

The species of the *Drosophila repleta* group in northwestern Europe with special reference to The Netherlands (Diptera: Drosophilidae)

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Abstract: Recently the American species *Drosophila mercatorum* was recorded from northwestern Europe for the first time. It was suggested that this was the second species of the *D. repleta* group in northwestern Europe after *D. hydei*. However, the first species of this group to be recorded from this area was *D. repleta* in 1935. Notes are given on the distribution of this species and *D. hydei* and an identification key for the three species is included. *Drosophila hydei* is recorded from Ireland for the first time.

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Introduction

Recently Kraaijeveld (1992) recorded *Drosophila mercatorum* Patterson & Wheeler as the second species of the *D. repleta* group from northwestern Europe. He stated that *D. hydei* Sturtevant was the first species to be recorded. However, a third species of the *D. repleta* group is known from northwestern Europe for over fifty years, viz. *D. repleta* Wollaston itself (De Meijere, 1935). The distributions of both *D. hydei* and *D. repleta* are discussed below and an identification key to the three species is given.

Drosophila hydei Sturtevant

Drosophila hydei has been recorded from virtually all northwestern European countries with the exception of Iceland, Ireland and Luxemburg (Bächli & Rocha Pité, 1984). It was recorded for the first time from The Netherlands by Lever & Sobels (1951). From Ireland I have seen two specimens; a male collected in a caravan at Arklow (county Wicklow) on 14 September 1968 and a female from a deciduous wood near the river Aughrim (county Wicklow) on 16 September 1968. Both specimens were collected by Mr P. J. Chandler and are in his collection. This species is new to the Irish list.

Drosophila hydei is a synanthropic species but probably less so than the following species. It is most often found in or near human dwellings but in low numbers also in other habitats, e.g. woodland or heathland.

Drosophila repleta Wollaston

According to Kraaijeveld (1992) *D. repleta* had not yet been recorded from northwestern Europe. However, he overlooked several publications dealing with the northwestern European fauna. Bächli & Rocha Pité (1984) recorded *D. repleta* from Germany, France, Great Britain, The Netherlands and Finland. More recently it was recorded from Belgium (Gosseries, 1992) and Ireland (O'Connor & Ashe, 1992).

De Meijere (1935) recorded it from "Artis" (the zoo) in Amsterdam and the specimens are still in the collection of the Zoological Museum of the University of Amsterdam. The identifications were checked by Bächli and in the same collection Bächli found specimens from Noordbroek (province of Groningen) and Simpelveld (province of Limburg) (Bächli, in litt.). I can add the following records:

Drenthe: Wijster: 2 ♂♂; kitchen of the Biological Station, 29.viii.1992, leg. P. L. Th. Beuk;

Gelderland: Hoge Veluwe: 1 ♀; 31.vii-14.viii.1989, Malaise trap Rijksinstituut voor Natuurbeheer (R.I.N.); Noord-Brabant: Cartierheide: 1 ♂; 12-26.ix.1989, Malaise trap R.I.N.; Noord-Holland: Amsterdam, Osdorp Oost: 1 ♂ and 1 ♀; on potato peelings, 17.ix.1989 and 18.ix.1989 respectively, leg. V. S. van der Goot; Haarlem: 1 ♂ and 1 ♀; in the restaurant of the railway station, 9.xii.1991, leg. P. L. Th. Beuk; Zuid-Holland: Leiden: ♀; in pub in centre of city, 6.i.1993, leg. P. L. Th. Beuk.

In Great Britain most records of this species come from human settlements, especially from restaurants and canteens (specimens in Natural History Museum, London) but also from a lavatory. *Drosophila repleta* has also been recorded in Britain from several species of

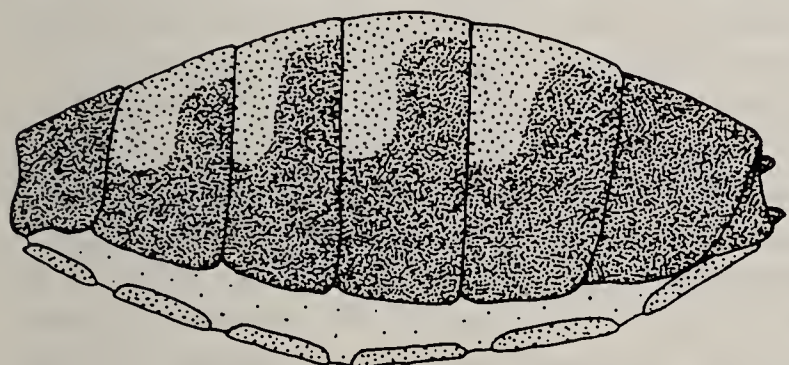
fungi (specimens in Natural History Museum, London).

The Dutch records from the Hoge Veluwe and the Cartierheide show that the species, although synanthropic, is well capable to survive in natural habitats during the summer months. Whether it can survive outside human settlements during the winter is not clear.

Identification

Kraaijeveld (1992) gives some characters to separate *D. hydei* and *D. mercatorum*. Below a key is given to separate all three species of the *D. repleta* group occurring in northwestern Europe. For further characters see Vilela (1983).

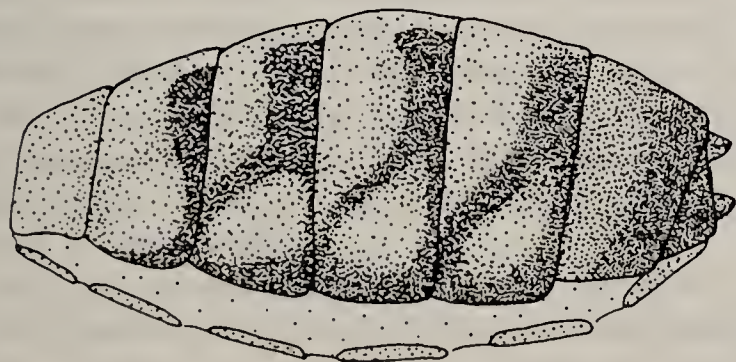
- 1 Abdomen without light lateral markings on the tergites (fig. 1). Distal part of first costal section not darkened. On average larger, body length about 3.2 mm *D. hydei*
- Abdomen with lateral markings on the tergites (figs 2 and 3). Distal part of first costal section either darkened or yellow. On average smaller, body length about 2.9 mm 2
- 2 Thorax dark greyish brown with dark grey-brown spots. Abdomen dark brown with a lighter brownish dorsal pattern and rather small lateral spots (fig. 2). Distal part of first costal section darkened *D. repleta*
- Thorax dark yellowish brown with brown spots. Abdomen brown with a yellowish dorsal pattern and rather large lateral spots (fig. 3). Distal part of first costal section not darkened. *D. mercatorum*



1



2



3

Figs. 1-3. Lateral view of abdomen of 1, *Drosophila hydei*; 2, *D. repleta* and 3, *D. mercatorum*. Length of abdomen in all three species \pm 1.5 mm.

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