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New records of Dolichopodinae (Diptera, Dolichopodidae) from Turkey, with the description of new species of *Sybistroma* Meigen and *Tachytrechus* Haliday

STEFAN NAGLIS

Naturhistorisches Museum, Augustinergasse 2, CH-4001 Basel, Switzerland. s.naglis@bluewin.ch

Faunistic data are given for 26 species of Dolichopodinae from Turkey. The following species are recorded for the first time from Turkey: *Dolichopus austriacus* Parent, *Dolichopus campestris* Meigen, *Dolichopus lepidus* Staeger, *Dolichopus longitarsis* Stannius, *Dolichopus pennatus* Meigen, *Dolichopus salictorum* Loew, *Dolichopus simplex* Meigen, *Dolichopus ungulatus* (Linnaeus), *Gymnopternus angustifrons* (Staeger), *Gymnopternus assimilis* (Staeger), *Gymnopternus blankaartensis* Pollet, *Hercostomus chaerophylli* (Meigen), *Hercostomus rusticus* (Meigen), *Poecilobothrus basilicus* (Loew), *Poecilobothrus bigoti* Mik, *Tachytrechus transitorius* Becker. *Sybistroma schachti* sp. n. and *Tachytrechus flavicornis* sp. n. are described as new. In addition, *Lamprochromus dalmaticus* Parent is newly recorded as member of the Sympycninae.

Keywords: Dolichopodidae, Dolichopodinae, new records, new species, Turkey.

INTRODUCTION

Grichanov *et al.* (2007) published a list of Turkish Dolichopodidae mentioning 69 species. The authors did not include the publication of Pârvu & Popescu-Mirceni (2006) which reported 26 species from Turkey, 10 of which recorded for the first time. Tonguç *et al.* (2009, 2010) added 13, Grichanov & Tonguç (2010, 2010a) 12 (*Diaphorus winthemi* added twice) and Naglis (2009, 2010) 22 species. In this paper faunistic data are provided for 26 species of Dolichopodinae including 16 new records and two new species as well as one new record of Sympycninae. As a result, 145 species are recently known from Turkey.

MATERIAL AND METHODS

The bulk of material for the present study was collected by Wolfgang Schacht (Zoologische Staatssammlung München, ZSM) in the Eastern part of Turkey in the years 1983 and 1985. The specimens are deposited at ZSM. Additional material was examined from the Museum für Naturkunde Berlin (ZMHB).

The morphological terminology for adult structures follows mainly McAlpine (1981) and Merz & Haenni (2000). For the male genitalia morphology the terminology of Brooks (2005) is used. The following abbreviations are used: ad = anterodorsal; av = anteroventral; pd = posterodorsal; pv = posteroventral; CuAx ratio = length of crossvein dM-Cu to length of distal section of CuA; RMx ratio = distance between R_{2+3} and R_{4+5} to distance between R_{4+5} and M at wing margin.

For each species the distribution in the area surrounding Turkey is given which comprises Eastern Europe, the Caucasus, and the Middle East. Distribution data is mostly according to Pollet (2004) and Yang *et al.* (2006), doubtful records are omitted.

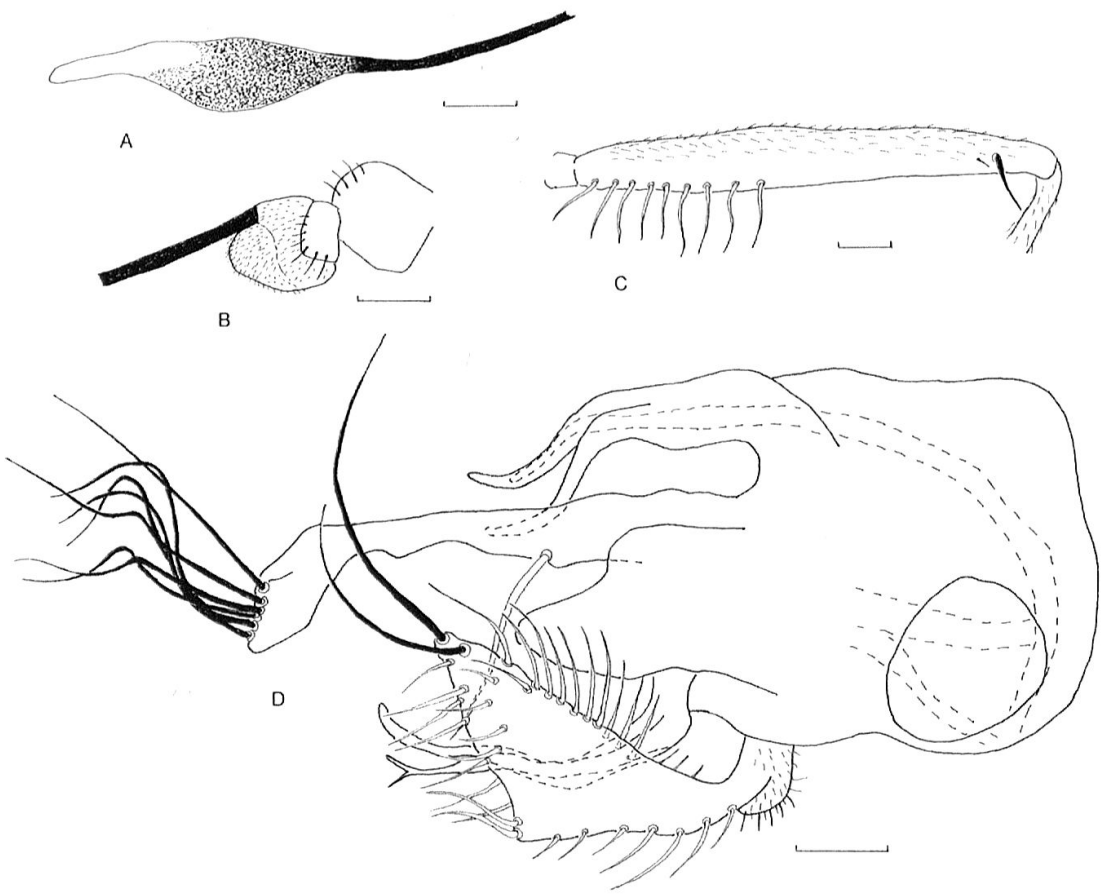

Fig. 1. *Sybistroma schachti* sp. n. male. — A, tip of arista. B, basal segments of antenna. C, mid femur, anterior view. D, hypopygium, left lateral view. (scale bar = 0.1 mm)

DESCRIPTION OF NEW SPECIES

Sybistroma schachti sp. n.

(Figs. 1A–D)

Diagnosis: Antenna yellow; postocular setae yellow; first flagellomere rounded; arista with spatulate apical flag which has apical half white; legs yellow; all tarsi simple; mid and hind femora with yellow basoventral setae; scutellum and tergites 1–3 yellow.

Material examined. Holotype male: Turkey, Province Hakkari, Nabur Deresi Valley, South Beytisebap, 1200 m, 26.VI.1985, leg. W. Schacht (ZSM).

Description. Body length: 3.9 mm, wing length 3.5 mm.

Head: Eyes almost contiguous on face; face with ochreous-yellow pruinosity, clypeus white; frons with dense greyish pruinosity; postoculars yellow, but 2 dorsalmost setae near vertex dark; palpus yellowish-white with a brown preapical seta; proboscis yellow; antenna entirely yellow; scape bulbous, with some short dorsal setae; pedicel short, vase-like, not protruding into first flagellomere; first flagellomere (Fig. 1B) rounded, as long as high; arista (Fig. 1A) dorsal, black, extremely prolonged, about as long as body, basal half slightly swollen, with a spatulate apical flag which has apical half white.

Thorax: mesonotum dark metallic green, with dense grey pruinosity; all setae black; 6 pairs of strong dorsocentrals, posteriormost pair distinctly longer; acrostichals in two rows; scutellum yellow, with a pair of strong and long scutellar setae, but without additional marginal setae; pleura dark, with dense grey pruinosity.

Legs: Completely yellow; hairs and setae black except as noted. Fore leg: coxa with light brown apical and lateral setae; femur bare of major setae; tibia with small pd setae at $1/3$ and $2/3$; tarsomeres unmodified, claws and pulvilli present; relative length of tibia and tarsomeres: 45:19:13:7:5:4. Mid leg: coxa with 2 strong lateral and some smaller pale apical setae; femur (Fig. 1C) with a row of 8–10 strong pale av setae on basal third slightly longer than diameter of femur, and with a strong anterior preapical seta; tibia slightly flattened laterally, with a small ad/pd setal pair at $1/5$, a single ad at $1/4$, and a strong ad/pd setal pair at $1/2$, and with 3 strong preapical setae; tarsomeres unmodified; claws and pulvilli present; relative length of tibia and tarsomeres: 77:52:27:20:11:6. Hind leg: coxa with a strong lateral seta; femur with a row of 5–6 strong pale av setae on basal fifth, which are about as long as diameter of femur, without anterior preapical seta; tibia with strong ad setae at $1/5$ and $2/3$, and with 4–5 smaller pd setae, and with 2 preapical setae; tarsomeres unmodified (4 and 5 lacking); relative length of tibia and tarsomeres: 94:29:42:21:-:-.

Wing: Membrane hyaline, veins light brown; R_{4+5} curved towards M in apical fourth; M gently bent towards R_{4+5} at $1/3$ from dM-Cu, becoming subparallel to join costa before wing apex; CuAx ratio: 0.5; RMx ratio: 3.2; lower calypter yellowish-white with fan of brown setae; halter pale yellow.

Abdomen: Mostly dark brown, with dense grey pruinosity; tergite 1 entirely yellow, tergites 2 and 3 yellow on basal half; hairs and setae dark, some setae on venter yellow; sternite 7 brown, forming peduncle; sternite 8 dark brown; hypopygium (Fig. 1D) dark brown, cercus brown, triangular, with 2 long curved apical setae; apicoventral epandrial lobe very narrow, projecting forward, with long sinuate apical setae, and a strong basal seta.

Female: unknown.

Etymology: The species is named after its collector Wolfgang Schacht.

Remarks: *Sybistroma schachti* sp. n. resembles in the antennal structure species which were formerly assembled in the genus *Ludovicius* Rondani. Brooks (2005) synonymised *Ludovicius* with *Sybistroma* based on the morphology of the male genitalia. The new species has an apical aristal flag which is similar to that of *S. impar* (Rondani), but can be separated by the following characters: first flagellomere rounded, about as long as wide; arista dorsal, swollen in basal half; scutellum yellow; mid and hind femur with distinct basoventral setae. Using Grichanov's (2000) key the species runs to *S. eucerum* (Loew) from which it can be differentiated by the following characters: fore basitarsus simple; first flagellomere rounded; arista dorsal, with spatulate flag which has apical half white.

Tachytrechus flavicornis sp. n.

(Figs. 2A–C)

Diagnosis: Antenna yellow; postocular setae yellow; face silvery-white; clypeus extending beyond lower eye margin; femora mainly dark metallic green; tibiae yellow; fore tibia flattened dorsoventrally; fore basitarsus very slender, tarsomeres 2–5 strongly broadened and flattened laterally, with silvery shine.

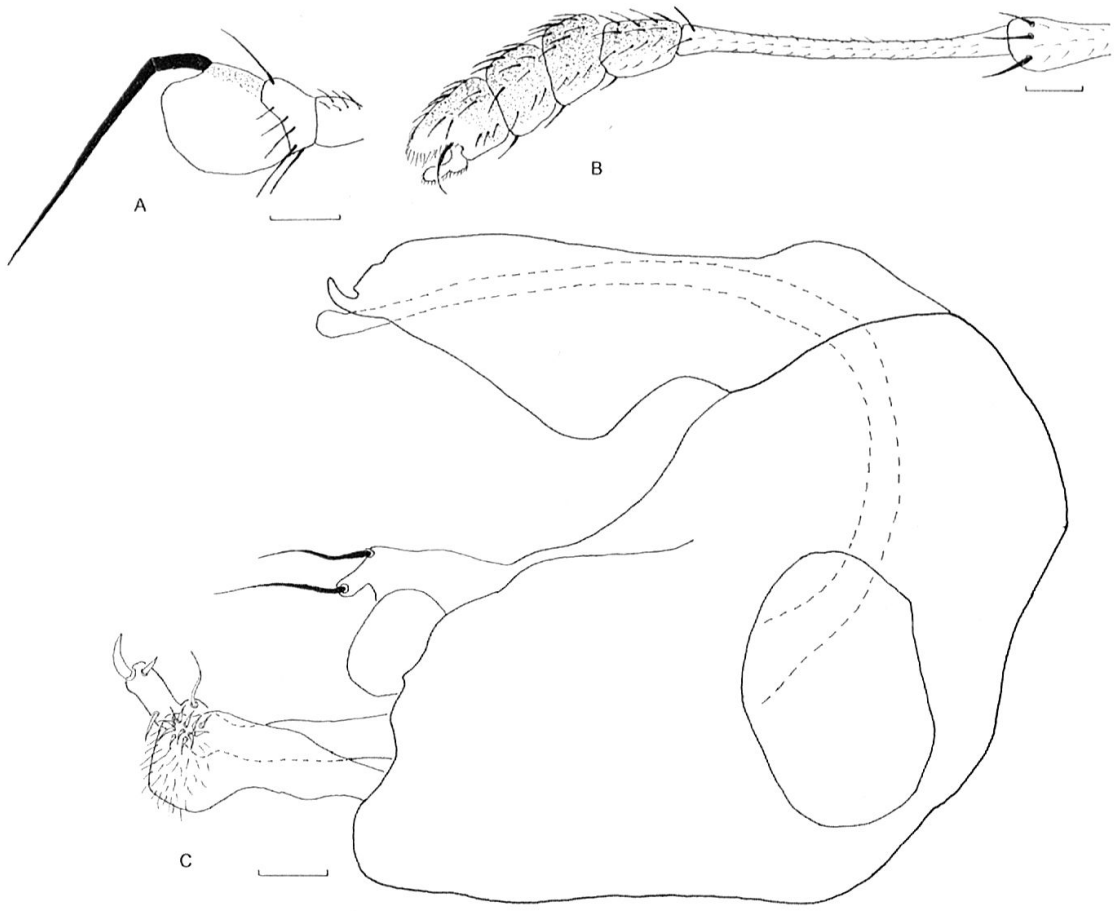

Fig. 2. *Tachytrechus flavicornis* sp. n. male. — A, antenna. B, fore tarsomeres, posterior view. C, hypopygium (cercus omitted), left lateral view. (scale bar = 0.1 mm)

Material examined. Holotype male: Turkey, Province Kars, Railway Station Soganli, West Sarikamis, 2100 m, 5.VII.1985, leg. W. Schacht (ZSM). Paratypes: 2 males: same data as holotype.

Description. Body length holotype: 4.7 mm, wing length 4.2 mm.

Head: Face narrowed below antennae then widening to clypeus, with dense silvery-white pruinosity, clypeus silvery-white, triangular, extending beyond lower eye margin; frons with dense yellowish-greyish pruinosity; setae black, lower postoculars yellow; palp dark grey, with black preapical setae; proboscis dark brown; antenna (Fig. 2A): scape and pedicel yellow; first flagellomere yellow, with dark dorsal stripe, rounded, as long as wide; arista dorsal, black and bare.

Thorax: Mesonotum dark metallic olive green, with dense grey pruinosity; all setae black; 6 pairs of strong dorsocentrals; acrostichals in two rows; a pair of strong scutellars; pleura dark metallic green, with dense grey pruinosity.

Legs: All coxae and most part of femora dark metallic green, with grey pruinosity; apical fourth of fore femur, apical third of mid femur, tip of hind femur, and tibiae yellow; fore tarsomeres 2–5, tip of mid basitarsus, and mid tarsomeres 2–5 infuscated; apical $^1/_4$ of hind tibia and hind tarsomeres black. Hairs and setae black except as noted. Fore leg: coxa with a strong anterior seta basally, with a strong anterolateral seta, and some additional smaller setae; femur bare of major setae; tibia

flattened dorsoventrally, with silvery shine dorsally on apical third, and with a small pv seta at about $^1/_2$; fore tarsomeres (Fig. 2B) modified: basitarsus slightly flattened dorsoventrally, very slender, with silvery shine, tarsomeres 2–5 distinctly broadened and flattened laterally, with small dorsal setae, and with silvery shine (best seen from ad and pd view); relative length of tibia and tarsomeres: 62:31:7:6:5:9. Mid leg: coxa with 1 strong anterolateral and some smaller anterior setae; femur with a row 3 strong ad preapical setae; tibia with a row 4–5 strong ad setae, 1 strong pd seta at $^1/_5$, 2 dorsal setae at $^1/_3$ and $^2/_3$, 3–4 ventral setae, and a circlet of 5 strong preapical setae; tarsomeres simple; relative length of tibia and tarsomeres: 83:38:16:12:10:9. Hind leg: coxa with a strong lateral seta; femur with a row of 4–5 strong ad preapical setae; tibia slightly swollen in apical fifth; with a row of 5 strong ad setae; a row of 5 strong pd setae; 1 strong dorsal seta at $^4/_5$, 4–5 ventral setae, and a circlet of 3 preapical setae; basitarsus with a strong basoventral seta; relative length of tibia and tarsomeres: 97:32:30:19:13:11. All claws and pulvilli well developed.

Wing: Membrane hyaline, slightly infuscated on area of crossvein dM-Cu; costa distinctly swollen between humeral crossvein and R_1; M with gentle bend at $^1/_3$ from dm-cu, converging towards R_{4+5}, joining costa well before wing apex; CuAx ratio: 0.9; RMx ratio: 6; lower calypter pale yellowish with fan of black setae; halter pale yellow.

Abdomen: Metallic olive green, with grey pruinosity; hairs and setae black; segment 7 dark brown; segment 8 black, shining; hypopygium (Fig. 2C) black, hypandrium triangular, with apical curved hook; apicoventral epandrial lobe with 2 strong apical setae; ventral surstylar lobe narrow and curved, with a hook-like apical seta in addition to the smaller setae, and with a sinuate subapical seta; dorsal surstylar lobe rounded apically with a field of small setulae; cercus dark brown, with yellow base, roundish, about 1.3 times as wide as long, marginal setae longer than width of cercus.

Female: Unknown.

Etymology: From Latin *flavus* = yellow and *cornus* = horn, referring to the yellow antennae.

Remarks: *Tachytrechus flavicornis* sp. n. belongs to the species group with a conspicuously slender fore basitarsus. Using Stackelberg's (1941) key the species runs to *T. hamatus* Loew and *T. ocior* Loew, from which it can be separated by the following characters: first flagellomere yellow; hypandrium apically rounded, with a small hook-like spine. The hypopygium, especially the hypandrium is similar to that of *T. notatus* Stannius, from which it can be distinguished by the following characters: fore basitarsus distinctly slender; first flagellomere yellow; fore tibia without dorsal setae. For figures of the hypandrium see also Becker (1917).

FAUNISTIC RECORDS

Dolichopus austriacus Parent, 1927

Material examined: 1 male: Turkey, Province Hakkari, South Yüksekova, 28.VI.1985.

Eastern distribution: Romania, Estonia, Russia, Uzbekistan (Stackelberg 1930).

Remarks: First record for Turkey.

***Dolichopus campestris* Meigen, 1824**

Material examined: 16 males: Turkey, Province Kars, Railway Station Soganli, West Sarikamis, 2100 m, 5.VII.1985. 5 males: Turkey, Province Erzurum, Pass West Oltu, 2200 m, 6.VII.1985. 1 male: Turkey, Province Kars, Aras-Tal, West Karakurt, 1300 m, 4.VII.1985.

Eastern distribution: Poland, Czech Republic, Slovakia, Hungary, Romania, Belarus, Estonia, Ukraine, Georgia, Russia, Kazakhstan.

Remarks: First record for Turkey.

***Dolichopus cinctipes* Wahlberg, 1850**

Material examined: 2 males: Turkey, Province Erzurum, Pass West Oltu, 2200 m, 6.VII.1985. 5 males: Turkey, Province Kars, Railway Station Soganli, West Sarikamis, 2100 m, 5.VII.1985.

Eastern distribution: Turkey, Russia.

Remarks: Listed from Turkey by Grichanov *et al.* (2007). In the material at hand are specimens with a pale cercus with brown rim and others with an entirely brown cercus (see also Grichanov *et al.* 2007).

***Dolichopus lepidus* Staeger, 1842**

Material examined: 9 males: Turkey, Province Kars, Railway Station Soganli, West Sarikamis, 2100 m, 5.VII.1985. 2 males: Turkey, Province Kars, Aras Valley, West Karakurt, 1300 m, 4.VII.1985.

Eastern distribution: Poland, Czech Republic, Slovakia, Hungary, Romania, Belarus, Georgia, Russia, Kazakhstan, Mongolia.

Remarks: First record for Turkey. The examined specimens match the description of the subspecies *Dolichopus lepidus macrostigma* Stackelberg, 1930 from Far East Russia (Vladivostok) but have all tibiae dark.

***Dolichopus longitarsis* Stannius, 1831**

Material examined: 12 males: Turkey, Province Kars, Railway Station Soganli, West Sarikamis, 2100 m, 5.VII.1985. 3 males: Turkey, Province Kars, Aras Valley, West Karakurt, 1300 m, 4.VII.1985.

Eastern distribution: Poland, Slovakia, Hungary, Romania, Belarus, Estonia, Georgia, Russia, Kazakhstan.

Remarks: First record for Turkey.

***Dolichopus pennatus* Meigen, 1824**

Material examined: 1 male: Turkey, Province Kars, Railway Station Soganli, West Sarikamis, 2100 m, 5.VII.1985.

Eastern distribution: Poland, Czech Republic, Slovakia, Hungary, Romania, Belarus, Estonia, Ukraine, Georgia, Russia, Kazakhstan, Mongolia.

Remarks: First record for Turkey.

***Dolichopus picipes* Meigen, 1824**

Material examined: 1 male: Turkey, Province Kars, Aras Valley, West Karakurt, 1300 m, 4.VII.1985.

Eastern distribution: Poland, Czech Republic, Slovakia, Hungary, Romania, Belarus, Estonia, Russia, Kazakhstan, Turkey.

Remarks: Listed from Turkey by Grichanov *et al.* (2007).

***Dolichopus plumipes* (Scopoli, 1763)**

Material examined: 3 males: Turkey, Province Rize, Ovit Pass, 2600 m, South Ikizdere, 10.VII.1985.

Eastern distribution: Poland, Czech Republic, Slovakia, Slovenia, Croatia, Hungary, Romania, Bulgaria, Belarus, Estonia, Ukraine, Georgia, Russia, Kazakhstan, Turkey, Mongolia.

Remarks: Listed from Turkey by Grichanov *et al.* (2007).

***Dolichopus salictorum* Loew, 1871**

Material examined: 2 males: Turkey, Province Adiyaman, Celik Lake, 900 m, Gölbasi, 21.VI.1985.

Eastern distribution: Poland, Czech Republic, Slovakia, Hungary, Romania, Bulgaria.

Remarks: First record for Turkey. The specimens examined have an entirely yellow hind tibia and hind basitarsus as described by Stackelberg (1933, p. 92). In the Palaearctic key by Negrobov *et al.* (2005), *D. salictorum* is included in couplet 161, as having apex of hind tibia and base of hind basitarsus dark, which is wrong (Negrobov, pers. comm.). Moreover, the specimens have a yellow first flagellomere. I have examined a male syntype (ZMHB) which has a dark brown first flagellomere, but the morphological and hypopygial characters are the same.

***Dolichopus simplex* Meigen, 1824**

Material examined: 5 males: Turkey, Province Kars, Aras Valley, West Karakurt, 1300 m, 4.VII.1985. 18 males: Turkey, Province Kars, Railway Station Soganli, West Sarikamis, 2100 m, 5.VII.1985. 12 males: Turkey, Province Erzurum, Pass West Oltu, 2200 m, 6.VII.1985. 1 male: Turkey, Province Hakkari, Sa Mountain, Varegös, South West Yüksekova, 700 m, 29.VI.1985.

Eastern distribution: Poland, Czech Republic, Slovakia, Hungary, Belarus, Estonia, Ukraine, Georgia, Russia, Kazakhstan.

Remarks: First record for Turkey.

***Dolichopus ungulatus* (Linnaeus, 1758)**

Material examined: 5 males: Turkey, Province Rize, Ovit Pass, 1500 m, South Ikizdere, 11.VII.1985.

Eastern distribution: Poland, Czech Republic, Slovakia, Croatia, Hungary, Romania, Bulgaria, Belarus, Estonia, Ukraine, Georgia, Russia, Kazakhstan.

Remarks: First record for Turkey.

***Gymnopternus angustifrons* (Staeger, 1842)**

Material examined: 1 male: Turkey, Province Kars, Railway Station Soganli, West Sarikamis, 2100 m, 5.VII.1985.

Eastern distribution: Poland, Czech Republic, Slovakia, Hungary, Serbia and Montenegro, Romania, Estonia, Ukraine, Russia, Kazakhstan.

Remarks: First record for Turkey.

***Gymnopternus assimilis* (Staeger, 1842)**

Material examined: 1 male: Turkey, Province Hakkari, South Yüksekova, 28.VI.1985.

Eastern distribution: Poland, Czech Republic, Hungary, Estonia, Belarus, Ukraine, Russia.

Remarks: First record for Turkey.

***Gymnopternus blankaartensis* Pollet, 1990**

Material examined: 1 male: Turkey, Province Adiyaman, Celik Lake, 900 m, Gölbasi, 21.VI.1985.

Eastern distribution: Czech Republic, Hungary, Ukraine.

Remarks: First record for Turkey.

***Hercostomus chaerophylli* (Meigen, 1824)**

= *Hercostomus conformis* (Loew, 1857)

Material examined: 6 males: Turkey, Province Erzurum, Pass West Oltu, 2200 m, 6.VII.1985. 1 male: Turkey, Province Kara, Aras Valley, West Karakurt, 1300 m, 4.VII.1985.

Eastern distribution: Poland, Czech Republic, Hungary, Belarus, Ukraine, Russia, Armenia.

Remarks: First record for Turkey.

***Hercostomus convergens* (Loew, 1857)**

Material examined: 4 males: Turkey, Province Kars, Aras Valley, West Karakurt, 1300 m, 4.VII.1985.

Eastern distribution: Poland, Hungary, Romania, Ukraine, Russia, Azerbaijan, Turkey.

Remarks: Recorded from Turkey by Pârvu & Popescu-Mirceni (2006).

***Hercostomus rusticus* (Meigen, 1824)**

Material examined: 1 male: Turkey, Province Rize, Ovit Pass, 1500 m, South Ikizdere, 11.VII.1985.

Eastern distribution: Poland, Czech Republic, Slovakia, Hungary, Bosnia and Herzegovina, Macedonia, Estonia, Belarus, Ukraine, Russia, Georgia, Armenia, Kazakhstan, Mongolia.

Remarks: First record for Turkey.

***Poecilobothrus basilicus* (Loew, 1869)**

Material examined: 5 males: Turkey, Province Adiyaman, Celik Lake, 900 m, Gölbasi, 21.VI.1985.

Distribution: So far known from Italy.

Remarks: First record for Turkey. The specimens are similar to *P. regalis* but differ in the hind basitarsus which lacks setae and in the structure of the male genitalia.

Poecilobothrus bigoti Mik, 1883

Material examined: 1 male: Turkey, Province Van, Van Lake, near Ercis, 1.VII.1985.

Eastern distribution: Romania.

Remarks: First record for Turkey. The specimen at hand has an entirely black antenna and a white face typical for this species. With a body length of 4.2 mm it is distinctly smaller than the other *Poecilobothrus* species examined.

Poecilobothrus caucasicus (Stackelberg, 1934)

= *Hercostomus caucasicus* Stackelberg, 1934

Material examined: 3 males: Turkey, Province Rize, Ovit Pass, 1500 m, South Ikizdere, 11.VII.1985.

Eastern distribution: Georgia, Armenia, Russia, Turkey.

Remarks: Recorded from Turkey by Grichanov *et al.* (2007). The species has been transferred from *Hercostomus* by Grichanov & Tonguç (2010a). The specimens at hand vary in the coloration of the femora: one specimen has entirely black femora, while two others have the basal half of all femora yellow. A similar variability is also known from the closely related *P. varicoloris* (Becker, 1917) (see Grichanov & Tonguç 2010a).

Poecilobothrus regalis (Meigen, 1824)

Material examined: 1 male: Turkey, Province Kars, Aras Valley, West Karakurt, 1300 m, 4.VII.1985. 13 males: Turkey, Province Adiyaman, Celik Lake, 900 m, Gölbasi, 21.VI.1985.

Eastern distribution: Czech Republic, Slovakia, Hungary, Romania, Bulgaria, Ukraine, Russia, Turkey, Uzbekistan, Georgia, Iran.

Remarks: Recorded from Turkey by Pârvu & Popescu-Mirceni (2006), and listed by Grichanov *et al.* (2007).

Sybistroma impar (Rondani, 1843)

= *Ludovicius impar* Rondani, 1843

Material examined: 4 males: Turkey, Province Adiyaman, Celik Lake, 900 m, Gölbasi, 21.VI.1985.

Eastern distribution: Hungary, Bulgaria, Romania, Turkey, Israel.

Remarks: Recorded from Turkey by Grichanov *et al.* (2007).

Sybistroma sphenopterum (Loew, 1859)

Material examined: 3 males: Turkey, Province Kars, Aras Valley, West Karakurt, 1300 m, 4.VII.1985.

Eastern distribution: Poland, Czech Republic, Hungary, Bosnia and Herzegovina, Romania, Turkey.

Remarks: Recorded from Turkey by Tonguç *et al.* (2009). In earlier works the species was included in the genus *Hypophyllus* Haliday.

Tachytrechus transitorius Becker, 1917

Material examined: 4 males: Turkey, Province Kars, Railway Station Soganli, West Sarikamis, 2100 m, 5.VII.1985. 1 male: Turkey, Province Kars, Aras Valley, West Karakurt, 1300 m, 4.VII.1985.

Eastern distribution: Russia.

Remarks: First record for Turkey.

Addendum to the Sympycninae (Naglis 2009)

Lamprochromus dalmaticus Parent, 1927

Material examined: 1 male: Turkey, Province Erzurum, Pass West Oltu, 2200 m, 6.VII.1985.

Distribution: Known from Croatia so far.

Remarks: First record for Turkey.

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