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## **A revision of Palaearctic *Sunius* XIV. Three new species from Turkey and additional records (Coleoptera: Staphylinidae: Paederinae)**

V. ASSING

**A b s t r a c t :** Three species of the *Sunius seminiger* species group from Turkey are described and illustrated: *Sunius sultanicus* nov.sp. (Isparta/Konya: Sultan Dağları), *S. aequus* nov.sp. (Isparta: Kuyucak Dağı), and *S. ulcerosus* nov.sp. (Isparta: Dedegöl Dağları). Supplements to a recent key to the *Sunius* species of the Palaearctic region are provided. Additional records of three species from Turkey and Spain are reported. In the Palaearctic region, the genus now comprises 116 species and two subspecies. The Turkish *Sunius* fauna is more diverse than that of any other country and at present includes 27 species.

**Key words :** Coleoptera, Staphylinidae, Paederinae, Medonina, *Sunius*, Palaearctic region, Turkey, taxonomy, new species, key to species, additional records.

### **Introduction**

According to the latest contribution to the revision of *Sunius* STEPHENS 1829, the genus is represented in the Palaearctic region by as many as 113 species and two subspecies. The vast majority of taxa (102 species and two subspecies) is confined to the West Palaearctic, with the trans-Palaearctic distribution of one species extending eastwards to the Russian Far East. A catalogue and a key to species are provided by ASSING (2011a).

The most speciose group of the genus is the *S. seminiger* group (see ASSING 2008), which exclusively includes micropterous and locally endemic species. The country with – by far – the most diverse *Sunius* fauna is Turkey. Of the 24 species previously recorded from Turkey, 20 are local endemics. The distributions of the Turkish representatives of the *S. seminiger* group are confined to western and southern Anatolia. However, there was a remarkable gap between western Antalya and Mersin, from where no species of this group had been recorded (ASSING 2008: map 1).

During a recent field trip conducted by Paul Wunderle and the author to southwestern Turkey (Konya, Afyon, Isparta) in spring 2011, three undescribed species of the *S. seminiger* group were discovered in Isparta. They may not completely close the aforementioned distribution gap, but at least they reduce it somewhat.

In addition to the descriptions of these three species, which increase the total number of species known from the Palaearctic to 116 and that of species recorded from Turkey to

27 (23 of them exclusive), additional records of some *Sunius* species are reported from Turkey and Spain.

### Material and methods

The material referred to in this study is deposited in the following public institutions and private collections:

MNHUB..... Museum für Naturkunde der Humboldt-Universität Berlin (J. Frisch)  
 OÖLL..... Oberösterreichisches Landesmuseum/Biologiezentrum Linz (F. Gusenleitner)  
 cAss..... author's private collection  
 cWun..... private collection Paul Wunderle, Mönchengladbach

The morphological studies were conducted using a Stemi SV 11 microscope (Zeiss Germany) and a Jenalab compound microscope (Carl Zeiss Jena). For the photographs a digital camera (Nikon Coolpix 995) was used.

Head length was measured from the anterior margin of the frons to the posterior margin of the head, elytral length 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 parameral side of the aedeagus (i.e., the side where the sperm duct enters) is referred to as the ventral, the opposite side as the dorsal aspect.

### Additional records and species descriptions

#### *Sunius melanocephalus* (FABRICIUS 1793)

**Material examined:** Turkey: 2 exs., Isparta, Sultan Dağları, 15 km SSW Akşehir, Cankurtaran, 38°15'N, 31°24'E, 1860 m, under stones, 22.IV.2011, leg. Assing (cAss); 1 ex., Afyon, Sultan Dağları, 15 km SE Çay, 38°31'N, 31°09'E, 1810 m, cedar forest, sifted, 18.IV.2011, leg. Assing (cAss).

**Comment:** *Sunius melanocephalus*, the most widespread species of the genus, has a trans-Palaearctic distribution and is adventive in North America. In Turkey, it has been recorded from numerous localities, but was previously unknown from Afyon province (ASSING 2008, 2011a). For maps illustrating its distribution see ASSING (2008).

#### *Sunius ovaliceps* (FAUVEL 1878)

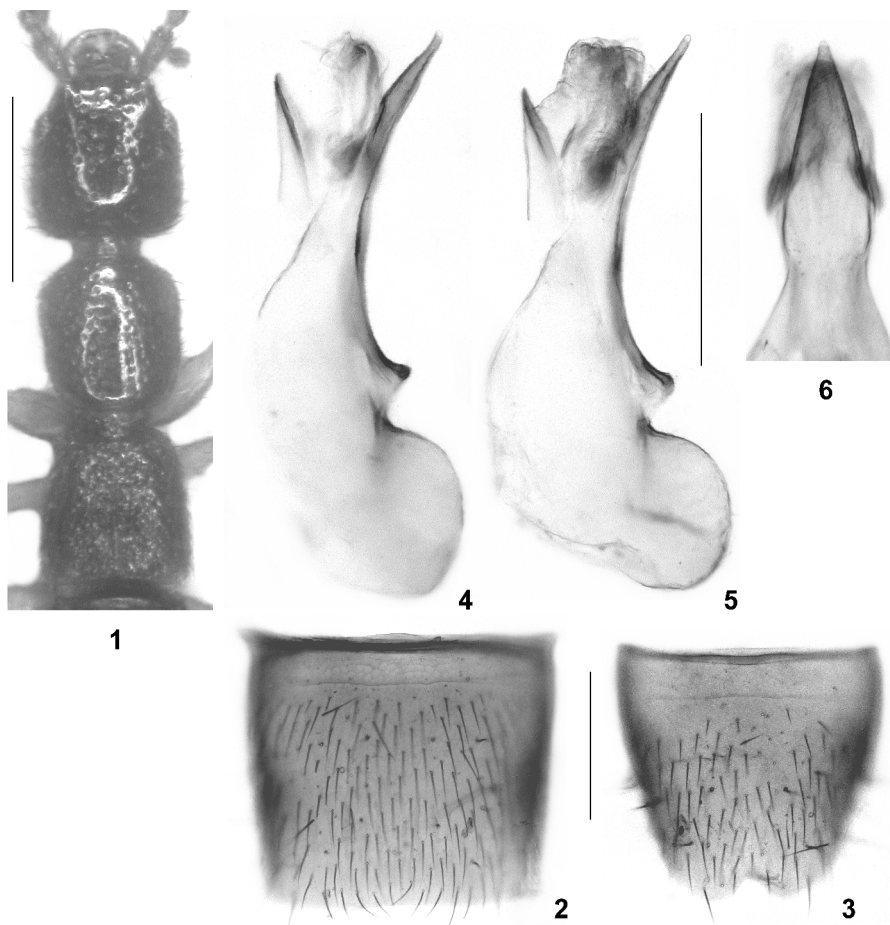
**Material examined:** Spain: 1 ex., S Parcent, Col de Rates, 38°43'N, 0°04'W, 620 m, 14.IV.2011, leg. Forcke (cAss); 1 ex., S Jalon, Sierra de Bernia, 38°40'N, 0°04'W, 11.IV.2011, leg. Forcke (cAss).

**Comment:** *Sunius ovaliceps* has an Atlanto-Mediterranean distribution and is widespread and common in the western Mediterranean (ASSING 2011a). For a map illustrating its distribution see ASSING (2008).

***Sunius adanensis* (LOKAY 1919)**

**Material examined:** Turkey: 3 exs., Konya, 5 km W Yunak, Bayatkolu Tepe, 38°49'N, 31°41'E, 1420 m, pasture, under stones, 17.IV.2011, leg. Wunderle (cWun, cAss); 1 ex., Adana, 8 km S Feke, Akkaya, 37°46'N, 35°54'E, 760 m, 21.IV.2011, leg. Brachat & Meybohm (cAss); 2 exs., Adana, Feke, 21 km to Mansurlu, 37°51'N, 35°46'E, 965 m, 22.IV.2011, leg. Brachat & Meybohm (cAss).

**Comment:** This species is widespread in Turkey and Iran, with a female-based record from Syria (ASSING 2008, 2011a). In Turkey, most records are from the east, southeast, and central south, but it was recently reported also from the central north and the northwest (Kastamonu, Çankırı, Bolu) (ASSING 2010). The above records from Bayatkolu Tepe represent the first records from Konya province.



**Figs 1-6:** *Sunius sultanicus* nov.sp.: (1) forebody; (2) male sternite VII; (3) male sternite VIII; (4-5) aedeagus in lateral view; (6) apical portion of aedeagus in ventral view. Scale bars: 1: 0.5 mm; 2-6: 0.2 mm.

***Sunius sultanicus* nov.sp.** (Figs 1-7)

**Type material:** Holotype ♂: "TR [2a] - Isparta, Sultan Dağları, SSW Akşehir, 38°15'15"N, 31°24'30"E, 1860 m, under stones, 22.IV.2011, V. Assing / Holotypus ♂ *Sunius sultanicus* sp.n. det. V. Assing 2011" (cAss). **Paratypes:** 54♂♂, 89♀♀: same data as holotype (cAss, MNHUB, OÖLL); 79 exs.: same data, but leg. Wunderle (cWun, MNHUB); 2♂♂, 6♀♀: same data as holotype, but "[2] ... 17.IV.2011" (cAss); 5 exs.: same data, but leg. Wunderle (cWun); 1♀: "N38°15'22 31°24'05 (19), TR Konya; Sultan Dağ; s Cankurtaran; 1800 m; 17.IV.2008, leg. Meybohm & Brachat" (cAss).



**Fig. 7:** Type locality of *Sunius sultanicus* nov.sp. (photo: P. Wunderle).

**Description:** Body length 2.8-3.3 mm. Coloration: head reddish to dark-brown; pronotum reddish to reddish-brown; elytra reddish; abdomen dark-brown; legs and antennae reddish-yellow.

Head approximately as wide as long or weakly oblong (Fig. 1); punctuation coarse and moderately dense to moderately sparse, somewhat sparser in median dorsal portion; interstices without microsculpture. Eyes rather small, approximately 1/3 the length of postocular region in dorsal view.

Pronotum weakly oblong, approximately 1.05 times as long as wide and slightly narrower than head (Fig. 1); punctuation dense and coarse; midline broadly impunctate.

Elytra short and narrow, approximately 0.75 times as long as pronotum; humeral angles weakly marked (Fig. 1); punctuation dense, rather fine, and weakly defined; interstices without distinct microsculpture. Hind wings completely reduced.

Abdomen broader than elytra; punctuation fine and moderately dense; interstices with microsculpture; posterior margin of tergite VII without palisade fringe.

♂: sternite VII without modified pubescence, posterior margin very weakly concave in the middle (Fig. 2); sternite VIII without modified pubescence and without tubercle, posterior incision small and not very deep (Fig. 3); aedeagus approximately 0.45 mm long, weakly sclerotized, ventral process very slender and acute especially in lateral view, internal sac without sclerotized spines (Figs 4-6).

**E t y m o l o g y :** The specific epithet is an adjective derived from the name of the mountain range where the type locality is situated.

**C o m p a r a t i v e   n o t e s :** In the key to the *Sunius* species of the Palaearctic region in ASSING (2011a), *S. sultanicus* would key out at couplet 67. In order to account for the new species, the key is modified as follows:

- 67 ♂: aedeagus subapically not dentate. Species from southwestern Anatolia.....67a  
 - ♂: aedeagus subapically dentate (best visible in lateral view). Species from western and central southern Anatolia.....68  
 67a ♂: aedeagus more strongly sclerotised, with much stouter and relatively short ventral process, its apex apically convex in ventral view (ASSING 2005: figures 23-25). Southwest of Antalya province: Dumanlı Dağı.....*S. dumanlianus* ASSING  
 - ♂: aedeagus weakly sclerotised, with slender and apically acute (ventral and lateral view) ventral process (Figs 4-6). Isparta/Konya: Sultan Dağları ..... *S. sultanicus* nov.sp.

**D i s t r i b u t i o n   a n d   n a t u r a l   h i s t o r y :** The type locality is situated in the Sultan Dağları, to the south of Akşehir, at the border between Isparta and Konya provinces, southwestern Anatolia. The type specimens were collected in a subalpine stony pasture at an altitude of approximately 1860 m (Fig. 7); for a close-up of the habitat see figure 8 in ASSING (2011b). They were found in large numbers under stones, partly near snow, together with numerous specimens of an undescribed species of *Geostiba* THOMSON.

***Sunius aequus* nov.sp.** (Figs 8-15, 24-25)

**T y p e   m a t e r i a l :** Holotype ♂: "TR [26b] - Isparta, 10 km SE Sütçüler, 1520 m, 37°24'55"N, 31°02'21"E, calcareous slope, stones, 26.IV.2011, V. Assing / Holotypus ♂ *Sunius aequus* sp. n. det. V. Assing 2011" (cAss). Paratypes: 28 ♂ ♂, 29 ♀ ♀: same data as holotype (cAss, MNHUB, OÖLL); 34 exs.: same data, but leg. Wunderle (cWun, MNHUB); 1 ♀: same data as holotype, but "[26a] ... sifted" (cAss); 1 ex., same data, but leg. Wunderle (cWun).

**D e s c r i p t i o n :** Body length 2.6-3.3 mm. Coloration: forebody reddish; abdomen dark-brown to blackish-brown, distinctly contrasting with the forebody; legs and antennae yellowish to reddish-yellow.

Head weakly oblong, approximately 1.05 times as long as wide (Fig. 8); punctuation coarse and moderately dense to moderately sparse, somewhat sparser in median dorsal portion; interstices without microsculpture. Eyes rather small, approximately 1/3 the length of postocular region in dorsal view.

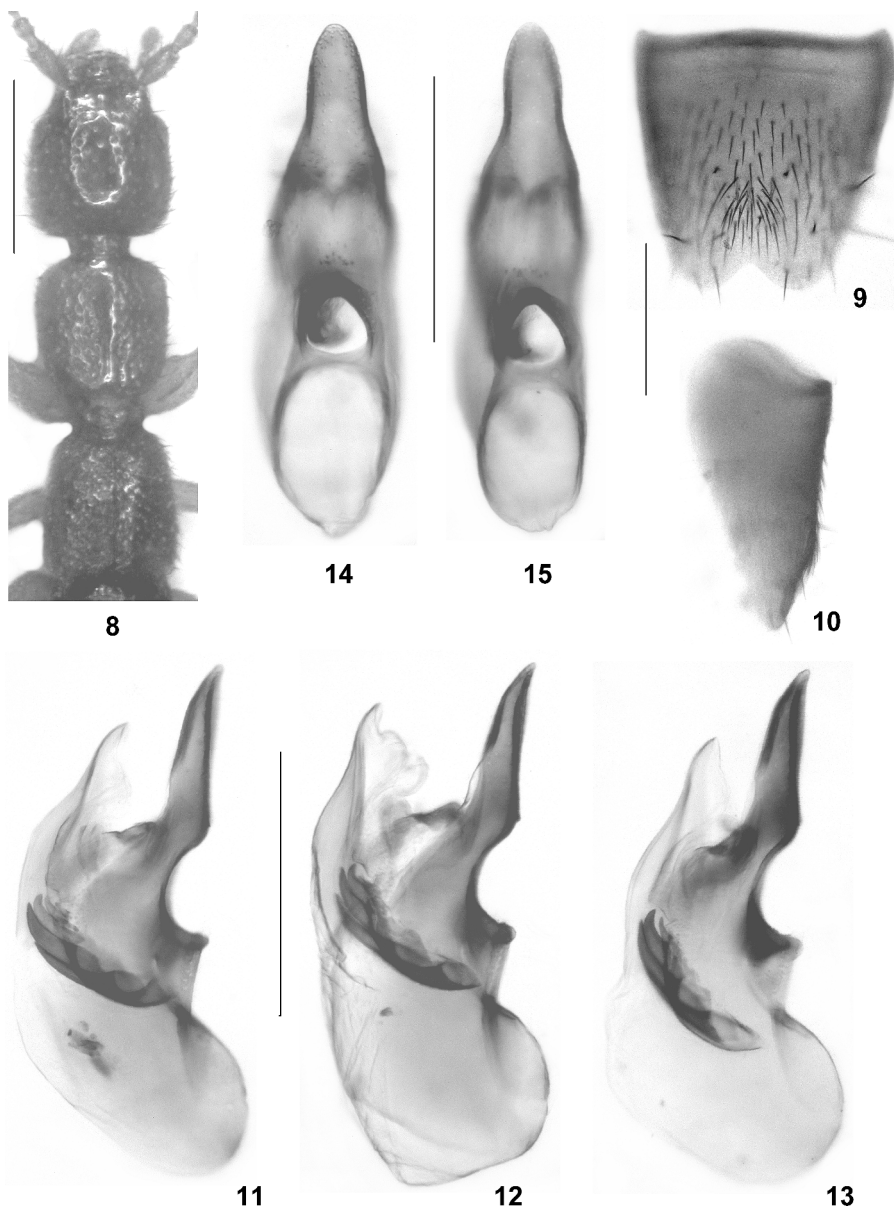
Pronotum weakly oblong, approximately 1.1 times as long as wide and slightly narrower than head (Fig. 8); punctuation dense and coarse; midline broadly impunctate.

Elytra short and narrow, approximately 0.70-0.75 times as long as pronotum; humeral angles weakly marked (Fig. 8); punctuation dense, rather fine, and weakly defined; interstices without distinct microsculpture. Hind wings completely reduced.

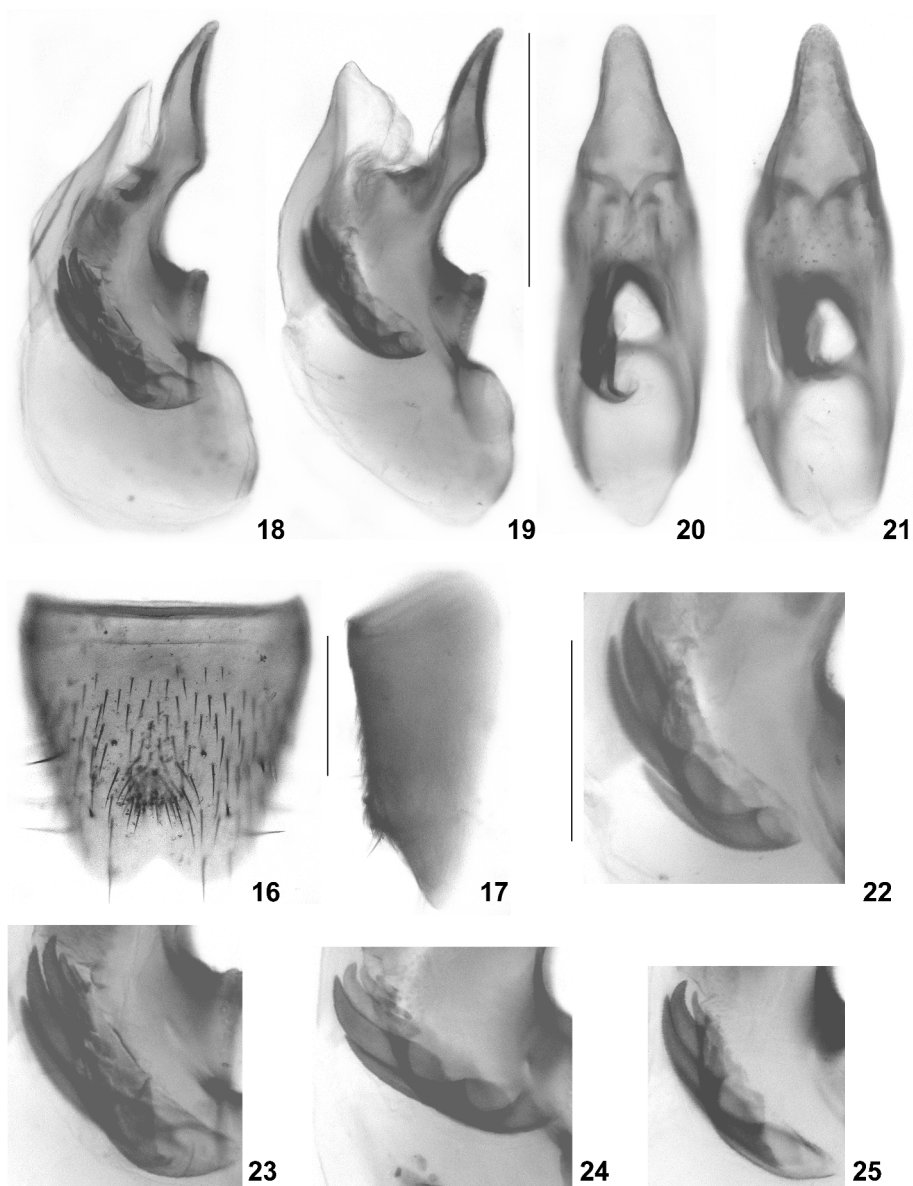
Abdomen broader than elytra; punctuation fine and dense; interstices with shallow microsculpture; posterior margin of tergite VII without palisade fringe.

♂: sternite VII without modified pubescence, posterior margin very weakly concave in the middle; sternite VIII posteriorly with a median cluster of dense pubescence (Fig. 9), but without distinct protuberance (Fig. 10), posterior incision rather broad, but not very





**Figs 8-15:** *Sunius aequus* nov.sp.: (8) forebody; (9) male sternite VIII in ventral view; (10) male sternite VIII in lateral view; (11-13) aedeagus in lateral view; (14-15) aedeagus in ventral view. Scale bars: 8: 0.5 mm; 9-15: 0.2 mm.



**Figs 16-25:** *Sunius ulcerosus* nov.sp. (16-23) and *S. aequus* nov.sp. (24-25): (16) male sternite VIII in ventral view; (17) male sternite VIII in lateral view; (18-19) aedeagus in lateral view; (20-21) aedeagus in ventral view; (22-25) internal structures of aedeagus in lateral view. Scale bars: 16-21: 0.2 mm; 22-25: 0.1 mm.

deep (Fig. 9); aedeagus approximately 0.40 mm long, ventral process subapically weakly dentate (lateral view), apical portion of ventral process almost straight (lateral view) and rather slender in ventral view; internal sac with row of approximately 5-7 distinctly sclerotised and moderately long spines (Figs 11-15, 24-25).

**E t y m o l o g y :** The specific epithet (Latin adjective: level, flat) alludes to the absence of a distinct protuberance on the male sternite VIII, one of the characters separating *S. aequus* from the similar *S. ulcerosus* nov.sp.

**C o m p a r a t i v e n o t e s :** Based on the similarly derived morphology of the male primary and secondary sexual characters, *S. aequus* is closely related to *S. ulcerosus* nov.sp. (see below). In the key in ASSING (2011a), the species would key out at couplets 69-70, together with *S. ulcerosus*. For a supplement to the key see the comparative notes in the following section.

**D i s t r i b u t i o n a n d n a t u r a l h i s t o r y :** The type locality is situated to the southeast of Sütçüler in the Kuyucak Dağı. The specimens were collected on a calcareous, grassy slope at an altitude of 1520 m, together with an undescribed species of *Geostiba*; for a photo of the habitat see ASSING (2011b: figure 20). The vast majority of specimens was found under stones, some were sifted from grass roots.

***Sunius ulcerosus* nov.sp.** (Figs 16-23, 26)

**T y p e m a t e r i a l :** Holotype ♂: "TR [25] - Isparta, 23 km ESE Eğirdir, 1820 m, 37°43'29"N, 31°18'39"E, pasture, under stones, 25.IV.2011, V. Assing / Holotypus ♂ *Sunius ulcerosus* sp.n. det. V. Assing 2011" (cAss). Paratypes: 3 ♂♂, 7 ♀♀: same data as holotype (cAss, MNHUB, OÖLL); 6 exs.: same data, but leg. Wunderle (cWun).



**Fig. 26:** Type locality of *Sunius ulcerosus* nov.sp. (photo: P. Wunderle).

**D e s c r i p t i o n :** In external morphology highly similar to *S. aequus*, distinguished only by the male primary and secondary sexual characters:



♂: sternite VIII posteriorly with a median subcircular protuberance, this protuberance with a cluster of denser pubescence (Figs 16-17), posterior incision not very deep (Fig. 16); aedeagus approximately 0.40 mm long, ventral process subapically not dentate (lateral view), apical portion of ventral process shorter and weakly curved (lateral view), subapically broader in ventral view; internal sac with row of slightly longer spines (Figs 18-23).

**E t y m o l o g y :** The specific epithet (Latin adjective: with ulcers, with bumps) alludes to the presence of a distinct protuberance on the male sternite VIII.

**C o m p a r a t i v e   n o t e s :** The similarly derived morphology of the male sexual characters suggests that *S. ulcerosus* is most closely related to *S. aequus*. In the key in ASSING (2011a), both species would key out at couplets 69-70. In order to account for them, the key is modified as follows:

- 69 Abdomen darker, distinctly contrasting with the rufous forebody. Species from the western Taurus and western Anatolia (Antalya, Isparta, Muğla) .....69a
- Abdomen more weakly infusate, less distinctly contrasting with rufous forebody. Species from the eastern Taurus (Mersin and eastwards).....73
- 69a ♂: sternite VIII posteriorly with median cluster of dense setae or with densely pubescent subcircular tubercle. Southwestern Antalya and Isparta.....69b
- ♂: sternite VIII with median process or fin-like tubercle. Species with more western distributions.....71
- 69b ♂: aedeagus without sclerotized spines in internal sac (ASSING 2003: figures 19-20). Southwestern Antalya: Ak Dağlar.....*S. brachati* ASSING
- ♂: aedeagus with approximately 5-7 strongly sclerotised spines in internal sac. Distribution different.....70
- 70 ♂: sternite VIII posteriorly with distinct, densely pubescent protuberance (Figs 16-17); ventral process of aedeagus subapically broader in ventral view, apical portion of ventral process shorter and slightly curved in lateral view (Figs 18-21); internal sac of aedeagus with slightly longer spines (Figs 22-23). Isparta: Dedegöl Dağları. ....*S. ulcerosus* nov.sp.
- ♂: sternite VIII posteriorly only with very indistinctly elevated cluster of dense pubescence (Figs 9-10); apical portion of ventral process more slender in ventral view, longer and straight in lateral view; internal spines of aedeagus slightly shorter (Figs 11-15, 24-25). Isparta: Kuyucak Dağı .....*S. aequus* nov.sp.

**D i s t r i b u t i o n   a n d   n a t u r a l   h i s t o r y :** The type locality is situated in the Dedegöl Dağları, approximately 5 km to the west of Yenişarbademli, in Isparta, southwestern Anatolia. The specimens were found under stones on a stony calcareous slope with scattered grass vegetation and shrubs at an altitude of 1820 m (Fig. 26).

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## Zusammenfassung

Drei Arten der *Sunius seminiger*-Gruppe aus der Türkei werden beschrieben und abgebildet: *Sunius sultanicus* nov.sp. (Isparta/Konya: Sultan Dağları), *S. aequus* nov.sp. (Isparta: Kuyucak Dağı) und *S. ulcerosus* nov.sp. (Isparta: Dedegöl Dağları). Eine kürzlich publizierte Bestimmungstabelle der *Sunius*-Arten der Paläarktis wird ergänzt. Für drei Arten werden Nachweise aus der Türkei und Spanien gemeldet. In der Paläarktis umfasst die Gattung nunmehr 116 Arten und zwei Unterarten. Mit insgesamt 27 Arten ist die *Sunius*-Fauna der Türkei weit artenreicher als die anderer Länder.

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