

**FIRST RECORDS OF THE ICHNEUMONID *CTENOCHARES BICOLORUS*
IN BELGIUM AND THE NETHERLANDS (HYMENOPTERA:
ICHNEUMONIDAE)**

Fons Verheyde

The ichneumonid wasp *Ctenochares bicolorus* was reported for the first time in the Netherlands in 2015 and in Belgium in 2019. These records are the first for continental northwestern Europe. The specimens are imported, probably with vegetables. The species, a parasite of Lepidoptera, originates from Africa, but has been introduced in southern Europe and has settled there. It seems possible that *Ctenochares bicolorus* will form populations in northwestern Europe in the future, especially in greenhouses.

INTRODUCTION

While colonization and migration by natural means are well-known phenomena within the Ichneumonidae, examples of import are scarce. This is probably caused by the fact that parasitic wasps don't cause damage, pest behaviour or 'outbreaks'. Luckily, citizen scientists do not discriminate and everything is registered, even from odd places such as warehouses or on vegetables. In fact, the first observations of the ichneumonid

Ctenochares bicolorus (Linnaeus, 1767) in the Netherlands and in Belgium, were made at home, after visiting a local supermarket.

DISTRIBUTION

Ctenochares bicolorus originates from the African continent, mainly from the sub-Saharan region. It has been reported widely from Ivory Coast to Somalia down to South Africa. Recent records



Figure 1. *Ctenochares bicolorus*, female. Benthuisen (the Netherlands), 22.XI.2015. Photo Adri de Groot.

Figuur 1. *Ctenochares bicolorus*, vrouwtje. Benthuisen (Nederland), 22.XI.2015. Foto Adri de Groot.

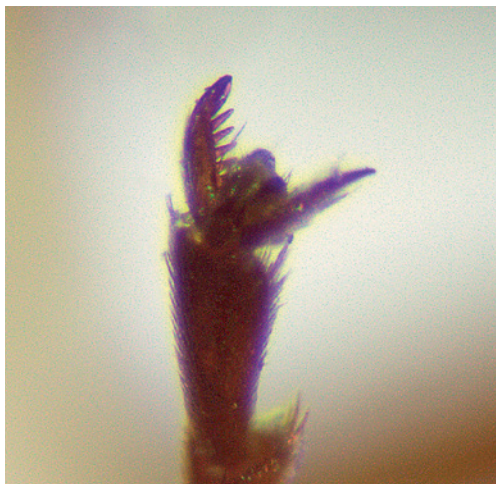


Figure 2. *Ctenochares bicolorus*, female. The tarsal claws are pectinate, typical for *Ctenochares*. Figure 2-5 Fons Verheyde.

Figuur 2. *Ctenochares bicolorus*, vrouwtje. De tarsklauwen hebben een kamachtige vorm, kenmerkend voor het genus *Ctenochares*. Figure 2-5 Fons Verheyde.



Figure 3. *Ctenochares bicolorus*, female. Anterior tibiae with two stout spines.

Figuur 3. *Ctenochares bicolorus*, vrouwtje. Voorste schenen met twee grote doorns.

(e.g. on Inaturalist.org) suggest that the ichneumonid has settled itself in southern Europe, forming populations. Hotspots can be found in southern France and on the western coast of Portugal. The species was also introduced in Australia and New Zealand, where it is still reported quite often (Fitton et al. 1983, Inaturalist.org). Finally, the species was reported only once for northwestern Europe, near London (UK) (Jones 2001).

RECORDS

Belgium Oost-Vlaanderen Ouwegem, 11.II.2019, 50°54'42"N 3°36'28"E, 1 ♀, L. Vandeveld, col. Verheyde (20190211-167405180). **The Netherlands Zuid-Holland** Benthuisen, 22.XI.2015, 52°04'32"N 4°32'34"E, 1 ♀, A. de Groot, photo on Waarneming.nl; Delfshaven, 23.V.2018, 51°54'12"N 4°27'07"E, 1 ♀, J. van 't Bosch, photo on Waarneming.nl.

The first Dutch specimen emerged while the observer cleaned his spinach, imported from Spain and bought at the local supermarket (Plus

Verheul) in Benthuisen (fig. 1). The Belgian specimen was found in cauliflower, bought at a supermarket in Ouwegem (Spar Huisse) (fig. 4-5). Interestingly, the second observation in the Netherlands was done outdoors (fig. 6). Probably this specimen was also introduced, as it was found in the port of Rotterdam and a supermarket was close by. The records are summarised in figure 7.

BIOLOGY

The hosts of representatives of the subfamily Ichneumoninae are mostly Lepidoptera. Either the caterpillars or the pupae are parasitized. *Ctenochares* Forster, 1869 is mainly associated with Noctuidae and more specifically Plusiinae. In Europe the only known hosts of *C. bicolorus* are *Chrysodeixis chalcites* (Esper, 1789) and *Autographa gamma* (Linnaeus, 1758) (Schembri 1992, Mifsud et al. 2019). *Chrysodeixis chalcites* can be very common on tomato in greenhouses.



Figure 4. *Ctenochares bicolorus*, female (ventral). Ouwegem (Belgium), 11.II.2019.

Figuur 4. *Ctenochares bicolorus*, vrouwtje (ventraal). Ouwegem (Belgium), 11.II.2019.



Figure 5. *Ctenochares bicolorus*, female (dorsal). Ouwegem (Belgium), 11.II.2019.

Figuur 5. *Ctenochares bicolorus*, vrouwtje (dorsaal). Ouwegem (Belgium), 11.II.2019.

MORPHOLOGY

A full description is made by Gauld & Fitton (1984). Typically for *Ctenochares* carinae are lacking on the propodeum, the tarsal claws are pectinate (fig. 2) and the fore wing is pale yellow with dark spots at the apex (fig. 1). Generally the insect is quite large, in our case 14 mm. The scutellum is closed in by two lateral carinae. Additionally, females have a few stout spines on the anterior tibiae (fig. 3), hind femora and coxae are black and the flagellum has a medium whitish band (Gauld & Fitton 1984; fig. 4-6), just like in most female Ichneumoninae (Broad et al. 2018).

DISCUSSION

Ctenochares bicolorus is not the first ichneumonid to be associated with supermarkets or storage facilities. A more famous example is *Venturia canescens* (Gravenhorst, 1829), which is even able to reproduce in storerooms (Broad et al. 2018). *Ctenochares bicolorus* has a more limited host range, which might also limit its possibilities to expand its range. On the other hand it could profit from the abundant presence of its host *Chrysodeixis chalcites* in greenhouses. It seems possible that the wasp can settle outdoors, as adults of *C. chalcites* can escape from greenhouses



Figure 6. *Ctenochares bicolorus*, female. Delfshaven (the Netherlands), 23.v.2018. Photo Johan van 't Bosch.

Figure 6. *Ctenochares bicolorus*, vrouwtje. Delfshaven (Nederland), 23.v.2018. Photo Johan van 't Bosch.

(pers. comm. Leo Janssen) and the other known host *Autographa gamma* can likewise be very abundant.

It will be interesting to look for new records in the coming years. Furthermore it would be important to know if the caterpillars or the pupae are parasitized. Based on the morphology of the ovipositor the latter seems to be more likely (pers. comm. Kees Zwakhals).

ACKNOWLEDGEMENTS

Marjan Bulcke is thanked for sending me a message concerning the first Belgian observation from her daughter. I would like to thank Adri de Groot and Johan van't Bosch for explaining the context of their finding. Kees Zwakhals is thanked for reading and improving the manuscript. Finally, Stichting Natuurinformatie is acknowledged for the establishment of Waarneming.nl.

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Figure 7. Records of *Ctenochares bicolorus* in the Netherlands and Belgium.

Figure 7. Vindplaatsen van *Ctenochares bicolorus* in Nederland en België.

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SAMENVATTING

Eerste waarnemingen van de sluipwesp *Ctenochares bicolorus* in België en Nederland (Hymenoptera: Ichneumonidae)

De sluipwesp *Ctenochares bicolorus* werd in Nederland voor het eerst waargenomen in 2015 en in België in 2019. In beide gevallen werden de dieren gevonden op groenten, afkomstig uit een naburige supermarkt. Deze van oorsprong Afrikaanse soort heeft zich al gevestigd in Zuid-Europa. Uit de recente vondsten blijkt dat de wesp af en toe geïmporteerd wordt in Noordwest-Europa. Het lijkt niet onmogelijk dat de soort zich op termijn ook hier kan vestigen, zeker in warme kassen. De gastheren komen hier al veel voor. Dat zijn nachtvlinders uit de subfamilie van de Plusiinae, zoals de Turkse uil en in mindere mate de gamma-uil. Van de Turkse uil zijn hoge dichtheden bekend uit tomaten-serres. Het lijkt aannemelijk dat *Ctenochares bicolorus* in de warme kassen met veel gastheren zeker moet kunnen overleven. In 2018 werd een tweede vondst in Nederland bekend. Interessant daarbij is dat dit onder natuurlijke omstandigheden gebeurde, wat mogelijk duidt op overleving in het buitengebied. Het zal interessant zijn om deze soort de komende jaren goed te volgen. Daarbij valt te bezien hoe breed het gastheerspectrum is en in welk stadium (larve of pop) de wesp toeslaat.

F. Verheyde
Oostende (België)
fonsverheyde@hotmail.com

