

The originally East Palaearctic crane fly *Tipula (Platytipula) moiwana* (Matsumura, 1916) (Diptera, Tipulidae) found in Oslo, an addition to the Norwegian fauna

LOUIS BOUMANS, HERMAN DE JONG & PJOTR OOSTERBROEK

Boumans, L., De Jong, H. & Oosterbroek, P. 2013. The originally East Palaearctic crane fly *Tipula (Platytipula) moiwana* (Matsumura, 1916) (Diptera, Tipulidae) found in Oslo, an addition to the Norwegian fauna. *Norwegian Journal of Entomology* 60, 159–162.

Females of the autumn crane fly *Tipula (Platytipula) moiwana* (Matsumura, 1916) were collected along the river Ljanselva in Oslo. This species was hitherto only known from the easternmost Palaearctic and from the Moscow and Tula regions in Russia. It has a characteristic wing pattern, which made it possible to distinguish even females from other known species in the subgenus *Platytipula* Matsumura, 1916. Its typical habitat and Palaearctic distribution are discussed.

Key words: Diptera, Tipulidae, *Platytipula*, *Tipula moiwana*, Norway, Holarctic.

Louis Boumans, Natural History Museum, University of Oslo, P.O. Box 1172 Blindern, NO-0318 Oslo, Norway. E-mail: louis.boumans@nhm.uio.no

Herman de Jong, Naturalis Biodiversity Center, Darwinweg 2, Postbus 9517, 2300 RA Leiden, the Netherlands. E-mail: herman.dejong@naturalis.nl

Pjotr Oosterbroek, Sixhavenweg 25, 1021 HG Amsterdam, the Netherlands. E-mail: p.oosterbroek@chello.nl

Introduction

Tipula (Platytipula) moiwana (Matsumura, 1916) was originally described from Japan, and until recently it was only known from Japan and the Russian Far East. However, since 1999 it has been collected repeatedly in the Tsaritsyno Park in Moscow and in the Tula oblast (Pilipenko 2008; Pilipenko *et al.* 2012). Inspection of Malaise trap material collected in the Oslo area in 2010 revealed five females.

The records

Tipula (Platytipula) moiwana (Matsumura, 1916)

NORWAY AK, Oslo: Nordstrand, the river Ljans-

elva, Liadalen (N59.8481, E10.7927), Malaise trap period 23.VIII.2010–5.IX.2010, leg. G. Søli & M. Steinert, 3♀♀; Idem, 5.IX.2010–28. IX.2010, 2♀♀.

Four specimens are housed in the ethanol collection of the Natural History Museum in Oslo (NHMO, aka ZMUN, barcodes 10073043-10073044); one is donated to Naturalis Biodiversity Center, Leiden.

These specimens were found in material collected in the framework of an entomological survey of the Diptera fauna of the Oslofjord area. The survey was part of a project called “Study of selected insect groups in the Oslofjord-area”, funded by the Norwegian Biodiversity Information Centre (Artsdatabanken), and ran from 2010 to 2011.

The trap in which they were collected was

placed on the bank of the small river Ljanselva. Although parts of the river course run through residential areas, it is one of the most pristine rivers in Oslo and has preserved much of its natural character (Bendiksen & Bakkestuen 2001: 4; Tønnessen 2010).

The trap site is characterised by a mesic, thermophilous deciduous forest with *Ulmus*, *Corylus*, *Alnus* and *Tilia*, but a few larger spruce trees (*Picea*) were also present nearby. The ground flora was heavily dominated by bracken ferns (*Pteridium aquilinum*). The trap was placed on an inner bend of the river, where a few decimetres thick mixture of fine sediment and organic matter covers the rocky bottom.

The Malaise trap was in place from 8 May to 28 September 2010. In the same period, another Malaise trap was placed some 2km upstream along the same river (site Ljanselva, Urskog, N59.85520° E10.81690°), but *T. (P.) moiwana* was not collected at that site.

Identification

Although only females were found, the characteristic habitus and wing pattern allow for its identification. *Tipula (P.) moiwana* is a large crane fly with yellowish thorax, abdomen, legs and wings (Figure 1). It resembles *T. (P.) luteipennis* Meigen, 1830, but while the latter has plain yellowish wings, *T. (P.) moiwana* is characterised by a large brown pterostigma, a broad brown patch running from the base of vein A1 to the tip of A2, and less conspicuous brown markings in the second basal cell and around the anterior margin of the discal cell (Figure 2); compare Figure 9/27 in Kinota (2006: 183), Plate 1 in Nakamura (2006: 168) and Figure 4 in Pilipenko (2010: 88).

The Nearctic species *Tipula (P.) ultima* Alexander, 1915 and *Tipula (P.) spenceriana* Alexander, 1943 have similar wing markings, but these species have two distinct dark spots at the anterior wing margin, and the latter lacks the

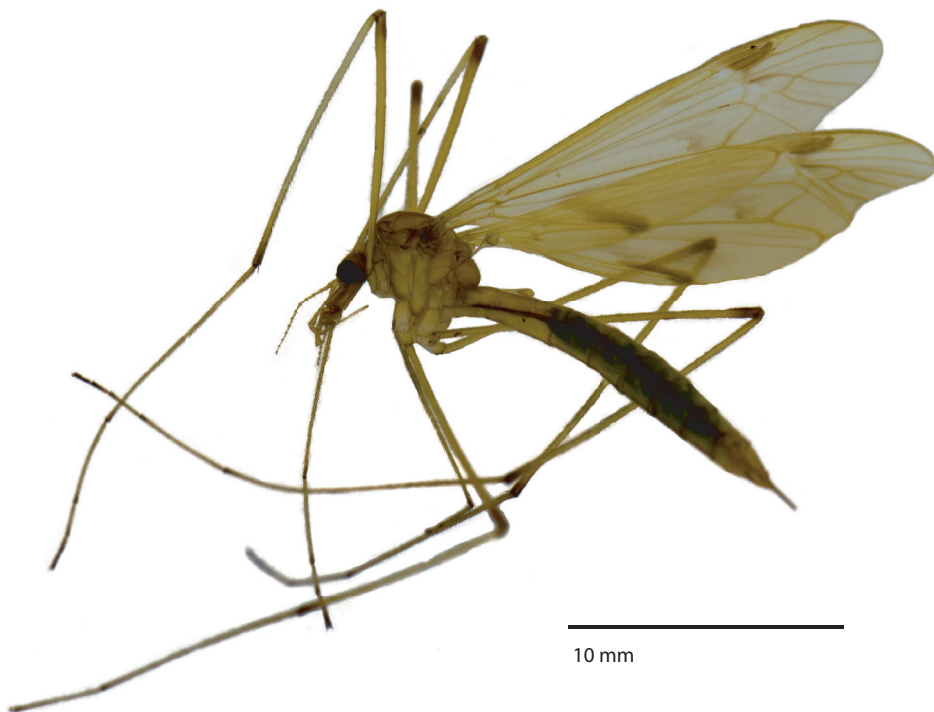


FIGURE 1. *Tipula (Platytipula) moiwana* Matsumura 1916. Female from Liadalan, river Ljanselva, Oslo. Photo: Pieter Jan Nellestijn.



FIGURE 2. *Tipula (Platytipula) moiwana* Matsumura 1916 from Oslo, left wing in ventral view. Photo: Pieter Jan Nellestijn.

large spot along vein A2, cf. Figures 2–3 in Taber (2009: 86–87). Another similar looking species is the Nearctic *T. (P.) hugginsi* Gelhaus, 1986, which has a smaller dark spot around the pterostigma than *T. (P.) moiwana*, cf. the photo on Young's (2005) web page. Many of the illustrations and much of the literature cited here can be accessed from the Catalogue of Craneflies of the World (Oosterbroek 2013).

Discussion

The collecting period in Oslo, late August to early September, concurs with the flight period of the species in Moscow and the Tula oblast. Likewise, the biotope of the collecting site along the Ljanselva, swamped brook floodlands with herbaceous vegetation, concurs with the biotope of *T. (P.) moiwana* in western Russia (Pilipenko 2008; Pilipenko *et al.* 2012). Pilipenko (2008) observed that females lay eggs into the moist soil near the water margin.

The collecting site in Oslo also resembles the collecting biotope of the morphologically similar, and presumably closely related, Nearctic species *T. (P.) ultima* and *T. (P.) spenceriana* (Taber 2009). Taber associates these species with stands of bracken fern (*Pteridium*), and notes that they are well camouflaged against the background of drying bracken fronds in late summer and autumn. Interestingly, bracken stands also characterise the Malaise trap site in Oslo where *T. (P.) moiwana*

was collected. Here it remains green until October, however.

So far, relatively few males *T. (P.) moiwana* have been collected. They are known only from the Russian Far East (Savchenko 1961: 82–84, 7 males, 41 females) and from Japan. That is, the figure of the male dististyles in Alexander (1965, Figure 20) is most likely based on Japanese material, cf. Alexander (1924: 601). No male specimens were ever found at the collecting sites in Moscow and in the Tula region, despite dedicated searches over several years since 2008 (Pilipenko 2008; Pilipenko 2009; Pilipenko *et al.* 2012). It will therefore be worthwhile to establish if males of this species occur in the Oslo population.

The fauna of large crane flies (Tipulidae sensu stricto) of Norway is relatively well known (Hofsvang 1986, 1992). Therefore it is remarkable that such a large crane fly with a characteristic wing pattern was not found earlier. *Tipula (P.) moiwana* has not been found in Finland either (Salmela 2012), even though much work on crane fly faunistics has been done in the past decade (references in Salmela 2012). However, the detailed characterisation of this species' habitat may help to find more populations in the West Palaearctic.

Acknowledgements. The specimens of *T. (P.) moiwana* were discovered thanks to Trude Magnusson who asked Louis Boumans to identify some of the Tipulidae specimens recently collected in Norway. Geir SØli located the additional Malaise-trap material from the Ljanselva sites in Oslo, provided information on the collecting event and gave helpful feedback on the manuscript of this paper. Pieter Jan Nellestijn took the photos of the habitus and wing. We thank Valentin Pilipenko for confirming our identification and for sending us his most recent publications. The insects were collected in the framework of the Oslo fjord project, an entomological survey financed by the Norwegian Biodiversity Information Centre Artsdatabanken (project nr. 70184216).

Post Scriptum. *Tipula moiwana* was found again at the same site in Liadalen in 2013. The density was rather low: one female was photographed on 25.VIII; one female was photographed and collected on 27.VIII. leg., det. and col. L. Boumans.

References

- Alexander, C.P. 1924. New or little-known crane flies from northern Japan (Tipulidae, Diptera). *Philippine Journal of Science* 24, 531–611.
- Bendiksen, E. & Bakkestuen, V. 2001. Naturtyper langs Ljanselva: Kartlegging og verdisetting av biologisk mangfold. 82-92205-06-3). Friluftsetaten, Oslo kommune, Oslo.
- Hofsvang, T. 1986. *Stankelbein* (Diptera, Tipulidae). Norsk Entomologisk Forening, Ås.
- Hofsvang, T. 1992. A check list of Norwegian Tipulidae (Diptera). *Norwegian Journal of Entomology SER B* 39 (2), 77–79.
- Kinota, K. 2006. *Common insects of Sapporo* [in Japanese]. Hokkaido University Press, Sapporo.
- Matsumura, S. 1916. Thousand insects of Japan. Additamenta 2 [in Japanese]. Keiseisha, Tokyo.
- Nakamura, T. 2006. *Diptera of the Nasu Imperial Villa, Tochigi, Japan* [in Japanese]. Pp. 167–178 in Tochigi Prefectural Museum (Ed.) Flora and Fauna of Nasu Imperial Villa. Tochigi Prefectural Museum, Utsunomiya.
- Oosterbroek, P. 2013. Catalogue of the Craneflies of the World (Diptera, Tipuloidea: Pediciidae, Limoniidae, Cylindrotomidae, Tipulidae). Available: <http://nlbif.eti.uva.nl/ccw/> [accessed February 2013].
- Pilipenko, V. 2008. A record of the Far Eastern crane fly *Tipula* (*Platytipula*) *moiwana* (Diptera, Tipulidae) in Moscow. *Entomological Review* 88 (6), 747–747.
- Pilipenko, V., Paramonov, N. & Lakomov, A. 2012. *First record of the crane fly Tipula* (*Platytipula*) *moiwana* (Diptera, Tipulidae) in the Tula Oblast. Pp. 282–283 in Revin, V.V., Kuznetsov, V.A. & Andreychev, A.V. (Eds.) Proceedings of the International Conference "Animals: Ecology, Biology, and Conservation" (November 29, 2012, Saransk) [in Russian]. Mordovia State University, Saransk.
- Pilipenko, V.E. 2009. A check list of craneflies (Diptera, Tipulidae) of the Central European territory of Russia. *Zoosymposia* 3, 203–220.
- Pilipenko, V.E. 2010. *Records of two rare species of crane flies* (Diptera, Tipulidae) from Tsaritsyno Park in Moscow. Pp. 88–90. Proceedings of the scientific and applied conference commemorating the centennial anniversary of the birth of KN Blagosklonov (Moscow, January 11–12, 2010) [in Russian]. Moscow.
- Salmela, J. 2012. Annotated list of Finnish crane flies (Diptera: Tipulidae, Limoniidae, Pediciidae, Cylindrotomidae). *Entomologica Fennica* 22 (4), 219–242.
- Savchenko, E.N. 1961. *Crane flies* (Diptera, Tipulidae), Subfam. Tipulinae, Genus *Tipula* L., (part 1) [in Russian]. Akademiya Nauk, Moskva, Leningrad.
- Taber, S.W. 2009. Two autumnal crane flies (Diptera: Tipulidae) from Michigan: comments on the difficulties of tipulid identification and a review of the *Tipula* subgenus *Platytipula* Matsumura in the United States and Canada. *Southwestern Entomologist* 34 (1), 85–94.
- Tønnessen, I.F. 2010. Langs Oslos elver og bekker: elver i syd. *St Hallvard : illustrert tidsskrift for byhistorie, miljø og debatt* 3+4, 48–73.
- Young, C.W. 2005. The Crane Flies (Diptera: Tipulidae) of Pennsylvania. Available: <http://iz.carnegiemnh.org/craneffy> [accessed 14 March 2013].

Received: 29 April 2013

Accepted: 2 August 2013