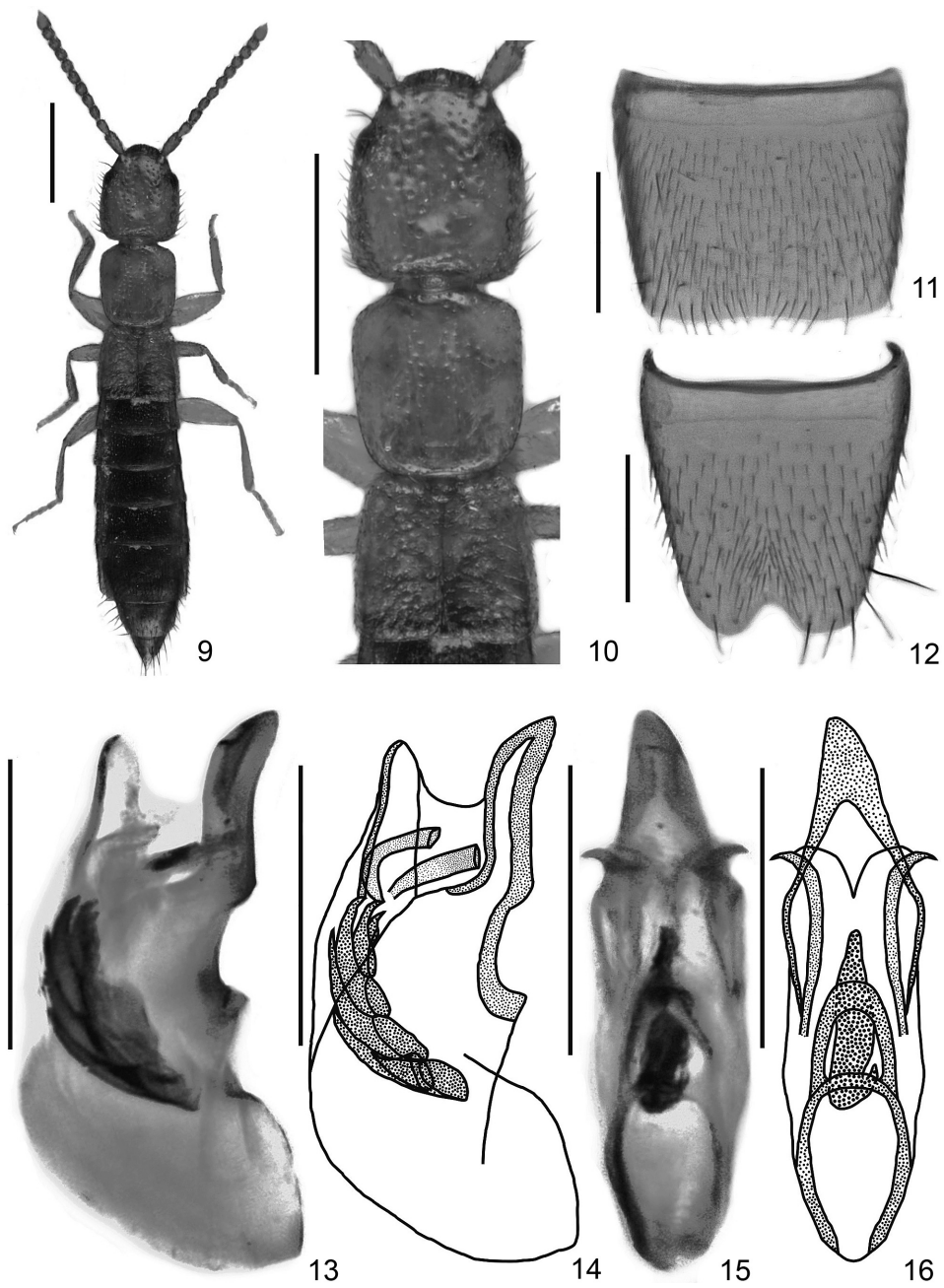
From *S. yamani* by the slender ventral process of the aedeagus in lateral view, by the different shape and the series of six uniformly sized spines in the internal sac (in *S. yamani*: internal sac with a series of five mixed large and small spines).

From *S. ulcerosus* by the absence of a tubercle on abdominal sternite VIII (in *S. ulcerosus*: sternite VIII posteriorly with a median subcircular protuberance), by the broader and stouter ventral process of the aedeagus in lateral view, by the differently shaped spines in the internal sac (in *S. ulcerosus*: internal sac with a row of approximately 5–7 distinctly sclerotised and moderately long spines).

From *S. brachati* by the absence of a tubercle on abdominal sternite VIII (in *S. brachati*: small tubercle on sternite VIII), by the broader and stouter ventral process of the aedeagus in lateral view, by the presence of sclerotized spines in the internal sac.

For descriptions, illustrations and distributions of these species see ASSING (2003, 2011), ANLAŞ (2018b) and Figure 17.

Distribution and bionomics – The species was found at two localities from Konya (Hadim) and Karaman (Ermenek). The specimens were found under stones and sifted from grass roots between limestone gravel on a pas-



Figs 9–16. Details of *Sunius cercii* sp. n.: 9 = habitus; 10 = forebody, 11 = male sternite VII, 12 = male sternite VIII, 13–14 = aedeagus, lateral view; 15–16 = aedeagus, ventral view. Scale bars: 0.5 mm (1–2); 0.2 mm (3–8)

ture with shrubs, at altitudes of 1890 and 1990 m. Some specimens were collected with a MSS trap in a rocky steep slope in the subalpine zone.

ADDITIONAL RECORDS

Sunius balkarensis Assing, 2001

Material examined – TURKEY: Niğde: 2 ♂, 4 ♀, 13.IV.2018, Ulukışla, Kılan 5 km SW, Güney Dağı, 37°26'42"N, 34°25'55"E, 1960 m, leg. Örgel & Yaman (AZMM). Konya: 5 ♂, 17 ♀, 04.V.2018, Halkapınar, Çakıllar, Aydos Dağı, 37°22'01"N, 34°19'01"E, 2430 m, leg. Örgel & Yaman (AZMM).

Remark – This species has so far only been known from the Bolkar Mountains, Mersin province, in Southern Turkey (ASSING 2001; ANLAŞ 2018b).

Sunius tauricus Anlaş, 2018

Material examined – TURKEY: Karaman: 3 ♂, 5 ♀, 30.X.2017 and 03.V.2018, Ayrancı, Yüğlük Tepesi, 37°00'49"N, 33°46'55"E, 1967 m, by MSS traps, leg. Örgel & Yaman (AZMM).

Remark – The recently described species is only known from Yüğlük Hill, Karaman province, in Southern Turkey (ANLAŞ 2018a).

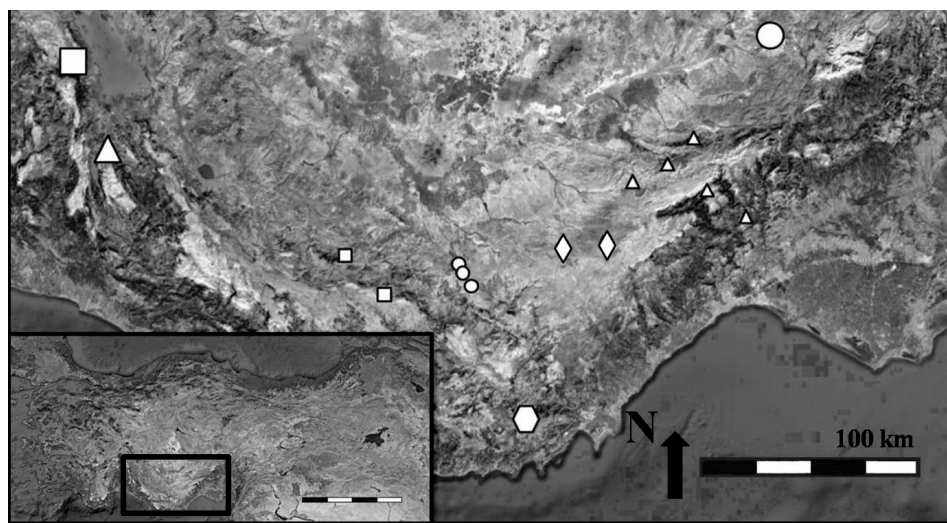


Fig. 17. Distributions of *Sunius ulcerosus* Assing (large square), *S. yamani* Anlaş (large triangle), *S. cercii* sp. n. (small squares), *S. tuberiventris* Assing (small circles), *S. wunderlei* Assing (Hexagon), *S. tauricus* Anlaş (diamonds), *S. balkarensis* Assing (small triangles), *S. orgeli* sp. n. (large circle)

Sunius khnזורiani (Coiffait, 1970)

Material examined – TURKEY: Kayseri: 2 ♂, 2 ♀, 05.VI.2016-02.XI.2017, Kayseri, Yahyalı, Aladağlar, 37°56'02"N 35°15'23"E, 2700 m, by MSS traps (AZMM). Sivas: 1 ♂, 19.IV.2018, Divriği, Uluçayır 2 km S, Leke Dağı, 39°11'45"N, 37°59'26"E, 1830 m, leg. Anlaş, Örgel & Yaman (AZMM). 1 ♂, 16.IV.2018, Koyulhisar, 40°23'54"N, 37°58'03"E, 1930 m, leg. Anlaş, Örgel & Yaman (AZMM).

Remark – This species was known from Adıyaman, Antalya, Bitlis, Kars and Mersin provinces in Turkey (ANLAŞ 2009), and here reported for the first time from central Anatolia.

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REFERENCES

- ANLAŞ, S. (2009): Distributional checklist of the Staphylinidae (Coleoptera) of Turkey, with new and additional records. – *Linzer biologische Beiträge* **41**: 215–342.
- ANLAŞ, S. (2018a): On the genus *Sunius* STEPHENS 1829 of Turkey. V. A new micropterous species from central southern Anatolia, with additional records from the western Mediterranean region (Coleoptera: Staphylinidae: Paederinae). – *Revue Suisse de Zoologie* **125**: 17–20. <https://doi.org/10.5281/zenodo.1196005>
- ANLAŞ, S. (2018b): On the genus *Sunius* STEPHENS 1829 of Turkey. VI. A new micropterous species and distribution of the genus (Coleoptera: Staphylinidae: Paederinae). – *Zoology in the Middle East* **64**: 68–74. <https://doi.org/10.1080/09397140.2017.1401307>
- ASSING, V. (2001): On the Turkish species of *Sunius* CURTIS 1829 (Coleoptera: Staphylinidae, Paederinae). – *Linzer biologische Beiträge* **33**: 195–210.
- ASSING, V. (2003): New species and records of Staphylinidae from Turkey (Insecta: Coleoptera: Staphylinidae). – *Entomologische Blätter* **98** (2002): 153–177.
- ASSING, V. (2008): A revision of the *Sunius* species of the Western Palaearctic region and Middle Asia (Coleoptera: Staphylinidae: Paederinae). – *Linzer biologische Beiträge* **40**: 5–135.
- ASSING, V. (2011): A revision of Palaearctic *Sunius* XIV. Three new species from Turkey and additional records (Coleoptera: Staphylinidae: Paederinae). – *Linzer biologische Beiträge* **43**: 1159–1168.
- ASSING, V. (2017): A revision of *Sunius* XVI. Two new species from Iran and Iraq (Coleoptera: Staphylinidae: Paederinae). – *Beiträge zur Entomologie (Contributions to Entomology)* **67**: 247–253. <https://doi.org/10.21248/contrib.entomol.67.2.247-253>
- SCHÜLKE, M. & SMETANA, A. (2015): Staphylinidae. Pp. 304–1134. – In: LÖBL, I. & LÖBL, D. (eds): *Catalogue of Palaearctic Coleoptera. Vol. 2. Hydrophiloidea – Staphylinoidea. Revised and updated edition.* – Leiden: Brill: xxvi + 1702 pp.

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