



The status of the sawfly *Xiphydria longicollis* (Hymenoptera: Xiphydriidae) in Belgium

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Abstract

A summary of historical and recent observations of *Xiphydria longicollis* in Belgium is presented. Based on research of these specimens, it is concluded that the observations reported decades ago were in fact misidentifications. However, several recent photographic evidences confirm the presence of this species in Belgium. A key to the Belgian Xiphydriidae is also provided, including *X. longicollis*.

Keywords: Hymenoptera, Symphyta, Xiphydriidae, *Xiphydria longicollis*

Samenvatting

In dit artikel wordt een overzicht voorgesteld van de oude en recente waarnemingen van *Xiphydria longicollis* in België. Uit onderzoek van deze exemplaren kan besloten worden dat de waarnemingen van decennia geleden in feite verkeerd gedetermineerd waren. Enkele recente waarnemingen met fotografisch bewijs bevestigen echter het voorkomen van deze soort in België. Ook wordt er een sleutel voor de Belgische Xiphydriidae voorgesteld, inclusief *X. longicollis*.

Résumé

Un résumé des observations historiques et récentes de *Xiphydria longicollis* en Belgique est présenté. Sur la base de recherches sur ces spécimens, il est conclu que les observations rapportées il y a des décennies étaient en fait des erreurs d'identification. Cependant, plusieurs preuves photographiques récentes confirment la présence de cette espèce en Belgique. Une clé des Xiphydriidae belges est également fournie, y compris *X. longicollis*.

Introduction

Within the hymenopterans the suborder Symphyta consists of a paraphyletic clade (VILHELMSSEN, 2015). They are called sawflies because of their saw-like shaped ovipositor, which is used to lay their eggs into plants. Except for the parasitic Orussidae, sawfly larvae have an herbivore lifestyle. The Xiphydriidae and Siricidae are unusual because the females bore into wood to deposit their eggs. The hosts of Xiphydriidae are deciduous trees like birch and alder, hosts of Siricidae are conifers (LISTON, 1995). There are two common species of Xiphydriidae in Belgium: *Xiphydria prolongata* (Geoffroy, 1785) and *Xiphydria camelus* (Linnaeus, 1758) (MAGIS, 2006). The Belgian sawfly checklist (MAGIS, 1994) also mentions the rare species *Konowia betulae* (Enslin, 1911), which is currently known as *Xiphydria betulae* (Enslin, 1911). In 2006, Noël Magis reported *Xiphydria picta* Konow, 1897 as new for Belgium although some doubt is expressed for the origin of the specimen. It was captured in 2001 by a

student and has an incomplete label (MAGIS, 2006). Some publications also mention *X. longicollis* (Geoffroy, 1785) for Belgium (SHAWN & LISTON, 1985), although this species is not present in Belgium according to the European country checklist (TAEGER *et al.*, 2006). This species is reported from several European countries like the Czech Republic, Germany, France, Great-Britain, Croatia, Hungary, Italy, Poland, Rumania, Slovakia, and Ukraine (TAEGER *et al.*, 2006). The original report of *X. longicollis* as new for Belgium is by Fernand Wolf (WOLF, 1969). Here, specimens from museum collections were re-examined and online, photographic databases were investigated, to resolve the status of *X. longicollis* in Belgium.

Material and methods

The *Xiphydria* species reported for Belgium can be identified using the keys of Kraus (KRAUS, 1997) or Zhelochovtsev (Zhelochovtsev, 1993). In addition, an adapted key for the currently known Belgian species is presented below.



Fig. 1. Adult female of *X. camelus* (Linnaeus, 1758) from Presles, Belgium, 03.V.1955, leg. A. Collart.
 Fig. 2. Adult female of *X. betulae* (Enslin, 1911) from Gruitrode, Belgium, 09.VI.1962, leg. unknown.
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The collections of the Royal Belgian Institute of Natural Sciences (RBINS) and the Gembloux Agro-Bio Tech Institution (FSAGbx) were checked for Belgian *X. longicollis* specimens. Further, the photographic database of waarnemingen.be was screened for observations (last visited on 20 October 2019).



Fig. 3. Adult female of *X. longicollis* (Geoffroy, 1785) from Villers-Devant-Orval, Belgium, 27.IX.2015, leg. A. Reynaerts. © Jorgen Ravoet.

Fig. 4. Adult male of *X. longicollis* (Geoffroy, 1785) from Gent, Belgium 22.VI.2019, leg. J. Raes. © Jorgen Ravoet.

Fig. 5. Adult female of *X. prolongata* (Geoffroy, 1785) from Mariembourg, Belgium, 06.V.2019, leg. S. Claerebout. © Jorgen Ravoet.

Fig. 6. Adult female of *X. camelus* (Linnaeus, 1758) from Turnhout, Belgium, 31.V.2016, leg. P. Geert. © Jorgen Ravoet.

Results

The two specimens that are mentioned in report of *X. longicollis* for Belgium (WOLF, 1969) were located in the RBINS and FSAGbx collections. During the validation of sawfly photos on the waarnemingen.be platform, three recent observations of *X. longicollis* were also discovered.

Hainaut: Presles, 3.V.1955, 1 ♀, leg. A. Collart, col. RBINS, det. F. Wolf as *X. longicollis* in 1964, det. N. Magis as *X. camelus* in 1984 (Fig. 1 A and B).

Limburg: Gruitrode, 9.VI.1962, 1 ♀, leg. unknown, col. FSAGbx, det. F. Wolf as *X. longicollis* in 1964, det. N. Magis as *Konowia betulae* (now regarded as synonym of *X. betulae*) in 2008 (Fig. 2 A and B).

Luxembourg: Villers-Devant-Orval, 27.IX.2015, 1 ♀, leg. A. Reynaerts, det. J. Ravoet as *X. longicollis* in 2018 (Fig. 3).

Oost-Vlaanderen: Semmerzake, 27.VIII.2018, 1 ♂, leg. J. Raes, det. J. Raes as *X. longicollis* in 2018 (Fig. 4); Gent, 22.VI.2019, 1 ♀, leg. P. Carchon, det. J. Ravoet as *X. longicollis* in 2019.

Key for the Belgian Xiphydriidae (based on KRAUS, 1997; JANSEN, 1987)

- (1) Abdomen is uniformly brown or black, no white streak on the tergites (Fig. 2 A) *X. betulae*
- Abdomen has white streaks on the tergites. It is dark brown till black, but a red band can be present (2)
- (2) Abdomen is black with a red band. The lateral white streaks are rather small (Fig. 5) *X. prolongate*
- Abdomen is black with white or yellow streaks on the tergites (3)
- (3) Male: red hairy tufts are present on the sternites (Fig. 4). The tibiae of the females have a large white - yellow spot at their base (Fig. 3), less pronounced in the males *X. longicollis*
- The males have sternites without hairy tufts. The legs are uniformly red. (4)
- (4) The stripes on the back of the head are rather short. The forehead is completely black.... (Fig. 6) *X. camelus*
- the stripes on the back of the head are long and reach the eyes. Some white spots are present on the forehead *X. picta*

Discussion

Noël Magis examined the specimens that F. Wolf identified as *X. longicollis*. Although these specimens were re-identified as other species, the results were not published. This explains why this species is lacking in the Belgian checklist (MAGIS, 1994).

However, photographic evidence was found that this species is recently present in Belgium. It concerns males and females (Fig. 1 and 2), observed in well separated areas and with an interval of several years. This confirms the presence of settled populations. Since only three validated specimens were found, *X. longicollis* is probably a very rare specimen in Belgium, comparable to *X. betulae*. The latter species is not present in the RBINS collection and is represented by only one Belgian specimen in the FSAGbx collection.

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