

THE CRANEFLY *TIPULA TRIFASCINGULATA* NEW FOR THE NETHERLANDS

(DIPTERA: TIPULIDAE)

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Craneflies of the family Tipulidae are a well-known group of the Diptera, consisting of large, long-legged nematocerous flies. Many species are more or less uniform yellow, grey or brown, but some are bright red or yellow and black. The wings can have extensive dark patterns. The subgenus *Pterelachisus* of the genus *Tipula* holds nine species in the Netherlands and in this paper species number 10 is introduced: *T. (P.) trifascingulata*.

It is a rather conspicuous insect with a very characteristic wing pattern. It was only known from 25 records worldwide. In 2012, the year of discovery in the Netherlands, the species was found no less than nine times, in different parts of the country. This is an indication that the species has recently reached the Netherlands and is expanding its range.

INTRODUCTION

About 90 species of Tipulidae are known from the Netherlands, 80 of which are considered established (Oosterbroek 2010). They are divided over eight genera. The largest of these is the genus *Tipula* Linnaeus, 1758, in the Netherlands represented by 11 subgenera (De Jong & Oosterbroek 2002). One of these subgenera is *Pterelachisus* Rondani, 1842, of which 10 species are known from the Netherlands, including *Tipula (Pterelachisus) trifascingulata* Theowald, 1980, recorded here as new for the Dutch fauna.

DUTCH *PTERELACHISUS* SPECIES

The subgenus *Pterelachisus* includes a range of different looking species, mainly found in woodland. Some of them are spring species, the others can be seen especially in the early summer. The wing markings can vary from strongly mottled to banded or even be very weak and reduced.

The most common species in the Netherlands is *T. (P.) varipennis* Meigen, 1818, known from about 175 records from all 12 provinces and the only *Pterelachisus* found so far in the northern provinces Friesland and Groningen. Also common are *T. (P.) errorata* Macquart, 1826 (105 records,

9 provinces) and *T. (P.) submarmorata* Schummel, 1833 (96 records, 8 provinces), followed by *T. (P.) truncorum* Meigen, 1830 (76 records, 8 provinces), *T. (P.) pabulina* Meigen, 1818 (60 records, 5 provinces), and the more local *T. (P.) pseudovariipennis* Czizek, 1912 (38 records, 7 provinces). These six species are also well represented in the Dune district along the coast of the provinces Noord- and Zuid-Holland, with two of them in coastal Zeeland, *T. (P.) varipennis* and *T. (P.) pseudovariipennis*. These two and *T. (P.) submarmorata* are known from Texel. From the other Wadden islands no species of *Pterelachisus* have been recorded so far.

Of the remaining four species, the newly recorded *T. (P.) trifascingulata* starts with the largest number of records, nine, in four provinces (fig. 5). *Tipula (P.) pauli* Mannheims, 1964, is known



Figure 1. Wing of *Tipula trifascingulata* (after Savchenko 1964, as *trifasciata*).

Figuur 1. Vleugel van *Tipula trifascingulata* (naar Savchenko 1964, als *trifasciata*).

Figure 2. Male. Gelderland, Rheden, Herikhuizerveld, 2.VI.2012, forests-shrubs-treelanes. Foto Arie Benschop.

Figuur 2. Mannetje. Gelderland, Rheden, Herikhuizerveld, 2.VI.2012, bossen-struwelen-singels. Photo Arie Benschop.



from two localities only, with collecting dates lying almost 100 years apart: Noord-Holland, Hilversum, July 1900 and Overijssel, Ootmarsum, 27 May-1 June 1999 (Oosterbroek & de Jong 2001). Finally, *T. (P.) pseudoirrorata* Goetghebuer, 1921 and *T. (P.) winthemi* Lackschewitz, 1932 are known from one locality, *T. (P.) pseudoirrorata* from Limburg, Meinweg, 22 June 1968 (Oosterbroek 2009) and *T. (P.) winthemi* from Zuid-Holland, 's Gravenhage, June, before 1877 (Theowald 1980).

RANGE

Before this report, *T. (P.) trifasciata* was known from some 25 records worldwide. The species was described by Loew in 1865, based on a female from Thüringen in Germany (as *trifasciata*, a preoccupied name, replaced by *trifasciata* by Theowald (1980)). The first male was described a hundred years later, from the Ukraine (Savchenko 1964). Most of the localities are in Central Europe: France (Isère), Germany 5 ×, Switzerland 7 ×, Austria 6 ×, Lithuania 3 ×, with individual records from the Ukraine (Volynska oblast), the North Caucasus (Kabardino-Balkar Rep.) and the Altay (Drees 2012, Hable et al. 2010, Lantsov 1998, Podenas 1995, Reusch &

Heiß 2012, Savchenko et al. 1972, Schacht & Heuck 2005, Theischinger 1978, Theowald 1980).

NETHERLANDS

As new for the Dutch fauna and including the westernmost localities in Europe, we report nine records, all in 2012.

Limburg, Vijlenerbossen, Zevenwegenbos, Amersfoortcoördinaten (AC) 194-309, 27.VII.2012, 1 female, at light, Harm Alberts (data and photo on www.waarneming.nl).

Gelderland, Arnhem, Hoog Erf, AC 188-445, 2.VI.2012, 1 female, collected in small-scale farmland, Jan Wind & Mariëtte Geluk (data and photo on www.waarneming.nl).

Gelderland, Arnhem, Hoog Erf, AC 188-445, 2.VI.2012, 1 female, collected in vegetation below *Quercus* trees, Jan Wind & Mariëtte Geluk (data and photo on www.waarneming.nl).

Gelderland, Rheden, Herikhuizerveld, AC 198-448, 2.VI.2012, 1 male, forests-shrubs-tree lanes, Arie Benschop (data and photo on www.waarneming.nl) (fig. 2).



Figure 3. Female. Overijssel, Enschede, Universiteit Twente, Bosweg en Marshoek, 5.VI.2012. Foto Marian en Bert Jagers.

Figuur 3. Vrouwkje. Overijssel, Enschede, Universiteit Twente, Bosweg en Marshoek, 5.VI.2012. Photo Marian en Bert Jagers.

Overijssel, Enschede, Universiteit Twente, Bosweg en Marshoek, AC 254-474, 5.VI.2012, 1 female, Marian en Bert Jagers (data and photo on www.waarneming.nl) (fig. 3).

Overijssel, Millingen, AC 214-501, 25.V.2012, 1 female, along a meadow in vegetation of sprouting trees (*Quercus*, *Betula* and *Ulmus*) and shrubs like *Sorbus*, *Euonymus* and *Rubus*, Henk Soepenberg (fig. 4) (data and photo on www.waarneming.nl).

Overijssel, Steenwijkerland, Dwarsgracht en Jonen, AC 198-526, 27.V.2012, 1 female, collected by Joke van Erkelens who provided the following habitat information: 'The biotope is a wild piece of peatland with lots of *Phragmites* and trees (*Salix*, *Betula* and bushes). A ditch with clear water runs through the area, which contains lots of water plants. The soil along the ditch is pretty soggy and the area around the ditch contains much dead and decaying wood. The temperature in the two weeks prior to May 27 was relatively high with outliers to 28 degrees.'

Zuid-Holland, Wassenaar, Meijendel, Kijfhoek, AC 083-461, 13.VI.2012, 1 female, forests-shrubs-tree lanes, Arie Benschop (data and photo on www.waarneming.nl).

Zuid-Holland, Wassenaar, Meijendel, Paarden-duin, AC 085-461, 14.VI.2012, 1 male, collected higher up in an area of older accidented dunes with *Betula* at the lower grounds and *Craetaegus* and *Hippophae* on the slopes, Herman de Jong. The specimen is included in the collection of Naturalis (RMNH.INS.551537).

RECOGNITION

Tipula (*P.*) *trifascingulata* can be easily recognized by the unique pattern of the wing (fig. 1-3). There are three broad pale-coloured bands across the somewhat darkened wing membrane, one before the middle of the wing, one beyond the middle, and one before the darkened wingtip, starting behind the wing stigma and including the discal cell. Furthermore, unique among European *Pterelachisus*, is the very dark costal cell ending in a small pale spot just before the wing stigma.

Another character is the dark colour of the legs (fig. 2-3). In *T. (P.) trifascingulata* only the basal part of the femora is lighter brown. In the other Dutch *Pterelachisus* species usually only the apex of the femora is darkened, except for *T. (P.) submarmorata* and *T. (P.) varipennis*. In *T. (P.)*



Figure 4. Habitat at Landgoed Rechteren (Overijssel, Millingen), 24.IV.2008. Foto Henk Soepenbergh.

Figuur 4. Habitat, Landgoed Rechteren (Overijssel, Millingen), 24.IV.2008. Photo Henk Soepenbergh.

submarmorata the femora are usually at most poorly darkened at the apex, whereas in *T. (P.) varipennis* the apical one-third or even two-thirds of the femora is darkened.

The female is very accurately described in Loew (1865, repeated in Riedel 1913), the male in Savchenko (1964) and Theowald (1980), including the uniquely shaped male genitalia. Illustrations of the species can be found online at www.waarneming.nl and at the Catalogue of the Craneflies of the World (<http://nlbif.eti.uva.nl/ccw/>; Oosterbroek 2013).

BIOLOGY

Tipula (P.) trifascingulata is a lowland and hill-side species. In Switzerland it does not cross the Alps and occurs at an altitude between 415 and 780 m (Dufour 1986). The Austrian records are between 510 and 640 m (pers. comm. P. Vogtenhuber). The highest altitude is given for the North Caucasus, 980 m (Lantsov 1998).

The period of flight is from the end of May until mid August but is largely restricted to June and July; there are two records for May (this report)

and there are two for August (Strobl 1895, Dufour 1986).

Although usually found in or near deciduous forests, the species is known from a variety of other habitats, such as mixed or coniferous forests, flood-plain meadows and shrubs near rivers (Savchenko 1964, Podenas 1995). This variety also applies to the Netherlands. Most specimens were collected in forested regions, along meadows and in small scale farmland (fig. 4). One specimen is from a rather wet environment (peatland) and another from a certainly dry environment (higher up on an inner dune). Nothing is known about the larval development or the pupal stage. It is most likely that the larvae feed on plant remains and/or mycelium, in the uppermost layer of the soil, under moss or under the bark of trees. From the period of flight we can conclude that there is one generation a year, with larval development in autumn and, after hibernation, again in spring, followed by a short pupal stage.

It seems that females are more often encountered than males (of our nine records six are females). However, Dufour (1986) collected 50% more males than females, mainly in light-traps. This led him to the conclusion that *T. (P.) trifascingulata* is active throughout the night and furthermore that males, being found more often in light-traps than females, are the more active flyers. Of our Dutch records, one female was collected at light. The male and female known from the Ukraine were also collected at light (Savchenko 1964).

CONCLUSION

It is striking that *P. (T.) trifascingulata* has not been recorded for the Netherlands before, especially when one realizes that there are nine (!) records from 2012 (fig. 5). Because the species is quite large and has a very distinctive and easily recognizable wing pattern, it doesn't seem very plausible that it already occurred in the Netherlands for a longer time without being noticed.



Figure 5. Localities from which *Tipula trifasciungulata* has become known for the Netherlands in 2012.

Figuur 5. Nederlandse locaties van *Tipula trifasciungulata* in 2012.

The species apparently has reached the Netherlands quite recently. An indication for a recent extension of its range might come from Germany where three out of the five known records are from 2005 or later (Drees 2012, Reusch & Heiß 2012, Schacht & Heuck 2005), the other two being 1849 (Loew 1865) and 1976 (Theowald 1980). It seems that the species is now widely established in the Netherlands. This is substantiated by the fact that the 2012 records are relating to fresh material (none of the specimen does look worn out) and would explain why the species is found in such a wide range of habitats, varying from a very wet peatland to dry inner dunes.

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SAMENVATTING

De langpootmug *Tipula trifascingulata* nieuw voor Nederland (Diptera: Tipulidae)

Na een kort overzicht van de negen soorten van *Tipula* subgenus *Pterelachisus* die we al kennen uit Nederland, melden we hier *T. (P.) trifascingulata* als nieuw voor de Nederlandse fauna, dit op basis van maar liefst negen waarnemingen, alle uit 2012. Na een bespreking van deze records wordt ingegaan op hoe de soort te herkennen en op wat we weten over biotopen en biologie. Ter illustratie dienen kleurenfoto's van een mannetje en een vrouwtje en van een van de Nederlandse habitats.

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