



This work is licensed under a Creative Commons Attribution 3.0 License.

Research article

urn:lsid:zoobank.org:pub:1A763AF4-A12F-4CCF-94CB-3981D29D7E55

A revision of the genus *Rhinotorus* Förster, 1869 (Hymenoptera, Ichneumonidae, Ctenopelmatinae), with descriptions of three new species and an illustrated identification key

Alexey V. RESHCHIKOV

Department of Zoology, Swedish Museum of Natural History, Box 50007, 104 05 Stockholm, Sweden.

E-mail: alexey.reshchikov@nrm.se

urn:lsid:zoobank.org:author:CB7D7449-FF41-4268-B594-D85D8032A91F

Abstract. The genus *Rhinotorus* Förster, 1869 is revised. Thirteen species are recognized including 3 species that are new to science (*R. jussilai* sp. nov., *R. campester* sp. nov., *R. tarsilatus* sp. nov.). *Saotis brachycerus* (Kasparyan & Kopelke, 2009) comb. nov. is considered to be a member of the genus *Saotis*. *Rhinotorus similis* (Brischke, 1892) is tentatively recorded from Austria and Sweden for the first time. A number of new host records are also provided: *Cladius pectinicornis* (Geoffroy, 1785) for *R. leucostomus* (Gravenhorst, 1829), *Nematus lucidus* (Panzer, 1801) for *R. nasutus* (Gravenhorst, 1829) and *N. papillosus* (Retzius, 1783) for *R. jussilai* sp. nov.

Keywords. Holarctic, new host records, parasitoid wasps, koinobiont endoparasitoid, Mesoleiini.

Reshchikov A.V. 2016. A revision of the genus *Rhinotorus* Förster, 1869 (Hymenoptera, Ichneumonidae, Ctenopelmatinae), with descriptions of three new species and an illustrated identification key. *European Journal of Taxonomy* 235: 1–40. <http://dx.doi.org/10.5852/ejt.2016.235>

Introduction

Rhinotorus Förster, 1869 is a genus in the family Ichneumonidae (Hymenoptera), the most species-rich family of Hymenoptera and one of the largest insect families (Townes *et al.* 1965). It belongs to the tribe Mesoleiini, a large tribe in the subfamily Ctenopelmatinae with 25 genera. The subfamily includes around 760 described Western Palearctic species (Yu *et al.* 2012; Kasparyan 2012, 2014; Reshchikov 2013, 2015).

Rhinotorus is predominantly a Palearctic genus. Prior to this study only 12 species were known, including one species from the Nearctic Region (Yu *et al.* 2012). Nearly all ctenopelmatines are koinobiont endoparasitoids of sawflies, and most records are from the largest family of sawflies (Tenthredinidae) (Table 1).

Material and methods

This study is a part of 2 projects entitled “Ctenopelmatinae, a poorly known group of parasitic wasps in Sweden” funded by The Swedish Taxonomy Initiative (<http://www.slu.se/en/collaborative-centres-and-projects/artdatabanken/the-swedish-taxonomy-initiative/>) and “Filling the blanks: a quest for

Table 1. Host records of *Rhinotorus*.

<i>Rhinotorus</i> species	Host record	Reference
<i>R. compactor</i> (Thunberg, 1822)	<i>Nematus latipes</i> Villaret, 1832	Rudow (1919)
	<i>Nematus septentrionalis</i> (Linnaeus, 1758), <i>Heterarthrus microcephalus</i> (Klug, 1818)	Zirngiebl (1961)
	<i>Nematus alniastri</i> (Scharfenberg, 1805)	Ozols (1961)
	<i>Nematus papillosus</i> (Retzius, 1783) and <i>N. pavidus</i> Serville, 1823	Zinnert (1969)
	<i>Cladius grandis</i> (Serville, 1823)	Györfi (1947)
<i>R. latvicus</i> (Ozols, 1928)	<i>Cladius pectinicornis</i> (Geoffroy, 1785)	Ozols (1928, 1961)
<i>R. ovalis</i> (Davis, 1897)	<i>Hemichroa crocea</i> (Geoffroy, 1785)	Townes (1945)

overlooked Norwegian species in poorly known insect taxa: Hymenoptera: Ichneumonidae” funded by Artsdatabanken (Norwegian Species information Centre, <http://www.nhm.uio.no/english/research/ncb/research/major-projects/ichneumonidae/>). The most important source of material was the Swedish Malaise Trap Project (SMTP) (<http://www.stationlinne.se/en/research/the-swedish-malaise-trap-project-smtp/>), a large-scale, national survey of insects based at Station Linné, Öland, Sweden. Seventy-two Malaise traps were placed at 52 different locations chosen for their potential species richness and special fauna, flora, geology and distributed across the country, from Sandhammaren on the south coast of Skåne to Nuolja treeless mountains of Abisko in the north.

Depositories

- ANSP = Academy of Natural Sciences of Philadelphia, Philadelphia, Pennsylvania, U.S.A. (Jason Weintraub)
- BMNH = Natural History Museum, London, U.K. (Gavin Broad)
- HNHM = Hungarian Natural History Museum, Budapest, Hungary (Zoltán Vas)
- MZH = Finnish Museum of Natural History, Helsinki, Finland (Juho Paukkunen)
- MZLU = Zoologiska Museet, Lunds Universitet, Lund, Sweden (Christer Hansson)
- NCMK = Norwich Castle Museum, Norwich, U.K. (Tony Irwin)
- NHRS = Swedish Museum of Natural History, Stockholm, Sweden (Hege Vårdal)
- NTNU = Norwegian University of Technical Science and Natural History (Torbjørn Ekrem)
- RJ = Dr. Jussila’s collection, Turku, Finland (Reijo Jussila)
- RMNH = Naturalis Biodiversity Center, Leiden, the Netherlands (Frederique Bakker)
- SMTP = Swedish Malaise Trap Project, Station Linné, Öland, Sweden (Dave Karlsson)
- SMF = Senckenberg Naturmuseum, Frankfurt, Germany (Jens-Peter Kopelke)
- UUZM = Museum of Evolution, Uppsala University, Uppsala, Sweden (Hans Mejlom)
- ZIN = Zoological Institute of Russian Academy of Science, St Petersburg, Russia (Dmitry Kasparyan)
- ZMUC = Zoological Museum, University of Copenhagen, Copenhagen, Denmark (Lars Vilhelmsen)
- ZMUN = Natural History Museum, University of Oslo, Oslo Norway (Vladimir Gusarov)
- ZMUT = Zoological Museum, University of Turku, Turku, Finland (Ilari Sääksjärvi)

Collections of the Zoological Museum, University of Bergen (ZMUB) and University of Tromsø Breivika (TZUM) were examined as well. Type specimens housed in the collections of the NHRS are databased and the data is available at www.naturarv.se and also at www.gbif.org.

RESHCHIKOV A.V., A revision of the genus *Rhinotorus* Förster, 1869

Morphological terminology follows Gauld (1997) and Karlsson & Ronquist (2012). Unless indicated as new records (marked by “*”), all distributional and host records in the sections “distribution” and “host records” are extracted from the Taxapad database (Yu *et al.* 2012). Photographs of the specimens were taken with a Canon EOS 5D digital camera and stacked using Zerene® software.

Results

Class Hexapoda Blainville, 1816
Order Hymenoptera Linnaeus, 1758
Suborder Apocrita Latreille, 1810
Superfamily Ichneumonoidea Latreille, 1802
Family Ichneumonidae Latreille, 1802
Subfamily Ctenopelmatinae Förster, 1869
Tribe Mesoleiini Thomson, 1883

Genus *Rhinotorus* Förster, 1869

Rhinotorus Förster, 1869: 211.

Spudaea Förster, 1869: 211 Preocc.

Spudaeus Thomson, 1883: 932 Preocc.

Prospudaea Hincks, 1944: 35.

Type species: *Spudea longicornis* Schmiedeknecht, 1914; designated by Perkins (1962).

Diagnosis (updated from Townes 1970)

Small to moderate sized species, fore wing length 4.5–9 mm. Ground colour mainly black. Antenna slender to stout, with 28–38 flagellomeres. Scape 1.25–1.6 times as long as broad. Face usually convex and densely punctate. Clypeus small, convex, around 0.3–0.4 times as long as broad, distinctly separated from face by a deep impression, medially projecting, shining and sparsely punctate, its apical margin rounded, laterally impressed and sharp. Malar space 0.5–0.7 times basal mandible width. Occipital carina complete. Mandible with teeth usually of equal length. Notaulus distinct. Mesopleuron usually granulate, striated, or densely and coarsely punctate. Metapleuron weakly shining, rugose, with rather dense punctation in upper part. Propodeum strongly rugose. Area superomedia usually fused with area basalis. Costula absent. Area apicalis large, trapezoidal, often with longitudinal carina and sometimes with striation. Spurs of middle and hind tibiae of unequal length. Tarsal claws not pectinate. Fore wing with pterostigma elongate. 2m-cu straight, with a single bulla. Cu-a vertical, slightly postfurcal. Hind wing with 1/Cu & cu-a intercepted by 2/Cu in lower 0.5. Metasoma coarsely punctate and reticulate rugose. First metasomal tergite usually short and projecting dorsally, its dorsal longitudinal carinae reaching middle of tergite, with a strong impression between carinae in basal part. Subapical impression strong. Second metasomal tergite with transverse impression starting immediately after middle of tergite. Third tergite with weak transverse impression. Ovipositor sheaths weakly clavate. Ovipositor stout at base with triangular shape before shallow subapical notch, its lower valvae slightly swollen before thin tip and tip of upper valve rather elongate after notch. Parameres broad basally and weakly elongate apically, extending beyond aedeagus. Volsella moderately large and notched apically. Aedeagus apically downcurved.

Tribal diagnosis

The genus belongs to the tribe Mesoleiini, whose representatives can be distinguished from other ctenopelmatines by combination of the following characters: epicnemial carina reaching fore edge of

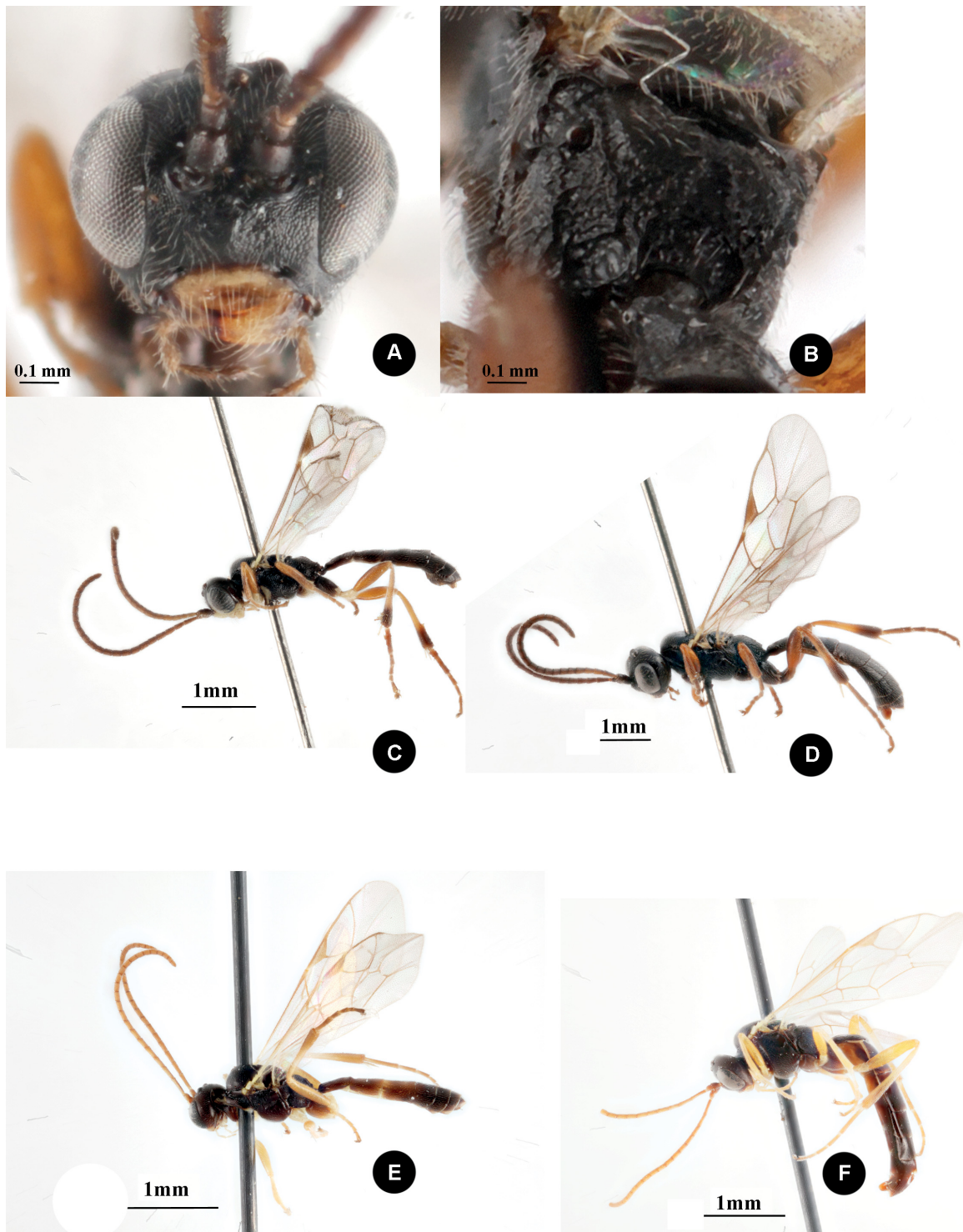


Fig. 1. A–D. *Saotis brachycerus* (Kasoparyan & Kopelke, 2009) comb. nov. A. Face. B. Propodeum. C. Habitus paratype, ♂ *S. brachycerus* (Kasoparyan & Kopelke, 2009). D. Habitus holotype, ♀ *S. brachycerus* (Kasoparyan & Kopelke, 2009). E–F. *Saotis granulator* Kasoparyan & Kopelke, 2010. E. Habitus ♂ *S. granulator* Kasoparyan & Kopelke, 2010. F. Habitus ♀ *S. granulator* Kasoparyan & Kopelke, 2010.



Fig. 2. *Mesoleius roepkei* Teunissen, 1945, holotype, ♀. **A.** Face. **B.** First metasomal tergite with shallow subapical transverse impressions (arrow). **C.** Habitus.

mesopleuron, notch between basal part of propodeum (at its middle) and hind edge of postscutellum V-shaped, glymma present, claws mostly without pecten.

Species in the genus *Rhinotorus* can be recognized by combination of the following characters: first and second metasomal tergites with subapical transverse impressions. Metasoma strongly punctate and reticulate rugose. Median dorsal carinae of first metasomal tergite distinct. 2m-cu with a single bulla. Areolet absent. Glymma present. Hind wing with 1/Cu & cu-a intercepted by 2/Cu in lower 0.5.

Some representatives of other Mesoleiini genera also have subapical transverse impressions of metasomal tergites [e.g., *Mesoleius roepkei* Teunissen, 1945 and *Saotis brachycerus* (Kasoparyan & Kopelke, 2009) comb. nov. (Figs 1, 2C–D)], but these have a broad and short ovipositor sheath, or a compressed metasoma as in *Saotis* (Fig. 1). *Saotis brachycerus* (Kasoparyan & Kopelke 2009) comb. nov. originally was described in the genus *Rhinotorus* with note “*Saotis*” in the brakes (Kasoparyan & Kopelke 2009). However it should be considered as *Saotis* since it has the ovipositor sheaths shortly elliptic but not elongate cone- or club-shaped as in *Rhinotorus*.

***Rhinotorus alpinus* (Roman, 1909)**

Fig. 3

Spudaea alpina Roman, 1909: 347, lectotype examined.

Diagnosis

This species is distinguished from other species in the genus by the following characters: face tapering downwards in anterior view (Fig. 3A); mesopleuron coriaceous, matt, and impunctate (Fig. 3B); hind femur and basal tarsomere of hind leg slender (5.5 times as long as broad and 6.7 times as long as broad, respectively); transverse impression of first metasomal tergite not defined (Fig. 3E); face and scutellum black; metasoma red centrally (Fig. 3E).

Type material examined

Lectotype

SWEDEN: ♀ (designation by R. Jussila, 1965), Lapland, Sarek, Popp, NHRS-HEVA000001984, NHRS.

Paralectotype

SWEDEN: ♀ (designation by R. Jussila, 1965, wrongly designated as ♂), Norrbotten, Luleå, 18 Aug. 1904, leg. A. Roman, NHRS-HEVA000001985, NHRS.

Other material examined

FINLAND: 1 ♀, Karuna, 13 Jun. 1966, leg. R. Jussila, RJ; 1 ♀, the same locality as previous, 20 Jun. 1980; 1 ♀, the same locality as previous, 20 Jun. 1998; 1 ♀, Northern Ostrobothnia, Kuusamo, Kiutaköngäs, 2 Jul. 1998, leg. R. Jussila, RJ; 1 ♀, Helsinki, Huopalahti, Munkkiniemi, 21 Jun. 1945, leg. Saarinen, MZH; 1 ♀, Kyrkslätt, 1877, leg. R. Frev, MZH; 1 ♀, Tavastia, Loppi, 4 Jun. 1942, leg. Saarinen, MZH; 1 ♀, Hattula, leg. L.v. Essen, MZH; 1 ♀, Porvoo, Seitlax, 10 Jun. 1931, leg. H. Ahlqvist, MZH; 1 ♀, Pihtipudas, 9 Jun. 1945, leg. Saarinen, MZH; 1 ♀, Joensuu, Eno, leg. Woldstedt, 1441, MZH; 1 ♀, Inari, 4 Jul. 1960, leg. Karvonen, MZH; 1 ♀, Inari, 6 Jul. 1962, leg. Karvonen, MZH; 1 ♀, Inari, 5 Jul. 1965, leg. Karvonen, MZH; 2 ♀♀, Inari, 6 Jul. 1967, leg. Karvonen, MZH; 1 ♀, Inari, 28 Jun. 1967, leg. Karvonen, MZH; 1 ♀, Lappi, Muonio, leg. Montell, MZH; 1 ♀, Lapland, Malla, leg. R. Frey, MZH; 1 ♀, Uusimaa, Lohja, 14 Jun. 1927, leg. Tuomikoski, MZH; 1 ♀, Lapland, Utsjoki, Outakoski, 17 Jun. 1947, leg. A. Saarinen, MZH.



Fig. 3. *Rhinotorus alpinus* (Roman, 1909), lectotype, ♀. **A.** Face. **B.** Mesopleuron. **C.** Propodeum. **D.** Head dorsally. **E.** Habitus.

RUSSIA: 1 ♀, Murmansk Oblast, Kola, leg. J.A. Palmén, 682, MZH; 1 ♀, Murmansk Oblast, Kandalaksha, leg. J. Sahlberg, 127, MZH; 1 ♀, Konosero, Levander, 701, MZH; 2 ♀♀, Murmansk Oblast, Kandalaksha, leg. R. Frey, 1532, 2263, MZH; 1 ♀, Leningrad Oblast, Pervomayskoye (Kivennapa), 1934, leg. Krogerus, MZH.

SWEDEN: 1 ♀, Dalarna, Idre Nipfjället, 1 Aug. 1928, NHRS; 1 ♂, Stockholm, 1939, leg. R. Malaise, NHRS; 1 ♀, Uppland, 24/6, 1907, A. Roman, NHRS; 1 ♂, Vassijaure, 16 Jul. 1918, leg. R. Malaise, NHRS; 1 ♀, Småland, Nybro kommun, Alsterbro/Alsterån, mixed forest at N 6312220, E 506997 (= TrapID 1008), 22 May–1 Jun. 2006 (= coll. event ID 1735), leg. SMTP, NHRS.

Description

Female

Fore wing 7 mm long. Antenna slender, about as long as fore wing, with 28 flagellomeres. Ratio of length of 1st plus 2nd flagellomeres to eye height 1.2. Scape 1.25 times as long as broad. Head weakly narrowed behind eyes, matt, without punctures and shagreened (Fig. 3D). Lateral ocellus separated from eye margin by 1.8 times their widest diameter. Face transverse and tapering downwards in anterior view, 2 times as wide as high, shagreened and without punctures (Fig. 3A). Clypeus 0.35 times as high as wide, distinctly separated from face by a deep groove, projecting medially, shining and impunctate, its apical margin thin and impressed laterally. Clypeal fovea not enlarged. Malar space 0.7 times basal mandible width. Occipital carina complete. Mandible teeth almost equal but lower one is slightly shorter than upper one.

Mesoscutum weakly shining, finely granulate, with dense and irregular punctation. Notaulus distinct. Mesopleuron shining, finely granulate and weakly striated in upper part (Fig. 3B). Metapleuron rugose and weakly shining. Propodeum strongly rugose (Fig. 3C). Area superomedia fused with area basalis, their combined area 2.6 times as long as broad. Costula absent. Area apicalis trapezoidal, 0.6 times as long as broad, and equal to 0.5 of propodeum, often with longitudinal carina and sometimes with striation. Spiracles weakly oval, 1.2 times as long as broad. Hind femur 5.5 times as long as broad. Hind tibia 7.8 times as long as apically broad. First tarsomere of hind leg 6.7 times as long as broad and 2.1 times as long as second tarsomere. Claws not pectinate. Fore wing with pterostigma elongate, around 3.6 times as long as broad and intercepted by Rs before its middle. 2m-cu straight, with a single bulla. Cu-a reclival, postfurcal. Hind wing with 1/Cu & cu-a intercepted by 2/Cu in lower 0.5.

Colouration: body black; clypeus, antennal flagellum, femora, tibiae (except apical part of hind tibia), and second and third metasomal tergites reddish (Fig 3).

Male

Morphologically similar to female. Parameres projecting weakly beyond aedeagus.

Host records

Unknown.

Distribution

Finland, the Netherlands, Norway, Poland, Russia*, Sweden.

Rhinotorus campester sp. nov.

urn:lsid:zoobank.org:act:806F63AB-DD96-4D66-BBC5-14B1C225D763

Fig. 4

Diagnosis

This species is distinguished from other species in the genus by the following characters: face and clypeus weakly projecting; clypeus 0.4 times as high as wide, distinctly separated from face by a deep impression, strongly projecting medially, shining and sparsely punctate, its apical margin thin and laterally impressed (Fig. 4A); male with lateral lobes of mesoscutum and lower part of mesopleuron yellow (Fig. 4D); male first metasomal tergite flat in profile (Fig. 4E); parameres broad (Fig. 4B–C).

Etymology

Species epithet (Latin “*campester*” – flat) refers to the morphology of the first metasomal tergite (Fig. 4E).

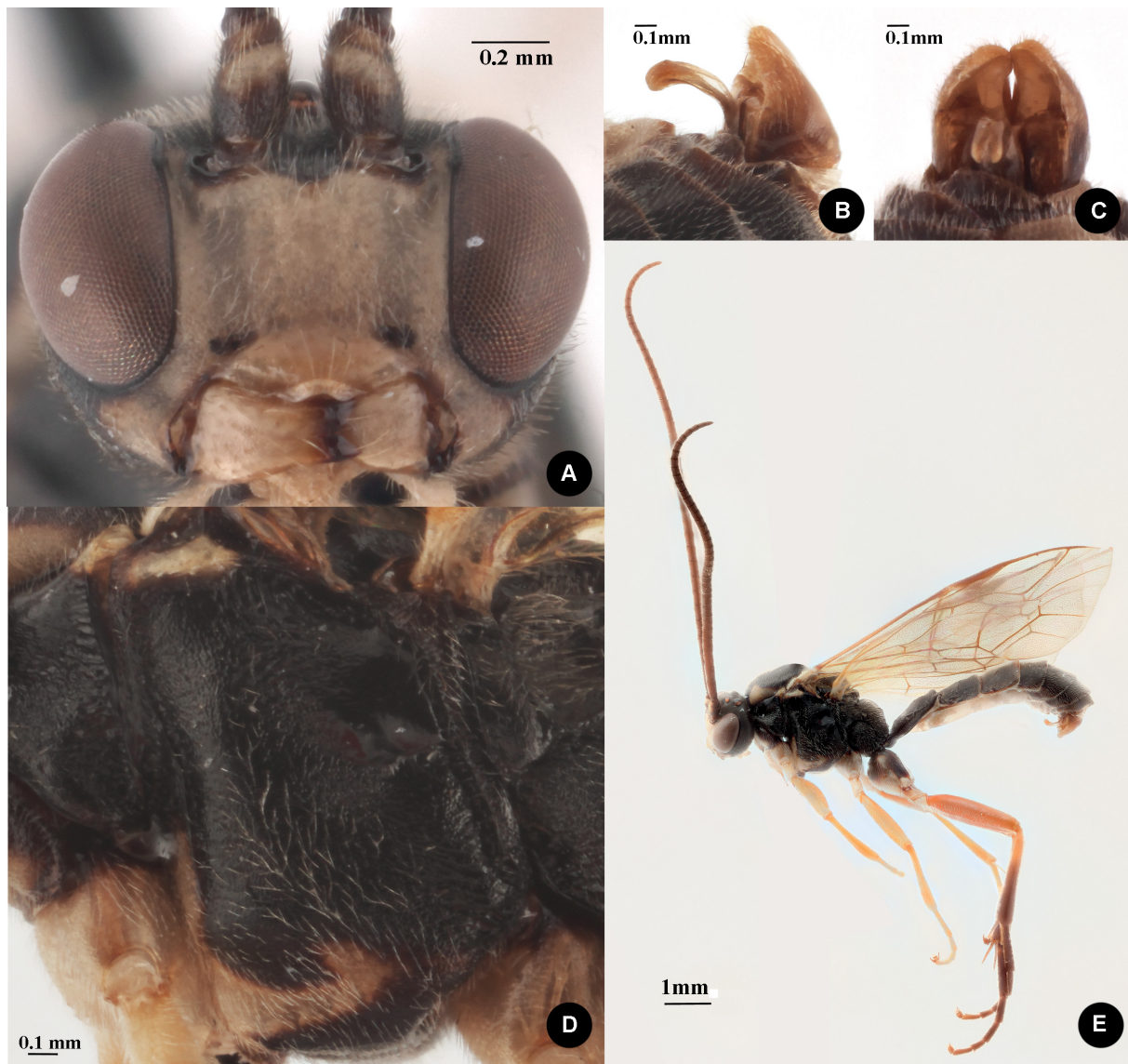


Fig. 4. *Rhinotorus campester* sp. nov., holotype, ♂. A. Face. B. Male genitalia laterally. C. Male genitalia ventrally. D. Mesopleuron. E. Habitus.

Type material

Holotype

NORWAY: ♂, Nord-Trøndelag, Høylandet, Tverråa stream 340 m, 64.39° N 12.08° E, MT, 1 Jul. 1986, leg. K. Aagaard, NTNU.

Description

Female

Unknown.

Male

Fore wing length around 9 mm. Antenna slender, around 1.3 times as long as fore wing and with 38 flagellomeres. Ratio of length of 1st plus 2nd flagellomeres to eye height 0.85. Scape 1.25 times as long as broad. Head very weakly narrowed behind eyes, matt, without punctures and shagreened. Lateral ocellus separated from eye margin by 1.6 times their widest diameter. Face transverse, 1.9 times as broad as high and densely punctate (Fig. 4A). Clypeus 0.4 times as high as wide, distinctly separated from face by a deep impression, strongly projecting medially, shining and sparsely punctate, its apical margin thin and laterally impressed. Clypeal fovea deep. Malar space 0.7 times basal mandible width. Occipital carina complete. Mandible teeth of equal length.

Mesoscutum weakly shining, finely granulate and with dense punctation. Notaulus distinct. Mesopleuron finely granulate, striated in upper part, shining, distinctly densely and coarsely punctate (Fig. 4D). Metapleuron weakly shining, rugose, with rather dense but vague punctation in upper part. Propodeum strongly rugose. Area superomedia fused with area basalis, their combined area 2.6 times as long as broad. Costula absent. Area apicalis trapezoidal, 0.6 times as long as broad, and equal to 0.5 of propodeum, often with longitudinal carina and sometimes with striation. Spiracles weakly oval, 1.56 times as long as broad. Hind femur 5 times as long as broad. Hind tibia 7.9 times as long as apically broad. First tarsomere of hind leg 6.7 times as long as broad and 2.1 times as long as second tarsomere. Claws not pectinate. Fore wing with pterostigma elongate, around 3 times as long as broad and intercepted by Rs before its middle. 2m-cu straight, with a single bulla. Cu-a vertical, slightly postfurcal. Hind wing with 1/Cu & cu-a intercepted by 2/Cu in lower 0.5.

Metasoma coarsely punctate and reticulate rugose. First metasomal tergite as long as apically broad and projecting dorsally, its dorsal longitudinal carinae reaching middle of tergite and with strong impression between carinae in basal part. Area between dorsal carina and spiracle with longitudinal impression. Spiracles projecting laterally. Subapical transverse impression strong, slightly wider laterally than medially. First metasomal sternite 0.3 times as long as its tergite. Second metasomal tergite 0.5 times as long as apically broad, its transverse impression starting immediately after middle of tergite. Third tergite with weak transverse impression. Parameres broad (Fig. 4B–C).

Host records

Unknown.

Distribution

Norway.

Rhinotorus compactor (Thunberg, 1822)

Fig. 5

Ichneumon compactor Thunberg, 1822: 273, lectotype examined.

Polyblastus albotrochanteratus Strobl, 1903: 61.

RESHCHIKOV A.V., A revision of the genus *Rhinotorus* Förster, 1869

Trematopygus atratus Holmgren, 1857: 181, lectotype examined.

Bassus quadriguttatus Vollenhoven, 1873: 197.

Mesoleius compactor var. *rufomedia* Teunissen, 1953: 33.

Diagnosis

This species is distinguished from other species in the genus by the following characters: metasoma black (Fig. 5I); face and mesopleuron shining, rather densely and distinctly punctate (Fig. 5A–B, H); face and clypeus strongly projecting; hind tibia entirely black (Fig. 5I); metasomal tergites 1–3 strongly punctate and with strong transverse impressions (Fig. 5E).

Type material examined

Ichneumon compactor Thunberg, 1822: 273. Holotype ♀, SWEDEN, UUZM.

Trematopygus atratus Holmgren, 1857: 181. Holotype ♀, SWEDEN, Lappland, NHRS-HEVA000001983, NHRS.

Other material examined

AUSTRIA: 1 ♂, BMNH.

BELGIUM: 1 ♀, Brabant, Bois de Rixensart, 2 Jun. 1961, leg. B.K. & R.D. Eady, BMNH.

DENMARK: 1 ♂, Å. Øle, BMNH; 9 ♀♀, leg. Schiødte, ZMUC.

FINLAND: 1 ♀, Helsinki, Munkkiniemi, 1947, leg. M. Häyrynen, MZH; 1 ♀, 7 ♂♂, Pirkanmaa, Ruovesi, 1932, leg. Saarinen, MZH; 1 ♂, Uusimaa, Huopalahti, 1945, leg. Saarinen, MZH; 1 ♂, Åboland, Houtskär, 1992, leg. J. Waselius, MZH; 2 ♂♂, Åboland, Pernå, 26 Jun. 1944, leg. Å. Nordström, MZH.

RUSSIA: 1 ♀, Semojärvi, leg. J. Carpelan, MZH; 1 ♀, Sakha, Yakutsk, 9–10 km Vilyuysk road, 22 Jul. 1970, leg. D. Kasparyan, ZIN.

POLAND: 1 ♀, Wrocław, Sępólno, leg. G. Heinrich, NHRS-HEVA000002059, NHRS.

SWEDEN: 3 ♀♀, Småland, leg. C. Boheman, NHRS; 5 ♀♀, Torne lappmark, Torneträsk, 28 Jul. 1910, leg. R. Malaise, NHRS.

U.K.: 1 ♀, England, Surrey, Claygate, 23 May 1937, leg. E.B. Britton, BMNH; 2 ♀♀, England, Esher, 3 May 1953, leg. D.M.S. Perkins, BMNH; 1 ♀, England, Essex, Colchester, 1903, Harwood coll., BMNH; 1 ♀, Harwood coll., BMNH.

Description

Female

Fore wing about 6–9 mm long. Antenna slender, around 1.2 times as long as fore wing, with 34–36 flagellomeres. Ratio of length of 1st plus 2nd flagellomeres to eye height 1.1. Scape 1.6 times as long as broad. Head not narrowed behind eyes, matt, with dense, strong punctures on a shagreened surface (Fig. 5F). Lateral ocellus separated from eye margin by 1.6 times their widest diameter. Face transverse, 1.9 times as broad as long, with dense punctures (Fig. 5A–B). Clypeus 0.4 times as high as wide, distinctly separated from face by a deep impression, strongly projecting medially, shining and sparsely punctate, its apical margin obtuse medially and impressed laterally. Clypeal fovea deep. Malar space 0.7 times basal mandible width. Occipital carina complete. Mandible teeth of equal length.

Mesoscutum weakly shining, finely granulate, with dense and coarse uniform punctation. Notaulus distinct. Mesopleuron finely granulate, striated in upper part, shining, distinctly densely and strongly punctate (Fig. 5H). Metapleuron weakly shining, rugose, with rather dense but vague punctation in upper part. Propodeum strongly rugose (Fig. 5D). Area superomedia fused with area basalis, their combined area 2.6 times as long as broad. Costula absent. Area apicalis trapezoidal, 0.6 as long as broad,

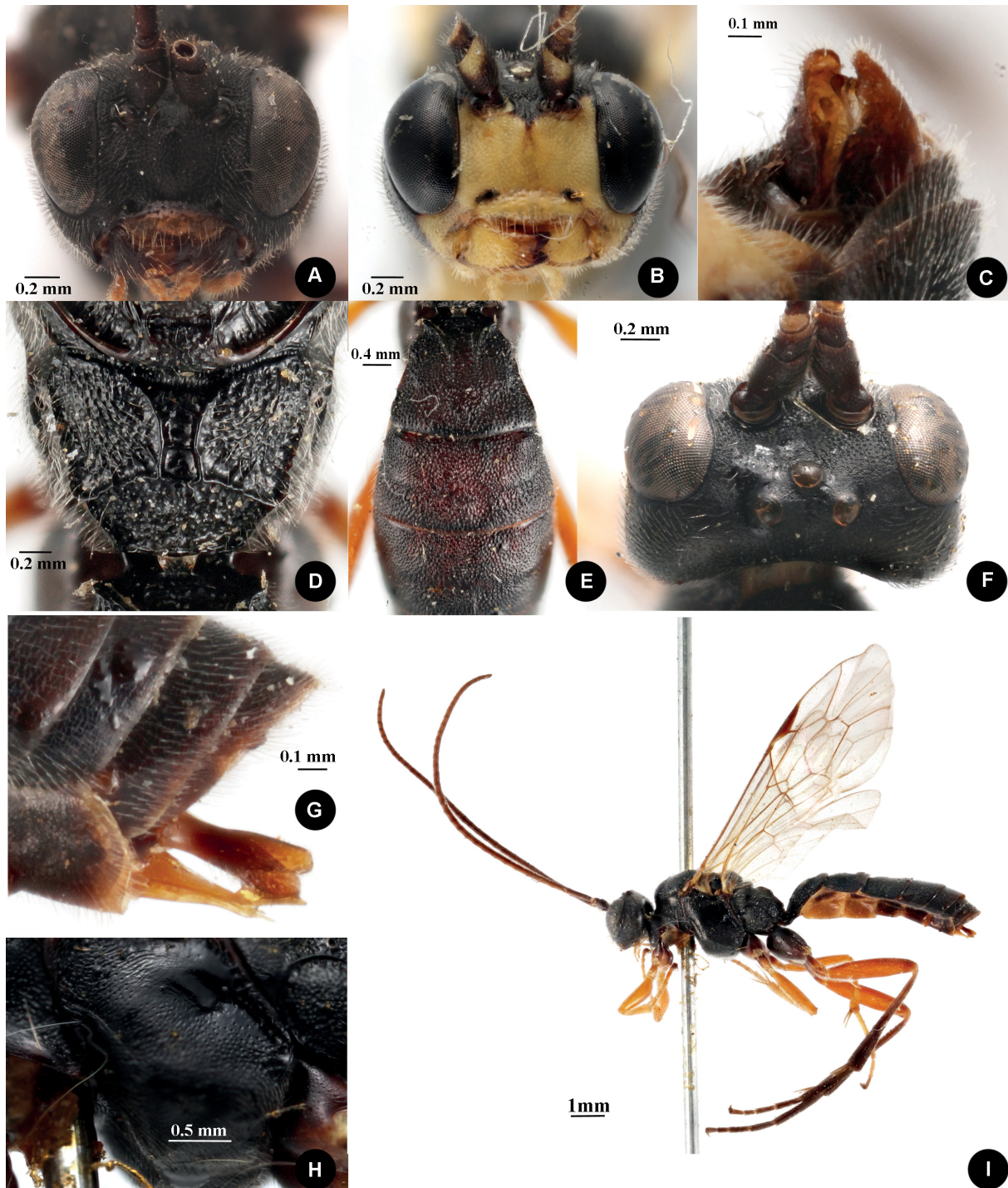


Fig. 5. *Rhinotorus compactor* (Thunberg, 1822). A. ♀ face. B. ♂ face. C. ♂ genitalia. D. Propodeum. E. Metasoma dorsally. F. Head dorsally. G. Ovipositor. H. Mesopleuron. I. Habitus.

RESHCHIKOV A.V., A revision of the genus *Rhinotorus* Förster, 1869

and equal to 0.5 of propodeum, often with longitudinal carina and sometimes with striation. Spiracles weakly oval, 1.56 times as long as broad. Hind femur 5 times as long as broad. Hind tibia 7.9 times as long as apically broad. First tarsomere of hind leg 6.7 times as long as broad and 2.1 times as long as second tarsomere. Claws not pectinate. Fore wing with pterostigma elongate, around 3 times as long as broad and intercepted by Rs before its middle. 2m-cu straight, with a single bulla. Cu-a vertical, slightly postfurcal. Hind wing with 1/Cu & cu-a intercepted by 2/Cu in lower 0.5.

Metasoma coarsely punctate and reticulate rugose (Fig. 5E). First metasomal tergite as long as apically broad and projecting dorsally, its dorsal longitudinal carinae reaching middle of tergite and with a strong impression between carinae in basal part. Area between dorsal carina and spiracle with longitudinal impression. Spiracles projecting laterally. Subapical impression strong and slightly wider laterally than medially. First metasomal sternite 0.3 times as long as its tergite. Second metasomal tergite 0.5 times as long as apically broad, its transverse impression starting immediately after middle of tergite. Third tergite with weak transverse impression. Ovipositor sheaths weakly clavate (Fig. 5G) and 0.6 times as long as height of last visible tergite. Ovipositor stout at base with triangular shape before shallow subapical notch, its lower valvae weakly swollen before thin tip and tip of upper valve after notch 0.28 times as long as ovipositor length (Fig. 5G).

Colouration: body mostly black (Fig. 5); antennal flagellomeres and pterostigma brownish; clypeus, legs (except coxa, hind tibia and tarsus), and second and third metasomal sternites reddish.

Male

Morphologically similar to female, but with clypeus shorter (0.3 times as high as wide) (Fig. 5B) and upper tooth of mandible slightly longer than lower. Parameres broad basally and weakly elongate apically, extending beyond aedeagus, volsella moderately large with apical notch, aedeagus apically downcurved (Fig. 5C).

Colouration as in female, but middle tergites sometimes with red spots. Face, clypeus, malar space, mandibles (excluding teeth), upper part of scape, flagellum ventrally, fore and middle coxae and trochanters, lower part of propleuron, hind angle of pronotum, tegulae and sternites yellow.

Host records

Nematus alniastri (Scharfenberg, 1805), *N. grandis* (Serville, 1823), *N. latipes* Villaret, 1832, *N. septentrionalis* (Linné, 1758), *N. papillosus* (Retzius, 1783), *N. pavidus* Serville, 1823, *Heterarthrus microcephalus* (Klug, 1818).

Distribution

Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Hungary, Ireland, Latvia, the Netherlands, Norway, Poland, Russia (Kursk, St. Petersburg, Tambov Regions), Sweden, U.K.

Rhinotorus jussilai sp. nov.

urn:lsid:zoobank.org:act:DA4CDDEB-8DD2-4325-8948-BDE2E47AE2C9

Fig. 6

Diagnosis

This species is distinguished from other species in the genus by the following characters: face and mesopleuron matt or weakly shining, shagreened, and at most weakly punctate; face and clypeus weakly projecting centrally; hind tibia basally reddish (Fig. 6D); metasoma black; first metasomal tergite convex in profile; metasomal tergites 1–3 strongly punctate with strong transverse impressions; parameres relatively thin.

Etymology

This species is named after Reijo Jussila.

Type material

Holotype

FINLAND: ♀, Lapland, Inari, Ivalo, 7 Jul. 1965, leg. V.V. Karvonen, RJ.

Paratypes

FINLAND: 1 ♀, Lapland, Utsjoki, 2 Jul. 1967, leg. V.V. Karvonen, RJ; 1 ♂, Lapland, Inari, Ivalo, 26 Jun. 1969, leg. V.V. Karvonen, RJ; 1 ♂, Wolleh, 4 Aug. 1909, leg. K. Pfankuch, NHRS-HEVA000002060, NHRS.

U.K.: 1 ♂, England, Colchester, 1910, Harwood coll., B.M. 1945-120, BMNH; 1 ♀, England, Colchester, 1903, Harwood coll., B.M. 1945-120, BMNH; 1 ♀, England, Whaddon Chase, 18 May 1948, R.B. Benson, B.M. 1948-316, BMNH; 3 ♀♀, 5 ♂♂, ex. *Nematus papillosus* (Retzius, 1783), Aug.–Sep. 1961, *Prospudaea atrata* Hlgr., det. G.J. Kerrich 1962? BMNH.

Description

Female

Fore wing around 6–7 mm long. Antenna slender, about as long as fore wing, with 30–32 flagellomeres. Ratio of length of 1st plus 2nd flagellomeres to eye height 1.0. Scape 1.6 times as long as broad. Head not narrowed behind eyes, matt, with scarce, fine punctures on shagreened surface. Lateral ocellus separated from eye margin by 1.6 times their widest diameter. Face transverse 2 times as wide as high, with scattered fine punctures (Fig. 6A). Clypeus 0.4 times as high as wide, distinctly separated from face by a deep impression, projecting medially, weakly shining and sparsely punctate, its apical margin thin and laterally impressed. Clypeal fovea shallow. Malar space 0.75 times of basal mandible width. Occipital carina complete. Mandible teeth of equal length.

Mesoscutum weakly shining, not granulate and with scattered but uniformly strong punctation. Notaulus distinct. Mesopleuron finely granulate, striated in upper part, shining, distinctly densely and strongly punctate (Fig. 6B). Metapleuron weakly shining, rugose, with rather dense but vague punctation in upper part. Propodeum strongly rugose (Fig. 6C). Area superomedia fused with area basalis, their combined area 2.6 times as long as broad. Costula absent. Area apicalis trapezoidal, 0.6 times as long as broad, and equal to 0.5 of propodeum, often with longitudinal carina and sometimes with striation. Spiracles weakly oval, 1.56 times as long as broad. Hind femur 5 times as long as broad. Hind tibia 7.9 times as long as apically broad. First tarsomere of hind leg 6.7 times as long as broad and 2.1 times as long as second tarsomere. Claws not pectinate. Fore wing with pterostigma elongate, around 3 times as long as broad and intercepted by Rs before its middle. 2m-cu straight, with a single bulla. Cu-a vertical, slightly postfurcal. Hind wing with 1/Cu & cu-a intercepted by 2/Cu in lower 0.5.

Metasoma reticulate rugose and strongly punctate. First metasomal tergite as long as apically broad (Fig. 6C) and projecting dorsally, its dorsal longitudinal carinae reaching middle of tergite, with a strong impression between carinae in basal part. Area between dorsal carina and spiracle with impression. Spiracles projecting laterally. Subapical transverse impression strong and slightly wider laterally than medially. First metasomal sternite 0.3 times as long as its tergite. Second metasomal tergite 0.5 times as long as apically broad, its transverse impression starting immediately after middle of tergite. Third tergite with weak transverse impression. Ovipositor sheaths weakly clavate and 0.6 times as long as height of last visible tergite. Ovipositor stout at base with a triangular shape before shallow subapical notch, its lower valvae slightly swollen before thin tip and tip of upper valve after notch 0.28 times as long as ovipositor length (Fig. 5G).



Fig. 6. *Rhinotorus jussilai* sp. nov., holotype, ♀. **A.** Face. **B.** Mesopleuron. **C.** Propodeum and first metasomal tergite dorsally. **D.** Habitus.

Colouration: body mostly black (Fig. 6); antennal flagellomeres and pterostigma brownish; clypeus, legs (except coxa and tibia and tarsus of hind legs), second and third metasomal sternites reddish.

Male

Morphologically similar to female, but with clypeus shorter (0.3 times as long as broad) and upper tooth of mandible slightly longer than lower. Parameres broad basally and weakly elongate apically, extending beyond aedeagus, volsella moderately large with apical notch, aedeagus apically downcurved.

Colouration as in female, but middle tergites sometimes with red spots. Face, clypeus, malar space, mandibles (except teeth), upper part of scape, flagellum ventrally, fore and middle coxae and trochanters, lower part of propleuron, epicnemius, hind angle of pronotum, tegulae and sternites yellow.

Host records

Nematus papillosus (Retzius, 1783)*.

Distribution

Finland, U.K.

Rhinotorus leucostomus (Gravenhorst, 1829)

Fig. 7

Tryphon leucostomus Gravenhorst, 1829: 17.

Mesoleius impressus Brischke, 1871: 85.

Spudaeus subimpressus Thomson, 1894: 2011, lectotype examined.

Diagnosis

This species is distinguished from other species in the genus by the following characters: face entirely black (Fig. 7D); clypeus relatively wide and not projecting centrally (Fig. 7D); scutellum yellow (Fig. 7B); first metasomal tergite either projecting at spiracles or narrow basally (Fig. 7A); metasoma partly reddish (Fig. 7E).

Type material examined

Spudaeus subimpressus Thomson, 1894: 2011. Lectotype ♀, SWEDEN, Skåne, MZLU.

Other material examined

AUSTRIA: 1 ♀, Hainbach, NHRS-HEVA000002061, leg. R. Hicker, NHRS; 1 ♂, Eisenstadt-Umgebung, Burgenland, Purbach am Neusiedlersee, 24 Aug. 1966, ex. *Cladius pectinicornis* (Geoffroy, 1785), C.I.E. coll., BMNH.

DENMARK: 2 ♀♀, 1 ♂, Nordsjaelland, leg. Schiødte, ZMUC.

FRANCE: 1 ♂, N.W., ex. Tenthred. leg. H.D. Smith, NHRS-HEVA000002063, NHRS.

GERMANY: 1 ♂, Ruthe coll., BMNH.

RUSSIA: 1 ♂, Kamchatka, 3758, leg. R. Malaise, NHRS.

ITALY, 2 ♀♀, Veneto, Treviso, Meolo, 45°36'24.76" N 12°27'25.19" E, Malaise trap, 10–22 Jun. 2013, leg. F. Di Giovanni, NHRS; 1 ♀, Friuli-Venezia Giulia, Udine, Marano Lagunare, 45°46'36.36" N 13°09'32.06" E, Malaise trap, 21 Jul.–3 Aug. 2013, leg. F. Di Giovanni, NHRS.



Fig. 7. *Rhinotorus leucostomus* (Gravenhorst, 1829). **A.** First metasomal tergite dorsally with projections at spiracles (arrows). **B.** Mesoscutellum. **C.** Propodeum. **D.** Face. **E.** Habitus.

SWEDEN: 1 ♀, Uppland, Håbo kommun, Biskops-Arnö, northern beach, elm grove, N 59°40.328' E 17°30.051' (= Trap ID 8), 20 May–20 Jun. 2005 (= coll. event ID 1601), leg. SMTP, NHRS; 2 ♂♂, Öland, Mörbylånga kommun, Frösslunda alvar, north eastern part, alvar pasture, N 56°32.847' E 16°34.635' (= Trap ID 20), 20 Jul.–12 Aug. 2003 (= coll. event ID 234), NHRS-SMTP70700020-21, leg. SMTP, NHRS; 3 ♂♂, Öland, Mörbylånga kommun, Frösslunda alvar, north eastern part, alvar pasture, N 56°32.847' E 16°34.635' (= Trap ID 20), 25 Jun.–20 Jul. 2003 (= coll. event ID 233), NHRS-SMTP70700013-15, leg. SMTP, NHRS.

U.K.: 1 ♀, Devon, Dartmoor, Lustleigh, 20 Jun. 1934, leg. Perkins, BMNH.

Description

Female

Fore wing around 5–6 mm long. Antenna slender, about as long as fore wing with 28–30 flagellomeres. Ratio of length of 1st plus 2nd flagellomeres to eye height 0.8. Scape short, almost as long as broad. Head rather narrowed behind eyes, matt, shagreened, and impunctate. Lateral ocellus separated from eye margin by 1.4 times their widest diameter. Face transverse 1.7 times as wide as high, shagreened, and impunctate (Fig. 7D). Clypeus 0.5 times as high as wide, distinctly separated from face by a shallow impression, strongly projecting medially, shining and sparsely punctate. Its apical margin thin and laterally impressed. Clypeal fovea not defined. Malar space 0.5 times basal mandible width. Occipital carina complete. Mandible teeth of equal length.

Mesoscutum weakly shining, finely granulate, and without punctures. Notaulus distinct. Mesopleuron rugose, not striated, matt, and impunctate. Metapleuron matt, rugose, and impunctate. Propodeum weakly rugose dorsally and granulated laterally (Fig. 7C). Area superomedia fused with area basalis, forming an X-shaped area that is around 1.6 times as long as broad. Costula absent. Area apicalis trapezoidal, 0.4 times as long as broad, as long as 0.35 of propodeum and with defined longitudinal carina. Spiracles roundish. Hind femur 5.3 times as long as broad. Hind tibia 7.9 times as long as apically broad. First tarsomere of hind leg 9.6 times as long as broad and 2.2 times as long as second tarsomere. Claws not pectinate. Fore wing with pterostigma around 3.6 times as long as broad and intercepted by Rs almost in its middle. 2m-cu straight, with a single bulla. Cu-a vertical, postfurcal. Hind wing with 1/Cu & cu-a intercepted by 2/Cu in lower 0.5.

Metasoma impunctate and reticulate rugose. First metasomal tergite as long as apically broad, projecting dorsally (Fig. 7A), its dorsal longitudinal carinae reaching middle of tergite and with strong impression between carinae in basal part. Area between dorsal carina and spiracle with longitudinal impression. Spiracles projecting laterally. Subapical impression strong and uniformly broad. First metasomal sternite 0.2 times as long as its tergite. Second metasomal tergite 0.5 times as long as apically broad, its transverse impression starting immediately after middle of tergite. Transverse impression of third tergite not defined. Ovipositor sheaths weakly almond-shaped and 0.5 times as long as height of last visible tergite. Ovipositor stout at base with shallow subapical notch, tip of upper valve after notch 0.3 times as long as ovipositor length.

Colouration: body mostly black (Fig. 7); clypeus, mandibles, tegulae, scutellum and postscutellum yellow; antennal flagellomeres, pterostigma, legs (except coxa and apical part of hind tibia and tarsus), apical margin of first metasomal tergite and metasomal tergites 2–4 reddish.

Male

Morphologically similar to female. Parameres broad basally and weakly elongate apically, extending beyond aedeagus, volsella moderately large and apically notched, aedeagus apically downcurved.

Colouration as in female, but with face, clypeus, malar space, mandibles (except teeth), upper part of scape, flagellum ventrally, fore and middle coxae and trochanters, hind angle of pronotum and tegulae yellow.

Host records

Cladius pectinicornis (Geoffroy, 1785)*, *Cladius ulmi* (Linné, 1758).

Distribution

Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Hungary, Latvia, Lithuania, the Netherlands, Norway, Poland, Sweden, U.K.

Rhinotorus longicornis (Schmiedeknecht, 1914)

Fig. 8

Spudaea longicornis Schmiedeknecht, 1914: 2884–2885.

Diagnosis

This species is distinguished from other species in the genus by the following characters: face entirely black (Fig. 8C); clypeus relatively wide and not projecting centrally (Figs 3, 8C); mesopleuron shining and distinctly punctate; scutellum black (Fig. 8A); metasoma excluding first metasomal tergite reddish (Fig. 8B); first metasomal tergite either with projections at spiracles or narrow basally (Fig. 8B).

Material examined

HUNGARY: 1 ♀, HNHM.

U.K.: 1 ♀, England, Surrey, Oxshott, 24 May 1930, leg. J.F. Perkins, BMNH; 1 ♀, England, Buckinghamshire, Wendover, 22 May 1960, leg. R.B. Benson, BMNH; 2 ♀♀, England, Devon, Teignbridge, Newton Abbot, 1 Jun. 1941, leg. J.F. Perkins, BMNH.

Description

Female

Fore wing around 8–9 mm long. Antenna slender, about as long as fore wing, with 33 flagellomeres. Ratio of length of 1st plus 2nd flagellomeres to eye height 1.1. Scape as broad as long. Head not narrowed behind eyes, matt, with dense, fine punctures on shagreened surface (Fig. 8D). Lateral ocellus separated from eye margin by 1.6 times their widest diameter. Face transverse, 2 times as wide as high, and densely punctate (Fig. 5C). Clypeus 0.3 times as high as wide and distinctly separated from face by a deep impression, projecting medially, shining and sparsely punctate, its apical margin obtuse medially and impressed laterally. Clypeal fovea deep. Malar space 0.6 times basal mandible width. Occipital carina complete. Mandible teeth of equal length.

Mesoscutum weakly shining and finely granulate, with dense and coarse uniform punctation. Notaulus distinct. Mesopleuron shining and finely punctate (Fig. 8E). Metapleuron smooth and weakly shining, with dense punctation. Propodeum weakly rugose. Area superomedia fused with area basalis, their combined area around 2.5 times as long as broad. Costula absent. Area apicalis trapezoidal, 0.6 times as long as broad and equal to 0.4 of propodeum, often with longitudinal carina and sometimes with striation. Spiracles weakly oval, 1.4 as long as broad. Hind femur 4 times as long as broad. Hind tibia 5.7 times as long as apically broad. First tarsomere of hind leg 7.5 times as long as broad and 2.5 times as long as second tarsomere. Claws not pectinate. Fore wing with pterostigma elongate, around 4 times



Fig. 8. *Rhinotorus longicornis* (Schmiedeknecht, 1914). **A.** Mesoscutellum. **B.** Metasoma dorsally. **C.** Face. **D.** Head dorsally. **E.** Habitus.

RESHCHIKOV A.V., A revision of the genus *Rhinotorus* Förster, 1869

as long as broad and intercepted by Rs before its middle. 2m-cu weakly curved, with single a bulla. Cu-a inclival, postfurcal. Hind wing with 1/Cu & cu-a intercepted by 2/Cu in lower 0.5.

Metasoma coarsely punctate (Fig. 8B). First metasomal tergite as long as apically broad and projecting dorsally, its dorsal longitudinal carinae reaching middle of tergite, with a strong impression between carinae in basal part. Area between dorsal carina and spiracle with longitudinal impression. Spiracles projecting laterally. Subapical impression strong and rather broad. First metasomal sternite 0.2 times as long as its tergite. Second metasomal tergite 0.5 times as long as apically broad, its transverse impression starting immediately after middle of tergite. Third tergite with a distinct transverse impression. Ovipositor sheaths weakly cone-shaped (Fig. 8E) and 0.4 times as long as height of last visible tergite. Ovipositor stout at base with shallow subapical notch, tip of upper valve after notch 0.23 times as long as ovipositor length.

Colouration: body mostly black (Fig. 8); apical part of clypeus, legs (except coxa, trochanters, apical part of hind tibia and hind tarsus) and metasoma (except first tergite) reddish.

Male

Unknown.

Host records

Unknown.

Distribution

Germany, Hungary, Poland, U.K.

Rhinotorus mesocostanus (Thomson, 1894)

Fig. 9

Spudaeus mesocostanus Thomson, 1894: 2011, lectotype examined.

Diagnosis

This species is distinguished from other species in the genus by the following characters: face entirely black (Fig. 9A); face roundish in anterior view (Fig. 9A); scutellum black; mesopleuron coriaceous, matt, and impunctate; metasoma with second and third tergites reddish (Fig. 9C); first metasomal tergite with transverse impression defined (Fig. 9B); first metasomal tergite with projections at spiracles or narrow basally (Fig. 9B).

Type material examined

Lectotype

SWEDEN: 1 ♀, Stockholm, MZLU.

Other material examined

FINLAND: 1 ♀, Inari Lapland, Utsjoki, Kaamanen, 24–28 Jun. 2013, leg. R. Jussila, RJ.

POLAND: 1 ♀, Iwanowo, leg. B. Sokanowsky, NHRS-HEVA000002062, NHRS.

SWEDEN: 1 ♀, Småland, Nybro kommun, Alsterbro/Alsterån. Mixed forest N6312220, E1506997 (=TrapID 1008) 22 May–1 Jun. 2006 (= coll. event ID 1735), leg. SMTP, NHRS; 1 ♀, Dalarna, Lima, leg. E. Dahl, NHRS; 2 ♀♀, Lappland, 17 Aug. 1904, leg. A. Roman, NHRS; 1 ♀, Lapland, 10 Jul. 1918, leg. R. Malaise, NHRS; 2 ♀♀, Södermanland, Huddinge kommun, Sofielunds kadaverdeponi, cadaver

dump, 59°10.592' N 17°59.631' E (= Trap ID 2003), 29 Jun.–7 Jul. 2006 (= coll. event ID 2034), leg. SMTP, NHRS; 1 ♀, Uppland, Håbo kommun, Biskops-Arnö, northern beach, elm grove, 59°40.328' N 17°30.051' E (= Trap ID 8), 20 May–20 Jun. 2005 (= coll. event ID 1601), leg. SMTP, NHRS; 1 ♀, Uppland, Knivsta kommun, Rickebasta alsumpskog, alder swamp wood, 59°44.061' N 17°43.225' E (= Trap ID 9), 11 Jun.–24 Jun. 2005 (= coll. event ID 1609), leg. SMTP, NHRS; 3 ♀♀, Småland, Nybro kommun, Bäckebo, Grytsjöns naturreservat. Old, moist haymaking meadow on forest edge, N 6311678 E 1517066 (= Trap ID 1001), 18 May–15 Jun. 2006 (= coll. event ID 1728), leg. SMTP, NHRS.

Description

Female

Fore wing around 6–7 mm long. Antenna slender, about as 0.8 times as long as fore wing and with 30–31 flagellomeres. Ratio of length of 1st plus 2nd flagellomeres to eye height 1.3. Scape as broad as long. Head not narrowed behind eyes, matt, with dense, fine punctures on shagreened surface. Lateral ocellus separated from eye margin by 1.5 times their widest diameter. Face transverse, 2.6 times as wide as high, shagreened and parallel-sided (Fig. 9A). Clypeus 0.3 times as high as wide and distinctly separated from face by a deep impression, projecting medially, shining and sparsely punctate, its apical margin obtuse



Fig. 9. *Rhinotorus mesocostanus* (Thomson, 1894). **A.** Face. **B.** Metasoma. **C.** Habitus.

medially and impressed laterally. Clypeal fovea shallow. Malar space as long as basal mandible width. Occipital carina complete. Mandible teeth of equal length.

Mesoscutum weakly shining, finely granulate, with dense and uniformly strong punctation. Notaulus distinct. Mesopleuron finely punctate, shining in upper part and shagreened in lower part. Metapleuron weakly shining, smooth, with dense punctation. Propodeum weakly rugose (Fig. 9B). Area superomedia fused with area basalis, their combined area 2.6 times as long as broad. Costula absent. Area apicalis trapezoidal, 0.6 times as long as broad, and equal to 0.4 of propodeum, often with longitudinal carina and sometimes with striation. Spiracles weakly oval, 1.2 times as long as broad. Hind femur 5.3 times as long as broad. Hind tibia 8.5 times as long as apically broad. First tarsomere of hind leg 8.7 times as long as broad and 2 times as long as second tarsomere. Claws not pectinate. Fore wing with pterostigma elongate, around 5.7 times as long as broad and intercepted by Rs before its middle. 2m-cu curved, with a single bulla. Cu-a slightly inclival, postfurcal. Hind wing with cu-a intercepted around its middle.

Metasoma strongly punctate (Fig. 9B). First metasomal tergite 1.1 times as long as apically broad and projecting dorsally, its dorsal longitudinal carinae reaching middle of tergite and with a strong impression between carinae in basal part. Area between dorsal carina and spiracle with longitudinal impression. Spiracles projecting laterally. Subapical impression strong and rather broad. First metasomal sternite 0.2 times as long as its tergite. Second metasomal tergite 0.7 times as long as broad apically (Fig. 9B), its transverse impression starting immediately after middle of tergite. Second and third tergite with weak transverse impressions. Ovipositor sheaths weakly cone-shaped (Fig. 9C) and as long as height of last visible tergite. Ovipositor stout at base with a shallow subapical notch, tip of upper valve rather elongate after notch, around 0.3 times as long as ovipositor length.

Colouration: body mostly black (Fig. 9); apical part of clypeus, fore and middle legs (except coxa), hind femur, base of hind tibia and second and third tergites of metasoma reddish; middle part of hind tibia reddish-yellow.

Male

Unknown.

Host records

Unknown.

Distribution

Austria, Belgium, Finland, Germany, Lithuania, Luxemburg, the Netherlands, Norway, Russia, Sweden.

***Rhinotorus nasutus* (Gravenhorst, 1829)**

Fig. 10

Tryphon nasutus Gravenhorst, 1829: 264–265.

Mesoleius confusus Thomson, 1883: 932, lectotype examined.

Diagnosis

This species is distinguished from other species in the genus by the following characters: face entirely black (Fig. 10A); clypeus relatively thin (Fig. 10A); head narrowed behind eyes (Fig. 10B); first metasomal tergite not projecting at spiracles and gradually narrowed towards its base (Fig. 10D); metasoma partly reddish (Fig. 10E).

Type material examined

Lectotype

SWEDEN: ♀, Skåne, MZLU.

Other material examined

FINLAND: 1 ♀, Sauvo, Karuna, 25 Jun. 1981, leg. R. Jussila, RJ; 1 ♂, EnL, Enontekiö, Annjaloanji, 7686:279, 12–14 Jul. 2007, leg. R. Jussila, RJ; 1 ♂, Lapi, Utsjoki, 9 Jul. 1959, leg. R. Jussila, RJ; 1 ♂, Enontekiö, Saana, leg. H. Lindberg, MZH; 1 ♀, Vihti, Siikajärvi, 23 Jun. 1970, leg. V.J. Karvonen, MZH; 1 ♂, Lapi, Utsjoki, Ailigas, 13 Jul. 1965, leg. E. Vesikari, MZH.

SWEDEN: 2 specimens, Uppland, Jun. 1923, leg. A. Roman, NHRS-HEVA000002064, NHRS; 3 ♀♀, Dalarna, Älvdalen, Grövelsjön, Jul. 1911, leg. A. Roman, NHRS-HEVA000002067-69, NHRS; 1 ♀, Lappland, Jokkmokk, Sarek, Jul. 1913, NHRS-HEVA000002065, NHRS; 1 ♀, 46-1945, SMTP, NHRS; 3 ♀♀, Skåne, Höör, 11 Jun. 1938, leg. D.M.S.P. & J.F. Perkins, BMNH; 2 ♀♀, Skåne, V. Ringsjö, 11 Jun. 1938, leg. J.F. Perkins, BMNH; 1 ♀, Lappland, Sorsele kommun, Ammarnäs, Vindelfjällens nature reserve, Tjulträsklaspen, alpine birch wood, 65°58.007 N 16°03.630 E (= Trap ID 46), 27 Jun.–17 Jul. 2004 (= coll. event ID 1945), leg. SMTP, NHRS.

U.K.: 1 ♀, England, Devon, Teignbridge, Newton Abbot, 21 May 1935, leg. J.F. Perkins, BMNH; 1 ♀, England, Surrey, Oxshott, 28 May 1933, leg. J.F. Perkins, BMNH; 1 ♀, England, Lancashire, Lancaster, Silverdale, ex. *Nematus lucidus* Pz, em. 5 Apr. 1934, leg. H.W. Miles, BMNH.

Description

Female

Fore wing around 6–7 mm long. Antenna slender, around 1.2 times as long as fore wing, with 32 flagellomeres. Ratio of length of 1st plus 2nd flagellomeres to eye height 1.1. Scape 1.3 times as long as broad. Head narrowed behind eyes, matt, shagreened and impunctate (Fig. 10B). Lateral ocellus separated from eye margin by 1.6 times their widest diameter. Face transverse 2 times as broad as long, shagreened, weakly tapering inwards in anterior view (Fig. 10A). Clypeus 0.4 times as high as wide and distinctly separated from face by deep impression, projecting medially, shining and sparsely punctate, its apical margin obtuse medially and impressed laterally. Clypeal fovea deep. Malar space as long as 0.7 of basal mandible width. Occipital carina complete. Mandible teeth of equal length.

Mesoscutum matt, finely granulate. Notaulus distinct. Mesopleuron matt, shagreened. Metapleuron matt, with dense punctation. Propodeum rugose (Fig. 10C). Area superomedia fused with area basalis, their combined area 2.9 times as long as broad. Costula absent. Area apicalis trapezoidal, 0.6 times as long as broad, and equal to 0.4 of propodeum, often with longitudinal carina. Spiracles weakly oval, 1.4 times as long as broad. Hind femur 5.3 times as long as broad. Hind tibia 8.25 times as long as apically broad. First tarsomere of hind leg around 8.6 times as long as broad and around 2.15 times as long as second tarsomere. Claws not pectinate. Fore wing with pterostigma short, around 2.6 times as long as broad and intercepted by Rs at its middle. 2m-cu straight, with a single bulla. Cu-a vertical, postfurcal. Hind wing with 1/Cu & cu-a intercepted by 2/Cu in lower 0.5.

Metasoma unevenly punctate. First metasomal tergite 1.5 times as long as apically broad, not projecting dorsally and gradually narrowed towards its base (Fig. 10D). Its dorsal longitudinal carinae reaching middle of tergite, with an impression between carinae in basal part. Area between dorsal carina and spiracle with weak longitudinal impression. Spiracles not projecting laterally. Subapical impression strong and rather broad. First metasomal sternite 0.2 times as long as its tergite. Second metasomal tergite 0.6 times as long as apically broad, its transverse impression starting immediately after middle of tergite. Second and third tergite with weak transverse impressions. Ovipositor sheaths weakly cone-

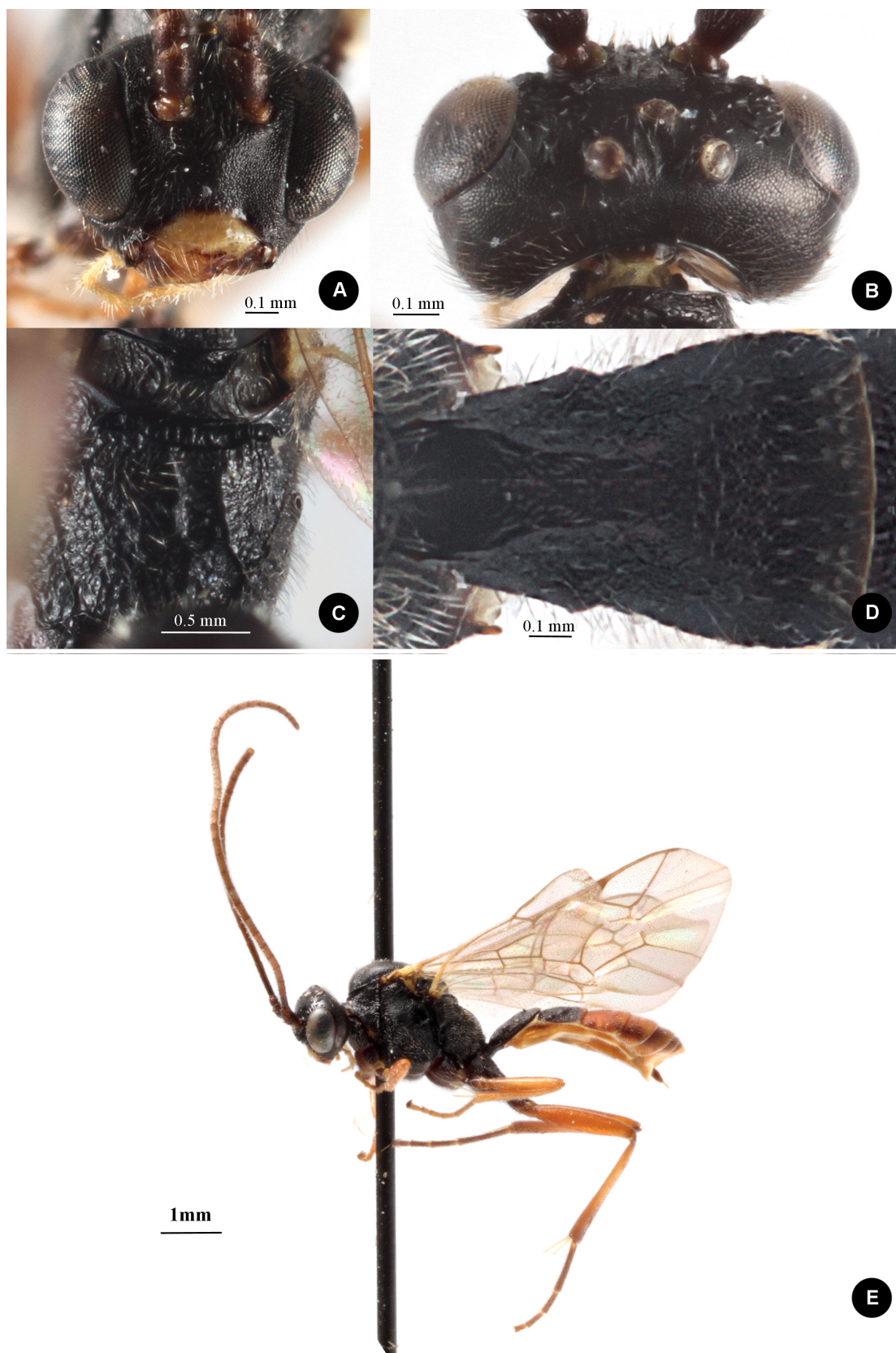


Fig. 10. *Rhinotorus nasutus* (Gravenhorst, 1829). A. Face. B. Head dorsally. C. Propodeum. D. First metasomal tergite dorsally. E. Habitus.

shaped (Fig. 10E) and as long as 0.5 of height of last visible tergite. Ovipositor stout at base with shallow subapical notch, the tip of upper valve rather elongate after notch, around 0.4 times as long as ovipositor length.

Colouration: body mostly black (Fig. 10); clypeus yellowish-red; antennal flagellomeres, legs (except coxae and trochanters), third and following tergites of metasoma reddish.

Male

Morphologically similar to female. Parameres not elongate apically, extending slightly beyond aedeagus.

Colouration as in female, but with face, sternites, epipleurum of tergites and parameres yellow.

Host records

Nematus lucidus (Panzer, 1801)*.



Fig. 11. *Rhinotorus ovalis* (Davis, 1897), lectotype, ♀. **A.** Metasoma dorsally. **B.** Face. **C.** Habitus dorsally. **D.** Habitus laterally.

Distribution

Czech Republic, Finland, Germany, Norway, Poland, Russia (Kostroma, Moscow, Tambov, Tver, Yaroslavl Regions), Sweden, U.K.

Rhinotorus ovalis (Davis, 1897)

Fig. 11

Spudaea ovale Davis, 1897: 291–292, lectotype examined.

Diagnosis

This species is distinguished from other species in the genus by the following characters: face with yellow spots (Fig. 11B); scutellum yellow (Fig. 11C); tarsus and hind tibia with reddish colouration (Fig. 11C–D).

Type material examined

Spudaea ovale Davis, 1897: 291–292. Lectotype ♀, U.S.A., New Hampshire, ANSP.

Description

Female

Fore wing around 7 mm long. Antenna slender, about as long as fore wing, with 30 flagellomeres. Ratio of length of 1st plus 2nd flagellomeres to eye height 1.1. Scape 1.2 times as long as broad. Head not narrowed behind eyes, matt, with dense, strong punctures on shagreened surface. Lateral ocellus separated from eye margin by 1.4 times their widest diameter. Face transverse, 2 times as broad as long, and densely punctate (Fig. 11B). Clypeus 0.4 times as high as wide, distinctly separated from face by deep impression, strongly projecting medially, shining and sparsely punctate, its apical margin obtuse medially and impressed laterally. Clypeal fovea deep. Malar space 0.7 times basal mandible width. Occipital carina complete. Mandible teeth of equal length.

Mesoscutum weakly shining, finely granulate, with dense and uniformly strong punctation. Notaulus distinct. Mesopleuron shining, distinctly densely and strongly punctate. Metapleuron weakly shining, with rather dense punctation. Propodeum weakly rugose (Fig. 11C). Area superomedia fused with area basalis, their combined area 2.5 times as long as broad. Costula absent. Area apicalis trapezoidal, 0.5 times as long as broad, and equal to 0.5 of propodeum, often with longitudinal carina and sometimes with striation. Spiracles weakly oval, 1.5 times as long as broad. Hind femur 4 times as long as broad. Hind tibia 7 times as long as apically broad. First tarsomere of hind leg 6.8 times as long as broad and 2.4 times as long as second tarsomere. Claws not pectinate. Fore wing with pterostigma elongate, around 3.7 times as long as broad and intercepted by Rs at its middle. 2m-cu straight, with a single bulla. Cu-a vertical, interstitial. Hind wing with 1/Cu & cu-a intercepted by 2/Cu in lower 0.5.

Metasoma strongly punctate and reticulate rugose (Fig. 11A, C). First metasomal tergite as long as broad apically and projecting dorsally, its dorsal longitudinal carinae reaching apical part of tergite and with a strong impression between carinae in its basal part. Area between dorsal carina and spiracle with impression. Spiracles projecting laterally. Subapical impression strong, slightly wider laterally than medially. First metasomal sternite 0.2 times as long as its tergite. Second metasomal tergite 0.5 times as long as apically broad, its transverse impression starting immediately after middle of tergite. Third tergite with a weak transverse impression. Ovipositor sheaths weakly cone-shaped and 0.8 times as long as height of last visible tergite. Ovipositor stout at base with a shallow subapical notch.

Colouration: body mostly black (Fig. 11); clypeus, spots on face, mandibles and tegulae yellow; antennal flagellomeres and legs (except apical part of hind tibia and hind tarsus) reddish.

Male

Unknown.

Host records

Hemichroa crocea (Geoffroy, 1785).

Distribution

U.S.A. (Colorado, Michigan, New Hampshire).

Rhinotorus similis (Brischke, 1892)

Fig. 12

Mesoleius similis Brischke, 1892: 35–36.

Diagnosis

This species is distinguished from other species in the genus by the following characters: female face with yellow coloration (Fig. 12A); female with ramulus on the 1m-cu present (Fig. 12C); propodeum with area basalis and area superomedia distinctly separated by carina (Fig. 12B); metasoma partly reddish.

Material examined

AUSTRIA: 1 ♂, Wachau, ex. *Cladius pectinicornis* (Geoffroy, 1785), BMNH.

FINLAND: 1 ♂, northern Ostrobothnia, Kuusamo, Jäkälämutka, 735:61, 1 Jul. 1997, leg. R. Jussila, ZMUT; 2 ♂♂, Vihti, Siikajärvi, 12 Jun. 1958, leg. V.J. Karvonen, MZH; 1 ♂, Vihti, Siikajärvi, 6 Jun. 1964, leg. V.J. Karvonen, MZH; 1 ♂, Espoo, 29 Jun. 1978, leg. O. Ranin, MZH.

FRANCE: 1 ♀, ZMUC.

SWEDEN: 1 ♂, NHRS-HEVA 000002066, NHRS.

Description

Female

Fore wing around 7–8 mm long. Antenna slender, around 0.8 times as long as fore wing, with 28 flagellomeres. Ratio of length of 1st plus 2nd flagellomeres to eye height 1.1. Scape as broad as long. Head not narrowed behind eyes, matt and shagreened, without punctures. Lateral ocellus separated from eye margin by 1.5 times their widest diameter. Face transverse, 2.2 times as wide as high, shagreened and parallel sided (Fig. 10A). Clypeus 0.35 times as high as wide, distinctly separated from face by deep impression, slightly projecting medially, shining and sparsely punctate, its apical margin weakly obtuse medially and impressed laterally. Clypeal fovea rather deep. Malar space as long as 0.7 basal mandible width. Occipital carina complete. Mandible teeth of equal length.

Mesoscutum matt and finely granulate. Notaulus distinct. Mesopleuron matt and shagreened, with striation in upper part. Metapleuron matt with dense punctation. Propodeum matt and shagreened (Fig. 12B). Area superomedia separated from area basalis by distinct carina. Costula absent. Area apicalis trapezoidal, 0.4 times as long as broad and with longitudinal carina. Spiracles weakly oval, 1.2 times as long as broad. Hind femur 4.7 times as long as broad. Hind tibia 7 times as long as apically broad. First tarsomere of hind leg 8.8 times as long as broad and 1.9 times as long as second tarsomere. Claws not pectinate. Fore wing with pterostigma around 3.6 times as long as broad and intercepted by Rs before its middle. Female with ramulus on the 1m-cu present (Fig. 12C). 2m-cu straight, with a single

bullae. Cu-a weakly inclival, postfurcal. Hind wing with cu-a intercepted far below middle and almost at vein 1A (Fig. 12C).

Metasoma finely punctate. First metasomal tergite 1.4 times as long as apically broad, not projecting dorsally (Fig. 12C), its dorsal longitudinal carinae reaching middle of tergite and with an impression between carinae in basal part. Area between dorsal carina and spiracle with weak longitudinal impression. Spiracles not projecting laterally. Subapical impression strong and rather broad. First metasomal sternite 0.2 times as long as its tergite. Second metasomal tergite as long as apically broad. Second and third



Fig. 12. *Rhinotorus similis* (Brischke, 1892), ♂. A. Face. B. Propodeum. C. Habitus.

tergites with weak transverse impressions. Ovipositor sheaths weakly cone-shaped and as long as 0.5 of height of last visible tergite. Ovipositor stout at base with a shallow subapical notch.

Colouration: body mostly black (Fig. 12); face (excluding middle and area around clypeal fovea), clypeus, mandibles and trochanters yellow (Fig. 12A); antennal flagellomeres, legs (except coxae, trochanters, and apical part of hind tibia and hind tarsus), and metasomal tergites 2–4 reddish.

Male

Morphologically similar to female, but with ramulus absent. Parameres not elongate apically and not extending beyond aedeagus.

Colouration as in female, but with face, sternites, epipleurum of tergites and parameres yellow.

Host records

Allantus cinctus (Linné, 1758), *Cladius pectinicornis* (Geoffroy, 1785)*.

Distribution

Austria*, Belarus, Finland, France, Germany, the Netherlands, Norway, Poland, Romania, Sweden*, U.K.

Comments

These are the first tentative records for Austria and Sweden. As the type specimen of this species is lost and males from Finland and Sweden are rather different in structure of face from the female known from Austria, more work is needed to ascertain their taxonomic status.

Rhinotorus tarsilatus sp. nov.

urn:lsid:zoobank.org:act:6BF50C79-BF01-4932-A59C-3C998657C467

Fig. 13

Diagnosis

This species is distinguished from other species in the genus by the following characters: female face entirely black (Fig. 13A); hind femur 4.2 times as long as broad and basal tarsomere of hind tarsus relatively stout (6 times as long as broad) (Fig. 13D); mesopleuron coriaceous, matt and impunctate; scutellum black; transverse impressions of first and second metasomal tergites rather distinct (Fig. 13C); metasoma with second and third metasomal tergites dark reddish (Fig. 13C).

Etymology

Species epithet refers to the morphology of the hind tarsus.

Type material

Holotype

NORWAY: ♀, AK, Frogn, Frogn Church, oak groove, Malaise trap, 17 May–21 Jun. 2004, leg. L.O. Hansen & E. Rindal, ZMUN.

Paratype

U.K.: 1 ♀, England, Sussex, W of Arundel, 20 Aug. 1984, leg. M. Edwards, BMNH.

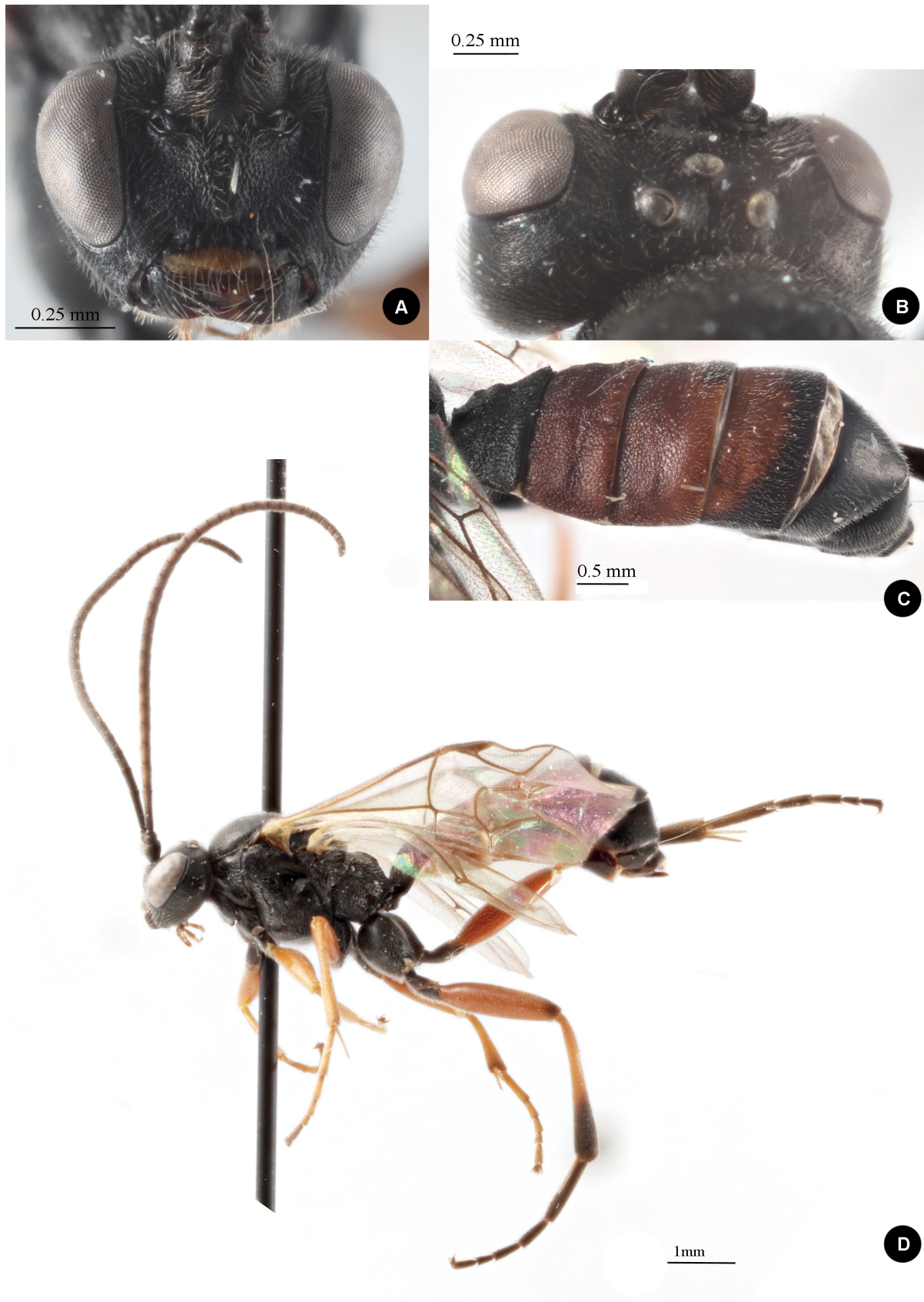


Fig. 13. *Rhinotorus tarsilatus* sp. nov., holotype, ♀. **A.** Face. **B.** Head dorsally. **C.** Metasoma. **D.** Habitus.

Description

Female

Fore wing around 9 mm long. Antenna slender, with 34 flagellomeres, about as long as fore wing. Ratio of length of 1st plus 2nd flagellomeres to eye height 1.1. Scape as long as broad. Head not narrowed behind eyes, matt, without punctures, shagreened (Fig. 13B). Lateral ocellus separated from eye margin by 1.6 times their widest diameter. Face transverse 2.2 times as wide as high, without punctures and shagreened (Fig. 13A). Clypeus 0.4 times as high as wide, distinctly separated from face by a deep impression, projecting medially, shining, its apical margin obtuse medially and impressed laterally. Clypeal fovea deep. Malar space 0.9 times basal mandible width. Occipital carina complete. Mandible teeth of equal length.

Mesoscutum weakly shining, finely granulate. Notaulus distinct. Mesopleuron shining and finely punctate. Metapleuron weakly shining, rugose and with dense punctation. Propodeum rugose. Area superomedia fused with area basalis, their combined area 2.5 times as long as broad. Costula absent. Area apicalis trapezoidal, often with longitudinal carina, 0.5 times as long as broad and equal to 0.4 of propodeum. Spiracles weakly oval, 1.4 times as long as broad. Hind femur 4.2 times as long as broad. Hind tibia 6.6 times as long as apically broad. First tarsomere of hind leg 6 times as long as broad and 2 times as long as second tarsomere. Claws not pectinate. Fore wing with pterostigma short, around 2.3 times as long as broad and intercepted by Rs at its middle. 2m-cu curved, with a single bulla. Cu-a vertical, postfurcal. Hind wing with 1/Cu & cu-a intercepted by 2/Cu in lower 0.5.

Metasoma strongly punctate (Fig. 13C). First metasomal tergite 1.1 times as long as apically broad, projecting dorsally, its dorsal longitudinal carinae reaching middle of tergite and with a strong impression between the carinae in basal part. Area between dorsal carina and spiracle with longitudinal impression. Spiracles projecting laterally. Subapical impression strong and rather broad. First metasomal sternite 0.2 times as long as its tergite. Second metasomal tergite 0.5 times as long as apically broad, its transverse impression at its middle (Fig. 13C). Third tergite with a distinct transverse impression (Fig. 13C). Ovipositor sheaths weakly cone-shaped and as long as height of last visible tergite. Ovipositor stout at base with shallow subapical notch.

Colouration: body mostly black (Fig. 13); apical part of clypeus, legs (except coxae, trochanters, apical part of hind femur and apical part of hind tibia and hind tarsus), second and third metasomal tergites and fore edge of fourth metasomal tergite reddish (Fig. 13C).

Male

Unknown.

Host records

Unknown.

Distribution

Norway, U.K.

Rhinotorus umbrarum (Holmgren, 1857)

Figs 14, 15

Trematopygus umbrarum (Holmgren, 1857): 180, lectotype examined.

Trematopygus obliterated (Holmgren, 1857): 183, lectotype examined.

Diagnosis

This species is distinguished from other species in the genus by the following characters: hind tibia black basally and apically and yellow centrally (Fig. 14); scutellum entirely black (Fig. 15C–D); first and second metasomal tergites with weak transverse impressions (Fig. 15C).

Type material examined

Lectotype

SWEDEN: ♀, Dalarna, leg. Boheman, NHRS-AVRE0000016, NHRS (lectotype of *T. obliteratus*).

Other material examined

FINLAND: 1 ♀, Oulu, Kainuu, Suomussalmi, leg. Hellen, MZH; 1 ♀, Lappi, Muonio, leg. Palmén, MZH; 2 ♂♂, Lappi, Enontekiö, Kilpisjärvi, 14 Jul. 1964, leg. V.J. Karvonen, NHRS-AVRE0000015, MZH.

RUSSIA: 1 ♀, Kamchatka, leg. R. Malaise, NHRS-HEVA000001987, NHRS.

SWEDEN: 1 ♀, 1 ♂, Dalarna, leg. Boheman, NHRS; 1 ♀, Lappland, leg. Boheman, NHRS.

Description

Female

Fore wing around 8–10 mm long. Antenna stout, around 0.8 times as long as fore wing and with 33–34 flagellomeres. Ratio of length of 1st plus 2nd flagellomeres to eye height 1.0. Scape as broad as long. Head not narrowed behind eyes, weakly shining. Lateral ocellus separated from eye margin by 1.6 times their widest diameter. Face transverse, 2 times as wide as high, shagreened and without punctures, (Fig. 15A). Clypeus 0.35 times as high as wide, distinctly separated from face by deep impression and projecting medially, its apical margin obtuse medially and impressed laterally. Clypeal fovea shallow. Malar space 0.8 times basal mandible width. Occipital carina complete. Mandible with upper tooth slightly longer than lower tooth.

Mesoscutum weakly shining, finely granulate, with dense and uniformly strong punctation. Notaulus distinct. Mesopleuron finely granulate, weakly striated in upper part, shining and distinctly densely and strongly punctate. Metapleuron weakly shining, with rather dense but vague punctation in upper part. Propodeum strongly rugose (Fig. 15D). Area superomedia fused with area basalis, their combined area forming a u-shape (Fig. 15D). Costula absent. Area apicalis roundish (Fig. 15D). Spiracles roundish. Hind femur 4 times as long as broad. Hind tibia 5.5 times as long as apically broad. First tarsomere of hind leg 8 times as long as broad and 2 times as long as second tarsomere. Claws not pectinate. Fore wing with pterostigma short, around 2.7 times as long as broad and intercepted by Rs slightly before its middle. 2m-cu weakly curved in upper part, with a single bulla. Cu-a inclival, postfurcal. Hind wing with 1/Cu & cu-a intercepted by 2/Cu in lower 0.5.

Metasoma shagreened. First metasomal tergite as long as apically broad, weakly projecting dorsally, its dorsal longitudinal carinae reaching middle of tergite and with a strong impression between carinae in basal part. Area between dorsal carina and spiracle with impression. Spiracles projecting laterally. Subapical impression strong, slightly wider laterally than medially. First metasomal sternite 0.3 times as long as its tergite. Second metasomal tergite 0.7 times as long as apically broad, its transverse impression at middle of tergite. Third tergite with weak transverse impression. Ovipositor sheaths weakly cone-shaped and 0.8 times as long as height of last visible tergite. Ovipositor stout at base with a shallow subapical notch.



Fig. 14. *Rhinotorus umbrarum* (Holmgren, 1857). **A.** ♂, habitus. **B.** ♀, habitus.

Colouration: body mostly black (Figs 14B, 15A, C–D); tegulae, upper edge of propleuron at tegulae, middle of hind tibia and rather thin margin of metasomal tergites yellowish; antennal flagellomeres and pterostigma brownish; clypeus and legs (except hind tibia and tarsus) reddish.

Male

Morphologically similar to female, but with clypeus shorter, 0.36 times as long as broad (Fig. 15B), and teeth of mandible of equal length. Parameres elongate apically, extending beyond aedeagus, volsella moderately large and notched apically, aedeagus apically downcurved.

Colouration as in female, but sometimes hind yellow margin of tergites wider. Face, sternites and parameres yellow (Fig. 14A).

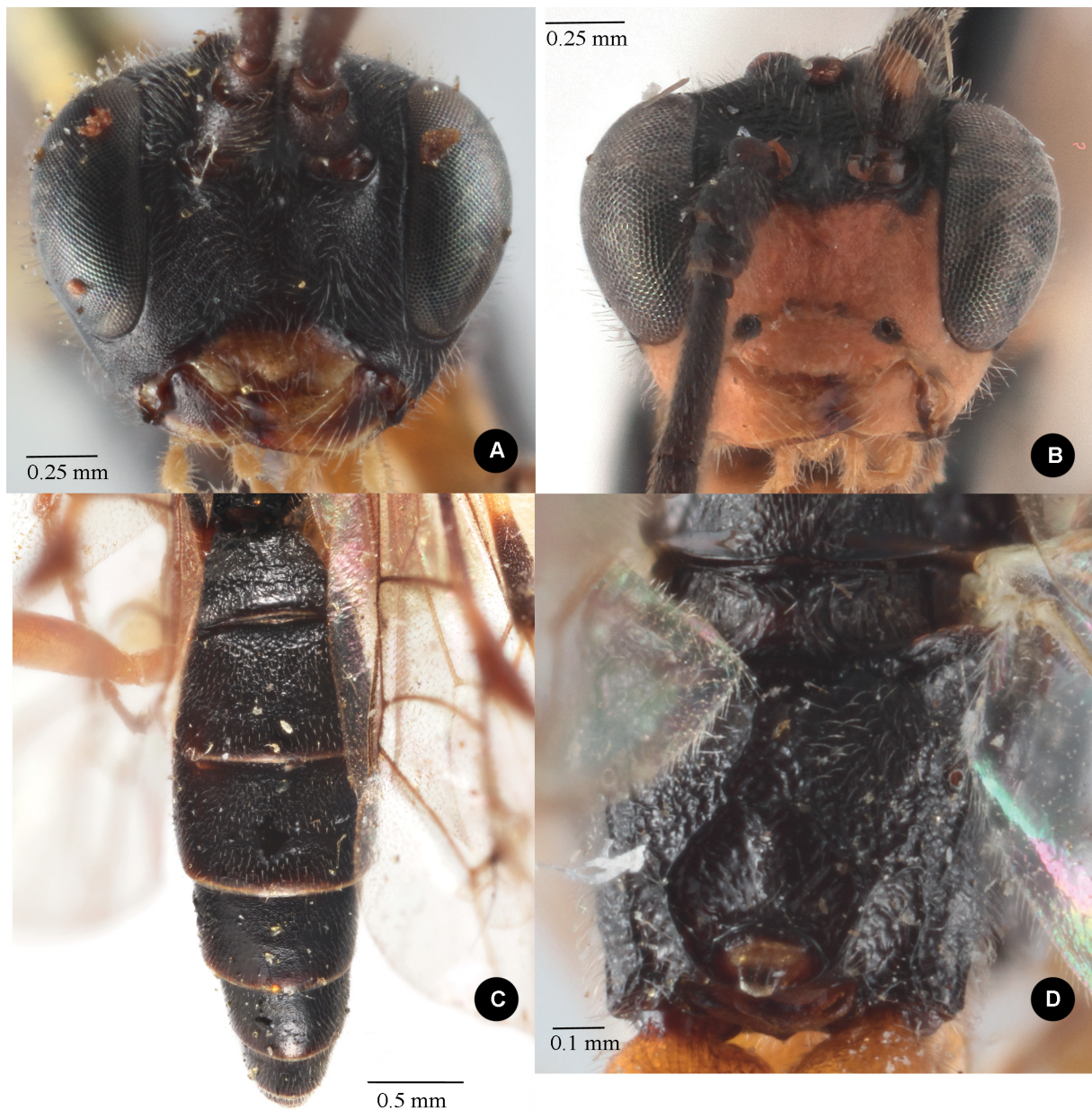


Fig. 15. *Rhinotorus umbrarum* (Holmgren, 1857). A. ♀, face. B. ♂, face. C. Metasoma dorsally. D. Propodeum.

Host records

Pachynematus fallax Lepeletier, 1823.

Distribution

Finland, Germany, Hungary, Norway, Poland, Romania, Russia (Kamchatka, Yakutia Republic), Sweden.

Key to species of the genus *Rhinotorus* Förster, 1869

1. Metasoma entirely black, without any reddish colouration (Figs 4E, 5E, I, 6D, 11A, C, D, 14, 15C), sometimes male tergites reddish or brownish centrally or on hind margins 2
 - Metasoma partly distinctly reddish (Figs 3E, 7E, 8B, E, 9B–C, 10E, 12C, 13C) 6
2. Scutellum yellow (Fig. 11C). Face black a yellow spot above each clypeal fovea (Fig. 11B) *R. ovalis* (Davis, 1897)
 - Scutellum black (Fig. 15D). Female face black without yellow spots (Figs 5A, 6A, 15A) 3
3. Female with each coxa darkly coloured. Male with only hind coxa black (the rest yellow) (Figs 4E, 5I, 6D). Hind tibia black apically and reddish-yellow basally (Figs 4E, 5I, 6D). Metasomal tergites 1–3 strongly punctate and with strong transverse impressions (Figs 5E, 6C) 4
 - Each coxa yellowish-red (Fig. 14). Hind tibia black basally and apically and yellow centrally (Fig. 14). First and second metasomal tergites with weak transverse impressions, third metasomal tergite without impression, granulated and impunctate (Fig. 15C) *R. umbrarum* (Holmgren, 1857)
4. Face and mesopleuron shining and rather densely and distinctly punctate (Fig. 5A, H). Face and clypeus strongly projecting apically. Hind tibia entirely black (Fig. 5I) *R. compactor* (Thunberg, 1822)
 - Face and mesopleuron matt or weakly shining, shagreened and either impunctate or weakly punctate (Figs 4A, D, 6A–B). Face and clypeus weakly projecting. Hind tibia reddish basally (Figs 6D–E) 5
5. First metasomal tergite convex in profile. Male with mesoscutum and mesopleuron black (Fig. 6B). Parameres thin *R. jussilai* sp. nov.
 - First metasomal tergite flat in profile (Fig. 4E). Male with lateral lobes of mesoscutum and lower part of mesopleuron yellow (Fig. 4D). Parameres broad (Fig. 4B–C) *R. campester* sp. nov.
6. Female face with yellow spots (Fig. 12A). Ramulus on the 1m-cu present (Fig. 12C). Propodeum with area basalis and area superomedia separated by carina (Fig. 12B). Hind wing with cu-a intercepted far below middle, almost at vein 1A (Fig. 12C) *R. similis* (Brischke, 1892)
 - Female face entirely black (Figs 3A, 7D, 8C, 9A, 10A, 13A). Ramulus absent (Figs 3E, 8E, 9C). Propodeum with area basalis and area superomedia continuous (Figs 3C, 7C, 9B, 10C). Hind wing with cu-a intercepted at or below middle but always distant from vein 1A 7
7. First metasomal tergite not projecting at spiracles and gradually narrowing towards its base (Fig. 10D). Clypeus relatively thin and projecting (Fig. 10A) *R. nasutus* (Gravenhorst, 1829)
 - First metasomal tergite projecting at spiracles or strongly constricted basally (Figs 7A, 9B). Clypeus relatively wide and not projecting (Figs 8C, 9A) 8
8. Scutellum yellow (Fig. 7B) *R. leucostomus* (Gravenhorst, 1829)
 - Scutellum black (Fig. 8A) 9

RESHCHIKOV A.V., A revision of the genus *Rhinotorus* Förster, 1869

9. Metasoma (excluding first metasomal tergite) reddish (Fig. 8B). Mesopleuron shining and distinctly punctate *R. longicornis* (Schmiedeknecht, 1914)
 – Metasoma with central tergites reddish (Figs 3E, 9B, 13C). Mesopleuron coriaceous, matt, and impunctate 10
10. Transverse impression of first and second metasomal tergites rather distinct (Fig. 13C). Hind femur 4.2 times as long as broad and with basal tarsomere of hind tarsus more stout (6 times as long as broad) (Fig. 13D) *R. tarsilatus* sp. nov.
 – Transverse impression of first and second metasomal tergites weak (Figs 3E, 9B). Hind femur 5 times as long as broad and with basal tarsomere of hind tarsus more slender (9–12.5 times as long as broad) (Figs 3E, 9C) 11
11. Head roundish in anterior view (Fig. 9A). Transverse impression of first metasomal tergite clearly defined (Fig. 9B) *R. mesocostanus* (Thomson, 1894)
 – Head diamond shaped in anterior (Fig. 3A). Transverse impression of first metasomal tergite not defined (Fig. 3E) *R. alpinus* (Roman, 1909)

Discussion

I was unable to include *R. latvicus* (Ozols, 1928) in this revision as the type material (deposited in the private collection of Arvids Ozols) was not available for study. According to the original description, this species is possibly a junior synonym of *R. similis* (Brischke, 1892).

Another species with unclear taxonomic status is *R. clypearis* (Brischke, 1888), originally described in the genus *Trematopygus* Förster, 1854, but as no material of this species was available for examination, it was not included in this revision.

Saotis brachycerus (Kasoparyan & Kopelke 2009) comb. nov. (originally described in *Rhinotorus*) is considered to be a member of the genus *Saotis* due to the form of the ovipositor sheaths which are shortly elliptic and not elongate cone- or club-shaped as in *Rhinotorus*.

Representatives of the genus are rather rarely collected and very few specimens are present, even in the huge collections of the larger European museums. Thus only 13 species of the genus are presently known including the 3 new species described here.

Rhinotorus similis (Brischke, 1892) is tentatively recorded from Austria and Sweden for the first time. The following sawflies are recorded here as new hosts for the genus: *Cladius pectinicornis* (Geoffroy, 1785) for *R. leucostomus* (Gravenhorst, 1829) and *R. similis* (Brischke, 1892), *Nematus lucidus* (Panzer, 1801) for *R. nasutus* (Gravenhorst, 1829) and *Nematus papillosus* (Retzius, 1783) for *R. jussilai* sp. nov.

Acknowledgements

The author is thankful to Hege Vårdal (NHRS), Roy Danielsson & Christer Hansson (MZLU), Ilari Sääksjärvi (ZMUT), Jens-Peter Kopelke & Patricia Peters (SMF), Frederique Bakker (RMNH), Gavin Broad (BMNH), Pekka Malinen & Olof Biström (MZH), Reijo Jussila (Turku, Finland), Lars Vilhelmsen (ZMUC), Filippo Di Guivanni (University of Rome), Torbjørn Ekrem (NTNU), Vladimir Gusarov (ZMUN), Zoltán Vas (HNHM) and the staff at Station Linné for kindly providing material for this study and help in my work with type collections, Tony Hunter (National Museums Liverpool, U.K.) for his kind help in improving the English, Mark Shaw (National Museums of Scotland, Edinburgh, U.K.), another reviewer, Koen Martens (Royal Belgian Institute of Natural Sciences, Brussels, Belgium) and Natacha Beau (Botanic Garden Meise, Belgium) for their reviews of the manuscript. The present study

was funded by Artsdatabanken (Artsprojektet No 70184219) and the Swedish Taxonomy Initiative (project 440804).

References

- Brischke C.G.A. 1871. Die Hymenopteren der Provinz Preussen. *Schriften der Königlichen Physikalisch-Ökonomischen Gesellschaft zu Königsberg* 11 (1870): 65–106.
- Brischke C.G.A. 1892. Bericht über eine Excursion ins Radaunethal bei Babenthal während des Juni 1890. *Schriften der Naturforschenden Gesellschaft in Danzig* 8 (1): 23–56.
- Davis G.C. 1897. A review of the Ichneumonid subfamily Tryphoninae. *Transactions of the American Entomological Society*. 24: 193–348.
- Förster A. 1869. Synopsis der Familien und Gattungen der Ichneumonen. *Verhandlungen des Naturhistorischen Vereins der Preussischen Rheinlande und Westfalens* 25 (1868): 135–221.
- Gauld I.D. 1997. The Ichneumonidae of Costa Rica, 2. *Memoirs of the American Entomological Institute* 57: 1–485.
- Gravenhorst J.L.C. 1829. *Ichneumonologia Europaea. Pars II*. Wrocław [Vratislaviae], Gravenhorst.
- Györfi J. 1947. Beiträge zur Kenntnis der Ichneumoniden Ungarns. IV. *Fragmenta Faunistica Hungarica* 10: 69–73.
- Hincks W.D. 1944. Notes on the nomenclature of some British parasitic Hymenoptera. *Proceedings of the Royal Entomological Society of London, Series B, Taxonomy* 1 (2): 25–48. <http://dx.doi.org/10.1111/j.1365-3113.1944.tb00778.x>
- Holmgren A.E. (1857) Försök till uppställning och beskrifning af de i Sverige funna Tryphonider. *Kongliga Svenska Vetenskaps-akademiens Handlingar* N.F. 1 (1): 93–246.
- Karlsson D. & Ronquist F. 2012. Skeletal Morphology of *Opius dissitus* and *Biosteres carbonarius* (Hymenoptera: Braconidae), with a Discussion of Terminology. *PLoS ONE* 7 (4): 1–38. <http://dx.doi.org/10.1371/journal.pone.0032573>
- Kasparyan D.R. 2012. Review of the Ichneumon-flies of the Genus *Rhorus* Förster, 1869 (Hymenoptera, Ichneumonidae: Ctenopelmatinae): I. The Species from the Far East (with Description of 24 New Species and with a Key). *Entomological Review* 92 (6): 650–687. <http://dx.doi.org/10.1134/S0013873812060061>
- Kasparyan D.R. 2014. Review of the Western Palaearctic Ichneumon-flies of the Genus *Rhorus* Förster, 1869 (Hymenoptera, Ichneumonidae: Ctenopelmatinae). II. The Species of the *punctus*, *longicornis*, *chrysopygus*, and *substitutor* Groups, the Species with the Black Metasoma and Some Others. *Entomological Review* 94 (5): 712–755. <http://dx.doi.org/10.1134/S0013873814050078>
- Malaise R.E. 1937. A new insect trap. *Entomologisk Tidskrift* 58: 148–160.
- Ozols E.Ya. 1928. Ichneumoniden aus bekannten Wirtstieren. *Konowia* 7: 135–146.
- Ozols E.Ya. 1961. Species of Ichneumonidae extracted from insects of Latvia [In Latvian with Russian & German summaries]. *Latvijas Entomologs* 3: 1–18.
- Perkins J.F. 1962. On the type species of Foerster's genera (Hymenoptera: Ichneumonidae). *Bulletin of the British Museum (Natural History) (Entomology)* 1: 385–483.
- Reshchikov A.V. 2013. Two new species of *Lathrolestes* (Hymenoptera, Ichneumonidae) from Norway, northern Russia and Finland with a key to western Palaearctic species. *Zootaxa* 3681 (1): 59–72. <http://dx.doi.org/10.11646/zootaxa.3681.1.3>

RESHCHIKOV A.V., A revision of the genus *Rhinotorus* Förster, 1869

- Reshchikov A.V. 2015. Review of North European species of the genus *Lathrolestes* (Hymenoptera, Ichneumonidae) with description of one new species from Öland (Sweden). *Zootaxa* 4033 (1): 1–47. <http://dx.doi.org/10.11646/zootaxa.4033.1.1>
- Roman A. 1909. Ichneumoniden aus dem Sarekgebirge. *Naturwissenschaftliche Untersuchungen des Sarekgebirges in Schwedisch-Lappland (Zool.)* 4 (3):199–374.
- Rudow F. 1919. *Ichneumon*. *Entomologische Zeitschrift* 32: 79–80, 84, 88.
- Schmiedeknecht O. 1914. Gen. *Spudaea* Först. In: Schmiedeknecht O. (ed.) *Opuscula Ichneumonologica* 5 (36): 2880–2889. Blankenburg (Thüringen).
- Strobl G. 1903. Ichneumoniden Steiermarks (und der Nachbarländer). *Mitteilungen Naturwissenschaftlichen Vereines für Steiermark, Graz* 39: 3–100.
- Teunissen H.G.M. 1953. Anciens et nouveaux Tryphonides (Ichneumonides, Hymenoptères). *Tijdschrift voor Entomologie* 96: 13–49.
- Thomson C.G. 1883. XXXII. Bidrag till kännedom om Skandinaviens Tryphoner. *Opuscula Entomologica* 9: 873–936. Lund.
- Thomson C.G. 1894. XLIX. Bidrag till kännedom om Skandinaviens Tryphonider. *Opuscula Entomologica* 19: 1971–2137. Lund.
- Thunberg C.P. 1822. Ichneumonida Insecta Hymenoptera. Pars I. *Mémoires de l'Académie impériale des sciences de St.-Pétersbourg, série 5* 8: 249–281.
- Townes H.K. 1945. A Catalogue and Reclassification of the Nearctic Ichneumonidae (Hymenoptera). Part II. The Subfamilies Mesoleiinae, Plectiscinae, Orthocentrinae, Diplazontinae, Metopiinae, Ophioninae, Mesochorinae. *Memoirs of the American Entomological Society* 11: 478–925.
- Townes H.K., Momoi S. & Townes M. 1965. *A catalogue and reclassification of the eastern Palearctic Ichneumonidae*. *Memoirs of the American Entomological Institute* 5, The American Entomological Institute, Ann Arbor.
- Vollenhoven S.C. Snellen van. 1873. Nieuwe naamlijst van Nederlandsche vliesvleugelige Insecten (Hymenoptera). Tweede Stuk. *Tijdschrift voor Entomologie* 16: 147–220.
- Yu D.S., van Achterberg K. & Horstmann K. 2012. Taxapad 2012, Ichneumonoidea 2011. Database on flash-drive. Ottawa, Ontario, Canada. Available from <http://www.taxapad.com> [accessed 2 Nov. 2015].
- Zinnert K.-D. 1969. Vergleichende Untersuchungen zur Morphologie und Biologie der Larvenparasiten (Hymenoptera: Ichneumonidae und Braconidae) mitteleuropäischer Blattwespen aus der Subfamilie Nematinae (Hymenoptera: Tenthredinidae). Teil I. *Zeitschrift für Angewandte Entomologie* 64: 180–217. <http://dx.doi.org/10.1111/j.1439-0418.1969.tb03036.x>
- Zirngiebl L. 1961. Über Parasiten an Blattwespen. *Mitteilungen der Pollichia* 8: 193–197.

Manuscript received: 5 November 2015

Manuscript accepted: 15 March 2016

Published on: 5 October 2016

Topic editor: Koen Martens

Desk editor: Natacha Beau

European Journal of Taxonomy 235: 1–40 (2016)

Printed versions of all papers are also deposited in the libraries of the institutes that are members of the *EJT* consortium: Muséum national d'Histoire naturelle, Paris, France; Botanic Garden Meise, Belgium; Royal Museum for Central Africa, Tervuren, Belgium; Natural History Museum, London, United Kingdom; Royal Belgian Institute of Natural Sciences, Brussels, Belgium; Natural History Museum of Denmark, Copenhagen, Denmark; Naturalis Biodiversity Center, Leiden, the Netherlands.

ZOBODAT - www.zobodat.at

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: [European Journal of Taxonomy](#)

Jahr/Year: 2016

Band/Volume: [0235](#)

Autor(en)/Author(s): Reshchikov Alexey

Artikel/Article: [A revision of the genus *Rhinotorus* Förster, 1869 \(Hymenoptera, Ichneumonidae, Ctenopelmatinae\), with descriptions of three new species and an illustrated identification key 1-40](#)