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Sphaeroceridae (Diptera) from Tunisia*

By

L. PAPP

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Abstract: A list of 18 sphaerocerid species hitherto known from Tunisia, and locality data of 27 species collected by the research workers of the Hungarian Natural History Museum in 1977. One species (Leptocera (Opacifrons) tunisica sp.n.) new to science and other 15 species new to the fauna of Tunisia.

Tunisia is one of the "classic collecting areas" in dipterology. At the beginning of this century, the then large Diptera collections were enriched by valuable materials following the collecting activities of Th. BECKER, L. BIRÓ, and others. Among these materials there were also numerous sphaerocerid flies, a big part of which was soon identified and published. BECKER (1907) listed 14 sphaerocerid species from his collecting in Tunisia (including some specimens collected by L. BIRÓ), but there were two specific names among them which are now no more identifiable (see below). DUDA (1918) described four species in his big monography, the type-specimens of which originated at least partly from Tunisia. Later (DUDA 1938) he enriched the Tunisian fauna with one other sphaerocerid species. Finally, the author (PAPP 1978) recently published a paper with an additional species new to Tunisia. Thus there were known 18 species of Sphaeroceridae from that country. These are in a taxonomic order (B= BECKER, 1907): Sphaerocera curvipes Latreille, 1805 (B: as subsultans Fabr.); Ischiolepta pusilla (Fallén, 1820) (B: as Sphaerocera margaritata ♀ n.sp.); Lotobia pallidiventris (Meigen, 1830) (B: as Sphaerocera africana ♀ n. sp., one female syntype (Gafsa, BIRÓ) in the collection of the HNHM); Copromyza (Olinea) atra (Meigen, 1830) (B: as Olina geniculata Macq.); Ceroptera rufitarsis (Meigen, 1830) (DUDA 1938); Coproica digitata (Duda, 1918) (as Limosina); Coproica hirtula (Rondani, 1880) (B: as Limosina hirtula); Coproica lugubris (Haliday, 1836) (PAPP, 1978); Coproica vagans (Haliday, 1833) (B: as Limosina albipennis Rond.); Limosina brevicostata Duda, 1918; Limosina ciliata Duda, 1918; Limosina heteroneura Haliday, 1936 (B: as heteroneura Rond.); Limosina simplicipes DUDA, 1925 (DUDA 1918: as simplicimana n. sp. in coll. HNHM: 1 ♂ syntype: Tunis, Hoegen - "simplicimana" det. O. Duda); Leptocera (Opacifrons) coxata (Stenhammar, 1854) (B: as Limosina pusio Zett.); L. (Opacifrons) maculifrons (Becker, 1907) (as Limosina); L. (Rachispoda) fuscipennis (Haliday, 1833) (B: as Limosina oelandica Stenh., see below); L. (Rachispoda) limosa (Stenhammar, 1854) (B: as Limosina limosa Stenh., in coll. HNHM: 1 ♂: Tunisia, Ain Draham - 1913. VI. 24.; 1 ♀: Tunisia, Les Sources - 1913. VI. 29. on both of

* The collectings of the Hungarian Natural History Museum in Tunisia, No. 2.

them: "limosa" det. O. DUDA); L. (Leptocera) curvinervis (Stenhammar, 1854) (B: as Limosina cilifera Rond.). Two of BECKER's (1907) species are not recognizable. BECKER wrote on three specimens of Limosina pygmaea Meig. from Tunis and Gafsa. Later, one of them was designated by O. DUDA as a syntype of Limosina ciliata Duda, 1918. The other questionable species (Borborus fumipennis Stenh. ?) is a Borborillus, and later DUDA identified them as C. (B) niveipennis (Duda, 1923) (see below).

Four research workers of the Hungarian Natural History Museum collected for a month in Tunisia, 23 March-23 April, 1977 (Gozmány et Mahunka, 1977), where they collected, among others, a valuable material of several thousands of Diptera. In this material there were 456 sphaerocerid specimens, representing 27 species. One species new to science (Leptocera (Opacifrons) tunisica sp.n.) and 15 species new to Tunisia were found. Thus the sphaerocerid fauna of Tunisia was nearly doubled by the interesting material collected by my colleagues. Now 34 species of Sphaeroceridae are known from Tunisia, but this figure is presumably only about one-third of the actual fauna of Tunisia, to be established by future research work. My colleagues collected sphaerocerid specimens in 18 localities. Their data are as follows:

No. 12. Qued Ettin, 5 km from El Kef, 27 March, 1977. Ripicolous fauna collected by treading, also singled, on shores of stream. Leg. S. Mahunka.

No. 27. Ferma Shitta, Djebel Eddyr, about 7 km N from El Kef, about 1100 m, 28 March, 1977. Five ethylenglycol soil traps, baited with canned liver, at base of perpendicular sheer cliff wall of N exposition; in situ until 3 April, 1977. Leg. S. Mahunka.

No.37/2. Environs of Ain Draham, 31 March, 1977. Berlese and Tartigrada samples from Quercus suber and Q.libanotus forests: 2. mosses from the ground with the underlying soil. Leg. S. Mahunka.

No. 38. Same, 31 March, 1977. Singled from under bark of decaying trunk and stones. Leg. L. Gozmány and S. Mahunka.

No. 42. Fernana, 1. April, 1977. Singled from horse dropping and from underlying ground. Leg. S. Mahunka.

No. 43. Ferme Shitta, Djebel Eddyr, about 8 km Ne from El Kef, 1 April, 1977. Singled from horse dropping and from underlying ground. Leg. S. Mahunka.

No. 46. El Kef: in the town and along its southern border (along railway track), 2 April, 1977. Netted from weedy vegetation along tracks and ditch borders. Leg. L. Gozmány and S. Mahunka.

No. 49. About 2 km NW from Maktar, 3 April, 1977. Berlese and Tardigrada samples from barren sites on border of town: 1. litter from base of Pinus pinsapo and a pulvinate Composite plant. Leg. S. Mahunka.

No. 50. Same, 3 April, 1977. Netted from shore vegetation and ground also singled (insects flying over water surface). Leg. S. Mahunka.

No. 60. Same, 2 April, 1977. Lighting (MV lamp) for nocturnal insects, 1900-2300, 22-16 C^{o}, slight wind, open sky, full moon. Leg. L. Gozmány and S. Mahunka.

No. 64. Boughrara: agricultural college, 2 April, 1977. Lighting (MV lamp), 1900-2330, about 20-15 C^{o}, soft wind, partly overcast sky. Leg. L. Gozmány and S. Mahunka.

No. 73. Same, 6 April, 1977. Netted on plants, mimosa shrubs, in cypress alley (also reservoir and a dung heap in its vicinity!) Leg. S. Mahunka.

No. 77. Same, 6 April, 1977. Sifted from dead decaying snake, also soil underneath it. Leg. S. Mahunka.

No. 80. Plage Chaffar, Nakta, 7 April, 1977. Netted on seacoast or on marsch vegetation (Juncus sp., Salsola sp., etc.) along seacoast. Leg. S. Mahunka.

No. 97. Oued Esmara, on the Mahares - Gabes road, 59 km S from Sfax, 10 April, 1977. Hardly moving very saltly water, sparse shore vegetation. Beaten from plants, netted from wet ground. Leg. S. Mahunka.

No. 106. Same, palm plantation of oasis, 14 April, 1977. Singled from under hay and litter in beds of palm tree rows. Leg. Zs. Debreczy, A. Embey-Isztin and S. Mahunka.

No. 116. Degache, agricultural school, 15 April, 1977. Lighted material, MV lamp, 1900-2130, 25-15 C^{o}, overcast sky, before storm; an extremely intense flight! Leg. L. Gozmány and S. Mahunka.

No. 116. Tozeur, in town, 16 April, 1977. Netted from straw, debris, excrement in open cattle barn. Leg. S. Mahunka.

Together with these sphaerocerids, which are preserved in alcohol, also some hitherto unpublished data of pinned sphaerocerid specimens in our Collection from Tunisia are given below.

I express my sincere thanks to my colleagues, to A.EMBEY-ISZTIN, Zs.DEBRECZY, L.GOZMÁNY, and to S. MAHUNKA, for collecting the invaluable Diptera material in Tunisia.

Sphaerocera curvipes Latreille, 1805 - 1 ♂ (No. 46). A coprophagous, cosmopolitan species.

Ischiolepta pusilla (Fallén, 1820) - 1 ♂ (No. 116). Almost cosmopolitan, coprophagous species.

Ishiolepta vaporariorum (Haliday, 1836) - 1 ♂ (No. 117). Known from the West Palearctic and North America. New to Tunisia.

Copromyza (Olinea) atra (Meigen, 1830) - 1 ♂ (No. 38). 35 ♂, 7 ♀ (No. 43), 10 ♂, 3 ♀ (No. 46). A common Holarctic species.

C. (Borborillus) nitidifrons (Duda, 1923) - 1 ♂, 1 ♀ (No. 43); 1 ♀; Tunis, Hoegen - "nitidifrons ♀" det. O. Duda. New to the African part of the Palearctic Region.

C. (Borborillus) niveipennis (Duda, 1923) - 1 ♀ (No. 37/2), 2 ♂, 2 ♀ (No. 64), 1 ♂, 1♀ (No. 60), 1 ♀ (No. 106) 1 ♂, 1 ♀ (No. 116), 1 ♂, 1♀: Gafsa, BIRÓ - 28. III. 1903. - "niveipennis ♂/♀" det. O. DUDA. The latter two specimens were published in the description, but it is not quite sure whether DUDA regarded them as syntypes or not (cf. DUDA 1923: 89) indeed, doubly so, as in his monography DUDA (1938) did not include Tunisia in the distribution data of the species. I believe that we have good reason for regarding them as syntypes, since it is obvious that DUDA identified them as such in the description of the species, and it was seldom that DUDA designated a type or types unequivocally. Anyway, the two specimens had to have a label "costalis ou fumipennis?" written by BECKER, but in all probability DUDA discarded them (cf. DUDA, 1923:89).

C. (Copromyza) equina (Fallén, 1820) - 2 ♂ (No. 46); 1 ♂: Tunisia, Bel Mehtia - 1913. VIII. 3. - "equinus ♂" det. O. DUDA. New to Tunisia.

Coproica hirtula (Rondani, 1880) - 2 ♂, 3 ♀ (No. 117). Found in every continent (see PAPP 1978b).

Coproica vagans (Haliday, 1833) - 6 ♂, 7 ♀ (No. 117). Almost cosmopolitan, coprophagous species. Probably common also in Tunisia.

Limosina brevicostata Duda, 1918 - 1 ♂ (No. 117). For distribution see PAPP (1978a).

Limosina ciliata Duda, 1918 - 1 ♀ (No. 46), 1 ♂ (No. 60), 1 ♀ (No. 117). I had the opportunity to compare them with a female syntype in our Collection (Gafsa, BIRÓ, 22. III. 1903, "ciliata ♀" det. O. DUDA). The specimens above are the only known specimens of this species except for the type-series.

Limosina crassimana Haliday, 1836 - 4 ♂, 8 ♀ (No. 43), 1 ♀ (No. 46), 1 ♀ (No. 64), 1 ♀ (No. 77). New to Tunisia.

Limosina heteroneura Haliday, 1836 - 1 ♀ (No. 12), 1 ♂ (No. 56), 1 ♀ (No. 80), 4 ♀ (No. 117). Almost cosmopolitan species.

Limosina palmata Richards, 1927 - 1 ♂, 1 ♀ (No. 42). New to Tunisia.

Limosina silvatica (Meigen, 1830) - 3 ♂ (No. 27). New to the African part of the Palearctic Region.

Limosina villosa Duda, 1918 - 20 ♂, 5 ♀ (No. 42), 27 ♂, 14 ♀ (No. 43), 1 ♂ (No. 73), 1 ♂ (No. 117), 3 ♂, 2 ♀ (No. 46); 1 ♀: Tunisia, Bel Mehtia - 1913. VIII. 30. - "villosa" det. O. DUDA. New to Tunisia.

Leptocera (Opacifrons) coxata (Stenhammar, 1854) - 1 ♀ (No. 46), 3 ♂, 1 ♀ (No. 56), 1 ♂ (No. 117). Distribution: Old World and North America.

L. (Opacifrons) humida (Haliday, 1836) - 2 ♂, 2 ♀ (No. 56), 11 ♂, 18 ♀ (No. 60), 1 ♀ (No. 64). New to Tunisia.

Leptocera (Opacifrons) tunisica sp.n.

An interesting yellow, only partly browned, small species.

Head completely yellow, only third antennal joint with some ochreous hue. Head short and high, eyes very small (similar to that of the species of Leptocera Oliv. s.str.); head 1.5 times higher than long, longest diameter of eye only 2.4 times longer than genal width at vibrissa; genae strongly widening posteriorad: in level of vte nearly as wide as longest diameter of eye. Arista more than 4 times longer than antenna, with about 0.018 mm long hairlets. Third antennal joint very small (shorter than second joint ending in a distinct upper edge. Head bristles: distinct but hairlike

pvt, very long occe, occi, long and very thick vte, vti, oc normal, posterior ors very thick and rather long, anterior ors short and much thinner. Four pairs of if: anterior and hind most pairs short and thin, second pair very thick and cruciate, third pair longer than anterior ors. Face with moderately strong facial ridge, mouth edge somewhat protruding. Mesonotum yellow with brown hue in sagittal line and on anterior part. Pleura mainly yellow, only posterior half of mesopleuron and upper part of pteropleuron brown. Scutellum brown except for a narrow anterior band. Thoracic chaetotaxy: 1 h, 2 np, 1 prst, 2 sa, 1 pa, 1 strong prescutellar dc and three pairs of short anterior postsutural dc shortening anteriorad, 1 thin prsc, 2 sc pairs of bristles. 8 acmi rows, no enlarged acmi. One very strong and thick posterior and one very short and thin anterior st. Wing length of holotype female: 1.63 mm, width: 0.71 mm. Wings yellowish, also veins yellow. Costa extending distinctly (about 0.05 mm) beyond conjointment with slightly upcurving r_{4+5}. mg_1 with 6 pairs of moderately strong bristles. c_x = 1.20; t_a-t_p only 1.5 times longer than t_p. Alula short and narrow with slightly rounded apex. Halteres waxy yellow. Legs yellow, only mid coxae brown and dorsal part of femora yellowish brown. Firts femora with ad and av rows of moderately strong bristles. Mid femora with a thick and long, ventrally directed anteral subapical bristle, and four shorter and thinner bristles more basally up to apical 2/5 of femur. Dorsal half of mid tibia with a short pair of bristles, each at 1/5 and 13/20, a strong pair of bristles at 3/10, a very long and thick pair near its 3/4, and one short bristle at 1/10. One small ventral bristle at 5/8, long and very thick ventral preapical. Mid metatarsus with a very thick and long bristle (nearly as long as preapical on tibia) at basal 5/22. Abdomen ochreous yellow, brown only on hind margin of tergites and sternites. Cerci short and flat with minute hairs only.

Body length of holotype female: 1.81 mm.

Holotype female: Tunisia, Boughrara, on MV light in agricultural college, 4 April, 1977, leg. DEBRECZY, EMBEY-ISZTIN, GOZMÁNY et MAHUNKA (No. 64).

Leptocera (Opacifrons) tunisica sp.n. is an easily recognizable species. In the subgenus Opacifrons Duda, there are only three other species known from the Palearctic Region (flavilabris Hackm., septentrionalis Stenh., ochrea L. Papp) with a ventral preapical bristle on mid tibia and a ventral bristle on mid metatarsus at the same time. In contrast to the former two species, the body of this new species is yellow, its eyes smaller, it has 1 strong and 3 short pairs of postsutural dc bristles, the female has no spines or strong bristles on the cerci, only minute hairs. Its nearest relative is ochrea L. Papp, 1974 (Mongolia, South Gobi), but tunisica sp. n. has not two but three short dc pairs before the robust hind dc pair, and the anterior dc pairs are distinctly shorter than on ochrea. Its c_x value is lower and its body is bigger (1.81 mm) than that of ochrea (1.3-1.47 mm).

L. (Rachispoda) fuscipennis (Haliday, 1833) - 1 ♂ (No. 49), 6 ♂, 8 ♀ (No. 56), 7 ♂, 7 ♀ (No. 60), 1 ♀ (No. 64), 1 ♀ (No. 77), 23 ♂, 16 ♀ (No. 80), 4 ♂, 10 ♀ (No. 116), 1 ♂ (No. 117). A halophilous species.

L. (Rachispoda) gel L. Papp, 1978 - 1 ♂ (No. 12). Described from Afghanistan; new to Tunisia.

L. (Rachispoda) lutosoidea (Duda, 1938) - 1 ♂, 2 ♀ (No. 56), 12 ♂, 14 ♀ (No. 60). Distribution: Europe, Canary Islands, Afghanistan. New to Tunisia.

L. (Rachispoda) kabuli L.Papp, 1978 - 9 ♂, 8 ♀ (No. 56). It is resembles more fuscipennis Hal. than modesta (Duda, 1924), since kabuli has one median row of acmi, agreeing with fuscipennis. But the arista of kabuli is three times longer than the antenna (not only two times as in fuscipennis), the scutellar armature and genital structures are completely different (see PAPP 1978a: Fig. 11, 12, 14, 15, 26). In our Collection there are six specimens identified by O. DUDA as "oelandica Stenh.". There are three specimens of fuscipennis Hal. among them: 1 ♂: Sfax, BIRÓ - 7. II 1903 - "Limosina oelandica Stenh." det. BECKER, "oelandica ♂" det. O. DUDA; 1 ♂: Tunis, Hoegen - "oelandica ♂" det. O. DUDA; 1 ♀: Sousse, BIRÓ - 28.II. 1903. - "oelandica ♀" det. O.DUDA. Specimens of kabuli L. Papp: 1 ♂, 1 ♀: Gafsa, BIRÓ - 22. III. 1903. - "oelandica ♂/♀" det. O. DUDA; 1 ♂: Tunisia, Djedeida - 1913. V. 31. - "oelandica ♂" det. O. DUDA. L./O./ kabuli L. Papp was described from Afghanistan; new to Tunisia.

L. (Rachisopda) modesta (Duda, 1924) - 1 ♀ (No. 56). New to Tunisia.

L. (Rachispoda) varicornis (Strobl, 1900) - 4 ♂, 6 ♀ (No. 56), 27 ♂, 45 ♀ (No. 60), 1 ♂ (No.106). Widespread in the Palaearctic and Ethiopian Regions. New to Tunisia.

L. (Leptocera) curvinervis (Stenhammar, 1854) - 1 ♂, 2 ♀ (No. 56), 1 ♂ (No. 97), 1 ♂, 1 ♀ (No. 117). An almost cosmopolitan species, developing in all kinds of mud.

L. (Leptocera) fontinalis (Fallén, 1820) - 1 ♀ (No. 106). Widespread, found also in the African part of the Palaearctic, but new to Tunisia. Older material in HNHM: 1 ♀: Tunisia, Ain Draham, 1913. VI. 24., "fontinalis" det. O. DUDA; 1 ♀: Tunisia, Bel Mehtia - 1913. VIII. 5. - "fontinalis" det. O. DUDA.

PAPP, L.: Sphaeroceridák (Diptera) Tunéziából.

A szerző ismerteti a Tunéziából eddig kimutatott Sphaeroceridae fajokat, majd 27 fajt közöl a Természettudományi Muzeum 4 tagu kutatócsoportja által 1977-ben Tunéziában gyüjtött gazdag légyanyagból. A fajok közül 1 (Leptocera (Opacifrons) tunisica sp.n.) tudományra uj és 15 faj uj Tunézia faunájára.

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Author's address: Dr. L. Papp
Zoological Department
Hungarian Natural History Museum
H-1088 Budapest
Baross u. 13.
Hungary