

## ***Issus muscaeformis* (Schrank, 1781) new to Belgium (Hemiptera: Issidae)**

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### **Abstract**

So far, *Issus coleoptratus* (Fabricius, 1781) was the only species of the family Issidae reported for Belgium. Here, *Issus muscaeformis* (Schrank, 1781), which closely resembles the former species and was overlooked so far, is added to the Belgian fauna. Characteristics of both species are illustrated.

**Keywords:** Auchenorrhyncha, Fulgoromorpha, *Issus coleoptratus*

### **Samenvatting**

Tot nu toe was *Issus coleoptratus* (Fabricius, 1781) de enige soort van de familie Issidae die bekend was voor België. Hier wordt *Issus muscaeformis* (Schrank, 1781), die goed lijkt op de vorige soort en tot nu toe over het hoofd werd gezien, toegevoegd aan de Belgische fauna. Kenmerken van beide soorten worden geïllustreerd.

### **Résumé**

Jusqu'à présent, *Issus coleoptratus* (Fabricius, 1781) était la seule espèce d'Issidae connue de Belgique. Ici, *Issus muscaeformis* (Schrank, 1781), qui ressemble fortement à l'espèce précédente avec laquelle elle a été confondue, est ajoutée à la faune belge. Les caractéristiques des deux espèces sont illustrées.

### **Introduction**

Issidae or issid planthoppers are a family of Auchenorrhyncha. As in all Fulgoromorpha, the insertions of the median coxae are widely separated, while these insertions are situated close to the body axis in Cicadomorpha. The body of Issidae is broad and oval, the eyes are large and the second hind tarsi bear only one apical spine at each side. So far, only *Issus coleoptratus* (Fabricius, 1781) was reported for Belgium (SYNAVE, 1951). Here, the similar *Issus muscaeformis* (Schrank, 1781) is reported for the first time for the Belgian fauna.

### **Material and methods**

Plant- and leafhoppers were sampled by sweeping the vegetation. Species were identified using BIEDERMANN & NIEDRINGHAUS (2009) in combination with KUNZ *et al.* (2011). The collected specimens of *Issus muscaeformis* (Schrank, 1781) were deposited to the entomological collection of the Royal Belgian Institute of Natural Sciences (RBINS, I.G.: 33.649).

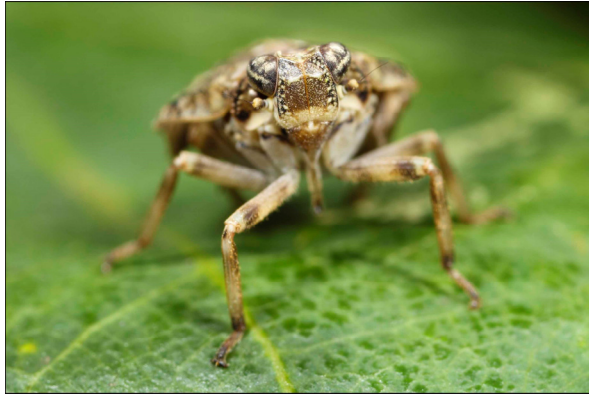


Fig. 1. Frontal view of *Issus muscaeformis* (Schrank, 1781) (photograph by Koen Lock).



Fig. 2. Frontal view of *Issus coleoptratus* (Fabricius, 1781) (photograph by Koen Lock).



Fig. 3. Lateral view of *Issus muscaeformis* (Schrank, 1781) (photograph by Koen Lock).



Fig. 4. Lateral view of *Issus coleoptratus* (Fabricius, 1781) (photograph by Koen Lock).

## Results

### STUDIED MATERIAL.

On 10.IX.2017, one female of *Issus muscaeformis* (Schrank, 1781) was collected and several other individuals were observed in the Parc Claeys-Bouüaert in Mariakerke (Province of East Flanders; UTM: 31UES4658). All animals were found on sun-exposed Pedunculate oak (*Quercus robur*).

On 27.IX.2017, another female was collected and several other individuals were observed in Brecht in the nature reserve Kooldries (Province of Antwerp, UTM: 31UFS1587), which is managed by Natuurpunt. Also here, animals were found on sun-exposed Pedunculate oak (*Quercus robur*).

In addition, one female was found in the collection of the Royal Belgian Institute of Natural Sciences. On 11.IX.2007, one female was collected by Jos Bruers in Veerle (Province of Antwerp), however, the specimen was wrongly identified as *I. coleoptratus* by Gabby Viskens.

### CHARACTERISTICS.

In *I. muscaeformis*, a distinct white bar is present in the lower third of the frons, while the rest of the frons is more or less uniformly dark brown with whitish spots (Fig. 1). The clypeus beneath the frons is dark brown, which strongly contrasts with the whitish bar (Fig. 1), which can also be visible in lateral view (Fig. 3). The upper third of the frons of *I. coleoptratus* is dark brown to black with whitish spots, while the lower parts of the frons and the clypeus are yellowish, light greenish or brownish, with or without dark markings, but always without a broad, white bar (Fig. 2). In lateral view, the clypeus is not contrastingly darker than the lower part of the frons (Fig. 4). Unlike *I. muscaeformis*, *I. coleoptratus* shows sexual dimorphism of the forewing venation: in males all longitudinal veins are distinct despite numerous secondary veins (Fig. 4), while in females the radius apically merges into a fine reticulation (not shown). This fine reticulation is never present in *I. muscaeformis* (Fig. 3). The body colour of both species is variable: light specimens are uniformly brownish grey, while other specimens show two dark wing bars or may even be entirely black.

## Discussion

*Issus muscaeformis* was expected in Belgium because it was already observed in the Netherlands (DEN BIEMAN *et al.*, 2011) and in the German federal state Nordrhein-Westfalen bordering Belgium (KUNZ *et al.*, 2011). Although it is not as common in Belgium as the very common *I. coleoptratus* (SYNAVE, 1951), *I. muscaeformis* is probably widespread in our country, however, it has been overlooked so far. *Issus muscaeformis* lives along sunny forest margins, in scrub and on solitary trees and is polyphagous on deciduous shrubs and trees (e.g. *Quercus*, *Carpinus*, *Corylus*) (HOLZINGER *et al.*, 2003). Although the flight period has been indicated as: “end V till end VIII(?)” (KUNZ *et al.* 2011), all records reported here were from September.

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