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New Records of Bibionidae (Diptera) from Turkey

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ABSTRACT

Bibio hortulanus (L., 1758) and *Dilophus bispinosus* Lundström, 1913, are recorded for the first time from Turkey. We also include a record of the latter species from Bulgaria.

Key words: Bibionidae, Turkey, new record.

INTRODUCTION

Bibionid flies (Diptera, Bibionidae) are frequently abundant inhabitants of Palaearctic grasslands (Skartveit, 1997), but the majority of the species prefer humid conditions and both species diversity and abundance are lower in the dry climate of the eastern Mediterranean. For instance, Skartveit & Kaplan (1996) found just six species from an extensive sampling in Israel, while most European countries tend to have 15-25 species recorded (Skartveit, 2004). Bibionid larvae, which feed on mainly decaying plant material in the litter layer, are believed to be highly susceptible to desiccation, and in dry climates they may be limited to humid habitats, e.g. areas under artificial irrigation. Despite this some species may be found even in quite dry areas (Haenni, 1985). As far as we can see, the present note is the first record of this family from Turkey.

MATERIAL AND METHODS

In this study, specimens were collected from the provinces of Afyonkarahisar, Aydın, Burdur and Isparta, all in South-West Anatolia, between 2004 and 2006. This region includes many lakes, wetland areas (Burdur Lake, Salda Lake, Yarıışh

Lake, Gölhisar Lake, Kovada Lake, Eğirdir Lake, Kartal Lake e.t.c.) and several national parks (Başkomutan National Park, Dilek Peninsula National Park, Honaz Dağı National Park, Kızıldağ National Park, Kovada Lake National Park, Saklıkent National Park e.t.c.). Specimens were collected using a butterfly hand net. Part of the material was pinned; the rest was preserved in 75 % ethanol. The material is deposited in Muğla University except where otherwise noted.

RESULTS

1. *Bibio hortulanus* (L., 1758)

Material examined: Afyonkarahisar, Şuhut, Hisar Location (38° 32' N / 30° 30' E), 1155 m, 07.V.2006, 1 male, 1 female (In copula); Aydın, Buharkent, Muratdağı (37° 59' N / 28° 44' E), 610 m, 10.IV.2004, 2 males 1 female; Kuyucak, Gencellidere Village (37° 58' N / 28° 39' E), 500 m, 10.IV.2004, 3 males (Museum of Zoology, Bergen); Nazilli, Büyük Manderes, Nehri Historical Bridge (37° 52' N / 28° 19' E), 65 m, 22.IV.2005, 1 male; Burdur, Military, Military Bridge (37° 45' N / 30° 20' E), 945 m, 19.V.2005, 2 males; Yeşilova, Kocapınar Village, Yarışlı Lake (37° 32' N / 29° 56' E), 930 m, 14.V.2004, 3 males; Yeşilova, Sazak Village (37° 34' N / 29° 54' E), 1060 m, 14.V.2004, 1 male; Denizli, Honaz, Gölpinar Village (37° 45' N / 29° 08' E), 348 m, 18.V.2005, 1 female; Serinhisar, Sırçalık Village (37° 30' N / 29° 28' E), 960 m, 14.V.2004, 2 males; Tavas, Akyar Village (37° 36' N / 29° 08' E), 1065 m, 18.V.2005, 3 males (Museum of Zoology, Bergen); Tavas, Akyar Village, Bridge Lokation (37° 36' N / 29° 07' E), 1060 m, 14.V.2004, 3 males; Isparta, Atabey, Çayırılı Village, Mescit Location (37° 57' N / 30° 38' E), 1065 m, 19.V.2005, 2 males; Eğirdir, 10. km along road to Konya, Eğirdir Lake (37° 51' N / 30° 54' E), 970 m, 15.V.2004, 2 males; Gönen, Gönen Dam (37° 57' N / 30° 31' E), 1061 m, 19.V.2005, 1 male; Yalvaç, Hüyükülü Village (38° 11' N / 31° 06' E), 996 m, 20.V.2005, 1 male.

Distribution in Palaearctic: This is a generally distributed and common species in the Mediterranean area (Krivoshaina, 1986), and has been recorded as far east as Iran and as far south as Ethiopia (Hardy, 1950). In Israel, it was found to be by far the commonest bibionid (Skartveit & Kaplan, 1996), which is also the case in the current survey. It is generally the most abundant bibionid in dry Mediterranean climates (Skartveit & Kaplan, 1996), being common in agricultural areas as well as shrublands and grasslands. *B. hortulanus* is the principal bibionid pest species in Central Europe (D'Arcy Burt & Blackshaw, 1991).

Morphology: The species is easily recognisable by the shortened r-m crossvein combined with medium size, broad, spoon-shaped tibial spurs, white abdominal pile in the male, brownish wings, orange-red mesonotum and abdomen in the female. It is, however, rather variable and the specimens in the present material do show considerable variation in size, general body build, the robustness of the legs and density of body pile. Flight period: Spring and early summer (records in Israel mainly March and April, Skartveit & Kaplan, 1996).

Ecology: The species was collected along a mountain stream running through a

valley with mixed forest including *Pinus* sp., *Castanea* sp., *Juglans* sp., and *Quercus* sp. There was also *Eucalyptus* sp. in one locality. *Populus* sp., *Salix* sp., *Platanus orientalis* and *Nerium oleander* grew along the side of the stream. Herbaceous vegetation included *Myosotis* sp., *Sedum* sp., *Cerastium* sp., *Galium* sp., *Scandix* sp., *Ranunculus* sp., *Trifolium* sp. *Urtica* sp., *Hordeum* sp., *Bromus* sp., *Galium* sp., *Mentha* sp. and *Anthemis* sp.

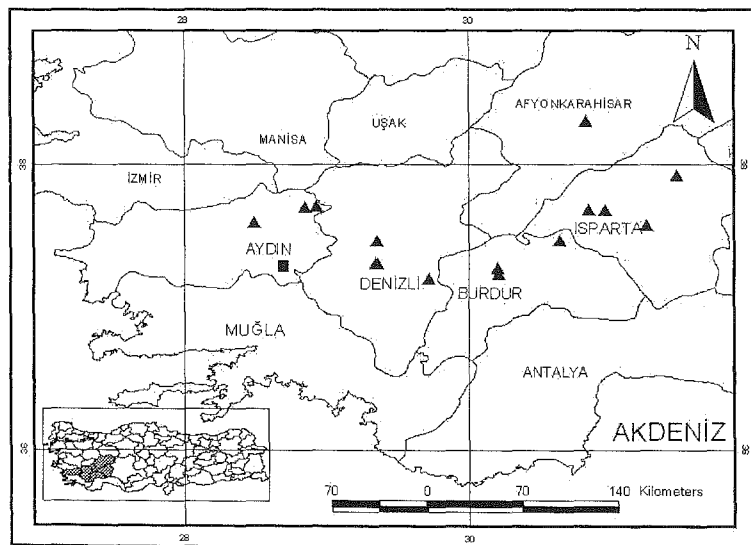
2. *Dilophus bispinosus* Lundström, 1913

Material examined: Turkey: Aydın, Bozdoğan, Kemer Bridge (37° 34' N/28° 31' E), 290-320 m, 22.IV.2005, 1 male; Bulgaria: Rila 1 female (Museum of Zoology, Helsinki, Finland (UZMH)).

Distribution in Palaearctic: *Dilophus bispinosus* is widespread in the Middle East, South and Central Europe, but seems to be uncommon everywhere (Freeman & Lane, 1985; Skartveit & Kaplan, 1996; Haenni, 1997).

Morphology: It is a rather distinctive species most easily recognised by the tan overall colour of the female, and by the mesal spines of the front tibia which are arranged in two pairs (Skartveit & Kaplan, 1996). The record from Bulgaria was included in the Fauna Europaea database (Skartveit, 2004) but has not been formally published. Flight period: September-December in Israel (Skartveit & Kaplan, 1996), obviously also in spring in Turkey. The species is most likely bivoltine.

Ecology: The specimens were collected in clay and rocky valley in the neighborhood of bridge.



Map 1. Distribution of *Bibio hortulanus* (▲) and *Dilophus bispinosus* (■) in the South-West Anatolian of Turkey

DISCUSSION

Two species only occurred in the present sample. However, the specimens were collected during April and May, and in the climate of Turkey one would expect more species to be active earlier in spring. We think it likely that sampling more extensively in February and March would reveal more species in the country, as would sampling in the mountainous areas further to the north. Additional species might also be found by sampling in autumn. While it seems likely that the dry coastal areas hold no more than a handful of bibionid species, we believe that sampling different areas of Turkey at different seasons would reveal a bibionid fauna of at least ten species in the country.

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Text: The standard order of sections for original papers is as follows: Introduction, Material and Methods, Results, Conclusions and Discussion, Acknowledgements, References. The scientific names (e.g. genus- and species-group names) are to be italicized.

For faunistic research follow this order, Distribution:..., Material examined:..., Host plant:....

Example:

Sphex oxianus Gussakovskij, 1928

Distribution: Central and South West Asia, Afghanistan, Iran, Israel, Turkey (Bohart & Menke, 1976; Menke & Pulawski, 2000; Kazenas, 2001), Turkey: Artvin (De Beaumont, 1967).

Material examined: Ankara, Altındağ, Çubuk Dam lake, 900 m, 29. VII. 1998, 1 female; Kalecik, 600 m, 24. VI. 2001, 1 female.

Host plant: *Echinophora* sp.

Do not use female and male symbols, instead of these use female, male words. Please write upper genus categories with capital letters.

Illustrations: Illustrations, graphs, their caption or legends should form separate, self-explanatory unit. Abbreviations in the legends should be explained but if there are too many, they should be included into a separate list. The original drawing and photographs should be not more than twice as large as when printed. Morphological illustrations should be including a scale bar. Photographs and electron micrographs must be in JPEG file format (300 dpi). Graphs and drawings (black and white type) must be in PC format. Color figures pay charge. Tables should include headings and explanations, and should be numbered consecutively. Their approximate position in the text should be indicated in the margin.

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Book Chapter

Putchkov, A. V., Matalin, A. V., 2003, *Subfamily Cicindelinae*. In: Lõbl, I., Smetana, A. (Eds.). Catalogue of Palaearctic Coleoptera. Vol. 1. Archostemata - Myxophaga - Adepaga. Apollo Books, Stenstrup, 99-118.

Book

Steinmann, H., Zombori, L., 1985, *An Atlas of Insect Morphology*. 2nd edn., Akadémiai Kiadó, Budapest, Hungary, 253.

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