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Mitt. Münch. Ent. Ges.	**98**	31-35	München, 15.10.2008	ISSN 0340-4943

Two species of Ichneumonidae from Tristan da Cunha and Nightingale Islands, South Atlantic

(Hymenoptera)

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Abstract

Two species of Ichneumonidae (Hymenoptera) from Tristan da Cunha and Nightingale Islands, South Atlantic, are described: *Ichneumon insulator* **sp. n.** and *Meloboris helminda* (HOLMGREN). Some remarks on *Ichneumon unicinctus* BRULLÉ are added.

Introduction

In a recent biological survey of Tristan da Cunha and Nightingale Islands, a number of parasitic Hymenoptera were collected by Christine HÄNEL and Jeremy GREEN. Two species of Ichneumonidae were sent to me for determination. One of them proved to belong to *Meloboris helminda* (HOLMGREN), a species know only from the original description (HOLMGREN 1868: 417). The other is apparently an undescribed species of *Ichneumon* LINNAEUS. Both species are described here. The fauna of the Tristan da Cunha Archipelago was revised by HOLDGATE (1965), who mentioned one species of Ichneumonidae (*Phygadeuon* spec. from Tristan da Cunha). Material of this taxon could not be traced.

Ichneumon insulator sp. n.

Holotype (♀): „Nightingale Island. 37˚25'095"S; 12˚28'470"W; 03 April 2005. Collector Jeremy GREEN", „East landing area – Coastal boulders + Tussock + Shack developments. Inside hut, alive" (Natural History Museum, London). – Paratypes (2 ♂♂): „Tristan da Cunha. 37˚108'44"S; 12˚326'53"W; 2270 ft. 15 Feb. 2005. Leg. C. HÄNEL", „On the rim, west of patches. Above Molly Gulch, below Daylies Hill. Malaise trap. *Blechnum palmiforme* grassland mix." (1 ♂ Natural History Museum, London; 1 ♂ Iziko Museums, Cape Town).

The new species belongs to the species group A of HILPERT (1992: 45), but cannot be associated with one of the subgroups characterized for European species. In Europe, species of that group parasitize pupae of Noctuidae hidden under moss or in the soil (HINZ & HORSTMANN 2007: 60). The species is closely related to *I. unicinctus* BRULLÉ, a species known from Seychelles, Réunion, Mauritius and Madagascar (HEINRICH 1967: 492), and also a parasitoid of Noctuidae.

Female: Head with punctation on a smooth background. Temples distinctly constricted behind the eyes, 0.7 times as long as the width of the eye (seen from above), tangential lines on eyes and temples intersect on the scutellum (Fig. 1). Distance between eye and lateral ocellus 1.2 times as long as the longest diameter of a lateral ocellus. Malar space 0.8 times as long as basal width of a mandible. Genal carina joining the oral carina distant from the base of the mandible, both carinae low. Mandible slender, lower mandibular tooth distinct, much shorter than upper tooth. Clypeus slightly rounded basally, flat apically, with some small punctures basally, few large punctures basally and medially, and a line of very small punctures subapically, without longitudinal striae. Apex of clypeus thin, sharp, almost not rounded forwards medially. Face with rather fine and dense or very dense punctures, partly with transverse wrinkles. Frons, vertex and temples for the greater part with very dense and fine punctures, partly rugose. Temples with disperse punctation ventrally.

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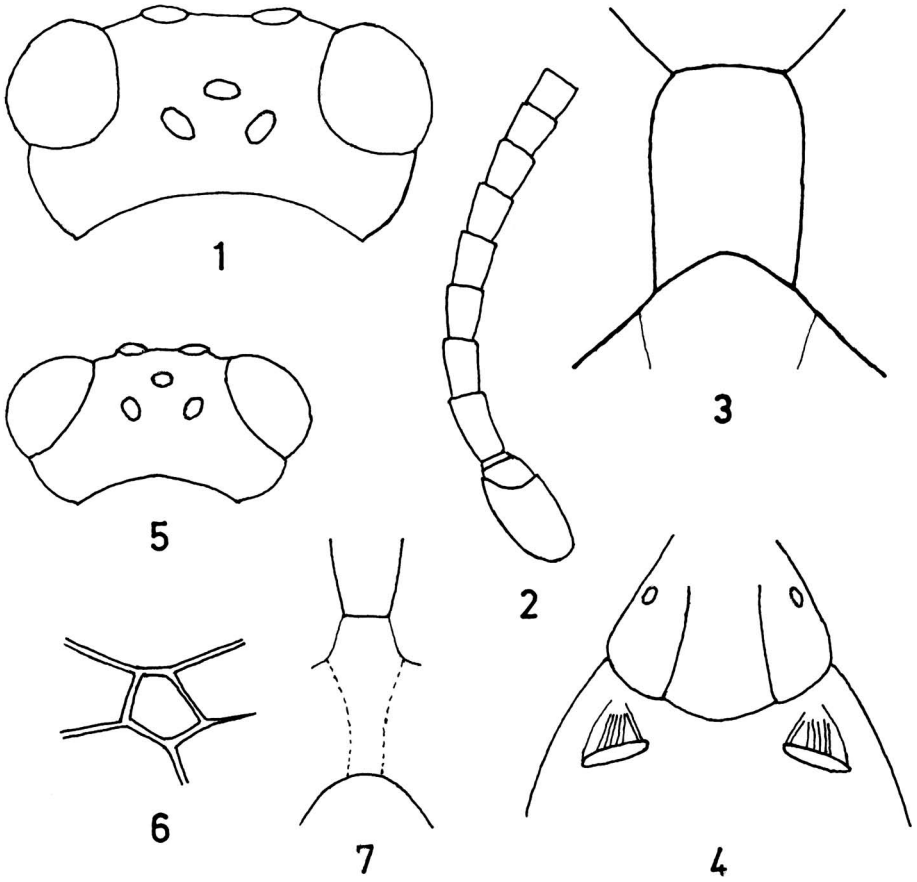

Fig. 1 - 4: *Ichneumon insulator* **sp. n.** (holotype). **1**. Head from above. **2**. Base of antenna. **3**. Area superomedia. **4**. Postpetiole and base of 2nd gastral tergite. **Fig. 5 - 7**: *Meloboris helminda* (HOLMGREN) (holotype). **5**. Head from above. **6**. Areolet. **7**. Area superomedia.

Flagellum with 36 segments, stout, slightly fusiform, flattened on the underside medially and subapically, truncate and almost not attenuated apically, 1st segment (annellus excluded) 1.9 times, 7th segment 1.0 times, shortest and widest segment 0.5 times, penultimate segment 0.73 times as long as wide (Fig. 2).

Thorax for the greater part with very dense punctation on a smooth background, partly rugose-punctate. Pronotum laterally and mesopleurum partly rugose. Scutellum dispersely punctate medially. Speculum densely punctate. Hind coxa with a distinct oval scopa (area with conspicuous and very dense pilosity) ventrally, with fine and very dense punctures beside the scopa, dense and rather fine punctures in other parts, and a few additional large punctures. Legs stout, hind femur 3.7 times as long as high, with dense and fine punctation all over its outer side. Tarsi of front and mid legs enlarged, 3rd segments of front and mid tarsi 1.0-1.1 times as long as wide. Hind tarsus not much enlarged, 3rd segment 1.7 times as long as wide.

Propodeum finely and very densely rugose and rugose punctate. Area superomedia 1.3 times as long as wide, with almost parallel sides, costulae lacking (Fig. 3). Area postica divided into three parts by fine longitudinal carinae, the lateral parts more coarsely rugose than the middle part. Middle part of the postpetiole 1.25 times as wide as a lateral part, somewhat raised, with about 20 fine longitudinal striae and with a few additional fine punctures. Lateral parts for the greater part with longitudinal wrinkles. 2nd gastral tergite with fine and very dense punctures, and with very fine longitudinal striae anteriorly between the gastrocoeli, some of those striae extending almost to the middle of the tergite. Interspace between the gastrocoeli 2.4 times as wide as the width of a gastrocoelus. Gastrocoelus distinct, not deeply depressed, with

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about eight longitudinal ridges. Thyridum distinct, oblique (Fig. 4). Middle and posterior tergites with very dense and fine punctures and very dense and fine pilosity, almost velvety. Gaster slightly attenuated posteriorly. Subgenital plate short. Ovipositor slightly projecting beyond the tip of the gaster.

Integument colour for the greater part black. Palpus yellowish brown. Mandible tinged with brown. Clypeus and inner orbits tinged with reddish brown. Scape, pedicellus and 1st to 3rd flagellar segments dark yellowish brown, 4th to 7th segments blackish, 8th to 11th segments blackish dorsally, dark yellowish brown ventrally, distal segments black. Scutellum yellow. Tegula and basal sclerites of wings dark yellowish brown. Wings hyaline, stigma pale yellowish brown. Legs for the greater part dark yellowish brown. Coxae partly tinged with black. Distal half of hind tibia and all of hind tarsus black. 1st gastral segment dark yellowish brown, partly tinged with black. 2nd tergite brownish black anteriorly and medially, the posterior 0.3 yellowish brown. The following tergites black, their posterior edges narrowly yellowish brown. 7th tergite dark yellowish brown. Pilosity whitish.

Head 2.3 mm wide. Thorax 4.2 mm long (mesoscutum to propodeum), 1.76 mm wide (mesoscutum). Front wing 8.0 mm long. 1st gastral tergite 2.1 mm long. Postpetiole 0.71 mm long, 1.17 mm wide. 2nd tergite 1.76 mm long, 2.4 mm wide. Body length (without ovipositor) 11.4 mm long.

Male: Malar space 0.55 times as long as basal width of a mandible. Flagellum with 36-37 segments, with tyloids on the segments 6-15 or 7-16. Largest tyloid 0.64 times as long as flagellar segment, 5.0 times as long as wide, slightly widened medially. In other sculptural characters similar to the ♀♀.

Integument colour für the greater part black, with extensive light yellow markings. Yellow are: palpi, mandible (except teeth), clypeus, face, frontal orbit, a large ventral stripe on the outer orbit (but malar space and a narrow band on the gena black), ventral half (or more) of scape and pedicellus, collum dorsally and with a small stripe laterally, pronotum with a long dorsal stripe posteriorly, tegula, basal sclerites of wings, subalar prominence, scutellum, postscutellum, a narrow posterior stripe on metapleurum, front and mid legs, dorsal part of hind coxa, hind trochanter and trochantellus, basal 0.6 of hind tibia, basal 0.8 of hind basitarsus, posterior 0.7 of propodeum, posterior 0.7 of postpetiole, anterior, lateral and posterior edges of 2nd gastral tergite, lateral and posterior edges of 3rd tergite, posterior edges of 4th and 5th tergites. Base of flagellum reddish brown ventrally (up to the 12th segment). Wings hyaline, stigma pale yellowish brown. Femora, tibiae and tarsi of front and mid legs partly tinged with light red. Hind femur reddish brown proximally, black distally (to a variable extent). 6th and 7th gastral tergites without yellow markings, slightly tinged with brown. Subgenital plate black. Genital clasper brownish proximally, yellowish brown distally. Pilosity whitish.

Ichneumon unicinctus BRULLÉ

This species is revised and described by HEINRICH (1967: 492). The ♀♀ differs from *I. insulator* by: Clypeus with dense or very dense punctation. Mandible slightly inflated subapically. Flagellum with 33-35 segments, the 4th or 5th segment about as long as wide. Postpetiole less extensively striate. Wings distinctly infuscated, stigma black. Mid and hind legs black, tibiae slightly tinged with brown. 2nd gastral tergite with a narrow whitish to reddish band posteriorly. The ♂ is rather poorly marked with yellow on head, thorax and legs (see description by HEINRICH). In addition it differs from *I. insulator* by: Clypeus with very dense punctation. Flagellum with 34-36 segments. Postpetiole less extensively striate. 4th and 5th gastral tergites without yellow markings, but 6th and 7th tergites with large yellow spots dorsally. HEINRICH mentions 2 ♂♂ from Madagascar with extensive yellow markings, which he tentatively places to *unicinctus*, but does not describe the characteristics used here to distinguish *insulator* and *unicinctus*.

Material: 1 ♀ Mauritius, ex *Sesamia calamistris* HAMPSON (Noctuidae) (Natural History Museum, London); 1 ♀, 1 ♂ Antananarivo, Tananarive Prov., Madagascar (American Entomological Institute, Gainesville); 1 ♀, 1 ♂ Bekily, Madagascar (Muséum National d'Histoire Naturelle, Paris); 2 ♂♂ Tananarive, Madagascar (Paris); 1 ♂ Bekily, Madagascar (London); 1 ♂ Périnet, Madagascar (Zoologische Staatssammlung München, Munich).

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Meloboris (*Nepiera*) *helminda* (HOLMGREN)

Holotype (♀): „Cap. B. Spei." (Cape of Good Hope, South Africa), „Victorin." „Type", „*L. Helminda* HGN." (Naturhistoriska Riksmuseet, Stockholm).

This species was known up to now only from the holotype. It belongs to the subgenus *Nepiera* FÖRSTER (HORSTMANN 1970: 81) and is very similar to the Palaearctic species *Meloboris collector* (THUNBERG). The latter differs by the colour of the hind coxa (completely black). *M. collector* parasitizes larvae of several species of Noctuidae (TISCHLER 1966: 73; AUBERT et al. 1984: 226; ŠEDIVÝ 1986: 17).

Female: Head for the greater part coriaceous and dull. Temples very short and strongly constricted behind the eyes, 0.55 times as long as the width of an eye (seen from above), tangential lines on eyes and temples intersect shortly behind the centre of the mesoscutum (Fig. 5). Distance between eye and lateral ocellus 1.15 times as long as the longest diameter of a lateral ocellus. Face 0.85 times as wide as frons. Eye scarcely emarginate beside the antennal socket. Malar space 0.6 times as long as the basal width of a mandible. Genal carina joining the oral carinae distinctly distant from the base of the mandible, both carinae low. Lower margin of mandible distinctly lamelliform, upper tooth slightly larger than lower tooth. Clypeus distinctly rounded, with some fine punctures subapically, its apex sharp, truncate medially. Vertex and temples finely coriaceous, slightly shining, very fine punctures hardly discernible. Flagellum with 26-27 segments, slender, filiform, 2nd segment 3.3 times, penultimate segment 1.3 times as long as wide.

Thorax coriaceous, dull. Lateral part of pronotum with short striae posteriorly. Epomia fine. Notaulus very weakly indicated. Prescutellar groove smooth. Scutellum with lateral carinae only anteriorly. Speculum finely coriaceous, slightly shining. Speculum and impression in front of the speculum without pilosity, other parts of the thorax with distinct fine pilosity. Prepectal carina complete, low. Postpectal carina interrupted subventrally in front of the mid coxae. Areolet large, narrowly sessile or pointed, with the 2nd recurrent vein at or shortly distad of the middle (Fig. 6). Nervulus distinctly postfurcal. Nervellus vertical, not visibly intercepted (sometimes slightly reclivous and slightly intercepted). Legs slender, hind femur 5.7 times as long as high. Hind claws short, with two short pectinate teeth basally.

Propodeum coriaceous, with conspicuous dense and fine white pilosity. Area basalis and area petiolaris surrounded by distinct carinae, lateral carinae of the area superomedia indistinct and partly covered with wrinkles. Area basalis sessile, slightly longer than wide. Area superomedia about 2.5 times as long as wide (sometimes narrower), with costulae in front of the middle, the latter partly reduced (Fig. 7). Area petiolaris flat, with some longitudinal wrinkles. Propodeal spiracle rather large, closer to the pleural carina than its longest diameter. 1st and 2nd gastral tergites coriaceous and dull, posterior tergites finely coriaceous and shining. Petiole laterally with dorsal and ventral longitudinal carinae but without glymmae. Postpetiole rounded dorsally and laterally, with complete lateral carinae, spiracles scarcely protruding. Thyridium distinct, large, its distance to the anterior edge of the 2nd tergite 1.5 times as wide as its longest diameter. Posterior edges of 6th and 7th gastral tergites not emarginate dorsally. Ovipositor distinctly projecting beyond the tip of the gaster, ovipositor sheath 0,7 times as long as the 1st gastral tergite.

Integument colour for the greater part black. Palpi, mandible (teeth brown), scape and pedicellus ventrally, prosternum ventrally, upper hind corner of pronotum, tegula, basal sclerites of wing, coxae, trochanters and trochantelli whitish (the white marks more extended in the holotype). Hind coxa with a small blackish basal mark (lacking in the holotype). Femur, tibia and tarsus of front leg whitish yellow. Mid femur yellowish red. Mid tibia whitish, brown apically. Mid tarsus blackish, its basitarsus broadly whitish basally. Hind femur light reddish brown ventrally and on the inner side, with a blackish stripe dorsally. Hind tibia whitish basally and ventrally, with black dorsal marks subbasally and apically, usually with a blackish dorsal stripe also medially (this stripe lacking in the holotype). Hind tarsus black, basitarsus with a small white mark basally. Pterostigma dark brown (light brown in the holotype, perhaps faded). Posterior edges of 2nd to 8th gastral tergites broadly whitish, lateral edges of posterior tergites whitish, sometimes also the postpetiole whitish posteriorly.

Head 0.93 mm wide. Thorax 1.49 mm long (mesoscutum to propodeum), 0.61 mm wide (mesoscutum). Front wing 3.2 mm long. 1st gastral tergite 0.66 mm long. Postpetiole 0.24 mm long, 0.23 mm wide. 2nd tergite 0.63 mm long, 0.35 mm wide. Ovipositor sheath 0.39 mm long. Body length (without ovipositor) about 3.9 mm. The measurements were taken from 1 ♀ from Nightingale Island; the holotype from the Cape of Good Hope is larger by a factor of about 1.2.

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Male: Flagellum with about 30 segments. In other characters similar to the ♀♀.

Material: 1 ♀ Cape of Good Hope (Naturhistoriska Riksmuseet, Stockholm); 2 ♀♀, 2 ♂♂ Johannesburg (American Entomological Institute, Gainesville); 2 ♀♀, 7 ♂♂ Nightingale Island and 1 ♀, 3 ♂♂ Tristan da Cunha, collector Christine HÄNEL (1 ♀, 2 ♂♂ Iziko Museums, Cape Town, 1 ♀, 2 ♂♂ Natural History Museum, London, 1 ♀, 5 ♂♂ Natural Resources Department, Tristan da Cunha, 1 ♂ Coll. Horstmann).

Acknowledgements

I am indepted to Christine HÄNEL (Stellenbosch), Gavin BROAD (Natural History Museum, London), Simon VAN NOORT (South African Museum, Iziko Museums, Cape Town) and Mark SHAW (National Museums of Scotland, Edinburgh) for collecting and sorting the material from the South Atlantic islands and sending it for study, and to Hege VÅRDAL (Naturhistoriska Riksmuseet, Stockholm), Claire VILLEMANT (Muséum National d'Histoire Naturelle, Paris) and David WAHL (American Entomological Institute, Gainesville) for sending types and other material for comparison. The field work of Christine HÄNEL was supported by the Darwin Initiative and the Royal Society for the Protection of Birds.

Zusammenfassung

Zwei Arten der Ichneumonidae (Hymenoptera) von den Inseln Tristan da Cunha und Nightingale im Südatlantik werden beschrieben: *Ichneumon insulator* **sp. n.** und *Meloboris helminda* (HOLMGREN). Einige Bemerkungen zu *Ichneumon unicinctus* BRULLÉ sind angefügt.

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Digitale Literatur/Digital Literature

Zeitschrift/Journal: Mitteilungen der Münchner Entomologischen Gesellschaft

Jahr/Year: 2008

Band/Volume: 098

Autor(en)/Author(s): Horstmann Klaus

Artikel/Article: Two species of Ichneumonidae from Tristan da Cunha and Nightingale Islands, South Atlantic (Hymenoptera). 31-35