

Contribution to the knowledge of the pipunculid fauna of The Netherlands (Diptera: Pipunculidae)

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Abstract: A contribution to the knowledge of the pipunculid fauna of The Netherlands is presented. 23 species are recorded for the first time. The Dutch pipunculid fauna is compared with the fauna of other European countries and a list is given of all species hitherto known from The Netherlands.

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Introduction

Pipunculidae are small to medium-sized flies (2-12 mm). They are closely related to hoverflies (Syrphidae) but can be readily differentiated by the large compound eyes occupying most of the head, and by the wing venation (discal cell closed, vein M1+2 reaching wing margin) (Oosterbroek, 1981). The larvae are known as parasitoids of Homoptera, Auchenorrhyncha (Waloff & Jervis, 1987).

The Dutch pipunculid fauna is relatively poorly known. The check list, compiled by De Meijere (1939) is now outdated. A few additional records have been published since then (Beuk, 1988; Cobben, 1956; Grootaert & De Meyer, 1986; Theowald, 1954; Van der Goot, 1961, 1981; Van der Goot & Lucas, 1966). In all, 25-26 species were so far recorded from The Netherlands (see table 1 and discussion).

For the present study pipunculid material from the private collections of the second (BEUK) and third (LUC) author was identified, as well as from the collection of the Laboratorium voor Entomologie of the Agricultural University at Wageningen (WAG). These collections proved to contain interesting material, including 23 species new for the Dutch fauna. These newly recorded species are presented here.

Records

Chalarus specimens were not identified since this genus is momentarily under revision by Dr M. Jervis (Cardiff, U.K.). The genera are ordered phylogenetically (De Meyer, 1989); the species within a genus are ordered alphabetically. The localities are arranged within provinces. The following abbreviations are used: Gld: Gelderland; Z-Holl: Zuid-Holland; Limb: Limburg; N-Br: Noord-Brabant; Ov: Overijssel. The collections are abbreviated as mentioned in the introduction

Species new to the Dutch fauna

Verrallia setosa Verrall, 1901

Gld: Wageningen (BEUK). Z-Holl: Rotterdam; Limb: Bunderbos; Geulle, Armenbos; Rijkholt (LUC).

A rather common species occurring in Northern and Western Europe. Until recently, it was often confused with *Verrallia pilosa* (Zetterstedt) and *V. beatricis* Coe. Lauterer (1981) mentions *V. setosa* as a submontaneous or montaneous species in Czechoslovakia. In Belgium, however, it also occurs in the lowlands and the coastal area (De Meyer & De Bruyn, 1985). It is a univoltine species para-

sitizing on *Oncopsis* spp. (Macropsinae, Cicadellidae) (Waloff & Jervis, 1987).

Pipunculus fonsecai Coe, 1966
Gld: Bennekom (BEUK).

Originally described from Great Britain, it is now also recorded from Belgium, Scandinavia and Czechoslovakia. According to Waloff & Jervis (1987) it is a univoltine species parasitizing on *Doratura stylata* (Boheman) (Deltocephalinae, Cicadellidae).

Pipunculus spinipes Meigen, 1830
Limb: Bunderbos; Cadier, Riesenberg (LUC).

A common species occurring all over Europe (Tanasijshtshuk, 1988). According to Kozánek (1981) the adults mainly occur in light oak forests.

Pipunculus varipes Meigen, 1824
Limb: Bunderbos (LUC).

Widely distributed in Europe. In contrast to the findings in Czechoslovakia (Kozánek, 1981) the species is not restricted to (sub)montaneous regions in Belgium (De Meyer & De Bruyn, 1985). In Belgium, *P. varipes* is a univoltine species with a peak period around mid August (De Meyer & De Bruyn, 1989).

Pipunculus zugmayeriae Kowarz, 1887
Limb: Bunderbos (LUC). No label, probably Wageningen (WAG).

A rather uncommon species, recorded from Belgium, Great Britain, Northern and Central Europe (Tanasijshtshuk, 1988). It is a univoltine species reared from *Graphocraerus ventralis* (Fallén) (Deltocephalinae, Cicadellidae) (Waloff & Jervis, 1987).

Cephalops obtusinervis (Zetterstedt, 1844)
N-Br: Oisterwijk (LUC).

A common species occurring all over Europe. In Belgium, this species occurs mainly at the end of June, beginning July (with occasional records from mid October) (De Meyer & De Bruyn, 1989). Its host is a *Stiroma* species (Delphacidae) (Waloff & Jervis, 1987).

Cephalops vittipes (Zetterstedt, 1844)
Ov: Losser, Smoddebos; Limb: Elsloo, Lage Bos (LUC).

Widely distributed in Europe. Also recorded from the eastern part of the Palaearctic region (Tanasijshtshuk, 1988). *C. vittipes* is one of the few pipunculid species that can be found in the Boreal province (De Meyer & Bäckeljau, 1989).

Eudorylas fascipes (Zetterstedt, 1844)
Gld: Vierhouten; Limb: Echt, De Doort (LUC).

Widely distributed in Europe. It is known to be a parasitoid of several Deltocephalinae: *Adarrus ocellaris* (Fallén), *Arthaldeus pascuelus* (Fallén), *Psammotettix confinis* (Dahlbom), *Cicadula quadrinotata* (Fabricius), and *Macrosteles* sp. (see Waloff & Jervis, 1987).

Eudorylas fuscus (Zetterstedt, 1844)
Gld: Bennekom (BEUK).

This is mainly a Northern and Central European species (Lauterer, 1983), but is also found in Belgium (De Meyer & De Bruyn, 1985). In Belgium this species is only found late in the season (end September till end October) but the Dutch specimens from Bennekom were collected on August 6th, 1988. Waloff & Jervis (1987) mention *Balclutha punctata* (Fabricius) as host (Deltocephalinae).

Eudorylas inferus Collin, 1956
Limb: Heerlen, Heksenberg (LUC).

A rather uncommon species recorded from Denmark, Great Britain, Poland, Sweden and probably also occurring in Belgium (De Meyer & De Bruyn, 1985, De Meyer, 1989).

Eudorylas melanostolus (Becker, 1898)
Limb: Bunderbos (LUC).

A rare species, although it seems to be widely distributed.

Eudorylas montium (Becker, 1898)
Gld: Groesbeek (BEUK). Limb: Bunderbos; Echt, De Doort; Etzenrade; Rijkholt, Savelsbos (LUC).

Recorded from all over Europe. A parasi-

toid of *Cicadula quadrinotata* (see Waloff & Jervis, 1987).

Eudorylas obliquus Coe, 1966

Gld: Renkum (BEUK).

So far, this species was only recorded from Great Britain and Belgium. Waloff & Jervis (1987) mention several deltocephalin hosts for this species, and record it as a bivoltine species for Great Britain.

Eudorylas obscurus Coe, 1966

Limb: Echt, De Doort; N-Br: Breda, Liesbos (LUC).

Like the previous species, the distribution of *E. obscurus* is poorly known. It is found in Great Britain and Belgium and is recently recorded from Sweden (De Meyer et al., 1989).

Eudorylas ruralis (Meigen, 1824)

Limb: Echt, De Doort (LUC).

This species is widely distributed in Central and Western Europe, and Northern Africa but is lacking from Northern Europe. Lauterer (1983) considers this to be a xerothermophilous species. *E. ruralis* has been reared from *Euscilis incisus* (Kirschbaum) (see Waloff & Jervis, 1987).

Eudorylas subfascipes Collin, 1956

Limb: Elsloo (LUC).

A rather uncommon species occurring in Central and Western Europe. Recorded hosts of this bivoltine species are *Adarrus ocellaris*, *Jassargus distinguendus* (Flor), *Psammotettix confinis* and *P. nodosus* (Ribaut) (Waloff & Jervis, 1987).

Eudorylas subterminalis Collin, 1956

Gld: Hoge Veluwe (WAG). Limb: Hopel (LUC).

This species is often confused with *E. terminalis* (Thomson), hence the distribution is poorly known. Tanasijtshuk (1988) mentions it only from Sweden and Great Britain, but the species has a much wider distribution ranging from Corsica and Bulgaria to Great Britain (De Meyer, 1989; Lauterer, 1983). It is a common species occurring in a variety of biotopes

and it parasitizes on a wide range of deltocephalin cicadellids (Waloff & Jervis, 1987). It is a bivoltine, facultatively trivoltine species (De Meyer & Bruyn, 1989; Huq, 1986; Waloff & Jervis 1987).

Eudorylas zonellus Collin, 1956

Z-Holl: Oostvoorne, Mildenburg; Oostvoorne, Overbos; Rotterdam; Limb: Brunssum; Bunderbos; Cadier, Riesenberg; Rijckholt, Savelbos (LUC).

A common species occurring all over Europe. No hosts are known but the species shows one generation with a peak period around the end of July (De Meyer & De Bruyn, 1989).

Tomosvaryella kuthyi Aczél, 1944

Gld: Hoge Veluwe; Wageningen; Limb: Geysteren (WAG).

Recorded from all over Europe except for the northern part. According to Lauterer (1981) this species seems to have a preference for xerothermic localities. This is supported by the records from Belgium where the species is mainly found on calcareous sites like St. Pietersberg. In Belgium it shows two generations (De Meyer & De Bruyn, 1989).

Dorylomorpha confusa (Verrall, 1901)

Limb: Cadier, Riesenberg (LUC).

A common species, widely distributed in Europe. This species seems to occur mainly in humid and dry woods, and at wood edges (Lauterer, 1981). It shows one peak period around July (De Meyer & De Bruyn, 1989).

Dorylomorpha extricata (Collin, 1937)

Limb: Bunderbos (LUC).

Common all over Europe.

Dorylomorpha imparata (Collin, 1937)

Limb: Bunderbos (LUC).

A uncommon species that is probably thermophilous (Lauterer, 1981) It occurs mainly during the month of June.

Dorylomorpha infirmata (Collin, 1937)

Gld: Hoge Veluwe (WAG).

A bivoltine species that is widely distributed over Europe.

Discussion

In all, 48 species are now recorded for the Dutch fauna (table 1). The occurrence in The Netherlands of *Dorylomorpha haemorrhoidalis* (Zetterstedt), mentioned in the check list of De Meijere (1939), is unlikely. According to Albrecht (in litt.) this is a northern species with southernmost limits reaching Denmark, South Sweden and the Baltic countries. Probably it has been confused with *D. hungarica* (Aczél). The latter is a common species occurring in Western and Central Europe.

De Meijere included *Tomosvaryella littoralis* (Becker) in his list as a synonym of *T. minima* (Becker). Other authors (Coe, 1966) however consider both as distinct species and Cobben (1956) mentions *T. minima* from Wageningen. Hence the occurrence of *Dorylomorpha hungarica* and *Tomosvaryella littoralis* still has to be confirmed.

De Meijere's record of *Eudorylas terminalis* might also be improbable. This species was often confused with *E. subterminalis* (see Collin, 1956) and no recent confirmation was found.

In general, the Dutch pipunculid fauna is still poorly known. In comparison to other Western and Central European countries that have been studied in more detail, like Belgium (De Meyer, 1989; De Meyer & De Bruyn, 1985), Great Britain (Coe, 1966) and Czechoslovakia (Lauterer & Kozánek, 1987), the occurrence of an additional 20 species can be anticipated (see De Meyer, 1989 for detailed lists of other European countries). Occurring all over Europe and already known from neighbouring countries are such species as *Verrallia beatricis*, *Pipunculus calceatus* von Roser, *Cephalops carinatus* (Verrall), *Cephalops subultimus* Collin, *Cephalops ultimus* (Becker), *Eudorylas halteratus* (Meigen), *Eudorylas sulcatus* (Becker), *Eudorylas zermattensis* (Becker), *Dorylomorpha clavifemora* Coe, *Dorylomorpha incognita* (Verrall), *Dorylomorpha macu-*

Table 1. Pipunculidae recorded from The Netherlands (see text for references), *: species recorded for the first time.

<i>Chalarus</i>	
	<i>basalis</i> Loew, 1873
	<i>fimbriatus</i> Coe, 1966
	<i>spurius</i> (Fallén, 1816)
<i>Verrallia</i>	
	<i>aucta</i> (Fallén, 1817)
	<i>pilosa</i> (Zetterstedt, 1838)
	<i>setosa</i> Verrall, 1901*
	<i>villosa</i> (von Roser, 1840)
<i>Nephrocerus</i>	
	<i>flavicornis</i> Zetterstedt, 1844
	<i>lapponicus</i> Zetterstedt, 1838
	<i>scutellatus</i> (Macquart, 1834)
<i>Pipunculus</i>	
	<i>campestris</i> Latreille, 1805
	<i>fonsceai</i> Coe, 1966*
	<i>spinipes</i> Meigen, 1830*
	<i>thomsoni</i> Becker, 1898
	<i>varipes</i> Meigen, 1824*
	<i>zugmayeriae</i> Kowarz, 1887*
<i>Cephalops</i>	
	<i>aeneus</i> Fallén, 1810
	<i>furcatus</i> (Egger, 1860)
	<i>germanicus</i> (Aczél, 1940)
	<i>obtusinervis</i> (Zetterstedt, 1844)*
	<i>perspicuus</i> (de Meijere, 1905)
	<i>persifumosus</i> (Kowarz, 1887)
	<i>vittipes</i> (Zetterstedt, 1844)*
<i>Eudorylas</i>	
	<i>fascipes</i> (Zetterstedt, 1844)*
	<i>fuscipes</i> (Zetterstedt, 1844)
	<i>fuscus</i> (Zetterstedt, 1844)*
	<i>inferus</i> Collin, 1956*
	<i>melanostolus</i> (Becker, 1898)*
	<i>montium</i> (Becker, 1898)*
	<i>obliquus</i> Coe, 1966*
	<i>obscurus</i> Coe, 1966*
	<i>ruralis</i> (Meigen, 1824)*
	<i>subfascipes</i> Collin, 1956*
	<i>subterminalis</i> Collin, 1956*
	<i>terminalis</i> (Thomson, 1869)
	<i>zonatus</i> (Zetterstedt, 1849)
	<i>zonellus</i> Collin, 1956*
<i>Tomosvaryella</i>	
	<i>geniculata</i> (Meigen, 1824)
	<i>kuthyi</i> Aczél, 1944*
	<i>minima</i> (Becker, 1898)
	<i>sylvatica</i> (Meigen, 1824)
<i>Dorylomorpha</i>	
	<i>confusa</i> (Verrall, 1901)*
	<i>extricata</i> (Collin, 1937)*
	<i>haemorrhoidalis</i> (Zetterstedt, 1838)
	<i>imparata</i> (Collin, 1937)*
	<i>infirmata</i> (Collin, 1937)*
	<i>rufipes</i> (Meigen, 1824)
	<i>xanthocera</i> (Kowarz, 1887)

lata (Walker), *Dorylomorpha xanthopus* (Thomson), *Tomosvaryella cilitarsis* (Strobl).

In addition, a number of species seem to reach the northernmost limits of their distribution along the line between Czechoslovakia, Belgium and the southern part of Great Britain. They can still be expected in the Netherlands, e.g. *Cephalops signatus* (Becker), *Cephalops vestitus* (Becker), *Beckerias panonicus* Aczél, *Pipunculus phaeton* Coe, and *Eudorylas horridus* (Becker).

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