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Two hundred and five ichneumonid wasps reported for the first time in Belgium and the Netherlands (Hymenoptera: Ichneumonidae)

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Two hundred and five ichneumonid wasps reported for the first time in Belgium and the Netherlands (Hymenoptera: Ichneumonidae)

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Abstract

The advent of citizen science, the free availability of information and literature, and even social media, have greatly advanced our knowledge on insect fauna in the Low Countries. However, this information is often dispersed and does not always end up being reported in entomological literature. With this paper we want to close this gap for Ichneumonidae, by listing 205 species and nineteen genera first reported in Belgium and the Netherlands.

Furthermore, several remarks with more profound morphological and/or ecological relevance are added. For more obscure species like *Diadegma cinnabaritor* Aubert, 1970, *Diphyus restitutor* (Wesmael 1859), *Ichneumon freyi* Kriechbaumer, 1880, *Javra opaca* (Thomson, 1883), *Lissonota pleuralis* Brischke, 1880, *Meloboris collector* (Thunberg, 1824), *Micromonodon tener* (Kriechbaumer, 1893), *Perilissus holmgreni* Habermehl, 1925, *Piogaster pillosator* (Aubert, 1958), *Spilothyrateles illuminatorius* (Gravenhorst, 1820) and *Vulgichneumon trifarius* (Berthoumieu, 1892) we provide a more elaborate description and figures. New parasitic relations are mentioned for *Acrodactyla degener* (Haliday, 1839), *Heterischnus debilis* (Gravenhorst, 1829) and *Nippocryptus vittatorius* (Jurine, 1807).

An appendix provides the reader with an overview of Ichneumonidae first reported since 2005 (in total 290 species), paving the way for future checklists.

Keywords: biodiversity, citizen science, Darwin wasps, Ichneumonidae, parasitoid wasps

Samenvatting

De opkomst van burgerwetenschap, de vrije beschikbaarheid van literatuur en informatie en zelfs sociale media hebben een grote impact gehad op de toename van onze kennis over insectenpopulaties in de Lage Landen. Een reëel gevaar is dat de informatie vaak verstrooid geraakt en niet doorsijpelt tot in de wetenschappelijke literatuur. In deze paper melden we tweehonderd en vijf soorten sluipwespen (Ichneumonidae) en negentien genera als nieuw voor België en Nederland en proberen we zo dit hiaat te dichten.

Verder maken we bij verschillende soorten enkele aanvullingen betreffende hun morfologie en ecologie. Bij meer obscure soorten zoals *Diadegma cinnabaritor* Aubert, 1970, *Diphyus*

restitutor (Wesmael 1859), *Ichneumon freyi* Kriechbaumer, 1880, *Javra opaca* (Thomson, 1883), *Lissonota pleuralis* Brischke, 1880, *Meloboris collector* (Thunberg, 1824), *Micromonodon tener* (Kriechbaumer, 1893), *Perilissus holmgreni* Habermehl, 1925, *Piogaster pillosator* (Aubert, 1958), *Spilothyrateles illuminatorius* (Gravenhorst, 1820) en *Vulgichneumon trifarius* (Berthoumieu, 1892) is er een meer uitgebreide beschrijving, aangevuld door foto's. Nieuwe parasitaire relaties worden gemeld voor *Acrodactyla degener* (Haliday, 1839), *Heterischnus debilis* (Gravenhorst, 1829) en *Nippocryptus vittatorius* (Jurine, 1807).

Een appendix geeft de lezer een overzicht van alle sluipwespen gemeld sinds 2005, in totaal 290 soorten.

Résumé

L'arrivée des "sciences citoyennes", de l'accès libre à l'information et à la littérature scientifique, voire même des médias sociaux, a permis une avancée importante dans la connaissance de la faune entomologique en Belgique et aux Pays-Bas. Néanmoins, l'information est souvent dispersée et elle n'est pas toujours publiée dans la littérature entomologique. Avec cette publication, nous voulons combler en partie les lacunes pour les Ichneumonidae en listant environ deux cents espèces et dix-neuf genres rapportés pour la première fois de Belgique et/ou des Pays-Bas.

De plus, plusieurs commentaires détaillés sont fournis sur les aspects morphologiques et/ou écologiques de certaines espèces. Pour des espèces moins connues comme *Diadegma cinnabaritor* Aubert, 1970, *Diphyus restitutor* (Wesmael 1859), *Ichneumon freyi* Kriechbaumer, 1880, *Javra opaca* (Thomson, 1883), *Lissonota pleuralis* Brischke, 1880, *Meloboris collector* (Thunberg, 1824), *Micromonodon tener* (Kriechbaumer, 1893), *Perilissus holmgreni* Habermehl, 1925, *Piogaster pillosator* (Aubert, 1958), *Spilothyrateles illuminatorius* (Gravenhorst, 1820) et *Vulgichneumon trifarius* (Berthoumieu, 1892), nous fournissons une description et une discussion plus approfondies ainsi que des photos. De nouvelles relations parasites/hôtes sont mentionnées pour *Acrodactyla degener* (Haliday, 1839), *Heterischnus debilis* (Gravenhorst, 1829) et *Nippocryptus vittatorius* (Jurine, 1807).

Une annexe présente au lecteur un aperçu des "Guêpes de Darwin" rapportées comme nouvelles depuis 2005, montrant ainsi le chemin vers de nouvelles listes d'espèces.

Introduction

The aim of this paper is providing a firm base for future ichneumonid research in the Low Countries. As an introduction we make a short sketch of the history of ichneumonid research in both Belgium and the Netherlands. Strengths and weaknesses are identified, and we try to explain how some of our collections grew and some of our knowledge gaps (species-wise) were filled.

However, the main part of this study consists of summing up more than two hundred species previously unreported. It should indeed be read as a compilation, and the product of many observers linked to many projects and localities. Provenance is more profoundly discussed in the "Material and methods" section, where we also discuss the integration of species based on photographic evidence. In this context one aspect that is crucial for this paper should already be mentioned, namely the advent of citizen science portals (*in casu*: waarnemingen.be and waarneming.nl) in the last decade. Its vast expanse led to an information gap between 'the entomological world', writing more technical in their own journals; and 'the greater public', taking pictures as a hobby and posting them on open platforms.

One example is the most reported ichneumonid species *Ichneumon xanthorius* Förster, 1771 with 554 unique records for 2020 in Belgium and 900 in the Netherlands (numbers generated on 13/04/2021). Countrywide this is the highest density of data on Ichneumonidae in the world. Indeed, migratory or imported species are reported faster on these portals, with more localities, and often with some kind of evidence. As a consequence, many of the ‘first reported’ species already have many records on the citizen science portals (for example *Aritranis director* (Thunberg, 1824) or *Echthrus reluctator* (Linnaeus, 1758) both with more than hundred records), while not being reported officially in entomological journals. This study functions as a bridge to close this gap and provides researchers with a more complete view on the present biodiversity, which gives them some space to focus on historical collections and even explore the option to say something about trends. In order to maximize results, the first author validated over 75.000 records of Ichneumonidae on the abovementioned citizen science portals.

Furthermore, we also take a closer look at some projects and areas where several new Ichneumonidae were recorded for Belgium or the Netherlands. If possible, figures are provided, especially for some rarer species with little to no images available worldwide. Lastly, two tables are added: Table 1, summarizing findings between 2005 and 2020 (findings from 2021 have not been included in this publication) and Table 2 with reported parasite/host relations. This is a first step for an updated checklist for Belgium, which was written in 2005, and the establishment of an updated checklist for the Netherlands.

Table 1. Ichneumonidae species first reported since 2005 in Belgium and the Netherlands. New = species’ presence has been reported in a publication since 2005. New* = species’ presence is reported in this publication. Unreported = species’ presence has not yet been reported in a publication. Confirmed = species’ presence has been confirmed and reported since 2005. Unconfirmed = species’ presence has not been confirmed and reported since 2005. Species reported since 2005 (the entire appendix): 290 (Belgium: 166; the Netherlands: 186). Species reported in our publication: 205 (Belgium: 110; the Netherlands: 138).

Record	Status BE	Status NL	Source
ACAENITINAE			
<i>Coleocentrus soleatus</i> (Gravenhorst, 1829)	New*	New*	
ADELOGNATHINAE			
<i>Adelognathus nigriceps</i> Thomson, 1888	Unreported	New*	
<i>Adelognathus pusillus</i> Holmgren, 1857	New*	New*	
ALOMYINAE			
<i>Alomya punctulatae</i> (Schellenberg, 1802)	Unreported	New	MOL, 2020
ANOMALONINAE			
GRAVENHORSTIINI			
<i>Aphanistes bellicosus</i> (Wesmael, 1849)	Confirmed	New*	
<i>Barylypa propugnator</i> (Förster, 1855)	Confirmed	New*	
<i>Barylypa uniguttata</i> (Gravenhorst, 1829)	Confirmed	New*	
<i>Erigorgus melanops</i> (Gravenhorst, 1829)	Confirmed	New*	
<i>Erigorgus procerus</i> (Gravenhorst, 1829)	New*	New*	
<i>Parania geniculata</i> (Holmgren, 1857)	New*	Unconfirmed	
BANCHINAE			
ATROPHINI			
<i>Alloplasta plantaria</i> (Gravenhorst, 1829)	Confirmed	New*	

Record	Status BE	Status NL	Source
<i>Lissonota admonternsis</i> Strobl, 1902	New*	Unreported	
<i>Lissonota bivittata</i> (Gravenhorst, 1829)	New	Unreported	LIBERT, 2019a
<i>Lissonota digestor</i> (Thunberg, 1822)	New	Unreported	LIBERT, 2019a
<i>Lissonota dormitor</i> Brock, 2017	New	Unreported	LIBERT, 2019a
<i>Lissonota luffiator</i> Aubert, 1969	New*	New*	
<i>Lissonota pleuralis</i> Brischke, 1880	New*	Unreported	
<i>Lissonota rufipes</i> Brischke, 1865	New	Unreported	LIBERT, 2019a
<i>Lissonota semirufa</i> (Desvignes, 1856)	New*	New*	
<i>Lissonota stigmator</i> Aubert, 1972	New	Unreported	LIBERT, 2019a
<i>Lissonota subaciculata</i> Bridgman, 1886	Unreported	New*	
<i>Lissonota tenerrima</i> Thomson, 1877	New	Unreported	LIBERT, 2019a
<i>Lissonota transversostriata</i> (Smits van Burgst, 1921)	New	Unreported	LIBERT, 2019a
BANCHINI			
<i>Exetastes calobatus</i> Gravenhorst, 1829	New	Unreported	LIBERT, 2019a
<i>Exetastes maurus</i> Desvignes, 1856	Unreported	New	MOL, 2020
<i>Rynchobanchus flavopictus</i> Heinrich, 1937	New	New*	LIBERT, 2019a
GLYPTINI			
<i>Glypta caudata</i> Thomson, 1889	Unreported	New*	
<i>Teleutaea striata</i> (Gravenhorst, 1829)	New	Confirmed	LIBERT, 2019a
BRACHYCYRTINAE			
<i>Brachycyrtus ornatus</i> Kriechbaumer, 1880	New	New	VERHEYDE & SOORS, 2018; MOL, 2020
CAMPOPLEGINAE			
<i>Bathyplectes curculionis</i> (Thomson, 1887)	Unreported	New*	
<i>Bathyplectes tibiator</i> (Gravenhorst, 1820)	Unconfirmed	New*	
<i>Campoletis ensator</i> (Gravenhorst, 1829)	Unconfirmed	New*	
<i>Casinarina albipalpis</i> (Gravenhorst, 1829)	Unreported	New*	
<i>Cymodusa declinator</i> (Gravenhorst, 1829)	Unreported	New*	
<i>Diadegma cinnabaritor</i> Aubert, 1970	Unreported	New*	
<i>Dusona bicoloripes</i> (Ashmaed, 1906)	New*	New*	
<i>Dusona genalis</i> (Thomson, 1887)	New*	Unreported	
<i>Dusona minor</i> (Provancher, 1879)	Unreported	New*	
<i>Dusona peregrina</i> (Wollaston, 1858)	Unconfirmed	New	MOL, 2020
<i>Dusona recta</i> (Thomson, 1887)	New*	Unreported	
<i>Dusona thomsoni</i> Hinz, 1963	Unreported	New*	
<i>Eriborus obscuripes</i> Horstmann, 1987	New*	Unreported	
<i>Eriborus perfidus</i> (Gravenhorst, 1829)	Unreported	New*	

Record	Status BE	Status NL	Source
<i>Gonotypus melanostoma</i> (Thomson, 1887)	New*	New*	
<i>Lathrostizus macrostoma</i> (Thomson, 1887)	New*	New*	
<i>Meloboris alternans</i> (Gravenhorst, 1829)	Unconfirmed	New*	
<i>Meloboris collector</i> (Thunberg, 1824)	Confirmed	New*	
<i>Olesicampe alboplica</i> (Thomson, 1887)	Unconfirmed	New*	
<i>Olesicampe binotata</i> (Thomson, 1887)	Unconfirmed	New*	
<i>Olesicampe fulviventris</i> (Gmelin, 1790)	Unconfirmed	New*	
<i>Olesicampe heterogaster</i> (Thomson, 1887)	Unreported	New*	
<i>Olesicampe macellator</i> (Thunberg, 1822)	New*	Unreported	
<i>Olesicampe patellana</i> (Thomson, 1887)	Unconfirmed	New*	
<i>Olesicampe sternella</i> (Thomson, 1887)	New*	Unreported	
<i>Phobocampe confusa</i> (Thomson, 1887)	Unconfirmed	New*	
<i>Phobocampe horstmanni</i> Sedivy, 2004	New*	Unreported	
<i>Rhimphoctona melanura</i> (Holmgren, 1860)	Unconfirmed	New*	
<i>Tranosema hyperboreum</i> (Holmgren, 1860)	Unreported	New*	
<i>Venturia canescens</i> (Gravenhorst, 1829)	Confirmed	New*	
CREMASTINAE			
<i>Cremastus lineatus</i> Gravenhorst, 1829	New*	Unreported	
<i>Cremastus pungens</i> (Gravenhorst, 1829)	New*	Confirmed	
CRYPTINAE			
APTESINI			
<i>Aptesis flagitator</i> (Rossi, 1794)	New*	New*	
<i>Cratocryptus subpetiolatus</i> (Gravenhorst, 1829)	New	Unreported	LIBERT, 2010
<i>Cubocephalus annularis</i> (Thomson, 1873)	New	Unreported	LIBERT, 2010
<i>Cubocephalus sternocerus</i> (Thomson, 1873)	New*	New*	
<i>Javra opaca</i> (Thomson, 1873)	Unreported	New*	
<i>Rhembobius perscrutator</i> (Thunberg, 1824)	New	New*	LIBERT, 2010
CRYPTINI			
<i>Acroricnus stylator</i> (Thunberg, 1824)	New*	Confirmed	
<i>Agrothereutes aterrimus</i> (Gravenhorst, 1829)	New*	New*	
<i>Agrothereutes leucorhaeus</i> (Donovan, 1810)	Confirmed	New*	LIBERT, 2010
<i>Apsilops aquaticus</i> (Thomson, 1874)	Unreported	New*	
<i>Aritranis director</i> (Thunberg, 1824)	New	New*	LIBERT, 2010
<i>Cryptus armator</i> Fabricius, 1804	New	Confirmed	LIBERT, 2010
<i>Cryptus titubator</i> (Thunberg, 1822)	Confirmed	New*	
<i>Cryptus tuberculatus</i> Gravenhorst, 1829	New*	Unreported	
<i>Echthrus reluctator</i> (Linnaeus, 1758)	New	New*	LIBERT, 2010
<i>Gambrus tricolor</i> (Gravenhorst, 1829)	New	New*	LIBERT, 2010

Record	Status BE	Status NL	Source
<i>Giraudia gyratoria</i> (Thunberg, 1822)	New	Unreported	LIBERT, 2010
<i>Helcostizus restaurator</i> (Fabricius, 1775)	Confirmed	New*	
<i>Hidryta sordida</i> (Tschek, 1871)	New	Unreported	LIBERT, 2010
<i>Hoplocryptus bellosus</i> (Curtis, 1837)	Confirmed	New*	LIBERT, 2010
<i>Hoplocryptus confector</i> (Gravenhorst, 1829)	New	New*	LIBERT, 2010
<i>Hoplocryptus melanocephalus</i> (Gravenhorst, 1829)	Unconfirmed	New*	
<i>Ischnus agitator</i> (Gravenhorst, 1829)	New*	New*	
<i>Ischnus alternator</i> (Gravenhorst, 1829)	New*	Confirmed	
<i>Listrognathus compressicornis</i> (Gravenhorst, 1829)	New*	New*	
<i>Listrognathus mactator</i> (Thunberg, 1824)	Unreported	New*	
<i>Mesostenus funebris</i> Gravenhorst, 1829	New	Unreported	LIBERT, 2010
<i>Nematopodius debilis</i> (Ratzeburg, 1852)	Confirmed	New*	LIBERT, 2010
<i>Nematopodius formosus</i> Gravenhorst, 1829	New*	Unreported	
<i>Nippocryptus vittatorius</i> (Jurine, 1807)	New*	New*	
<i>Schreineria populnea</i> (Giraud, 1872)	New	Unreported	LIBERT, 2010
<i>Trychosis neglecta</i> (Tschek, 1871)	New	Unreported	LIBERT, 2010
<i>Trychosis tristator</i> (Tschek, 1871)	New	Confirmed	LIBERT, 2010
<i>Xylophrurus lancifer</i> (Gravenhorst, 1829)	New	Unconfirmed	LIBERT, 2010
CTENOPELMATINAE			
EURYPROCTINI			
<i>Euryproctus bivinctus</i> Holmgren, 1857	Unconfirmed	New	MOL, 2020
<i>Euryproctus regenerator</i> (Fabricius, 1804)	Unreported	New	MOL, 2020
<i>Gunomeria macrodactylus</i> (Holmgren, 1856)	Unreported	New*	
<i>Hadrodactylus gracilis</i> (Stephens, 1835)	Unreported	New	MOL, 2020
<i>Hadrodactylus nigrifemur</i> Thomson, 1883	New*	Confirmed	
MESOLEIINI			
<i>Alexeter gracilentus</i> (Holmgren, 1857)	New*	Unconfirmed	
PERILISSINI			
<i>Absyrtus vernalis</i> Bauer, 1961	New*	New	MOL, 2020
<i>Bremiella pulchella</i> Kriechbaumer, 1890	New	Unreported	LIBERT, 2020
<i>Lathiponus semiluctuosus</i> (Vollenhoven, 1878)	New	Unconfirmed	LIBERT, 2020
<i>Lathrolestes clypeatus</i> (Zetterstedt, 1838)	New*	Unconfirmed	
<i>Lathrolestes ensator</i> (Brauns, 1898)	New*	Unconfirmed	
<i>Lathrolestes moravicus</i> (Habermehl, 1923)	Unreported	New	ZWAKHALS & BLOMMERS, 2020
<i>Lathrolestes pleuralis</i> (Thomson, 1883)	Unreported	New	ZWAKHALS & BLOMMERS, 2020

Record	Status BE	Status NL	Source
<i>Perilissus albitarsis</i> Thomson, 1883	New*	New	Op.cit.; MOL, 2020
<i>Perilissus dissimilator</i> Aubert, 1987	Unreported	New	ZWAKHALS & BLOMMERS, 2020
<i>Perilissus holmgreni</i> Habermehl, 1925	New*	Unreported	
<i>Priopoda apicaria</i> (Geoffroy, 1785)	New*	New	MOL, 2020
<i>Trematopygodes auriculator</i> Hinz, 1980	Unreported	New	ZWAKHALS & BLOMMERS, 2020
PIONINI			
<i>Glyptorhaestus periclistor</i> Hinz, 1975	Unreported	New	MOL, 2020
<i>Lethades laricis</i> Hinz, 1976	New*	Unreported	
CYLLOCERIINAE			
<i>Allomacrus arcticus</i> (Holmgren, 1880)	Unreported	New*	
<i>Cylloceria caligata</i> (Gravenhorst, 1829)	New*	Confirmed	
<i>Cylloceria sylvestris</i> (Gravenhorst, 1829)	Unreported	New*	
DIACRITINAE			
<i>Diacritus aciculatus</i> (Vollenhoven, 1878)	New	Unconfirmed	LIBERT, 2019b
EUCEROTINAE			
<i>Euceros albitarsus</i> Curtis, 1837	New	Confirmed	LIBERT & HENRARD, 2012
<i>Euceros superbus</i> Kriechbaumer, 1888	New	Unreported	LIBERT & HENRARD, 2012
ICHNEUMONINAE			
HERESIARCHINI			
<i>Coelichneumon erythromerus</i> (Rudow, 1888)	Confirmed	New*	RIEDEL, 2012
<i>Coelichneumon opulentus</i> (Taschenberg, 1871)	Unreported	New*	
ICHNEUMONINI			
<i>Cratichneumon armillatops</i> Rasnitsyn, 1981	New*	Unconfirmed	
<i>Cratichneumon sexarmillatus</i> (Kriechbaumer, 1891)	New*	Unconfirmed	
<i>Ctenochares bicolorus</i> (Linnaeus, 1767)	New	New	VERHEYDE, 2019
<i>Diphyus restitutor</i> (Wesmael, 1859)	Unconfirmed	New*	
<i>Exephanes riesei</i> (Habermehl, 1916)	New*	Confirmed	
<i>Hoplismenus terrificus</i> Wesmael, 1848	Confirmed	New*	
<i>Ichneumon freyi</i> Kriechbaumer, 1880	New*	Unreported	
<i>Orgichneumon calcatorius</i> (Thunberg, 1822)	Unreported	New*	
<i>Spilothyrateles illuminatorius</i> (Gravenhorst, 1820)	Confirmed	New*	
<i>Vulgichneumon trifarius</i> (Berthoumieu, 1892)	New*	New*	

Record	Status BE	Status NL	Source
LISTRODROMINI			
<i>Anisobas rebellis</i> Wesmael, 1845	New*	New*	
PHAEOGENINI			
<i>Dicaelotus punctiventris</i> (Thomson, 1891)	Unreported	New	MOL, 2020
<i>Heterischnus debilis</i> (Gravenhorst, 1829)	New*	Unreported	
PLATYLABINI			
<i>Ectopoides brevicornis</i> (Kriechbaumer, 1890)	Unreported	New*	
METOPHINAE			
<i>Carria paradoxa</i> Schmiedeknecht, 1924	Unreported	New*	
OPHIONINAE			
<i>Enicospilus adustus</i> (Haller, 1835)	Unreported	New*	
<i>Enicospilus cerebrator</i> Aubert, 1966	New	Unreported	VERHEYDE <i>et al.</i> , 2020b
<i>Enicospilus inflexus</i> (Ratzeburg, 1844)	New*	New*	
<i>Enicospilus myricae</i> Broad & Shaw, 2016	New	Unreported	VERHEYDE <i>et al.</i> , 2020b
<i>Eremotylus marginatus</i> (Jurine, 1807)	New*	Confirmed	
<i>Ophion brocki</i> Johansson, 2019	Unreported	New*	
<i>Ophion confusus</i> Johansson, 2019	Unreported	New*	
<i>Ophion crassicornis</i> Brock, 1982	New*	New*	
<i>Ophion inclinans</i> Johansson, 2019	New*	Unreported	
<i>Ophion ocellaris</i> Ulbricht, 1926	New*	Confirmed	
<i>Ophion slaviceki</i> Kriechbaumer, 1892	New*	New*	
<i>Ophion splendens</i> Johansson, 2019	New*	Unreported	
<i>Ophion variegatus</i> Rudow, 1883	New*	New*	
ORTHOCENTRINAE			
<i>Aniseres pallipes</i> Förster, 1871	Unreported	New*	
<i>Plectiscidea communis</i> (Förster, 1871)	Unreported	New*	
<i>Proclitus attentus</i> Förster, 1871	New*	Unconfirmed	
<i>Stenomacrus celer</i> (Holmgren, 1858)	Unreported	New*	
<i>Stenomacrus meijeri</i> Woelke, Pham & Humala, 2020	Unreported	New	WOELKE <i>et al.</i> , 2020
<i>Stenomacrus vafer</i> (Holmgren, 1858)	Unreported	New*	
PHYGADEUONTINAE			
<i>Aclastus pilosus</i> Horstmann, 1980	New	Unreported	LIBERT, 2010
<i>Aclastus solutus</i> (Thomson, 1884)	New	Confirmed	LIBERT, 2010
<i>Acrolyta marginata</i> (Bridgman, 1883)	New*	Unreported	
<i>Acrolyta nens</i> (Hartig, 1838)	New	New*	LIBERT, 2010
<i>Arotrephes perfusor</i> (Gravenhorst, 1829)	New*	New*	

Record	Status BE	Status NL	Source
<i>Atractodes angustipennis</i> Förster, 1876	Unconfirmed	New*	
<i>Atractodes arator</i> Haliday, 1838	New*	New*	
<i>Atractodes pusillus</i> Förster, 1876	Unreported	New*	
<i>Bathythrix aerea</i> (Gravenhorst, 1829)	New	Unconfirmed	LIBERT, 2010
<i>Bathythrix claviger</i> (Taschenberg, 1865)	New*	Confirmed	
<i>Bathythrix collaris</i> (Thomson, 1896)	New*	Unreported	
<i>Bathythrix linearis</i> (Gravenhorst, 1829)	New	Unreported	LIBERT, 2010
<i>Bathythrix spheninus</i> (Gravenhorst, 1829)	New*	Unreported	
<i>Charitopes leucobasis</i> Townes, 1983	Unreported	New*	
<i>Chirotica decorator</i> (Villers, 1789)	Unreported	New*	
<i>Dichrogaster liostylus</i> (Thomson, 1885)	New	Unconfirmed	LIBERT, 2010
<i>Dichrogaster modesta</i> (Gravenhorst, 1829)	Unreported	New*	
<i>Encrateola laevigata</i> (Ratzeburg, 1848)	New*	Confirmed	
<i>Endasys alutaceus</i> (Habermehl, 1812)	New	Unreported	LIBERT, 2010
<i>Endasys analis</i> (Thomson, 1883)	New*	Unreported	
<i>Endasys plagiator</i> (Gravenhorst, 1829)	New	Unconfirmed	LIBERT, 2010
<i>Endasys talitzkii</i> (Telenga, 1961)	New	Unreported	LIBERT, 2010
<i>Ethelurgus balearicus</i> (Kriechbaumer, 1894)	New*	Unreported	
<i>Gelis albipalpus</i> (Thomson, 1884)	Unreported	New*	
<i>Gelis apterus</i> (Pontoppidan, 1763)	Unreported	New*	
<i>Gelis festinans</i> (Fabricius, 1798)	New*	Confirmed	
<i>Gelis intermedius</i> (Förster, 1850)	New	Unreported	LIBERT, 2010
<i>Gelis longicauda</i> (Thomson, 1884)	New*	Confirmed	
<i>Gelis mangeri</i> (Gravenhorst, 1815)	New*	Confirmed	
<i>Gelis micrurus</i> (Förster, 1850)	Unreported	New*	
<i>Gelis spurius</i> (Förster, 1850)	New	Confirmed	LIBERT, 2010
<i>Gnotus tenuipes</i> (Gravenhorst, 1829)	Unconfirmed	New*	
<i>Lochetica westoni</i> (Bridgman, 1880)	New*	New*	
<i>Mastrulus marshalli</i> (Bridgman & Fitch, 1882)	New	Unreported	LIBERT, 2010
<i>Medophron recurvus</i> (Thomson, 1884)	Unconfirmed	New*	
<i>Mesoleptus scrutator</i> (Haliday, 1838)	New	Unconfirmed	LIBERT, 2010
<i>Mesoleptus vigilatorius</i> (Förster, 1876)	New*	New*	
<i>Micromonodon tener</i> (Kriechbaumer, 1893)	New*	New*	
<i>Obisiphaga stenoptera</i> (Marshall, 1868)	New*	Confirmed	
<i>Orthizema amabile</i> (Hedwig, 1939)	Unreported	New*	
<i>Orthizema hadrocerum</i> (Thomson, 1884)	New*	New*	
<i>Orthizema nigriventre</i> Horstmann, 1992	Unreported	New*	
<i>Phygadeuon dromicus</i> (Gravenhorst, 1815)	Unreported	New*	

Record	Status BE	Status NL	Source
<i>Phygadeuon paradoxus</i> (Bridgman, 1889)	New*	Unreported	
<i>Polyaulon paradoxus</i> (Zetterstedt, 1838)	New*	Confirmed	
<i>Pygocryptus brevicornis</i> (Brischke, 1881)	New	Unreported	LIBERT, 2010
<i>Thaumatogelis audax</i> (Olivier, 1792)	New*	New*	
<i>Thaumatogelis gallicus</i> (Seyrig, 1928)	New	New*	LIBERT, 2010
<i>Theroscopus fasciatulus</i> Horstmann, 1979	New	Unreported	LIBERT, 2010
<i>Theroscopus melanopygus</i> (Gravenhorst, 1829)	New	Unconfirmed	LIBERT, 2010
<i>Theroscopus ochrogaster</i> (Thomson, 1888)	Unreported	New*	
<i>Theroscopus pullator</i> (Gravenhorst, 1829)	Unreported	New*	
<i>Theroscopus trifasciatus</i> Förster, 1850	New*	New*	
<i>Tropistes nitidipennis</i> Gravenhorst, 1829	New*	Unreported	
PIMPLINAE			
DELOMERISTINI			
<i>Pseudorhyssa alpestris</i> (Holmgren, 1860)	New*	New*	
<i>Pseudorhyssa nigricornis</i> (Ratzeburg, 1852)	New*	New*	
EPHIALTINI			
<i>Acrodactyla degener</i> (Haliday, 1839)	New*	New*	
<i>Acrodactyla quadrisculpta</i> (Gravenhorst, 1820)	Confirmed	New	BELGERS <i>et al.</i> , 2013
<i>Dolichomitus messor</i> (Gravenhorst, 1829)	New*	New*	
<i>Dolichomitus quercicolus</i> Zwakhals, 2010	New	New	ZWAKHALS, 2010
<i>Exeristes roborator</i> (Fabricius, 1793)	Confirmed	New*	
<i>Iania pictifrons</i> (Thomson, 1877)	Unreported	New*	
<i>Piogaster pilosator</i> (Aubert, 1958)	New*	Unreported	
<i>Polysphincta boops</i> (Tschek, 1869)	New*	New	MOL, 2020
<i>Polysphincta longa</i> Kasparyan, 1976	New*	Unreported	
<i>Polysphincta rufipes</i> Gravenhorst, 1829	New*	New*	
<i>Polysphincta tuberosa</i> Gravenhorst, 1829	New*	New*	
<i>Scambus puniceus</i> (Schmiedeknecht, 1914)	New*	Unreported	
<i>Schizopyga circulator</i> (Panzer, 1800)	New*	Confirmed	
<i>Schizopyga flavifrons</i> Holmgren, 1856	New*	Unreported	
<i>Schizopyga frigida</i> Cresson, 1870	New*	New*	
<i>Sinarachna nigricornis</i> (Holmgren, 1860)	Unconfirmed	New*	
<i>Tromatobia variabilis</i> (Holmgren, 1856)	New*	Unreported	
PIMPLINI			
<i>Pimpla processioneae</i> Ratzeburg, 1849	Unreported	New	ZWAKHALS, 2005
THERONIINI			
<i>Theronia laevigata</i> (Tschek, 1869)	Unconfirmed	New*	

Record	Status BE	Status NL	Source
POEMENIINAE			
POEMENIINI			
<i>Neoxorides nitens</i> (Gravenhorst, 1829)	Confirmed	New*	
<i>Podoschistus scutellaris</i> (Desvignes, 1856)	Confirmed	New*	
RHYSSINAE			
<i>Megarhyssa perlata</i> (Christ, 1791)	Confirmed	New	MOL & ZWAKHALS, 2017
<i>Megarhyssa rixator</i> (Schellenberg, 1802)	New*	New*	
<i>Megarhyssa superba</i> (Schränk, 1781)	Confirmed	New	MOL & ZWAKHALS, 2017
<i>Megarhyssa vagatoria</i> (Fabricius, 1793)	New*	New	ZWAKHALS & SMITS 2012
STILBOPINAE			
<i>Stilbops ruficornis</i> (Gravenhorst, 1829)	Confirmed	New*	
TERSILOCHINAE			
<i>Allophroides platyurus</i> (Strobl, 1904)	Unreported	New	KHALAIM, 2016
<i>Aneuclis brevicauda</i> (Thomson, 1889)	New*	Unreported	
<i>Barycnemis alpina</i> (Strobl, 1901)	Unreported	New	MOL, 2020
<i>Barycnemis angustipennis</i> (Holmgren, 1860)	New*	Unconfirmed	
<i>Barycnemis bellator</i> (Müller, 1776)	New*	Confirmed	KHALAIM, 2016
<i>Barycnemis punctifrons</i> Horstmann, 1981	New*	Unreported	
<i>Diaparsis carinifer</i> (Thomson, 1889)	Unreported	New	KHALAIM, 2016
<i>Heterocola nigrotibialis</i> Horstmann et Kolarov, 1988	Unreported	New	KHALAIM, 2016
<i>Phradis interstitialis</i> (Thomson, 1889)	Unreported	New	KHALAIM, 2016
<i>Phradis nigrifulus</i> (Gravenhorst, 1829)	Unreported	New*	
<i>Phrudus monilicornis</i> Bridgman, 1886	New	Unconfirmed	LIBERT, 2019b
<i>Probles caudiculatus</i> Khalaim, 2007	Unreported	New	KHALAIM, 2016
<i>Probles crassipes</i> (Thomson, 1889)	Unconfirmed	New	KHALAIM, 2016
<i>Probles erythrostomus</i> (Gravenhorst, 1829)	Confirmed	New	Op.cit. 2016; MOL, 2020
<i>Probles marginatus</i> (Bridgman, 1986)	Unreported	New	KHALAIM, 2016
<i>Probles microcephalus</i> (Gravenhorst, 1829)	Unreported	New	KHALAIM, 2016
<i>Probles neoversutus</i> (Horstmann, 1967)	Unreported	New	Op.cit. 2016; MOL, 2020
<i>Probles nigriventris</i> Horstmann, 1971	Unreported	New	MOL, 2020
<i>Probles xanthopus</i> (Holmgren, 1860)	Unreported	New	MOL, 2020
<i>Sathropterus pumilus</i> (Holmgren, 1860)	New*	New	KHALAIM, 2016
<i>Tersilochus caudatus</i> (Holmgren, 1860)	New	New*	KHALAIM, 2016
<i>Tersilochus cognatus</i> (Holmgren, 1860)	New*	Confirmed	

Record	Status BE	Status NL	Source
<i>Tersilochus fenestralis</i> (Thomson, 1889)	Unreported	New	KHALAIM, 2016
<i>Tersilochus lapponicus</i> Hellen, 1958	Unreported	New*	
<i>Tersilochus liopleuris</i> (Thomson, 1889)	Unreported	New	KHALAIM, 2016
<i>Tersilochus longicaudatus</i> Horstmann, 1971	Unconfirmed	New	KHALAIM, 2016
<i>Tersilochus obscurator</i> (Aubert, 1959)	Unreported	New*	
<i>Tersilochus striola</i> (Thomson, 1889)	Unconfirmed	New	KHALAIM, 2016
<i>Tersilochus thyridialis</i> Horstmann, 1971	Unreported	New	KHALAIM, 2016
TRYPHONINAE			
PHYTODIETINI			
<i>Netelia fuscicarpus</i> (Kokujev, 1899)	New*	Unreported	
<i>Netelia millieratae</i> (Kriechbaumer, 1897)	New	Unreported	VERHEYDE <i>et al.</i> , 2020b
<i>Netelia thoracica</i> (Woldstedt, 1880)	Unreported	New*	
<i>Netelia vinulae</i> (Scopoli, 1763)	New*	Unconfirmed	
TRYPHONINI			
<i>Cosmoconus meridionator</i> Aubert, 1963	New*	New*	
<i>Cosmoconus nigriventris</i> Kasparyan, 1971	Unreported	New*	
<i>Cteniscus pedatorius</i> (Panzer, 1809)	New*	New*	
<i>Ctenochira genalis</i> (Thomson, 1883)	Unreported	New	MOL, 2020
<i>Dyspetes arrogator</i> Heinrich, 1949	New*	New	MOL, 2020
<i>Eridolius bimaculatus</i> (Holmgren, 1856)	New*	Unconfirmed	
<i>Erromenus analis</i> Brischke, 1871	Unreported	New*	
<i>Erromenus plebejus</i> (Woldstedt, 1878)	New*	Unreported	
<i>Exenterus tricolor</i> Roman, 1913	Unreported	New*	
<i>Exyston pratorum</i> (Woldstedt, 1874)	Confirmed	New*	
<i>Grypocentrus cinctellus</i> Ruthe, 1855	Unconfirmed	New	MOL, 2020
<i>Polyblastus macrocentrus</i> Thomson, 1888	Unreported	New*	
<i>Tryphon latrator</i> (Fabricius, 1781)	Confirmed	New*	
XORIDINAE			
<i>Odontocolon appendiculatum</i> (Gravenhorst, 1829)	Unreported	New	MOL, 2020
<i>Xorides alpestris</i> (Habermehl, 1903)	New*	New*	LIBERT & VERHEYDE, 2021
<i>Xorides brachylabis</i> (Kriechbaumer, 1889)	New*	New*	LIBERT & VERHEYDE, 2021
<i>Xorides csikii</i> (Clement, 1938)	New*	New*	
<i>Xorides sepulchralis</i> (Holmgren, 1860)	New*	New*	

Table 2. Trophic relations of Ichneumonidae species. * = relation new to science (based on YU *et al.*, 2016 and more recent literature); ** = not reared, field observation of parasitism; *** = combination of the above.

Ichneumonid	Host
<i>Acrodactyla degener</i> (Haliday, 1839)*	<i>Tenuiphantes flavipes</i> (Blackwall, 1854)
<i>Acrodactyla degener</i> (Haliday, 1839)	<i>Tenuiphantes tenuis</i> (Blackwall, 1852)
<i>Acroricnus stylator</i> (Thunberg, 1824)	<i>Eumenes</i> sp. and <i>Eumenes coarctatus</i> (Linnaeus, 1758)
<i>Agrothereutes leucorhaeus</i> (Donovan, 1810)	<i>Lasiocampa quercus</i> (Linnaeus, 1758)
<i>Barylypa propugnator</i> (Förster, 1855)**	<i>Tyria jacobaeae</i> (Linnaeus, 1758)
<i>Cteniscus pedatorius</i> (Panzer, 1809)	<i>Craesus septentrionalis</i> (Linnaeus, 1758)
<i>Gelis albipalpus</i> (Thomson, 1884)	<i>Bucculatrix (ulmella?)</i> (Zeller, 1848)
<i>Heterischnus debilis</i> (Gravenhorst, 1829)*	<i>Amblyptilia acanthadactyla</i> (Hübner, 1813)
<i>Nippocryptus vittatorius</i> (Jurine, 1807)***	<i>Taleporia tubulosa</i> (Retzius, 1783)
<i>Phobocampe confusa</i> (Thomson, 1887)	<i>Aglais io</i> (Linnaeus, 1758)
<i>Polysphincta boops</i> (Tschek, 1869)	<i>Araniella</i> spp.
<i>Polysphincta rufipes</i> Gravenhorst, 1829	<i>Larinioides scolopetarius</i> (Westring, 1851)
<i>Polysphincta tuberosa</i> Gravenhorst, 1829	<i>Araniella</i> spp.
<i>Sinarachna nigricornis</i> (Holmgren, 1860)	Araneidae
<i>Stilbops ruficornis</i> (Gravenhorst, 1829)**	<i>Nemophora metallica</i> (Poda, 1761)

Brief history of research on Ichneumonidae

As long as there has been human civilization, people have been wondering about nature and insects. Describing their behaviour and diversity more systematically is something we Europeans first connect to ancient Greek society. There is no doubt there were important Asian traditions as well. However, those traditions have not survived and/or are, even at this stage, difficult to access from other parts of the world. Some glimpses are the later examples in older Chinese literature (10th century) on biological control with insects (LIU, 1939) and there is a famous example for forensic entomology, which has a strong Chinese tradition starting from the 13th century onwards (TZ'U & MC KNIGHT, 1981).

However, in the 4th century BC Aristotle was the first to coin the term 'Ichneumon' in his *Ton peri ta zoia historion* or *Historia animalium* (VIII: 609). More specifically, he mentions it in the context of war: “καὶ ἰχνεύμων καὶ φάλαγξ· θηρεύει γὰρ τοὺς φάλαγγας ὁ ἰχνεύμων” - “At war are [...] And ichneumon and venom-spider; for the ichneumon hunts the spiders.” (translation from Peck; Loeb-edition). While it is clear Aristotle seems to have used the expression for other hymenopterans, possibly Pompilidae, the word was recuperated by Early Modern scholars. Finally, it was the French entomologist Latreille who fixed the term in 1802 in a volume of his *Histoire naturelle générale et particulière des crustacés et des insectes*. Ironically, it was also Aristotle's idea of *Generatio Spontaneum* (or the Christian recuperation of this idea) that hindered any conceptualizations of parasitism as a biological phenomenon (VIDAL, 2005).

At the end of the 17th century, attention for parasitoids increased in Europe. Not only was field equipment now largely available (HÜNNINGER, 2018), we also see an increase in literature and art on the topic. The Netherlands and especially the area of Amsterdam played a pivotal role with many important scholars (Blankaerts, Goedaert, Swammerdam, Mouffet, Jonston and Van Leeuwenhoek) and many cabinets of natural history (VIDAL, 2005).

The great taxonomists of the 18th century did definitively pave the way for the following generations and established the main line of thinking for many decades thereafter. They also introduced professionalism to the discipline by making sound rules and handbooks for naturalists, with information on collecting, storing, and preserving. The paradigmatic changes in perception, systematization and classification of insects were brought about by the advancement of these Linnaean systematics in zoology and botany around 1750. Another important tendency that influenced the interest in insects from the second half of the 18th century onwards, were the expanding numbers of collected specimens in natural history or *curiosa* cabinets, compiled through local and global markets or expeditions, which of course can be linked to (pre-)colonialism (HÜNNINGER, 2018).

Although at least one part of the public used to be a ‘gentlemen’s’ public, mainly interested in collecting insects during leisure, the professional public kept growing from the 19th century onwards. An important factor at play here was the rise of the nation-state, and the professionalization of existing institutions (universities, museums, associations...).

Taxonomic work nowadays has been thoroughly internationalised. Otto Schmiedeknecht was the last one to deliver a complete overview on all subfamilies in his *Opuscula Ichneumonologica* (1902–1904). Around 1970, the American Henry Townes made an important introduction to the world genera, and in 2018 an updated general introduction to the subfamilies of Ichneumonidae was published by Gavin Broad, Mark Shaw and Michael Fitton. However, generally speaking, recent keys and revisions in Ichneumonidae became highly specialized from the second half of the 20th century onwards. Therefore, researchers often chose to focus on certain subfamilies, for example Klaus Horstmann and Martin Schwarz on Campopleginae, Cryptinae and Phygadeuontinae, Dmitriy Kasparyan on Tryphoninae and Ctenopelmatinae, Jacques Aubert on Banchinae, etc. This tendency is still there today, and sometimes leads to practical difficulties, for example in projects which require holistic approaches. Keys nowadays ideally consist of pictures in high resolution and if possible, with molecular evidence being integrated (for example, JOHANSSON & CEDERBERG, 2019).

The first generation of entomologists in Belgium is represented by Pierre Léonard Vander Linden (1797–1831), who was mainly specialised in Crabronidae and Sphecidae, and died at a young age, and Constantin Wesmael (1798–1872), who did extensive work on Ichneumonidae and Braconidae. Surprisingly, this was not on a professional basis. Wesmael learned about the natural sciences through self-study and was a teacher in several secondary schools. After writing several monographs and describing many genera and species new to science, his collection was donated to the Royal Belgian Institute of Natural Sciences in Brussels (PAULY, 2001). Wesmael’s work, as mentioned above, should be seen in a broader international context where describing species was the prime motivation of many researchers, influenced by Linnaean systematics. Contemporaries (some of them correspondents) were Bondroit, Dahlbom, Gmelin, Fabricius, Gravenhorst, Kohl, Latreille (see above), Lepeletier, Mayr, Nylander, Panzer, Schiødte and Westwood (REEMER *et al.*, 2004). From the second half of the 19th century onwards, and possibly under influence of the ideas of Charles Darwin, a (slow) shift was induced towards the biology and ecology of the insects.

Charles Darwin himself has an important connection with parasitic wasps. In a famous letter (no. 2814, to Asa Gray) he says: “I cannot persuade myself that a beneficent and omnipotent

God would have designedly created the Ichneumonidae with the express intention of their feeding within the living bodies of caterpillars.” This has led modern scholars to use the term “Darwin’ wasps” for Ichneumonidae (see BRAECKMAN, 2001; KLOPFSTEIN *et al.*, 2019).

While research in Belgium had been mainly rooted in (descriptive) taxonomy and began rather early, researchers in Germany and the Netherlands have a larger tradition of this ‘newer’ type of research. In 1844, the incidence of hyperparasitism was discovered by the German entomologist Ratzeburg (VIDAL, 2005). S.C. Snellen van Vollenhoven, curator of the Rijksmuseum van Natuurlijke Historie in Leiden on the other hand, is often cited as the prime Dutch researcher of insect taxonomy. In 1858, he made a checklist of Hymenoptera with Dutch names. In his work there is quite a lot of attention already to the biology and ecology of wasps. His main work, therefore, is not just entitled ‘Insects’, but ‘Insects: their metamorphosis and behaviour’ (*De insecten: hunne gedaantewisseling en levenswijze*). It is also one of the first works written in Dutch, for a somewhat larger public. His major work was the *Pinacographia*, which partly appeared between 1875 and 1880 and had the aim of providing illustrations of more than thousand species to the readers. It was never finished unfortunately (KRIKKEN *et al.*, 1981).

In the second part of the 19th century and the first part of 20th century, interest in Ichneumonidae decreased in Belgium. Jules Tosquinet (1824–1902) donated a large collection of ichneumonids to the natural history museum in Brussels, although he did not describe any species. He had a function in the health service of the army and was thus able to collect insects from many different locations. Other researchers also made smaller donations (PAULY, 2001).

Another checklist for the Netherlands appeared around the First World War, written by Smits van Burgst (SMITS VAN BURGST, 1911). He often reared parasitic wasps (a tradition that is still much more common in the Netherlands than in Belgium) and also studied the economic importance (often biological control) of ichneumonids, in close collaboration with the research centres near Wageningen (SMITS VAN BURGST, 1918). A third checklist for Ichneumonidae was made by Herman Teunissen (1914-1992) in 1948 and 1972 (TEUNISSEN, 1948 & 1972). He was specialised on Campopleginae, Ctenopelmatinae and Tryphoninae, not coincidentally the more common groups in relation to rearing (VAN ACHTERBERG, 1992b).

Roughly stated, from the 1960s onwards, tendencies of the preceding decades accumulated in different forms of entomology: an academic one focusing on biochemical and genetic processes, sometimes with a connection to agriculture and biocontrol, and a non-academic one focusing on taxonomy and field biology. Sometimes the two were united, especially for the people working professionally in Wageningen (for example K.W.R. Zwart and G. Van Rossem, who made several important contributions to Cryptinae and Orthocentrinae, see also VAN ACHTERBERG, 1992a). In Belgium there is a similar connection with the ULiège Gembloux Agro-Bio Tech. Camille Thirion, associate at Gembloux, was first to make a profound checklist for Belgium in 2005.

In the first two decades of the 21st century research on ichneumonids in the Netherlands has been mostly done by Kees Zwakhals, providing keys for some genera and reporting several species new to the Dutch fauna. He is also responsible for the ichneumonids on the platform Fauna Europaea. Kees van Achterberg also made important contributions (although his main work is on Braconidae) and acted as co-author for the database Taxapad (YU *et al.*, 2012). For Belgium there was the project around Somal (see Localities), with many publications (mainly reporting species new to the Belgian fauna) by Pierre-Nicolas Libert.

Material and methods

As already mentioned in our Introduction, the main reason for compiling our study was the presence of many unreported species on citizen science portals with photographic evidence. Reporting species based on photographic evidence only is rather contested within the entomological world. One set of arguments is based on identification. Some genera or species are simply deemed too difficult to identify with any certainty. We acknowledge that this is true in several cases, but this should not be used as a slippery slope argument. Some deeper issues are often at play, for example the unavailability of good or reliable keys, or, for example, the unavailability of clear and validated pictures, which can somehow serve as a proxy of a reference collection. Furthermore, to limit identification problems, we contacted many experts across the world to ensure every species (with solely photographic evidence) was validated by at least two individual researchers.

A more solid argument is made by taxonomists. Some species still have an uncertain status, and when there are no specimens available to falsify taxonomical changes, we simply cannot know which species the author reported. We acknowledge this fact, and have excluded genera that need to be revised profoundly (i.e. *Exochus* or *Mesochorus*) or treated with extra care (i.e. *Alexeter*, *Netelia* and *Phygadeuon*).

While writing this manuscript, many specimens were added from all authors of this paper. Many of these collected specimens confirmed first reports from the citizen science portals and elevated the percentage of ‘new’ species in collection. The origin of these specimens is diverse: malaise traps, light traps, pitfall traps, yellow or white pan traps and finally catches in the field with or without a sweeping net. Some of these findings are related to projects (Belgium: region of Bruges, ENDURE-project; The Netherlands: Soesterberg, malaise traps near Tilburg and in Frisia). With the exception of one historical collection (collection Crèvecoeur; see VERHEYDE & DEKONINCK (2021), *in press.*), no historical material (specimens collected before 2000) was checked. Several projects will be elaborately discussed in specific papers in the future, but here we briefly want to sketch an overview of some of these important localities.

All eight authors confidently confirm that their own findings and catches were made in correspondence with the existing legal framework (see THOMAES *et al.*, 2019 for Belgium). Permits were asked if necessary and we want to state this was explicitly the case for the use of non-selective traps in nature reserves. As far as we are aware, this was also the case for the records integrated from other observers and those from citizen science portals. However, we distance ourselves from any infringements that may have occurred on this end. Observers have the legal and ethical responsibility to follow the code of conduct as stated on <https://waarnemingen.be/pages/code-of-conduct/> and <https://waarneming.nl/pages/code-of-conduct>

Finally, it is important to note that we based our notion of ‘first report’ on all existing literature, with THIRION (2005) for Belgium and ‘NEDERLANDS SOORTENREGISTER’ for the Netherlands (species registered on 1 January 2020) as guidance. While writing this paper, we discovered both these sources have their flaws. In Thirion’s list some species already published are missing (for example *Diadromus collaris* (Gravenhorst, 1829) reported by WESMAEL (1844) near Brussels) and in ‘Nederlands Soortenregister’ some unpublished species are integrated.

LOCALITIES AND INVOLVED PROJECTS

DISCLAIMER: All details (full taxonomic names and sources except explicitly referred to here) can be found in our ‘Species’ section. This chapter should be seen as a summary with a focus on some of the localities visited.

COASTAL AREAS IN BELGIUM AND THE NETHERLANDS

(Fig. 1)

Although it is difficult to say anything definitive without thoroughly revising the historical collections in Belgium, the coast seems to be rather poorly studied for Hymenoptera (esp. “Parasitica”). Due to habitat fragmentation, urbanization, the growth of tourism, the agricultural use of pesticides, etc., many coastal areas have disappeared or shrunk to small patches. Hobbyists and environmentalists have primarily focused on the Belgian West coast as it is known to be high on biodiversity.

Additional to citizen science portals, an important and more systematic opportunity to mitigate this idea was offered by the European project ENDURE, where coastal resilience is studied around the North Sea. One of the investigated aspects (guided by the UGent, research group TERC) was measuring biodiversity on marram grass (*Ammophila arenaria*). Samples were taken randomly along the Belgian coast, the Netherlands, France and the United Kingdom. This was mainly limited to the summer months (July and August).

Many uncommon species were found, clearly proving that some nature reserves along the Belgian Middle and East coast still house rare and specialised ichneumonids. Particularly good results were reached in Knokke (Het Zwin) and the dunes of Bredene-De Haan-Wenduine (Fig. 1). For these localities we report five new species in this study: *Ischnus agitator*, *Lathrostizus macrostoma*, *Lissonota pleuralis*, *Scambus puniceus* and *Tromatobia variabilis*. Seldomly reported were the diplazontine wasps *Enizemum ornatum* and *Woldstedtius biguttatus*. A full list of the findings will be published at the end of the project.

Collected specimens can be allocated to different groups of opportunistic common species and specialist rare species. Among the latter group are those species we also encounter in the heathland areas (see ‘Heathlands of Bruges’). They are often specialists of open soils, where hosts are easy to reach and located near the soil. For this project, the findings of this group (within Ichneumonidae) were rather low, which probably has to do with the fact that most of the specimens were caught with a sweeping net on the plants.

Another group consists of parasitoids with specific dune-related hosts (cf. our Results and YU *et al.*, 2012 for more details on those relations). The prime example is the first reported *Lissonota pleuralis*, which is a known parasitoid of the very rare lepidopteran *Eudonia lineola* (Curtis, 1827). *Tyria jacobaeae* is a host for *Barylypa propugnator* and *Virgichneumon maculicauda*. *Lissonota cruentator* is specialised on the lepidopteran *Synaphe punctalis*. Also common was *Anomalon cruentatum*. There were many diplazontinae wasps like *Diplazon laetatorius*, which use the aphid-eating larvae of hoverflies as a host and are often connected to Rosaceae in the dunes. Another species, *Ischnus agitator* (first report) is reported to use the sawflies *Hemichroa australis* and *Euura rufa* as hosts, which are respectively strictly monophagous on *Betula pendula* and *Salix pentandra*.

While the coastal nature reserves are splintered and small in Belgium, in the Netherlands bigger areas can be found. In our study one area contributed with several first reports: Noordhollands Duinreservaat (province of North Holland) of 5.300 hectares. It consists of a mix of non-specific and specific ichneumonids.



Fig. 1. Belgian coastal dunes between Ostend and Bredene. © Fons Verheyde.



Fig. 2. The Noardlike Fryske Wâlden in the Netherlands are characterized by agricultural land enclosed by small landscape elements. © Gerrit Tuinstra.

HEATHLANDS OF BRUGES (BELGIUM)

With approximately fifteen new species for the fauna of Belgium, a short description of the area of Bruges (province of West Flanders) and its projects should not be absent. From 2014 to 2020; several traps (pitfall traps, yellow pan traps, white pan traps, and malaise traps) were placed by the Royal Belgian Institute of Natural Sciences (guided by curator Wouter Dekoninck) in different nature reserves near Bruges (Sint-Andries, Zedelgem, Assebroek). These nature reserves mainly consist of mixed forests with small heathland patches, some of them only recently restored. These patches remind us of the environmental situation in the Middle Ages and Early Modern Period, where farmers made use of these forests, intensively, for their livestock. Bruges has a sandy soil, and with the disruption of upper layers, heathlands sometimes get a chance to grow. The results we formulate here are preliminary and focus on Ichneumonidae. In a larger article, we analyze all parasitic fauna, the methods used, results for specific areas, etc. (VERHEYDE & DEKONINCK, *in prep.*). Approximately 550 specimens (Parasitica) were caught, of which 315 are Ichneumonidae.

Our first results bear many resemblances to the results from other species groups (see all reports via <https://www.researchgate.net/project/Monitoring-Entomofauna-heathlands-Bruges>): most of our rare findings are those species characteristic for heathlands, dunes and dry, oligotrophic grasslands. Another crucial factor for the many first reports however is the methods used. Pitfall traps are not often used for ichneumonid research (or even Hymenoptera as a whole). Not surprisingly then, many soil-specialists were discovered. No less than 66 specimens of *Barycnemis* sp. were caught, with first reports for *B. angustipennis*, *B. bellator* and *B. punctifrons*. Other groups with good results, caught with a variety of methods, were *Trychosis* spp. (29 specimens) and *Cylloceria caligata* (52 specimens).

As mentioned above, a small but distinguished group can be seen as specialists on sandy and more open areas, and are *de facto* often encountered in coastal areas. Most of them have hosts in or near the soil (e.g., spiders, beetles, lepidopterans...). Examples are mainly found in the subfamilies Cryptinae and Phygadeuontinae: *Agrothereutes abbreviatus*, *Hidryta fusiventris*, *Ischnus alternator*, *Polyaulon paradoxus* (first report) and *Theroscopus pedestris*.

As striking as the presence of these specialists, is the relatively small proportion of species connected to woodland. There are more common representatives, mostly from the subfamily Ichneumoninae (for example *Ctenichneumon panzeri*, *Ichneumon bucculentus*), or *Stilbops vetula*. A genuinely rare finding was a female specimen of *Bioblapsis polita*, a parasitoid of *Ferdinandea* spp., a hoverfly of which the larvae develop in decaying or wounded hardwood (VAN ECK & ZWAKHALS, 2015). Well-known migratory species with common distribution and forest ecology are completely missing. No representatives of the subfamilies of Ophioninae, Poemeniinae, Rhyssinae or Xoridinae were found. This is surprising, because standing decaying or dead wood is often encountered in the vicinity of heathland patches. Standing on the border of the heathland, trees (such as beeches or birches) are often burned by the sun and start decaying, offering many possibilities for other insects and their parasitoids (VERHEYDE *et al.*, 2020a). Although the flying behaviour of these groups is extremely flexible, it seems to suggest these species fly from tree to tree and avoid lower layers of vegetation or open ground, which could be a defensive strategy to avoid being predated. Generally, many of these wasps are very large (at least a centimetre) and thus easier to spot.

NOARDLIKE FRYSCHE WÂLDEN (THE NETHERLANDS)

(Fig. 2)

The Noardlike Fryske Wâlden constitutes a unique landscape situated in the northeastern part of the province of Fryslân or Frisia (the Netherlands), but it is commonly not well-known. It is a beautiful area with many small landscape elements. In 2004, the area received the status of ‘National Landscape’ in the Netherlands, because of its special values with respect to landscape, nature and cultural history. The area is mainly agricultural, but there are some nature reserves with a species-rich fauna and flora. Especially the old and small landscape elements, which are owned and managed by the farmers (Fig. 2) in exchange for a fee, play a crucial role in the ecosystem.

The abovementioned landscape elements are very diverse and consist, for example, of *Alnus glutinosa* girth’s, wood banks, hedgerows, ponds and pingo ponds. There are many different species of trees and plants growing in the different landscape elements that create many ecological niches, which all attract their specific fauna.

To get an impression of the biodiversity of insects in the area, a monitoring project was established in 2012. Two malaise traps for flying insects were used and placed at different times of the year at different localities within the Noardlike Fryske Wâlden. Also, many specimens were caught in the field with sweeping nets. The main part of the specimens was collected by Landschapsbeheer Fryslân. Ichneumonid wasps (Ichneumonidae) were found to be the most abundant family in the traps and more than 20 new species of ichneumonids, for the fauna of the Netherlands, were discovered in the collected material and integrated in this study. Many of them are known from neighbouring countries. However, there were also some rare findings (FAUNA EUROPAEA) known only from a few countries in Western Europe:

Tranosema hyperboreum ♀ (Campopleginae): known from Germany and Austria.

Dusona minor ♀ (Campopleginae): known from Germany and Austria.

Gunomeria macrodactylus (Ctenopelmatinae): known from Western Europe.

Cylloceria sylvestris 3 ♀♀ (Cylloceriinae): known from Germany.

Phradis nigrifulus ♀ (Tersilochinae): known from Germany and Denmark.

Habitat loss as a result of isolation and defragmentation of nature reserves, urbanization and the intensive agricultural use of the landscape can certainly be countered or mitigated by the use of small landscape elements. There is no doubt that Noardlike Fryske Wâlden can make an important contribution to the preservation and enhancement of biodiversity in the Netherlands. The ecosystem can only be maintained by continuing the ongoing collaboration and dialogue with the farmers, who will ensure the Noardlike Fryske Wâlden will stay as they are right now.

VILLAGE OF SOMAL (BELGIUM)

Somal is a village in Famenne, a natural region in southern Belgium (Wallonia). This territory has been studied for twenty years by the third author and papers have been published in a series called “Contribution to the knowledge of entomofauna of a Belgian Famenne village” (see all reports via <https://www.researchgate.net/project/Entomofauna-of-a-belgian-village> and the ones related to ichneumonids explicitly in our Bibliography).

Already published papers cover Banchinae and Cryptinae (Ichneumonidae), sawflies, fungus gnats and chalcid wasps. The territory itself is about 9 km², centred around the hamlet of Somal. It covers the places called „La Chavée“ and „La Foulerie“ in the north-west, „Campagne de Somal“ and „Bois des Aloux“ in the north, „Moulin de Leuze“ in the north-east, the „Château

de Ramezée“ in the west, the „Bois des Avenues“ in the south-west, the village „Moressée“ in the south and „Bon Bonî“ in the south-east (IGNB, 1981).

The habitat can be primarily typified as coppiced woodland within high forest. The main tree species here are *Quercus* spp., *Carpinus betulus* but also *Corylus avellana*, *Betula* spp. and *Acer pseudoplatanus*. On more fertile places it also includes *Cornus sanguinea*, *Acer campestre* and *Euonymus europaeus*. In areas where the woodland is often accessed, the undergrowth is reduced to a thicket with thorny vegetation like *Crataegus*, *Prunus*, *Rosa* and *Rubus* spp. The village is bordered by ‘Eau de Somme’, a stream where natural riparian forests with typical vegetation (*Alnus* and *Salix* spp.) can be found near the borders. Finally, there are also isolated conifers or coniferous forests, artificially planted in gardens, lanes and on cultivated land (LIBERT, 2010). If we take a look at the species already reported in past publications (Table I) and the ones first reported here, some groups can be identified. There are for example forest and tree specialists with Coleoptera as a host (*Coleocentrus soleatus*, *Echthrus reluctator*...) or ‘garden’ species with Lepidoptera or Aculeata as hosts (*Agrothereutes leucorhaeus*, *Hoplocryptus* spp., *Lochetica westoni*, *Nematopodius* spp...).

Rarer findings are those species which are connected to more local host populations or plants (most of them are connected to the riparian vegetation, as mentioned above), which are rare in Flanders and (some) parts of Wallonia, for example *Cubocephalus sternocerus*, a parasitoid of the lepidopteran *Synanthedon spheciformis*; *Gambrus tricolor*, a known parasitoid of the cephid sawfly *Phylloecus linearis*; *Gonotypus melanostoma* which is related to the rather rare *Coleophora* spp. connected to *Juncus* spp. and *Mesostenus funebris* Gravenhorst, 1829, a parasitoid of *Zygaena lonicerae* (KAŹMIERCZAK & DĄBROWSKI, 2003).

ABBREVIATIONS

Acronyms used for personal collections:

ADK = coll. Augustijn De Ketelaere

AR = coll. Anne Ronse

EB = coll. Edwin Brosens

FV = coll. Fons Verheyde

GL = coll. Gilbert Loos

HM = coll. Hilco Meijer

KZ = coll. Kees Zwakhals

MN = coll. Marc Nachtergaele

MS = coll. Martin Schwarz

PH = coll. Paul Hoekstra

PNL = coll. Pierre-Nicolas Libert

SDR = coll. Samuel de Rycke

TV = coll. Thibaud Vandaudenard

Acronyms used for institutional collections:

- MITOX = Eurofins MITOX BV, the Netherlands
 NB = Natuurmuseum Brabant, the Netherlands
 NMB = Naturhistorisches Museum Basel, Switzerland
 RBINS = Royal Belgian Institute of Natural Sciences collection, Belgium.

Abbreviations for Provinces

Belgium	the Netherlands
AN = Antwerp	DR = Drenthe
BW = Walloon Brabant	FL = Flevoland
BR = Brussels	FR = Friesland
HA = Hainaut	GE = Gelderland
LIB = Limburg (Belgium)	GR = Groningen
LG = Liège	LIN = Limburg (the Netherlands)
LX = Luxembourg	NB = North Brabant
NA = Namur	NH = North Holland
OVL = East Flanders	OV = Overijssel
VB = Flemish Brabant	UT = Utrecht
WVL = West Flanders	ZL = Zeeland
	ZH = South Holland

The material formatting follows the European guidances on taxonomy from CETAF (BÉNICHOU *et al.*, 2018). Max. five confirmed findings per record are listed (chronologically oldest, excl. specimens in collection, which were prioritised). When there is more material available, this is noted with “[...]”. Taxonomical hierarchy and integration of tribes and genera is based on BROAD *et al.* (2018).

Results

Order Hymenoptera Linnaeus, 1758
Suborder Apocrita Gerstaecker, 1867
Superfamily Ichneumonoidea Latreille, 1802
Family Ichneumonidae Latreille, 1802

Subfamily Acaenitinae Förster, 1869

***Coleocentrus soleatus* (Gravenhorst, 1829) (Fig. 3 A–B)**

Coleocentrus spp. are large parasitoids, which can be recognised within the subfamily by their areolet (triangular) and clypeus (with a median apical tubercle). Ovipositor is 2.0–3.5 as long as hind tibia (VARGA, 2013).

Both males and females of *C. soleatus* have red hind trochanters and trochantelli with black colouration (Fig. 3 A). Females at least have their fore trochanters reddish. The tarsomeres of the males are only partly white (admittedly, this is more difficult to see on photographic evidence) and the clypeus is completely yellow (Fig. 3B). This distinguishes it from the common *Coleocentrus excitator* (Poda, 1761). *C. soleatus* is a presumably (very) rare species in Western Europe, known from only a few records, with Germany being the closest country to Belgium and the Netherlands. It seems highly probable the species has only recently expanded its territory from Eastern and Central Europe, thereby following many other ichneumonid wasps related to the presence of dead wood and forest areas (see VERHEYDE *et al.*, 2020a). Hosts are unknown (VARGA, 2013).

First report for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 2 ♀♀; Somal (NA); 25/v/2012; P-N. Libert leg.; coll. PNL; field observation; P-N. Libert det. • 1 ♂; Somal (NA); 18/v/2013; P-N. Libert leg.; coll. PNL; field observation; P-N. Libert det. • 1 ♂; Londerzeel (VB); 50°59'15"N 4°16'19"E; 20/iv/2020; S. De Rycke leg.; coll. SDR; field observation; F. Verheyde det. (ObsID: 193762942); Fig. 3A–B. • 1 ♂; Anderlecht, centrum (BR); 50°50'06"N 4°16'60"E; 22/iv/2020; M. Marblie leg.; field observation; O. Varga & F. Verheyde det. (ObsID: 193762942). • 1 ♀; Hody (LG); 50°29'05"N 5°30'39"E; 7/v/2020; A. Derouax leg.; field observation; F. Verheyde det. (ObsID: 190791292)[...].

THE NETHERLANDS: • 1 ♀; Udenhout, De Brand (NB); 51°37'35"N 5°06'29"E; 3/v/2020; J. van de Heuvel leg.; field observation; F. Verheyde det. (ObsID: 190311894). • 1 ♀; Vlijmen, Bosje Hooge Bank (NB); 51°40'14"N 5°12'03"E; 8/vi/2020; H. van der Sterren leg.; field observation; F. Verheyde det. (ObsID: 193565619).

Subfamily Adelognathinae Thomson, 1888

***Adelognathus nigriceps* Thomson, 1888**

Adelognathus spp. are interesting parasitoids. They are seldom caught in the field and are ectoparasitoids of sawfly larvae. They can be recognised by their exposed labrum and fairly short antennae (approx. 14 to 15 segments) and the presence of a pentagonal areolet in some species (BROAD *et al.*, 2018).

A. nigriceps is a smaller species of more or less 3 mm. Occipital carina reaches the mandibular base. The face is yellow and there is a unique groove between the mandibles and eye (KASPARYAN, 1990).

First report for the Netherlands; unreported for Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♂; Eastermar (FR); 53°10'40"N 6°05'13"E; 6/v/2012; G.; Tuinstra leg.; coll. HM; field observation; H. Meijer det.

***Adelognathus pusillus* Holmgren, 1857 (Fig. 4)**

A. pusillus can be identified by the following characteristics: face completely yellow, hind coxae predominantly yellow and fore wing with *3r-m* (weakly) present (Fig. 4). This ichneumonid species is a parasitoid of the concealed larvae of *Phyllocolpa* spp. (Symphyta: Tenthredinidae). Being caught in August it matches known phenological records (FITTON *et al.*, 1982).
First report for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♂; Wingene, Predikherenbossen (WVL); 51°04'21"N 3°20'01"E; 26/iv/2020; A. De Ketelaere & L. Lams leg.; coll. ADK; field observation; A. De Ketelaere det. (ObsID: 207730971); Fig. 4.

THE NETHERLANDS: • 1 ♀; Olterterp (FR); 53°04'11"N 6°06'20"E; 28/viii/2015; H. Meijer leg.; coll. HM; field observation; H. Meijer det.

Subfamily Anomaloninae Viereck, 1918**Tribe Gravenhorstiini Enderlein, 1912*****Aphanistes bellicosus* (Wesmael, 1849)**

Aphanistes can be recognised by the presence of the distal abscissa in the hind wing *CU*, frons below anterior ocellus with a median vertical lamella and the hind tarsal claws pectinate right to the apex (GAULD & MITCHELL, 1977).

Typical for *A. bellicosus* is the completely yellow-orange scapus, while the remaining flagellomeres are mainly black, especially apically (PÉNIGOT 2021, *in press*).

First report for the Netherlands; confirmed in Belgium.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Somal (NA); 18/iv/2007; P-N. Libert leg.; coll. PNL; field observation; A. Nuzhna det.

THE NETHERLANDS: • 1 ♀; Rechteren, Rechterensche Veld (OR); 52°29'16"N 6°18'16"E; 27/vii/2019; G. Beersma leg.; field observation; W. Pénigot det. (ObsID: 177056989).

***Barylypa propugnator* (Förster, 1855)**

Just like *Aphanistes*, *Barylypa* can be recognised by the presence of the distal abscissa in the hind wing *CU*. Additionally, the cubital index is < 0.6 (usually < 0.4) and the pronotum does not have an impressed medio-dorsal transverse sulcus: it is flat to slightly concave (GAULD & MITCHELL, 1977).

Barylypa propugnator can be easily identified by its habitus: it is quite large (measuring approx. 8 mm), the metasoma is largely orange with black apical tergites, and most importantly the temples are reddish. In the Low Countries it is often found from June to August near its common host *Tyria jacobaeae* (Linnaeus, 1758) (Lepidoptera: Erebidae) or hostplant *Senecio* spp. The ichneumonid wasp appears to be slightly more common in coastal or sandy areas, due to the abundance of the above-mentioned host and host plant. It is highly probable the species has

been overlooked in the Netherlands the past few decades.

First report for the Netherlands; confirmed in Belgium.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Oostduinkerke, Ter Yde (WVL); 51°08'03"N 2°41'53"E; 2/viii/2012; F. Schoeters leg.; field observation parasitizing *Tyria jacobaeae* (Linnaeus, 1758); W. Pénigot det. (ObsID: 70204655). • 1 ♂; Zwevegem (WVL); 50°49'35"N 3°20'25"E; 25/vi/2013; L. Clarysse leg.; field observation; W. Pénigot det. (ObsID: 77101175). • 1 ♀; Bredene, Duinen Fort Napoleon (WVL); 51°14'23"N 2°56'09"E; 26/vii/2017; P. Vanhauwere leg. [UGent]; coll. KBIN/RBINS (ENDURE-project, 205_OST_2_N); field observation; F. Verheyde det. • 1 ♀; Harelbeke, De Gavers (WVL); 50°50'38"N 3°19'02"E; 21/vii/2020; Y. Gevaert leg.; field observation, near *Tyria jacobaeae*; F. Verheyde det. (ObsID: 196744990). • 1 ♀; Buggenhout (OVL); 51°01'56"N 4°12'34"E; 21/vii/2020; L. Verhelst leg.; field observation parasitizing *Tyria jacobaeae*; F. Verheyde det. (ObsID: 196761137) [...].

THE NETHERLANDS: • 1 ♂; Ameland, Buurderduinen (FR); 53°27'37"N 5°49'52"E; 2/ix/2014; T. Kiewiet leg.; field observation; W. Pénigot det. (ObsID: 87684918). • 1 ♂; Bernheze, Arboretum (NB); 51°43'25"N 5°32'59"E; 12/vii/2015; H. van den Acker leg.; field observation; W. Pénigot det. (ObsID: 104264719). • 1 ♀; Axel, Sportpark (ZL); 51°15'20"N 3°55'35"E; 9/vii/2018; M. Kiefer leg.; field observation parasitizing *Tyria jacobaeae*; W. Pénigot det. (ObsID: 159773753). • 1 ♀; Dishoek, Duinen en strand (ZL); 51°28'52"N 3°30'44"E; 23/vi/2020; A. van Gilst leg.; field observation parasitizing *Tyria jacobaeae*; F. Verheyde det. (ObsID: 194805116). • 1 ♀; Utrecht, Soesterberg – Vliegbasis (UT); 52°07'50"N 5°16'50"E; 1/viii/2020; A. Schaftenaar leg.; field observation; F. Verheyde det. (ObsID: 196226430) [...].

***Barylypa uniguttata* (Gravenhorst, 1829)**

In comparison to *B. propugnator*, *B. uniguttata* is somewhat smaller, with a more sober colouration. Its antennae are shorter in length than the total length of the hind wing. The face is strongly punctured and black, with one yellowish spot centrally. Tegulae yellowish (PÉNIGOT 2021, *in press*). The species seems to be less abundant, but this could be partly due to its phenology, being active in early spring (March and April). Especially the males are observed in the field. Its hosts are not yet known.

First report for the Netherlands; confirmed in Belgium.

MATERIAL EXAMINED:

BELGIUM: • 2 ♂♂; Moerbeke, Heidebos (OVL); 51°10'47"N 3°54'59"E; 21/iii/2016; B. Lutin-Smet leg.; field observation; W. Pénigot det. (ObsID: 115658521). • 4 ♂♂; Retie, Pontforts Heike (AN); 51°15'56"N 5°02'56"E; 29/iii/2019; N. Van Loco leg.; field observation; W. Pénigot det. (ObsID: 169407007). • 1 ♂; Retie, Pontforts Heike (AN); 51°15'54"N 5°02'59"E; 10/iii/2020; N. Van Loco leg.; field observation; W. Pénigot det. (ObsID: 186402928). • 1 ♂; Genk, Winterslag Terril (LIB); 50°59'08"N 5°28'59"E; 15/iii/2020; T. Gyselinck leg.; field observation; W. Pénigot det. (ObsID: 186672774). • 1 ♂; Westvleteren, Dozinghembos (WVL); 50°53'31"N 2°42'09"E; 16/iii/2020; D. Becuwe leg.; field observation; W. Pénigot det. (ObsID: 186702727) [...].

THE NETHERLANDS: • 1 ♂; De Rips, Stippelberg (NB); 51°31'56"N 5°47'26"E; 17/iv/2010; J. Albers leg.; field observation; W. Pénigot det. (ObsID: 47478444). • 1 ♀; Maarn, Zanderij (UT); 52°03'46"N 5°21'03"E; 4/iv/2016; C. Witkamp leg.; field observation; W. Pénigot det. (ObsID: 125864005). • 1 ♂; Woensdrecht, Grenspark Kalmthoutse Heide (NB); 51°24'52"N 4°21'45"E; 13/iv/2016; H. Nouwens leg.; field observation; W. Pénigot det. (ObsID:

116461633). • 1 ♂; Wassenaar, Meijendel (ZH); 52°06'53"N 4°20'22"E; 21/iii/2019; C. van Heerden leg.; field observation; W. Pénigot det. (ObsID: 168837779). • 1 ex.; Utrecht, Soesterberg – Vliegbasis West (UT); 52°07'50"N 5°15'58"E; 31/iii/2020; T. Zeegers leg.; coll. FV (Soesterberg-project, 27–31/iii/2020; nr. 39); malaise trap; F. Verheyde det. [...].

***Erigorgus melanops* (Gravenhorst, 1829)**

Erigorgus spp. also belong to the group of Anomaloninae that have the distal abscissa present in the hind wing *CU*. However, contrary to *Aphanistes*, their frons is smooth and a median lamella is missing. The tarsal claws are not completely pectinate (GAULD & MITCHELL, 1977).

Identification from pictures is hard and has to be treated with care, especially because there is a lot of variability, i.e. in the colouration of the faces of males (PÉNIGOT 2021, *in press*). More consistent characteristics are the yellowish hind tarsi and the black coxae. This species is primarily active in early spring (March and April) and is probably more common than we know, with a host like *Maniola jurtina* (Linnaeus, 1758) (Lepidoptera: Nymphalidae).

First report for the Netherlands; confirmed in Belgium.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Deurne (AN); 51°11'10"N 4°27'11"E; 30/iii/2014; D. Verstraeten leg.; field observation; W. Pénigot det. (ObsID: 82871425). • 1 ♀; Meensel, Zandgroeve (VB); 50°53'08"N 4°54'46"E; 29/iii/2019; N. Van Loco leg.; field observation; W. Pénigot det. (ObsID: 168832456). • 1 ♀; Oudenaarde (OVL); 50°50'47"N 3°39'28"E; 18/iv/2020; G. Groenez leg.; field observation; W. Pénigot det. (ObsID: 188998180).

THE NETHERLANDS: • 1 ♂; Swalmen (LIN), A73; 51°12'59"N 6°01'10"E; 25/iii/2020; D. Nijskens leg.; field observation; W. Pénigot det. (ObsID: 187210553).

***Erigorgus procerus* (Gravenhorst, 1829) (Fig. 5)**

E. procerus is easier to recognise than *E. melanops*. The tarsi are yellowish (without any ivory patterns). The females only have red coxae, but males sometimes tend to have black hind coxae basally (Fig. 5). Lastly their antennae are largely orange/reddish, turning darker apically (PÉNIGOT 2021, *in press*). This species does not seem to be rare. Some host records need to be further confirmed, but certainly used as a host is *Polia nebulosa* (Hufnagel, 1766) (Lepidoptera: Noctuidae) (RUDOW, 1917; pers. comm. W. Pénigot).

First report for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 2 ♀♀; Somal (NA); 4/v/2010; P-N. Libert leg.; coll. PNL; field observation; A. Nuzhna det. • 4 ♂♂; Spiere, Spierebos (WVL); 50°43'33"N 3°21'18"E; 25/iv/2011; L. Clarysse leg.; field observation; W. Pénigot det. (ObsID: 53801638). • 1 ♀; Evere, Moeraske (BR); 50°52'46"N 4°23'11"E; 15/iv/2012; B. Hanssens leg.; field observation; W. Pénigot det. (ObsID: 64452858). • 1 ♀; Ranst, Bos van Ranst (AN); 51°12'47"N 4°33'34"E; 29/iv/2012; M. Gorrens leg.; field observation; W. Pénigot det. (ObsID: 66897776) • 1 ♂; Jette (BR); 50°52'24"N 4°20'00"E; 28/iii/2020; T. Vandaudenard leg.; coll. TV; field observation; W. Pénigot det. (ObsID: 188572176); Fig. 5. [...].

THE NETHERLANDS: • 1 ♀; Deurne, Deurnse Peel (AN); 51°24'38"N 5°52'30"E; 24/iv/2018; J. Slaats leg.; field observation; W. Pénigot det. (ObsID: 155492673). • 1 ♀ 1 ♂; Echt, De Doort (LIN); 51°05'13"N 5°51'19"E; 11/iv/2019; J. Geraets leg.; field observation in copula; W. Pénigot det. (ObsID: 170059413). • 1 ♂; Delft, Abtswoudse Bos (ZH); 51°58'32"N 4°22'08"E; 5/v/2019; J. van't Bosch leg.; field observation; W. Pénigot det. (ObsID:

171762528). • 1 ♂; Wellerlooi, Gertenkamp (LIN); 51°31'11"N 6°09'27"E; 4/iv/2020; T. Martens leg.; field observation; W. Pénigot det. (ObsID: 187814628).

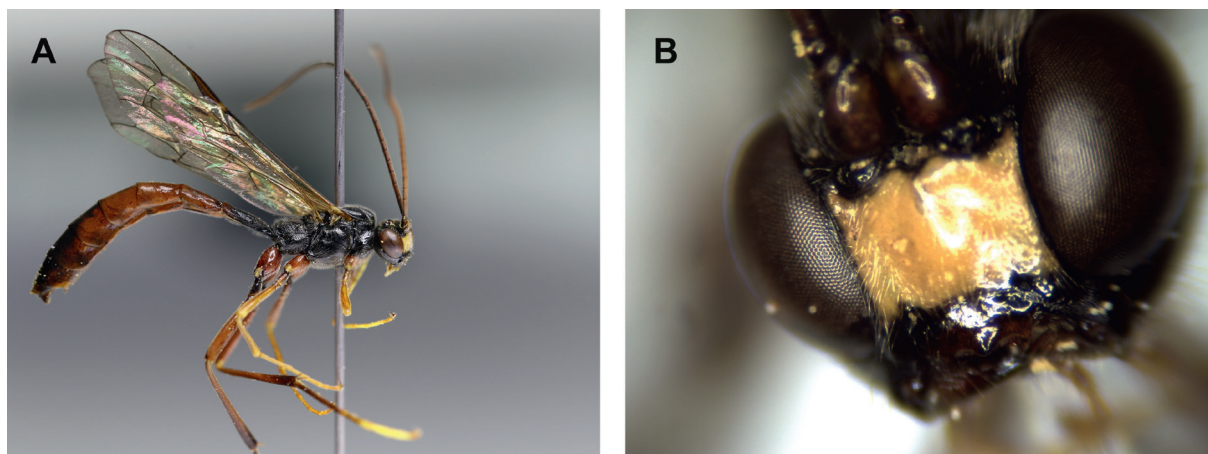


Fig. 3. *Coleocentrus soleatus* (Gravenhorst, 1829), male. A, habitus, lateral view. B, head, frontal view. © Fons Verheyde.

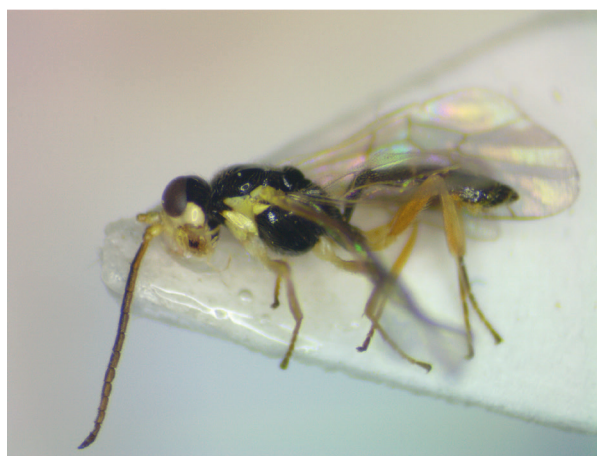


Fig. 4. *Adelnathus pusillus* Holmgren, 1857, male, habitus, lateral view. © Augustijn De Ketelaere.



Fig. 5. *Erigorgus procerus* (Gravenhorst, 1829), male, habitus, lateral view. © Thibaud Vandaudenard.

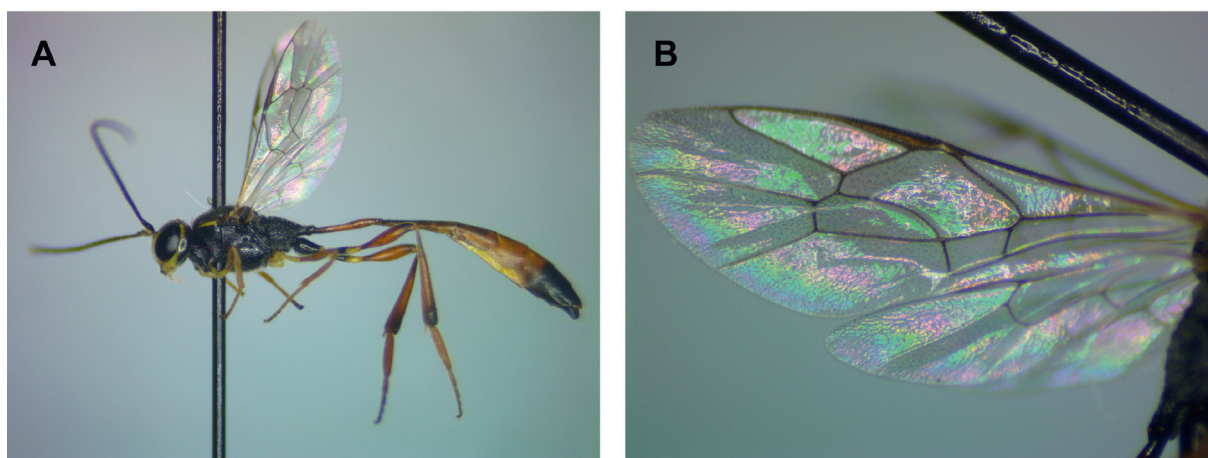


Fig. 6. *Parania geniculata* (Holmgren, 1857), male. A, habitus, lateral view. B, right fore and hind wing, lateral view. © Augustijn De Ketelaere.

***Parania geniculata* (Holmgren, 1857)** (Fig. 6 A–B)

One of the rarer findings of this study. *Parania* spp. have a unique wing venation: the brachial cell and the 2nd discal cell are separated by a small portion of the vein *Im-cu* (PÉNIGOT 2021, *in press*; see also Fig. 6 B).

Overall the species is small, with a fore wing length of 4 mm. With the males the frontal part of the head and the clypeus is completely yellow. Its mesosoma and the apical tergites are predominantly black (possibly with yellow markings on the thorax). Its metasoma is red brown (Fig. 6 A). Our finding took place in a small field where flower mixtures had been sown. Some of the known hosts are rare, but *Gypsonoma aceriana* (Duponchel, 1843) (Lepidoptera: Tortricidae) seems to be the most plausible candidate here (YU *et al.*, 2012).

First report of the species and the genus for Belgium, unconfirmed in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♂; Beernem, Beverhoutsveld (WVL); 51°10'41"N 3°16'52"E; 6/vii/2020; A. De Ketelaere leg.; coll. ADK; field observation; W. Pénigot det. (ObsID: 198933657); Fig. 6A–B.

Subfamily Banchinae Wesmael, 1845**Tribe Atrophini Seyrig, 1932*****Alloplasta plantaria* (Gravenhorst, 1829)**

Alloplasta can be easily recognised through the wing venation; the nervellus is intercepted near or above the middle and the areolet is distinct.

In this species all coxae are black, distinguishing it from *A. tomentosa*. The tergites are also black, with a yellowish to whitish apical band and yellow patches on the face, distinguishing it from *A. piceator* (KUSLITZKY, 1981). Like many ichneumonids, this species is probably more common than data would suggest, with *Orthosia cerasi* (Fabricius, 1775) (Lepidoptera: Noctuidae) as an extremely common host (BROCK, 2017).

First report for the Netherlands; confirmed in Belgium.

MATERIAL EXAMINED:

BELGIUM: • 1 ♂; Mechelen, De Potpolder (AN); 51°00'57"N 4°30'49"E; 26/iv/2020; G. Duponcheel leg.; field observation; F. Verheyde det. (ObsID: 190133184).

THE NETHERLANDS: • 1 ♂; Zwolle, Westerveldse Bos (OV); 52°32'39"N 6°05'09"E; 29/iii/2012; G. Reitsma leg.; field observation; W. Pénigot & F. Verheyde det. (ObsID: 64020153). • 1 ♀; Terschelling, Kooibosjes (FR); 53°23'23"N 5°15'25"E; 29/v/2015; J. Vink leg.; field observation; F. Verheyde det. (ObsID: 102794504). • 1 ♀; Langerak, Polder Langerak (ZH); 51°55'14"N 4°55'22"E; 21/v/2019; J. Vink leg.; field observation; F. Verheyde det. (ObsID: 102794504). • 1 ♀; Delft, Abtswoudse Bos (ZH); 51°58'10"N 4°22'18"E; 10/v/2020; M. Albers leg.; field observation; F. Verheyde det. (ObsID: 191069277).

***Lissonota admontensis* Strobl, 1902**

Belonging to the Atrophini, *Lissonota* spp. have their nervellus broken near the middle, their areolet is small and their metasoma is not laterally compressed. It is a very complex genus for which identification is hard and undescribed species are still to be discovered (more details see BROCK, 2017).

With some hesitation we report this species. It is hard to key and regarding distribution this finding is odd because it is coined as a mountain or alpine species (however, the species is present in most of the neighbouring countries; YU *et al.*, 2012). However, it was successfully identified with all existing keys. *L. admontensis* is a smaller species (6 to 7 mm) with a black head and mesosoma. The metasoma is also black except for at least the second and third (and sometimes fourth) tergite, which are reddish with more or less black patches. Tergites 2–3 are finely coriaceous, the rest of the body is matt and covered with silvery hairs. The tarsal claws are simple and there are no odd patterns anywhere on the body. The ovipositor is almost as long as the body (AUBERT, 1978; KUSLITZKY, 1981; BROCK, 2017).

First report for Belgium; unreported in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Buggenhout, Buggenhoutbos (OVL); 50°59'44"N 4°12'23"E; 10/ix/2015; A. Ronse leg.; coll. AR; field observation; F. Verheyde & T. Robert det. (ObsID: 206558640).

***Lissonota luffiator* Aubert, 1969**

Lissonota luffiator is one of the few species of *Lissonota* that can be identified quite easily using macroscopic features. Firstly, it has a short and stout ovipositor, often down-curved distally; secondly, the colour pattern is striking: the mesonotum extensively reddish with yellow and black patterning (BROCK, 2017). Due to its visual appearance, we must agree with Brock that this species is probably rather uncommon. Our own findings on the other hand show the phenology of this species could be wider than was thought (from April to September), possibly even with multiple generations in a year. We do know that these ichneumonid wasps are connected to the lepidopteran family of Psychidae (one finding in the Netherlands was on a tree trunk where possible hosts were present) and the finding with a light trap in Belgium signals possible nocturnal activity.

First report for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Meerhout (AN); 51°07'43"N 5°05'46"E; 17/iv/2020; M. Mangelschots leg.; light trap; G. Broad & F. Verheyde det. (ObsID: 188836251).

THE NETHERLANDS: • 1 ♀; Den Haag (ZH); 52°03'53"N 4°15'38"E; 27/ix/2020; B. Boon leg.; field observation; G. Broad & F. Verheyde det. (ObsID: 200749864).

***Lissonota pleuralis* Brischke, 1880 (Fig. 7 A–B)**

= syn. *L. strigifrons* Schmiedeknecht, 1900

Lissonota pleuralis has a striking appearance. Both sexes have white or yellow tegulae, in combination with a yellow clypeus and pair of mandibles. The females have reddish patches on their mesopleuron and metapleuron. Their scutellum is also reddish. Next to the two lateral ocelli (on frons/vertex) there is a rather large triangular yellow spot, and sometimes there are yellow markings on the cheeks. The other parts of the head and the mesosoma (incl. mesonotum) are black and rather evenly punctuated on a matt surface (Fig. 7 A). The males are predominantly yellow. Their face, clypeus, frontal orbits and scutellum are completely yellow. Their pronotum (incl. pronotal collar), mesopleuron and metapleuron have yellow markings. Usually the upper part of the mesopleuron has a red to red brown stripe. Sometimes the mesoscutum also has red brown markings. The antennae are orange, at least ventrally. Their metasoma is black with the apical borders yellow. Their legs are predominantly orange or red (Fig. 7 B). The body length in our specimens is 7–9 mm for the males and 9–10 mm for the females. Despite these features, it is necessary to check this species with a microscope to distinguish it from *L. bivittata* Gravenhorst, 1829 (especially ssp. *-gallicator*, with black

mesonotum) which does not have its second and third tergite evenly and densely punctuated (KUSLITZKY, 1981). Therefore, we cannot assess the presence of the species in the Netherlands with complete certainty, although it is highly probable taking the distribution and ecology of both species in mind (see for example ObsID 196467195). The only known host is the rare lepidopteran *Eudonia lineola* (Curtis, 1827) (Lepidoptera: Crambidae). This explains the local distribution of the findings, which are all situated in coastal areas.

First report for Belgium; unreported in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♂; Oostduinkerke, Schipgatduinen (WVL); 51°07'50"N 2°39'31"E; 18/vii/2017; P. Vanhauwere leg. [UGent]; coll. KBIN/RBINS (ENDURE-project, 150_ODK_BAD_15_M); field observation; F. Verheyde det. • 1 ♂; Knokke, De Haan, Duinbossen Wenduine/De Haan (WVL); 51°17'14"N 3°03'03"E; 21/vii/2017; P. Vanhauwere leg. [UGent]; coll. KBIN/RBINS (ENDURE-project, 176_DHN_K_15_N); field observation; F. Verheyde det. • 1 ♂; Knokke, Het Zwin - Zwinbosjes (WVL); 51°21'49"N 3°20'30"E; 25/vii/2017; P. Vanhauwere leg. [UGent]; coll. KBIN/RBINS (ENDURE-project, 203_ZWN2_8_N); field observation; F. Verheyde det.; Fig. 7 A. • 1 ♀; Oostende, Duinen Fort Napoleon (WVL); 51°14'26"N 2°56'11"E; 22/vii/2020; E. Devos & F. Verheyde leg.; coll. FV; field observation; A. De Ketelaere, T. Robert & F. Verheyde det. (ObsID: 196821118). • 1 ♀; Wenduine, Duinbossen Wenduine/De Haan (WVL); 51°17'44"N 3°04'06"E; 26/vii/2020; A. De Ketelaere leg.; coll. ADK; field observation; T. Robert & A. De Ketelaere det. (ObsID: 205393239); Fig. 7 B.

***Lissonota semirufa* (Desvignes, 1856)**

Should not be confused with *L. semirufa* Strobl, 1902, which was synonymised with *L. bivittata* Gravenhorst, 1829; reported in Belgium only recently (LIBERT, 2019a; see Table 1) and unreported in the Netherlands. Morphologically it is easily distinguished from related species.

Its head and thorax are black with yellow patches on their vertex and pronotum. All legs are reddish. Apically the metasoma is black, but the other segments are (dark) red with black patches. Additionally, the first flagellar segment is at least 5× its width and the second and third tergite are subquadrate to longer than broad (BROCK, 2017). This wasp is mainly active from May to July and can be found around (standing) dead wood. The habitat range seems to be somewhat wider than coniferous woodland only (as mentioned in BROCK, 2017). Our observations are situated on *Betula* and *Fagus* spp. in forest areas with smaller patches of moorland, suggesting the presence of an unknown host.

First report for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Beernem, Bulskampveld – Heideveld-Bornebeek (WVL); 51°06'31"N 3°17'45"E; 6/v/2020; A. De Ketelaere leg.; coll. ADK; field observation on *Fagus sylvatica*; A. De Ketelaere det. (ObsID: 191894869).

THE NETHERLANDS: • 1 ♀; Heeze-Leende, Strabrechtste Heide (NB); 51°23'49"N 5°38'15"E; 3/v/2020; Telpost Strabrecht leg.; field observation; F. Verheyde det. (ObsID: 190332070). • 1 ♀; Bloemendaal, Amsterdamse Waterleidingduinen (NH); 52°19'59"N 4°33'34"E; 12/vi/2020; J. Duivenvoorden leg.; field observation; F. Verheyde det. (ObsID: 194062394).

***Lissonota subaciculata* Bridgman, 1886**

Another colourful species with yellow patches on its vertex is *L. subaciculata*. Also yellow are its face, the orbits along the vertex, the sides of thorax, the coxae and the fore trochanters. The hind coxae are black with red patches. The remaining parts of the legs and tergites 2-4 are red (KUSLITZKY, 1981). Additionally, the sculpture on the first tergite is distinctive, with many pre-apical striae extending diagonally over the median part of the petiole (BROCK, 2017). Its presence could be expected (and should be expected in Belgium), with the species being very widely distributed in Western Europe (see FAUNA EUROPAEA). The second specimen was caught in a lane with oaks where the ‘plague’ moth *Thaumetopoea processionea* (Linnaeus, 1758) (Lepidoptera: Notodontidae) was abundant. This indeed is a known host (AUBERT, 1978).

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♂; Drachten-Azeven (FR); 53°06'49"N 6°09'00"E; 11/vii/2020; H. Meijer leg.; coll. HM; field observation; H. Meijer det. • 1 ♂; Drachten-Azeven (FR); 53°06'49"N 6°09'00"E; 30/vii/2020; H. Meijer leg.; coll. HM; light trap; H. Meijer det.

Tribe Banchini Wesmael, 1845

***Rynhobanchus flavopictus* Heinrich 1937 (Fig. 8 A–B)**

Rynhobanchus is a remarkable genus within the tribe of Banchini. Its habitus is somewhat similar to *Banchus* spp., but it misses the spine on its scutellum and has no trace of posterior transverse carina on its propodeum. Furthermore, the metasoma is uncompressed (Fig. 8A–B).

On colour *R. flavopictus* is easily distinguishable from the other European species *R. bicolor* Kriechbaumer 1894, which has a predominantly reddish metasoma. *R. flavopictus* was only recently reported in Belgium (LIBERT, 2019a) and is probably genuinely rare or at least rather uncommon. Host records need further confirmation (see also BROCK, 2017), but phenology suggests an active host in spring (April–May).

First report of the species and of the genus for the Netherlands; confirmed in Belgium.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Mechelen, Stadsbos Kauwendaal (AN); 51°02'50"N 4°29'27"E; 26/iv/2020; N. Iwens leg.; field observation; F. Verheyde det. (ObsID: 189701657). • 1 ♀; Herselt, Blauwberg (AN); 51°02'47"N 4°55'27"E; 4/v/2020; I. Van den Broek leg.; field observation; F. Verheyde det. (ObsID: 190428447).

THE NETHERLANDS: • 1 ♀; Valkenburg, De Kluis (LIN); 50°51'36"N 5°51'25"E; 6/iv/2012; S. Lamberts leg.; field observation; F. Verheyde & W. Pénigot det. (ObsID: 181850552); Fig. 8A–B. • 1 ♀; Zwolle, Westerveldse Bos (OR); 52°32'46"N 6°05'05"E; 15/iv/2014; G. Reitsma leg.; field observation; F. Verheyde det. (ObsID: 83377666). • 1 ♂; Schiedam, Prinses Beatrixpark (ZH); 51°55'57"N 4°23'12"E; 5/v/2019; P. van Santbrink leg.; field observation; F. Verheyde det. (ObsID: 171713183).

Tribe Glyptini Cushman & Rohwer, 1920

Glyptini can be quickly identified by the presence of diagonal grooves on (at least) the second and third tergite. *Glypta* spp. have the spur of the front tibia shorter than 0.5× basitarsus length (for other characteristics see BROCK, 2017).

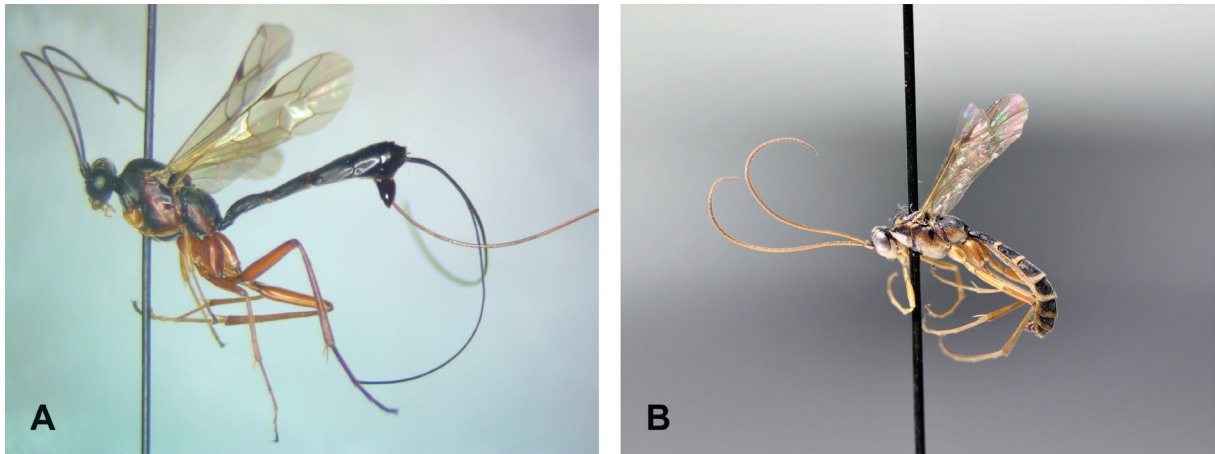


Fig. 7. *Lissonota pleuralis* Brischke, 1880. A, female, habitus, lateral view. © Augustijn De Ketelaere. B, male, habitus, lateral view. © Fons Verheyde.

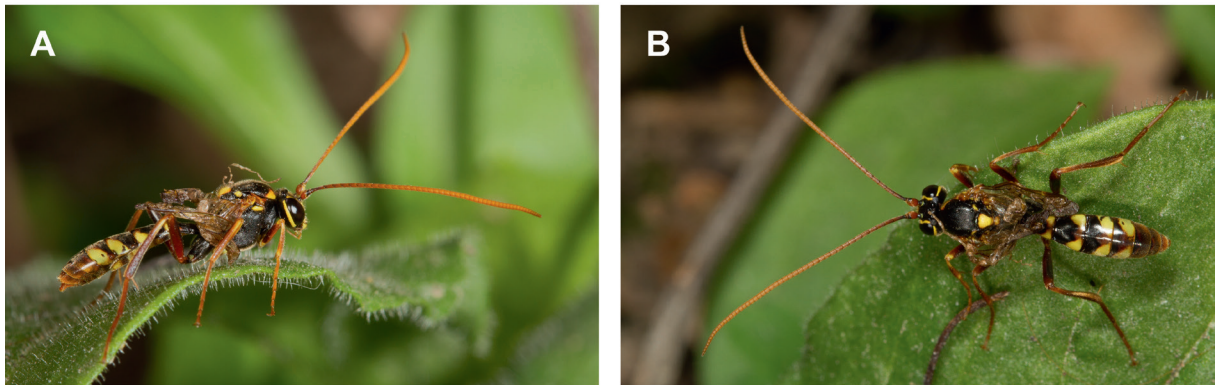


Fig. 8. *Rynchobanchus flavopictus* Heinrich 1937, female. A, habitus, lateral view. B, habitus, dorsal view. © Sandra Lamberts.



Fig. 9. *Casinaria albipalpis* (Gravenhorst, 1829), female. A, habitus, lateral view. B, head, frontal view. © Rik Delhem

***Glypta caudata* Thomson, 1889**

This species belongs to the species group or subgenus *Conoblasta* with a larger horn on its frons (between the antennal sockets). The temples are narrowed behind the eyes along their whole expanse. Its metasoma is completely black. The hind tibiae are entirely pale dorso-medially. The mandibles are black. Finally, the ovipositor sheaths are as long as the fore wing and the body length is approximately 7–8 mm (KUSLITZKY, 1981). Its hosts in the Low Countries are unknown.

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Twijzel (FR); 53°14'53"N 6°04'56"E; 28/v/2012; Landschapsbeheer Friesland leg.; coll. HM; malaise trap 215 (24–28); H. Meijer det. • 2 ♂♂; Oostermeer, (FR); 53°14'47"N 6°05'03"E; 6/vii/2012; Landschapsbeheer Friesland leg.; coll. HM; malaise trap 193 (29.VI–6.VII); H. Meijer det.

Subfamily Campopleginae Förster, 1869

***Bathyplectes curculionis* (Thomson, 1887)**

Bathyplectes spp. have a typical habitus which make them relatively easy to recognise within Campopleginae. Most species are (very) robust with an impressive head (width of temples 0.75–1.3× the length of eyes) and a complete (and stalked) areolet (TOWNES, 1970b). *B. curculionis* needs to be examined with a microscope for certain identification. It strongly resembles *B. exiguus*, but has a shorter ovipositor (HORSTMANN, 1974). Just like other species in the genus (and as its name suggest), it is a parasitoid of Curculionidae (Coleoptera).

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Twijzel (FR); 53°14'53"N 6°04'56"E; 28/v/2012; Landschapsbeheer Friesland leg.; coll. HM; malaise trap 215 (24–28); H. Meijer det. • 1 ♀; Drachten-Azeven (FR); 53°06'48"N 6°09'01"E; 24/vii/2020; H. Meijer leg.; coll. HM; field observation; H. Meijer det.

***Bathyplectes tibiator* (Gravenhorst, 1820)**

= syn. *B. corvinus* (Thomson, 1887), synonymized by HORSTMANN (1986: 143)

This species of *Bathyplectes* is a lot bigger in comparison to the previously mentioned *B. curculionis*. The females have more than 23 antennal segments, which is rare within the genus. Otherwise it has a fine punctuation (next to granulation) on its frons, its mesoscutum and its mesopleuron. This distinguishes it from *B. incisus* (HORSTMANN, 1974, 1986).

First report for the Netherlands; unconfirmed in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Twijzel (FR); 53°14'53"N 6°04'56"E; 28/v/2012; Landschapsbeheer Friesland leg.; coll. HM; malaise trap 215 (24–28); H. Meijer det.

***Campoletis ensator* (Gravenhorst, 1829)**

Typical for this genus is the presence of an acute or obtuse median tooth (but not always). Additionally, the species are not too small (at least 5 mm), have at least 26 flagellomeres and a stalked areolet (more details see TOWNES, 1970b; RIEDEL, 2017).

C. ensator has to be collected for identification. Its clypeus has a sharp tooth apically and the ovipositor sheaths are 0.9–1.1× the length of hind tibiae. These hind tibiae have a specific colour pattern distinguishing them from the resembling *C. postica* (Bridgman & Fitch, 1885): basally

yellow-white, subbasally brown and medially yellowish white. Some of the known lepidopteran hosts (family Noctuidae) are common in Belgium and the Netherlands (RIEDEL, 2017).

First report for the Netherlands; unconfirmed in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 3 ♀♀; Oosterveer, (FR); 53°14'47"N 6°05'03"E; 6/vii/2012; Landschapsbeheer Friesland leg.; coll. HM; malaise trap 193 (29.VI–6.VII); H. Meijer det.

***Casinarina albipalpis* (Gravenhorst, 1829) (Fig. 9A–B)**

Superficially, *Casinarina* spp. resemble *Dusona* spp., but belonging to the (former) tribe of Campoplegini the suture on the first tergite is always present, usually at or above mid-height of this segment. Specific for this genus is the shape of the areolet, with *2m-cu* meeting *CU* (distal corner of second discal cell) at an acute angle (TOWNES, 1970b).

Overall, this species is black with yellow to white mandibles (Fig. 9 B), tegulae, fore and mid trochanters/trochantelli. The legs are reddish, with the hind tibiae ivory basally and externo-medially (RIEDEL, 2018; see Fig. 9 A). This species can be regarded as ‘opportunistic’ with a wide host range and phenology (from April to September). It is widely distributed in western Continental Europe (see FAUNA EUROPAEA) and is just waiting to be found in Belgium. Most of the collected specimens were caught with light traps, and all of them were found within an urban context. Host records are uncertain at this moment.

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♂; Drachten (FR); 53°05'59"N 6°06'32"E; 18/ix/2019; H. Meijer leg.; coll. HM; light trap; H. Meijer det. • 1 ♀; Almere (FL); 52°22'48"N 5°14'19"E; 26/iv/2020; P. Hoekstra leg.; coll. PH; field observation, flying around *Chamaecyparis lawsoniana* shrubs; P. Hoekstra det. (ObsID: 190092733); Fig. 9A-B. • 1 ♂; Drachten (FR); 53°05'59"N 6°06'32"E; 8/v/2020; H. Meijer leg.; coll. HM; light trap; H. Meijer det. • 1 ♂; Drachten (FR); 53°05'59"N 6°06'32"E; 15/viii/2020; H. Meijer leg.; coll. HM; light trap; H. Meijer det. • 1 ♀; Drachten (FR); 53°05'59"N 6°06'32"E; 30/viii/2020; H. Meijer leg.; coll. HM; light trap; H. Meijer det.

***Cymodusa declinator* (Gravenhorst, 1829)**

Cymodusa spp. do not have glymmae, the areolet is complete and the lower margins of the eyes (which are at least sparsely hairy) are converging ventrally (TOWNES, 1970b).

C. declinator belongs to a species complex with *C. leucocera* Holmgren, 1859. Characteristically, the females have white bands on their antennae. For *C. declinator* these are the basal flagellomeres 4–6; for *C. leucocera* 6–10. There are also other differences in its propodeal carination and its colouration (see HORSTMANN, 2013). The status of both species is not entirely clear for the Low Countries. Although both species have been validly described, Horstmann felt the necessity to revise and restate them, and some authors in the 19th century seem to have made errors and/or even used *Campoplex declinator* as a synonym. Because of these issues, we hereby restate the species' presence in the Netherlands, following the descriptions by Horstmann. **First report for the Netherlands; unreported in Belgium.**

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Drachten-Azeven (FR); 53°06'49"N 6°09'00"E; 27/vii/2020; H. Meijer leg.; coll. HM; field observation; H. Meijer det.



Fig. 10. *Diadegma cinnabaritor* Aubert, 1970, female. A, habitus, lateral view. B, head, frontal view. C, area superomedia (propodeum), dorsal view. © Seraina Klopstein.

***Diadegma cinnabaritor* Aubert, 1970 (Fig. 10 A–C)**

One of the rarest and more surprising findings in this study. Based on the remarkable red habitus, it was first identified as *Chromoplex picticollis* (Gravenhorst, 1829). This monotypic genus has a rather long (hind) tibial spur, red mesosoma and metasoma with black ovipositor sheaths and yellow marks on its black face. Its speculum is smooth (HORSTMANN, 1986).

However, closer examination of our specimen revealed some divergent characteristics. For example, the hind tibiae were not brown with a medial white band and the spot on the face was rather red than yellow (HORSTMANN, 1986; MOHAMMADI-KHORAMABADI *et al.*, 2017; see Fig. 10A–B). It was thus considered to be a *Diadegma* sp. (TOWNES, 1970b). The extend of the testaceous colouration (both mesosoma and metasoma) is unique within the genus.

AUBERT (1970) described the species. It is closely related to *Diadegma grisecens* (Gravenhorst, 1829), which is known to be present in Belgium and the Netherlands. HORSTMANN (1973) even assumed it could be a rufous form of this species. The female holotype from Auberts collection (see KLOPFSTEIN & BAUR, 2011) was carefully compared to our specimen by Seraina Klopstein and it looks nearly identical. This suggests it is a valid species, as it is accepted now, although future genetic analysis will provide a more decisive judgment. Next to the colouration, other characteristics (although variable) to distinguish *D. cinnabaritor* from *D. grisescens* are its speculum (shiny, as mentioned above) and its area superomedia (one and a half times as long as wide and more weakly closed at the apical end; see Fig. 10 C) (HORSTMANN, 1973a). AUBERT (1976) later added that *D. cinnabaritor* is slightly larger and more robust, with 38 instead of 33 antennal segments. Its head is deemed to be more transverse, the ocelli bigger, distanced from the compound eyes by only just their diameter. The apical margin of its clypeus is densely punctuated. Its malar space is shorter and the mandibles are narrowed apically. Finally, the radial cell is longer and the nervellus is postfurcal.

This specimen was gifted to the first author by the initial observer. He donated it to the Naturhistorisches Museum Basel, where it will be analysed genetically and is integrated in a forthcoming key on Campopleginae. As far as we know, our finding constitutes the third report and specimen of this species in collection, worldwide.

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Nieuwkoop, Nieuwkoopse Plassen (ZH); 52°08'57"N 4°48'57"E; 3/viii/2016; B. Koese leg.; coll. NMB; malaise trap (28.VII–3.VIII); S. Klopstein det. (ObsID: 122316512); Fig. 10 A–C.

***Dusona bicoloripes* (Ashmead, 1906) (Fig. 11)**

Superficially *Dusona* spp. resemble *Casinaria* spp., but belonging to the former tribe of Porizontini the suture on the first tergite is often indistinct or absent.

Dusona bicoloripes belongs to the group with the epipleurum of the third gastral tergite separated from the tergite. The specimen from Zedelgem (Belgium) measured 11.5 mm and had 49–50 flagellomeres. There is one diagnostic character, the frons has a small raised point between its eye and its antennal socket. The metasoma has some of the middle tergites red, the others black (HORSTMANN, 2009; see Fig. 11). *Lymantria dispar* (Linnaeus 1758) (Lepidoptera: Erebidae) is considered to be the main host (SAWONIEWICZ, 1979).

First report for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 2 ♀♀; Somal (NA); 10/v/2006; P-N. Libert leg.; coll. PNL; field observation; K. Horstmann det. • 1 ♀; Zedelgem, Militair domein Vloethemveld - Oud elzen-beuken-zomereikenbos Perceel 71 (WVL); 22/v/2020; W. Dekoninck *et al.* (KBIN) leg.; coll. KBIN/RBINS (project Bruges heathlands); pitfall trap (8–22); F. Verheyde det.

THE NETHERLANDS: • 1 ♀; Drunen, Loonse en Drunense Duinen (NB); 51°38'21"N 5°06'22"E; 11/viii/2014; P. Hoekstra leg.; coll. KZ; field observation; K. Zwakhals det. (ObsID: 143737056). • 1 ♀; Wageningen (GE); 51°57'59"N 5°40'24"E; 25/iv/2020; D. Belgers leg.; coll. KZ; field observation in skylight; K. Zwakhals det. (ObsID: 189675058); Fig. 11. • 1 ♀; Ameland (FR); 53°27'01"N 5°38'51"E; 24/v/2020; P. Hoekstra leg.; coll. PH; yellow pan trap (19–24); P. Hoekstra det. (ObsID: 203062104).

***Dusona genalis* (Thomson, 1887)**

This species has to be collected to be identified. Although the excellent key by HORSTMANN (2009) is quite technical, many species can be excluded based on the amount of flagellomeres (in casu around 53) and total length (in casu 11 mm). Typical for *D. genalis* is that its frons has a rather fine median longitudinal carina, and the femora are completely black. Several hosts are common lepidopterans in the Low Countries (HORSTMANN, 2011).

First report for Belgium; unreported in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Steenhuffel (VB); 50°59'57"N 4°16'20"E; 21/iv/2018; S. De Rycke leg.; coll. SDR; field observation; F. Verheyde det. (ObsID: 155135279). • 1 ♀; Elverdinge, Galgenbossen (WVL); 50°52'06"N 2°46'59"E; 2/vi/2019; F. Verheyde leg.; coll. FV; field observation; F. Verheyde det. (ObsID: 173660838).

***Dusona minor* (Provancher, 1879)**

This species has the epipleurum of the third tergite completely fused with the tergite. As its name suggests it is a smaller species (6–8 mm) with a smaller amount of flagellomeres (34–37 for females). The ventral part of the prepectal carina is not raised. Characteristically for this species is that the hind corners of the pronotum are produced to a flange, which projects about as far as the tegulae and is rounded apically (HORSTMANN, 2009). Our specimen has the hind tibiae black; its fifth tergite is partly reddish. All the known hosts are quite rare or even unreported (see HORSTMANN, 2011; YU *et al.*, 2012). *Eupithecia lariciata* (Freyer, 1841) (Lepidoptera: Geometridae) seems to be the most plausible candidate (FINLAYSON, 1975).

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Twijzel (FR); 53°14'53"N 6°04'56"E; 28/v/2012; Landschapsbeheer Friesland leg.; coll. HM; malaise trap 215 (24–28); H. Meijer det.

***Dusona recta* (Thomson, 1887) (Fig. 12)**

Dusona recta belongs to the first group of *Dusona* spp., with the epipleurum of the third gastral tergite separated from the tergite by a crease. In this case, the crease is clearly black. Our specimen measured approximately 8 mm and counted at least 39 flagellomeres (some broke off). Its genal index is 0.1–0.2 and the speculum is coriaceous, rather dull. In front of the speculum there are fine longitudinal striae medially and ventrally as well as dorsally. The hind tibiae are largely yellowish but black apically (HORSTMANN, 2009). In our specimen, tergites 3–4 are orange red and the second tergite is partly orange, partly black (Fig. 12). *Aethalura punctulata* (Denis & Schiffermüller, 1775) and *Ematurga atomaria* (Linnaeus, 1758) (Lepidoptera: Geometridae) are plausible hosts (HORSTMANN, 2011).

First report for Belgium; unreported in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Mechelen (AN); 51°01'28"N 4°28'07"E; 8/vii/2017; C. Deschepper leg.; coll. FV; field observation; F. Verheyde det. (ObsID: 207715788); Fig. 12.

***Dusona thomsoni* Hinz, 1963**

A smaller species of *Dusona*, measuring approximately 7 to 8 mm and counting 39-42 flagellomeres. The epipleurum of the third tergite is fused with the tergite, its genal carina joins the oral carina close the base of the mandible (genal index 0.1–0.2) and the ventral part of the prepectal carina is not distinctly raised. The second tergite is marked black dorsally and the following tergites are marked with black dorsally and with red laterally (to a variable extent). The males have reddish brown claspers (HORSTMANN, 2009). Both *D. thomsoni* and the abovementioned *D. genalis* are not often reported, and missing in some countries in Western continental Europe, but this could be due to the difficulties of identifying them in the first place. *Ematurga atomaria* (Linnaeus, 1758) (Lepidoptera: Geometridae), also mentioned above, is an abundant possible host in the Low Countries (HORSTMANN, 2011; SHAW *et al.*, 2016).

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♂; Drachten (FR); 53°05'59"N 6°06'24"E; 27/iv/2012; H. Meijer leg.; coll. HM; field observation; H. Meijer det. • 1 ♀; Drachten (FR); 53°05'59"N 6°06'24"E; 2/v/2012; H. Meijer leg.; coll. HM; field observation; H. Meijer det. • 1 ♂; Drachten (FR); 53°05'59"N 6°06'24"E; 1/vii/2012; H. Meijer leg.; coll. HM; field observation; H. Meijer det. • 2 ♂♂; Drachten (FR); 53°05'59"N 6°06'24"E; 3/vii/2012; H. Meijer leg.; coll. HM; field observation; H. Meijer det.

***Eriborus obscuripes* Horstmann, 1987** (Fig. 13A–B)

Another genus belonging to the (former) tribe of Porizontini. The hind basitarsus has a continuous, straight, median ventral row of small very closely-spaced hairs. In the hind wing the distal abscissa of *CU* stops before the nervellus (which is vertical). In contrast to *Echthronomas* spp. the areolet is absent (TOWNES, 1970b).

Using the key of HORSTMANN (1987) both specimens clearly keyed as this species (e.g. the entire tarsal claws pectinate, tegulae yellow, temples short and narrowed, ovipositor shorter than petiole; see Fig. 13 A). However, it is with some caution we make this report. In contrast to Horstmann's original description, the mandibles of both specimens are (completely) yellow (Fig. 13 B). It could thus be an unknown variation or even (sub)species. Hosts are unknown.

First report for Belgium; unreported in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Westrozebeke, Polderbos (WVL); 50°56'24"N 3°00'35"E; 13/vi/2020; F. Verheyde leg.; coll. FV; field observation; F. Verheyde det. (ObsID: 193950343). • 1 ♀; Sint-Michiels (WVL); 51°11'44"N 3°13'44"E; 18/ix/2020; A. De Ketelaere leg.; coll. ADK; field observation; A. De Ketelaere & H. Meijer det. (ObsID: 202192182); Fig. 13A–B.



Fig. 11. *Dusona bicoloripes* (Ashmead, 1906), female, habitus, lateral view. © Dick Belgers.



Fig. 12. *Dusona recta* (Thomson, 1887), female, habitus, lateral view. © Fons Verheyde.



Fig. 13. *Eriborus obscuripes* Horstmann, 1987, female. A, habitus, lateral view. B, head, frontal view. © Augustijn De Ketelaere.



Fig. 14. *Meloboris collector* (Thunberg, 1824), female. A, habitus, lateral view. B, head, frontal view. © Malcolm Storey.

***Eriborus perfidus* (Gravenhorst, 1829)**

This species is more well known in historical collections. In comparison to other species in the genus, the ovipositor sheaths are relatively long, reaching the same length as the postpetiole. Its area superomedia has a typical shape, the length is one and a half times its width, which distinguishes it from *E. braccatus* (Gmelin 1790). It is already reported from many countries in Western Europe (see FAUNA EUROPAEA). *Hypena proboscidalis* (Linnaeus, 1758) (Lepidoptera: Erebidae) is an extremely common host.

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Eastermar (FR); 53°10'47"N 6°05'39"E; 20/vi/2012; Landschapsbeheer Friesland leg.; coll. HM; malaise trap 31 (13–20); H. Meijer det.

***Gonotypus melanostoma* (Thomson, 1887)**

A small black species (more or less 4 to 6 mm) with glymmae which are sometimes hard to see on the first tergite. The ovipositor is very stout, about twice as long as the metasomal maximum depth (TOWNES, 1970b). Its pterostigma is brownish, the tegulae are white (SCHMIEDEKNECHT 1908). Our findings probably constitute the most southern observations so far. Among its hosts are rather rare *Coleophora* spp. (Lepidoptera) connected to *Juncus* spp. (SHAW *et al.*, 2016).

First report of the species and the genus for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Somal (NA); 27/v/2019; P-N. Libert leg.; coll. PNL; malaise trap (16–27); P-N. Libert det.

THE NETHERLANDS: • 1 ♀; Drachten-Azeven (FR); 53°06'48"N 6°09'01"E; 2/viii/2020; H. Meijer leg.; coll. HM; light trap; H. Meijer det.

***Lathrostizus macrostoma* (Thomson, 1887)**

Lathrostizus spp. are relatively hard to recognise and require careful keying and comparison with other campoplegine genera. There is the presence of an areolet and glymmae; and the hind wing with the distal abscissa of *CU* stopping short of the nervellus. Their clypeus is rather wide and their ovipositor is two to three times as long as the metasomal maximum depth, very strongly upcurved. Finally, the lower tooth of the mandible is not longer than the upper tooth (TOWNES, 1970b).

Lathrostizus macrostoma has relatively short ovipositor sheaths, measuring 1.3–1.6× as long as the first tergite. Its clypeus is black, the postpectal ridge is not remarkable. Our specimens had approximately 26 flagellomeres (HORSTMANN, 2004). Tergites 2–4 are red brown, the other tergites are black. All our findings were coastal suggesting there are unknown hosts, although some of the known ones are common everywhere (see YU *et al.*, 2012).

First report for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Heist, Strand - Duinreep (WVL); 51°20'35"N 3°14'50"E; 16/vii/2017; P. Vanhauwere leg. [UGent]; coll. KBIN/RBINS (ENDURE-project, 123_DUI_14_N); field observation; F. Verheyde det. • 2 ♀♀; Oostduinkerke-Bad, Duinen (WVL); 51°07'57"N 2°39'45"E; 16/vii/2017; P. Vanhauwere leg. [UGent]; coll. KBIN/RBINS (ENDURE-project, 142_ODK_BAD_8_N & 144_ODK_BAD_10_N); field observation; F. Verheyde det.

THE NETHERLANDS: • 1 ♂; Wassenaar, Berkheide (NB); 52°10'15"N 4°21'26"E; 19/ix/2018; coll. KBIN/RBINS (ENDURE-project, HYM_83_N_M); field observation; F. Verheyde det. • 1 ♀; Bergen, Noordhollands Duinreservaat (NB); 52°40'03"N 4°37'49"E; 27/vi/2019; coll. KBIN/RBINS (ENDURE-project, HYM_236_N_N); field observation; F. Verheyde det.

***Meloboris alternans* (Gravenhorst, 1829)**

Just like the abovementioned genus *Lathrostizus*, *Meloboris* spp. are relatively hard to recognise. Their areolet and glymmae are present and the distal abscissa of *CU* is meeting the nervellus in the hind wing. Their propodeum is rather long and has a unique carination (TOWNES, 1970b).

M. alternans has its temples narrowed behind the eyes, while the clypeus is protruding. The penultimate antennal segment is slender: 1.4 to 1.6× its width. Lastly, the hind femora are 5.0 to 5.8× longer than wide and red (brown), just like at least one abdominal segment. Hosts are mainly *Elachista* spp. (Lepidoptera: Elachistidae) (HORSTMANN, 2004).

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Drachten-Azeven (FR); 53°06'49"N 6°09'00"E; 6/ix/2020; H. Meijer leg.; coll. HM; field observation; H. Meijer det. • 1 ♀; Drachten-Azeven (FR); 53°06'49"N 6°09'00"E; 12/ix/2020; H. Meijer leg.; coll. HM; field observation; H. Meijer det.

***Meloboris collector* (Thunberg, 1824)** (Fig. 14A–B)

Surprisingly, *M. collector* has been rather poorly described in recent literature, although it is deemed to be the most common species in the genus (see also HORSTMANN, 2004; HORSTMANN, 2013) and has sometimes been treated as a biological agent (KHAN, 1997). In fact, it seems to be one of the most common ichneumonid wasps all-round in the Low Countries, with many widespread hosts as *Agrotis exclamationis* (Linnaeus, 1758) and *A. segetum* (Denis & Schiffermüller, 1775) (Lepidoptera: Noctuidae). It is often found in gardens, sometimes with light traps, and seems to have a very wide phenology (March–November). One specimen was attracted by a pheromone-trap of *Spodoptera exigua* (Hübner, 1808) (Lepidoptera: Noctuidae). Based on SCHMIEDEKNECHT (1908) (who used the synonym *Napiera concinna*), HORSTMANN (2013) and our specimens we hereby give a short description.

The head and mesosoma are black with whitish pubescence, especially on the mesopleuron and propodeum. The palps and mandibles are yellow (Fig. 14 B). The antennae and scapus are black, the latter sometimes with yellow stains on the ventral side. The pterostigma is brownish, tegulae yellowish white. The hind legs have a specific colour pattern: coxae black, trochanters yellowish white but black basally, femora orange-red and black basally and apically, tibiae also black basally and apically, but yellowish white medially [exceptionally orange, in specimens from the UK; see Fig. 14 A] and tarsi black. The front and mid legs are (light) orange with yellowish white coxae and trochanters. The metasoma is predominantly black with apical margins reddish brown. The dorsolateral sides are increasingly red apically, superficially resembling *Stilbops vetulus* (Gravenhorst, 1829). Length 5–6 mm.

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Sint-Andries, Ter Heyde (WVL); 24/vi/2016; W. Dekoninck *et al.* (KBIN) leg.; coll. KBIN/RBINS (project Bruges heathlands); yellow pan trap (10–24); F. Verheyde det. • 1 ♀; De Haan, Duinengordel tot Bredene - Vosseslag (WVL); 51°16'07"N 3°00'23"E;

14/vii/2017; P. Vanhauwere leg. [UGent]; coll. KBIN/RBINS (ENDURE-project, 103_DHN1_3_N); field observation; F. Verheyde det. • 1 ♀; Knokke, Het Zwin - Strand (WVL); 51°21'57"N 3°21'02"E; 19/vii/2017; P. Vanhauwere leg. [UGent]; coll. KBIN/RBINS (ENDURE-project, 155_ZWN_5_N); field observation; F. Verheyde det. • 1 ♂; Snellegem, Waterwinning (WVL); 21/vi/2019; W. Dekoninck *et al.* (KBIN) leg.; coll. KBIN/RBINS (project Bruges heathlands); malaise trap (7–21); F. Verheyde det. • 1 ♀; Zeebrugge (WVL); 51°19'13"N 3°10'40"E; 1/vii/2020; A. Beidts leg.; coll. ADK; field observation; A. De Ketelaere det. (ObsID: 204524959) [...].

THE NETHERLANDS: • 2 ♂♂; Utrecht, Soesterberg – Vliegbasis West (UT); 52°07'50"N 5°15'58"E; 24/v/2019 & 23/vi/2019; T. Zeegers leg.; coll. FV (Soesterberg-project, 21–24.V.2019 & 21–23.VI.2019; nr. 44 & nr. 46); malaise trap; F. Verheyde det. • 1 ♀; Ossendrecht, Meiduin (NB); 51°24'00"N 4°20'55"E; 5/vii/2019; H. Nouwens leg.; light trap; F. Verheyde det. (ObsID: 175824503). • 1 ♂; Utrecht, Soesterberg – Vliegbasis West (UT); 52°07'50"N 5°15'58"E; 23/iv/2020; T. Zeegers leg.; coll. Naturalis (Soesterberg-project, 20–23.IV.2020; nr. 36); malaise trap; F. Verheyde det. • 1 ♀; Wageningen (GE); 51°58'09"N 5°41'18"E; 17/viii/2020; R. Beunen leg.; light trap; F. Verheyde det. (ObsID: 198614536) • 1 ♀; Drachten (FR); 53°05'59"N 6°06'32"E; 22/viii/2020; H. Meijer leg.; coll. HM; light trap; H. Meijer det.

***Olesicampe alboplica* (Thomson, 1887)**

This genus has yet to be revised and was thus treated with care. Keying was done with SCHMIEDEKNECHT (1908). *Olesicampe* spp. are not very difficult to recognise. Their fore wing has a closed areolet, the nervellus is not broken, their clypeus is long, the upper tooth of the mandibles is (often) shorter than the lower tooth and the ovipositor is fairly short but straight (more details see SCHMIEDEKNECHT, 1908 and TOWNES, 1970b).

For this species, the dorsolateral carinae and glymmae are present on the petiole. The metasoma is completely black. The hind tibiae are black apically, the femora are completely black. Some of the known hosts are said to be the very rare sawflies *Aglaostigma nebulosum* (Ed. Andre, 1881) and *Siobla sturmi* (Klug, 1817) (Symphyta: Tenthredinidae) (HINZ, 1961).

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♂; Twijzel (FR); 53°14'53"N 6°04'56"E; 28/v/2012; Landschapsbeheer Friesland leg.; coll. HM; malaise trap 215 (24–28); H. Meijer det.

***Olesicampe binotata* (Thomson, 1887)**

Olesicampe binotata belongs to the species group which does not have dorsolateral carinae and glymmae on the petiole. Its hind tibiae are (broadly) black apically and the femora are completely black. Its metasoma is partly red (T1–2 hind margin, T3–4 completely and T5 partly). The sawfly *Tenthredo amoena* (Symphyta: Tenthredinidae) is a common host (HINZ, 1961).

First report for the Netherlands; unconfirmed in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Twijzel (FR); 53°14'53"N 6°04'56"E; 28/v/2012; Landschapsbeheer Friesland leg.; coll. HM; malaise trap 215 (24–28); H. Meijer det.

***Olesicampe fulviventris* (Gmelin, 1790)**

Following the abovementioned *O. binotata*, this species similarly has no dorsolateral carinae, nor glymmae, and it is relatively large (around 8 to 9 mm). Specifically for *O. fulviventris* the hind tibiae are not black apically and its speculum is matt. There are probably unreported hosts in existence, or the host record is erroneous, because the supposed host *Adscita geryon* (Hübner, 1813) (Lepidoptera: Zygaenidae) (BIGNELL, 1898) is not known from this part of the country.

First report for the Netherlands; unconfirmed in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Twijzel (FR); 53°14'53"N 6°04'56"E; 28/v/2012; Landschapsbeheer Friesland leg.; coll. HM; malaise trap 215 (24–28); H. Meijer det.

***Olesicampe heterogaster* (Thomson, 1887)**

= syn. *Holocremna heterogaster* Thomson, 1887, synonymized by FITTON (1982: 41)

This species used to belong to the genus *Holocremna*, which was synonymised with *Olesicampe* but can still be seen as a subgenus. The species from this subgenus have a different head shape (shorter, not cubiform as in Fig. 16), their clypeus is rounded apically and its teeth-length is more or less equal. On average the species are also slightly smaller.

Olesicampe heterogaster is more difficult to key. Its femora, mandibles and tegulae are not completely black, the temples are seldomly narrowed behind the head and its speculum is matt. The coxae and trochanters are black, except for the hind legs of the males. Known hosts are *Acantholyda erythrocephala* (Linnaeus, 1758) (Symphyta: Pamphiliidae) and *Diprion pini* (Linnaeus, 1758) (Symphyta: Diprionidae) (SCHEIDTER, 1934; ZAPRYNANOV, 1985).

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Drachten-Azeven (FR); 53°06'48"N 6°09'01"E; 30/viii/2020; H. Meijer leg.; coll. HM; field observation; H. Meijer det. • 1 ♀; Drachten-Azeven (FR); 53°14'53"N 6°04'55"E; 6/ix/2020; H. Meijer leg.; coll. HM; field observation; H. Meijer det.

***Olesicampe macellator* (Thunberg, 1822) (Fig. 15)**

The teeth of *O. macellator* are more or less equal in length and its head is not cubic, this species thus belongs to the abovementioned subgenus *Holocremna*. It is a very colourful species (see also Fig. 15). Its mesosoma is mostly black, but the metasoma is predominantly red. The mandibles and trochanters are white to yellow. The hind femora are red, the hind tibiae as well, but with a black apical band. The apical flagellomeres are slightly reddish. It measures 7 to 8 mm. Many hosts are known, among them sawflies associated with conifers and lepidopterans (YU *et al.*, 2012).

First report for Belgium; unreported in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♂; Rijmenam (AN); 22/iv/1944; A. Crèvecoeur leg.; coll. KBIN/RBINS (coll. Crèvecoeur); F. Verheyde det.; Fig. 15.

***Olesicampe patellana* (Thomson, 1887)**

Just like *O. binotata* and *O. fulviventris* this species belongs to the complex which does not have dorsolateral carinae or glymmae on the petiole. In contrast to the latter species, the hind tibiae are black apically. Furthermore, the femora are black as well. The shape of the pedicellus (second antennal segment) is unique; lenticular. The hosts are unknown.

First report for the Netherlands; unconfirmed in Belgium.



Fig. 15. *Olesicampe macellator* (Thunberg, 1822), male, habitus, lateral view. © Fons Verheyde.



Fig. 16. *Olesicampe sternella* (Thomson, 1887), male, head, frontal view. © Fons Verheyde.



Fig. 17. *Phobocampe confusa* (Thomson, 1887), female. A, habitus, lateral view. B, habitus, dorsal view. © Rudy Soethof.



Fig. 18. *Venturia canescens* (Gravenhorst, 1829), female. A, habitus, lateral view. B, area superomedia (propodeum), dorsal view. © Augustijn De Ketelaere.

MATERIAL EXAMINED:

THE NETHERLANDS: • 3 ♂♂; Oostermeer, (FR); 53°14'47"N 6°05'03"E; 6/vii/2012; Landschapsbeheer Friesland leg.; coll. HM; malaise trap 193 (29.VI-6.VII); H. Meijer det.

***Olesicampe sternella* (Thomson, 1887) (Fig. 16)**

Olesicampe sternella has a lower tooth of the mandible that is longer than the upper tooth, the tegulae are white and the dorsolateral carinae and glymmae are present on the first tergite. The metasoma is partly red, basal and apical tergites are black. The basal flagellomeres are light brown ventrally. The hind coxae are black, the trochanters yellow, the femora red and the tibiae yellow brown. Only one host is known: the rather rare lepidopteran *Amphipoea oculea* (Linnaeus, 1761) (Lepidoptera: Noctuidae) (TÖLG, 1912).

First report for Belgium; unreported in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♂; Snellegem, Waterwinning (WVL); 21/vi/2019; W. Dekoninck *et al.* (KBIN) leg.; coll. KBIN/RBINS (project Bruges heathlands); malaise trap (7–21); F. Verheyde det.; Fig. 16.

***Phobocampe confusa* (Thomson, 1887) (Fig. 17A–B)**

Phobocampe spp. are small but robust wasps which can be recognised by the strongly sloping fore wing *Icu-a*, the apical margin of their clypeus which is truncate or subtruncate, the thyridium with approximately its own diameter from the base of the second tergite, the glymmae which are small or obsolescent, their typical propodeal carination and the ovipositor which is about as long as the metasomal maximum depth in the females (TOWNES, 1970b).

The propodeal carination and the colouration of the legs are mainly used for identification to species level. It needs to be keyed carefully. *P. confusa* has its head feebly narrowed behind the eyes, the propodeal spiracle is oval and the basal transverse carina is V- or U-shaped. Its postpetiole, second and third tergites have a reddish brown to brown band or blotch. The hind tibiae are white to yellowish, dark brown to black basally and apically (SEDIVY, 2004; see Fig. 17A-B). Our specimens were reared from *Aglais io* (Linnaeus, 1758) (Lepidoptera: Nymphalidae). The parasitoid wasp is able to cause high mortality in some circumstances. The relation with its hosts has been studied in depth in recent literature (AUDUSSEAU *et al.*, 2020).

First report for the Netherlands; unconfirmed in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 12 ♀♀; Zevenaar, Rosandse Polder (GE); 51°54'39"N 6°04'11"E; 18/viii/2019; R. Soethof leg.; coll. FV (4 ♀) & KZ; reared ex *Aglais io* (Linnaeus, 1758); K Zwakhals & F. Verheyde det. (ObsID: 181622631); Fig. 17A–B.

***Phobocampe horstmanni* Sedivy, 2004**

Just like *P. confusa* (see above) this species requires careful keying. Additionally to its typical propodeal carination (the median longitudinal carinae below costulae are very shortly constricted then divergent), the petiole has no lateral grooves. The hind tibiae are pale brown to white, brown subbasally and apically. The second and third tergite have reddish brown lateral blotches (SEDIVY, 2004). Our specimen measured 5 mm and had 27 flagellomeres. Several common lepidopterans are known as host (SEDIVY, 2004; SHAW *et al.*, 2016).

First report for Belgium; unreported in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Snellegem, Waterwinning (WVL); 21/vi/2019; W. Dekoninck *et al.* (KBIN) leg.; coll. KBIN/RBINS (project Bruges heathlands); malaise trap (7–21); F. Verheyde det.

***Rhimphoctona melanura* (Holmgren, 1860)**

Another genus belonging to the former tribe of Porizontini. It belongs to the group of genera with the distal abscissa of *CU* meeting the nervellus in the hind wing. The lower mandibular tooth is longer than the upper tooth. The fore wing vein *2m-cu* is meeting the areolet distinctly near the distal end. Their ovipositor is cylindrical, with the ovipositor tip slightly curving (TOWNES, 1970b; HORSTMANN, 1980a).

Recently the genus was revised by VARGA (2017). *R. melanura* is distinguished by having the hind coxae black, the mesoscutum more strongly sculptured, distinct costula on propodeum (which has the area superomedia wider than area basalis), short temples and a densely punctuated mesopleuron. These species are ectoparasitoids of wood-boring beetles, mainly Cerambycidae (VARGA, 2017). Possibly, these parasitoids will become more common, following the tendency of many ‘dead wood’-ichneumonids migrating from eastern parts of Europe to the western part (VERHEYDE *et al.*, 2020a).

First report for the Netherlands; unconfirmed in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Wageningen (GE); 51°59'38"N 5°40'06"E; 18/v/2020; P. Hoekstra leg.; coll. PH; field observation; G. Broad & P. Hoekstra det. (ObsID: 192511518).

***Tranosema hyperboreum* (Holmgren, 1860)**

Tranosema spp. can be recognised by the presence of the glymmae on the first tergite and the presence of a closed areolet. Their nervellus is broken. The sternite of the first tergite does not reach the stigma. The posterior mesosternal carina is complete and the thyridium is less than its own length from the base of the second tergite (TOWNES, 1970b).

Tranosema hyperboreum [*hyperborea* in HORSTMANN, 1977] has deep glymmae, the hind tibiae are red brown, its speculum is shiny, the tegulae are black and the length of the femora is 4.5–5× its width (HORSTMANN, 1977). Only one rare host is known: *Eana incanana* (Stephens, 1852) (Lepidoptera: Tortricidae) (SHAW *et al.*, 2016).

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Twijzel (FR); 53°14'53"N 6°04'56"E; 28/v/2012; Landschapsbeheer Friesland leg.; coll. HM; malaise trap 215 (24–28); H. Meijer det.

***Venturia canescens* (Gravenhorst, 1829) (Fig. 18 A–B)**

One of the more straightforward genera within the former tribe of Campoplegini. The genus consists of more slender species, with the propodeum reaching beyond the middle of the hind coxa. The propodeal area superomedia and petiolaris may be combined but are not depressed. The hind wing has the distal abscissa of *CU* (a faint furrow) nearly always connected to the nervellus (TOWNES, 1970b; HORSTMANN, 1973b).

V. canescens is by far the commonest species of the genus. Its area superomedia is distinctly elongated (at least 1.5x its width; see Fig. 18 B), its pterostigma is brown and the metasoma is (extensively) reddish (VAS, 2019; see Fig. 18 A). Ecology and biology wise it is one of the more well studied campoplegines or even ichneumonid wasps overall (BROAD *et al.*, 2018). Just

like the imported species *Ctenocharaxes bicolorus* (Linnaeus, 1767) it is one of the few Western European species that can be found in warehouses or storerooms. It is specialised in finding its hosts in these places: flour and meal moths from the lepidopteran family Pyralidae. Many of our reported specimens were found indoors. Some of them were of poor photographic quality and could not be integrated, but are highly likely to be reliable observations, knowing the context of these findings. Hypothetically the species has benefitted from the growing economy or habit of feeding garden birds. It is now widely spread; with the Netherlands being the latest country in Western Europe to report the species (FAUNA EUROPAEA).

First report for the Netherlands; confirmed in Belgium.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Brugge (WVL); 51°13'10"N 3°13'07"E; 13/vi/2019; J. Vernieuwe leg.; field observation; F. Verheyde det. (ObsID: 174350349). • 1 ♀; Lier (AN); 51°08'42"N 4°36'00"E; 4/iv/2020; L. Vaes leg.; field observation, found in a mix of muesli; F. Verheyde det. (ObsID: 187941350). • 1 ♀; Beernem (WVL); 51°06'44"N 3°19'29"E; 8/ix/2020; A. De Ketelaere leg.; coll. ADK; field observation, indoors; A. De Ketelaere & F. Verheyde det. (ObsID: 202192627); Fig. 18A–B.

THE NETHERLANDS: • 1 ♀; Pijnacker (ZH); 52°00'45"N 4°27'00"E; 16/ix/2018; H. van Yperen leg.; field observation; F. Verheyde det. (ObsID: 162544861). • 1 ♀; Zwolle, Stadshagen (OV); 52°00'45"N 4°27'00"E; 7/viii/2020; H. van Riessen leg.; field observation; F. Verheyde det. (ObsID: 197969142). • 1 ♀; Wageningen, Blauwe Bergen (GE); 51°58'49"N 5°39'39"E; 9/ix/2020; B. De Vries leg.; field observation; F. Verheyde det. (ObsID: 199813150). • 1 ♀; Veenendaal (UT); 52°01'15"N 5°35'09"E; 19/ix/2020; Jochem leg.; field observation; F. Verheyde det. (ObsID: 200346803). • 1 ♀; Dordrecht (ZH); 51°48'29"N 4°41'20"E; 29/ix/2020; A. van den Ende leg.; field observation; F. Verheyde det. (ObsID: 200823044).

Subfamily Cremastinae Förster, 1869

Cremastinae is a smaller subfamily within Ichneumonidae, of which its species are easily recognised by their prominent hind and mid tibial spurs, which are inserted in separate sockets (BROAD *et al.*, 2018). *Cremastus* spp. can be distinguished from the more common other genera by the absence of the closed areolet, a tooth on the hind femur and the more or less parallel ventral edges of the first sternite (Fig. 19 B).

***Cremastus lineatus* Gravenhorst, 1829**

The ventral edges of the first sternite are curved in the middle in *C. lineatus*, which is unique in the genus. Furthermore, the second recurrent vein is interstitial (or antefurcal) and the first abdominal segment is nearly as long as the second (KOLAROV, 1997). Our specimen was predominantly black with yellow markings on the temples and orbits.

First report for Belgium; unreported in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Oostende, Standsrandbos (WVL); 51°12'19"N 2°56'41"E; 5/viii/2020; F. Verheyde, E. Devos & J. Devos leg.; coll. FV; field observation; F. Verheyde det. (ObsID: 197817164).

***Cremastus pungens* (Gravenhorst, 1829)** (Fig. 19A–B)

Cremastus pungens then, is a smaller species (measuring approx. 5.5 to 6 mm). The first abdominal segment is nearly as long as the second, the abovementioned (shiny) ventral edges or margins are running parallel (Fig. 19B), the areola of the propodeum is longer than its width (but not four times its width), the hind tibiae are not swollen, the prepectal carina is not raised in the middle, the face has yellowish orbits, the middle tibiae are red brownish to yellow, the clypeus is moderately convex and the scutellum is black (KOLAROV, 1997; see Fig. 19 A). No hosts are known. Our findings date from June to July on small patches of (somewhat stony) dry grassland and moorland. From the European ENDURE project, the first author is aware of species caught on marram grass in coastal dunes from the UK. This suggests *C. pungens* could be thermophilic (just like its yet unknown hosts) and will thus be more common in the future.

First report for Belgium; confirmed in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Beernem, Bossen Lindeveld (WVL); 51°06'22"N 3°19'12"E; 1/vi/2020; F. Verheyde & A. De Ketelaere leg.; coll. ADK; field observation; A. De Ketelaere det. (ObsID: 193023764). • 1 ♀; Antwerpen, Galgenweel (AN); 51°13'04"N 4°21'51"E; 15/vi/2020; F. Verheyde & A. De Ketelaere leg.; coll. ADK; field observation; A. De Ketelaere det. (ObsID: 194210292); Fig. 19A–B.

THE NETHERLANDS: • 1 ♀; America, Het Meerdal (LIN); 51°27'09"N 5°58'08"E; 8/vii/2020; P. Hoekstra leg.; coll. PH; field observation; P. Hoekstra det. (ObsID: 203290115).

Subfamily Cryptinae Kirby, 1837**Tribe Aptesini Smith & Shenefelt 1955*****Aptesia flagitator* (Rossi, 1794)**

Belonging to the tribe Aptesini, *Aptesia* spp. have a small triangular projection opposite the anterior end of the lateromedian carina of the propodeum. The genus is hard to recognise from pictures (details see TOWNES, 1970a) and still needs a thorough revision.

A. flagitator is a remarkable species with a specific habitus. The colouration is very distinct within the genus (orange mesoscutum and other parts of thorax orange), although there are other Cryptinae with a more or less similar colour pattern (pers. comm. M. Schwarz). Other features are the tricoloured antennae (orange-black-white-black) and a black metasoma with the last two (often tree) tergites covered by white bands (JONAITIS, 1981). *Agonopterix heracliana* (Linnaeus, 1758) (Lepidoptera: Oecophoridae) is a common host (MORLEY, 1907).

First report for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Somal (NA); 1/ix/2012; P-N. Libert leg.; coll. PNL; field observation; M. Schwarz det. • 1 ♀; Overpelt (LIB); 51°12'18"N 5°22'33"E; 19/ix/2012; G. Van Hertum leg.; field observation; F. Verheyde & M. Schwarz det. (ObsID: 71235386). • 1 ♀; Burdinne (LG); 50°35'56"N 5°04'44"E; 27/viii/2019; S. Vincent; field observation; F. Verheyde det. (ObsID: 205190761). • 1 ♀; Sint-Agatha-Rode, Huldenberg (VB); 50°47'23"N 4°38'26"E; 14/viii/2020; M. Vandenberghe; field observation; F. Verheyde det. (ObsID: 198456493).

THE NETHERLANDS: • 1 ♀; Ooy (GE); 51°54'50"N 6°03'05"E; 22/ix/2018; R. Soethof leg.; field observation; M. Schwarz det. (ObsID: 164172352).

***Cubocephalus sternocerus* (Thomson, 1873)**

Cubocephalus spp. are not hard to identify on their habitus. As their name implies, their head is cubic and robust, just like their body. Their areolet is not too wide and the apical tergites are often greyish banded (very narrowly). More details can be found in TOWNES (1970a). Although *Cubocephalus* is a confusing genus that needs to be revised in one key (at this stage, species are described in several sources), we are able to report one species with a unique character.

C. sternocerus has two bulges on the postpectal ridge (JONAITIS, 1981). Furthermore, all its femora and trochanters are black (SCHMIEDEKNECHT 1904; as *Cratocryptus* sp.). Superficially (on habitus) it also resembles *C. nigriventris* (Thomson, 1874), but this latter species has a shorter ovipositor (shorter or rarely equal to metasoma). Only one host is known: *Synanthedon specififormis* (Denis & Schiffermüller, 1775) (Lepidoptera: Sesiidae) (MEYER, 1927).

First report for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Somal (NA); 25/vi/2010; P-N. Libert leg.; coll. PNL; field observation; M. Schwarz det.

THE NETHERLANDS: • 1 ♀; Twijzel (FR); 53°14'53"N 6°04'56"E; 28/v/2012; Landschapsbeheer Friesland leg.; coll. HM; malaise trap 215 (24–28); H. Meijer det.

***Javra opaca* (Thomson, 1873) (Fig. 20)**

Javra spp. have a rather long ovipositor. Their basal flagellomeres are very long with the second segment 3.3–5.5× as long as wide. Their sternaulus is also long and reaches the hind edge of the mesopleuron. Their areolet is wide, rectangular or pentagonal. The second tergite is matt, its hairs dense or moderately sparse (TOWNES, 1970a; JONAITIS, 1981).

Javra opaca has a rather small closed areolet. The notauli are only feebly impressed (JONAITIS, 1981). Several female specimens were caught, so we can provide more details on the basis of these findings. The head and mesosoma are predominantly black. The antennae are tricoloured, with the basal flagellomeres orange, a white band, and the apical flagellomeres black. The tegulae, hind coxae (apically) and apical tergites (7–8) are white or marked with white. The legs are predominantly orange, but the hind femora and the tibiae are slightly infuscate basally and/or apically. The metasoma is predominantly black, but tergites 1–3 have a broad orange band dorsally and laterally, covering at least half of the tergite (Fig. 20). Plausible hosts in the Netherlands are unknown. **First report for the Netherlands; unreported in Belgium.**

MATERIAL EXAMINED:

THE NETHERLANDS: • 2 ♀♀; Zundert, De Moeren (NB); 51°29'5"N 4°36'39"E; 5/v/2014; E. Brosens leg.; coll. EB; field observation; M. Schwarz det. • 5 ♀♀; Achtmaal, Oude Buisse Heide (NB); 51°28'5"N 4°34'5"E; 26/vi/2015; E. Brosens leg.; coll. EB; field observation; M. Schwarz det.; Fig. 20.

***Rhembobius perscrutator* (Thunberg, 1824) (Fig. 21)**

Rhembobius spp. are more robust and smaller cryptine wasps. Unique for the genus is the propodeum, with strong, coarse reticulation (TOWNES, 1970a).

Rhembobius perscrutator is characterized by a black metasoma and black reddish legs. The dorsolateral carinae reach far (beyond the middle of the postpetiole) and are often distinctly striated. Striking are the extremely white tegulae (Fig. 21). There are also white bands on the apical tergites. The known hosts are hoverflies, which is exceptionally within Cryptinae

(HORSTMANN, 2000). Some of our specimens were caught with light traps. It has a long flying season, from April to October. **First report for the Netherlands; confirmed in Belgium.**

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Hoboken (AN); 51°10'41"N 4°21'02"E; 1/iv/2019; R. Hendrickx leg.; field observation; F. Verheyde det. (ObsID: 169445686) • 1 ♀; Houyet, Bois de Baronville (NA); 50°08'41"N 4°56'19"E; 26/x/2019; C. Steeman leg.; light trap; F. Verheyde det. (ObsID: 181692489). • 1 ♀; Hove, Uilenbos (AN); 51°08'34"N 4°29'35"E; 5/ix/2020; Danny VG leg.; light trap; F. Verheyde det. (ObsID: 199607030).

THE NETHERLANDS: • 1 ♀; Wageningen (GE); 51°57'59"N 5°40'24"E; 31/v/2019; D. Belgers leg.; field observation in skylight; F. Verheyde det. (ObsID: 173503282). • 1 ♀; Wageningen (GE); 51°57'59"N 5°40'24"E; 14/vi/2019; D. Belgers leg.; field observation in skylight; F. Verheyde det. (ObsID: 174445536). • 1 ♀; Wageningen (GE); 51°57'59"N 5°40'24"E; 18/vi/2019; D. Belgers leg.; field observation in skylight; F. Verheyde det. (ObsID: 174669086); Fig. 21. • 1 ♀; Amsterdam, Osdorp (NH); 52°21'41"N 4°46'59"E; 16/x/2020; T. Kaizer leg.; field observation; F. Verheyde det. (ObsID: 201734645). • 1 ♀; Utrecht (NH); 52°06'11"N 5°07'34"E; 31/x/2020; T. Kaizer leg.; field observation; F. Verheyde det. (ObsID: 202541473).

Tribe Cryptini Kirby, 1837

Acroricnus stylator (Thunberg, 1824)

Acroricnus stylator can be easily recognised within the cryptine wasps on the basis of macroscopic features, but strong characteristics are the position of the petiole (spiracle before the middle) and the last segment of the hind tarsus with a group of large midventral bristles (TOWNES, 1970a).

It is an impressive ichneumonid wasp with a long ovipositor and slender metasoma. Especially the colouration of the hind legs and antennae is quite unique, although there is variation to some extent. The trochanters are black, the femora are orange to red, the tibiae are orange to red with a broad black band apically (approximately 0.4× the total length) and have distinct spurs. Some male specimens also have a black apical band on the femora. The hind tarsi are white to creamy yellow. The antennae always have a thin white ring medio-ventrally, covering at least two flagellomeres. The females sometimes have their flagellomeres orange basally and black apically. The males have a yellow clypeus. Most of the field observations were made in the summer (July–August) and came from moorlands where high temperatures are reached. Animals were often spotted feeding on umbellifers. However, there are also some observations from May (data from waarneming.nl), suggesting the species is bivoltine, sharing this aspect with the closely related and in the Low Countries unreported *Acroricnus seductor* (Scopoli, 1786) (POLIDORI *et al.*, 2011). Hosts are eumenine wasps (Hymenoptera: Apocrita: Vespidae), with at least *Eumenes coarctatus* (Linnaeus, 1758) as a certain report (MARCELIS, 2008). Despite the species' grandeur and distinct appearance, distribution maps (e.g. FAUNA EUROPAEA) clearly suggest it has been overlooked in Belgium.

First report for Belgium; confirmed in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♂; Mol, Buitengoor (AN); 51°13'03"N 5°10'51"E; 30/vii/2020; J. Thora leg.; field observation; F. Verheyde det. (ObsID: 197557119).

THE NETHERLANDS: • 1 ♀; Fochteloërveen (FR); 52°59'59"N 6°22'56"E; 4/viii/2009, F. Visscher leg.; field observation; F. Verheyde det. (ObsID: 44091854). • 1 ♂; Elsendorp

(NB); 51°34'18"N 5°47'21"E; 22/v/2013; A. Jacobs leg.; reared ex *Eumenes* sp. (dome); F. Verheyde det. (ObsID: 76297402). • 1 ♂; Wellerlooi, Uiterwaarden (LIN); 51°30'50"N 6°09'32"E; 29/vii/2013; L. Troisfontaine leg.; field observation; F. Verheyde det. (ObsID: 77985777). • 1 ♂; Ospel, Groote Peel (LIN); 51°19'37"N 5°48'05"E; 8/viii/2015; P. Smeets leg.; field observation; F. Verheyde det. (ObsID: 105231350). • 1 ♀; Sint-Anthonis (NB); 51°37'17"N 5°50'19"E; 14/viii/2015; A. Jacobs leg.; field observation on dome of *Eumenes coarctatus* (Linnaeus, 1758); F. Verheyde det. (ObsID: 105568900).

***Agrothereutes aterrimus* (Gravenhorst, 1829) (Fig. 22)**

With some experience, *Agrothereutes* spp. (especially the females) can be recognised by pictures. Their mesoscutum is polished and punctured and their ovipositor has a specific shape (robust, straight and not longer than the metasoma). White bands are often present on the hind tibiae or apical tergites. Their propodeum has the transverse carina nearly always obliterated medially (TOWNES, 1970a; SCHWARZ [2013], draft key). Based on the habitus there are only some similarities with the closely related genera *Apsilops* (see below), *Gambrus* (mesoscutum matt) and *Thrybius* (area superomedia laterally delimited by carinae).

Agrothereutes aterrimus is easy to recognise within the genus, it is the only species with a completely black metasoma (except for a white band on the apical tergites; see Fig. 22). The males are very slender, with the hind tarsi white and a brown pair of front and mid tibiae. It is one of the more common species reported in this paper which was missing from both Belgium and the Netherlands. Observations were often made in or near gardens, but hosts are unknown so far.

First report for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♂; Evere (BR); 50°52'44"N 4°23'28"E; 7/vi/2010; B. Hanssens leg.; field observation; M. Schwarz det. (ObsID: 48439160). • 1 ♀; Mechelen (AN); 51°01'55"N 4°29'16"E; 16/v/2011; J. Soors leg.; field observation; M. Schwarz & F. Verheyde det. (ObsID: 54800956). • 1 ♀; Keerbergen (VB); 50°59'58"N 4°37'58"E; 2/vi/2017; J. Denonville leg.; M. Schwarz & F. Verheyde det. (ObsID: 139395477). • 1 ♀; Merelbeke (OVL); 50°59'31"N 3°44'56"E; 15/vi/2017; P. De Somer leg.; field observation; F. Verheyde det. (ObsID: 140327413). • 1 ♀; Drongen (OVL); 51°02'17"N 3°35'48"E; 2/viii/2019; P. Lambrecht leg.; field observation; F. Verheyde det. (ObsID: 177340138) [...].

THE NETHERLANDS: • 1 ♀; Wageningen (GE); 51°57'59"N 5°40'24"E; 15/vi/2016; D. Belgers leg.; field observation in skylight; M. Schwarz & F. Verheyde det. (ObsID: 120005858); Fig. 22. • 1 ♂; Delft (ZH); 51°59'00"N 4°21'32"E; 22/vii/2018; W. Veldhuis leg.; field observation; M. Schwarz det. (ObsID: 160323427). • 1 ♀; Zoetermeer, Seghwaert (ZH); 52°04'09"N 4°30'15"E; 12/viii/2018, F. M. Jansen leg.; field observation; M. Schwarz & F. Verheyde det. (ObsID: 161262193). • 1 ♀; Zoetermeer, Seghwaert (ZH); 52°04'09"N 4°30'15"E; 15/viii/2018; F. M. Jansen leg.; field observation; F. Verheyde det. (ObsID: 161442145). • 1 ♀; Wageningen (GE); 51°57'59"N 5°40'24"E; 15/vi/2020; D. Belgers leg.; field observation in skylight; F. Verheyde det. (ObsID: 194152450) [...].

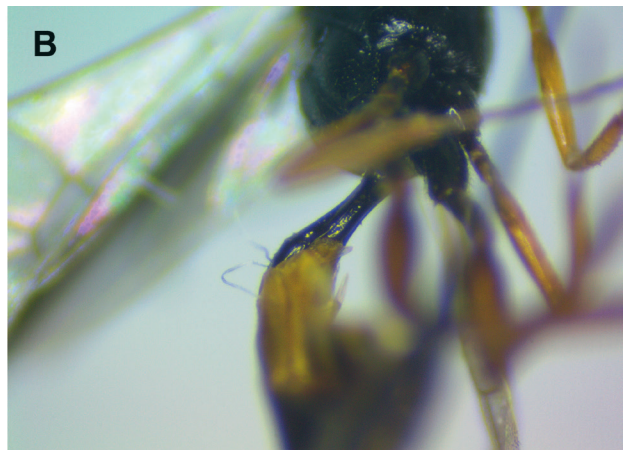


Fig. 19. *Cremastus pungens* (Gravenhorst, 1829), female. A, habitus, lateral view. B, first sternite, ventral view. © Augustijn de Ketelaere.



Fig. 20. *Javra opaca* (Thomson, 1873), female, habitus, dorsal view. © Edwin Brosens.



Fig. 21. *Rhembobius perscrutator* (Thunberg, 1824), female, habitus, lateral view. © Dick Belgers.



Fig. 22. *Agrothereutes aterrimus* (Gravenhorst, 1829), female, habitus, lateral view. © Dick Belgers.



Fig. 23. *Agrothereutes leucorhaeus* (Donovan, 1810), female, habitus, lateral view. © Patrick Debeuf.

***Agrothereutes leucorhaeus* (Donovan, 1810)** (Fig. 23)

Agrothereutes leucorhaeus is harder to identify than *A. aterrimus*. Its hind tibiae are white basally, the hind tarsi do not have a white ring (females), its face has white orbits (but is black medially) and its clypeus has white spots (SCHWARZ [2013], draft key; see Fig. 23). Just like the abovementioned species *A. aterrimus*, most of the observations were made in gardens. One observer was able to rear several specimens from a cocoon of *Lasiocampa quercus* (Lepidoptera: Lasiocampidae), thus confirming the existing host record in literature (QUICKE & SHAW, 2004).

First report for the Netherlands; confirmed in Belgium.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Wetteren (OVL); 51°00'49"N 3°53'03"E; 1/vi/2013; K. Bracke leg.; field observation; F. Verheyde det. (ObsID: 76838321). • 1 ♂; Sint-Andries, Tillegem – Heideveld (WVL); 12/vi/2015; W. Dekoninck *et al.* (KBIN) leg.; coll. KBIN/RBINS (project Bruges heathlands); pitfall trap (30.V–12.VI); F. Verheyde det. • 11 ♀♀ 3 ♂♂; Zingem (OVL); 50°54'25"N 3°39'13"E; 21–24/iii/2020; M; Nachtergaele leg.; coll. MN; reared ex *Lasiocampa quercus* (Linnaeus, 1758); F. Verheyde det. (ObsID: 187002639) [...].

THE NETHERLANDS: • 1 ♀; Ede, Planken Wambuis - Mosselse Veld (GE); 52°04'14"N 5°44'26"E; 6/vi/2015; S. Lamberts leg.; field observation; F. Verheyde det. (ObsID: 185738214). • 1 ♀; Eindhoven, Stratumse Heide (NB); 51°24'31"N 5°30'15"E; 21/vi/2015; R. Aussems leg.; field observation; F. Verheyde det. (ObsID: 103640742). • 1 ♀; Utrecht, Amerongse Berg (UT); 52°01'23"N 5°30'51"E; 2/vi/2016; J. Bouwmans leg.; field observation; F. Verheyde det. (ObsID: 119478527). • 1 ♀; Gulpen, Dunnenbos (LIN); 50°48'08"N 5°54'16"E; 18/v/2017; W. Bol leg.; field observation; F. Verheyde det. (ObsID: 138757374). • 1 ♀; Molenhoek, NS-terrein (LIN); 51°45'58"N 5°52'47"E; 21/iv/2018; W. Bakker leg.; field observation; F. Verheyde det. (ObsID: 155248268) [...].

***Apsilops aquaticus* (Thomson, 1874)**

Next to 'soft' characteristics such as colour, *Apsilops* spp. can be distinguished from related genera by the area superomedia (entirely delimited by carinae), the head and thorax which are densely hairy and the first abdominal segment and the propodeum that are coloured black.

A. aquaticus can be distinguished from the more common *A. cinctorius* by analysing the shape of the area superomedia, which is longer than wide in the latter species. The females of *A. aquaticus* have brownish antennae basally (red in *A. cinctorius*), while the males have a white scutellum and black hind coxae (red in *A. cinctorius*) (SCHWARZ, 1989; SCHWARZ [2013], draft key). More striking than morphological features is the ecology. *Apsilops* spp. parasitize aquatic or semi-aquatic moths of the lepidopteran families Crambidae and Noctuidae (YOSHIDA *et al.*, 2011). Therefore, they are often spotted on floating vegetation in ponds or ditches close to urban areas.

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Ureterp, Terrein de Fûgelhelling (FR); 53°06'16"N 6°08'24"E; 20/ix/2015; H. Meijer leg.; coll. HM; field observation; H. Meijer det.

***Aritranis director* (Thunberg, 1824)**

Aritranis spp. closely resemble *Agrothereutes* spp. (see above) if we check the propodeum.

However, females of *A. director* have a longer and downcurved ovipositor (longer than the metasoma) and the postpetiole is strongly convex. Also, the apical tergites are narrowed and in general the species is slenderer. The males are more difficult to recognise, especially if we

compare them to male *Idiolispa* or *Trychosis* spp. Important features here are the shape of the areolet and the colour of the hind tarsi. Together with *Echthrus reluctator* (Linnaeus, 1758) this is the commonest ichneumonid that had yet to be reported (92 observations on waarneming.nl; numbers Jan. 2021). In fact, it is one of the most abundant ichneumonids in general. It seems to be opportunistic and has several common lepidopterans as known hosts (see YU *et al.*, 2012).

First report for the Netherlands; confirmed in Belgium.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Ninove, Neigembos (OVL); 50°48'35"N 4°04'22"E; 7/vii/2010; M. Pédrón leg.; field observation; F. Verheyde det. (ObsID: 48882444). • 1 ♀; Hallaar (AN); 51°05'03"N 4°44'09"E; 6/vi/2012; G. Van den Wyngaert leg.; field observation; F. Verheyde det. (ObsID: 69040537). • 1 ♀; De Klijte, Scherpenberg (WVL); 50°47'46"N 2°46'40"E; 17/vi/2012; M. Valdueza; field observation; F. Verheyde det. (ObsID: 80434177). • 1 ♀; Brugge, Blauwe Toren (WVL); 51°15'11"N 3°11'39"E; 31/v/2019; H. De Blauwe; field observation; F. Verheyde det. (ObsID: 173484779). • 1 ♂; Antwerpen, Galgenweel (AN); 51°12'59"N 4°21'43"E; 15/v/2020; F. Verheyde leg.; coll. FV; field observation; F. Verheyde det. (ObsID: 194165330) [...].

THE NETHERLANDS: • 1 ♀; Dongen, Kaatsheuvel (NB); 51°38'54"N 4°59'13"E; 15/v/2011; P. Fleurbaaij leg.; field observation; F. Verheyde det. (ObsID: 54504144). • 1 ♀; Hardenberg, De Krim (OR); 52°39'09"N 6°36'56"E; 3/vii/2011; J. de Gooijer leg.; field observation; F. Verheyde det. (ObsID: 55470297). • 8 ♀♀; Twijzel (FR); 53°14'53"N 6°04'56"E; 28/v/2012; Landschapsbeheer Friesland leg.; coll. HM; malaise trap 215 (24–28); H. Meijer det. • 1 ♀; Asch (GE); 51°56'06"N 5°19'48"E; 21/v/2015; F. Walraven leg.; field observation; F. Verheyde det. (ObsID: 102755140). • 1 ♀; Almere, Hanny Schaftpark (FL); 52°22'49"N 5°14'09"E; 6/viii/2019; P. Hoekstra leg.; coll. PH; field observation; F. Verheyde det. & P. Hoekstra det. (ObsID: 178031635) [...].

***Cryptus titubator* (Thunberg, 1822)**

Cryptus spp. are archetypical for cryptine wasps: relatively long and slender, prominent ovipositor, areolet present, notauli relatively strong and females often with banded antennae. Based on the habitus they share similarities with, for example *Buathra* or *Hoplocryptus* spp. but the former genus has a well-developed tentorial pit dorsally, the latter has a distinct median tooth on the clypeus. Finally, *Cryptus* spp. usually have an elliptic or sub-circular propodeal spiracle (TOWNES, 1970a; SCHWARZ [2013], draft key).

Cryptus titubator is a smaller species with shorter ovipositor sheaths (0.9 to 1.0× the length of the hind tibia). Its head and mesoscutum are black, thus contrasting with a completely orange-red metasoma (except for the postpetiole). The ventral part of the frons is smooth and without striae (SCHWARZ, 2015). Its frontal orbits are often whitish. Among the hosts are the common moths *Operophtera brumata* (Linnaeus, 1758) and *Agriopsis aurantiaria* (Hübner, 1799) (Lepidoptera: Geometridae) (VINDSTAD *et al.*, 2013).

First report for the Netherlands; confirmed in Belgium.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Dudzele (WVL); 51°16'42"N 3°13'13"E; 15/v/2019; H. De Blauwe leg.; field observation; M. Schwarz & F. Verheyde det. (ObsID: 172389768).

THE NETHERLANDS: • 1 ♀; Eastermar (FR); 53°10'47"N 6°05'39"E; 20/vi/2012; Landschapsbeheer Friesland leg.; coll. HM; malaise trap 31 (13–20); H. Meijer det.

***Cryptus tuberculatus* Gravenhorst, 1829** (Fig. 24)

Cryptus tuberculatus is not well documented in visual sources of the internet, although it is easily recognised by a combination of the following characteristics: fore tibia thickened and wider than fore femur, ovipositor short with an index of 0.6–0.7 and tegulae and scutellum white (SCHWARZ, 2015). Like several other *Cryptus* spp. our specimen was feeding on flowering umbellifers (Fig. 24) on an industrial terrain (in the port of Antwerp), suggesting some kind of migrating behaviour and thermophilic preferences.

First report for Belgium; unreported in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Antwerpen (AN); 51°16'08"N 4°18'57"E; 28/vi/2020; S. Verheyen leg.; field observation; F. Verheyde & M. Schwarz det.; Fig. 24.

***Echthrus reluctator* (Linnaeus, 1758)**

Echthrus reluctator is easy to recognise by its habitus alone, but typical are the sharp and deep notauli. It is a fairly big ichneumonid (size ranging from 10 to 20 mm, which is often the case with wasps bound to larvae in dead wood). In both sexes the white banded antennae are present. The males vary in colour from close to completely black to some tergites and the first two pairs of legs reddish. The females at least have the second and third tergite reddish. Their ovipositor is long, distinctly longer than their metasoma. In the Low Countries this is one of the typical species benefiting from the increasing amount of dead wood in our forests, and a hypothetical migrant from eastern Europe (VERHEYDE *et al.*, 2020a). In contrast to the forest specialists, this species also occurs in gardens, even in urban areas. It can be seen as somewhat more opportunistic. The state of the damaged tree seems to be less important, ranging from completely dead to 'half' dead. Hosts are Coleoptera of the families Buprestidae and Cerambycidae (see also YU *et al.*, 2012).

First report for the Netherlands; confirmed in Belgium.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Oostkamp (WVL); 51°10'03"N 3°16'34"E; IV.2019; A. Zwaenepoel leg.; coll. FV; malaise trap; F. Verheyde det. • 1 ♂; Wijtschate, Huikerbossen (WVL); 50°48'01"N 2°54'31"E; 26/iv/2020; F. Verheyde leg.; field observation; F. Verheyde det. (ObsID: 189748953). • 4 ♂♂; Beernem, Bulskampveld - Heideveld-Bornebeek (WVL); 51°06'30"N 3°17'46"E; 2/v/2020; A. De Ketelaere leg.; field observation; A. De Ketelaere & F. Verheyde det. (ObsID: 190218250) [...].

THE NETHERLANDS: • 1 ♂; Bergen, Noordhollands Duinreservaat (NH); 52°40'30"N 4°39'14"E; 27/v/2013; T. de Graaf leg.; field observation; F. Verheyde det. (ObsID: 76389845). • 1 ♀; Westerveld, Dwingelderveld (DR); 52°49'07"N 6°24'34"E; 2/vi/2013; L. Douma leg.; field observation; F. Verheyde det. (ObsID: 76668742). • 1 ♀; Ossendrecht, Grenspark De Zoom (NB); 51°24'19"N 4°21'49"E; 24/v/2014; F. van de Putte leg.; field observation; K. Zwakhals & F. Verheyde det. (ObsID: 84783727). • 1 ♀ 3 ♂♂; Utrecht, Soesterberg–Vliegbasis West (UT); 52°07'50"N 5°15'58"E; 12/v/2019; 16/v/& 20/v/2019; T. Zeegers leg.; coll. Naturalis (Soesterberg-project, 9-20.V.2019; nr. 47–49); malaise trap; F. Verheyde det. • 1 ♀ 6 ♂♂; Tilburg, Leijbos (NB); 51°32'37"N 5°00'50"E; 23/iv/2020; IWG KNNV Tilburg leg.; coll. PH; malaise trap (16-23); P. Hoekstra det. (ObsID: 203584778) [...].

***Gambrus tricolor* (Gravenhorst, 1829)**

As mentioned above, *Gambrus* spp. superficially resemble species from the genus *Agrothereutes*. In contrast to these species however, *Gambrus* spp. have their mesoscutum matt,

and the lower margin of the clypeus has a tooth or distinct angulation medially (SCHWARZ [2013], draft key). Ecology wise, species are often found in wetlands or riparian vegetation (for example reedbeds).

G. tricolor can be easily distinguished within the genus. It is the only species with a white scutellum and it has no orange coloration on the mesosoma. It is a known parasitoid wasp of the uncommon cephid wasp *Phylloecus linearis* (Schrank, 1781) (Symphyta: Cephidae), which uses *Agrimonia* spp. as host plant (SCHWARZ & SHAW, 1998; VERHEYDE & MEERT, 2020).

First report for the Netherlands; unconfirmed in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Drachten-Azeven (FR); 53°06'49"N 6°09'04"E; 13/ix/2020; H. Meijer leg.; coll. HM; field observation; H. Meijer det.

***Helcostizus restaurator* (Fabricius, 1775)**

The only species in its genus in Western Continental Europe. Typical (but not so typical for Cryptini) the areolet is small and open. Furthermore, *H. restaurator* has a stout first tergite (the length is less than twice the width) and the basal carina on the propodeum is almost central and strongly angled while the apical carina is absent (TOWNES, 1970a). Superficially it resembles *Deuteroxorides elevator* (Panzer, 1799), but the ovipositor is shorter and the hind tarsi are not white. Its tegulae are white instead of creamy. Our second observation has quite some ecological importance. It was found searching insects, raking pine needles in late autumn. This suggests it could be hibernating as an adult, which has not been recorded for this species (see also YU *et al.*, 2012). It is a parasitoid of several Coleoptera connected to conifers.

First report for the Netherlands; confirmed in Belgium.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Moerbeke, Heidebos (OVL); 51°10'54"N 3°54'39"E; 16/iv/2015; B. Lutin-Smet leg.; field observation; F. Verheyde det. (ObsID: 101477985).

THE NETHERLANDS: • 1 ♀; Eindhoven, Stratumse Heide (NB); 51°24'31"N 5°30'28"E; 20/v/2015; R. Aussems leg.; field observation; F. Verheyde & W. Pénigot det. (ObsID: 102473401). • 1 ♀; Bergen, Maasduinen (LIN); 51°35'37"N 6°06'25"E; 11/xi/2019; T. Martens; field observation; F. Verheyde & W. Pénigot det. (ObsID: 182132871).

***Hoplocryptus bellosus* (Curtis, 1837) (Fig. 25)**

Hoplocryptus spp. have a rather flat clypeus, with a distinct median tooth on the anterior margin. In contrast to *Enclisis* spp., the second tergite has distinct punctures and (at least) the apical tergite has a white spot (TOWNES, 1970a; SCHWARZ [2013], draft key). Although the genus, with some training, can be recognised by habitus, the identification of species is a very challenging and difficult task, with only few exceptions.

Hoplocryptus bellosus closely resembles *H. melanocephalus* (Gravenhorst, 1829). Both species have a reddish mesosoma with a white scutellum. The metasoma varies from completely black to black with some tergites reddish (Fig. 25). Therefore, additional characteristics are necessary: *H. bellosus* has a weakly granulated mesoscutum (not shiny) and the ovipositor sheath is slightly shorter than the hind tibia (index 0.8–0.9). Additionally, the third segment of the antennae measures 4.6–5.0× its width (SCHWARZ, 2007). Both species were observed on flowering umbellifers in the summer months and are often found in the vicinity of gardens, where they are searching for aculeate hosts in twigs or other nesting material.

First report of the species and the genus for the Netherlands; unconfirmed in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Wageningen (GE); 51°57'59"N 5°40'24"E; 7/vii/2018; D. Belgers leg.; field observation in skylight; M. Schwarz det. (ObsID: 159601039); Fig. 25.

***Hoplocryptus confector* (Gravenhorst, 1829)**

Hoplocryptus confector is something else entirely in comparison to the other two species reported here. Its mesosoma is black. The spiracles on the propodeum are distinctly elongated (1.4–2.8× its width) and the hind femora are red. Its clypeus has a broad and blunt tooth. The females have a long ovipositor, its length at least equal to the entire length of the metasoma. The males are easier to recognise by habitus. Their hind tibiae (and tarsi) are white basally and their face usually is entirely white (in all cases medially white; SCHWARZ, 2007). *H. confector* undoubtedly is the commonest species of the genus in the Low Countries. Much like the other species it is often spotted in gardens close to the nesting materials of its aculeate hosts.

First report for the Netherlands; unconfirmed in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♂; Veenendaal, Kwintelooyen (UT); 51°59'35"N 5°33'00"E; 12/v/2014; J. Bouwmans leg.; field observation; F. Verheyde & M. Schwarz det. (ObsID: 84372117). • 2 ♂♂; Utrecht, Soesterberg – Vliegbasis West (UT); 52°07'50"N 5°15'58"E; 4/iv/2020 & 23/vii/2020; T. Zeegers leg.; coll. FV (Soesterberg-project, 2–4.IV.2020 & 20–23.VII.2020; nr. 12 & nr. 33); malaise trap; F. Verheyde det.

***Hoplocryptus melanocephalus* (Gravenhorst, 1829)**

As mentioned above this species looks a lot like *H. bellosus* (Curtis, 1837). Both species have a reddish mesosoma with a white scutellum. Its metasoma varies from completely black to having some tergites reddish. *H. melanocephalus* has a shiny mesoscutum and the ovipositor sheath is slightly shorter or longer than the hind tibia (index 0.9–1.1). Additionally, the third segment of the antennae measures 6.2–7.7× its width (SCHWARZ, 2007; more differences are listed there). On our specimen the hind femora and tibiae were slightly reddish basally, while completely black in *H. bellosus*.

First report for the Netherlands; unconfirmed in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Wellerlooi, Uiterwaarden (LIN); 51°30'33"N 6°10'03"E; 3/vii/2020; T. Martens leg.; field observation; F. Verheyde & M. Schwarz det. (ObsID: 195483954).

***Ischnus agitator* (Gravenhorst, 1829) (Fig. 26)**

Ischnus spp. are hard to recognise by the basis of strong morphological characteristics (shape of the areolet, subpyramidal clypeus in profile), but luckily most species have a remarkable habitus (see also TOWNES, 1970a; SCHWARZ [2013], draft key).

I. agitator is the only species in the genus with a red thorax and propodeum. The head is black, just like the apical tergites of the metasoma. This makes it a colourful species with quite some contrast (Fig. 26). Additionally, the metapleuron is distinctly punctured. Although probably uncommon, the species could be expected to be present, with all surrounding countries having distributional details (see FAUNA EUROPAEA). One of the known hosts is the common sawfly *Hemichroa australis* (Serville, 1823) (Symphyta: Tenthredinidae) (RUDOW, 1918).

First report for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Knokke, Het Zwin - Duinengordel (WVL); 51°21'56"N 3°21'16"E; 19/vii/2017; P. Vanhauwere leg. [UGent]; coll. KBIN/RBINS (ENDURE-project, 160_ZWN_10_N); field observation; F. Verheyde det.; Fig. 26. • 1 ♀; Anderlecht (BR); 50°48'27"N 4°17'07"E; 6/ix/2020; L. Boon leg.; field observation; F. Verheyde det. (ObsID: 199689520).

THE NETHERLANDS: • 1 ♀; Otterlo, Veluwe (GE); 52°02'40"N 5°48'29"E; 21/vi/2019; R. van Ekeris leg.; field observation; F. Verheyde det. (ObsID: 174871966). • 1 ♀; Drachten (FR); 53°05'50"N 6°04'23"E; 24/iii/2020; R. Offereins leg.; field observation; F. Verheyde & M. Schwarz det. (ObsID: 187140967).

***Ischnus alternator* (Gravenhorst, 1829)**

Somewhat more common than the preceding species is *I. alternator*. It is easy to recognise by the basis of several white rings on the hind legs (tibiae basally, tarsi) and white tibial spurs. Sometimes the antennae are orange basally. Lastly, the first tergite of the metasoma basally has a distinct tooth laterally (SCHWARZ [2013], draft key). Our findings demonstrate it is very common in traps on open and more sandy grounds, presumably searching its hosts (Tortricidae).

First report for Belgium; confirmed in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Antwerpen, Hobokense Polder (AN); 51°11'16"N 4°20'60"E; 7/vii/2007; L. Janssen leg.; field observation; C. Thirion det. (ObsID: 52365386). • 1 ♀; Schoten, Orangerie De Vlinder (AN); 51°15'28"N 4°29'24"E; 15/ix/2011; L. Janssen leg.; field observation; F. Verheyde det. (ObsID: 61194635). • 1 ♂; Tienen (VB); 50°48'32"N 4°56'44"E; 22/ix/2011; G. Wynants leg.; field observation; C. Thirion det. (ObsID: 61181939). • 1 ♀; Erpe-Mere (OVL); 50°56'37"N 3°58'17"E; 7/vii/2012; G. Van Heghe leg.; field observation; F. Verheyde det. (ObsID: 146483854). • 10 ♀♀ 1 ♂; Sint-Andries, Beisbroek, Chartreuzinnenheide, Heide Zevenkerken & Ter Heyde (WVL); VIII.2015–X.2016; W. Dekoninck *et al.* (KBIN) leg.; coll. KBIN/RBINS (project Bruges heathlands); yellow pan trap & pitfall trap; F. Verheyde det. [...].

THE NETHERLANDS: • 1 ♀; Eijsden (LIN); 50°47'33"N 5°41'47"E; 6/ix/2012; J. Wiersma leg.; field observation; F. Verheyde det. (ObsID: 71016314). • 1 ♂; Ameland (FR); 53°26'29"N 5°42'56"E; 13/vii/2013; T. Kiewiet leg.; field observation; F. Verheyde det. (ObsID: 77549145). • 1 ♀; Rotterdam, Blijdorp (ZH); 51°55'51"N 4°26'55"E; 24/viii/2013; J. de Gans leg.; field observation; F. Verheyde det. (ObsID: 78650781). • 1 ♀; Bennekom (GE); 51°59'59"N 5°40'09"E; 1/ix/2013; M. de Jonge leg.; field observation; F. Verheyde det. (ObsID: 78860897). • 1 ♀; Utrecht, Leidsche Rijn (UT); 52°05'30"N 5°02'30"E; 29/viii/2014; M. Braad leg.; field observation; F. Verheyde det. (ObsID: 87553960) [...].

***Listrognathus compressicornis* (Gravenhorst, 1829)**

Listrognathus is an easier genus to recognise by habitus. The females are rather robust with long white banded antennae and a thick downcurved ovipositor. Some species have a tooth on their frons medially.

L. compressicornis is a predominantly black species, no white markings are present apically on its metasoma. Its ovipositor is more or less straight, but the nodus is downcurved in profile (HORSTMANN, 1989). With one exception all our reported specimens were observed in autumn (September-October) on old trees near cities or meadows, presumably searching for its known lepidopteran hosts *Furcula bifida* (Brahm, 1787) and *Furcula furcula* (Clerck, 1759) (Lepidoptera: Notodontidae), which are both present in Belgium and the Netherlands

(populations peaking in August), varying from locally rather common to uncommon.

First report for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Dorent (OVL); 50°54'13"N 3°55'44"E; 4/x/2017; J. Vindevoghel leg.; field observation; F. Verheyde det. (ObsID: 144719361). • 1 ♀; Damme, Weiden Damse Vaart West (WVL); 51°14'54"N 3°15'45"E; 21/ix/2019; J. Mees leg.; field observation; F. Verheyde det. (ObsID: 179962923).

THE NETHERLANDS: • 1 ♀; Boukoul, Blankwater (LIN); 51°12'42"N 6°03'52"E; 26/vi/2020; A. Wijker leg.; field observation; L. Bendixen det. (ObsID: 201444463). • 1 ♀; Thorn (LIN); 51°09'41"N 5°51'20"E; 11/x/2020; H. Mertens leg.; field observation; F. Verheyde & L. Bendixen det. (ObsID: 201444463).

***Listrognathus mactator* (Thunberg, 1824)** (Fig. 27)

Listrognathus mactator is the only species in the genus with a red metasoma and white apical tergites (Fig. 27). Its femora seem to vary from black or dark brown to red, even outside the regions originally outlined by HORSTMANN (1989). It is probably uncommon, but still expected to be present in Belgium. There is one known host *Earias insulana* (Boisduval, 1833) (Lepidoptera: Nolidae), but this species is very rare, suggesting other unknown hosts exist.

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Dongen (NB); 51°38'54"N 4°59'11"E; 3/x/2010; P. Fleurbaaij leg.; field observation; M. Schwarz det. (ObsID: 50359150). • 1 ♀; Eindhoven, Stratumse Heide (NB); 51°24'30"N 5°30'17"E; 15/viii/2016; R. Aussems leg.; field observation; M. Schwarz det. (ObsID: 122631708). • 1 ♀; Wageningen (GE); 51°57'59"N 5°40'24"E; 20/v/2020; D. Belgers leg.; field observation in skylight; F. Verheyde det. (ObsID: 191893456); Fig. 27.

***Nematopodius debilis* (Ratzeburg, 1852)** (Fig. 28)

This small genus can be recognised by its small closed areolet and its cylindrical petiole dorsally (TOWNES, 1970a). The species are very slender and hard to be confused with any other genus within Cryptini.

N. debilis appears to be slightly more common than subsequent species. Its pronotum is black dorsolaterally (without white; see Fig. 28) and its nervellus is broken in the middle (HORSTMANN, 1989). Known hosts are crabronid wasps (Crabronidae) of the genus *Trypoxylon*.

First report of the species and the genus for the Netherlands; confirmed Belgium.

MATERIAL EXAMINED:

BELGIUM: • 2 ♀♀; Roborst (OVL); 50°52'00"N 3°45'25"E; 11/vi/2020; F. Walraet leg.; field observation; F. Verheyde det. (ObsID: 193808199).

THE NETHERLANDS: • 1 ♀; Zoetermeer, Westerpark (ZH); 52°03'27"N 4°27'05"E; 17/vi/2020; A. van Berge-Henegouwen leg.; field observation; O. Varga det. (ObsID: 194645183); Fig. 28. • 1 ♀; Almere, Wilgenbos (FL); 52°25'11"N 5°13'59"E; 21/vii/2020; P. Hoekstra leg.; coll. PH; field observation on dead *Salix alba* with many *Trypoxylon* nests; P. Hoekstra det. (ObsID: 197267704).



Fig. 24. *Cryptus tuberculatus* Gravenhorst, 1829, female, habitus, lateral view. © Stefan Verheyen.



Fig. 25. *Hoplocryptus bellosus* (Curtis, 1837), female, habitus, lateral view. © Dick Belgers.



Fig. 26. *Ischnus agitator* (Gravenhorst, 1829), female, habitus, lateral view. © Fons Verheyde.



Fig. 27. *Listrognathus mactator* (Thunberg, 1824), female, habitus, lateral view. © Dick Belgers.



Fig. 28. *Nematopodius debilis* (Ratzeburg, 1852), female, habitus, lateral view. © Arno van Berge.



Fig. 29. *Nippocryptus vittatorius* (Jurine, 1807), female, habitus, lateral view, ovipositing on *Taleporia tubulosa* (Retzius, 1783). © Henk Wallays.

***Nematopodius formosus* Gravenhorst, 1829**

Nematopodius formosus can be distinguished from *N. debilis* by its white colouration on the pronotum, dorsolaterally. Generally, the nervellus is broken behind the middle, which also distinguishes it from another unreported species (HORSTMANN, 1989). Supposedly the host range seems to be wider than with the abovementioned *N. debilis*, with older reports also including Coleoptera and Lepidoptera, but this needs further confirmation (YU *et al.*, 2012).

First report for Belgium; unreported in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Somal (NA); 28/vi/2014; P-N. Libert leg.; coll. PNL; field observation; M. Schwarz det. • 1 ♂; Merksem, Fort (AN); 51°15'50"N 4°27'11"E; 5/vi/2017; S. Verheyen leg.; field observation; F. Verheyde det. (ObsID: 197231414).

***Nippocryptus vittatorius* (Jurine, 1807) (Fig. 29)**

Taxonomically the position of the genus is still unclear. Usually it is distinguished from *Cryptus* by the shape of the spiracles on the propodeum (circular or very slightly oval), but genetic research must confirm its hypothetical paraphyletic position (SCHWARZ, 2015).

N. vittatorius can be recognised very easily. It is the only species in the genus with the hind tibia white basally and with a unique dark band on the fore wing (SCHWARZ, 1990; see Fig. 29). Our findings allow us to say something on the phenology and ecology of the species. This ichneumonid wasp appears to have a relatively long flying period, peaking in autumn (June–October). Several specimens were caught with light traps, suggesting nocturnal activity. Many animals were observed on tree stumps, searching for hosts, with one certain record of a female parasitizing *Taleporia tubulosa* (Retzius, 1783) (Lepidoptera: Psychidae) (Fig. 29).

First report for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Evere, Moeraske (BR); 50°52'44"N 4°23'29"E; 18/vii/2010; B. Hanssens leg.; field observation; J. Devalez & J. D'Haeseleer det. (ObsID: 49047354). • 1 ♀; Melle (OVL); 50°58'59"N 3°49'27"E; 16/x/2014; K. Maes leg.; field observation; F. Verheyde det. (ObsID: 89489835). • 1 ♀; Lotenhulle, Ganzeveld (OVL); 51°03'59"N 3°28'10"E; 4/x/2015; H. Wallays leg.; field observation, parasitizing *Taleporia tubulosa* (Retzius, 1783); F. Verheyde det. (ObsID: 109165073); Fig. 29. • 1 ♀; Gent, Moscou (OVL); 51°01'46"N 3°46'01"E; 5/vi/2017; C. Grandsart leg.; field observation; F. Verheyde det. (ObsID: 177524444). • 1 ♀; Dudzele (WVL); 51°16'17"N 3°13'22"E; 25/vii/2018; H. De Blauwe leg.; light trap; F. Verheyde det. (ObsID: 160867782) [...].

THE NETHERLANDS: • 1 ♀; Eindhoven, Stratumse Heide (NB); 51°24'30"N 5°30'17"E; 13/x/2016; R. Aussems leg.; field observation; F. Verheyde det. (ObsID: 125110197). • 1 ♀; Arnhem (GE); 51°59'37"N 5°52'21"E; 14/x/2018; A. Boorsma leg.; field observation; F. Verheyde det. (ObsID: 163576300). • 1 ♀; Susteren (LIN); 51°04'09"N 5°52'42"E; 31/viii/2019; H.J.M. van Buggenum leg.; light trap; F. Verheyde det. (ObsID: 178902608). • 1 ♀; Thorn (LIN); 51°09'38"N 5°50'02"E; 31/vii/2020; H. Mertens leg.; field observation; F. Verheyde det. (ObsID: 198296753). • 1 ♀; Nieuwerkerk aan den IJssel, Hitlandbos (ZH); 51°57'44"N 4°37'40"E; 7/viii/2020; W. Teunissen leg.; field observation; F. Verheyde det. (ObsID: 197973807).

Subfamily Ctenopelmatinae Förster 1869

Tribe Euryproctini Thomson, 1883

Gunomeria macrodactylus (Holmgren, 1856)

Gunomeria is a small genus that can be recognised by the fifth tarsal segments, which are large, very long and strongly arched. A closed areolet is present, the nervellus is intercepted above the middle. The propodeal carination is very limited (TOWNES, 1970b).

It can be distinguished from *G. sordida* (Gravenhorst, 1829) by its frons, which is thickly and closely punctuated, its speculum (big/shiny) and some other aspects (see HORSTMANN, 2008).

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Eastermar (FR); 53°10'47"N 6°05'39"E; 20/vi/2012; Landschapsbeheer Friesland leg.; coll. HM; malaise trap 31 (13-20); H. Meijer det.

Hadrodactylus nigrifemur Thomson, 1883

Hadrodactylus spp. are rather large (but slender) ctenopelmatine wasps. Their areolet is present and their clypeus is moderately short (its apical margin moderately to rather strongly arcuate). Typical for this genus, the fifth tarsal segments are weakly to strongly elongate and arched (TOWNES, 1970b).

Most species are not easy to identify. *H. nigrifemur* has a very short malar space and the lower tooth of the mandible is much longer than the upper tooth. Its propodeum is matt, the tarsal claws are stronger upcurved at apex and the second tarsal segment is longer than the fifth, which is subequal to the third. Its scape and pedicel are blackish dorsally. The prepectal carina is not raised (about as high as the lateral parts). The middle coxae and the hind femora are black (KASPARYAN, 2011). The Belgian specimen measures 9 mm and counts 45 flagellomeres.

First report for Belgium; confirmed in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♂; Watermaal-Bosvoorde (BR); 15/v/1932; A. Crèvecoeur leg.; coll. KBIN/RBINS (coll. Crèvecoeur); F. Verheyde det.

THE NETHERLANDS: • 1 ♀; Biddinghuizen (FL); 52°27'48"N 5°48'44"E; 20/v/2020; P. Hoekstra leg.; coll. PH; field observation; P. Hoekstra det. (ObsID: 193453903).

Tribe Mesoleiini Thomson, 1883

Alexeter gracilentus (Holmgren, 1857) (Fig. 30 A–B)

Alexeter spp. are slender wasps (first tergite 1.7–4× as long as wide) belonging to the tribe Mesoleiini. Their nervellus is intercepted at or just below the middle and the notauli are distinct in some species. The mandibular teeth are equal or almost so (TOWNES, 1970b). The genus needs to be revised, but some species already have a firmer taxonomic base.

A. gracilentus is a testaceous species with yellow markings on the mesosoma (Fig. 30 A). The head is relatively small and brownish black, but the face is completely yellow (Fig. 30 B). The first tergite varies from completely testaceous to partly black (see SCHMIEDEKNECHT, 1912).

First report for Belgium; unconfirmed in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♂; Beernem, Beverhoutsveld (WVL); 51°09'28"N 3°18'26"E; 21/viii/2020; A. De Ketelaere leg.; coll. ADK; field observation; H. Meijer & G. Broad det. (ObsID: 201831203); Fig. 30 A–B.

Tribe Perilissini Thomson, 1883

***Absyrtus vernalis* Bauer, 1961** (Fig. 31 A–B)

Belonging to the tribe of Perilissini, the glymmae are present (relatively deep) and the claws are pectinate. Distinguishing this genus from other testaceous Ctenopelmatinae can be done on the basis of the wing venation. The fore wing has the discosubmarginal cell uniformly setose, lacking sclerites, and the fore wing *AA* is bent downward into this cell (TOWNES, 1970b; BROAD, 2012; see Fig. 31 A).

In theory *A. vernalis* can be distinguished from *A. vicinator* (Thunberg, 1824) by its matt propodeum with a complete carination (Fig. 31 B) and the fore wing vein *cu-a*, which is widely separated from *M*. On some of our specimens, however, we noted how the carination of propodeum is variable and sometimes only shallow. This diagnostic feature should thus be treated with care to distinguish the species. Lastly, *A. vernalis* is a known parasitoid of several common sawflies of the genus *Macrophya* (Symphyta: Tenthredinidae) (AUBERT, 2000).

First report for Belgium; unconfirmed in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♂; Beernem (WVL); 51°06'38"N 3°19'33"E; 31/v/2020; A. De Ketelaere leg.; coll. ADK; light trap; G. Broad det. (ObsID: 195372106). • 1 ♂; Nismes (NA); 50°04'04"N 4°34'17"E; 7/vii/2020; T. Vandaudenard leg.; coll. TV; light trap; G. Broad det. (ObsID: 202473592). • 1 ♂; Doische (NA); 50°07'26"N 4°44'52"E; 10/vii/2020; T. Vandaudenard leg.; coll. TV; light trap; G. Broad det. (ObsID: 202496749); Fig. 31 A–B.

***Lathrolestes clypeatus* (Zetterstedt, 1838)**

The genus *Lathrolestes* is a larger one within Ctenopelmatinae (tribe Perilissini). It can be distinguished from other genera by the occipital carina not intercepting the hypostomal carina and the first tergite which is not elongate, its length being less than twice its width; and by the absence of a notch in the hind margin of the male's last visible sternite (TOWNES, 1970b; RESHCHIKOV, 2015a).

Lathrolestes clypeatus is a well-documented European species. Typical for this species is the complete occipital carina and the separation of the face and clypeus by a distinct transverse groove. The carination of the propodeum is partly complete and the clypeus is strongly projecting anteriorly (hence its name). The females have their ovipositor upcurved (RESHCHIKOV, 2015b). The hosts are several lepidopteran leaf miners, *Eriocrania* spp. (Lepidoptera: Eriocraniidae) (RESHCHIKOV, 2015a), with many species being common in the Low Countries.

First report for Belgium; unconfirmed in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Somal (NA); 14/v/2007; P-N. Libert leg.; coll. PNL; field observation; D. Kasparian det. • 1 ♀; Antwerpen (AN); 51°10'42"N 4°21'02"E; 12/iv/2020; R. Hendrickx leg.; field observation; G. Broad, R. Hendrickx & F. Verheyde det. (ObsID: 188521720).

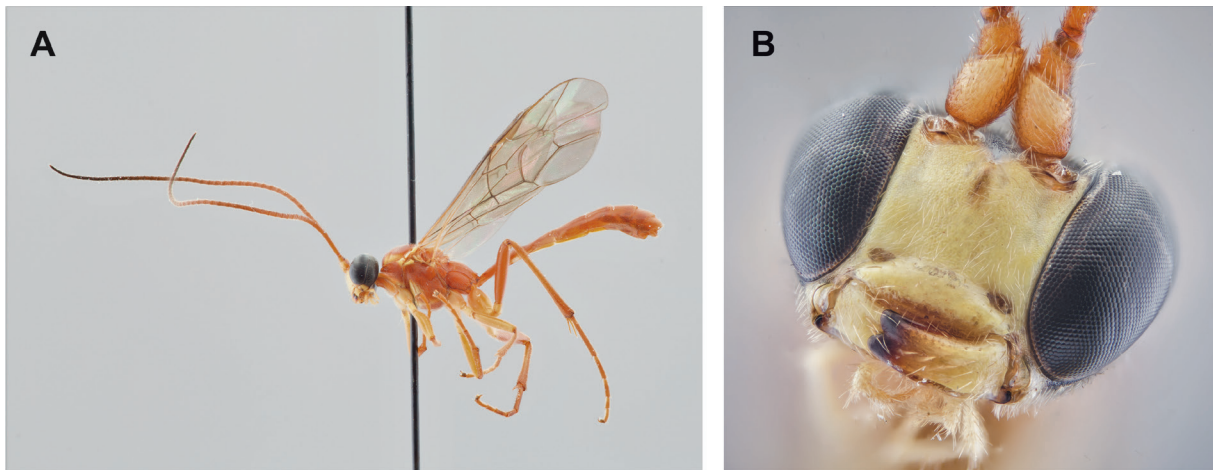


Fig. 30. *Alexeter gracilentus* (Holmgren, 1857), male. A, habitus, lateral view. B, head, frontal view.
© Thibaud Vandaudenard.

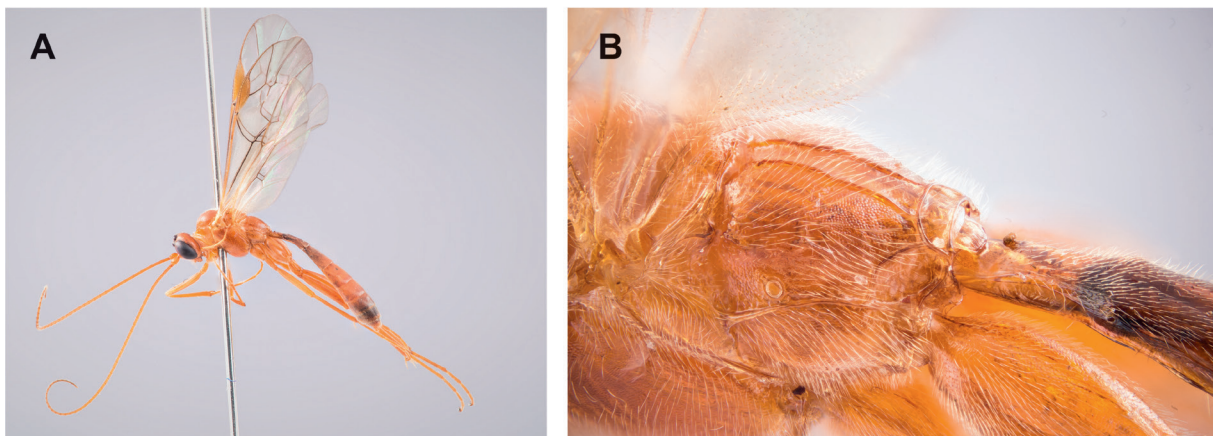


Fig. 31. *Absyrtus vernalis* Bauer, 1961, male. A, habitus, lateral view. B, propodeum, dorsolateral view.
© Thibaud Vandaudenard.

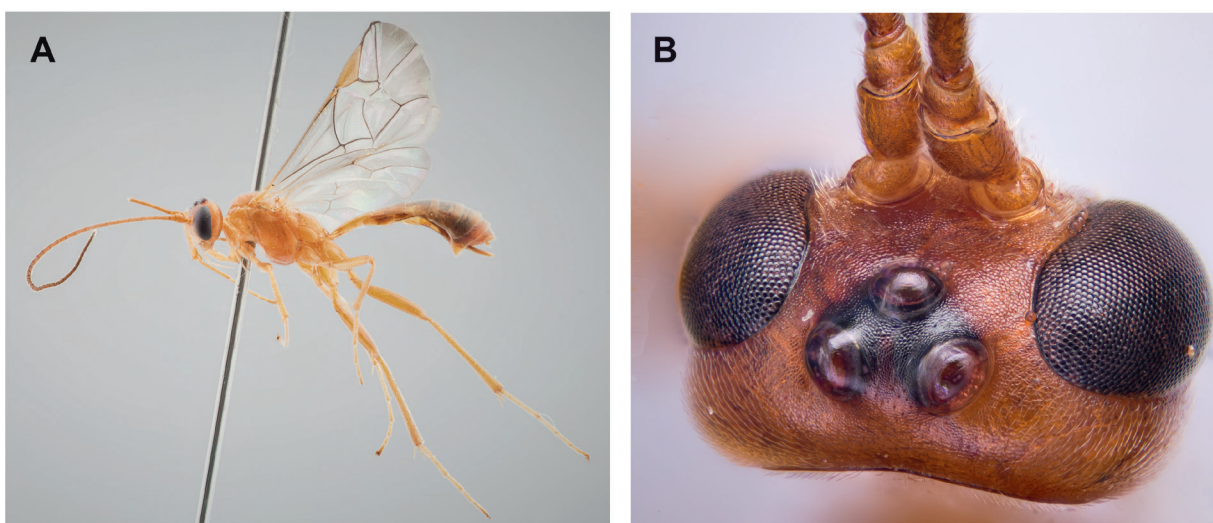


Fig. 32. *Perilissus albitarsis* Thomson, 1883, female. A, habitus, lateral view. B, head, dorsal view.
© Thibaud Vandaudenard.

***Lathrolestes ensator* (Brauns, 1898)**

As a more colourful species, females of *L. ensator* have a red metasoma (except for its first tergite). Its mesosoma is predominantly black, but there is some yellow on its pronotum, tegulae and frontal orbits. Its ovipositor is long, longer than its metasoma, and it has apical teeth (RESHCHIKOV, 2015a). The long ovipositor is used to parasitize the rather uncommon ‘Apple sawfly’, *Hoplocampa testudinea* (Klug, 1816) (Symphyta: Tenthredinidae).

First report for Belgium; unconfirmed in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Broechem (AN); 51°10'57"N 4°35'40"E; 9/v/2020; D. Van Tulder leg.; light trap; M. James det. (ObsID: 190976879).

***Perilissus albitarsis* Thomson, 1883** (Fig. 32 A–B)

Perilissus spp. can be recognised by its habitus with some experience. The genus comprises both testaceous species which are often caught with light traps, and species caught in springtime and summer near its hosts (*Dolerus* spp.) on grasses. The species are rather robust with a specific wing venation, namely a subvertical to strongly reclivous nervellus in the hind wing (more details see TOWNES, 1970b). The genus is currently under revision by Gavin Broad and the wasps reported here were confirmed by him. For identification purposes, we used a draft key (edition 2017) which was made available to us.

P. albitarsis has a completely testaceous body, including the pterostigma (Fig. 32 A). Furthermore, its mesopleuron and its mesoscutum are weakly coriaceous, its malar space is short, the ocelli large (Fig. 32 B) and the propodeum has weakly defined carinae. Additionally, the tarsal claws are pectinate (ZWAKHALS & BLOMMERS, 2020), which is one of the characteristics to distinguish it from *P. pallidus* (Gravenhorst, 1829).

First report for Belgium; confirmed in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♂; Brussel, Zoniënwood (BR); 20/iv/1934; A. Crèvecoeur leg.; coll. KBIN/RBIN (coll. Crèvecoeur); F. Verheyde det. • 1 ♂; Wingene, Gulke Putten (WVL); 51°04'34"N 3°19'45"E; 15/iv/2020; A. De Ketelaere leg.; coll. ADK; light trap; G. Broad det. (ObsID: 202653561). • 1 ♀; Falaën (NA); 50°17'10"N 4°46'50"E; 19/v/2020; T. Vandaudenard leg.; coll. TV; light trap; G. Broad det. (ObsID: 194501298); Fig. 32 A–B.

THE NETHERLANDS: • 1 ♂; Drachten (FR); 53°06'00"N 6°06'41"E; 26/v/2012; H. Meijer leg.; coll. HM; light trap; H. Meijer det. • 1 ♂; Ameland (FR); 53°27'01"N 5°38'50"E; 31/v/2019; P. Hoekstra leg.; coll. PH; light trap; P. Hoekstra det. (ObsID: 175232221).

***Perilissus holmgreni* Habermehl, 1925** (Fig. 33 A–B)

Much like the abovementioned species, *P. holmgreni* has its mesopleuron and mesoscutum predominantly coriaceous. Its pterostigma is dark brown, however, and its metasoma is black apically, (partly) testaceous basally (Fig. 33 A). The lateromedian longitudinal carinae on the propodeum are faint posteriorly. Its mandibles are testaceous, but the tips are black (Fig. 33 B). *P. holmgreni* seems to be a genuinely rare species with few reports in Europe. Even (unidentifiable) pictures of anything resembling it superficially were not found, while ichneumonids caught with light traps are often photographed and placed on citizen science portals. Our specimen was caught in the vicinity of some of Belgium's most exceptional nature reserves consisting of rare limestone grasslands. The parasitic relations are unclear. Among the supposed hosts are the sawfly *Allantus cinctus* (Linnaeus, 1758) (Symphyta: Tenthredinidae)

and the crabronid wasp *Crossocerus podagricus* (Vander Linden, 1829) (Apocrita: Crabronidae), but this combination seems to be very unlikely and conceivably other hosts are still present (HEDWIG, 1950; STARKE, 1956).

First report for Belgium; unreported in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Nismes, Viroinval (NA); 50°04'04"N 4°34'19"E; 7/vii/2020; T. Vandaudenard leg.; coll. TV; light trap; G. Broad det. (ObsID: 204815687); Fig. 33 A–B.

***Priopoda apicaria* (Geoffroy, 1785)**

Priopoda spp. have deep glymmae on the first tergite, which is about twice as long as wide. The mandibles have a lower tooth that is much longer than the upper tooth. The occipital carina is meeting the hypostomal carina at the mandibular base (TOWNES, 1970b; BROAD, 2012).

The species has not been clearly described in recent literature. *P. apicaria* is largely testaceous, with a black ovipositor and first tergite (partly) and sometimes with black markings on its head, propodeum and the lower part of its mesosoma. It flies in the summer and is sometimes caught with light traps. *P. xanthopsana* (Gravenhorst, 1829), the other species in the genus living in Western Europe, has a completely black mesosoma. Its apical tergites are also black (see also validated pictures on GBIF). Among the hosts is the common sawfly *Arge ustulata* (Linnaeus, 1758) (Symphyta: Argidae) (AUBERT, 2000).

First report for Belgium; confirmed in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Wanze (LG); 50°31'40"N 5°13'05"E; 19/vii/2020; P. de Gottal leg.; field observation; F. Verheyde & L. Bendixen det. (ObsID: 196591498).

THE NETHERLANDS: • 3 ♂♂; Veenendaal, Kwintelooyen (UT); 51°59'36"N 5°33'04"E; 20/viii/2015 – 25/viii/2015 – 3/ix/2015; J. Bouwmans leg.; field observation; K. Zwakhals det. (ObsID: 105581748). • 1 ♀; Ospel, Groote Peel (LIN); 51°20'08"N 5°49'44"E; 13/vi/2018; J. Slaats leg.; field observation; F. Verheyde det. (ObsID: 158380437).

Tribe Pionini Smith & Shenefelt, 1955

***Lethades laricis* Hinz, 1976** (Fig. 34 A–B)

Lethades spp. belong to the smaller tribe Pionini, ctenopelmatine wasps without thyridium and with the presence of pectinate tarsal claws. The genus is well revised.

L. laricis has a complete areolet. Its appearance is striking with a completely black metasoma but broad reddish-yellow bands on posterior margins (Fig. 34 A). The male has many yellow markings, on pronotum, mesonotum and mesopleuron. Its face is also yellow (RESHCHIKOV *et al.*, 2017; see Fig. 34 B). Our specimens did not have a yellow apical band on the second and third tergite (but otherwise matched well), suggesting local variation or the existence of an undescribed species. Supposed hosts are the uncommon sawflies *Pachynematus scutellatus* (Hartig, 1837) and *Pristiphora laricis* (Hartig, 1837) (Symphyta: Tenthredinidae) (HINZ, 1976).

First report for Belgium; unreported in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♂; Beernem, Gevaerts (WVL); 51°08'29"N 3°18'52"E; 10/iv/2020; A. De Ketelaere leg.; coll. ADK; A. De Ketelaere det. (ObsID: 203717256). • 2 ♂♂; Beernem, Bossen Lindeveld (WVL); 51°06'20"N 3°19'14"E; 22/iv/2020; A. De Ketelaere leg.; coll. ADK; A. De Ketelaere det. (ObsID: 203718886); Fig. 34 A–B.

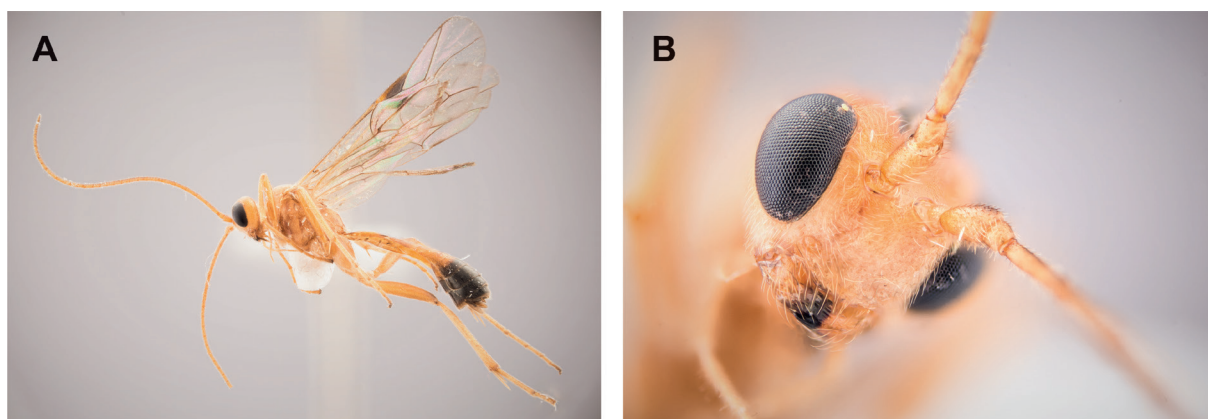


Fig. 33. *Perilissus holmgreni* Habermehl, 1925, female. A, habitus, lateral view. B, head, frontal view. © Thibaud Vandaudenard.

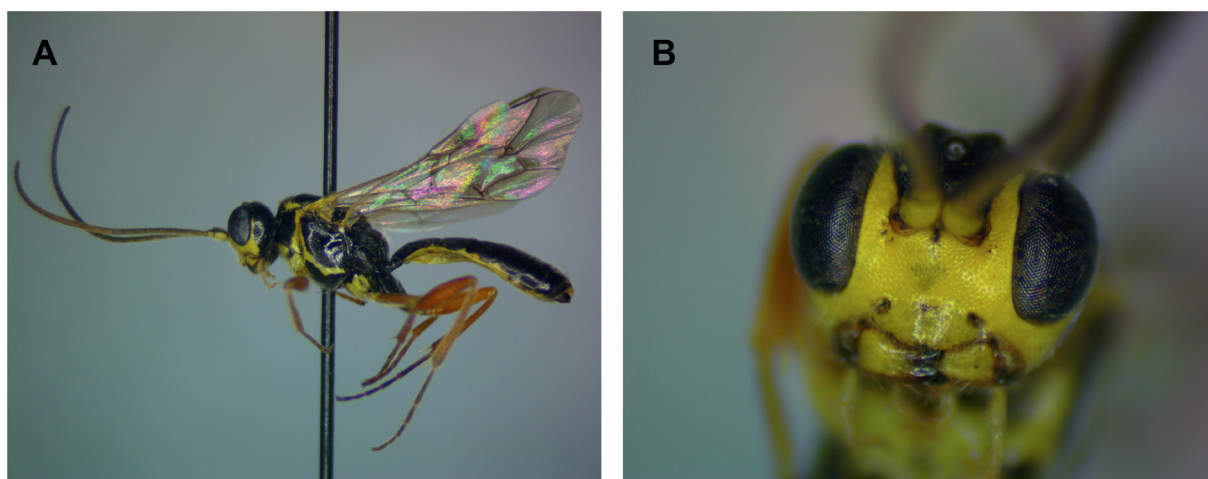


Fig. 34. *Lethades laricis* Hinz, 1976, male. A, habitus, lateral view. B, head, frontal view. © Augustijn De Ketelaere.

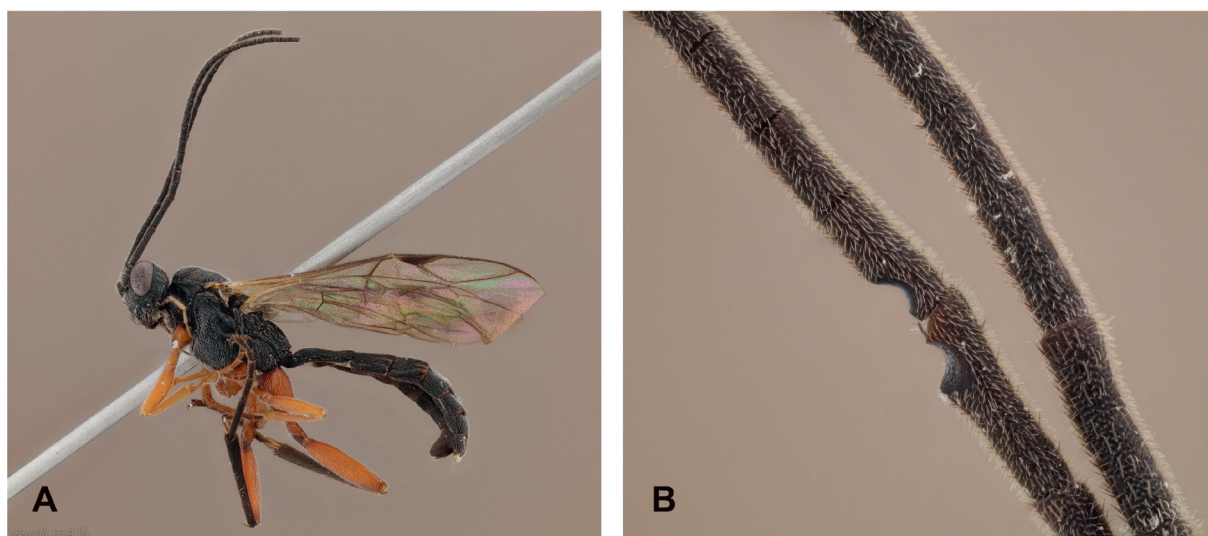


Fig. 35. *Cylloceria caligata* (Gravenhorst, 1829), male. A, habitus, lateral view. B, detail of the basal flagellomeres, lateral view. © Bart Minnebo.

***Allomacrus arcticus* (Holmgren, 1880)**

Cyllocerines can be recognised by a combination of a flattened clypeus, a rather elongate propodeum with median longitudinal carinae but no transverse carina, a granulate first tergite and well-defined notauli. Additionally, the males of *Cylloceria* sp. (see below) have very characteristic tyloids in the form of semi-circular excavations (Fig. 35 B). The females have long, notched ovipositors (BROAD *et al.*, 2018).

A. arcticus belongs to a small genus. Its nervellus in the hind wing is inclivous and broken below the middle. The fore wing is less than 6 mm long. *A. arcticus* has a stumpy body, its clypeus is wide and flat without deep impression. Our male specimen also had longitudinal yellow spots running along the inner eye orbits (HUMALA, 2002).

First report of the species and the genus for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♂; Tilburg, Leijbos (NB); 51°32'34"N 5°00'51"E; 23/iv/2020; IWG KNNV Tilburg leg.; coll. PH; malaise trap (16-23); P. Hoekstra & A. Humala det. (ObsID: 206464937).

***Cylloceria caligata* (Gravenhorst, 1829)** (Fig. 35 A–B)

Cylloceria caligata can be very easily recognised. In the Low Countries it is the only species in the genus with all the coxae red (HUMALA, 2002; see Fig. 35 A). Its hosts are crane flies (Diptera: Tipulidae). There are some records on sawflies and lepidopterans (see YU *et al.*, 2012), but these are doubtful (BROAD *et al.*, 2018). In Belgium more than fifty specimens were caught, particularly with pitfall and yellow pan traps in the moorlands near Bruges. Remarkably, checking one of the historical collections, another specimen was discovered from the same locality (but approximately 75 years older). This provides a glimpse of how local populations can be, and how they are able to survive over a long period of time.

First report for Belgium; confirmed in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Sint-Andries (WVL); 14/viii/1940; A. Crèvecoeur leg.; coll. KBIN/RBINS (coll. Crèvecoeur); F. Verheyde det. • 6 ♀♀ 46 ♂♂; Sint-Andries, Beisbroek & Chartreuzinnenheide (WVL); IX.2014–XI.2016; W. Dekoninck *et al.* (KBIN) leg.; coll. KBIN/RBINS (project Bruges heathlands); yellow pan trap & pitfall trap; F. Verheyde det.; Fig. 35 A–B.

THE NETHERLANDS: • 1 ♀; Assen (DR); 52°58'41"N 6°33'35"E; 8/viii/2019; J. Visser leg.; field observation; F. Verheyde det. (ObsID: 177682302). • 1 ♀; Heeze, Strabrechtste Heide (NB); 51°23'51"N 5°35'17"E; 30/ix/2019; A. Van Dijk leg.; field observation; F. Verheyde det. (ObsID: 200888241).

***Cylloceria sylvestris* (Gravenhorst, 1829)**

Cylloceria sylvestris is harder to identify and can be distinguished from *C. melancholica* (Gravenhorst, 1820) by the former having a longer ovipositor (0.8–1.1× length of the fore wing [own measurements based on our specimens]) and the nervellus not being broken above the middle (HUMALA, 2002). It seems to be genuinely uncommon, with the species being more abundant in Northern and Eastern Europe.

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 3 ♀♀; Twijzel (FR); 53°14'53"N 6°04'56"E; 28/v/2012; Landschapsbeheer Friesland leg.; coll. HM; malaise trap 215 (24-28); H. Meijer det.

Subfamily Ichneumoninae Latreille 1802

Tribe Heresiarchini Ashmead, 1900

***Coelichneumon erythromerus* (Rudow, 1888)**

Coelichneumon is one of the more emblematic genera within Ichneumoninae. Most species are big on average (around a centimetre) and have deeply impressed gastrocoeli. Furthermore, the shape of the propodeum is specific with the area superomedia (on average) as broad as long or broader than long (PERKINS, 1959). A number of species are identifiable from pictures, but there is also an amount of species (mainly the black ones lacking any specific other colours or patterns) that need careful identification with the microscope. The genus was recently revised by RIEDEL (2012).

C. erythromerus is one of the easier species to recognise. As well as its typical dark blue or blackish appearance (often with shiny metasoma) as in most *Coelichneumon* spp., the hind femora are strikingly reddish, slightly black apically (RIEDEL, 2012). Most of the findings in Belgium were made in gardens. In combination with the (much) more uncommon distribution of this species in the Netherlands, it is likely the yet unknown hosts are somewhat thermophilic. Riedel mentions the species' presence in the Netherlands, but because no specific details are given about the used specimen(s) we decided to integrate it in our paper.

Confirmed in Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Evere, Moeraske (BR); 50°52'47"N 4°23'27"E; 10/v/2009; B. Hanssens leg.; field observation; C. Thirion det. (ObsID: 42949616). • 1 ♀; Erpe-Mere (OVL); 50°56'37"N 3°58'17"E; 27/x/2012; G. Van Heghe leg.; field observation; F. Verheyde det. (ObsID: 71891305). • 1 ♀; Gent, Sint-Amandsberg (OVL); 51°02'57"N 3°44'54"E; 4/v/2014; G. Stoops leg.; field observation; F. Verheyde det. (ObsID: 84196527). • 1 ♀; Bonheiden, Rijmenam (AN); 51°00'07"N 4°34'54"E; 11/vii/2017; F. Collet leg.; field observation; F. Verheyde det. (ObsID: 157091211). • 1 ♀; Zelzate -West (OVL); 51°12'05"N 3°47'22"E; 17/viii/2017; I. De Wispelaere leg.; field observation of dead specimen; F. Verheyde det. (ObsID: 142962331) [...].

THE NETHERLANDS: • 1 ♀; Brunssum, Treebeek (LIN); 50°56'12"N 5°56'59"E; 20/viii/2020; G. Lommen leg.; light trap; F. Verheyde det. (ObsID: 198822450).

***Coelichneumon opulentus* (Taschenberg, 1871)**

Coelichneumon opulentus is a bigger species (measuring 18–20 mm) with a distinctive yellow coloration: two lines on mesoscutum, scutellum, mesopleura, propodeum and orbits clearly yellow or with yellow marks (RIEDEL, 2012). Superficially it somewhat resembles *Hepiopelmus variegatorius* (Panzer, 180), but *C. opulentus* has a metasoma and hind femora that are completely black. No scopa is present on the hind coxae. This species has to be rather (very) rare in the Low Countries. With *Panthea coenobita* (Esper, 1785) (Lepidoptera: Noctuidae) there is one rather rare lepidopteran that should be a plausible host (SOKOLOV, 1990). Its distribution is very local, with stable populations in the eastern part of the Netherlands (where our parasitoid wasp was found) and in the south-eastern part of Belgium in Wallonia.

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Bennekom, Veluwe (GE); 52°00'07"N 5°43'55"E; 25/viii/2015; H. Derks leg.; field observation; F. Verheyde det. (ObsID: 105736665).

Tribe Ichneumonini Latreille, 1802***Cratichneumon armillatops* Rasnitsyn, 1981**

If we ignore recognition by habitus, *Cratichneumon* spp. are not easy to identify. Usually the area superomedia is conspicuously transverse, the lateral carinae are often poorly developed at the base and the tyloids of the males are narrow (PERKINS, 1959; TERESHKIN, 2004).

C. armillatops was (re)described by RASNITSYN & SIITAN (1981). The males have white rings on their flagellum and all tibiae. Except for the legs the species is completely black, including its clypeus. The thyridia are small and well distanced from the base of the tergite.

First report for Belgium; unconfirmed in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♂; Mol, Buitengoor en omgeving (AN); 51°12'35"N 5°09'13"E; 19/vi/2010; werkgroep EW [Paul and Marianne] leg.; field observation; C. Thirion & J. Valemberg det. (ObsID: 48800565).

***Cratichneumon sexarmillatus* (Kriechbaumer, 1891)**

= syn. *Cratichneumon albiscuta* (Thomson, 1893), synonymized by HORSTMANN (2006a: 14)

Another *Cratichneumon* sp. with a black and white colouration, the males closely resembling the abovementioned species (but the clypeus and several tarsi are white). Our specimen was a female, feeding on umbellifers. The frontal orbits are conspicuously white. All tibiae have distinctive white rings, strongly contrasting with the tarsi and other parts of the legs. It is a bigger species, measuring approx. 14–18 mm (RASNITSYN & SIITAN, 1981). Furthermore, just like *C. armillatops* it appears to be genuinely rare.

First report for Belgium; unconfirmed in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Mechelen, Mechels Broek (AN); 51°01'13"N 4°31'26"E; 12/viii/2011; J. Denonville leg.; field observation; C. Thirion & J. Valemberg det. (ObsID: 56172516).

***Diphyus restitutor* (Wesmael, 1859) (Fig. 36 A–B)**

Within the tribe of Ichneumonini (subtribe Amblytelina), *Diphyus* spp. can be recognised by their robust appearance, (normal) mandibles with two teeth, postpetiole with striae or wrinkles longitudinally, rudimentary thyridia and metasoma without tergites 3–6 elongated (VALEMBERG, 1983; TERESHKIN, 2011).

The species does not seem to be well described in recent literature. Therefore, we make an elaborate description based on BERTHOUMIEU (1895). It has been found hibernating by Tereshkin, but so far, no evidence on this aspect has been found for the Low Countries (VERHEYDE, *in prep.*). Its clypeus is truncated in both sexes, which are sexually dimorph. The females are predominantly black with a dark bluish hue. White are the banded (black) antennae, the frontal orbits and its scutellum. There are also at least two dorsolateral spots on the second and third tergite (thus four in total – at least), like in *D. quadripunctorius* (Muller, 1776), and at least two spots on the apical segments (the penultimate one only covering more or less half of the tergite). Sometimes there is a third spot, barely visible. Its coxae and legs are completely

black except for the tibiae, which are red brown, and the tarsi, which are infusate, especially on the hind legs (Fig. 36 A). The males are also predominantly black, but have up to eight white dorsolateral spots, also covering the first and fourth tergite. Their antennae are completely black, but the pronotal collar and the subtegular ridge are sometimes marked with white. Their legs are yellow to orange instead of red brown. Their hind tibiae have a blackish band apically (Fig. 36 B). Approximately 15 mm. Hosts are unknown.

First report for the Netherlands; unconfirmed in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Heeze-Leende, Strabrechtse Heide (NB); 51°23'51"N 5°38'16"E; 17/vii/2013; T. Strabrecht leg.; field observation; J. Valemborg det. (ObsID: 105736665). • 1 ♀; Terschelling (FR); 53°22'59"N 5°15'13"E; 16/vii/2019; L. Bot leg.; field observation; W. Pénigot & F. Verheyde det. (ObsID: 176411989); Fig. 36 A • 1 ♀; Renkum (GE); 51°59'48"N 5°44'45"E; 26/iv/2020; R. Majoor leg.; field observation; F. Verheyde det. (ObsID: 193594733). • 1 ♂; Ospel, Groote Peel (LIN); 51°20'04"N 5°48'18"E; 18/vii/2020; J. Slaats leg.; field observation; F. Verheyde det. (ObsID: 196500973). • 1 ♂; Asten, Groote Peel (NB); 51°21'05"N 5°48'22"E; 21/vii/2020; J. Slaats leg.; field observation; F. Verheyde det. (ObsID: 196759071); Fig. 36 B.

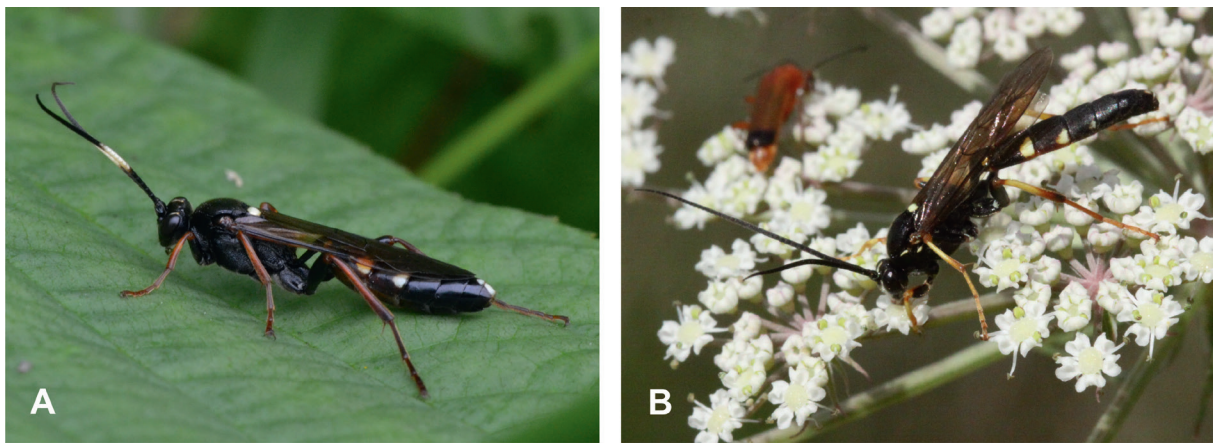


Fig. 36. *Diphys restitutor* (Wesmael, 1859). A, female, habitus, lateral view. © Leo Bot. B, male, habitus, lateral view. © Jan Slaats.



Fig. 37. *Ichneumon freyi* Kriechbaumer, 1880, male. A, habitus, lateral view. B, head, frontal view. © Augustijn De Ketelaere.

***Exephanes riesei* (Habermehl, 1916)**

Exephanes spp. (females) are quite straightforward to key and recognise by habitus, within Ichneumonini. Their penultimate tergite (7) is very elongate and the last tergite (8) is conspicuously projecting beyond this. Their ovipositor sheaths are typical (broad), the thyridia are absent (PERKINS, 1959).

E. riesei has a big white spot apically, but it is not covering the entire tergite. Its temples are normal, the flagellum is black. Its hind femora are not swollen and are also largely black. The hind tibiae are more yellowish than red, and black apically. The gastrocoeli are clearly visible, not small. The cerci are not reaching over the middle of the ovipositor, seen laterally (BERTHOUMIEU, 1895; HINZ & HORSTMANN, 2000). Like other species in the genus, *E. riesei* has been found hibernating as an adult in caves (SEBALD & WEBER, 2013), so far, only one similar observation is known from the Low Countries.

First report for Belgium; confirmed in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Hasselt (LIB); 50°56'00"N 5°19'18"E; 8/vii/2007; T. Smeets leg.; field observation; F. Verheyde & W. Pénigot det. (ObsID: 77412583).

THE NETHERLANDS: • 2 ♀♀; Maastricht, Sint-Pietersberg (LIN); 50°49'40"N 5°40'45"E; 29/i/2019; W. Vergoossen leg.; field observation, hibernating in marl caves; F. Verheyde det. (ObsID: 167079795).

***Hoplismenus terrificus* Wesmael, 1848**

Another genus which can be identified without difficulties. *Hoplismenus* spp. have two strongly developed dentiparal spines on their propodeum and a strongly elevated scutellum. Their antennae are slender, their mandibles are strongly twisted apically, and the ovipositor is distinctly exerted (PERKINS, 1960).

The females of *H. terrificus* are very distinctive. Their mesosoma and metasoma are completely black, the front legs and the hind femora are reddish, the hind tibiae are black with white tarsi. All coxae and trochanters are black as well. The antennae are black, with a small white ring on females. Lastly, the notauli go far beyond the base of the tegulae, and its mesopleuron is roughly wrinkled (RASNITSYN & SIITAN, 1981). *H. terrificus* is a known parasitoid wasp of numerous lepidopterans (e.g. *Aglais io*) (Lepidoptera: Nymphalidae). Several specimens were found hibernating under bark (VERHEYDE, *in prep.*).

First report for the Netherlands; confirmed in Belgium.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Linkebeek (VB); 50°46'16"N 4°20'10"E; 12/ix/2019; K. Schoonvaere leg.; field observation; F. Verheyde det. (ObsID: 179469629). • 1 ♀; Parike, Parike bos (OVL); 50°46'52"N 3°47'52"E; 8/xii/2019; W. Decock leg.; field observation, hibernating on *Populus* sp.; F. Verheyde det. (ObsID: 182980199). • 1 ♀; Zemst, Bos van Aa (VB); 50°59'27"N 4°23'14"E; 7/iii/2020; D. De Grave leg.; field observation; F. Verheyde det. (ObsID: 186247767). • 1 ♀; Kortesseem, Nietelbroeken (LIB); 50°52'45"N 5°22'22"E; 19/v/2020; W. Smets leg.; field observation; F. Verheyde det. (ObsID: 191781020). • 1 ♀; Erpe-Mere, Wachtbekken (OVL); 50°55'42"N 3°58'20"E; 14/vi/2020; G. Van Heghe leg.; field observation; F. Verheyde det. (ObsID: 194044633) [...].

THE NETHERLANDS: • 1 ♀; Venray (LIN); 51°31'30"N 5°54'35"E; 4/ii/2017; L. Troisfontaine leg.; field observation, hibernating on *Pinus* sp.; G. Ørsnes & F. Verheyde det. (ObsID: 134312125). • 1 ♀; Wassenaar, Meijendel – Ganzenhoek (ZH); 52°09'40"N

4°21'07"E; 21/ii/2019; C. Zuyderduyn leg.; field observation, hibernating on *Pinus nigra*; F. Verheyde det. (ObsID: 167805046). • 1 ♀; Zwolle, Westerveldse Bos (OR); 52°32'46"N 6°05'02"E; 25/v/2019; M. Kelfkens leg.; field observation; F. Verheyde det. (ObsID: 173115078).

***Ichneumon freyi* Kriechbaumer, 1880** (Fig. 37 A–B)

Ichneumon spp. can be recognised by their area superomedia (the sides are feebly arched), grooves on the propodeum, postpetiole etc. (details see PERKINS, 1960).

This is one of the most ‘obscure’ species we report. However, following description fits perfectly with HILPERT (1992). Our (male) specimen measures 18 mm, has the teeth bidentate and has tyloids on flagellomeres 6–16. It has 43 flagellomeres in total. The width of the area superomedia is more or less twice its length and is not strongly transverse, in contrast to the similar *Ichneumon inops* Holmgren, 1880 which has an elevated scutellum (pers. comm. Geir Ørnsnes). The metasoma and the mesosoma are mainly black. The scutellum, frontal orbits and underside of scapus are yellow. The antennae are red ventrally (Fig. 37 B). T2–T3 are red basally. The legs appear orange to reddish, but the tarsi are infuscate. The hind tibiae are yellowish to orange medially, black basally, while the hind tarsi are completely black. All coxae and trochanters are black (Fig. 37 A). The pterostigma is light brown. It was caught in reed vegetation. A plausible host is the butterfly *Aglais urticae* (Linnaeus, 1758) (Lepidoptera: Nymphalidae) (GRÖNBLOM, 1964).

First report for Belgium; unreported in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♂; Lissewege, Monnikenwerve (WVL); 51°17'27"N 3°12'21"E; 24/viii/2020; A. De Ketelaere leg.; coll. ADK; A. De Ketelaere det. (ObsID: 206730328); Fig. 37 A–B.

***Orgichneumon calcatorius* (Thunberg, 1822)**

= syn. *Ichneumon desultorius* Wesmael 1848, synonymized by RIEDEL (2012: 1579)

Ichneumon desultorius was recently synonymized with *O. calcatorius* by Matthias Riedel, who described the species in detail (RIEDEL, 2012). Important for the small genus *Orgichneumon* is the width of the thyridia, measuring at least 0.65–1.25× the space between them, this space being densely striated (VALEMBERG, 2014).

The males can be recognised by habitus. Their metasoma and mesosoma is predominantly black and matt. White (to creamy white) are the frontal orbits, the hind corners of the pronotum, their scutellum (apically) and the subbasal rings on all tibiae (RIEDEL, 2012). The hosts are several common lepidopterans (see YU *et al.*, 2012).

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♂; Heeze-Leende, Strabrechtste Heide (NB); 51°23'51"N 5°38'14"E; 5/vi/2012; Telpost Strabrecht leg.; field observation; J. Valemberg det. (ObsID: 72372974).

***Spilothyrates illuminatorius* (Gravenhorst, 1820)** (Fig. 38 A–B)

Spilothyrates is a smaller genus within Ichneumonini. In contrast to *Ichneumon* spp. first tergite and hypopygium are elongate and gastrocoeli are relatively small (HILPERT, 1992).

Spilothyrates illuminatorius is sexually dimorphic. The females have tergites 2–3 red, while the third tergite has a black stripe basally. Other tergites are black, but the last two have a

characteristic white stain (Fig. 38 A). This in combination with the yellowish scutellum and the reddish frontal orbits distinguishes the species from others. The males superficially resemble other black-yellow *Ichneumon* males. However, just like the females, there is a black stripe basally on the third tergite (which is yellow). The frontal orbits are also yellow and the flagellum is brownish. From a lateral view, their face is (strongly) convex, resembling *Cratichneumon* spp. Finally, the front and mid femora are stained black on the inner side, the hind tibiae are yellowish with a black ring apically and the hind coxae are completely black (Fig. 38 B).

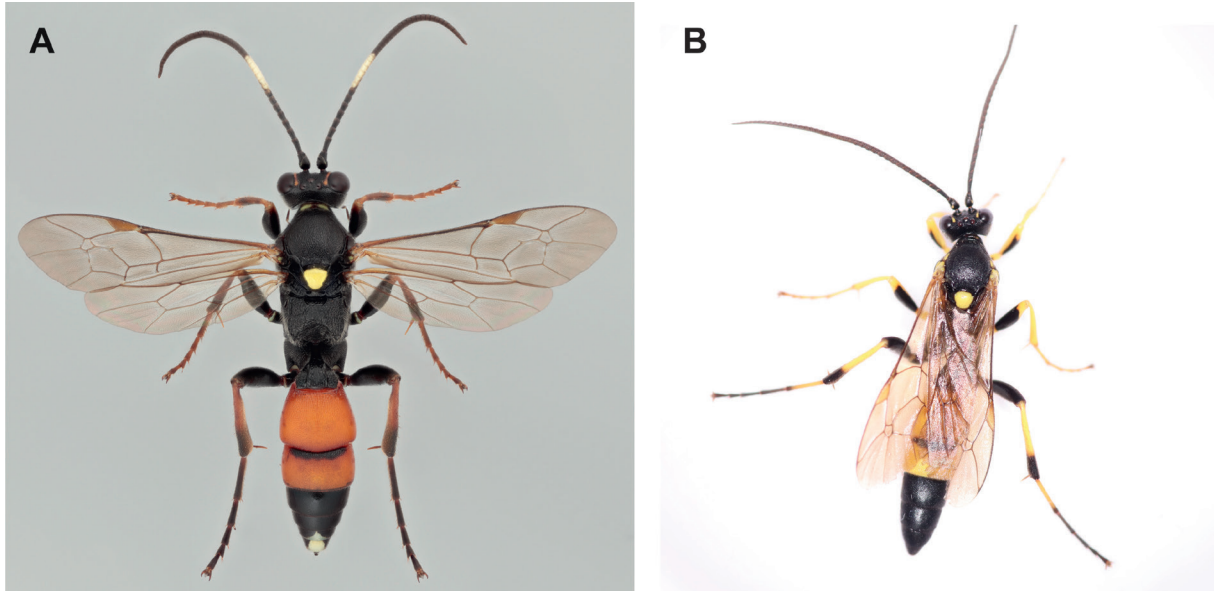


Fig. 38. *Spilothyrates illuminatorius* (Gravenhorst, 1820). A, female, habitus, dorsal view. © Malcolm Storey. B, male, habitus, dorsal view. © Ruud van Middelkoop.

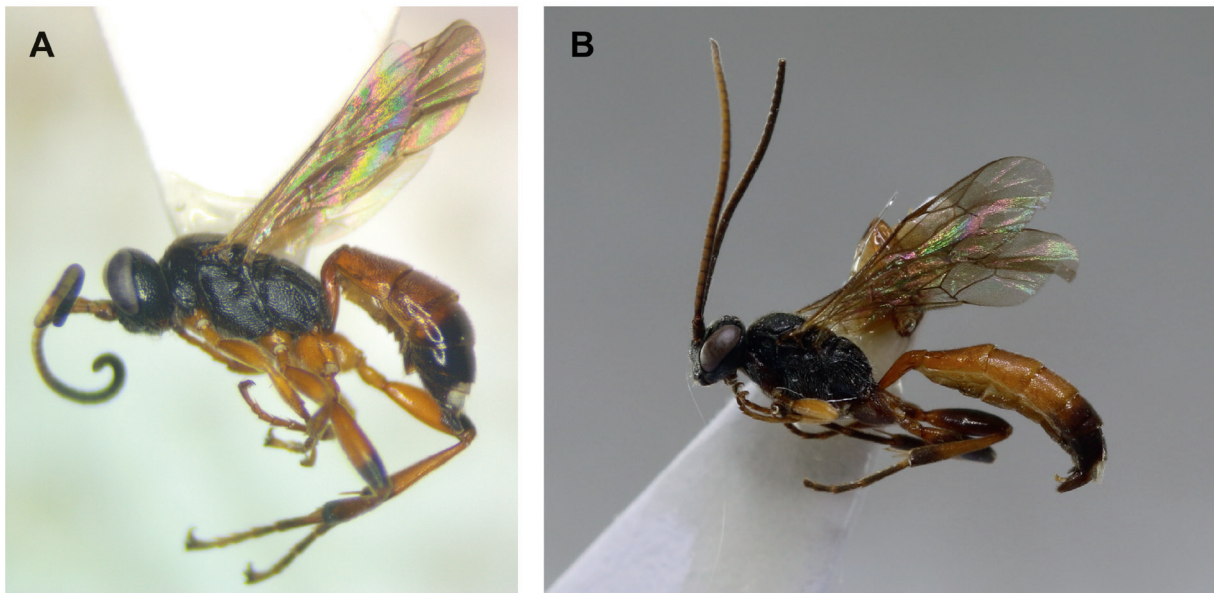


Fig. 39. *Vulgichneumon trifarius* (Berthoumieu, 1892). A, female, habitus, lateral view. © Augustijn De Ketelaere. B, male, habitus, lateral view. © Fons Verheyde.

This species has been vastly ignored or underreported in the past, which is partly due to the poor description in recent literature. The females are known to hibernate as adults, exclusively on grass tussocks and old stems from all kinds of vegetation. One report was made on the outside of a bee hotel, suggesting the plants and twigs deposited there housed at least one specimen. Next to these findings, *S. illuminatorius* appears to have a slight preference for open habitats, for example coastal dunes and limestone grasslands. The hosts are several common

lepidopterans from the families Noctuidae and Notodontidae (YU *et al.*, 2012).

First report for the Netherlands; confirmed in Belgium.

MATERIAL EXAMINED:

BELGIUM: • 1 ♂; Viroinval (NA); 50°04'41"N 4°36'00"E; 16/ix/2012; A. Moers leg.; field observation; F. Verheyde det. (ObsID: 71268995). • 1 ♀; Oostende, Havengebied - Halvemaandijk (WVL); 51°14'14"N 2°55'31"E; 9/x/2014; W. Decock leg.; field observation; F. Verheyde det. (ObsID: 89068553). • 1 ♂; Anderlecht, Begraafplaats (BR); 50°48'46"N 4°16'54"E; 19/vi/2016; M. Cuypers leg.; field observation; F. Verheyde det. (ObsID: 120155992). • 1 ♀; Hermalle-sous-Argenteau (LG); 50°43'16"N 5°41'05"E; 28/vii/2017; L. Bronne leg.; field observation; F. Verheyde det. (ObsID: 142162534). • 1 ♀; Geluveld, Polygoonbos (WVL); 50°51'25"N 2°59'34"E; 26/viii/2019; F. Verheyde leg.; coll. FV; field observation; F. Verheyde det. (ObsID: 178625844) [...].

THE NETHERLANDS: • 1 ♀; Helvoirt, Loonse en Drunense Duinen (NB); 51°39'15"N 5°12'10"E; 9/iii/2017; J. Bokelaar leg.; field observation; F. Verheyde det. (ObsID: 135222909). • 1 ♀; Klein Valkenisse, Duinen en strand (ZL); 51°28'57"N 3°30'46"E; 11/iv/2017; A. van Gilst leg.; field observation; F. Verheyde det. (ObsID: 136739484). • 1 ♀; Goirle, Regte Heide (NB); 51°30'32"N 5°01'31"E; 24/ix/2018; M. Verbeeten leg.; field observation; F. Verheyde det. (ObsID: 162847091). • 1 ♀; Moerdijk, Industriegebied (NB); 51°41'02"N 4°35'19"E; 31/x/2018; N. Kroese leg.; field observation; F. Verheyde det. (ObsID: 165917670). • 1 ♂; Zwolle, Vreugderijkerwaard (OR); 52°31'03"N 6°01'04"E; 22/vi/2019; R. & B. van Middelkoop leg.; field observation; F. Verheyde det. (ObsID: 178201075); Fig. 38 B [...].

***Vulgichneumon trifarius* (Berthoumieu, 1892) (Fig. 39 A–B)**

Vulgichneumon is a complex genus within Ichneumonini, which is sometimes difficult to discern from the closely related genus *Virgichneumon*. In contrast to the latter genus, the gastrocoeli are very small, sometimes punctiform or obsolete. The thyridia are less deeply impressed in *Vulgichneumon* (VALEMBERG, 1983) and the central part of the postpetiole is somewhat less densely punctuated. Many species are sexually dimorph.

Both females and males (which are not well known) closely resemble *Ichneumon oblongus* Schrank, 1802. The main differences lay in the abovementioned characteristics for the genus, the propodeal carination and in the colouration of the scutellum, which is white in *V. trifarius*. *Vulgichneumon trifarius* has a closely punctuated and matt frons (RASNITSYN & SIITAN, 1981). Otherwise the female species have many similarities: tricoloured antennae, last two apical tergites with white dots, head and mesosoma black, metasoma reddish and black. Even the hind femora and the hind tibiae, which are red with an apical black band, are identical (Fig. 39 A). We also collected several male specimens (Fig. 39 B). They measured approximately 6.5 mm, had 28 flagellomeres and tyloids on flagellomeres 4–11. Coloured rings on the antennae were missing. These numbers are very similar to those for *Ichneumon oblongus*. Hilpert mentions 26–30 flagellomeres with tyloids on 5–11(12) (HILPERT, 1992). More research is necessary to confirm the status of this species (and those of the males). It seems to be rather common and clearly flies late in the year (October–November). One host is known: the common lepidopteran *Bupalus piniaria* (Linnaeus, 1758) (Lepidoptera: Geometridae) (MEYER, 1933).

First report for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Sint-Lambrechts-Herk, Mombeekvallei (LIB); 50°53'16"N 5°19'47"E; 19/xi/2010; K. Windmolders leg.; field observation; J. Valemberg det. (ObsID: 50995879). • 9 ♂♂; Sint-Andries, Ter Heyde (WVL); VII–X.2016; W. Dekoninck *et al.* (KBIN) leg.; coll. KBIN/RBINS (project Bruges heathlands); yellow pan trap & pitfall trap; F. Verheyde det.; Fig. 39 B. • 1 ♀; Tessenderlo, Averbode Bos en Heide (LIB); 51°02'40"N 5°00'04"E; 11/x/2018; G. Van den Heuvel leg.; light trap; F. Verheyde det. (ObsID: 163626762). • 1 ♀; Zedelgem, Militair domein Vloethemveld - Relict natte heide (WVL); 25/x/2019; W. Dekoninck *et al.* (KBIN) leg.; coll. KBIN/RBINS (project Bruges heathlands); pitfall trap (11-25); F. Verheyde det. • 1 ♀; Koksijde, Doornpanne (WVL); 51°06'59"N 2°39'11"E; 15/xi/2020; A. Beidts leg.; coll. ADK; light trap; A. De Ketelaere det. (ObsID: 203249317); Fig. 39 A.

THE NETHERLANDS: • 1 ♀; Bergen (NH); 52°40'02"N 4°42'21"E; 11/x/2014; T. de Graaf leg.; field observation; F. Verheyde det. (ObsID: 89137865). • 1 ♀; Veenendaal, Kwintelooyen (UT); 51°59'32"N 5°33'03"E; 21/x/2016; J. Bouwmans leg.; field observation; F. Verheyde det. (ObsID: 125768011). • 1 ♀; Arcen, Walbeckheide (LIN); 51°30'47"N 6°11'41"E; 12/iii/2020; J. Bouwmans leg.; field observation; F. Verheyde det. (ObsID: 186502407). • 1 ♀; Zwolle, Westerveldse Bos (OR); 52°32'47"N 6°05'19"E; 19/viii/2020; G. Reitsma leg.; field observation; F. Verheyde det. (ObsID: 198735413).

Tribe Listrodromini Förster, 1869***Anisobas rebellis* Wesmael, 1845**

= syn. *A. jugorum* Heinrich, 1949, synonymized by HORSTMANN (2007: 108–110)

= syn. *A. parviceps* Thomson, 1888, synonymized by HORSTMANN (2007: 108–110)

The genus *Anisobas* belongs to the small tribe Listrodromini. Their genal carina is meeting the hypostomal carina at the base of the mandible and the transverse furrow of the pronotum has a large shining central keel. *Anisobas* spp. have mandibles with a normal hind margin (not raised). The spiracles of the propodeum are double the size in length than breadth, the clypeus is conspicuously flat. There are short dentiparal spines on the propodeum (PERKINS, 1959; HORSTMANN, 2007).

Anisobas rebellis does not have an elevated scutellum. Its temples and mandibles are normal, but its head, viewed in front, is triangular (BERTHOUMIEU, 1895; RASNITSYN & SIITAN, 1981). The hind femora are reddish (exceptionally black) and relatively slender (3.6–4.3× as long as wide). The hind tibiae and tarsi often are completely black. The antennae have 29–34 flagellomeres. Its hosts are butterflies from the genus *Lycaena* (Lycaenidae) (HORSTMANN, 2007).

First report for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Oosterlo (AN); 51°06'00"N 4°59'01"E; 12/vi/2013; D. Plu leg.; field observation; F. Verheyde & J. Valemberg det. (ObsID: 76798571).

THE NETHERLANDS: • 1 ♀; Mook, Mookerheide (LIN); 51°44'55"N 5°54'00"E; 13/x/2007; H. Alberts leg.; field observation; J. Valemberg det. (ObsID: 3071814). • 1 ♀; Den Haag, Solleveld (ZH); 52°02'32"N 4°11'37"E; 11/v/2019; J. van't Bosch leg.; field observation; F. Verheyde det. (ObsID: 172212616).

Tribe Phaeogenini Förster, 1869

Heterischnus debilis (Gravenhorst, 1829)

Heterischnus spp. are quite straightforward to recognise in Phaeogenini. Their mandibles have only one tooth and their clypeus is separated from the face by a deep groove. Furthermore, their flagellomeres are slender and long, the notauli deeply indented and long and their scutellum is high and arched (SELFA & DILLER, 1994).

H. debilis is a predominantly black species. Its frontal orbits, scutellum, tegulae and pronotal collar are whitish-yellow, however, and the legs are orange. This species seems to be rare, although difficulties in determination could be present since it is missing from recent literature. According to YU *et al.* (2012) our finding constitutes the first confirmed rearing record with *Amblyptilia acanthadactyla* (Hübner, 1813) (Lepidoptera: Pterophoridae) as a host.

First report for Belgium; unreported in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Erpe-Mere (OVL); 50°56'36"N 3°58'16"E; 26/vii/2014; G. Van Heghe leg.; reared ex *Amblyptilia acanthadactyla* (Hübner, 1813); E. Diller det. (ObsID: 86740373).

Tribe Platylabini Berthoumieu, 1904

Ectopoides brevicornis (Kriechbaumer, 1890)

This small genus belongs to the tribe of Platylabini. The antennae are rather short and uniquely shaped in the tribe (together with *Apaeticus* spp.): filiform for females and semi-bristle shaped for males. Furthermore, the thyridia are narrower than the interval between them and the gastrocoeli are very small and only feebly impressed (TERESHKIN, 2009).

E. brevicornis has a predominantly black head and mesosoma. Only its tegulae, upper part of its mesopleuron and its scutellum are more or less white. The metasoma is red except for the first abdominal segment and the apical segments, which are black. The hind tibiae and femora are also red, but with a broad black band apically. The females have a white band on their antennae (RASNITSYN & SIITAN, 1981).

First report of the species and the genus for the Netherlands; unreported Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Koudekerke (ZL); 51°28'52"N 3°33'47"E; 6/viii/2018; A. De Wilde leg.; coll. KZ; field observation; K. Zwakhals det. (ObsID: 161008810).

Subfamily Metopiinae Förster, 1869

Carria paradoxa Schmiedeknecht, 1924 (Fig. 40)

This is the only species we report within the subfamily Metopiinae. *Carria* is a small and exceptional genus. Its face is entirely convex, the middle and hind tibiae have two spurs, the tarsal claws are simple and there is a closed areolet. Finally, the occipital carina is entirely absent (TOWNES, 1971). Its mesosoma and metasoma are completely black, but the tibiae and the tarsi can be reddish brown (Fig. 40). Hosts are unknown.

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Wageningen, Blauwe Kamer (GE); 51°56'38"N 5°37'15"E; 14/iv/2011; D. Belgers leg.; coll. KZ; field observation; K. Zwakhals det. (ObsID: 56675785); Fig. 40.

Subfamily Ophioninae Fabricius, 1798***Enicospilus adustus* (Haller, 1885)**

Enicospilus is a distinctive genus within Ophioninae. All species are more or less testaceous, have strongly narrowed mandibles, a large glabrous patch in the fore wing discosubmarginal cell and the fore wing vein *RS+2R* partly thickened.

Enicospilus adustus has only recently been distinguished (clearly) from *E. merdarius* (Gravenhorst, 1829) and other related species. The species is uniformly testaceous. The fore wing has distinct, pigmented proximal and central sclerites. Its head has the temples narrowed, but less strongly posteriorly. Its scutellum has the sides distinctly converging posteriorly, sparsely punctate and smoothly curved (BROAD & SHAW, 2016; JOHANSSON, 2018).

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Ureterp, Terrein de Fûgelhelling (FR); 53°06'15"N 6°08'24"E; 3/ix/2020; H. Meijer leg.; coll. HM; light trap; H. Meijer det.

***Enicospilus inflexus* (Ratzeburg, 1844)**

Enicospilus inflexus is a large species (fore wing length c. 20 mm) without any sclerites in the abovementioned glabrous area of the fore wing. It is not easy to distinguish it from *E. undulatus*. Its head is not expanded laterally beyond the eyes (posteriorly, in dorsal view) and the ocelli are touching or almost touching the eye. Furthermore, *E. inflexus* has the antennal socket separated from the inner margin of the eye by only a third of the socket's diameter (BROAD & SHAW, 2016; JOHANSSON, 2018).

First report for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♂; Koekelare (WVL); 51°05'27"N 2°58'36"E; 17/vi/2020; F. Declerck leg.; field observation; G. Broad det. (ObsID: 194328978).

THE NETHERLANDS: • 1 ♂; Heeze-Leende, Strabrechtste Heide (NB); 51°23'51"N 5°38'14"E; 19/vi/2012; Telpost Strabrecht leg.; field observation; G. Várkonyi det. (ObsID: 72372994). • 1 ♂; Heeze-Leende, Strabrechtste Heide (NB); 51°23'51"N 5°38'14"E; 9/vi/2013; Telpost Strabrecht leg.; field observation; G. Várkonyi det. (ObsID: 81094316) [...].

***Eremotylus marginatus* (Jurine, 1807) (Fig. 41)**

Eremotylus marginatus is an impressive species often caught with light traps. Its antennae are orange and the wing membrane yellowish. Its metasoma is testaceous and black apically. Therefore, it is often confused with *Ophion ventricosus* Gravenhorst, 1829. While colour patterns are less reliable, it can be distinguished from the latter by its wing venation. In *Eremotylus* fore wing vein *RS+2R* is abruptly bent near the base of the pterostigma and ramellus is absent (Fig. 41). Additionally, the lower edge of the mesopleuron has a weak, blunt, projection (BROAD, 2012). The species is uncommon but seems to be vastly underreported in the past. Hosts are unknown. **First report for Belgium; confirmed in the Netherlands.**

MATERIAL EXAMINED:

BELGIUM: • 1 ♂; Somal (NA); 12/vi/2004; P-N. Libert leg.; coll. PNL; field observation; P-N. Libert det. • 1 ex.; Moeskroen (HA); 50°45'05"N 3°12'53"E; 20/v/2014; C. Gruwier leg.; light trap; F. Verheyde & T. Vandaudenard det. (ObsID: 84671625). • 2 ex. ; Durbuy, Domaine de Hottemme (LX); 50°21'01"N 5°31'21"E; 8/v/2018; T. Vandaudenard leg.; coll. TV; light trap; G. Broad det. (ObsID: 170003188). • 1 ex.; Hoepertingen (LIB); 50°48'52"N 5°17'02"E; 9/v/2018; S. Carolus leg.; light trap; F. Verheyde det. (ObsID: 156251271). • 1 ex.; Viroinval (NA); 50°04'56"N 4°36'38"E; 9/v/2020; T. Vandaudenard leg.; coll. TV; light trap; F. Verheyde det. (ObsID: 191261279); Fig. 41. [...].

THE NETHERLANDS: • 6 ex.; Maastricht (LIN); 50°49'00"N 5°40'54"E; 22/v/2020; R. Hulsbosch leg.; light trap; F. Verheyde det. (ObsID: 189500616). • 3 ex.; Vaals, Zevenwegenbos (LIN); 50°45'49"N 5°57'13"E; 20/v/2020; A. Wijker leg.; light trap; F. Verheyde det. (ObsID: 192247324).

***Ophion brocki* Johansson, 2019**

Ophion is a large and famous genus of ichneumonids, consisting of many testaceous species often caught with light traps. In a recent key the genus was revised in depth with molecular evidence, and although the work is not done yet (esp. for Central Continental Europe and Britain), many species have now received a more firm status (see JOHANSSON & CEDERBERG, 2019).

Ophion brocki is one of the newly described species. It is a big species with a large number of flagellomeres (59-64). Its propodeum usually has a clear and complete carination, with the anterior transverse carina centrally and laterally and the lateral longitudinal carina usually distinct. Its nervellus is broken distinctly below the middle (JOHANSSON & CEDERBERG, 2019).

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♂; Ameland, Hollumerheide en huisjesterreinen (FR); 53°27'01"N 5°38'52"E; 21/v/2020; P. Hoekstra leg.; coll. PH; light trap; P. Hoekstra & N. Johansson det. (ObsID: 193324614).

***Ophion confusus* Johansson, 2019**

As another recently described species, *O. confusus* closely resembles the common *O. moscaryi* Brauns, 1889. The occipital carina is centrally rounded, however, straight or with a central depression and the face below antennal socket is shagreened. It has between 53 and 59 flagellomeres (JOHANSSON & CEDERBERG, 2019).

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Ameland, Hollumerheide en huisjesterreinen (FR); 53°27'01"N 5°38'52"E; 21/v/2020; P. Hoekstra leg.; coll. PH; light trap; P. Hoekstra & N. Johansson det. (ObsID: 193324615).

***Ophion crassicornis* Brock, 1982**

Another large species (fore wing length 15–16 mm and 57–61 flagellomeres). It can be especially confused with *O. borealis* Johansson, 2019. However, *O. crassicornis* has a distance between the tentorial pits and compound eyes that is smaller than the distance between the cavities, while this distance is almost equal in *O. borealis*. Additionally, the sides of the

scutellum in the known specimens are usually paler than the rest of the scutellum, while they are concolorous in *O. borealis* (JOHANSSON & CEDERBERG, 2019).

First report for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Havelange (NA); 50°23'07"N 5°15'42"E; 2/vi/2020; T. Vandaudenard leg.; coll. TV; light trap; N. Johansson & T. Vandaudenard det. (ObsID: 211823443).

THE NETHERLANDS: • 1 ♀; Beusichem (GE); 51°57'23"N 5°16'46"E; 17/v/2014; P. Hoekstra leg.; coll. PH; light trap; P. Hoekstra & N. Johansson det. (ObsID: 184430720).

***Ophion inclinans* Johansson, 2019**

This species was also only recently described. It is a smaller species (fore wing length 12 mm) with vein *RS+2R* not thickened. Its mesosoma and metasoma are testaceous. The sclerotised section of the first sternite is ending distinctly posterior to the spiracle. The hind femur is not particularly slender, but the subapical flagellomeres are narrow and long, more than two times as long as wide (JOHANSSON & CEDERBERG, 2019). Our specimen is relatively small, which could be due to the use of alternative hosts (pers. comm. N. Johansson).

First report for Belgium; unreported in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♂; Oppem (VB); 1/viii/1944; A. Crèvecoeur leg.; coll. KBIN/RBINS (coll. Crèvecoeur); N. Johansson & T. Vandaudenard det.

***Ophion ocellaris* Ulbricht, 1926** (Fig. 42 A–B)

Ophion ocellaris is a species with a longer history. It appears very early in keys because it is easily recognisable. The occipital carina is completely absent (Fig. 42 B). Furthermore, its stemmaticum is black or dark brown (Fig. 42 A–B), its area superomedia is absent with transverse wrinkles in its place and it has over 50 flagellomeres. The species appears to fly earlier in the year in the Low Countries than in Sweden (JOHANSSON & CEDERBERG, 2019).

First report for Belgium; confirmed in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Beernem (WVL); 51°06'39"N 3°19'33"E; 10/v/2020; A. De Ketelaere leg.; coll. ADK; light trap; T. Vandaudenard det. (ObsID: 191278424). • 2 ♀♀; Sorinnes (NA); 50°15'04"N 5°00'33"E; 15/vi/2020; T. Vandaudenard leg.; coll. TV; light trap; T. Vandaudenard det. (ObsID: 211423812). • 1 ♀; Havelange, Bois d'Avennes (NA); 50°19'05"N 5°16'41"E; 22/vi/2020; T. Vandaudenard leg.; coll. TV; light trap; T. Vandaudenard det. (ObsID: 211424854); Fig. 42 A–B.

THE NETHERLANDS: • 1 ♀; Brunssum (LIN); 50°56'12"N 5°57'00"E; 26/iv/2018; G. Lommen leg.; coll. KZ; light trap; K. Zwakhals det. (ObsID: 167795496).

***Ophion slaviceki* Kriechbaumer, 1892**

Belonging to the *O. luteus*-aggregate, this species is testaceous, the sclerotised section of the first sternite is ending anterior or at the level of the spiracle, and species are mainly active in the summer. It is a larger species (fore wing length 14–17 mm) with the ocelli large and usually touching the inner margin of the compound eye. All our specimens were males, they can be characterized by the more or less yellow temples. Additionally, the first flagellomere is four times as long as wide and the central flagellomeres are 1.5–1.6× as long as wide. It has an acute

angled mandibular gape (JOHANSSON & CEDERBERG, 2019).

First report for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♂; Sterrebeek (VB); 30/vii/1936; A. Crèvecoeur leg.; coll. KBIN/RBINS (coll. Crèvecoeur); N. Johansson & T. Vandaudenard det.

THE NETHERLANDS: • 5 ♂♂; Corle (GE); 51°58'09"N 6°40'39"E; 22/vii/2020; K. Verhoogt & A. Krediet leg.; coll. PH; light trap; P. Hoekstra det. (ObsID: 197136908).

***Ophion splendens* Johansson, 2019**

Another rather large (fore wing length 17 mm) and testaceous species. The sclerotised section of the first sternite ends at the level of the spiracle. Its head is simple with 56 flagellomeres, of which the first flagellomere is more or less three times as long as wide. The ocelli are rather wide and touch the compound eye. The carination of the propodeum is incomplete. The nervellus is broken near the middle and finally, its mesopleuron has small punctures and is a bit shagreened (JOHANSSON & CEDERBERG, 2019).

First report for Belgium; unreported in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Onhayne (NA); 50°17'10"N 4°46'49"E; 24/vi/2020; T. Vandaudenard leg.; coll. TV; light trap; N. Johansson & T. Vandaudenard det. (ObsID: 211833535).

***Ophion variegatus* Rudow, 1883 (Fig. 43)**

This species has only been recently described in all clarity. It belongs to the so-called *O. obscuratus*-aggregate, which consists of species with a creamy to yellowish pattern on their mesosoma. Presumably, some unknown species are yet to be described (pers. comm. G. Broad and JOHANSSON & CEDERBERG, 2019) and therefore all authors are keeping material for future reconsiderations. However, *O. variegatus* is a well-established species now. It is a smaller species (fore wing length 14–16 mm), usually with 60 flagellomeres or fewer. These flagellomeres are 1.5–1.6× as long as wide in the males. Furthermore, the occipital carina is joining the hypostomal carina at an angle of 80–90 degrees and the scutellum is more narrowed posteriorly (JOHANSSON & CEDERBERG, 2019). Although specimens always have to be checked with a microscope, on habitus, the species seems to be slightly more reddish, while the pattern on its mesosoma often is slightly more creamy-yellow than light yellow in for example *Ophion obscuratus* Fabricius, 1798 (Fig. 43). There is also an important difference in phenology, with *O. variegatus* being mainly active from April to June.

First report for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Zeebrugge (WVL); 51°19'14"N 3°10'39"E; 13/vi/2020; A. Beidts leg.; coll. ADK; light trap; A. De Ketelaere det. (ObsID: 194639244). • 1 ♂; Jamagne (NA); 50°13'40"N 4°31'46"E; 23/vi/2020; T. Vandaudenard leg.; coll. TV; light trap; T. Vandaudenard det. (ObsID: 202044165); Fig. 43.

THE NETHERLANDS: • 1 ♂; Beuningen, Personenbos (GE); 51°50'08"N 5°45'28"E; 9/iv/2020; P. Hoekstra leg.; coll. PH; light trap; P. Hoekstra & F. Verheyde det. (ObsID: 188427643).



Fig. 40. *Carria paradoxa* Schmiedeknecht, 1924, female, habitus, dorsal view. © Dick Belgers.



Fig. 41. *Eremotylus marginatus* (Jurine, 1807), 1 ex., habitus, lateral view. © Thibaud Vandaudenard.

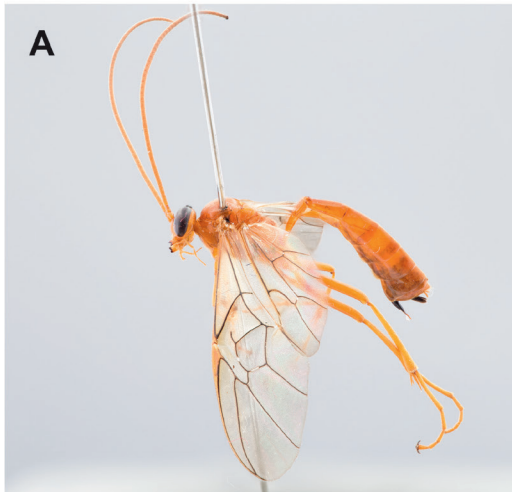


Fig. 42. *Ophion ocellaris* Ulbricht, 1926, female. A. habitus, lateral view. B. occipital carina (head), dorsal view. © Thibaud Vandaudenard.



Fig. 43. *Ophion variegatus* Rudow, 1883, male, habitus, lateral view. © Thibaud Vandaudenard.



Fig. 44. *Proclitus attentus* Förster, 1871, female, habitus, lateral view. © Fons Verheyde.

Subfamily Orthocentrinae Förster, 1869

Aniseres pallipes Förster, 1871

Aniseres spp. have glymmae on the first tergite and the notaulus is present (with a short vertical carina on its front side). Their first tergite is 1.5–2.2× as long as wide and the discoidella is present. Their ovipositor sheaths are 1.4–2.6× as long as their hind tibiae (TOWNES, 1971).

The genus is rather small. *A. pallipes* has the scapi very close to each other and the clypeus is about 2.5x as wide as long, not protruding (VAN ROSSEM, 1980). Like all Orthocentrinae, hosts are mainly fungus gnats (Diptera: Mycetophilidae) (ŠEDIVÝ & ŠEVČIK, 2003; BROAD *et al.*, 2018).

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 2 ♀♀; Zeewolde, Horsterwold (FL); 52°17'38"N 5°27'34"E; 5/viii/2018; P. Hoekstra leg.; coll. PH; field observation on *Polyporus squamosus* (Huds 1821); P. Hoekstra & A. Humala det. (ObsID: 161207192).

Plectiscidea communis (Förster, 1871)

Plectiscidea spp. have two bullae in the second recurrent vein, the glymmae are absent and the petiolar area does not have a median carina. Their first tergite is matt and the flagellar segments of the females are slender (TOWNES, 1971).

Plectiscidea communis has the longest ovipositor in the genus, namely 0.72–0.85× fore wing length (VAN ROSSEM, 1991).

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Olterterp (FR); 53°04'12"N 6°06'20"E; 28/viii/2015; H. Meijer leg.; coll. HM; field observation; H. Meijer det.

Proclitus attentus Förster, 1871 (Fig. 44)

Proclitus spp. have a second recurrent vein with two bullae, the areolet is open and the epipleura of the second tergite are separated by a crease. Their first and second tergite are polished and usually without wrinkles. The tip of the mandible is moderately narrow but with the lower tooth visible. The ovipositor sheath is at least half as long as apical depth of the abdomen (TOWNES, 1971). Species need to be keyed carefully, because existing literature needs to be revised.

The ovipositor of *P. attentus* is short, approximately 0.42–0.48× the fore wing length (Fig. 44). Its tentorial pits are not impressed. Its first tergite is 2.7–3.0× as long as the apical width. Its radius originates at 0.54 of the lower margin of the pterostigma (VAN ROSSEM, 1987).

First report for Belgium; unconfirmed in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Sint-Andries, Beisbroek - Hoog (WVL); 1/xi/2014; W. Dekoninck *et al.* (KBIN) leg.; coll. KBIN/RBINS (project Bruges heathlands); pitfall trap (18.X-1.XI); A. Humala & F. Verheyde det.; Fig. 44.

***Stenomacrus celer* (Holmgren, 1858)**

Stenomacrus spp. are generally smaller species with the lower edge of the clypeus truncate or subtruncate and without a closed areolet. The prepectal carina is present, just like the lower tooth of the mandible, which is located on the inner edge of the mandible (TOWNES, 1971).

Stenomacrus celer is a small species (2.5 mm) with a ‘knife-like’ compressed metasoma, without any long hairs. Its postannellus measures more than three times its width (AUBERT, 1981).
First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 4 ♀♀; Ureterp, Terrein de Fûgelhelling (FR); 53°04’12”N 6°06’20”E; 21/x/2020; H. Meijer leg.; coll. HM; light trap; H. Meijer det.

***Stenomacrus vafer* (Holmgren, 1858)**

Stenomacrus vafer has a smaller cylindrical postannellus, measuring more than twice but less than three times its width. Its area superomedia has a more complete carination, with two longitudinal carinae. Its first tergite is at least as long as wide, feebly sculptured (AUBERT, 1981).
First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♂; Eastermar (FR); 53°10’47”N 6°05’39”E; 20/vi/2012; Landschapsbeheer Friesland leg.; coll. HM ; malaise trap 31 (13-20); H. Meijer det.

Subfamily Phygadeuontinae Förster, 1869***Acrolyta marginata* (Bridgman, 1883) (Fig. 45 A–B)**

Species within the subtribe Acrolytina can be recognised by the strong but short dorsal longitudinal carinae on their pronotum and the absence of a median apical tooth on their clypeus (TOWNES, 1970a). *Acrolyta* spp. are closely related to species from the genus *Eudelus* but can be distinguished on the basis of the distinctly widened antennae in the middle and the ovipositor tip with distinct teeth ventrally (females) or the incomplete carination on the area superomedia (males) (SCHWARZ & SHAW, 2000).

A. marginata has a straight clypeus without a tooth (Fig. 45 A), the second tergite basally (0.4) rugose/strigose and both the second and third tergite distinctly sculptured. Its third antennal segment is 4.4–4.6x as long as wide and the third tergite is clearly reddish laterally (SCHWARZ & SHAW, 2000; Fig. 45 B). It is a known parasitoid of Microgastrinae (Parasitica: Braconidae).

First report for Belgium; unreported in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Beernem, Beverhoutsveld (WVL); 51°09’18”N 3°18’34”E; 17/viii/2020; A. De Ketelaere leg.; coll. ADK; field observation; A. De Ketelaere & G. Várkonyi det. (ObsID: 198902055); Fig. 45 A–B.

***Acrolyta nens* (Hartig, 1838)**

Acrolyta nens also has a straight clypeus without a tooth. Its third tergite has very fine punctures, on a smooth and lustrous surface. Its third antennal segment is shorter, 2.6–3.6x as long as wide (SCHWARZ & SHAW, 2000). It is also a parasitoid wasp of Microgastrinae.

First report for the Netherlands; unconfirmed in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Ureterp, Terrein de Fûgelhelling (FR); 53°06'15"N 6°08'24"E; 22/viii/2020; H. Meijer leg.; coll. HM; light trap; H. Meijer det.

***Arotrephes perfusor* (Gravenhorst, 1829)**

Another small genus within Phygadeuontinae. Belonging to the subtribe Hemitelina, the area superomedia is separated from the petiolar area. The second and third tergite are separated. The areolet is closed and *2m-cu* has two bullae. Species are rather robust (TOWNES, 1970a).

A. perfusor has a second tergite that is more or less shiny and smooth. Its temples are strongly narrowed (at most 0.6x as long as width of the eyes), its ovipositor sheaths are at least as long as the hind tibiae and the legs and middle tergites are mostly red brown. Its scapus is slender and the third and fourth antennal segment are 2.5–3× as long as wide. The females are macropterous (HORSTMANN, 1995). The (micro)lepidopteran *Pammene regiana* (Zeller, 1849) is a plausible host (Lepidoptera: Tortricidae) (HEDWIG, 1955).

First report of the species and the genus for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♂; Somal (NA); 29/iv/2010; P-N. Libert leg.; coll. PNL; field observation; M. Schwarz det.

THE NETHERLANDS: • 1 ♀; Nunspeet, Leuvenhorst (GE); 52°20'10"N 5°42'40"E; 9/v/2020; P. Hoekstra leg.; coll. PH; field observation; M. Schwarz & P. Hoekstra det. (ObsID: 191124221).

***Atractodes angustipennis* Förster, 1876**

With the presence of a closed areolet, a long and slender habitus (including the first tergite) and the shape of their propodeum *Atractodes* spp. strongly resemble *Mesoleptus* spp. (see below). The lateral crease of the second tergite is shorter however, and the metasoma of the females is compressed (TOWNES, 1970a). The genus has been thoroughly revised by Rejio Jussila in several papers.

Atractodes angustipennis needs to be keyed carefully with JUSSILA (2001). It belongs to the group with a smooth and unpunctuated mesopleuron and the tarsal claws as long as or only slightly longer than their arolium. Its presence in the Netherlands could be expected with confirmed reports from all neighbouring countries (FAUNA EUROPAEA).

First report for the Netherlands; unconfirmed in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Twijzel (FR); 53°14'53"N 6°04'56"E; 28/v/2012; Landschapsbeheer Friesland leg.; coll. HM; malaise trap 215; H. Meijer det.

***Atractodes arator* Haliday, 1838**

Atractodes arator also belongs to the group of species with a smooth and unshagreened mesopleuron. It has two bullae in the fore wing and the tarsal claws are relatively long and weakly curved with a thin base. It is a bigger species, measuring approximately 7–8 mm (JUSSILA, 2001).

First report for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♂; Mechelen, Zennegat (AN); 51°03'46"N 4°25'48"E; 1/vii/2018 [date estimated]; C. Deschepper leg.; coll. FV; field observation; F. Verheyde det. (ObsID: 207829939).

THE NETHERLANDS: • 1 ♀; Ureterp, Terrein de Fûgelhelling (FR); 53°06'15"N 6°08'24"E; 22/viii/2020; H. Meijer leg.; coll. HM; light trap; H. Meijer det.

***Atractodes pusillus* Förster, 1876**

Just like the abovementioned species, *A. pusillus* has a shiny mesopleuron. In contrast to the species mentioned however, this species is really small. Our specimen had a body length of 3.5 mm. Furthermore, it is completely black, except for the (hind) femora and tibiae, which are red. This distinguishes it from for example *A. pauxillus* Förster, 1876 (JUSSILA, 2001).

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Drachten (FR); 53°05'59"N 6°06'32"E; 29/viii/2020; H. Meijer leg.; coll. HM; light trap; H. Meijer det.

***Bathythrix claviger* (Taschenberg, 1865)**

Species from the genus *Bathythrix* are not that hard to recognise within Phygadeuontinae by their habitus. They are all slender (or very slender), their notaulus is long, their propodeum has a specific carination and their first tergite often has longitudinal carinae (TOWNES, 1970a). Several species are hairy and/or have tentorial pits.

Bathythrix claviger is a distinctive species within the genus. Its ovipositor is very long (1.9–2.7× the hind tibia) and downcurved. It is mainly black, but it has silvery hairs on its mesopleura and frons. Its legs are reddish brown, but the hind tibiae and the tarsi are blackish. It is a known parasitoid of sawflies, namely *Diprion* (Symphyta: Diprionidae) and *Strongylogaster* spp. (Symphyta: Tenthredinidae) (SAWONIEWICZ, 1980).

First report for Belgium; confirmed in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Hoboken, Hobokense Polder (AN); 51°11'21"N 4°20'47"E; 12/vi/2010; L. Janssen leg.; field observation; G. Broad & F. Verheyde det. (ObsID: 48568025). • 1 ♀; Gent, Bourgoyen (OVL); 51°03'28"N 3°40'41"E; 16/v/2014; W. Decock leg.; field observation; F. Verheyde det. (ObsID: 84535872). • 1 ♀; De Panne, Krakeelduinen (WVL); 51°05'15"N 2°34'43"E; 7/xi/2017; H. Vanhulle leg.; field observation; F. Verheyde det. (ObsID: 145818193).

THE NETHERLANDS: • 1 ♀; Linschoten (UT); 52°03'38"N 4°55'19"E; 8/vi/2015; C. Witkamp leg.; field observation; G. Broad det. (ObsID: 103506800). • 1 ♀; Strijensas (ZH); 51°42'15"N 4°32'28"E; 14/v/2020; A. Den Tuinder leg.; field observation; F. Verheyde det. (ObsID: 191334763).

***Bathythrix collaris* (Thomson, 1889)**

Bathythrix collaris is harder to recognise. Its mesosoma, first tergite and the apical tergites are black. Its metasoma is mainly orange with black spots on the second tergite. Its nervellus is intercepted below the middle and the areolet is open. The ovipositor is slightly shorter than the hind tibia and the temples are narrowed behind the eyes. Its propodeum is almost completely smooth. Our specimens had 25 flagellomeres and measured approximately 5.5 mm. It is a

known parasitoid of *Pristiphora abietina* (Christ, 1791) (Symphyta: Tenthredinidae) (SAWONIEWICZ, 1980). **First report for Belgium; unreported in the Netherlands.**

MATERIAL EXAMINED:

BELGIUM: • 2 ♀♀; Stokkel (BR); 17/vi/1932; A. Crèvecoeur leg.; coll. KBIN/RBINS (coll. Crèvecoeur); F. Verheyde det.

***Bathythrix spheginus* (Gravenhorst, 1829)**

Several males of *B. spheginus* were caught with pitfall traps. The species can be recognised by its nervellus (intercepted), areolet (open) and first tergites (distinctly striate). Furthermore, the head is rather strongly narrowed behind the eyes. It is a known parasitoid of several common cephid wasps (Symphyta: Cephidae) and a facultative hyperparasitoid of Collyriinae (Parasitica: Ichneumonidae) (SAWONIEWICZ, 1980).

First report for Belgium; unreported in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♂; Sint-Andries, Chartreuzinnenheide - Laag (WVL); 16/v/2014; W. Dekoninck *et al.* (KBIN) leg.; coll. KBIN/RBINS (project Bruges heathlands); pitfall trap (2-16); F. Verheyde det. • 7 ♂♂; Sint-Andries, Chartreuzinnenheide (WVL); V–VII.2016; W. Dekoninck *et al.* (KBIN) leg.; coll. KBIN/RBINS (project Bruges heathlands); pitfall trap; F. Verheyde & A. Humala det.

***Charitopes leucobasis* Townes, 1983**

Charitopes is a smaller genus that also needs to be keyed carefully. Some characteristics are the absence of any teeth on their clypeus, the presence of two bullae on *2m-cu*, which is strongly inclivous, hairless eyes, wide epipleura and an ovipositor sheath with a length of 0.35–0.65× its fore wing length (TOWNES, 1970a).

Charitopes leucobasis has the following features: fifth antennal segment at least 2.9× its width, area superomedia 0.9–1.4× as wide as long, ovipositor sheath at least 1.5x hind tibia length, temples not strongly narrowed, areolet open and postpetiole with longitudinal carinae (HORSTMANN, 1998b). It is one of the rarest (or seldom reported) species in our study. Hosts are unknown.

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Drachten (FR); 53°05'59"N 6°06'32"E; 22/viii/2020; H. Meijer leg.; coll. HM; light trap; H. Meijer det.

***Chiotica decorator* (Villers, 1789)**

Chiotica is a remarkable genus with species superficially resembling Cryptini. The fore wing has a unique venation: the areolet is not or only indistinctly formed, *2rs-m* is very short or obliterated and *1m-cu* is only weakly angled forward. Additionally, the females can be easily recognised by the presence of two strongly pigmented black bands on the fore wings (TOWNES, 1970a; HORSTMANN, 1983).

Chiotica decorator has slender antennal segments, with the first flagellomere at least 3.6x as long as wide. Its ovipositor sheaths are shorter than the hind tibiae. Its colouration is remarkable. The mesopleuron, the metapleuron, the hind coxae, the hind femora (mostly) and at least the first two tergites are red. The head, mesoscutum, scutellum, front and middle legs (especially coxae and femora) and apical tergites are grayish to black. The basal flagellomeres are red brown. The tegulae are creamy yellow to white, the hind tibiae have a very small yellow spot

subbasally and the apical tergites have a whitish band (HORSTMANN, 1983). It is the commonest species of the genus in Europe, but apparently flies in low abundancies. The moths *Pachythelia villosella* (Ochsenheimer, 1810) and *Canephora hirsuta* (Poda, 1761) (Lepidoptera: Psychidae) are rather rare, but plausible, host candidates.

First report of the species and the genus for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Heeze-Leende, Strabrechtste Heide (NB); 51°23'49"N 5°38'15"E; 9/v/2020; Telpost Strabrecht leg.; field observation; G. Várkonyi, M. Storey & F. Verheyde det. (ObsID: 190982125).

***Dichrogaster modesta* (Gravenhorst, 1829)**

Dichrogaster spp. are small Phygadeuontinae that can be recognised by their clypeus (very small) and their propodeum (very short, with its area superomedia defined by sharp carinae and measuring about three times as wide as long) (TOWNES, 1970a).

The taxonomical status of this taxon is not entirely clear, but at the moment of writing it is still accepted as a valid species. HORSTMANN, 1991 stated it could be a variation of *Dichrogaster aestivalis* (Gravenhorst, 1829) but is not able to analyse it decisively. He proposes it is best to accept both species out of practical reasons (which we do now). Both species have a typical wing venation, with their mesoscutum coriaceous and more or less matt, and their mesopleuron shiny without many punctures (HORSTMANN, 1976). *D. modesta*, however, has a second tergite that is entirely red. Its metapleuron is more distinctly punctuated dorsally (HORSTMANN, 1991). It has been reported as a parasitoid of several beetles and green lacewings (YU *et al.*, 2012).

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Drachten-Azeven (FR); 53°06'49"N 6°09'02"E; 19/vii/2020; H. Meijer leg.; coll. HM; field observation; H. Meijer det. • 1 ♀; Almere (FL); 52°22'49"N 5°14'13"E; 25/vii/2020; P. Hoekstra leg.; coll. PH; field observation; M. Schwarz, P. Hoekstra & F. Verheyde det. (ObsID: 197700635).

***Encrateola laevigata* (Ratzeburg, 1848) (Fig. 46 A–B)**

Just like the abovementioned *Acrolyta* spp. this species belongs to the subtribe Acrolytina. The genus *Encrateola* can be recognised by the surface of its mesoscutum (polished or subpolished) and its notaulus (reaching to center of mesoscutum) (TOWNES, 1970a).

Encrateola laevigata has an open areolet and typical propodeal carination (vertical carination beneath the costula is missing; see Fig. 46 B). Its ovipositor is slightly widened subapically, with a distinctly raised nodus. The sheaths are as long as the hind tibiae. Additionally, the temples are slightly narrowed behind the eyes (Fig. 46 A) and the penultimate flagellar segment is as long as wide (HORSTMANN, 1998b). It has a very wide host range with many common species (see SCHWARZ & SHAW, 2000; YU *et al.*, 2012).

First report for Belgium; confirmed in the Netherlands.



Fig. 45. *Acrolyta marginata* (Bridgman, 1883), female. A, habitus, lateral view. B, head, frontal view.
© Augustijn De Ketelaere.

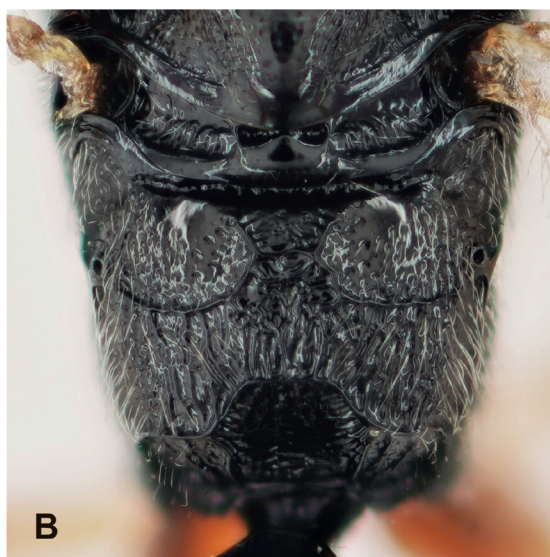


Fig. 46. *Encrateola laevigata* (Ratzeburg, 1848), female. A, habitus, dorsal view. B, area superomedia (propodeum), dorsal view. © Rudy Soethof.



Fig. 47. *Gelis apterus* (Pontoppidan, 1763), female, habitus, dorsal view. © Cor Zonneveld.



Fig. 48. *Micromonodon tener* Kriechbaumer 1893, female, habitus, lateral view. © Rik Delhem.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Somal (NA); 4/v/2010; P-N. Libert leg.; coll. PNL; field observation; M. Schwarz det. • 2 ♀♀; Sint-Andries, Ter Heyde, Beisbroek; 30/ix/2016; W. Dekoninck *et al.* (KBIN) leg.; coll. KBIN/RBINS (project Bruges heathlands); yellow pan trap (17-30); F. Verheyde det. • 1 ♀; Sint-Andries, Ter Heyde; 14/x/2016; W. Dekoninck *et al.* (KBIN) leg.; coll. KBIN/RBINS (project Bruges heathlands); yellow pan trap (1-14); F. Verheyde det.

THE NETHERLANDS: • 1 ♀; Zevenaar (GE); 51°23'51"N 5°35'17"E; 3/viii/2020; R. Soethof leg.; field observation; R. Soethof & M. Schwarz det. (ObsID: 199095883); Fig. 46 A–B.

***Endasys analis* (Thomson, 1883)**

Endasys spp. have a fore wing vein *2m-cu* that is weakly inclivious or vertical (with one or two bullae), the hind edge of their mesoscutum has a transverse break just in front of the prescutellar groove, the lower tooth of the mandible is shorter than the upper tooth and the median dorsal carinae of the first tergite are strong. Their propodeal carination can again be seen as typical with a rather big area petiolaris and a small and somewhat rectangular area superomedia (TOWNES, 1970a).

This species needs to be examined carefully with existing literature. *E. analis* logically belongs to the *E. analis*-group, which has their first tergite at least moderately stout, its petiole not elongate and their last tergites granulate/distinctly punctate or both. The males of *E. analis* have a distinctly swollen face laterally and their first and second tergite are widened (SAWONIEWICZ & LUHMAN, 1992). Only one host is known, the rare sawfly *Pristiphora abietina* (Christ, 1791) (Symphyta: Tenthredinidae), which is associated with conifers (JONAITIS, 1970).

First report for Belgium; unreported in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♂; Brussel, Zoniënwood (BR); 21/v/1933; A. Crèvecoeur leg.; coll. KBIN/RBINS (coll. Crèvecoeur); F. Verheyde det.

***Ethelurgus balearicus* (Kriechbaumer, 1894)**

Ethelurgus is a smaller genus. Next to the apical truncation of the scape, which is very oblique, their area superomedia is much wider than long, and small. The females have a short ovipositor tip, compressed and somewhat decurved, with a strong nodus (TOWNES, 1970a).

E. balearicus can be distinguished from *E. sodalis* by the length of its fourth antennal segment (more or less 3.0x as long as wide), its red hind coxae and its fine punctuation of the second tergite. Our specimen had 22 antennal segments (HORSTMANN, 2000).

First report for Belgium; unreported in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Zedelgem, Militair domein Vloethenveld - Rand oud beuken-zomereikenbos (Bosperceel 9); 7/viii/2020; W. Dekoninck *et al.* (KBIN) leg.; coll. KBIN/RBINS (project Bruges heathlands); pitfall trap (24.VII–7.VIII); G. Broad & F. Verheyde det.

***Gelis albipalpus* (Thomson, 1884)**

Gelis spp. are among the most challenging groups within Phygadeuontinae and possibly Ichneumonidae. They can be recognised by their antlike habitus and the outer face of the mandible with a strong subbasal swelling, with a transverse groove at the base (TOWNES, 1970a). Luckily, in the past decades species have been described more clearly by Klaus

Horstmann and Martin Schwarz. Many of the species reported here were confirmed at least once, to make sure no mistakes were made in keying. Probably, many of them have been overlooked in the past.

Gelis albipalpis is a species with macropterous females. As the name suggests, it can be recognised by its white and distinct palpi. Its mesoscutum is matt and the hind tibiae are basally white in most cases (SCHWARZ, 2016). Its metasoma is completely black and its ovipositor sheaths are only slightly longer than the first abdominal segment (HORSTMANN, 1993). It was reared by Rayan Majoor after collecting several *Bucculatrix* spp. (Lepidoptera: Bucculatricidae) autumn 2017. **First report for the Netherlands; unreported in Belgium.**

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Lunteren, Uilenbos (GE); 52°05'59"N 5°38'33"E; 1/i/2018; R. Majoor leg.; coll. MS; reared ex *Bucculatrix (ulmella?)* (Zeller, 1848); M. Schwarz det. (ObsID: 154126948).

***Gelis apterus* (Pontoppidan, 1763) (Fig. 47)**

Gelis apterus is one of the few species in the genus with a very long ovipositor (ovipositor sheaths measuring at least 1.9x the length of the hind tibiae). The other candidate, *G. atratus* (de Stefani, 1884) has a Mediterranean distribution (SCHWARZ, 1998). In profile, its mesonotum is horizontally orientated and not sloping downwards. Furthermore, *G. apterus* has a more reddish colouration, especially on its mesosoma (Fig. 47). The species seems to be very rare in the Low Countries. Host records are scarce and unclear.

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Ooststellingwerf, Drents-Friese Wold (FR); 52°55'51"N 6°18'22"E; 18/v/2008; C. Zonneveld leg.; field observation; M. Schwarz det. (ObsID: 4352937); Fig. 47.

***Gelis festinans* (Fabricius, 1798)**

This certainly is a more challenging apterous *Gelis* sp. to identify. Measuring only between 1.7–2.5 to rarely 3.3 mm, it is a small species as well. *G. festinans* often is completely black, with only marginal brown or orange markings. Its scutellum is not or only indistinctly separated from its mesoscutum, its first abdominal segment is about as long as wide apically (and apically broad) and the laterotergite of the second segment is not separated from the tergite (SCHWARZ, 1995). Additionally, its eyes are only very slightly protruding and its first flagellar segment is yellowish basally. As this species is hard to identify from pictures, only a limited amount of certain observations has been integrated here. *G. festinans* has a wide host range with arachnids like *Erigone atra* Blackwall, 1833 (Araneae: Linyphiidae) and hymenopterans like *Diplolepis rosae* (Linnaeus, 1758) (Parasitica: Cynipidae) (see SCHWARZ, 2002 and YU *et al.*, 2012).

First report for Belgium; confirmed in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Spa (LG); 50°29'24"N 5°52'35"E; 7/x/2008; C. Devillers leg.; field observation; M. Schwarz det. (ObsID: 166555068) • 1 ♀; Westrozebeke, Polderbos (WVL); 50°56'31"N 3°00'34"E; 13/vi/2020; F. Verheyde leg.; field observation; F. Verheyde det. coll. (ObsID: 193950325).

THE NETHERLANDS: • 1 ♀; Almere (FL); 52°22'43"N 5°14'12"E; 6/xi/2019; P. Hoekstra leg.; coll. PH; field observation; P. Hoekstra det. (ObsID: 182029665). • 1 ♀; Ede (GE);

52°01'33"N 5°40'31"E; 29/v/2020; K. Verhoogt leg.; coll. PH; field observation; P. Hoekstra det. (ObsID: 193305356).

***Gelis longicauda* (Thomson, 1884)**

This is another species with macropterous females. Its mesopleuron and pronotal collar are somewhat red to orange and its ovipositor sheaths are longer than the hind tibiae (SCHWARZ, 2016). This species is sometimes confused with *Gelis areator* (Panzer, 1804) but in contrast to this species (which also has a shorter ovipositor), its mesoscutum is greyish to black (exceptionally with some red markings), while it is often profoundly reddish for *G. areator*, and the apical tergites of *G. longicauda* often have a white band. Related to phenology and ecology, both species are often observed on tree stems during the entire year (March–October) and have a wide host range (see YU *et al.*, 2012), with slightly more observations in early spring (March).

First report from Belgium; confirmed in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 5 ♀♀; Mol, Meergoor (AN); 51°12'42"N 5°09'52"E; 8/iii/2015; Paul en Marianne leg.; field observation; F. Verheyde det. (ObsID: 98598255). • 1 ♀; Zillebeke, De Palingbeek (WVL); 50°48'51"N 2°54'55"E; 6/iv/2015; M. Valdueza leg.; field observation; F. Verheyde det. (ObsID: 100978476). • 1 ♀; Westerlo, Asberg (AN); 51°04'44"N 4°54'10"E; 11/vii/2015; Paul en Marianne leg.; field observation; F. Verheyde det. (ObsID: 104248006). • 1 ♀; Erpe-Mere, Bambrugge (OVL); 50°54'40"N 3°55'51"E; 22/viii/2016; J. Vindevoghel leg.; field observation; F. Verheyde det. (ObsID: 133648906). • 1 ♀; Mazenzele (VB); 50°56'58"N 4°09'40"E; 21/v/2017; L. Verhelst leg.; field observation; F. Verheyde det. (ObsID: 138923878) [...].

THE NETHERLANDS: • 1 ♀; Zwolle (OR); 52°30'49"N 6°01'24"E; 17/vii/2018; G. Beersma leg.; field observation; F. Verheyde det. (ObsID: 160387647). • 1 ♀; Bloemendaal, Leyduin (NH); 52°20'21"N 4°35'05"E; 29/iv/2019; D. Drukker leg.; field observation; F. Verheyde det. (ObsID: 171378961). • 1 ♀; Borgerveld (GR); 52°55'56"N 7°07'14"E; 1/vi/2019; S. Lamberts leg.; field observation; F. Verheyde det. (ObsID: 173791234). • 1 ♀; Vlieland, Duinkersoord (FR); 53°18'07"N 5°03'09"E; 18/vi/2019; B. Pater leg.; field observation; F. Verheyde det. (ObsID: 179298297). • 1 ♀; Tilburg, Leijbos (NB); 51°32'35"N 5°00'53"E; 2/iv/2020; IWG KNNV Tilburg leg.; coll. PH; field observation; P. Hoekstra det. (ObsID: 191287530) [...].

***Gelis mangeri* (Gravenhorst, 1815)**

Gelis mangeri has both apterous and brachypterous females. All specimens reported here were brachypterous. This species also has dark bands on the fore wings. Its mesosoma is reddish, and in contrast to the abovementioned *G. longicauda*, its ovipositor sheaths are shorter than the hind tibiae. Its propodeum has no or only weakly defined carinae, while its head is long and only weakly narrowed behind the eyes (SCHWARZ, 2016). Otherwise the colour pattern is exceptional, with the head black, thorax red, propodeum black, basal tergites orange to red and apical tergites black again. The arachnid *Gongylidium rufipes* (Linnaeus, 1758) (Araneae: Linyphiidae) is the only known host (SCHWARZ & SHAW, 1999).

First report for Belgium; confirmed in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Wichelen, Bergenmeersen (OVL); 51°01'02"N 3°57'56"E; 30/iii/2014; K. Bracke leg.; field observation; J. Lutz & M. Storey det. (ObsID: 82942184). • 1 ♂; Somal (NA); 24/x/2014; P-N. Libert leg.; coll. PNL; field observation; M. Schwarz det. • 1 ♀; Virelles,

Étang de Virelles (HA); 50°04'31"N 4°21'56"E; 27/ii/2016; S. Claerebout leg.; field observation; J. Lutz det. (ObsID: 114970848).

THE NETHERLANDS: • 1 ♀; Velp (GE); 51°59'21"N 5°59'50"E; 16/xii/2017; A. Geelhoed leg.; field observation; F. Verheyde det. (ObsID: 147733148). • 1 ♀; Zwolle (OR), Vreugderijkerwaard; 52°31'37"N 6°01'18"E; 20/xi/2019; G. Beersma leg.; field observation; F. Verheyde det. (ObsID: 182490415).

***Gelis micrurus* (Förster, 1850)**

A very small species (± 2 mm) with apterous females. Generally it is predominantly black, but the first two antennal segments, the pronotum and the petiole are often (partly) orangish. Its head is broad and not or only weakly narrowed behind the eyes; its mesonotum and its propodeum are sloping upwards in lateral view and its thorax, propodeum and its first tergite are relatively short (SCHWARZ, 2002). It is a known parasitoid of lycosid egg sacs.

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Brielle (ZH); 51°54'53"N 4°10'03"E; 10/v/2010; T. van Haaren leg.; coll. MS; field observation; M. Schwarz det. (ObsID: 53398214).

***Gnotus tenuipes* (Gravenhorst, 1829)**

Gnotus spp. can be identified within Phygadeuontinae on the basis of their fully developed wings, their incomplete transverse carina (on mesosternum), the presence of a closed areolet, the lower tooth, which is a lot shorter than the upper tooth (0.3-0.6x as long), the absence of teeth on the apical margin of the clypeus and the occipital carina joining the oral carina at the base of the mandible (TOWNES, 1970a; HORSTMANN, 1993).

Gnotus tenuipes has a shiny and finely punctuated mesoscutum. Its nervellus is vertical or reclivate. It is hard to distinguish this species from *G. czekelii* (Kiss, 1924). One difference is the colouration of the legs, which is more or less reddish in the former and blackish in the latter (more details see HORSTMANN, 1993). Its presence could be expected in the Netherlands, with the species being very widely distributed in Western Europe (see for example FAUNA EUROPAEA) and several common arachnid and lepidopteran hosts (see YU *et al.*, 2012).

First report for the Netherlands; unconfirmed in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♂; Drachten (FR); 53°05'59"N 6°06'32"E; 28/v/2020; H. Meijer leg.; coll. HM; light trap; H. Meijer det. • 1 ♀; Drachten (FR); 53°05'59"N 6°06'32"E; 3/vi/2020; H. Meijer leg.; coll. HM; field observation; H. Meijer det.

***Lochetica westoni* (Bridgman, 1880)**

An outstanding species within the subfamily. The lower edge of the mandibles is rounded and the hairs on the outer face of the mandibles are dense and short. In the fore wing, wing vein *2m-cu* only has one bulla and the areolet is relatively large and closed. Finally, the ovipositor is relatively long for a species in this subfamily, only slightly less than the total fore wing length. Our specimens have a more or less black mesosoma and red metasoma (except for the apical tergites and base of the first tergite). Its basal flagellomeres and its legs are orange. It is a known parasitoid of the rather uncommon crabronid wasp *Passaloecus insignis* (Vander Linden, 1829) (Apocrita: Crabronidae) (see for example KREISCH, 2000).

First report of the species and the genus for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Somal (NA); 2/vii/2010; P-N. Libert leg.; coll. PNL; field observation; M. Schwarz det.

THE NETHERLANDS: • 1 ♀; Ureterp, Terrein de Fûgelhelling (FR); 53°06'15"N 6°08'24"E; 22/viii/2020; H. Meijer leg.; coll. HM; light trap; M. Schwarz & H. Meijer det.

***Medophron recurvus* (Thomson, 1884)**

This genus belongs to the subtribe Endaseina. The fore wing vein *2m-cu* is weakly inclivous or vertical and the hind edge of the mesoscutum has a transverse break. Their prescutellar transverse groove does not have a median longitudinal ridge. Their area superomedia is much wider than long (TOWNES, 1970a).

M. recurvus has its areolet closed and its flagellum has a whitish band. Its metasoma is shiny and entirely red, except for the first tergite which is black, at least basally. Its ovipositor sheaths are about half as long as the metasoma (JONAITIS, 1981).

First report for the Netherlands; unconfirmed in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 9 ♀♀; Twijzel (FR); 53°14'53"N 6°04'56"E; 28/v/2012; Landschapsbeheer Friesland leg.; coll. HM; malaise trap 215 (24-28); H. Meijer det.

***Mesoleptus vigilatorius* (Förster, 1876)**

As mentioned above, *Mesoleptus* spp. look like *Atractodes* spp., but with the lateral crease of the second tergite extending from base to apex of the tergite. Their first tergite is straight from the base to the zone behind the spiracle (TOWNES, 1970a).

Mesoleptus vigilatorius belongs to the group with vein *M+CU* fully pigmented in the hind wing. Its frons and its vertex are polished and smooth and its first tergite has distinct lateral carinae (JUSSILA *et al.*, 2010). Our findings seem to suggest this species flies somewhat earlier in the year than other *Mesoleptus* spp.

First report for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♂; Bekkevoort (VB); 50°54'37"N 4°56'21"E; 8/v/2015; C. Deschepper leg.; coll. FV; field observation; F. Verheyde det. (ObsID: 207716351)

THE NETHERLANDS: • 1 ♂; Twijzel (FR); 53°14'53"N 6°04'56"E; 28/v/2012; Landschapsbeheer Friesland leg.; coll. HM; malaise trap 215 (24-28); H. Meijer det.

***Micromonodon tener* (Kriechbaumer, 1893) (Fig. 48)**

Micromonodon is a small genus with only one species being present in Europe. The fore wing vein has *2m-cu* with two bullae and the areolet is open. The clypeus does not have a tooth medially. Their head, thorax and middle segments are finely coriaceous. The females have an ovipositor about as long as their metasoma (TOWNES, 1970a; HORSTMANN, 1978; Fig. 48).

The mandibles of our female specimens are sharply two-teethed. Its first flagellomere has a very small orange-yellow ring basally. Its metasoma is predominantly black (the second tergite is sometimes reddish in Scandinavian specimens; see JUSSILA, 2018), but the sternites are strikingly whitish with black squares. Furthermore, the tergites 3-6 have a distinctive white band apically, which is also present on the other tergites, but only narrowly. Overall the legs are dark brown. Its hind tibiae are slightly darker with a light brown band (sub-)basally. It

measures around 6 mm.

First report of the species and the genus for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Wervik (WVL); 50°47'04"N 3°02'09"E; 31/iii/2020; C. Kuipers leg.; field observation; F. Verheyde det. (ObsID: 187549463)

THE NETHERLANDS: • 1 ♂; Tilburg, Leijbos (NB); 51°32'36"N 5°00'53"E; 12/iii/2020; IWG KNNV Tilburg leg.; coll. PH; malaise trap (5-12); P. Hoekstra & M. Schwarz det. (ObsID: 190559963). • 1 ♀; Udenhout, De Brand (NB); 51°32'36"N 5°00'53"E; 15/iii/2020; IWG KNNV Tilburg leg.; coll. PH; malaise trap (7-14); P. Hoekstra & M. Schwarz det. (ObsID: 190559976); Fig. 48. • 13 ♂♂; Udenhout, De Brand (NB); 51°32'36"N 5°00'53"E; 28/iii/2020; IWG KNNV Tilburg leg.; coll. NB; malaise trap (21-28); P. Hoekstra det. (ObsID: 212029285).

***Obisiphaga stenoptera* (Marshall, 1868)**

Obisiphaga stenoptera belongs to the earlier mentioned group of Hemitelina and is easy to identify. It often has brachypterous females. Its mesosoma is predominantly black, its metasoma and its legs are light yellow to orange. The basal flagellomeres are orangish, the apical flagellomeres are black. Its ovipositor is relatively long. In contrast to another Palaearctic species *O. albiannulata* the teeth of the mandibles are of equal length, its frons is only partly granulate and the first segment of the metasoma is 1.4–1.9× as long as wide (SCHWARZ, 2018). The species seems to be at least uncommon in the Low Countries. *O. stenoptera* is known to parasitize several species of pseudoscorpions (AUSTIN *et al.*, 1998) (Arachnida: Pseudoscorpiones).

First report of the species and the genus for Belgium; confirmed in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Ferrières (LG); 50°23'41"N 5°32'01"E; 12/vii/2018; M. Valdueza leg.; field observation; M. Schwarz det. (ObsID: 166986245).

THE NETHERLANDS: • 1 ♀; Zeist (UT); 52°05'49"N 5°12'58"E; 18/vii/2016; H. Jansen leg.; field observation; M. Schwarz det. (ObsID: 165484021).

***Orthizema amabile* (Hedwig, 1939) (Fig. 49)**

Orthizema spp. are closely related to *Theroscopus* spp. Therefore, both genera were treated together in the key by SCHWARZ & SHAW (2011). The females of *Orthizema* spp. have a frons and mesoscutum that is entirely and distinctly granulate. Their ovipositor is slender and the area superomedia of the propodeum is at least 1.2× as long as wide. The lower margin of their clypeus usually has no teeth and the antennae often have a white ring.

The females of *O. amabile* are brachypterous and can be keyed with HORSTMANN, 1993. Their colouration is remarkable (Fig. 49): the mesosoma is red brownish, just like the first two tergites. The metasoma is black apically, but the last tergite has a yellowish to white band. The antennae are tricoloured (orange-black-white-black). The third antennal segment measures 2.8x its width, apical third 0.8x its width. This species appears to be (very) rare, with a limited amount of reports in Western Europe. Possibly this is due to the species' ecology (next to its size of 2.5 to 3.5 mm). Our specimen was found while raking the soil, the observer searching certain species of Heteroptera. **First report for the Netherlands; unreported in Belgium.**

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Den Helder, Fort Dirksz Admiraal (NH); 52°56'19"N 4°45'34"E; 7/v/2020; M. Renden leg.; field observation; M. Schwarz det. (ObsID: 190741367); Fig. 49.

***Orthizema hadrocerum* (Thomson, 1884)**

Orthizema hadrocerum can be recognised easily. It is the only species (speaking for macropterous females) with an orange thorax and propodeum (SCHWARZ & SHAW, 2011). Its metasoma is equally orange, with a white band on the last tergite. The fore wings are darkened with a white band coming from the pterostigma. The antennae are tricoloured (orange-black-white-orange). It seems to be rather uncommon, but more widespread than originally thought. Specimens were caught with several methods: sweeping net (field observations), malaise traps and light traps. The only host known is the lepidopteran *Taleporia tubulosa* (Retzius, 1783) (Lepidoptera: Psychidae) (HAUSER, 1994). **First report for Belgium and the Netherlands.**

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Somal (NA); 14/vi/2014; P-N. Libert leg.; coll. PNL; field observation; M. Schwarz det. • 1 ♀; Zichem (VB); 50°59'09"N 4°56'22"E; 8/viii/2018; M. Herremans leg.; light trap; M. Schwarz det. (ObsID: 161131930). • 1 ♀; Oostkamp (WVL); 51°10'03"N 3°16'34"E; vi/2019; A. Zwaenepoel leg.; coll. FV; malaise trap; F. Verheyde det. • 1 ♀; Hallaar (AN); 51°05'10"N 4°44'35"E; 11/viii/2019; G. Van den Wyngaert leg.; field observation; F. Verheyde det. (ObsID: 177829717). • 1 ♀; Sinaai, Fondatie van Boudelo (OVL); 51°10'20"N 4°00'36"E; 17/viii/2019; M. Valdueza leg.; field observation; F. Verheyde det. (ObsID: 178363508).

THE NETHERLANDS: • 1 ♀; Dorst (NB), De Leemputten; 51°35'45"N 4°52'54"E; 19/x/2013; R. & B. van Middelkoop leg.; field observation; F. Verheyde det. (ObsID: 79967200). • 1 ♀; Nijmegen, Molenhoek (GE); 51°45'54"N 5°52'52"E; 25/v/2015; B. Schoenmakers leg.; field observation; F. Verheyde det. (ObsID: 102957482). • 1 ♀; Bergen (NH); 52°40'02"N 4°42'21"E; 20/vi/2016; T. de Graaf leg.; field observation; M. Schwarz det. (ObsID: 120205286). • 1 ♀; Tilburg, De Loonse en Drunense Duinen (NB); 51°38'17"N 5°07'60"E; 28/vi/2019; H. Nouwens leg.; field observation; F. Verheyde det. (ObsID: 175331272). • 3 ♀♀; Utrecht, Soesterberg – Vliegbasis West (UT); 52°07'50"N 5°15'58"E; 7/vii/2019; 17/vii/2019 & 18/viii/2019; T. Zeegers leg.; coll. FV & Naturalis (Soesterberg-project, 5–7.VII.2019; 15–17.VII.2019 & 15–18.VIII.2019; nr. 26, nr. 32 & nr. 40); malaise trap; F. Verheyde det. [...].

***Orthizema nigriventre* Horstmann, 1992 (Fig. 50)**

Another species that can be recognised by habitus. *O. nigriventre* has a completely black head, mesosoma and metasoma. Its apical tergites can be somewhat white. Its antennae are tricoloured (orange-(black-)-white-black) and rather stout (third segment 2.1–2.6× as long as wide). Characteristic for this species is that the hind tibiae are strongly thickened (Fig. 50). Its head is moderately narrowed behind the eyes (SCHWARZ & SHAW, 2011).

First report for the Netherlands; unreported Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Den Helder, Donkere Duinen (NH); 52°56'06"N 4°43'46"E; 27/viii/2020; M. Renden leg.; field observation; F. Verheyde & M. Schwarz det. (ObsID: 199213383); Fig. 50.



Fig. 49. *Orthizema amabile* (Hedwig, 1939), female, habitus, dorsal view. © Mario Renden.



Fig. 50. *Orthizema nigriventre* Horstmann, 1992, female, habitus, dorsal view. © Mario Renden.



Fig. 51. *Polyaulon paradoxus* (Zetterstedt, 1838), female. A, habitus, lateral view. B, head, lateral view. © Bart Minnebo.



Fig. 52. *Theroscopus trifasciatus* Förster, 1850, female, habitus, dorsal view. © Arnold Wijker.



Fig. 53. *Tropistes nitidipennis* Gravenhorst, 1829, female, habitus, lateral view. © Maarten Cuypers.

***Phygadeuon dromicus* (Gravenhorst, 1815)**

Phygadeuon spp. are very common but need to be revised. At this stage only a limited group of well-defined species can be identified with absolute certainty. One of those groups consists of species with brachypterous females.

P. dromicus belongs to this group. Its fore wing is very short, measuring at most half of the hind tibia and it does not reach the scutellum. The third antennal segment measures more or less twice its width. Its colouration is also distinct. The antennae are often tricoloured (orange-white-black). The mesosoma and metasoma are predominantly black except for the second and third tergite, which are reddish with black marks (HORSTMANN, 1993). It is a known parasitoid of the coleopteran *Oulema* spp. (Coleoptera: Chrysomelidae) (MICZULSKI, 1988).

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Almere, Hanny Schaftpark (FL); 52°22'50"N 5°14'11"E; 23/ix/2019; P. Hoekstra leg.; coll. PH; field observation; P. Hoekstra det. (ObsID: 180878534).

***Phygadeuon paradoxus* (Bridgman, 1889)**

In the same group of species with brachypterous females there also is *P. paradoxus*. Its fore wing is short, its mesosoma (and metasoma for some part) is shiny and its ovipositor is very short for the genus (the sheaths measuring only one fifth of the hind tibiae). The species therefore is easy to recognise by pictures. Furthermore, it is mainly black, with brownish legs and reddish marks on the second and third tergite (HORSTMANN, 1993).

First report for Belgium; unreported in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Antwerpen, Hobokense Polder (AN); 51°11'17"N 4°20'58"E; 14/iv/2011; L. Janssen leg.; field observation; F. Verheyde det. (ObsID: 53548543).

***Polyaulon paradoxus* (Zetterstedt, 1838) (Fig. 51 A–B)**

An extraordinary genus comprising ichneumonids which have the second and third tergite fused into a single large sclerite, often forming a very smooth area as in for example Proctotrupidae. Additionally, the mandibular outlines are not convex and have no transverse furrow at the base (SCHWARZ, 1995; HORSTMANN, 1998b). *Polyaulon paradoxus* has apterous females and is completely testaceous, except for the somewhat darker head (Fig. 51 A–B). This species is rarely reported, which could be due to its ecology connected to arachnids.

First report of the species and the genus for Belgium; confirmed in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Somal (NA); 19/vi/2014; P-N. Libert leg.; coll. PNL; field observation; M. Schwarz det. • 1 ♀; Snellegem, Waterwinning; 20/vii/ 2018; W. Dekoninck *et al.* (KBIN) leg.; coll. KBIN/RBINS (project Bruges heathlands); pitfall trap (6-20); F. Verheyde det.; Fig. 51 A–B.

THE NETHERLANDS: • 1 ♀; Eempolders (UT); 52°15'56"N 5°20'50"E; 10/vi/2015; MITOX leg.; coll. MITOX; pitfall trap; P. Hoekstra det. (ObsID: 211726236).

***Thaumatogetelis audax* (Olivier, 1792)**

Thaumatogetelis spp. closely resemble *Gelis* spp. (see above). Both genera have an antlike habitus and wingless females. Some characteristics to distinguish them consist of a fused second and third tergite, the fusion of pro- and mesonotum and the absence of dorsolateral carinae on the first abdominal segment (more details see SCHWARZ, 1995). All species parasitise spiders' egg sacs and some of them hibernate as adults in ground vegetation (SCHWARZ & SHAW, 2000).

Thaumatogetelis audax has the second and third tergite entirely fused. Both these tergites have a distinct transverse black band, on the otherwise entirely orange metasoma. In contrast to *T. sylvicola* (Förster, 1850) these tergites are densely hairy. Furthermore, the third antennal segment is 1.8–2.0x as long as wide and the frons does not have any distinct punctures (SCHWARZ, 2001). The head is black. *T. audax* appears to prefer open habitats (coastal dunes, moorlands) where it is able to search for its arachnid hosts (in casu: *Agroeca* spp.; see SCHWARZ & SHAW, 2000).

First report for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Stokkel (BR); 4/vii/1932; A. Crèvecoeur leg.; coll. KBIN/RBINS (coll. Crèvecoeur); F. Verheyde det. • 1 ♀; Geel, Belsbroekbos (AN); 51°09'17"N 5°04'28"E; 21/x/2012; L. Jansen leg.; field observation; C. Thirion & J. Devalez det. (ObsID: 71790082). • 1 ♀; Stabroek, Grenspark Kalmthoutse Heide (AN); 51°21'05"N 4°22'48"E; 25/iv/2013; R&B Foquet leg.; field observation; F. Verheyde det. (ObsID: 75458297). • 1 ♀; Retie (AN); 51°15'45"N 5°02'59"E; 3/ix/2019; N. Van Loco leg.; field observation; F. Verheyde det. (ObsID: 179236448) • 1 ♀; Couthuin (LG); 50°31'09"N 5°07'42"E; 11/v/2020; P. Vanmeerbeeck leg.; field observation; F. Verheyde det. (ObsID: 191154624).

THE NETHERLANDS: • 1 ♀; Huijbergen, Grenspark Kalmthoutse Heide (NB); 51°25'10"N 4°22'30"E; 25/iv/2013; H. Nouwens leg.; field observation; F. Verheyde det. (ObsID: 178538351). • 1 ♀; Geijsteren (LIN); 51°32'22"N 6°03'28"E; 21/xii/2019; T. Martens leg.; field observation; F. Verheyde det. (ObsID: 183307016). • 1 ♀; Wellerlooi, Wellsche Heide (LIN); 51°32'45"N 6°08'51"E; 20/i/2020; T. Martens leg.; field observation; F. Verheyde det. (ObsID: 183307016). • 1 ♀; Lemele (OR); 52°27'53"N 6°23'54"E; 11/iii/2020; H. Soepenbergh leg.; field observation; F. Verheyde det. (ObsID: 186517284). • 1 ♀; Udenhout, De Loonse en Drunense Duinen (NB); 51°38'18"N 5°07'53"E; 28/vi/2020; R. Hofland & W. Teunissen leg.; field observation; F. Verheyde det. (ObsID: 195216970) [...].

***Thaumatogetelis gallicus* (Seyrig, 1928)**

Thaumatogetelis gallicus also has the second and third tergite entirely fused. Its metasoma is entirely black except for the first tergite. The ovipositor is long (0.8–1.2× hind tibiae) and simple and the sixth tergite of the metasoma does not cover the seventh tergite entirely. The third antennal segment is 2.4–2.7× as long as wide. Its head is black and somewhat narrowed (SCHWARZ, 2001). Its mesosoma is reddish, making it easy to recognise by habitus (in combination with the mentioned characteristics). Another aspect that distinguishes this species from many other specialists of spiders are its observations in houses and urban areas. One of its hosts is the common house spider *Eratigena atrica* (C.L. Koch, 1843) (Araneae: Agelenidae) (SCHWARZ & SHAW, 2000). The species has many reports in Belgium, while it seems to be more uncommon in the Netherlands. It is unclear why this is the case at this moment.

First report for the Netherlands; confirmed in Belgium.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Mol (NA); 51°12'26"N 5°06'41"E; 16/vii/2009; Paul en Marianne leg.; field observation; J. Devalez & F. Verheyde det. (ObsID: 43917994). • 1 ♀; Bellem (OVL);

51°05'32"N 3°29'51"E; 3/x/2010; H. Wallays leg.; field observation; J. Devalez & F. Verheyde det. (ObsID: 50359975). • 1 ♀; Ruiselede, Gentse Veld (WVL); 51°04'35"N 3°22'34"E; 29/vi/2019; M. Valdueza leg.; coll. FV; field observation; F. Verheyde det. (ObsID: 175438004). • 1 ♀; Zichem (VB); 50°59'09"N 4°56'22"E; 10/vii/2020; M. Herremans leg.; light trap; F. Verheyde det. (ObsID: 195889322) [...].

THE NETHERLANDS: • 1 ♀; Bergen, Noordhollands Duinreservaat (NH); 52°37'34"N 4°37'46"E; 24/vi/2008; A. Wijker leg.; field observation; F. Verheyde det. (ObsID: 4600883). • 1 ♀; Venhorst (NB); 51°36'29"N 5°44'21"E; 27/ix/2011; A. Jacobs leg.; field observation; F. Verheyde det. (ObsID: 59180343). • 1 ♀; Emmen (DR); 52°47'56"N 6°53'51"E; 11/vi/2019; Lis leg.; field observation; F. Verheyde det. (ObsID: 175043191). • 1 ♀; Vriezenveen, De Pollen (OR); 52°25'52"N 6°39'52"E; 22/iv/2020; R. Bos leg.; field observation; F. Verheyde det. (ObsID: 189371276). • 1 ♀; Berkelaar (LIN); 51°07'17"N 5°52'17"E; 24/iv/2020; R. Hulsbosch leg.; field observation; F. Verheyde det. (ObsID: 189538249) [...].

***Theroscopus ochrogaster* (Thomson, 1888)**

As mentioned above, *Theroscopus* spp. are closely related to *Orthizema* spp. Therefore, both genera were treated together in the key from SCHWARZ & SHAW (2011). The females of *Theroscopus* spp. have their frons and mesoscutum at most partly granulate. Their ovipositor is robust sometimes and area superomedia is at most 1.4× as long as wide. The lower margin of their clypeus has paired teeth in most cases and the antennae does not often have a white ring.

Theroscopus ochrogaster is a species which needs to be keyed carefully and has no real distinctive features. It is rather characteristically coloured with black tergites both basally and apically, and orange antennal segments basally. Important is the length of the third antennal segment (2.8–3.1× as long as wide) and the area superomedia (0.8–1.4× as long as wide). The second and third tergite are completely orange (SCHWARZ & SHAW, 2011).

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Haarzuilen (UT); 52°07'25"N 5°00'02"E; 9/vii/2020; S. De Waart leg.; coll. FV; malaise trap; F. Verheyde det. (ObsID: 208392105).

***Theroscopus pullator* (Gravenhorst, 1829)**

Theroscopus pullator is somewhat more odd than abovementioned species. Its antennal segments are completely black, except for the narrow base of the third segment and the scape (ventrally). Its frons is distinctly granulate and more or less matt. Its head is strongly transverse dorsally, 0.5–0.53× as long as wide (SCHWARZ & SHAW, 2011).

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Ureterp, Terrein de Fûgelhelling (FR); 53°06'15"N 6°08'24"E; 24/x/2020; H. Meijer leg.; coll. HM; light trap; H. Meijer det.

***Theroscopus trifasciatus* Förster, 1850 (Fig. 52)**

This species belongs to the smaller group of *Theroscopus* spp. with brachypterous or apterous females. *T. trifasciatus* is wingless and predominantly yellowish brown. Its antennal segments are brownish to yellow basally, reaching at least over the middle of the entire antenna. Its head is black. The metasoma has black transverse bands and scattered (short) white hairs

(HORSTMANN, 1993). Its apical tergites have white marks (Fig. 52).

First report for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Zedelgem, Militair domein Vloethemveld - Nat jong berkenbos (Bestand 93); 26/vi/2020; W. Dekoninck *et al.* (KBIN) leg.; coll. KBIN/RBINS (project Bruges heathlands); pitfall trap (12-26); F. Verheyde det.

THE NETHERLANDS: • 1 ♀; Windesheim, Landgoed (OR); 52°26'48"N 6°07'28"E; 1/ix/2015; G. Beersma leg.; field observation; F. Verheyde det. (ObsID: 106848997) • 1 ♀; Hardenberg (OR); 52°35'28"N 6°31'54"E; 4/xi/2015; J. de Gooijer leg.; field observation; F. Verheyde det. (ObsID: 110350077). • 1 ♀; Oosterwolde (FR); 52°59'45"N 6°17'51"E; 2/ix/2019; R. J. van der Leij leg.; field observation; F. Verheyde det. (ObsID: 179604966). • 1 ♀; Vaals, Vijlenerbos (LIN); 50°46'48"N 5°56'42"E; 21/v/2020; S. Lamberts & A. Wijker leg.; field observation; F. Verheyde det. (ObsID: 201035790). • 1 ♀; Amerongen, Amerongse Bos (UT); 52°00'12"N 5°28'14"E; 25/viii/2020; A. Kreffer & G. van Poelgeest leg.; field observation; F. Verheyde det. (ObsID: 199119552).

***Tropistes nitidipennis* Gravenhorst, 1829 (Fig. 53)**

A smaller genus with some clear characteristics: fore wing vein *3rs-m* lacking or faint, thorax compressed and unique carination on the propodeum. The metasoma of the females is also compressed and the ovipositor decurved (TOWNES, 1970a).

T. nitidipennis has the third antennal segment slender (4.5–5.7× as long as wide). Its ovipositor is robust and distinctly bent downwards with the ovipositor tip raised subapically and strongly tapered to the apex dorsally (Fig. 53). Its tegulae are white, the hind coxae are black (SCHWARZ & SHAW, 2011). Some of the known hosts are (remarkably) Raphidioptera-species (ASPÖCK, 2002). The ichneumonid was caught with a light trap in an urban area and is probably widely underreported.

First report for Belgium; unreported in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Anderlecht (BR); 50°50'00"N 4°17'25"E; 10/iv/2020; M. Cuypers leg.; light trap; W. Pénigot, F. Verheyde & M. Schwarz det. (ObsID: 188336437); Fig. 53.

Subfamily Pimplinae Wesmael, 1845

Tribe Delomeristini Hellén, 1915

***Pseudorhyssa alpestris* (Holmgren, 1860)**

Pseudorhyssa is a very distinctive genus consisting of giant species with conspicuous transverse rugae on their mesoscutum (and thus closely resembling Rhyssinae). In contrast to this subfamily the occipital carina is complete medio-dorsally and the fore wing vein *1cu-a* is situated opposite of *M&RS* (BROAD *et al.*, 2018). Both species reported here are migratory and only recently colonized the Low Countries, coming from central and eastern Europe (see also VERHEYDE *et al.*, 2020a). The genus was recently transferred from the subfamily Poemeniinae to Pimplinae (KLOPFSTEIN *et al.*, 2018).

P. alpestris has red hind coxae and the first two tergites usually have a smooth reddish triangle apically (VARGA, 2015). It is mainly associated with and found on hardwood, where it acts as cleptoparasitoid of for example *Rhyssella approximator* (Fabricius, 1793), an ichneumonid wasp which belongs to the abovementioned subfamily of Rhyssinae (HILSZCZANSKI, 2018).

First report of the species and the genus for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Oud-Turnhout, Landschap De Liereman (AN); 51°20'28"N 5°00'27"E; 18/v/2020; N. Van Loco leg.; field observation, oviposition on *Betula* sp.; F. Verheyde det. (ObsID: 204102351). • 1 ♀; Kasterlee, De Tikkebroeken (AN); 51°16'59"N 4°59'58"E; 3/vi/2020; N. Van Loco leg.; field observation, oviposition on *Betula* sp.; F. Verheyde det. (ObsID: 191279896).

THE NETHERLANDS: • 1 ♀; Tilburg, Leijbos (NB); 51°32'35"N 5°00'52"E; 23/iv/2020; KNNV Tilburg leg.; coll. PH; malaise trap (16-23); P. Hoekstra det. (ObsID: 203450372) • 1 ♀; Sint-Michielsgestel (NB); 51°39'29"N 5°19'34"E; 7/vi/2020; M. Heymans leg.; field observation; F. Verheyde det. (ObsID: 195616765).

***Pseudorhyssa nigricornis* (Ratzeburg, 1852)**

Pseudorhyssa nigricornis has black hind coxae and a completely black metasoma (VARGA, 2015). It is mainly associated with conifers, where it is cleptoparasitic on *Rhyssa persuasoria* (Linnaeus, 1758) and possibly other Rhyssinae like *Megarhyssa rixator* (see below).

First report for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Oud-Turnhout, Landschap De Liereman (AN); 51°20'24"N 5°00'25"E; 13/v/2020; N. Van Loco leg.; field observation, oviposition on *Picea abies*; O. Varga det. (ObsID: 191279896). • 1 ♀; Oud-Turnhout, Landschap De Liereman (AN); 51°20'23"N 5°00'32"E; 16/v/2020; W. Smets leg.; field observation, oviposition on *Picea abies*; F. Verheyde det. (ObsID: 191461758). • 1 ♀; Beernem, Bossen Lindeveld (WVL); 51°06'39"N 3°19'05"E; 26/v/2020; A. De Ketelaere & L. Lams leg.; coll. ADK; field observation; A. De Ketelaere & F. Verheyde det. (ObsID: 192489996). • 1 ♀; Mol, Vito bossen en De Bleken (AN); 51°12'50"N 5°04'02"E; 26/v/2020; J. De Witte leg.; field observation, oviposition on *Picea abies*; F. Verheyde det. (ObsID: 192502856). • 1 ♀; Beernem, Bossen Lindeveld (WVL); 51°06'39"N 3°19'05"E; 1/vi/2020; A. De Ketelaere & F. Verheyde leg.; coll. FV; field observation; & F. Verheyde det. (ObsID: 193023007).

THE NETHERLANDS: • 1 ♀; Epen, Bovenste Bos (LIN); 50°45'24"N 5°53'55"E; 19/v/2012; S. Lamberts leg.; field observation; F. Verheyde det. (ObsID: 199188514). • 1 ♀; Maastricht, Sitn-Pietersberg (LIN); 50°48'54"N 5°40'52"E; 24/iv/2017; S. Lamberts leg.; F. Verheyde det. (ObsID: 137275245). • 1 ♀; Eindhoven, Stratumse Heide (NB); 51°24'36"N 5°30'12"E; 17/vi/2017; R. Aussems leg.; F. Verheyde det. (ObsID: 140797488). • 1 ♀; Lage Mierde, Landgoed De Utrecht (NB); 51°26'19"N 5°09'33"E; 20/v/2020; W. Heesters leg.; field observation on *Pseudotsuga* sp.; F. Verheyde det. (ObsID: 192729602). • 4 ♀♀; Lage Mierde, Landgoed Wellenseind (NB); 51°25'35"N 5°09'24"E; 21/v/2020; F. Neijts leg.; field observation; F. Verheyde, P. Hoekstra & O. Varga det. (ObsID: 191995020).

Tribe Ephialtini Hellén, 1915***Acrodactyla degener* (Haliday, 1839)**

Acrodactyla spp. resemble *Schizopyga* spp. (see below), but have their clypeus and face separated by a distinct transverse impression.

The metapleuron of *A. degener* is smooth, the fore and mid femora are simple. The vertical carina on the mesoscutum in front of the notauli are well developed and the lateral lobes of the mesoscutum have isolated hairs (FITTON *et al.*, 1988). Some of our specimens were reared from

the small spider *Tenuiphantes flavipes* (Blackwall, 1854) (Araneae: Linyphiidae).

First report for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Oudenaarde, Volkegembos (OVL); 50°50'06"N 3°38'46"E; 16/vi/2015; Bos Ename leg.; coll. KBIN/RBINS; malaise trap; P-N. Libert det. (ObsID: 134381074).

THE NETHERLANDS: • 1 ♀; Wageningen, Blauwe Kamer (GE); 51°56'39"N 5°37'07"E; 27/iv/2008; D. Belgers leg.; coll. KZ; reared ex *Tenuiphantes tenuis* (Blackwall, 1852) det. J. Prinsen; K. Zwakhals det. (ObsID: 42448435). • 1 ♀; Wageningen, Blauwe Kamer (GE); 51°56'39"N 5°37'07"E; 6/v/2008; D. Belgers leg.; coll. KZ; reared ex *Tenuiphantes flavipes* (Blackwall, 1854) det. J. Prinsen; K. Zwakhals det. (ObsID: 40255137).

***Dolichomitus messor* (Gravenhorst, 1829)**

Dolichomitus spp. are large species mainly associated with hosts living in trees. They closely resemble other 'black species with orange legs', for example *Ephialtes* or *Liotryphon* spp. In Fitton (FITTON *et al.*, 1988) genera are partly distinguished on the basis of the ovipositor-hind tibia index (less than 3.7 and hind wing broken near or slightly below the middle) and the ovipositor tip with the lower valves extended to partly enclose the upper valve (never with a distinct row of dorsolateral minute teeth). Some of these look-a-likes from other genera are also included in the key by Zwakhals on the genus.

Dolichomitus messor has the ovipositor/fore wing index at most at 2.2. The lower tooth of the mandible is as long as the upper tooth. The dorsal lobe of the ovipositor has at least five rather vertical grooves and the pterostigma is pale yellowish. Temples are slightly narrowed behind the head (ZWAKHALS, 2010). Many hosts are known (see YU *et al.*, 2012).

First report for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Somal (NA); 12/v/2008; P-N. Libert leg.; coll. PNL; field observation; P-N. Libert det.

THE NETHERLANDS: • 1 ♀; Udenhout, Loonse en Drunense Duinen (NB); 51°38'22"N 5°06'24"E; 11/v/2014; P. Hoekstra leg.; coll. PH; field observation; P. Hoekstra & K. Zwakhals det. (ObsID: 143376219).

***Exeristes roborator* (Fabricius, 1793) (Fig. 54 A–B)**

Exeristes spp. closely resemble *Scambus* spp. on habitus. In contrast to the latter genus however, the occipital carina is mediodorsally dipped (FITTON *et al.*, 1988).

Furthermore, some characteristics in *E. roborator* are unusual and make it 'unkeyable' for *Scambus*: front and middle coxae black but hind coxae red, a rather high ovipositor-hind tibia index (at least 2) and orange colouration of apical flagellomeres (Fig. 54 A). Additionally, to distinguish it from other species in the genus, the females have a little tubercle on the dorsal valve (Fig. 54 B); the males have a medial tooth on their clypeus (KASPARYAN, 1981a). Much like *Scambus* spp., *E. roborator* is probably a common parasitoid wasp with a wide range of hosts (see YU *et al.*, 2012) often linked to flower heads and is primarily active from the summer onwards.

First report for the Netherlands; confirmed in Belgium.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Roosbeek (VB); 50°50'04"N 4°51'34"E; 14/vi/2019; J. Coppens leg.; field observation; O. Varga det. (ObsID: 174462344). • 1 ♀; Merksem (AN); 51°14'22"N 4°27'10"E; 1/vii/2020; S. Verheyen leg.; field observation on *Daucus carota*; F. Verheyde &

O. Varga det. (ObsID: 174462344). • 1 ♀; Zonnebeke, Haneveld (WVL); 50°52'17"N 2°57'52"E; 19/vii/2020; F. Verheyde leg.; coll. FV; field observation on *Cirsium arvense*; F. Verheyde det. (ObsID: 196577154); Fig. 54 A–B.

THE NETHERLANDS: • 1 ♀; Budel-Dorplein (NB); 51°13'46"N 5°36'30"E; 9/viii/2013; J. Bouwmans leg.; field observation; F. Verheyde & O. Varga det. (ObsID: 78369419). • 1 ♀; Vlaardingen, Volksbos (ZH); 51°54'09"N 4°17'36"E; 22/vii/2016; E. Kester leg.; field observation; F. Verheyde det. (ObsID: 121884476). • 1 ♀; Losser (OR); 52°17'49"N 6°58'34"E; 2/vii/2018; M. Bonte leg.; field observation; F. Verheyde & O. Varga det. (ObsID: 159541493).

***Iania pictifrons* (Thomson, 1877)**

= syn. *Dreisbachia pictifrons* (Thomson, 1877), synonymized by MATSUMOTO (2016: 8–9)

A small genus in Western Europe. It belongs to the pimpline group with a closed areolet in the fore wing. The presence of *3rs-m* in the fore wing veins immediately distinguishes it from other polysphinctine wasps. The fore tarsal claw has a tooth-like basal lobe and the occipital carina is evenly convex mediodorsally. The ovipositor is tapered from the middle to the apex in lateral view (FITTON *et al.*, 1988).

Iania pictifrons otherwise superficially resembles other polysphinctines, as mentioned above, for example *Zatypota percontatoria* (Müller, 1776), which also has reddish zones on its mesopleuron and its metapleuron in combination with yellowish to white trochanters. The species has been questionably synonymised with *Schizopyga* by GAULD & DUBOIS (2006) and was finally transferred to the new genus *Iania* (MATSUMOTO, 2016).

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♂; Beusichem (GE); 51°57'25"N 5°16'50"E; 26/x/2017; P. Hoekstra leg.; coll. KZ; light trap; K. Zwakhals det. (ObsID: 146393464). • 1 ♀; Almere, Hanny Schaftpark (FL); 52°22'52"N 5°13'54"E; 23/viii/2019; P. Hoekstra leg.; coll. PH; field observation; P. Hoekstra & F. Verheyde det. (ObsID: 182789323). • 1 ♀; Texel (NH); 53°02'00"N 4°44'20"E; 11/ix/2020; A. Dijkssen leg.; field observation; O. Varga det. (ObsID: 200008986).

***Piogaster pilosator* (Aubert, 1958) (Fig. 55 A–C)**

Piogaster is a remarkable genus with specimens rarely collected. Its areolet is open, its notaulus is absent and its tergites 2–4 are evenly convex (FITTON *et al.*, 1988).

The morphological and taxonomical position of *P. pilosator* (especially in relation to *P. rugosa*) is not entirely clear and is still being worked upon (pers. comm. A. Bennett, paper in prep.). The complex can be nonetheless easily distinguished from *P. albina* Perkins, 1958. *P. pilosator* has a denser pubescence on its head and on its mesosoma (Fig. 55 B–C) and is predominantly brownish orange: the mesosoma is orange with brown markings, the metasoma is light yellow (Fig. 55 A–C). Its first tergite has an incomplete dorsolateral carina. Its mesoscutum is matt with granulate sculpture (unpolished; Fig. 55 C). In contrast, *P. albina* is predominantly dark (brown). Only the legs (black and white) are similar (KASPARYAN, 1981a). This finding is one of the rarest in the study. Our specimen was caught with a light trap. Species from the genus are recognised as ectoparasitoids of jumping spiders (Salticidae) (TAKASUKA *et al.*, 2018).

First report of the species and the genus for Belgium; unreported in the Netherlands.

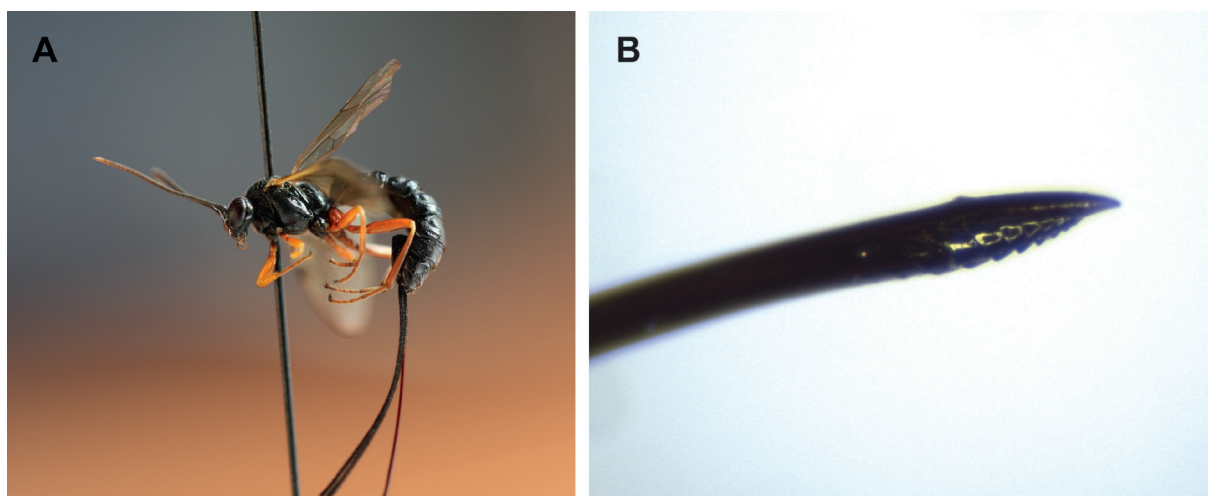


Fig. 54. *Exeristes roborator* (Fabricius, 1793), female. A, habitus, lateral view. B, ovipositor, with tubercle on dorsal valve, lateral view. © Fons Verheyde.

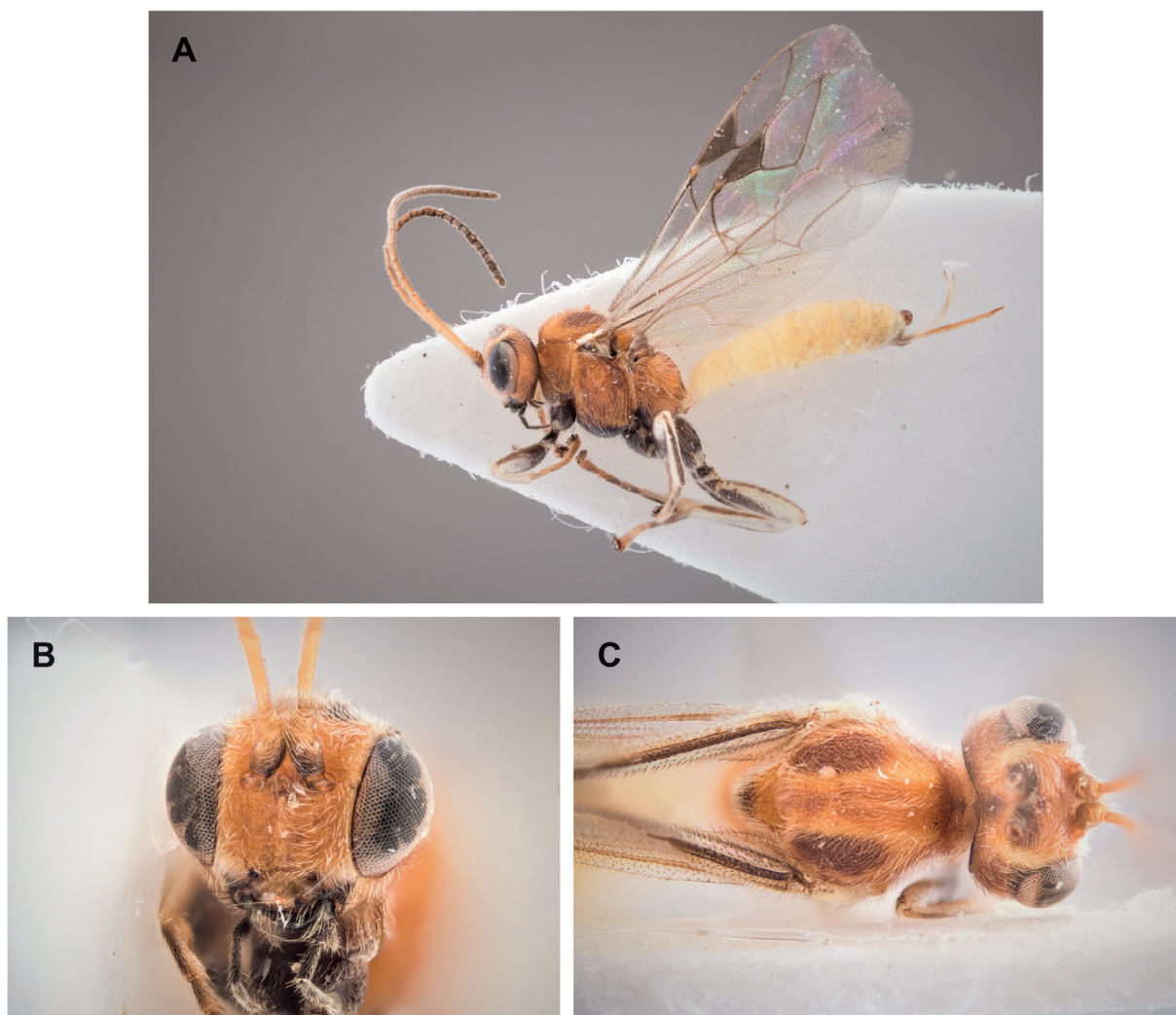


Fig. 55. *Piogaster pilosator* (Aubert, 1958), female. A, habitus, lateral view. B, head, frontal view. C, mesoscutum, dorsal view. © Thibaud Vandaudenard.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Ruiselede, Gulke Putten - Disveld (WVL); 51°04'31"N 3°20'41"E; 22/v/2020; A. De Ketelaere leg.; coll. ADK; light trap; A. Bennett det. (ObsID: 195257909); Fig. 55 A–C.

***Polysphincta boops* (Tschek, 1869)**

Polysphincta spp. belong to the pimpline wasps without a closed areolet in the fore wing. Their fifth tarsal segment is conspicuously broadened and their notaulus is present. Finally the abscissa of *CU* is present in the hind wing and the tergites have rounded swellings. They parasitize arachnids (FITTON *et al.*, 1988).

Polysphincta boops has a mainly yellow scutellum, mandibles and subtegular ridge. It thereby looks like *P. longa*, but there are important differences in the number of flagellomeres and the pubescence of the mesoscutum (see below).

First report for Belgium; confirmed in the Netherlands.

BELGIUM: • 1 ♀; Oudenaarde, Bos t'Ename (OVL); 50°50'06"N 3°38'46"E; 2/ix/2014; Bos Ename leg.; coll. KBIN/RBINS; light trap; P-N. Libert det. (ObsID: 134419328).

THE NETHERLANDS: • 1 ♂; Amstelveen, Amsterdamse Bos (NH); 52°17'58"N 4°49'31"E; 25/i/2009; R. Heemskerk; reared ex *Araniella* spp.; K. Zwakhals det. (ObsID: 42306613).

***Polysphincta longa* Kasparyan, 1976**

Polysphincta longa resembles *P. boops*, as mentioned above, but has more flagellomeres (28-33 versus 25-28) and has a thicker pubescence on its mesoscutum (while very smooth in *P. boops*). There is also some difference in size (see all details FRITZÉN & SHAW, 2014). Our specimen had well above 30 flagellomeres. As stated in the abovementioned publication, this species probably has been widely underreported due to its unclear morphological status and confusion with *P. boops*.

First report for Belgium; unreported in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Lozer, Lozerbos (OVL); 50°55'26"N 3°33'25"E; 15/ix/2020; J. Raes leg.; field observation; F. Verheyde & O. Varga det. (ObsID: 200162223).

***Polysphincta rufipes* Gravenhorst, 1829**

This species belongs to a second group of species, with its scutellum, mandibles and its subtegular ridge black and a slightly shorter ovipositor (ovipositor-hind tibia index less than 1.2). Its submetapleural carina is complete and present as a distinct raised keel. All coxae and trochanters are red and its mesoscutum is evenly hairy on its anterior 0.7 (more details see FITTON *et al.*, 1988).

First report for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Oudenaarde, Wallebos (OVL); 50°50'40"N 3°38'16"E; 2/vii/2014; Bos Ename leg.; coll. KBIN/RBINS; malaise trap; P-N. Libert det. (ObsID: 134419351).

THE NETHERLANDS: • 1 ♀; Oene (GE); 52°20'47"N 6°03'34"E; 25/iii/2015; G. Elbertsen leg.; coll. KZ; reared ex *Larinioides sclopetarius* (Westring, 1851); K. Zwakhals det. (ObsID: 100294725).

***Polysphincta tuberosa* Gravenhorst, 1829** (Fig. 56)

This species also belongs to the second group (like *P. rufipes*; cfr. supra). However, its submetapleural carina is absent or present as a weak ridge and its lateromedian longitudinal carinae of the propodeum are also absent or only weakly present. The thorax and the propodeum vary from entirely black to extensively reddish (see Fig. 56; more details in FITTON *et al.*, 1988).

First report for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Somal (NA); 26/ix/2009; P-N. Libert leg.; coll. PNL; field observation; M. Shaw det. • 1 ♀; Wingene, Gulke Putten – Predikherenbosssen (WVL); 51°04'38"N 3°20'39"E; 29/vi/2019; F. Verheyde leg.; coll. FV; field observation; F. Verheyde & O. Varga det. (ObsID: 175421632).

THE NETHERLANDS: • 1 ♂; Wageningen, Blauwe Kamer (GE); 51°56'34"N 5°37'05"E; 22/v/2008; D. Belgers leg.; coll. KZ; reared ex *Araniella* spp.; K. Zwakhals det. (ObsID: 40254918). • 1 ♀; Wageningen, Blauwe Kamer (GE); 51°56'34"N 5°37'05"E; 18/iii/2011; D. Belgers leg.; coll. KZ; reared ex Araneidae spp.; K. Zwakhals det. (ObsID: 61117112). • 1 ♂; Almere, Hanny Schaftpark (FL); 52°22'51"N 5°13'56"E; 18/iv/2020; P. Hoekstra leg.; coll. PH; reared ex *Araniella* spp.; P. Hoekstra det. (ObsID: 193453902). • 1 ♂; Renkum, Golfbaan (GE); 51°59'31"N 5°45'58"E; 27/iv/2020; W. de Jong leg.; reared ex *Araniella* spp.; P. Hoekstra det. (ObsID: 189861550); Fig. 56. • 1 ♂; Haaren (NB); 51°35'59"N 5°13'28"E; 14/v/2020; R. Wolfs leg.; reared ex *Araniella* spp.; P. Hoekstra det. (ObsID: 191363477).

***Scambus puniceus* (Schmiedeknecht, 1914)** (Fig. 57)

Scambus spp. belong to more robust Pimplinae with a full areolet in the fore wing. On habitus species are sometimes difficult to distinguish from for example *Endromopoda* spp., where species have an ovipositor tip with teeth, a mid-tarsus with the fifth tarsal segment at least 0.9× the length of the first tarsal segment and with the hind tarsal claws bevelled at apex (FITTON *et al.*, 1988).

Scambus puniceus belongs to the *S. brevicornis* group and has recently been reaffirmed as a valid species. The females in this group are defined by the colouration of the hind tibiae (median-dorsal yellow-red; light reddish brown in *S. brevicornis* s.s. or whitish in the remaining species), pterostigma (light yellowish-brown with whitish posterior margin) and hind coxae (black or red). *S. puniceus* is easy to recognise in the group because of its unique metasoma which is red brown (Fig. 57), at least laterally. Its ovipositor is 2.2–2.3× the length of the hind tibiae (HORSTMANN, 2010). Like other species in the genus, it appears to be mainly active from July to September. Its hosts are not known. One wasp was observed ovipositing on the flower heads of *Tripolium pannonicum* in a coastal environment, so at least one host should be associated with this plant. **First report for Belgium; unreported in the Netherlands.**

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Knokke, Het Zwin - Duinengordel (WVL); 51°21'56"N 3°21'16"E; 19/vii/2017; P. Vanhauwere leg. [UGent]; coll. KBIN/RBINS (ENDURE-project, 160_ZWN_10_N); field observation; F. Verheyde & O. Varga det.; Fig. 57. • 1 ♀; Knokke, Het Zwin (WVL); 51°21'42"N 3°21'53"E; 16/ix/2020; W. Decock & J. Mees leg.; field observation, oviposition on *Tripolium pannonicum*; O. Varga det. (ObsID: 200213741).

***Schizopyga circulator* (Panzer, 1800)**

Schizopyga spp. are smaller pimpline spider parasitoids with the fore wing vein *3rs-m* entirely absent. Their clypeus and face are confluent, forming a nearly flat surface (FITTON *et al.*, 1988).

The females of *S. circulator* are easy to recognise: it is the only species with the metasoma (at least tergites 4 and 5) completely red. The males are trickier. Their face is black, the mid femur red but blackish at apex, the tegulae are mostly brown or black and the metapleuron is rather closely punctate (sculpture contrasting with shiny adjacent area of mesopleuron). Its antenna has about 23–25 segments (SHAW, 2006). Common and widely underreported in both countries.

First report for Belgium; confirmed in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Westouter, Sulferberg (WVL); 50°47'47"N 2°45'42"E; 1/vi/2013; M. Valdueza leg.; field observation; F. Verheyde det. (ObsID: 76670137). • 1 ♀; Hallaar (AN); 51°05'04"N 4°44'07"E; 17/vii/2014; G. Van den Wyngaert leg.; field observation; F. Verheyde det. (ObsID: 86453186). • 1 ; Hallaar (AN); 50°50'04"N 3°38'46"E; 13/vi/2015; Bos t'Ename leg.; coll. KBIN/RBINS; malaise trap (30.V–13.VI); P.-N. Libert det. (ObsID: 134381252). • 1 ♀; Haaltert, Den Dotter – Blauwbos (OVL); 50°54'38"N 3°57'48"E; 19/vii/2015; G. Van Heghe leg.; field observation; F. Verheyde det. (ObsID: 104560748). • 1 ♀; Sint-Gillis-Waas (OVL); 51°13'25"N 4°04'40"E; 12/v/2019; D. Baert leg.; field observation; F. Verheyde det. (ObsID: 172218111) [...].

THE NETHERLANDS: • 1 ♀; Rotterdam, Polder De Esch (ZH); 51°54'11"N 4°31'36"E; 1/x/2010; U. Kloss leg.; field observation; F. Verheyde det. (ObsID: 50331043). • 1 ♀; Slagharen (OR); 52°37'45"N 6°33'20"E; 3/vii/2011; J. de Gooijer leg.; field observation; F. Verheyde det. (ObsID: 55470282). • 1 ♀; Kaatsheuvel (NB); 51°38'54"N 4°59'12"E; 24/viii/2011; P. Fleurbaaij leg.; field observation; F. Verheyde det. (ObsID: 56424453). • 1 ♀; Wageningen (GE); 51°57'59"N 5°40'24"E; 22/vii/2018; D. Belgers leg.; field observation in skylight; F. Verheyde det. (ObsID: 160333131). • 1 ♀; Utrecht, Soesterberg – Vliegbasis West (UT); 52°07'50"N 5°15'58"E; 1/viii/2020; T. Zeegers leg.; coll. FV (Soesterberg-project, 30–1.VII–VIII.2020; nr. 3) [...].

***Schizopyga flavifrons* Holmgren, 1856 (Fig. 58 A–B)**

The females of *S. flavifrons* have a yellow clypeus (Fig. 58 B). Their metasoma is black and their hind femora are red and only black apically, which distinguishes it from *S. varipes* (see SCHMIEDEKNECHT, 1906 and SHAW, 2006). Their hind tibiae are black with a white band medially (Fig. 58 A).

First report for Belgium; unconfirmed in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Ruiselede, Gulke Putten (WVL); 51°04'19"N 3°20'59"E; 1/iv/2020; A. De Ketelaere leg.; field observation; O. Varga & A. De Ketelaere det. (ObsID: 205393321); Fig. 58 A–B.

***Schizopyga frigida* Cresson, 1870**

Schizopyga frigida has a black face and metasoma. The females have their tegulae yellowish or pale red, the second tergite is at least 1.2x as long as broad and the mid femur usually is completely reddish. The males can also be distinguished on the basis of their tegulae (yellowish) and their mid femur (entirely red) (SHAW, 2006).

First report for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Somal (NA); 14/vii/2008; P-N. Libert leg.; coll. PNL; field observation; M. Shaw det. • 1 ♀; Hoboken, Hobokense Polder (AN); 51°11'22"N 4°20'48"E; 20/ix/2011; L. Janssen leg.; field observation; F. Verheyde det. (ObsID: 61743810). • 1 ♀; Merendree, Loplas (OVL); 51°05'30"N 3°35'32"E; 12/v/2020; J. Mees leg.; field observation; F. Verheyde det. (ObsID: 191182382).

THE NETHERLANDS: • 1 ♀; Dalfsen (OR); 52°30'33"N 6°14'58"E; 9/ix/2015; V. Martens leg.; field observation; F. Verheyde det. (ObsID: 108057688). • 1 ♀; Veere, Dishoek (ZL); 51°28'39"N 3°31'17"E; 16/vii/2018; J. Goedbloed leg.; field observation; F. Verheyde det. (ObsID: 163108316). • 1 ♀; Den Helder (NH); 52°56'15"N 4°45'36"E; 10/v/2019; M. Renden leg.; field observation; F. Verheyde det. (ObsID: 172113458). • 1 ♀; Wageningen (GE); 51°57'59"N 5°40'24"E; 2/vi/2019; D. Belgers leg.; field observation in skylight; F. Verheyde det. (ObsID: 173618095). • 1 ♀; Castricum, Noordhollands Duinreservaat (NH); 52°34'29"N 4°38'11"E; 17/viii/2019; A. Wijker leg.; light trap; F. Verheyde det. (ObsID: 178258104) [...].

***Sinarachna nigricornis* (Holmgren, 1860)**

Species in the genus *Sinarachna* also have a missing fore wing vein *3rs-m* and the final abscissa of *CU* is likewise absent in the hind wing. The occipital carina is interrupted mediodorsally (FITTON *et al.*, 1988; ZWAKHALS, 2006).

Sinarachna nigricornis has more dense, longer hairs on its metasoma and the antennae are usually entirely blackish. Its hind coxae are also blackish. The arachnids *Araneus diadematus* Clerck, 1757 and *Araneus sturmi* (Hahn, 1831) are hosts (Araneae: Araneidae) (FITTON *et al.*, 1988).

First report of the species and the genus for the Netherlands; unconfirmed in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Wageningen, Blauwe Kamer (GE); 51°56'34"N 5°37'05"E; 30/v/2011; D. Belgers leg.; coll. KZ; reared ex *Araneidae* spp.; K. Zwakhals det. (ObsID: 61117112). • 1 ♀; Oostmeer, (FR); 53°14'47"N 6°05'03"E; 6/vii/2012; Landschapsbeheer Friesland leg.; coll. HM; malaise trap 193 (29.VI-6.VII); H. Meijer det.

***Tromatobia variabilis* (Holmgren, 1856)**

Tromatobia spp. usually have a fore wing with the vein *3rs-m* entirely absent. The fifth tarsal segment is not broadened and the antennae of the males do not have tyloids (FITTON *et al.*, 1988).

Tromatobia variabilis however does have *3rs-m*, but only faintly pigmented. Its frontal orbits are black, but there is a small yellow spot on the vertex. Its metasoma is mainly (dark) reddish with black apical bands (FITTON *et al.*, 1988). The species is probably underreported with the common arachnid *Larinioides cornutus* (Clerck, 1757) (Araneae: Araneidae) as one of its main hosts (SHAW, 2006) and can be expected to be present in the Netherlands.

First report for Belgium; unreported in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♂; Oostduinkerke, Zeebermduinen (WVL); 51°08'20"N 2°41'13"E; 10/vii/2017; P. Vanhauwere leg. [UGent]; coll. KBIN/RBINS (ENDURE-project, 76_ODK_12_N); field observation; F. Verheyde & O. Varga det.



Fig. 56. *Polysphincta tuberosa* Gravenhorst, 1829, ectoparasitoid larva on *Araniella* sp., dorsal view. © William de Jong.



Fig. 57. *Scambus puniceus* (Schmiedeknecht, 1914), female, habitus, lateral view. © Fons Verheyde.



Fig. 58. *Schizopyga flavifrons* (Panzer, 1800), female. A, habitus, lateral view. B, head, frontal view. © Augustijn De Ketelaere.



Fig. 59. *Podoschistus scutellaris* (Desvignes, 1856), female. A, habitus, lateral view. B, head, dorsolateral view. © Fons Verheyde.

Tribe Theroniini Cushman and Rohwer 1921

Theronia laevigata (Tschek, 1869)

Theronia spp. can be easily recognised. Their areolet is closed, their ovipositor is straight and relatively long, tergites 2–4 are polished and all tarsal claws are very large with a prominent, flattened, spatulate-tipped bristle (FITTON *et al.*, 1988).

Theronia laevigata is predominantly black, without a ventral longitudinal ridge on the hind femur. It is known as a hyperparasitoid of the rather rare ichneumonid wasp *Protichneumon pisorius* (Linnaeus, 1758) on *Sphinx pinastri* Linnaeus, 1758 (Lepidoptera: Sphingidae) (JACOBS, 2009). With respect to its ecology it is probably rare and living in low densities.

First report for the Netherlands; unconfirmed in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Olterterp, Bos Olterterp (FR); 53°04'27"N 6°05'52"E; 2/viii/2012; H. Meijer leg.; coll. KZ; field observation; H. Meijer & K. Zwakhals det.

Subfamily Poemeniinae Narayanan & Lal, 1953

Neoxorides nitens (Gravenhorst, 1829)

Much like *Podoschistus* spp. (see below), *Neoxorides* spp. have temples with ridges behind the eyes. However, their tarsal claws do not have a subapical tooth. Their scutellum and metascutellum are black (OEHLKE, 1965; VARGA, 2015).

Neoxorides nitens has a clearly punctuated mesopleuron, but between the punctures the surface is more or less shiny. Its pronotal collar is distinctly raised. The males have white to yellow orbits, but the face is black centrally. The females have brownish palps (OEHLKE, 1965; VARGA, 2015). Hosts are Coleoptera; cerambycids and possibly buprestids connected to oak (BOPARAI *et al.*, 2019; JOHANSSON & KLOPFSTEIN, 2020).

First report for the Netherlands; confirmed in Belgium.

MATERIAL EXAMINED:

BELGIUM: • 1 ♂; Zillebeke, Zandvoordebos (WVL); 50°49'25"N 2°57'59"E; 12/v/2019; F. Verheyde leg.; coll. FV; field observation; W. Pénigot & F. Verheyde det. (ObsID: 172129366). • 1 ♂; Oud-Turnhout, Landschap De Liereman (AN); 51°19'31"N 5°01'49"E; 20/v/2020; N. Van Loco leg.; field observation on *Betula* sp.; F. Verheyde det. (ObsID: 191946288).

THE NETHERLANDS: • 1 ♂; Tilburg, Leijbos (NB); 51°32'34"N 5°00'51"E; 23/iv/2020; IWG KNNV Tilburg leg.; coll. PH; malaise trap (16-23); P. Hoekstra & A. Humala det. (ObsID: 203584805).

Podoschistus scutellaris (Desvignes, 1856) (Fig. 59 A–B)

Podoschistus comprises only one European species. It has a striking sculpture on the dorsal half of the temple, consisting of large, uneven, scale-like ridges (Fig. 59B). All tarsal claws have an additional subapical tooth and vein *3rs-m* is missing in the fore wing. Its scutellum and metascutellum is marked yellow apically (OEHLKE, 1965; FITTON *et al.*, 1988; VARGA, 2015). Furthermore, striking are the black hind trochanters (and tarsi), which contrast with the yellowish brown and white front legs (Fig. 59 A). The males have their face yellow. Specimens are often observed on dead wood, searching for their hosts.

First report of the species and the genus for the Netherlands; confirmed in Belgium.

MATERIAL EXAMINED:

BELGIUM: • 1 ex.; Oudenaarde, Bos t'Ename (OVL); 50°50'03"N 3°38'46"E; 13/vi/2015; Bos t'Ename leg.; coll. PNL; malaise trap (30.V-13.VI); P.-N. Libert det. (ObsID: 134381227). • 1 ♀; Momignies (HA); 50°01'40"N 4°10'10"E; 6/vii/2019; A. De Ketelaere & L. Lams leg.; coll. ADK; light trap; F. Verheyde det. (ObsID: 181867189); Fig. 59 A–B. • 1 ♂; Vleteren, Wippehoek (WVL); 50°53'37"N 2°45'40"E; 8/v/2020; F. Verheyde leg.; coll. FV; field observation; O. Varga & F. Verheyde det. (ObsID: 190787615). • 1 ♂; Marenne (LX); 50°14'12"N 5°25'04"E; 21/v/2020; M. Valdueza leg.; field observation; F. Verheyde det. (ObsID: 194801148).

THE NETHERLANDS: • 1 ♀; Wellerlooi, Stalberg (LIN); 51°30'58"N 6°09'12"E; 25/iv/2014; H. Martens leg.; field observation; F. Verheyde det. (ObsID: 83816289). • 2 ♀♀; Utrecht, Soesterberg – Vliegbasis West (UT); 52°07'50"N 5°15'58"E; 20/v/2019 & 24/v/2019; T. Zeegers leg.; coll. FV (Soesterberg-project, 17–24.V.2019; nr. 44 & nr.49); malaise trap; F. Verheyde det. • 1 ♀; Haren, Hortus Botanicus & De Biotoop (GR); 53°10'45"N 6°36'08"E; 5/vi/2019; K. Hendriks leg.; field observation; F. Verheyde det. (ObsID: 173901370). • 1 ♀; Valkenburg, Ravensbosch (LIN); 50°53'09"N 5°49'23"E; 26/vi/2019; A. Wijker & S. Lamberts leg.; field observation; F. Verheyde det. (ObsID: 175223057). • 1 ♀; Vlijmen, Bosje Hooge Bank (NB); 51°40'13"N 5°12'04"E; 3/v/2020; P. Van de Laak leg.; field observation; F. Verheyde det. (ObsID: 190345074) [...].

Subfamily Rhyssinae Morley, 1913

Megarhyssa rixator (Schellenberg, 1802) (Fig. 60)

Megarhyssa spp. are huge parasitoids of Siricidae (Symphyta). The females have important adaptations for their long ovipositor, for example grooves on the hind coxae and a membranous sac at the position of the apical sternites (QUICKE, 2015). All four western European *Megarhyssa*-species have recently colonized the Low Countries and are now fully present and reproducing (VERHEYDE *et al.*, 2020a).

M. rixator was the last species to be reported in the Low Countries. Furthermore, it is the only species associated with conifers (as the larvae of their hosts live there). It can be distinguished from *R. persuasoria* (Linnaeus, 1758) by its mesoscutum (often with two white lines). Its metasoma has white cylindrical or rectangular stains laterally, instead of smaller more roundish spots (Fig. 60). The apical tergites have a different shape, with the abovementioned membranous sac visible when females are ovipositing.

First report for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Geel, Belsbroekbos (AN); 51°09'25"N 5°04'18"E; 26/v/2017; J. Eykmans leg.; field observation; K. Zwakhals det. (ObsID: 139115219). • 1 ♂; Bonheiden (AN); 51°01'15"N 4°31'57"E; 12/v/2019; W. Deleus leg.; field observation; F. Verheyde det. (ObsID: 172136425). • 1 ♀; Dessel, Achter Grootbosheide (AN); 51°16'10"N 5°10'30"E; 22/v/2019; J. De Witte leg.; field observation; F. Verheyde det. (ObsID: 172879635). • 10 ♀♀; Beernem, Bossen Lindeveld (WVL); 51°06'44"N 3°19'04"E; 26/v/2020; A. De Ketelaere & L. Lams leg.; coll. ADK; field observation, oviposition on *Pinus sylvestris*; A. De Ketelaere & F. Verheyde det. (ObsID: 192789472). • 1 ♀; Oud-Turnhout, Landschap De Liereman (AN); 51°19'37"N 5°01'19"E; 9/vi/2020; G. Loos leg.; coll. GL; field observation; F. Verheyde det. (ObsID: 197942234) [...].

THE NETHERLANDS: • 1 ♂; Monfort (LIN); 51°07'42"N 5°56'14"E; 7/v/2018; H. Schmitz leg.; field observation; F. Verheyde det. (ObsID: 156087791). • 1 ♀; Eindhoven, Stratumse

heide (NB); 51°24'26"N 5°30'14"E; 24/v/2019; R. Aussems leg.; field observation; F. Verheyde det. (ObsID: 173604105). • 1 ♀ 1 ♂; Ede, Noord Ginkel/Zandbosch (GE); 52°02'17"N 5°45'24"E; 27/v/2019; J. Groenleer leg.; field observation in copula; F. Verheyde det. (ObsID: 183266327). • 1 ♂; Tilburg, De Sijsten (NB); 51°32'40"N 5°00'40"E; 3/v/2020; R. van den Broek leg.; field observation; F. Verheyde det. (ObsID: 190335658). • 6 ♀♀; Eindhoven, Stratumse heide (NB); 51°24'26"N 5°30'14"E; 7/v/2020; F. Neijts leg.; field observation, oviposition on *Pinus* sp.; F. Verheyde det. (ObsID: 190677110) [...].

***Megarhyssa vagatoria* (Fabricius, 1793) (Fig. 61)**

Megarhyssa vagatoria is a predominantly orange species. In contrast to *Megarhyssa perlata* (Christ, 1791) its antennae are darker and the yellow spots on the metasoma are often smaller (HORSTMANN, 1998a; Fig. 61). The males have black apical tergites. It was one of the first species to colonize our countries, following its host *Tremex fuscicornis* (Fabricius, 1787) and searching for suitable birches and beeches (VERHEYDE *et al.*, 2020a). It seems to have somewhat more difficulties to colonize the western parts of Flanders, but it is known to be present in the northern parts of France near Lille (LIBERT *et al.*, 2021).

First report for Belgium; confirmed in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 5 ♀♀ 2 ♂♂; Mol, Vito bossen en De Bleken (AN); 51°12'49"N 5°04'19"E; 5/vi/2011; L. Peeters leg.; field observation, oviposition on *Betula* sp.; C. Thirion, P-N. Libert & F. Verheyde det. (ObsID: 54999773). • 8 ♂♂; Lommel, Sahara (LIB); 51°15'10"N 5°17'12"E; 18/v/2012; L. Peeters leg.; field observation; F. Verheyde det. (ObsID: 68550530). • 3 ♂♂; Arendonk, Rode Del (AN); 51°20'00"N 5°07'48"E; 22/v/2012; W. Machielsen leg.; field observation; F. Verheyde det. (ObsID: 68666823). • 1 ♀ 15 ♂♂; Postel, Ronde Put (AN); 51°17'24"N 5°09'58"E; 28/v/2012; P. vds leg.; field observation; F. Verheyde det. (ObsID: 68823525). • 1 ex.; Lommel, Balimgronden (LIB); 51°12'00"N 5°16'43"E; 23/v/2020; G. Loos leg.; coll. GL; field observation; F. Verheyde det. (ObsID: 197963318) [...].

THE NETHERLANDS: • 1 ♀; Reusel, Reuselse Moeren (NB); 51°18'57"N 5°08'51"E; 14/v/2011; F. Neijts leg.; field observation; J. Ravoet & F. Verheyde det. (ObsID: 54494614). • 3 ♀♀; Ospel, Grote Peel (LIN); 51°19'50"N 5°47'47"E; 9/vi/2011; S. Gubbels leg.; field observation, oviposition on *Betula* sp.; J. Ravoet & F. Verheyde det. (ObsID: 55010399). • 1 ♀; Leersum, Leersumse Veld (UT); 52°02'19"N 5°25'43"E; 27/v/2012; T. Vernooij leg.; field observation, oviposition on *Betula* sp.; F. Verheyde det. (ObsID: 70092184). • 1 ♀; Bladel, Cartierheide (NB); 51°19'56"N 5°16'13"E; 28/v/2012; H. Berkhoudt leg.; field observation, oviposition on *Betula* sp.; J. Ravoet & F. Verheyde det. (ObsID: 68870632). • 17 ♀♀ 6 ♂♂; De Reusel, Reuselse Moeren (NB); 51°18'47"N 5°09'02"E; 21/vi/2012; L. Peeters leg.; field observation, oviposition on *Betula* sp.; I. Raemakers & F. Verheyde det. (ObsID: 69323725) [...].

Subfamily Stilbopinae Förster, 1869

***Stilbops ruficornis* (Gravenhorst, 1829) (Fig. 62 A–B)**

Stilbopinae and *Stilbops* spp. are not easily characterised as a subfamily or genus, but most species can – with some experience – be recognised by habitus. *Stilbops* spp. have their apical flagellar segment usually longer than the preceding one and their areolet is obliquely quadrate or narrowly pentagonal (BROAD *et al.*, 2018).

Stilbops ruficornis has a black mesosoma and a predominantly red metasoma, with the exception of the first tergite which is partly blackish and the apical tergites which have

yellowish white bands. Its ovipositor is black and somewhat upcurved apically (Fig. 62A). This species is often easy to recognise in the field because of its specific ecology. It swarms in groups in the vicinity of *Knautia arvensis*, where it searches for eggs of its lepidopteran host *Nemophora metallica* (Poda, 1761) (Lepidoptera: Adelidae) in the flower heads (BROAD *et al.*, 2018; Fig. 62B). There is no doubt the parasitoid wasp is rarer than its host, but even then it is also clear there are important gaps in our current knowledge on the distribution of the species. Although we have to admit the specific habitat is scarcer in Flanders, still a bit striking is the absence of data near the Dutch border, while all observations from the Netherlands stem from the same (bordering) southern part of the country (Nederlands Limburg).

First report for the Netherlands; confirmed in Belgium.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Viroinval, Le Franc Bois (NA); 50°05'24"N 4°33'58"E; 12/viii/2010; H. Wallays leg.; field observation; F. Verheyde det. (ObsID: 49485409). • 1 ♂; Rochefort, Le Gros Tienne (NA); 50°06'18"N 5°05'54"E; 2/vii/2017; J. Preud'homme leg.; field observation, oviposition on *Knautia arvensis* next to living specimens of *Nemophora metallica* (Poda, 1761); F. Verheyde det. (ObsID: 141663329). • 1 ♀; Bailièvre (HA); 50°04'13"N 4°14'57"E; 16/vii/2017; S. Claerebout leg.; field observation, oviposition on *Knautia arvensis* sp.; F. Verheyde det. (ObsID: 141689470). • 3 ♀♀; Fauvillers (LX); 49°53'28"N 5°45'06"E; 21/vi/2020; W. Declercq leg.; field observation, oviposition on *Knautia arvensis* sp.; F. Verheyde det. (ObsID: 194783213). • 1 ♀; Torgny (LX); 49°30'35"N 5°28'53"E; 25/vi/2020; F. Verheyde leg.; field observation, oviposition on *Knautia arvensis* sp.; F. Verheyde det. (ObsID: 195171863) [...].

THE NETHERLANDS: • 1 ♀; Simpelveld (LIN); 50°50'14"N 5°58'12"E; 8/vii/2010; T. Bakker leg.; field observation, flying next to living specimens of *Nemophora metallica*; F. Verheyde det. (ObsID: 165700135). • 5 ♀♀; Eys, Piepert (LIN); 50°49'39"N 5°55'16"E; 24/vi/2014; A. Wijker leg.; field observation, oviposition on *Knautia arvensis* sp.; F. Verheyde det. (ObsID: 86162753). • 2 ♀♀; Wahlwiller/Nijswiller, Kruisberg (LIN); 50°48'48"N 5°56'37"E; 13/vii/2019; S. Lamberts & A. Wijker leg.; field observation, oviposition on *Knautia arvensis* sp.; F. Verheyde det. (ObsID: 176567411). • 1 ♀; Voerendaal, Kunderberg (LIN); 50°51'48"N 5°57'00"E; 14/vii/2019; S. Lamberts & A. Wijker leg.; field observation, oviposition on *Knautia arvensis* sp.; F. Verheyde det. (ObsID: 176351473); Fig. 62 A–B.

Subfamily Tersilochinae Schmiedeknecht, 1910

***Aneuclis brevicauda* (Thomson, 1889)**

Aneuclis spp. belongs to the group clustered around the genus *Diaparsis*. Both genera do not have glymmae on the first tergite (or it is isolated) and the propodeum has one basal keel. Typical for *Aneuclis* spp., however, is the brachial cell of the fore wing which is widely open at apex and the posterior part of the postnervulus which is absent. The fore wing vein *2m-cu* is present (KHALAIM & YURTCAN, 2011).

A. brevicauda is a small species. Our specimen measured 2.5 mm and had 14 flagellomeres. Its ovipositor is relatively short, about as long as the first tergite (which has striations dorsolaterally). Its mesosoma and metasoma are black (KHALAIM, 2004a). It has been reported as a parasitoid of the common coleopteran *Phyllotreta nemorum* (Linnaeus, 1758) (Coleoptera: Chrysomelidae) (HORSTMANN, 1980b).

First report for Belgium; unreported in the Netherlands.



Fig. 60. *Megarhyssa rixator* (Schellenberg, 1802), female, habitus, lateral view. © Warre Smets.



Fig. 61. *Megarhyssa vagatoria* (Fabricius, 1793), male, habitus, lateral view. © Paul en Marianne.

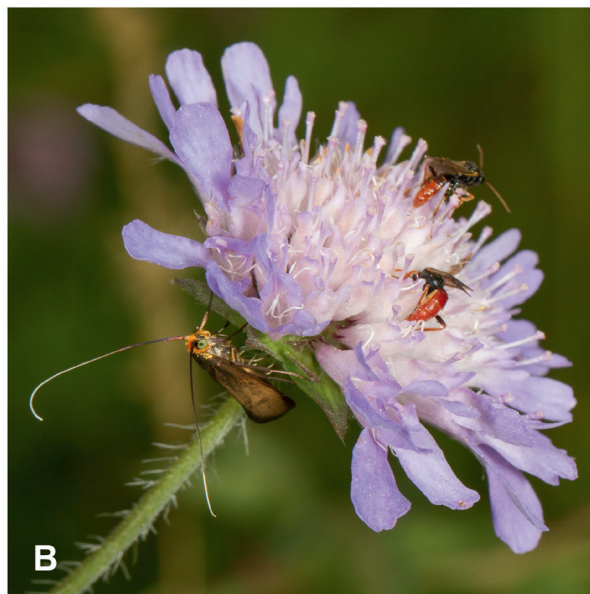


Fig. 62. *Stilbops ruficornis* (Gravenhorst, 1829), female. A, habitus, lateral view. © Arnold Wijker. B, parasitizing *Neomophora metallica*, dorsolateral view. © Sandra Lamberts.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Ukkel (BR); 6/viii/1933; A. Crèvecoeur leg.; coll. KBIN/RBINS (coll. Crèvecoeur); F. Verheyde det.

***Barycnemis angustipennis* (Holmgren, 1860)** (Fig. 63 A–B)

As mentioned in our section on localities (heathlands of Bruges) our specimens reported here were nearly all caught in the context of the project near Bruges, often with pitfall traps. *Barycnemis* spp. can be distinguished from other genera by their apically curving spurs on the hind legs, the more or less linear to slightly upcurved sternaulus (Fig. 64B) and their longer propodeum (often with the basal area longer than the petiolar or apical area; see for example Fig. 64A). Their legs and ovipositor can be robust (see for example Fig. 64A). Several species are very elongate (KHALAIM & YURTCAN, 2011). We have also tried to identify males, but in the end results were too uncertain to integrate. With an older key (HORSTMANN, 1980b) we were able to split the males in different species groups (*B. gravipes*-group with more robust species and the vertex and temples densely punctate and *B. 118ellator*-group with more elongate species and the vertex and temples very finely punctate). Although hypothetically, it is highly probable males of all three reported species are present in those specimens (coll. KBIN/RBINS; project Brugse heiderelicten). Some species are known to parasitize Staphylinidae (Coleoptera), especially *Bledius* spp.; see AUBERT, 1970.

Barycnemis angustipennis superficially looks like *B. gravipes* (Gravenhorst, 1829) (Fig. 63 A). Its first tergite is rather robust, its sternaulus is wide and the first segment of the hind tarsus is smaller than the hind tibiae. However, its head is not prominent (widened) anteriorly (Fig. 63B) and its ovipositor sheaths are shorter than the first tergite. The dorsolateral area of the propodeum is smooth and densely punctate dorso-posteriorly. Our specimen has 33 flagellomeres and measured 7 to 8 mm (KHALAIM, 2004b).

First report for Belgium; unconfirmed in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Sint-Andries, Beisbroek – Hoog; 16/v/2014; W. Dekoninck *et al.* (KBIN) leg.; coll. KBIN/RBINS (project Bruges heathlands); pitfall trap (2-16); F. Verheyde det.; Fig. 63A-B. • 1 ♀; Somal (NA); 19/v/2014; P.-N. Libert leg.; field observation; coll. PNL; A. Khalaim det.

***Barycnemis bellator* (Müller, 1776)** (Fig. 64 A–B)

Belonging to the smaller and more elongate species in the genus. Its sternaulus is narrow and more or less linear (Fig. 64 B). The first segment of the hind tarsus is longer than the hind tibiae. The basal area of the propodeum is 1.5x as long as the apical area (Fig. 64 A). Its hind femur is robust. The ovipositor is roundly tapered apically. Our specimens had approximately 25 flagellomeres and measured around 4 mm.

First report for Belgium; unconfirmed in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 13 ♀♀; Sint-Andries, Beisbroek; VI.2014–VI.2016; W. Dekoninck *et al.* (KBIN) leg.; coll. KBIN/RBINS (project Bruges heathlands); pitfall trap; F. Verheyde det. • 2 ♀♀; Assebroek, Schobbejakshoogte; V–IX.2017; W. Dekoninck *et al.* (KBIN) leg.; coll. KBIN/RBINS (project Bruges heathlands); pitfall trap; F. Verheyde det.; Fig. 64 A–B.

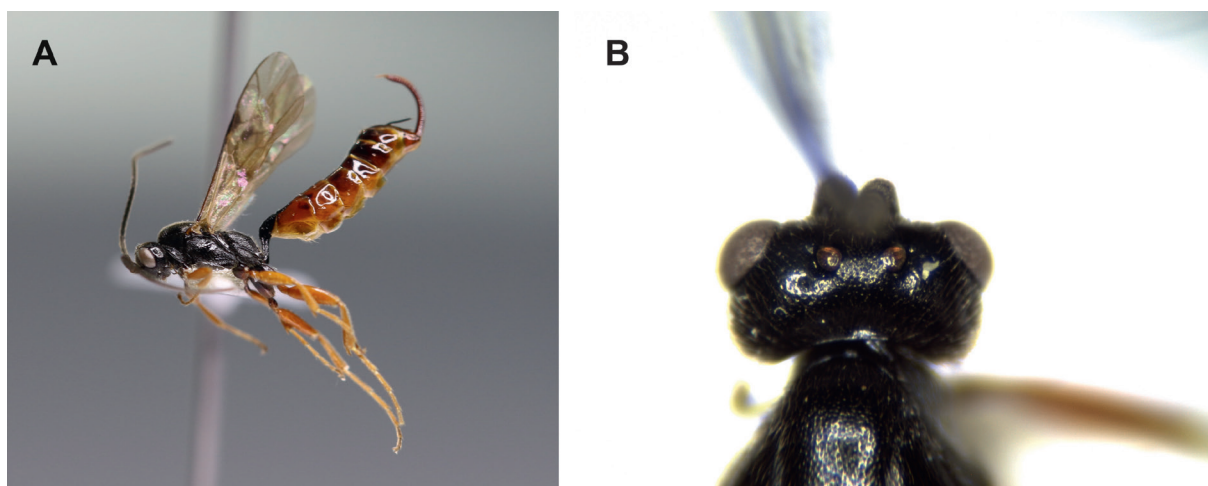


Fig. 63. *Barycnemis angustipennis* (Holmgren, 1860), female. A, habitus, lateral view. B, head (temples), dorsal view. © Fons Verheyde.

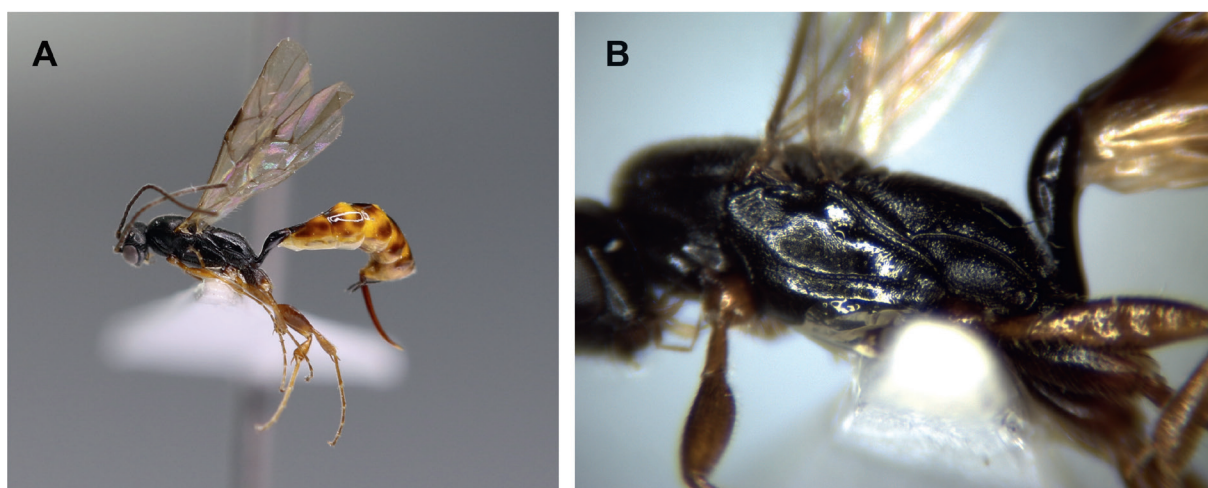


Fig. 64. *Barycnemis bellator* (Müller, 1776), female. A, habitus, lateral view. B, sternaulus (mesopleuron), lateral view. © Fons Verheyde.



Fig. 65. *Barycnemis punctifrons* Horstmann, 1981, female. A, habitus, lateral view. B, head (temples), dorsal view. © Fons Verheyde.

***Barycnemis punctifrons* Horstmann, 1981** (Fig. 65 A–B)

Similar to *B. angustipennis* and *B. gravipes* (Fig. 65 A). This species has its head narrowed behind the eyes, however (Fig. 65 B), its ovipositor sheaths are as long as the first tergite and it is slightly smaller with less flagellomeres (30 in our specimen). It measured 6 mm.

First report for Belgium; unreported in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Sint-Andries, Beisbroek – Korstmosvegetatie; 24/ix/2015; W. Dekoninck *et al.* (KBIN) leg.; coll. KBIN/RBINS (project Bruges heathlands); white pan trap (18-24); F. Verheyde det.; Fig. 65 A–B.

***Phradis nigrutilus* (Gravenhorst, 1829)**

Phradis spp. are small and robust species with the wing veins thickened around *2rs-m*. Their propodeum has one or two median longitudinal carinae, and the first tergite does not have glymmae (KHALAIM & YURTCAN, 2011).

Phradis nigrutilus is a smaller species (2–4 mm and 11–12 flagellomeres) with its ovipositor sheath 1.6–1.8× as long as the first tergite. The second recurrent vein is present, but it is only pigmented in its anterior part. The dorsolateral areas of the propodeum are smooth and shiny. Its basal flagellomeres are relatively stout and its ovipositor has a narrow dorsal subapical notch (KHALAIM *et al.*, 2009).

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Boelenslaan (FR); 53°09'49"N 6°07'03"E; 15/vii/2012; G. Tuinstra leg.; coll. HM; field observation; H. Meijer det.

***Sathropterus pumilus* (Holmgren, 1860)** (Fig. 66 A–B)

This is a somewhat easier species to key within Tersilochinae, being the only one in the genus. Its wing veins in the fore wing are thickened around *2rs-m*, glymmae are present and the propodeum has longitudinal carinae medially. More importantly, the brachial cell of the fore wing is widely open at apex, the fore wing vein *2m-cu* is completely absent (Fig. 66B) and the ovipositor tip is sinuate (KHALAIM & YURTCAN, 2011; Fig. 66A).

First report of the species and the genus for Belgium; confirmed in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Somal (NA); 26/ix/2009; P.-N. Libert leg.; coll. PNL; field observation; A. Khalaim det. • 1 ♀; Sint-Andries, Ter Heyde; 16/ix/2016; W. Dekoninck *et al.* (KBIN) leg.; coll. KBIN/RBINS (project Bruges heathlands); yellow pan trap (3-16); F. Verheyde det.

THE NETHERLANDS: • 1 ♀; Almere (FL); 52°22'47"N 5°14'17"E; 15/x/2019; P. Hoekstra leg.; coll. PH; yellow pan trap (1-15); P. Hoekstra det. (ObsID: 181544111). • 1 ♂; Beusichem (GE); 51°57'25"N 5°16'51"E; 14/viii/2020; P. Hoekstra leg.; coll. PH; light trap; P. Hoekstra det. (ObsID: 199737943). • 1 ♀; Groessen (GE); 51°54'51"N 6°02'08"E; 20/viii/2020; R. Soethof leg.; field observation; R. Soethof & F. Verheyde det. (ObsID: 200134889); Fig. 66 A–B.

***Tersilochus caudatus* (Holmgren, 1860)**

Tersilochus spp. superficially look like species of the genus *Probles*. The latter group has a distinct sternaulus, however (at least half as long as the mesopleuron), with the thyridia usually

elongate. Although some species are missing or taxonomy has changed, Horstmanns key (1971) is still very useful. Most species have a wide host range (see YU *et al.*, 2012).

T. caudatus belongs to the subgenus *Gonolochus*, which has the hypostomal ridge complete, its sternaulus only feebly present and the thyridia more or less as long as wide, or slightly longer. The mesopleuron is not clearly punctuated in *T. caudatus* and the second tergite is more or less twice as long as wide (HORSTMANN, 1971).

First report for the Netherlands; unconfirmed in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Twijzel (FR); 53°14'53"N 6°04'56"E; 28/v/2012; Landschapsbeheer Friesland leg.; coll. HM; malaise trap 215 (24-28); H. Meijer det.

***Tersilochus cognatus* (Holmgren, 1860)**

= syn. *T. jocator* Holmgren, 1859, synonymized by HORSTMANN (2001: 25)

Tersilochus cognatus forms a species-complex in Horstmanns key ('*jocator*-Gruppe'). The sternaulus is wide, covering at least half of the mesopleuron; the thyridia are feeble and the ovipositor tip has two teeth dorsally. For *T. cognatus* itself, its ovipositor sheaths are long, at least 1.2× as long as the first tergite (but often much longer). Its clypeus is rounded in profile and its metasoma is reddish (HORSTMANN, 1971).

First report for Belgium; confirmed in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Somal (NA); 30/iv/2012; P.-N. Libert leg.; coll. PNL; field observation; A. Khalaim det. • 1 ♀; Beernem, Gevaerts (WVL); 51°08'29"N 3°18'52"E; 10/iv/2020; A. De Ketelaere leg.; coll. ADK; A. De Ketelaere & F. Verheyde det. (ObsID: 202473064). • 1 ♀; Poperinge, Wipphoek (WVL); 50°53'36"N 2°45'48"E; 8/v/2020; F. Verheyde leg.; coll. FV; field observation on gall of *Biorhiza pallida* (Olivier, 1791); F. Verheyde det. (ObsID: 190787642).

THE NETHERLANDS: • 6 ♀♀ 1 ♂; Tilburg, Leijbos (NB); 51°32'38"N 5°00'52"E; 16/iv/2020; IWG KNNV Tilburg leg.; coll. PH; malaise trap; P. Hoekstra & F. Verheyde det. (ObsID: 195629210). • 2 ♀♀ 7 ♂♂; Almere, Hanny Schaftpark (FL); 52°22'50"N 5°13'57"E; 18/iv/2020; P. Hoekstra leg.; coll. PH; pan trap; P. Hoekstra & F. Verheyde det. (ObsID: 189565211).

***Tersilochus lapponicus* Hellen, 1958**

The group around *T. lapponicus* has a weakly expressed or short sternaulus. The ovipositor tip is deeply incised subapically and the claws are pectinate. *T. lapponicus* is a predominantly black species. Its thyridia are longer than wide and the ovipositor sheaths are twice as long as the first tergite (HORSTMANN, 1971). **First report for the Netherlands; unreported in Belgium.**

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Twijzelerheide (FR); 53°14'53"N 6°04'56"E; 5/iv/2012; Landschapsbeheer Friesland [G. Tuinstra] leg.; coll. HM; field observation; H. Meijer det. • 1 ♀; Haarzuilen (UT); 52°07'25"N 5°00'02"E; 10/iv/2020; S. De Waart leg.; coll. FV; malaise trap; F. Verheyde det. (ObsID: 208390971).

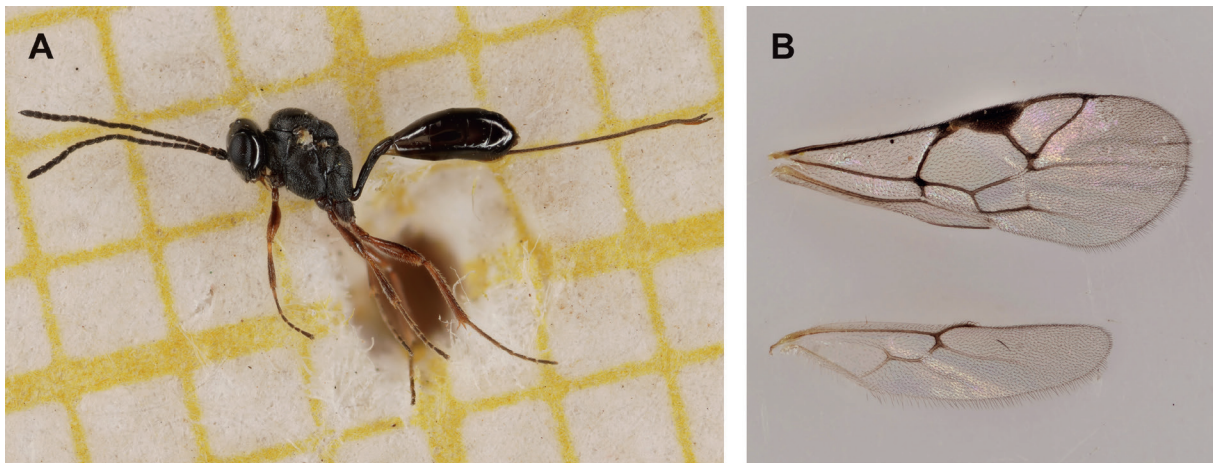


Fig. 66. *Sathropterus pumilus* (Holmgren, 1860), female. A, habitus, lateral view. B, right fore and hind wing, lateral view. © Rudy Soethof.

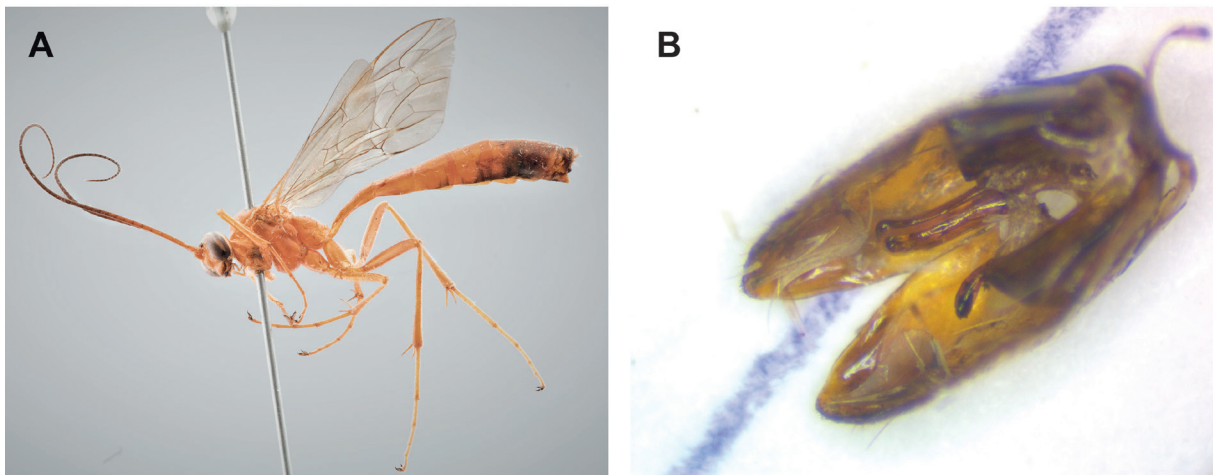


Fig. 67. *Netelia fuscicarpus* (Kokujev, 1899), male. A, habitus, lateral view. © Thibaud Vandaudenard. B, genitals, dorsal view. © Augustijn De Ketelaere.



Fig. 68. *Dyspetes arrogator* Heinrich, 1949, male, habitus, lateral view. © Arnold Wijker.



Fig. 69. *Erromenus plebejus* (Woldstedt, 1878), female, habitus, lateral view. © Fons Verheyde.

***Tersilochus obscurator* (Aubert, 1959)**

Tersilochus obscurator belongs to the abovementioned *T. jocator*-complex. Its clypeus is flattened however, the hypostomal ridge is incomplete and the metasoma is predominantly black. Its ovipositor sheaths are more or less 1.4× as long as its first tergite (HORSTMANN, 1971).

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Drongelen, Oud Maasje (NB); 51°42'56"N 5°02'34"E; 20/v/2020; P. Hoekstra leg.; coll. PH; field observation; P. Hoekstra det. (ObsID: 190171995).

Subfamily Tryphoninae Shuckard, 1840

Tribe Phytodietini Hellén, 1915

***Netelia fuscicarpus* (Kokujev, 1899) (Fig. 67 A–B)**

Netelia is a difficult genus that still needs to be revised. Its species are testaceous and can be distinguished from Ophioninae by their more or less complete areolet (Fig. 67 A), their twisted mandibles and a longer ovipositor in females (except for the subgenus *Bessobates*).

N. fuscicarpus has been synonymised in the past with *N. testacea* (Gravenhorst, 1829). There are however crucial arguments to accept it as a valid species, which will be confirmed in a near future paper (DELRIO, 1975; BROAD, pers. comm, *in prep.*). Our specimen is a male, which can be recognised by the specific shape of its genitals (Fig. 67 B). Among its hosts are the common lepidopterans *Lycia hirtaria* (Clerck, 1759) and *Phigalia pilosaria* (Denis & Schiffermüller, 1775) (Lepidoptera: Geometridae) (MEYER, 1927).

First report for Belgium; unreported in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♂; Zeebrugge (WVL); 51°19'14"N 3°10'38"E; 1/viii/2020; A. Beidts leg.; coll. ADK; light trap; A. De Ketelaere & G. Broad det. (ObsID: 206129370); Fig. 67 A–B.

***Netelia thoracica* (Woldstedt, 1880)**

= syn. *Netelia ahngeri* (Kokujev, 1906)

This species belongs to the subgenus *Paropheltes*: the occipital carina is absent, the scutellum has the lateral carina absent or weak, the areolet is usually closed by vein *3rs-m* and the male has longer parameres, lacking curved 'brace' across internal surface (BROAD, 2012). *N. thoracica* has many black markings: the head with the stigmaticum, the mesoscutum (except for the central part) and the lower part of the mesopleuron are black. Its apical tergites are also blackish. The hind tarsi are white. Its temples are slightly narrowed behind the eyes (DELRIO, 1975). This is a genuinely rare species, which could be partly coastal. *Orthosia incerta* (Hufnagel, 1766) (Lepidoptera: Noctuidae) is the only known host (MEYER, 1929).

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♂; Castricum, Noordhollands Duinreservaat (NH); 52°32'26"N 4°37'00"E; 27/viii/2019; A. Wijker & S. Lamberts leg.; light trap; F. Verheyde & G. Broad det. (ObsID: 185984424 & 180209107).

***Netelia vinulae* (Scopoli, 1763)**

Netelia vinulae belongs to the subgenus *Netelia*. Both sexes have their head parallel behind the eyes with their stemmaticum brown to black and wing vein *CU-A* distal by 0.3. Our male specimen has at least 24 teeth on the hind tarsal claws, distinguishing it from other closely related species. Its mesonotum is not shiny and its propodeum is simple. The female is very robust with a rather long ovipositor. Its head is distinctly buccate, without a distinct ocular-ocellar gap. The temples are nearly as wide as the outer edge of the eyes. The propodeum is striated (DELRIO, 1975; BROAD, 2012).

First report for Belgium; unconfirmed in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♂; Brussel, Zoniënwood (BR); 15/v/1944; A. Crèvecoeur leg.; coll. KBIN/RBINS (coll. Crèvecoeur); T. Vandaudenard, G. Broad & F. Verheyde det. • 1 ♀; Brussel, Zoniënwood (BR); 21/v/1944; A. Crèvecoeur leg.; coll. KBIN/RBINS (coll. Crèvecoeur); T. Vandaudenard & F. Verheyde det. • 1 ♀; Brussel, Zoniënwood (BR); 24/v/1944; A. Crèvecoeur leg.; coll. KBIN/RBINS (coll. Crèvecoeur); T. Vandaudenard, G. Broad & F. Verheyde det. • 1 ♀; Brussel, Zoniënwood (BR); 27/v/1944; A. Crèvecoeur leg.; coll. KBIN/RBINS (coll. Crèvecoeur); T. Vandaudenard, G. Broad & F. Verheyde det.

Tribe Tryphonini Shuckard, 1840***Cosmoconus meridionator* Aubert, 1963**

Cosmoconus spp. belong to the tribe Tryphonini (the carination of the propodeum more or less complete, the notaulus short/absent and the head not transverse). Just like *Tryphon* spp. their areolet is closed and the fore wing vein *2m-cu* has a strong zigzag. Unlike this genus however, the frons has a distinctive median horn. Most species have a metasoma that is more or less yellow/orange medially and black apically and sometimes basally (TOWNES, 1969).

Cosmoconus meridionator has the first tergite orange, at least posteriorly starting from the spiracle, and its flagellum is usually darkened at apex (KASPARYAN & TOLKANITZ, 1981). This species has proven to be very common (and thus probably underreported in the past), with many observations in the early autumn, often in the vicinity of umbellifers and in all types of habitat. It is a known parasitoid wasp of the common sawfly *Rhogogaster viridis* s.l. (Linnaeus, 1758) (Symphyta: Tenthredinidae).

First report for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Sterrebeek (VB); 19/ix/1936; A. Crèvecoeur leg.; coll. KBIN/RBINS (coll. Crèvecoeur); F. Verheyde det. • 1 ♀; Nazareth, Hospicebossen (OVL); 50°58'30"N 3°37'08"E; 7/ix/2017; J. Raes leg.; field observation; F. Verheyde det. (ObsID: 143821841). • 1 ♂; Tintigny (LX); 49°41'26"N 5°31'26"E; 14/vi/2019; A. Ronse leg.; coll. AR; field observation; F. Verheyde det. (ObsID: 206561842). • 1 ♀; Ieper (WVL); 50°51'11"N 2°52'52"E; 14/ix/2019; F. Verheyde & K. Schoonvaere leg.; coll. FV; field observation; F. Verheyde det. (ObsID: 179550970). • 1 ♀; Oudenaarde, Volkegembos (OVL); 50°50'00"N 3°38'52"E; 21/ix/2019; J. Raes leg.; field observation; F. Verheyde det. (ObsID: 179929754) [...].

THE NETHERLANDS: • 3 ♀♀; Den Haag (ZH); 52°05'52"N 4°21'12"E; 15/ix/2008; A. Benschop leg.; field observation; F. Verheyde det. (ObsID: 62975598). • 1 ex.; Zeist (UT); 52°05'52"N 5°12'57"E; 16/ix/2009; H. Jansen leg.; field observation; F. Verheyde det. (ObsID: 183087639). • 1 ex.; Bergen (NH); 52°40'02"N 4°42'21"E; 28/viii/2011; T. de Graaf leg.; field observation; F. Verheyde det. (ObsID: 198616417). • 1 ♀; Zeist (UT); 52°07'50"N 5°14'04"E; 7/ix/2013; J. Vink leg.; field observation; F. Verheyde det. (ObsID: 78955327). • 1 ♀; Ureterp,

Terrein de Fûgelhelling (FR); 53°06'17"N 6°08'23"E; 20/ix/2015; H. Meijer leg.; coll. HM; field observation; H. Meijer det. [...].

***Cosmoconus nigriventris* Kasparyan, 1971**

Cosmoconus nigriventris belongs to the species group with a darker first tergite, only the posterior third is orange. The dorsolateral carinae of this first tergite are either absent behind the spiracles or indistinct. The males have their flagellum entirely dark ventrally. The second tarsal segment of the hind tarsus is at least 1.2× as long as the fifth tarsal segment. Several common *Tenthredo* spp. (Symphyta: Tenthredinidae) are known hosts (KASPARYAN & TOLKANITZ, 1981).

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♂; Drachten (FR); 53°06'21"N 6°07'52"E; 21/ix/2015; H. Meijer leg.; coll. HM; field observation; H. Meijer det.

***Cteniscus pedatorius* (Panzer, 1809)**

Cteniscus belongs to the former tribe Exenterini. Its notaulus is distinct, punctures on the abdominal tergites are fine to medium sized and the area superomedia is longer than wide (TOWNES, 1969).

Cteniscus pedatorius needs to be keyed carefully. Its pterostigma is dark brown to black with a lighter base. Its temples are more or less straight behind the eyes (dorsally). The hind tibiae are darkened apically and the tarsi are blackish (KASPARYAN & TOLKANITZ, 1981). Several specimens discovered were associated with *Nematus (Craesus) septentrionalis* (Linnaeus, 1758). More information on the Dutch rearing records can be read in ZWAKHALS & BLOMMERS, *forthcoming*.

First report of the species and the genus for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Somal (NA); 26/ix/2009; P.-N. Libert leg.; coll. PNL; field observation; D. Kasparyan det.

THE NETHERLANDS: • 1 ♀; Veenendaal, Kwintelooyen (UT); 51°59'33"N 5°32'59"E; 17/ix/2014; J. Bouwmans leg.; field observation; F. Verheyde det. (ObsID: 88050265). • 1 ♀; Rhenen, Achterbergse Hooilanden (UT); 51°58'23"N 5°37'31"E; 10/xii/2015; J. Bouwmans leg.; coll. KZ; reared ex *Nematus (Craesus) septentrionalis* (Linnaeus, 1758), larva, collected on 4/x/2015; K. Zwakhals det. (ObsID: 113084673).

***Dyspetes arrogator* Heinrich, 1949 (Fig. 68)**

Dyspetes spp. can be very easily identified within Tryphonini because of their unique areolet, which is rhombic, wider than high, with the veins *2r-m* and *3r-m* of nearly equal length.

The females of *D. arrogator* are not easily distinguished from *D. luteomarginatus* Habermehl, 1925. They are somewhat smaller sometimes and fly earlier in the year (May-July; versus July-September in *D. luteomarginatus*), but differences are very small morphologically. The males, however, can be easily identified. They have black hind legs (Fig. 68), which is unique in the genus. Among its hosts are sawflies, e.g. *Aglaostigma aucupariae* (Klug, 1817) (Symphyta: Tenthredinidae) (HINZ, 1961; KASPARYAN & TOLKANITZ, 1981; HORSTMANN, 2006b).

First report for Belgium; confirmed in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Somal (NA); 23/vii/2006; P.-N. Libert leg.; coll. PNL; field observation; D. Kasparyan det. • 1 ♂; Ranst, Bos van Ranst (AN); 51°11'55"N 4°33'26"E; 15/v/2012; L. Janssen leg.; field observation; F. Verheyde & W. Pénigot det. (ObsID: 72958909). • 1 ♂; Rillaar (VB); 50°58'38"N 4°54'04"E; 19/v/2018; E. Van Dyck leg.; field observation; F. Verheyde & W. Pénigot det. (ObsID: 156905265). • 1 ♂; Waarschot (OVL); 51°09'31"N 3°36'56"E; 16/v/2020; K. Deroose leg.; field observation; F. Verheyde & W. Pénigot det. (ObsID: 191512406).

THE NETHERLANDS: • 1 ♀; Houten (UT); 52°01'47"N 5°08'13"E; 22/v/2018; J. E. Wigboldus leg.; field observation; F. Verheyde det. (ObsID: 157092500). • 1 ♂; Echt, De Doort (LIN); 51°05'13"N 5°51'43"E; 1/v/2020; A. Wijker leg.; field observation; F. Verheyde det. (ObsID: 201011699); Fig. 68.

***Eridolius bimaculatus* (Holmgren, 1856)**

Eridolius spp. usually have the lower tooth of the mandible shorter or subequal to the upper tooth and the first tergite does not have any laterobasal corners (TOWNES, 1969).

The areolet is open in *E. bimaculatus*. Its face is wide and the temples have a minimum length of 0.5–0.8× from its transverse diameter of the eyes. Its frons is black without yellow spots, but the face does have characteristic square white-yellow spots with a specific pattern. Its flagellum has 21 to 26 segments. It is a parasitoid of the sawfly *Nematus bergmanni* Dahlbom, 1835 (Symphyta: Tenthredinidae), which lives on *Salix* (KASPARYAN & TOLKANITZ, 1981).

First report for Belgium; unconfirmed in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♂; Beernem, Beverhoutsveld (WVL); 51°10'27"N 3°17'19"E; 19/viii/2020; A. De Ketelaere leg.; coll. ADK; field observation; A. De Ketelaere & H. Meijer det. (ObsID: 206040970).

***Erromenus analis* Brischke, 1871**

Erromenus spp. can be distinguished from other Tryphonini by the lack of the typical zigzag *2m-cu* fore wing vein or horn on the frons. Their areolet is petiolate or subpetiolate above, or absent and their ovipositor sometimes has a typical shape and is often upcurved. The subtegular ridge is produced upward and outward as a lamella that is in contact with the lower edge of the tegula when the tegula is not raised (TOWNES, 1969). Species are rather robust (Fig. 69).

E. analis has a closed areolet and characteristically, its face is very convex with the fovea deeply impressed. The gena is short, not measuring more than 0.2× the width of the mandibular base (KASPARYAN & TOLKANITZ, 1981). It is a parasitoid of gall-forming sawflies from the genera *Pontania* and *Phyllocopla* (Symphyta: Tenthredinidae) (KASPARYAN & KOPELKE, 2009).

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♂; Eastermar (FR); 53°10'47"N 6°05'39"E; 20/vi/2012; Landschapsbeheer Friesland leg.; coll. HM ; malaise trap 31 (13-20) ; H. Meijer det.

***Erromenus plebejus* (Woldstedt, 1878) (Fig. 69)**

Erromenus plebejus does not have a closed areolet, its ovipositor and sheaths are comparatively narrow and the second segment of the hind tarsus is more or less equal in length to the fifth tarsal segment (KASPARYAN & TOLKANITZ, 1981). Hosts are unknown.

First report for Belgium; unreported in the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Sint-Andries, Beisbroek – Korstmosvegetatie; 2/x/2015; W. Dekoninck *et al.* (KBIN) leg.; coll. KBIN/RBINS (project Bruges heathlands); yellow pan trap (25.IX-2.X); F. Verheyde det.; Fig. 69.

***Exenterus tricolor* Roman, 1913**

In contrast to *Cteniscus* spp. (see above) the notaulus is absent, the abdominal tergites are coarse and strongly punctured and the area superomedia is wider than long (TOWNES, 1969).

Exenterus tricolor has a distinctive colour-pattern on its metasoma. The apical tergites are red brownish laterally. The clypeus is slightly protruding with a small impression at the lower margin. Like other species in the genus, this is a parasitoid of sawflies associated with conifers, i.e. Diprionidae (KASPARYAN & TOLKANITZ, 1981).

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♂; Olterterp (FR); 53°04'11"N 6°06'20"E; 12/viii/2020; H. Meijer leg.; coll. HM; light trap; H. Meijer det.

***Exyston pratorum* (Woldstedt, 1874)**

Exyston also belongs to the former tribe Exenterini, which does not have tibial spurs on the hind tibia (and only one spur on the mid tibiae). Their first tergite has a basolateral angulation (and is 1.4–3.6× as long as wide), their tarsal claws are simple and the lower tooth of the mandible is not longer than the upper tooth (TOWNES, 1969).

Exyston pratorum has the occipital carina and the hypostomal ridge connected, above the mandibular base. The length of the first tergite is approximately 1.6x its width. Its metasoma is red, starting from the second tergite (KASPARYAN & TOLKANITZ, 1981). The only known host is the already mentioned sawfly *Arge ustulata* (Linnaeus, 1758) (Symphyta: Argidae) (WEIFFENBACH, 1988).

First report for the Netherlands; confirmed in Belgium.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Somal (NA); 8/v/2008; P.-N. Libert leg.; coll. PNL; field observation; D. Kasparyan det.

THE NETHERLANDS: • 1 ♂; Drachten-Azeven (FR); 53°06'49"N 6°09'00"E; 6/ix/2020; H. Meijer leg.; coll. HM; field observation; H. Meijer det.

***Polyblastus macrocentrus* Thomson, 1888**

Species in the genus *Polyblastus* have the fore wing vein *2m-cu* normal. Their ovipositor is more or less straight. The females carry their eggs externally at the ventral side of the metasoma (TOWNES, 1969).

Polyblastus macrocentrus has a closed areolet and is the only species with simple tarsal claws and the costulae (on the propodeum) very weak. The upper valve of the ovipositor is not

compressed towards the apex (KASPARYAN & TOLKANITZ, 1981). Hosts are sawflies of the genus *Hoplocampa* (Symphyta: Tenthredinidae). Another rearing record from The Netherlands and more information on the ecology can be found in ZWAKHALS & BLOMMERS, *forthcoming*.

First report for the Netherlands; unreported in Belgium.

MATERIAL EXAMINED:

THE NETHERLANDS: • 1 ♀; Ureterp, Terrein de Fûgelhelling (FR); 53°06'16"N 6°08'24"E; 7/v/2015; H. Meijer leg.; coll. HM; field observation; H. Meijer det.

***Tryphon latrator* (Fabricius, 1781)**

= syn. *Tryphon auricularis* Thomson, 1883, synonymized by HORSTMANN (2001: 25)

Tryphon is a genus with several common species within Tryphonini, which is typified by having a more or less complete carination on the propodeum. *Tryphon* spp. characteristically have their *2m-cu* vein in the fore wing with a strong zigzag and two bullae. The areolet is closed and their tarsal claws are simple (TOWNES, 1969).

Tryphon latrator has a black face with longitudinal dorsal and other carinae distinct on the propodeum. Its vertex is relatively densely and coarsely punctate; while the second tarsal segment of the hind leg is longer than the fifth tarsal segment. Its trochanters have dark spots (FITTON, 1975).

First report for the Netherlands; confirmed in Belgium.

MATERIAL EXAMINED:

BELGIUM: • 1 ♂; Bonheiden (AN); 51°01'06"N 4°35'01"E; 14/vi/2014; A. Ronse leg.; coll. AR; field observation; F. Verheyde det. (ObsID: 206558294). • 1 ♀; Assebroek, Schobbejakshoogte - Vergraste struikheide (SA); 18/iv//2017; W. Dekoninck *et al.* (KBIN) leg.; coll. KBIN/RBINS (project Bruges heathlands); pitfall trap (4-18); F. Verheyde det. • 2 ♂♂; Snellegem, Waterwinning (WVL); 7/vi/2019; W. Dekoninck *et al.* (KBIN) leg.; coll. KBIN/RBINS (project Bruges heathlands); malaise trap; F. Verheyde det.

THE NETHERLANDS: • 1 ♀ 1 ♂; Twijzel (FR); 53°14'53"N 6°04'56"E; 28/v/2012; Landschapsbeheer Friesland leg.; coll. HM; malaise trap 215 (24-28); H. Meijer det.

Subfamily Xoridinae, Shuckard 1840

DISCLAIMER: Some of the species mentioned here are more elaborately reported in a separate paper by LIBERT and VERHEYDE (2021) for Belgium.

***Xorides alpestris* (Habermehl, 1903)**

Xorides spp. are parasitoids of wood-boring insects. They have a clear habitus, often robust, and females with white-banded antennae. They can be distinguished from other families by some of the following characteristics: fore wing with vein *3r-m* absent, tarsal claws simple, first tergite without glymmae, fore wing vein *2m-cu* with two bullae, propodeum with at least a trace of the anterior transverse carina, etc. (more details see GAULD & FITTON, 1981).

Xorides alpestris is a huge species (at least 15 mm) which can be distinguished from other species by the face and the frons (entirely black), its long and narrow pterostigma (four times as long as wide), the hind coxae which are polished and the hind tibiae which are white basally (CLÉMENT, 1938; VARGA, 2014). Additionally, we noticed the basal flagellomeres of many specimens are often orange (in addition to the normal white ring on the otherwise black antennae). *X. alpestris* has only been recently observed in the Low Countries, which is probably due to the increasing amount of dead wood in nature reserves and gardens and areal expansion of (Central- and Eastern-) European ichneumonids (VERHEYDE *et al.*, 2020a). Animals are often

found on (standing) wounded or dead wood, for example beeches or birches next to heathlands or on forest borders.

First report for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Malderen, Marselaerbossen (VB); 51°02'14"N 4°16'19"E; 15/viii/2015; J. Reyniers leg.; field observation; C. Thirion & F. Verheyde det. (ObsID: 105516412). • 1 ♀; Nazareth, Hospicebossen (OVL); 50°58'46"N 3°37'20"E; 24/vii/2018; J. Raes leg.; field observation; F. Verheyde det. (ObsID: 160427330). • 1 ♀; Brussel, Begijnenbosdal (BR); 50°54'19"N 4°23'44"E; 24/vii/2018; F. Dierge leg.; field observation; F. Verheyde det. (ObsID: 160451607). • 1 ♂; Beernem, Bulskampveld - Heideveld-Bornebeek (WVL); 51°07'07"N 3°17'24"E; 17/v/2020; A. De Ketelaere leg.; coll. ADK; field observation on *Fagus sylvatica*; G. Várkonyi, A. De Ketelaere & F. Verheyde det. (ObsID: 191750278). • 1 ♂; Zillebeke, Zandvoordebos (WVL); 50°49'25"N 2°57'55"E; 23/v/2020; F. Verheyde leg.; coll. FV; field observation on *Fagus sylvatica*; A. De Ketelaere & F. Verheyde det. (ObsID: 192192921) [...].

THE NETHERLANDS: • 1 ♀; Ravenswoud, Compagnonsbosschen (FR); 52°58'21"N 6°22'54"E; 26/vi/2012; A. van Hengstum leg.; field observation; F. Verheyde det. (ObsID: 69410543). • 1 ♀; Hilversum (NH); 52°13'40"N 5°12'08"E; 26/ix/2013; T. van Wijk leg.; field observation; O. Varga & F. Verheyde det. (ObsID: 79310064). • 1 ♀; Emmen, Bargerveen (DR); 52°41'59"N 7°01'28"E; 5/viii/2017; S. Wiebing leg.; field observation; F. Verheyde det. (ObsID: 142451644). • 1 ♀; Vaals, Schimperbos (LIN); 50°45'16"N 5°59'27"E; 29/vi/2019; S. Lamberts leg.; field observation; F. Verheyde det. (ObsID: 175407282). • 21 ♂♂; Eindhoven, Stratumse heide (NB); 51°24'27"N 5°30'15"E; 22/v/2020; R. Aussems leg.; field observation; F. Verheyde det. (ObsID: 192847169) [...].

***Xorides brachylabis* (Kriechbaumer, 1889) (Fig. 70 A–B)**

Xorides brachylabis can be distinguished from other species within the genus by the absence of a subapical tooth on the anterior side of the fore trochantellus. Furthermore, the pterostigma is narrow, with the length of $RS + 2r$ being at least 3.5× as long as its breadth. The fore tibiae are swollen and wider than the mid femora. Generally, the fore and mid coxae and trochanters are yellow, while the hind coxae and femora are mostly red (Fig. 70 A). Finally, the females are finely and evenly rugosely punctate on their first tergite and their inner orbits are widely white-striped (GAULD & FITTON, 1981; VARGA, 2014; Fig. 70 B). The species is genuinely rare. Known hosts are *Tetropium* spp., notably *Tetropium gabrieli* Weise, 1905 (Coleoptera: Cerambycidae) for our first locality/finding on larch (YU *et al.*, 2012). This beetle species is primarily known from the eastern part of Belgium (MUYLAERT, 1984). The surprisingly low density of larches on our first Belgian locality strongly suggests the ichneumonid and its host *T. gabrieli* have been overlooked for many decades and/or have only recently arrived, especially in Wallonia where dense larch-forests are more common.

First report for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Zillebeke, De Vierlingen (WVL); 50°49'10"N 2°56'08"E; 24/vi/2019; F. Verheyde leg.; coll. FV; field observation on *Larix* sp.; O. Varga & F. Verheyde det. (ObsID: 175085077); Fig. 70A-B. • 1 ♀; Retie, Looiendse Bergen (AN); 51°15'52"N 5°03'14"E; 8/v/2020; N. Van Loco leg.; field observation on *Picea abies*; F. Verheyde det. (ObsID: 191232266). • 1 ♀; Mol, Vito bossen en De Bleken (AN); 51°12'53"N 5°04'00"E; 19/vii/2020; J. De Witte leg.; field observation on *Picea abies*; F. Verheyde det. (ObsID: 196672069).

THE NETHERLANDS: • 1 ♀; Eerbeek (GE); 52°05'57"N 6°04'26"E; 12/viii/2019; H. Cuppen leg.; field observation; F. Verheyde det. (ObsID: 177926651).

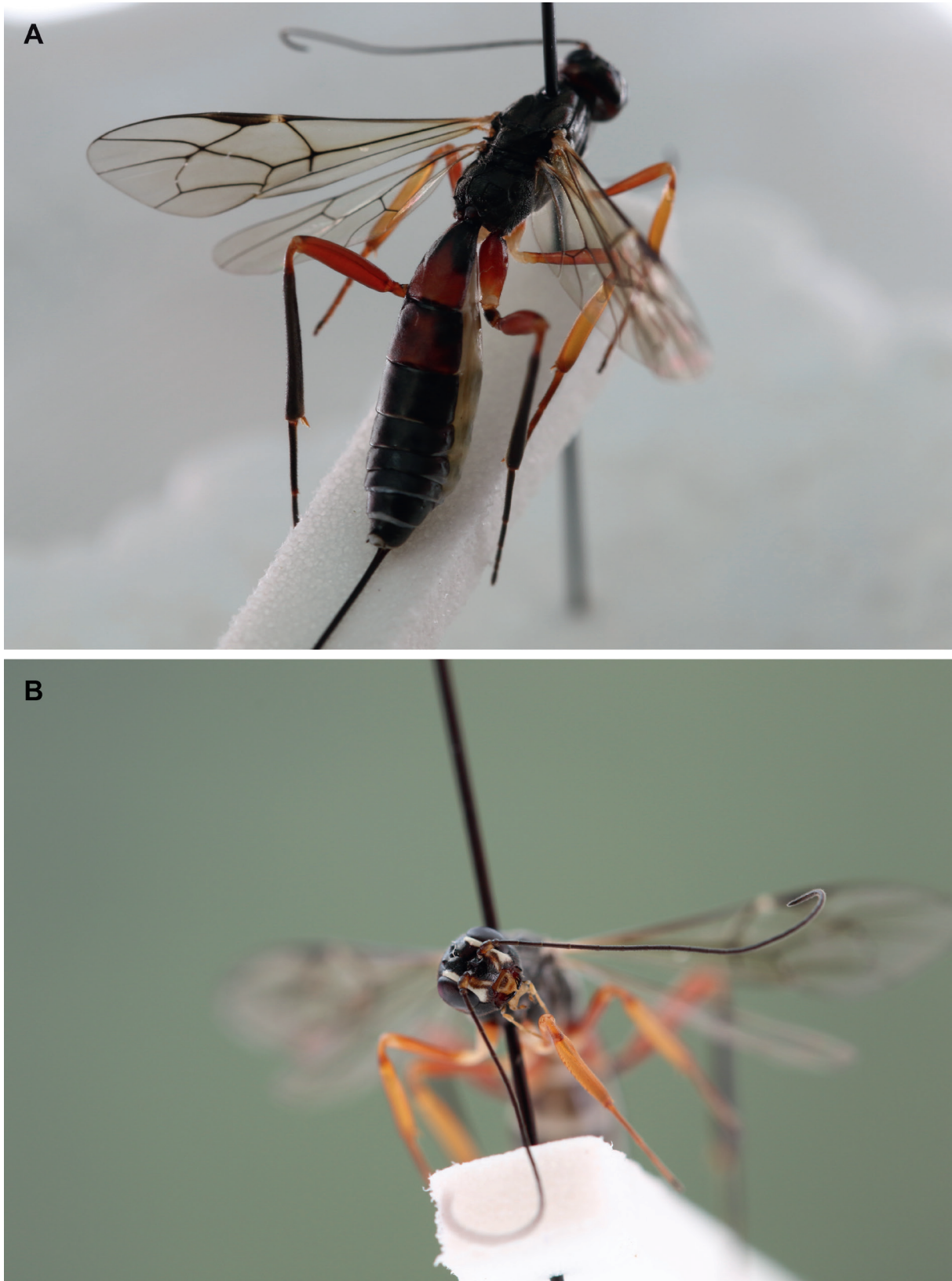


Fig. 70. *Xorides brachylabis* (Kriechbaumer, 1889), female. A, habitus, dorsal view. B, head, frontal view.
© Fons Verheyde.

***Xorides csikii* (Clement, 1938)**

With a body length of 4 to 5 mm, *X. csikii* is a very small wasp in the genus. Its head, mesosoma and first tergite of the metasoma are black, the remaining part red. The females have their subapical antennal segments 13–16 swollen, making an indistinct club with a total of 4–6 stout erect setae (VARGA, 2014). Its pterostigma is short and wide (about 3x as long as wide) and often bicoloured: basally white, apically black. The species seems to be rather uncommon, but not rare.

First report for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Boom, De Schorre (AN); 51°05'14"N 4°23'16"E; 7/v/2019; Y. Callaert leg.; field observation; F. Verheyde det. (ObsID: 171781041). • 1 ♀; Beersel, Begijnenbos (VB); 50°44'28"N 4°17'22"E; 7/v/2020; L. Decrick leg.; field observation of a dead specimen; F. Verheyde det. (ObsID: 191115899). • 1 ♀; Ieper (WVL); 50°51'15"N 2°51'51"E; 11/v/2020; M. Willems leg.; field observation; F. Verheyde det. (ObsID: 191364768).

THE NETHERLANDS: • 1 ♀; Arnhem (GE); 51°57'14"N 5°51'09"E; 18/iv/2019; B. Schoenmakers leg.; field observation; W. Pénigot & F. Verheyde det. (ObsID: 170925226). • 1 ♀; Eindhoven, Stratumse Heide (NB); 51°24'39"N 5°30'07"E; 17/iv/2020; R. Aussems leg.; field observation; F. Verheyde det. (ObsID: 189244105). • 1 ♀; Tilburg, Leijbos (NB); 51°32'34"N 5°00'51"E; 23/iv/2020; KNNV Tilburg leg.; coll. PH; malaise trap; P. Hoekstra det. (ObsID: 205272898). • 1 ♂ 1 ♀; Udenhout, de Brand (NB); 51°37'55"N 5°08'00"E; 25/iv/2020; KNNV Tilburg leg.; coll. PH; malaise trap (19-25); P. Hoekstra det. (ObsID: 210729367).

***Xorides sepulchralis* (Holmgren, 1860)**

Although it is not hard to recognise, this species has been rather poorly described in recent literature (descriptions can be found in CLÉMENT, 1938 and KASPARYAN, 1981b). *X. sepulchralis* is another large species which can reach up to 20 mm. Except for the first tergites (which are red), the species is predominantly black. Both the females and the males have white hind tarsi and white apical hands on all tibiae. Their pterostigma is clearly bicoloured, much like the abovementioned *X. csikii* (basally white, apically black). Their frontal orbits are white. It has more or less the same habitat as *X. alpestris* and some other *Xorides* spp.; dead or wounded (older) hardwood trees on forest borders. They are often found near their hosts on stems of these trees.

First report for Belgium and the Netherlands.

MATERIAL EXAMINED:

BELGIUM: • 1 ♀; Oudenaarde, Bos t'Ename (OVL); 50°50'40"N 3°38'16"E; IV.2014; Bos t'Ename leg.; coll. PNL; malaise trap; P.-N. Libert det. (ObsID: 134419357). • 1 ♀; Antwerpen, Sint-Annabos (AN); 51°14'06"N 4°22'15"E; 14/v/2018; R. Hendrickx leg.; field observation; F. Verheyde det. (ObsID: 156661447). • 1 ♀; Rillaar (VB); 50°58'40"N 4°54'06"E; 9/vi/2019; E. Van Dyck leg.; field observation; F. Verheyde det. (ObsID: 174061714). • 1 ♀; Deftinge (OVL); 50°46'58"N 3°50'11"E; 25/vii/2019; P. Vdv & A. Vl leg.; field observation; F. Verheyde det. (ObsID: 176960530). • 1 ♂; Beernem, Bulskampveld - Heideveld-Bornebeek (WVL); 51°07'07"N 3°17'24"E; 2/v/2020; A. De Ketelaere leg.; coll. ADK; field observation on *Fagus sylvatica*; W. Pénigot, A. De Ketelaere & F. Verheyde det. (ObsID: 190219081).

THE NETHERLANDS: • 1 ♀; Roerdalen, Nationaal Park de Meinweg (LIN); 51°09'39"N 6°08'42"E; 26/iv/2019; W. Vergoossen leg.; field observation; F. Verheyde det. (ObsID: 171194601). • 1 ♀; Liessel, Deurnse Peel (NB); 51°24'32"N 5°52'09"E; 1/vii/2019; J. Slaats leg.; field observation; F. Verheyde det. (ObsID: 175543067).

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