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**Atelestidae (Diptera: Empidoidea) from the Botanic Garden  
Jean Massart with a first record from Belgium of the very rare  
*Meghyperus sudeticus* Loew, 1850 and an update  
on the Belgian Atelestidae**

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### Abstract

A survey on Atelestidae was done as part of a comprehensive Diptera study of the Botanic Garden Jean Massart, Brussels. *Atelestus pulicarius* (Fallén, 1816) was relatively common in the Garden. Its sibling species, *Atelestus dissonans* Collin, 1961 was not found. *Meghyperus sudeticus* Loew, 1850, a very rare species throughout Europe, is recorded here for the first time in Belgium, represented by a male and four females. The Belgian records of the Atelestidae are updated.

**Keywords:** Atelestidae, *Meghyperus*, first record, Jardin Botanique Jean Massart, Belgium.

### Introduction

The Atelestidae is a very small family in the superfamily Empidoidea that were formerly included in the Empididae s. l. (CHVÁLA, 1983). There are three genera known in Western Europe: *Atelestus* Walker, 1837, *Meghyperus* Loew, 1850 and *Nemedina* Chandler, 1981. The genus *Atelestus* is represented in Belgium with two species: *Atelestus pulicarius* (Fallén, 1816) and *A. dissonans* Collin, 1961. Recently, two new *Atelestus* species have been described by KANAVALOVÁ *et al.* (2020) respectively from Spain and Turkey and a key to the four western Palaearctic species is provided.

The genus *Meghyperus* Loew, 1850 is still represented in Europe by a single species, *Meghyperus sudeticus* Loew, 1850 which is reported here for the first time in Belgium.

The genus *Nemedina* has not been recorded yet in Belgium. In the western Palaearctic, there are three species known of this very rare genus (*N. alamirabilis* Chandler, 1981, *N. acutiformis* Carles-Tolrá, 2008 and *N. zaitsevi* Sinclair & Shamshev, 2003). A re-description of the type species *N. alamirabilis* Chandler, 1981 is given by SINCLAIR & PAPP (2004).

The present report is based on a three-year survey of the Diptera in the Botanic Garden Jean Massart (Brussels-Capital Region, Belgium). This Botanic Garden is a tiny 4.5 ha site, squeezed in between the eastern border of the city of Brussels and the Sonian forest. Nearly 2,000 plant species have been recorded in this Natura 2000 site. The area is composed of various biotopes such as humid areas with a swamp and ponds, an old orchard on dry grassland, a medicinal plants garden, an arboretum and an evolution garden. All is mixed with patches of semi natural woods.

## Material and methods

Six sites in the Garden were sampled during different periods from spring 2017 to spring 2018 with Malaise traps (abbr. MT) only. Details on trapping and the sites are described in GROOTAERT *et al.*, 2023.

All the samples from the survey have been screened for empidoid flies including the Atelestidae. The material is conserved in the collections of the Royal Belgian Institute of Natural Sciences in Brussels (RBINS). The position of the specimens in the collection from the Botanic Garden is given as ref. followed by a number.

## Observations

### *Atelestus pulicarius* (Fallén, 1816)

*Empis pulicaria* Fallén, 1816: 33.

*Atelestus sylvicola* Walker, 1837: 229.

*Platycnema tibiella* Zetterstedt, 1842: 333.

*Atelestus pulicarius* (Fallén, 1816) in COLLIN, 1961: 231.

*Atelestus pulicarius* (Fallén, 1816) in CHVÁLA, 1983: 235; re-description (Figs 53, 557, 561, 563-579).

MATERIAL EXAMINED. Oudergem, Botanic Garden Jean Massart: MT1: 1♀, 28.V- 4.VI.2015; 1♂, 4-10.VI.2015; MT2: 1♀, 24.v-1.VI.2017 (ref. 1074); 1♂, 8-15.VI.2017 (ref. 1378); MT5: 11♂♂, 3♀♀, 24.V-1.VI.2017 (ref. 1082); 2♂♂, 1♀, 1-8.VI.2017 (ref. 1285); MT5: 1♀, 8-15.VI.2017; MT6: 1♂, 24.V-1.VI.2017 (ref. 1169); 1♂, 2♀♀, 1-8.VI.2017 (ref. 1088).

PREVIOUS BELGIAN RECORDS: 1♂, Durbuy (31UFR78), 18.VI.1962 (M. BEQUAERT, RBINS); 1♂, Herbeumont (31UFR61), 26.VI.1952 (M. Bequaert, RBINS); 1♂, Lixhe (31UFS82), 1.VI.1947 (M. Bequaert, RBINS); 2♂♂, Logne (31UFR88), 2.VII.1986 (J. Berteau, RBINS); 1♂, Mirwart (31UFR64), 12.VI.1946 (M. Bequaert, RBINS); 1♀, Nismes (31UFR14), 24.VI.1981 (P. Grootaert, RBINS); 1♀, Ottignies (31UFS11), 5.VI.1982 (P. Dessart, RBINS); 2♂♂, Ottignies (31UFS11), 12.VI.1981 (M. Bequaert, RBINS); 1♂, Steenbergse bossen (st. 16), 2013 (J. Mortelmans); 1♂, Treignes (31UFR15), 7.VIII.1984 (K. Hofmans, RBINS).

COMMENTS. As can be seen, almost all records, except the record from Steenbergse bossen, are from the southern part of Belgium. Apparently, the species is only active from early summer onward.

DISTRIBUTION. Belgium, British Isles, Central European Russia, Croatia, Czech Republic, Danish mainland, Finland, Germany, Ireland, Slovakia, Slovenia, Sweden and Switzerland [according to CHVÁLA (1983), Fauna Europaea, 2022].

### *Atelestus dissonans* Collin, 1961

*Atelestus dissonans* Collin, 1961: 233; description female.

*Atelestus dissonans* Collin, 1961 in CHVÁLA, 1983: 237; description male and female (Fig. 580 male genitalia).

MATERIAL EXAMINED. 1♂, Houyet (UTM: 31UFR46), 6.VII.1928 (RBINS); 1♂, Ethe (31UFQ89), 28.VIII.1981 (RBINS).

DISTRIBUTION. Belgium, British I., Czech Republic, Germany and Switzerland (Fauna Europaea, 2022). According to CHVÁLA (1983), its occurrence is expected in Fennoscandia.

There are only two records from Belgium and they are from the south of Belgium.

**Key to the west Palaearctic *Atelestus* species after KANAVALOVÁ *et al.*, 2020.**

1. Mesonotum with all bristles pale (white to yellow).....*A. turcicus* Barták  
– Mesonotum with most bristles black .....2
2. Abdomen with many pale bristles (white to yellow) .....*A. ibericus* Barták  
– Abdomen with all bristles black.....3
3. Female frons with microtrichia. Male mid tibia usually with at least one longer dorsal bristle near middle; apex of epandrial lamella broadly ovate and microtrichose; hypandrium longer than wide in ventral view, with posterior lobes pointed posteriorly (L- to C- shaped in lateral view); wing usually longer than 2.4 mm ..... *A. pulicarius* (Fallén)  
– Female frons shiny. Male mid tibia with all dorsal bristles shorter and equally long; apex of epandrial lamella narrowly ovate and shiny; hypandrium short (about as long as wide in ventral view), with posterior lobes pointed dorsally (U-shaped in lateral view); wing usually shorter than 2.2 mm ..... *A. dissonans* Collin

*Meghyperus sudeticus* Loew, 1850 – **Belg. sp. nov.**

Fig. 1.

*Meghyperus sudeticus* Loew, 1850: 303.

*Meghyperus sudeticus* Loew, 1850 in CHVÁLA, 1983: 241; re-description (Figs 54, 558, 559, 562, 581-588, 592-594).

MATERIAL EXAMINED. Oudergem, Botanic Garden Jean Massart: MT1: 1♂, 10-17.VI.2015; 1♀, 17-26.VI.2015 (ref. 761); MT2: 2♀♀, 24.V-1.VI.2017 (ref. 1069); MT5: 1♀, 24.V-1.VI.2017 (ref. 1081); MT6: 1♀, 17-24.V.2017 (det. P. Beuk; in coll. Natuurhistorisch Museum, Maastricht).

DISTRIBUTION. Austria, Belgium (new record), Finland, Germany, Hungary, Slovakia, Slovenia, The Netherlands, Russia (NW European Russia & Russian Far East) and former Yugoslavia (according to Fauna Europaea, 2022).

COMMENTS. According to CHVÁLA (1983), the species is rare everywhere and males are even more rare. In Fennoscandia, *Meghyperus* is present in June and July while in Central Europe from May to August.

*Meghyperus sudeticus* was found in four sites in the Botanic Garden Jean Massart (MT1, MT2, MT5 and MT6). It was present only in late Spring from 17 May to 17 June.

BIOLOGY. According to CHVÁLA, 1983 nothing is known about the immature stages, nor are there observations on the feeding behaviour of the adults. Nevertheless, the mouthparts suggest that they are predacious. The habitat of the adult flies is also unclear, though adults have been frequently collected along riverbanks in forest in Finland (Finnish database, leg. J. Kahanpää). Moreover, swarming behaviour was observed by FREY (1933, 1956), also along a riverbank. The record in the Netherlands was apparently also from a swarm when Bob van Aartsen (*in litt.* Paul Beuk) collected 1♂ and 29♀♀ in early June 1998 in ‘t Harde (Gelderland). Unfortunately, the precise habitat is not known. The observations in the Botanic Garden Jean Massart do not elucidate its habitat preferences since specimens were found in four different habitats.

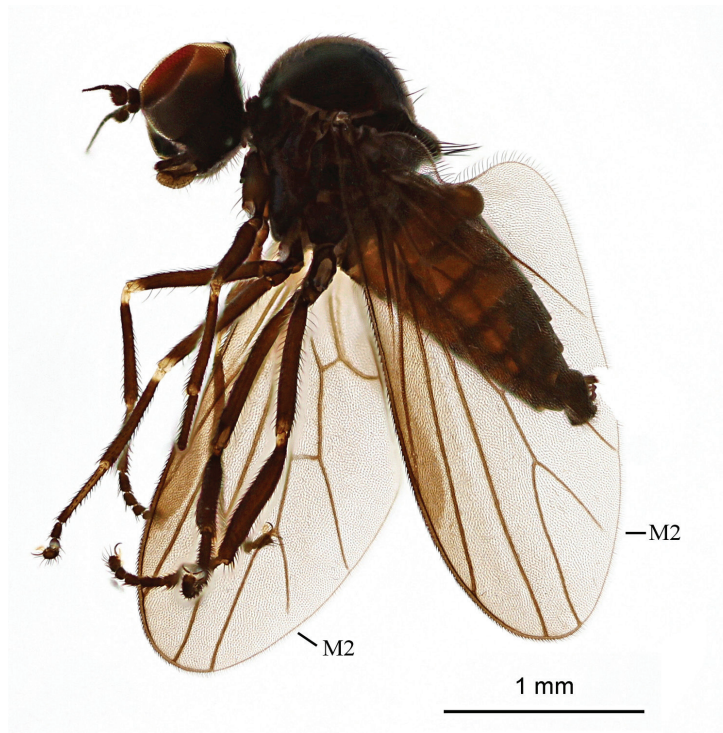


Fig. 1. *Meghyperus sudeticus* Loew, 1850, Botanic Garden Jean Massart. Habitus male, Vein M<sub>2</sub> is abbreviated. © Camille Locatelli.

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