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Neoalticomerus formosus new for the fauna of the Netherlands (Diptera: Odiniidae)

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Odiniidae are small acalyptrate flies represented by three genera in Europe and one in the Netherlands. Here we add *Neoalticomerus formosus* to the Dutch fauna, a representative of a new genus. The species was caught by a Malaise trap on the island of Rottumerplaat, an atypical habitat for Odiniidae. *Neoalticomerus formosus* can be separated from *Odinia* because it has only four dorsocentral bristles. The absence of an intra-alar stripe is the main feature to separate it from its sibling species. Although no larval habits are known, they are presumed to be dependent on dead wood for their development. *Neoalticomerus formosus* is widely distributed in Europe and the Palaearctic region, but probably disproportionately rarely recorded due to its biology

Introduction

During a recent campaign of Malaise trap collections on the small island of Rottumerplaat (province of Groningen) several new species for the fauna of the Netherlands were caught. To our surprise, a number of species we caught are dependent on dead wood for their development. Because there are no full-grown trees and only bushes on the island, we did not expect to find species normally found in forests. Even more surprising is that on this tiny island in the North Sea, we found a species of Odiniidae that is new to the Dutch fauna.

Identification

Adult Odiniidae have a very recognizable habitus. A black, grey dusted body of 2 to 5 millimeters with brown or black stripes on the sides of the thorax and black spots on the abdomen, reddish eyes usually with iridescent bands when alive, and long, thick bristles on head and thorax. Wings have usually one or more black spots (figure 1). Diagnostic features are vibrissae present, post-ocellarbristles diverging, three pairs of fronto-orbital bristles (the anterior one curving inwards), middle tibia with hair-like preapical setae, wing with subcostal break, vein BM-Cu (basal medial cubital) present and cell cup (posterior branch of cubitus) closed.

Three genera are recognized in Europe, comprising fifteen species. The genus *Odinia* is the most widespread and often caught. A revision of its eleven European species is urgently needed. Besides *Neolaticomerus*, there are two European species of *Turanodinia*, both known only from Hungary (Gaimari & Mathis 2011).

Neoalticomerus can be recognized by the fact that the flies are dark with lighter dusting then *Odinia* species. Diagnostic features are the presence of four dorsocentral bristles, a setulose anepisternum and small post-ocellar bristles.

Neoalticomerus formosus (Loew, 1844)

Material 1♀, 25.v-8.vi.2017 & 1♀, 22.vi-7.vii.2017, Rottumerplaat, AC 229.1-617.1, Malaise trap, leg. R. Ketelaar.

Until Withers & Papp (2012) reviewed the Palearctic *Neoalticomerus*, the European fauna consisted of the single species *N. formosus*. They, however, showed that another species is present in Europe, *N. fabricius* Withers & Papp 2012. It can be distinguished by the male genitalia. Because we caught females, we will only detail the external diagnostic features of *N. formosus*. Diagnostic features of *N. formosus* include the strong setae on the palpi, extension of the frontal triangle to beyond the middle of frons and no intra-alar stripe (between dorso-central line and the lateral sides of thorax) (figure 2).

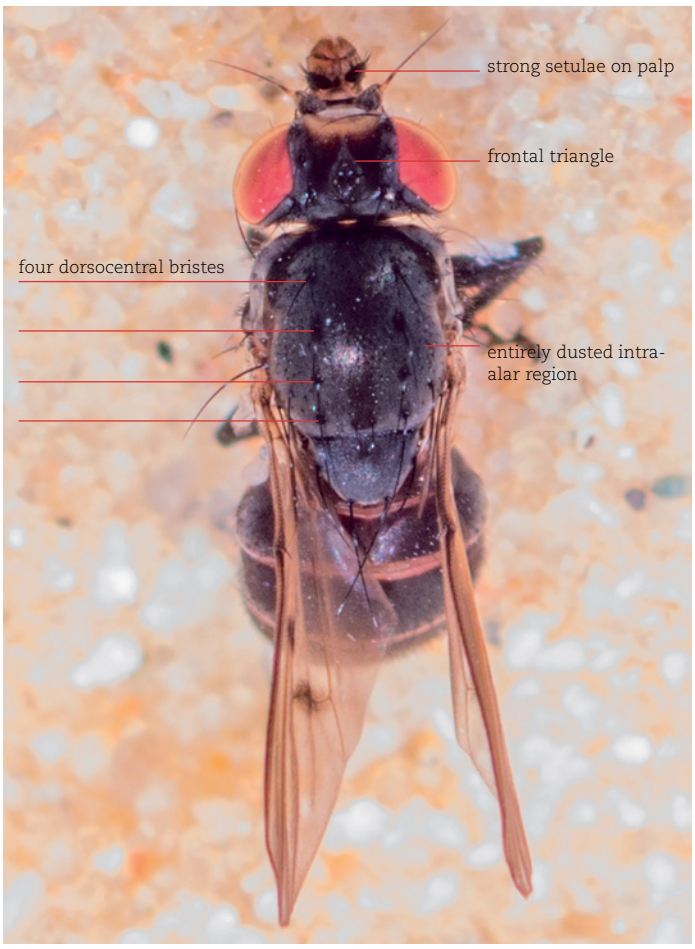
Besides these features, Withers & Papp (2012) mention the absence of setulae between posterior fronto-orbital and outer vertical setae in *N. formosus*. However, the state of this character is not mentioned in the description of *N. fabricius*. Both Dutch specimens possess all the features mentioned by Withers & Papp (2012) as diagnostic for female *N. formosus*.

Habitat and biology

On Rottumerplaat, *Neoalticomerus formosus* was found in the company of Clusiidae and Periscelididae. Members of these families are dependent on wood for their development. Of the family Clusiidae, two species were found: *Clusiodes albimanus* (Meigen, 1830) and *C. gentilis* (Collin, 1912). Larvae of these *Clusiodes* species have been reared from logs (Smith 1989).

Of the family Periscelididae, the species *Periscelis annulata* (Fallén, 1813) was found in numbers. Larvae of this species are adapted to live in fresh flowing sap from tree wounds (Papp 1998). No larvae are known for *Neoalticomerus*, but *Odinia* larvae are known to develop in dead wood in association with beetle larvae (Smith 1989). Presumably, *Neoalticomerus* shares this

1. Habitus of a male of *Neoalticomerus formosus* from Finland (dry mounted specimen). Photo: Jari Flinck
1. Habitus van een mannetje *Neoalticomerus formosus* uit Finland (droog geprepareerd exemplaar).



2. Dorsal view of head and thorax of a female of *Neoalticus formosus* from Rottumerplaat (25.v-8.vi.2017) (specimen in alcohol). Photo: Andre Grove
2. Rugaanzicht van kop en borststuk van een vrouwtje *Neoalticus formosus* van Rottumerplaat (25.v-8.vi.2017) (in alcohol).

3. Habitat of *Neoalticomerus formosus* on Rottumerplaat. Photo: Robert Ketelaar
3. Habitat van *Neoalticomerus formosus* op Rottumerplaat.

habit. Adults of *Neoalticomerus* have been found on wounds of deciduous trees. For the rest adults have been captured with Malaise traps and wine traps suspended in trees (Withers & Papp 2012).

The habitat in which *Neoalticomerus* was found in the Netherlands is very atypical for Odiniidae. Rottumerplaat is a former sandbank that became a more or less stable island since 1833. Until 1950, vegetation was almost absent on the island (Bouwsema 1983). After 1950, Rijkswaterstaat started to stabilise the island by planting marram grass (*Ammophila arenaria*). As a result, a saltmarsh developed along the south side of the stabilised sand dune. Since then, the Island has been managed as a nature reserve. On the eastern tip of the island, there is a small patch of shrubland. It has a surface area of about a tenth of a hectare, with a maximum height of six meters and the maximum diameter of the wood does not exceed twenty

centimetres. The predominant species are sycamore (*Acer pseudoplatanus*), sea buckthorn (*Hippophae rhamnoides*), white abele (*Populus alba*) and willow (*Salix*). The woodland species can only have colonized the island in the last five decades and most likely in the last three as the shrubs take a long time to colonize and grow. When considering the accompanying species, the shrubbery on the island is apparently sufficient to support populations of both *Clusiodes* species, *P. annulata* and *N. formosus*.

Distribution

Withers & Papp (2012) report *N. formosus* from 'Finland, Sweden and Poland to France and Italy and... Russia'. Further, they mention specimens from Hungary and Mongolia, although they do not mention if they have seen specimens from these countries and identified them as the true *N. formosus*, or that they rely on the available literature, and if 'Poland to France' includes Germany and Switzerland. In the world catalogue of Odiniidae, Austria, Czech Republic, Germany, Latvia, Slovakia, Spain and Switzerland are also mentioned (Gaimari & Mathis 2011). It is reasonable to conclude that *N. formosus* is a widespread species but probably, due to its life habits, rarely recorded.

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Samenvatting

***Neoalticomerus formosus* nieuw voor de Nederlandse fauna (Diptera: Odiniidae)**

Odiniidae zijn kleine acalyptrate vliegen vertegenwoordigd met drie genera in Europa, waarvan één tot nu toe gemeld was uit Nederland. Hier melden wij *Neoalticomerus formosus* nieuw voor de Nederlandse fauna, tevens een vertegenwoordiger van een nieuw genus voor ons land. De soort is gevangen met behulp van een Malaiseval op Rottumerplaat, een atypische habitat voor Odiniidae. *Neoalticomerus formosus* kan worden onderscheiden van *Odinia*-soorten doordat er maar vier dorsocentrale borstels aanwezig zijn. De afwezigheid van een intra-alar-streep is het belangrijkste verschil met de Europese zustersoort, *N. fabricius*. Er zijn geen gegevens over larvale levenswijze bekend, maar waarschijnlijk zijn de larven afhankelijk van dood hout. *Neoalticomerus formosus* is wijd verspreid in Europa en het Palaearctisch gebied, maar is waarschijnlijk weinig gevangen vanwege de verborgen levenswijze.

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