

New Records from Inner West Anatolia to the Turkish Limoniidae (Insecta, Diptera) Fauna

Okan ÖZGÜL Hasan KOÇ

Muğla University, Science and Arts Faculty, Department of Biology, 48000 Kötekli Muğla,
TURKEY, e-mails: okanozgul@mu.edu.tr, khasan@mu.edu.tr.

ABSTRACT

In this study 4 new records belonging to Limoniidae are be found from Inner West Anatolia in 2009. Locations of 4 new records are given in this paper. These species are; *Hoplolabis (Parilisia) pontica*, *Afrolimnophila minima*, *Austrolimnophila (Austrolimnophila) ochracea* and *Limnophila (Limnophila) schranki*. The distribution of these 4 new records from Kütahya and Uşak provinces are mapped and localities of this species are characterized. Also distributions of these species in Palearctic Region are given.

Key words: Limoniidae, Diptera, Turkey, Inner West Anatolia, New Records.

INTRODUCTION

Although adult Limoniidae resemble Tipulidae and Cylindrotomidae in many respects, Limoniidae usually are distinctly smaller than the members of these families (Savchenko, Oosterbroek & Stary, 1992). Limoniidae, the largest family of the Diptera, currently contains 11.847 described species world-wide (Oosterbroek, 2010). Research on Turkish Limoniidae was summarized by Koc *et al.* (2005)

Since then, the number of species recorded from Turkey has significantly increased. The region studied most intensively is southwest Anatolia (Koç, 2004 and 2008; Koç, *et al.*, 2005; Özgül *et al.*, 2006; Parvu & Popescu-Mirceni, 2006). In all, these studies listed 47 taxa for the region. Together with the species recorded from the eastern Black Sea region, the total number of species known from Turkey now has increased to 92 (Stary and Oosterbroek, 2008; Oosterbroek, 2009). 61 of these occur in southwest Anatolia (Özgül *et al.*, 2009).

Inner West Anatolia, covering the provinces Afyonkarahisar, Kütahya and Uşak, is an important subregion of the Aegean region. This study presents new faunistic information on the Limoniidae of the area.

MATERIAL AND METHODS

In this study, specimens were collected from the provinces of Afyonkarahisar, Kütahya and Uşak, all in Inner West Anatolia in 2009, were collected from different localities and altitudes.

Specimens were collected with a hand-net. Specimens were killed by ethyl acetate and brought to laboratory. They were preserved either in 70 % mixture of alcohol and glycerin (3:1) solution or by pinning and drying. The materials are deposited in Zoological Museum of Muğla University, Muğla, Turkey (ZMMU).

RESULTS

SUBFAMILY CHIONEINAE

***Hoplolabis (Parilisia) pontica* (Savchenko, 1984)** (Figs 1, 5)

Ilisia pontica Savchenko, 1984: Vestn. zool. 1984(1): 88.

Material examined: Kütahya, Gediz, Gökler Town, Kalaycıoğlu (39° 01' N / 29° 32' E), 987 m, 10.VI.2009, 4 ♂♂, 2 ♀♀. Total: 4 ♂♂, 2 ♀♀.

Paleartic Distribution: Czech Republic, Moldova, Poland, Romania, Slovakia, Ukraine (Oosterbroek, 2010).

SUBFAMILY LIMNOPHILINAE

***Afrolimnophila minima* (Savchenko, 1971)** (Figs 2, 6)

Limnophila minima Savchenko, 1971: Vestn. zool. 1971(6): 11

Material examined: Uşak, Banaz, Küçükler Village, Murat Mountain 21.Km (38° 56' N / 29° 36' E), 1466 m, 25.VII.2009, 2 ♂♂. Total: 2 ♂♂.

Paleartic Distribution: Greece, Romania, Georgia, Armenia, Azerbaijan (Oosterbroek, 2010).

***Austrolimnophila (Austrolimnophila) ochracea* (Meigen, 1804)** (Figs 3, 7)

Limonia ochracea Meigen: 1804. Klass. Beschr. 1: 55

Material examined: Kütahya, Domaniç, Karayayla Village (39° 52' N / 29° 39' E), 1264 m, 24.VII.2009, 1 ♂. Total: 1 ♂.

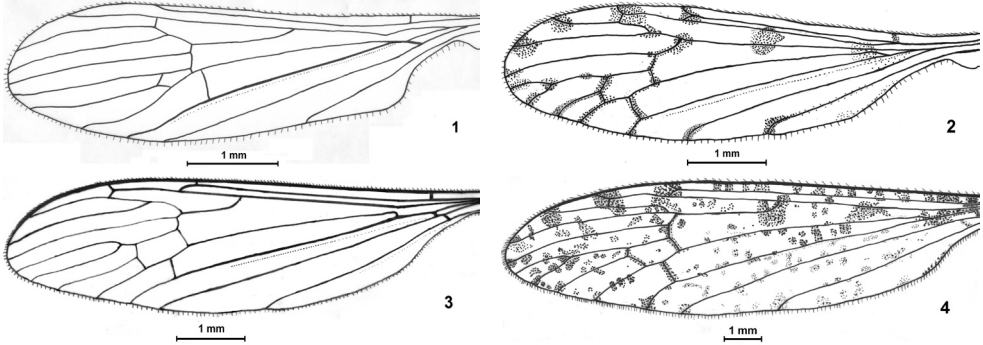
Paleartic Distribution: Austria, Belgium, Bosnia-Herzegovina, Bulgaria, Croatia, Czech Republic, Denmark, France, Germany, Great Britain, Hungary, Ireland, Italy, Lithuania, Luxembourg, Macedonia, Montenegro, Netherlands, Norway, Poland, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Ukraine, Azerbaijan, Iran (Oosterbroek, 2010).

***Limnophila (Limnophila) schranki* Oosterbroek, 1992** (Figs 4, 8)

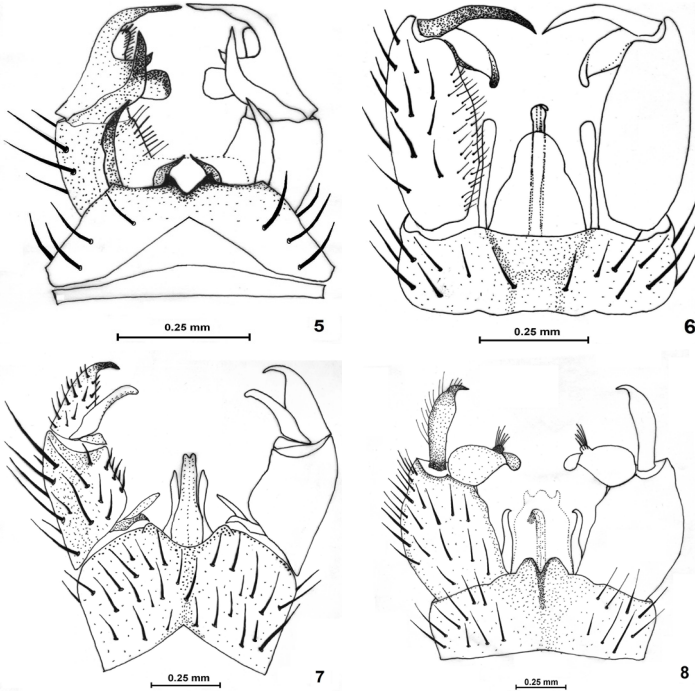
Limnophila schranki Oosterbroek, 1992: In: Savchenko *et al.*, 1992, Cat. Pal. Dipt. 1: 224

Material examined: Uşak, *Banaz*, Büyükturak (38° 46' N / 29° 49' E), 955 m, 01.V.2009, 4 ♂♂. Total: 4 ♂♂.

Palaearctic Distribution: Austria, Belgium, Bosnia-Herzegovina, Bulgaria, Croatia, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Hungary, Italy, Latvia, Lithuania, Macedonia, Montenegro, Netherlands, Norway, Poland, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Ukraine, Russia, Georgia, Kazakhstan (Oosterbroek, 2010).



Figs. 1-4) Wings; 1) *Hoplolabis (Parilisia) pontica*, 2) *Arolimnophila minima*, 3) *Austrolimnophila (Austrolimnophila) ochracea*, 4) *Limnophila (Limnophila) schranki*.



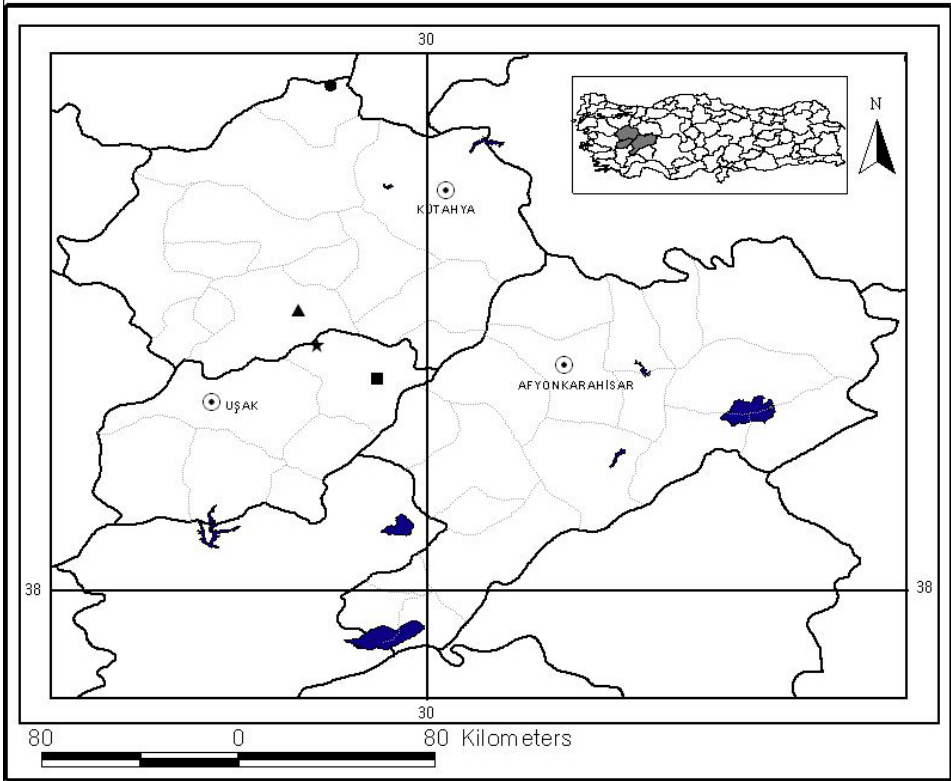
Figs. 5-8). Male Genitalia. 5) *Hoplolabis (Parilisia) pontica*, Ventral view, 6) *Arolimnophila minima*, Dorsal view, 7) *Austrolimnophila (Austrolimnophila) ochracea*, Dorsal view, 8) *Limnophila (Limnophila) schranki*, Dorsal view.

CONCLUSIONS AND DISCUSSION

Together with this 4 new contribution the known species in Turkey reached to 96. The new records in this region are composed of 1 species belonging to Chioneinae subfamilies and 3 species belonging to Limnophilinae subfamilies. The distribution of these species in the research area is presented in Map 1.

Limnophila (Limnophila) schranki Oosterbroek, 1992 of the new records is take part in both Westpaleartic and Eastpaleartic, other of new records are only take part in Westpaleartic.

Furthermore, *Afrolimonia* and *Limnophila* are recorded for the first time in Turkey. Together with these 2 species, the number of known genus reached 38 in total. Considering these findings, the number of limoniid genera is higher than that of tifulid genera.



Map 1. Distribution of the New Records from Inner West Anatolia. *Hoplolabis (Parilisia) pontica* (▲), *Afrolimnophila minima* (★), *Austrolimnophila (Austrolimnophila) ochracea* (●), *Limnophila (Limnophila) schranki* (■).

ACKNOWLEDGEMENTS

The authors would like to thank to Muğla University for financial support (Research Project No: 09/05).

REFERENCES

- Koç, H., Özgül, O., Aktaş, M., 2005, Contributions to Pediciidae and Limoniidae of Turkey (Diptera), *Studia Dipterologica*, II (2): 615-618.
- Koç, H., 2004, Muğla ili Tipulidae ve Limoniidae familyalarının faunistik ve ekolojik yönden incelenmesi. (Faunistic and investigation of ecological aspects of Tipulidae and Limoniidae families in Mugla province). Muğla Üniversitesi Yayınları 55 (Rektörlük Yayınları 35): i-xviii, 1-154 (in Turkish with English abstract).
- Koc, H., 2008, Additions to the Limoniidae species in Turkey (Insecta, Diptera). III. International Journal of Dipterological Research 19: 3-5.
- Oosterbroek, P., 2009, New distributional records for Palaearctic Limoniidae and Tipulidae(Diptera: Craneflies), mainly from the collection of the Zoological Museum, Amsterdam, *Zoosymposia* 3: 179-197.
- Oosterbroek, P., 2010, Catalogue of the Craneflies of the World (Insecta, Diptera, Nematocera, Tipuloidea) Available from: <http://ip30.eti.uva.nl/ccw> (Access 17 Jun 2010).
- Özgül, O., Koç, H., Stary, J., 2006, Additions to the Limoniidae species in Turkey (Insecta, Diptera) II, *An International Journal of Dipterological Research*, 17(3): 209-213.
- Özgül, O., Koç, H., Barlas, M., Tonguç, A., 2009, "Güneybatı Anadolu Bölgesi Limoniidae (Diptera, Nematocera) Faunası", *Selçuk Üniversitesi Fen Fakültesi Dergisi*, 33(2009): 61-66.
- Parvu, C., Popescu-Mirceni, R., 2006, Faunistic data on some dipteran families (Insecta: Diptera) from West Turkey (Results of Taurus Expedition 2005). *Travaux du Museum National d'Histoire Naturelle Grigore Antipa* 49: 283-295.
- Savchenko, E. N., Oosterbroek, P., Stary, J., 1992, *Family Limoniidae*, In: Soos A., Papp L. Oosterbroek P. (eds.): *Catalogue of Palaearctic Diptera*, 1: 183-369.
- Stary, J., Oosterbroek, P., 2008, New records of West Palaearctic Limoniidae, Pediciidae and Cylindrotomidae (Diptera) from the collections of the Zoological Museum, Amsterdam. *Zootaxa* 1922: 1-20.

Received: April 05, 2010 Accepted: October 20, 2010