Chymomyza amoena (Diptera: Drosophilidae) new for The Netherlands

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During an inventory of the entomofauna of the Kaaistoep near Tilburg, Noord-Brabant, The Netherlands, a male of the drosophilid *Chymomyza amoena* (Loew) was captured by one of the window traps used. The species is recorded here as new to the Dutch fauna. *Chymomyza amoena* originates from the Nearctic region and was introduced in Europe about 30 years ago. The broad-niched fruit-and-nut breeder has since then spread across Europe and has become an established species in Central and eastern Europe. The record in The Netherlands represents its northwesternmost locality until now. Although small, the species is easily recognized by its unique wing pattern.

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Introduction

Starting in April 2002, the entomofauna of the nature reserve 'De Kaaistoep' near Tilburg, Noord-Brabant, The Netherlands, was monitored using window traps (figure 1). One of the remarkable findings of this inventory is the capture of a male of *Chymomyza amoena* (Loew) in the week of 31 May - 7 June 2002. The species was not yet known from The Netherlands (Beuk 2002) and is recorded here as a new acquisition of the Dutch fauna.

Loew (1862) described *Drosophila amoena* on material originating from the District of Columbia, USA. The species was later transferred to the genus *Chymomyza*. Among the patterned-wing Diptera, *C. amoena* is easily recognized by its unique wing pattern, which consists of two broad crossbands and a small marking near the end of vein R1 (figure 2).

Distribution

Originally *Chymomyza amoena* is a Nearctic species, which is distributed in Canada (Ontario), the eastern United States plus the states of Texas, Arizona, Utah, and in Mexico (Wheeler 1965). About 30 years ago it was introduced into Europe, where it was first recorded from the Czech Republic in 1975 (Máca 1985). It has been suggested that *C. amoena* entered Europe on imported fruits, probably apples, from the USA (Schumann 1987, Burla & Bächli 1992, Máca & Bächli 1994). In the meantime, *C. amoena* has spread across Europe and has been reported from Austria, Crna Gora, the Czech Republic, Dagestan, Southeast France, Germany, Hungary, Poland, Romania, Russia, Serbia, Slovakia, and Switzerland (Máca & Bächli 1994, Withers & Allemand 1998). The species reputedly also occurs in Japan (Schumann 1987). The northernmost localities where *C. amena* has been found are Berlin, where numerous specimens were captured in a suburban house (Schumann 1987, Bächli pers. comm. 2002), and the area near Moscow (Máca & Bächli 1994, Withers & Allemand 1998). The locality in The Netherlands represents the northwesternmost European record of *C. amoena* thus far.

Biology

Chymomyza amoena is known to breed in domestic fruit (apples, pears, plums), but it has also entered the forest habitat in Europe via nuts (acorns, chestnuts, hazelnuts) and wild fruit (apples, cherries; Band *et al.* 1998, 1999). Besides having a broad spectrum of suitable breeding substrates, the species is also capable to cope with a wide variety of temperatures (Band & Band 1982), making it well-adapted to act as a versatile colonizing species.

Burla & Bächli (1992) suggested that *C. amoena* entered Europe on apples. Máca & Bächli (1994) accounted its rapid spread across Central and eastern Europe to its ability to exploit an open ecological niche. Band (1996) argued that its dispersal across Europe was enhanced by its ability to act as a domestic species in unripe and ripe fallen fruit, a niche it also occupies in the United States of America. This suggestion was corroborated by the study of Band *et al.* (1999) carried out in Switzerland. Its wide variety of substrates and the small population size it seems to be adapted to suggest that *C. amoena* will continue to spread over Europe and will eventually become established wherever suitable habitats occur.

The locality of the Dutch specimen is a dry open sandy area where *Senecio jacobaea* and *Rumex acetosella* are predominating. Here two window traps were placed in an open

Figure 1. Window trap in which the specimen was captured. Photo: Paul van Wielink.
Raamval waarin het exemplaar gevangen werd.

field; a third window trap was placed between two oak trees (*Quercus robur*) standing in a row of eight oak trees. The window trap in which the male of *C. amoena* was collected was the one situated between the oak trees. The oak trees have a circumference of about 1.5 m and are circa 13 m high. The distance between the trees is approximately five metres. The litter underneath the oak trees consists of many dead twigs and thick beds of fallen leaves.

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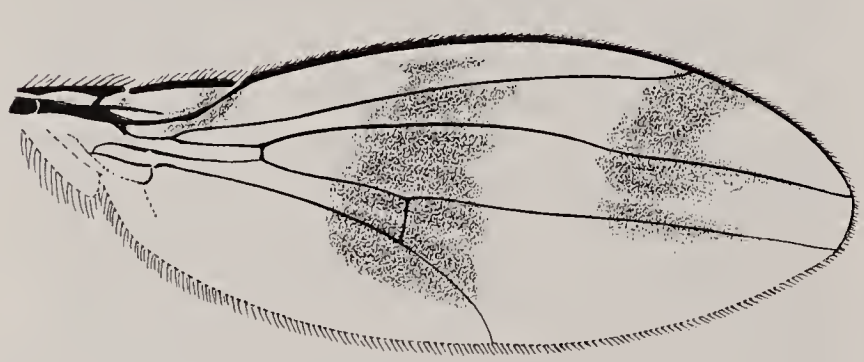

Figure 2. Wing of *Chymomyza amoena* male.
Vleugel van mannetje Chymomyza amoena.

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Samenvatting

***Chymomyza amoena* (Diptera: Drosophilidae) nieuw voor Nederland**

Tijdens een inventarisatie van de entomofauna van de Kaaistoep bij Tilburg, waarbij gebruik werd gemaakt van raamvallen, werd een mannetje van de fruitvlieg *Chymomyza amoena* (Loew) gevangen. De soort was nog niet eerder in Nederland gevonden en wordt hier als een nieuwe aanwinst voor de Nederlandse fauna opgevoerd. *Chymomyza amoena* komt oorspronkelijk voor in de Nearctische regio en werd ongeveer 30 jaar geleden voor het eerst in Europa aangetroffen. Sindsdien heeft de soort zich over grote delen van Midden- en Oost-Europa verspreid. De vondst in Nederland vertegenwoordigt de meest noordwestelijke Europese locatie van *C. amoena* tot nu toe. *Chymomyza amoena* heeft een breed ecologisch spectrum en kan zich als larve ontwikkelen in zowel gekweekt fruit als in wilde vruchten en noten. Er wordt verondersteld dat de soort met geïmporteerd fruit Europa is binnengekomen en zich vervolgens in de Europese bossen heeft kunnen vestigen. *Chymomyza amoena* is eenvoudig te herkennen aan het vleugelpatroon, dat bestaat uit twee brede dwarsbanden en een kleine vlek bij het einde van ader R1. Onder de vliegen met gevlekte vleugels is dit patroon uniek.