

Description of two new species of the genus *Eumerus* Meigen (Diptera, Syrphidae) from Corsica

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Doczkal, D. (1996): Description of two new species of the genus *Eumerus* Meigen (Diptera, Syrphidae) from Corsica. - Volucella 2 (1/2), 3-19. Stuttgart.

Two new species of *Eumerus* are described from Corsica: *Eumerus niehuisi* spec. nov., related to *E. longicornis* Loew, and *Eumerus vandenberghiei* spec. nov., related to *E. tuberculatus* Rondani. Both the new species are probably endemic to Corsica.

Zusammenfassung

Zwei neue Arten der Gattung *Eumerus* von Korsika werden beschrieben: *Eumerus niehuisi* spec. nov., verwandt mit *E. longicornis* Loew, und *Eumerus vandenberghiei* spec. nov., verwandt mit *E. tuberculatus* Rondani. Beide neue Arten sind wahrscheinlich auf Korsika endemisch.

Introduction

The genus *Eumerus* Meigen, 1822, as currently defined with more than 300 described nominal species (Knutson et al. 1975; Smith & Vockeroth 1980; Peck 1988; Thompson & Vockeroth 1989), is one of the largest genera of the family Syrphidae. Species of the genus occur in all major parts of the Old World except for arctic regions; three species have been introduced into the Nearctic. Some species are pests of vegetables. However, the taxonomy and systematics of this genus have not yet received much attention. Even the European fauna still contains many uncertain taxa and undescribed species. This is the first of a series of papers dealing with the genus.

In May 1994 Mr Eric van den Berghe ran a Malaise trap on Corsica. The yield contains five species of *Eumerus*: *amoenus* Loew, *pulchellus* Loew, cf. *melanopus* Rondani, and two apparently undescribed species. The latter are described in this paper. The status of „cf. *melanopus*“ will be dealt with elsewhere.

Methods and terminology

Where reference is made here to features of external morphology the terminology of McAlpine (1981) has been adopted. Where no appropriate terms are provided by McAlpine terms used by Speight (1987) or new terms are used. In contrast to McAlpine the term epaulet is used for the thickened proximal part of the costa, as in Hippa (1990). The apicolateral sensory pit of the first flagellomere (i.e. antennal segment 3), rather indistinct in the species described below, is here referred to as the fossette, derived from the French term „fossette sensorielle apicale“ in Séguy (1961). As far as possible the terminology of Cumming et al. (1995) has been adopted for the ♂ genitalia. Some descriptive terms of Hurkmans (1993) are used for certain parts. The hook-shaped appendages attached to the posterolateral apices of the phallapodeme, the aedeagal base dorsolaterally, and the interior dorsolateral wall of the hypandrium are called hamus (pl. hami), a Latin word meaning hook (fig. 7). A more detailed contribution to the morphological characteristics and terminology of *Eumerus* will be presented in a forthcoming paper (Doczkal, in prep.).

An ocular micrometer attached to a Zeiss Stemi SV11 microscope has been used for measurements, with a maximum accuracy of $\pm 2 \mu\text{m}$ at a magnification of 169 x. All measurements are carried out in such a way that both ends of the distance are situated in the same plane. The only exception is the length of the head, where this is not possible. The length of the head is defined as the shortest distance from the anterior end of the lunule to the posterior margin of postocular orbit, observed at a right angle to the sagittal plane. The width of the face has been measured at the half-way point between the lower margin of the antennal sockets and the anteromedial margin of the subcranial cavity. The proportions of the antennal segments have been measured from the outside. The width of the vertex is defined as the distance between the eyes at the posterior margins of the posterior ocelli. Except where mentioned otherwise all measured values relate to the maximum length of the respective part. Approximate values are given as fractions.

All drawings have been made with the aid of a drawing tube attached to a Zeiss Stemi SV11 microscope. Generally hairs and bristles have been omitted from the drawings. Dry specimens have been used for the drawings, except for in production of figures of the genitalia, which have been treated with 10 % KOH. The drawings are of various specimens.

The descriptions comprise only characters that vary inter-specifically within the genus. The ♂ genitalia, as well as some of the characters that are not used in the diagnoses or tables, have been checked in only some of the specimens. In *Eumerus* these characters usually either show little intraspecific variation or are of minor importance.

Abbreviations: T = tergite; S = sternite; f = femur; t = tibia; ta = tarsus.

Eumerus niehuisi spec. nov.

Holotype: ♂ France, Corsica, Porto Vecchio, 26 V 1994 leg. E. van den Berghe.
- Paratypes: 7♂ dto.; 8♂, 3♀ France, Corsica, Calvi, Punta revellata, STARESO, 1-30 V 1994, leg. E. van den Berghe. 1♀ France, Corsica, estuary of Solenzara river, 1 VI 1991, leg. R. & R. Blackith.

The type is deposited in the collection of the 'Staatliches Museum für Naturkunde Stuttgart' (SMNS). Most of the paratypes are currently preserved in the private collection of the author, except for 1♂1♀ in the collection of the SMNS, and 1♂ in the collections of the 'Museum für Naturkunde der Humboldt-Universität zu Berlin' (ZMHB), the 'Museum National d'Histoire Naturelle' in Paris (MNHN), 1♂1♀ in the private collections of Oliver Niehuis (Albersweiler, D), and Dr Martin C.D. Speight (Dublin, IRE).

Etymology: The specific epithet is derived from and dedicated to Mr Oliver Niehuis who made most of the material available. A noun in the genitive case.

Diagnosis

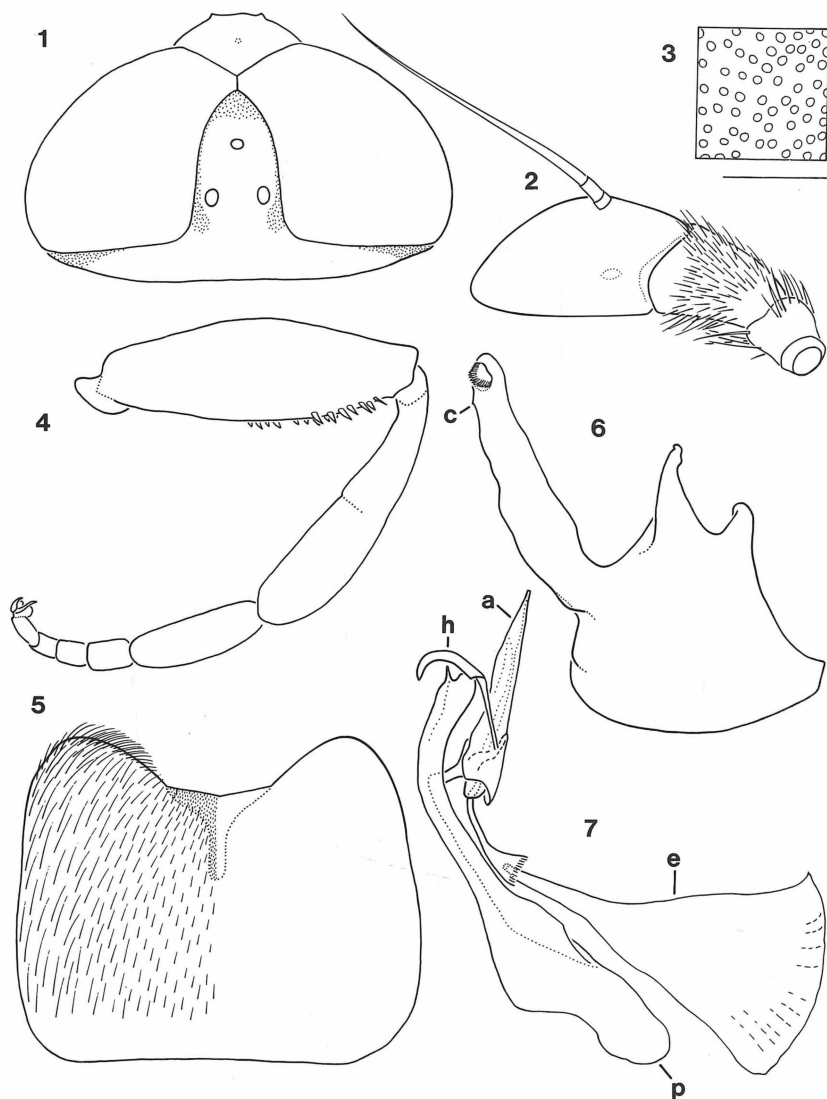
Medium sized species with entirely dark abdomen (except for the usual pruinose spots on T2-4). ♂ holoptic. Pedicel and first flagellomere slender and elongated. Notopleural suture absent. Upper and lower katepisternal hair patches broadly interrupted. Posterolateral scutal suture posteriorly without pit or with only rudiments. Scutum and tergites with dense and comparatively coarse punctation. S4 of ♂ flat, posterior margin with shallow emargination (fig. 5). ♂ genitalia of characteristic shape (figs 6 - 10), interior accessory lobe of posterior surstyle lobe densely covered with short thick trichiae (fig. 11). Differing from the similar *E. longicornis* Loew by the characters in table 1.

Description

Male (figs 1 - 11).

Size: body length 9 - 10 mm; wing length 5,7 - 6,2 mm.

Head. Width : length : depth = 1 : 0,51 - 0,58 : 0,78 - 0,83. Width of face 0,32 - 0,35 the width of head. Face with eye margins parallel or slightly broadening ventrally. Lower facial margin anteromedially not protruding (in lateral view). Length : width of subcranial cavity = 1,4 - 1,6. Width of gena : width of subcranial cavity = 0,30 - 0,33. Shape of anteclypeus rather variable, usually proximally comparatively wide, short, with ± straight diverging margins. Eyes touching for a distance of about 3 - 6 ommatidia. Length of contiguity of eyes : length of frons = 0,2 - 0,5 : 1. Anterior angle of eye bridge about 80 - 85°. Width of vertex 0,20 the width of head. Anterior ocellus more distant from the posterior ocelli than the latter are from each other (fig. 1). Distance from a posterior ocellus to the upper eye corner as long as or slightly shorter than to the anterior ocellus. Maximum : minimum length of postocular orbit 4 - 5, upper part somewhat swollen. Vertex and postocular orbit with comparatively



Figs 1 - 7: *Eumerus niehuisi* spec. nov. ♂ - 1. head, dorsal view, stippling on vertical triangle and postocular orbit showing extent of pruinescence; - 2. left antenna, external view; - 3. punctuation of scutum (submedian area of posterior half; the area equals 0,1 mm², scale 0,25 mm); - 4. left hind leg, anterolateral view; - 5. sternite 4, ventral view; - 6. hypandrium, lateral view; - 7. aedeagus with accessory structures, lateral view, a = aedeagus, c = chitinous plate, e = ejaculatory apodeme, h = hamus, p = phallapodeme.

strong tubercles at the hair bases. Carina at posterior margin of postocular orbit scarcely developed. Face and frons densely pruinose, white in lower part, yellowish in upper part. A small spot between the anterior tentorial pit and the lateral margin of the subcranial cavity \pm bare of pruinescence. Vertical triangle with yellowish pruinescence in front of anterior ocellus, and a narrow stripe of pruinescence along the eye margin (may be interrupted at posterior ocellus), widening behind posterior ocellus and ending at the upper eye corner, vertex posteriorly, and upper part of postocular orbit largely bare of pruinescence (fig. 1). Face and frons with moderately long (about 0,25 mm) pale hairs, bare only on a very narrow median stripe (at most as wide as the anteclypeus basally, may be indistinct). Vertical triangle with pale brown hairs, apart from the ocellar triangle, where there are black hairs. Upper and lower halves of eye in lateral view of equal size. Eye with moderately long (0,10-0,12 mm) white hairs, widely separated from the margins, except for next to the anterior tentorial pit and often also beside the ocellar triangle. Ommatidia of eye bridge only slightly enlarged. Antenna (fig. 2) dark brown, often \pm reddish. Pedicel elongated, 1,3 - 1,7 times as long as deep, the long ventral hairs shorter than half depth of pedicel, inner side with short pale hairs, outer side with mixed black and pale bristly hairs, distally (1/5 - 1/4 the length of pedicel) bare, except for dorsolaterally. First flagellomere 1,5 - 1,9 times as long as deep, only little deeper than pedicel, with a small sensory pit close to the basal margin, fossette indistinct. Arista dark brown, slightly thickened basally, evenly tapering towards apex.

Thorax. Colour of scutum and scutellum blackish, lighter laterally, with metallic purplish to greenish bronze lustre. Scutum with comparatively coarse (16 - 26 μ m) and moderately dense punctation (fig. 3). Scutum and scutellum with rather short hairs of somewhat uneven length (up to 0,15 mm), some distinctly longer hairs may be present on the prescutellar area, with a \pm large patch of black hairs that often covers most of postsutural area, otherwise with pale hairs. Scutum medially with three narrow stripes of pale pruinescence on the anterior 2/3 - 3/4, the median stripe very narrow or rudimentary, scutum otherwise without pruinescence. Notopleuron smooth or slightly wrinkled, notopleural suture absent. Supra-alar area at lateral margin with several rather weak pale brown to black bristles, anterolaterally with transverse striae. Bristles on postalar callus indistinct. Anterior notal wing process with sparse microscopic pile, with coarse rugae reaching the lateral half. Posterolateral scutal suture posteriorly without pit or with rudiments only. Scutellum short (length : width = 0,5 - 0,55), posterior margin with weak serration, without pruinescence, without ventral fringe. Subscutellum small. Katepisternum posteriorly with broadly separated dorsal and ventral hair patches, the latter consisting of a few hairs only. Pleural pile pale yellowish. Pleurae with whitish pruinescence except for the posterodorsal corner of the katepisternum behind the hair patch, the upper and posterior margin of anepisternum, a central patch of anepimeron, and the barrette. Hypopleuron bare. Halteres yellow. Wings without markings, with \pm distinct brownish

Table 1: Characters to distinguish adults of *Eumerus longicornis* Loew, 1855 (3♂, 3♀ from Germany and Hungary [type] examined), *Eumerus minotaurus* Claussen & Lucas, 1988 (1♂ paratype examined), and *Eumerus niehuisi* spec. nov.

For figures of antenna and ♂ genitalia of *minotaurus* see Claussen & Lucas (1988).

***E. niehuisi* spec. nov**

♂ and ♀

the long hairs on the ventral side of the pedicel shorter than half depth of pedicel (fig. 2)

postsutural area with a large patch of black hairs

supra-alar area bare of pruinescence, with transverse striae

hairs of all parts of the body slightly longer

♂

surstylus with slender apex (fig. 9)

interior accessory lobe of posterior surstyle lobe entirely densely covered with thick microscopic trichiae (fig. 11)

bristles at the dorsal margin of interior accessory lobe of posterior surstyle lobe much longer than those of the remaining surface (fig. 11)

hamus evenly curved, apex more pointed (fig. 7)

lateral wing of phallapodeme with obtuse outline in dorsal view

cercus apically notched (fig. 9)

♀

frons without longitudinal groove, surface smooth and shiny

pedicel about 1 1/2 times as long as deep

***E. longicornis* Loew,**

***E. minotaurus* Claussen & Lucas**

♂ and ♀

the long hairs on the ventral side of the pedicel longer than half depth of pedicel

scutum without black hairs

supra-alar area anterolaterally puinose, without transverse striae (longitudinal striae may occur at extreme corner)

hairs of all parts of the body slightly shorter (*longicornis* only)

♂

surstylus with broad apex

interior accessory lobe of posterior surstyle lobe without short thick trichiae

bristles at the dorsal margin of interior accessory lobe of posterior surstyle lobe of roughly equal length

hamus before apex with a ± right angle, apex more truncate

lateral wing of phallapodeme pointed

cercus without notch

♀ (*longicornis* only)

frons with longitudinal groove, surface irregularly wrinkled and ± dull

pedicel about 2 times as long as deep

tinge, pterostigma brown, veins dark, basally only little paler. Costa almost reaching apex of wing. R4+5 little curved. Upper marginal crossvein with two external spurs. Crossvein Sc-R absent. Epaulet entirely hairy. Wing almost entirely trichose, a narrow bare stripe usually present along proximal part of cubital vein. Wing membrane beyond marginal crossveins smooth (without undulations). Legs predominantly dark, the following parts reddish: the apices of all f (posteriorly less than 1/10 of length of f); the basal 2/5 - 1/2 and extreme apices of all t; all ta ventrally and often the apex of the 5th tarsomere dorsally. All legs with pale yellowish hairs, black hairs may occur on the dorsal side of f2, more rarely also on f1, and on the distal tarsomeres of ta2+3 dorsally. The long hairs on fore and mid legs shorter than the width of the respective segment. ta and apices of t1+2 apicoventrally with weak pale setulae. Mid coxa posteriorly without hairs. Hind trochanter simple. f3 thick (about 3 - 3 1/2 times as long as deep) (fig. 4), preapically with an anteroventral row of 7 - 9 and a posteroventral row of 8 - 12 short stout spines, the latter extended farther basally than the anterolateral row, the spines of the posteroventral row directed outward. t3 anteroventrally compressed on basal half, forming a \pm distinct ridge, without spinules. Legs (almost) entirely pruinose, except for large parts of f3 and t3, and the posterior side of f2.

Abdomen. Slightly less than two times as long as wide, only slightly tapering. Tergites blackish with blue tinge in the median part, laterally and posterior half of T4 purplish or greenish bronze, without pale translucent integumental spots. T2-4 with spots of pale brownish pruinescence, on T4 \pm reduced, sometimes absent, their anterior margins slightly concave on T3+4. Pile short, laterally erect, otherwise \pm adpressed, laterally, on the pruinose spots and on about the posterior 2/3 of T4 yellow, otherwise black. Punctuation about as strong as on scutum, but in median part of T2+3 denser. T3 about 2 times as wide as long, T4 about 1 1/2 times as long as T3. S8 with pale brown pilosity, some black hairs may occur. S3 wider than long (length : width = 3/4 - 4/5). S4 (fig. 5) about 4/5 as long as wide, flat, a short process at each posterolateral corner, laterally with long, medially with short, pale hairs. Genitalia figs 6 - 11. Cerci small, apically notched (fig. 9). Surstylus comparatively simple. Interior accessory lobe of posterior surstyle lobe entirely covered with dense thick microscopic trichiae and scattered short bristles, dorsal margin with a row of long thin bristles, ventral appendage with shorter bristles (fig. 11). Posterior surstyle lobe near the ventral ridge with a rather dense fringe of long thin bristly hairs on inner and outer side. Distal part of hypandrium (figs 6, 8) approximately reaching the apex of the surstyle, rather slender, apex hardly exceeding ctenidion in length, chitinous plates small, not protruding ventrally. Hamus slender, with pointed apex (fig. 7). The membrane connecting the phallapodeme with the lingula region hairy. Anterior part of phallapodeme strongly compressed dorsoventrally, with small lateral and ventral wings, lateral wing with obtuse angle in dorsal view.

Female

Size: body length 9 1/2 - 10 1/2 mm; wing length 6,6 - 6,9 mm.

Except for the usual differences between sexes very similar to the ♂. Fundamental differences are: Width of vertex 0,24 - 0,25 the width of head. Frons largely without pruinescence, only pruinose on a very narrow stripe along the eye margin; surface smooth and shiny, with rather dense punctation, without longitudinal groove. Scutum with shorter hair.

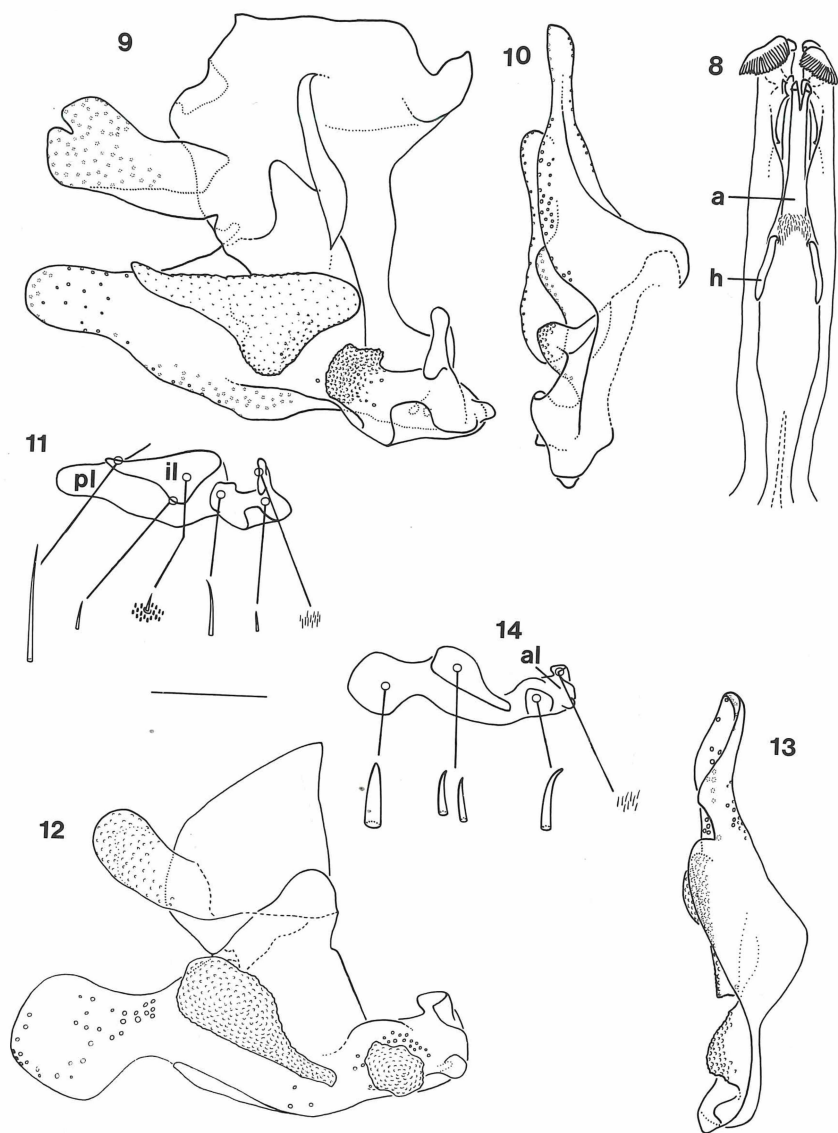
Discussion

The elongated pedicel as well as the shape of S4 and the structures of ♂ genitalia (especially hypandrium) suggest a close relationship to *longicornis* Loew, 1855, and *minotaurus* Claussen & Lucas, 1988. In its overall appearance *niehuisi* is similar to these species, too. Therefore *niehuisi* is compared with *longicornis* and *minotaurus* in table 1. In the present context *E. longicornis* and *E. minotaurus* are treated as a unit, because they are extremely similar and differ only in characters usually of minor taxonomic importance within the genus. *E. niehuisi* has two outstanding apomorphic characters, namely the absence of a pit near the posterior end of the posterolateral scutal suture (apparently unique in *Eumerus*), and the presence of short thick trichiae on the interior accessory lobe of the posterior surstyle lobe.

The identification of ♂ of these species is likely to cause problems using existing keys. The identification of *longicornis* suffers from the fact that the ♂ usually have the eyes contiguous for a considerable distance, only exceptionally separated as stated by Sack (1932) and Stackelberg (1961). The incorrect body length given for *longicornis* by Sack (1932), namely 6 mm instead of 8 - 10 mm, is a further source of confusion. The recently described *minotaurus* is not included in any published key.

Using the key in Stackelberg (1961) *niehuisi* would most likely run to *sibiricus* Stackelberg, 1952, a little known species so far reported from eastern Siberia only. According to the information and figures in Stackelberg (1961) this species is smaller than *niehuisi* and has a broad median pruinose stripe on the scutum. The figure of ♂ genitalia is similar to *niehuisi*, but the surstylus is more slender. A close relationship of *niehuisi* and *sibiricus* is obvious. As I have not seen specimens of *sibiricus* so far, I cannot give further information.

Within the palaearctic fauna an elongated pedicel seems to be restricted to *longicornis*, *minotaurus*, and *niehuisi* (character state in *sibiricus* unknown). Other *Eumerus* species with an elongated pedicel occur in the Afrotropical and Oriental regions, respectively, but all of them are quite different.



Figs. 8 - 11: *Eumerus niehuisi* spec. nov. ♂ - Figs. 12 - 14: *Eumerus vanderberghei* spec. nov. ♂
 - 8. distal part of hypandrium, ventral view; - 9, 12. right half of epandrium, internal view; - 10, 13. left half of epandrium, ventral view; - 11, 14. vestiture on various parts of the inner side of the surstyle.
 a = aedeagus, al = anterior surstyle lobe, h = hamus, il = interior accessory lobe of posterior surstyle lobe, pl = posterior surstyle lobe, scale (for vestiture only) = 0,1 mm.

Eumerus vandenberghei spec. nov.

Holotype: ♂ France, Corsica, Calvi, Punta revellata, STARESO 1-30 V 1994, leg. van den Berghe. - Paratypes: 18♂, 5♀ dto.; 25♂, 20♀ France, Corsica, Porto Vecchio, 26.V.1994, leg. van den Berghe.

The type is deposited in the collection of the 'Staatliches Museum für Naturkunde Stuttgart' (SMNS). Most of the paratypes are currently preserved in the private collection of the author, except for 2♂2♀ in the collection of the SMNS, and 1♂1♀ in the collections of the 'Museum für Naturkunde der Humboldt-Universität zu Berlin' (ZMHB), the 'Museum National d'Histoire Naturelle' in Paris (MNHN), the private collections of Dr Eric van den Berghe (Seattle, USA), Claus Claußen (Flensburg, D), Oliver Niehuis (Albersweiler, D) and Dr Martin C.D. Speight (Dublin, IRE).

Etymology: The specific epithet is derived from and dedicated to Mr van den Berghe who caught all available material. A noun in the genitive case.

Diagnosis

Rather small species with entirely dark abdomen (apart from the usual pruinose spots on T2 - 4). ♂ holoptic. Notopleural suture absent. Upper and lower katepisternal hair patches widely separated. Basal half of t3 anteroventrally with a ridge covered with short black spinules. Base of f3 ventrally with a strong hump (fig. 17; less developed in ♀), with a bare stripe extending from just posterior to the hump to the distal end. Base of first tarsomere (i.e. basitarsus) of ta3 of ♂ posteroventrally with a laterally compressed projection (fig. 17). Pruinose spots on T4 well developed, at most slightly smaller than those on T3. S4 (fig. 19) and genitalia (figs 12 - 14, 20 - 22) of ♂ of characteristic shape. T5 of ♀ sublaterally swollen. Closely related to *E. tuberculatus* Rondani, but separable by the characters in table 2.

Description

Male (figs 12 - 22).

Size: body length 5 1/2 - 7 1/2 mm; wing length 3,7 - 5,0 mm.

Head. Width : length : depth = 1 : 0,47 - 0,53 : 0,80 - 0,85. Width of face 0,31 - 0,39 the width of the head. Face broadening progressively downward. Lower facial margin anteromedially slightly protruding (in lateral view). Length : width of subcranial cavity 1,5 - 1,6. Width of gena : width of subcranial cavity = 0,37 - 0,43. Anteclypeus slender, proximally with parallel lateral margins. Eyes touching for a distance of about 8 - 9 ommatidia. Length of contiguity of eyes : length of frons = 0,8 - 1,1 : 1. Anterior angle of eye bridge about 85°. Width of vertex 0,19 - 0,22 the width of head. Anterior ocellus more distant from the posterior ocelli than the latter are from each other (fig. 15). Distance from a posterior ocellus to the upper eye corner as long as or slightly longer than to the anterior ocellus. Maximum : minimum length of postocular orbit 4 - 5. Posterior margin of upper part of postocular orbit

with a fine serrated carina accompanied by a regular row of hairs. Face and frons densely pruinose, white in lower part, yellowish in upper part. A stripe from the anterior tentorial pit to the lateral margin of the subcranial cavity bare of pruinescence. Vertical triangle with yellowish pruinescence in front of anterior ocellus, a small stripe of pruinescence along the eye margin (may be interrupted at posterior ocellus) widening behind the posterior ocellus and ending at upper eye corner, postocular orbit pruinose except for a \pm long stripe at the posterior end of the thickened part and at the pit behind the upper eye corners (fig. 15). Face and frons with moderately long (0,2 - 0,25 mm) pale hairs, bare only on a narrow median stripe (about as wide as the anteclypeus), often with a few black hairs near the lunule. Vertical triangle with black hairs on the ocellar triangle and most often behind the posterior ocelli, otherwise with pale (whitish or yellowish) hairs. Upper half of eye in lateral view slightly bigger than lower half. Eye with moderately long (60 - 86 μ m) white hairs, margins bare, but hairs nearly reaching the margin next to the anterior tentorial pit and often also beside the ocellar triangle. Eye bridge with enlarged ommatidia (diameter about 1 1/2 times as wide as in the middle of the eyes). Antenna fig. 16. Scape and pedicel short, dark, distal rim of pedicel reddish. Scape with mixed black and pale or sometimes only with black bristly hairs. Apicoventral corner of pedicel with some long black bristly hairs, otherwise with short hairs, on lateral, ventral and dorsal side usually predominantly black, on medial side predominantly pale. First flagellomere moderately large, 1,2 - 1,3 times as long as deep, about 2 1/2 times as long and about 1 1/2 times as deep as the pedicel, base ventrally pale reddish to a varying extent, apically and dorsally dark brown, with a small sensory pit close to the basal margin, foss \acute{e} te indistinct. Arista dark, evenly tapering towards apex.

Thorax. Colour of scutum and scutellum variable, usually blackish, lighter laterally, with metallic purplish to greenish bronze lustre. Scutum with rather fine (14 - 19 μ m) and rather dense punctation (fig. 18). Scutum behind the transverse suture with hairs of two different length, the long ones about 2 - 2 1/2 times as long as the short, the long 0,17 - 0,26 mm, slightly adpressed, the short more so, black in the centre, pale anteriorly (up to the transverse suture), on a large triangular area in front of the scutellum, and often also on a narrow stripe along the sides. Scutum with two narrow submedial stripes of white pruinescence on the anterior 2/3 - 3/4, often with a short additional median stripe never extended beyond the transverse suture. Notopleuron pruinose at extreme lateral margin, irregularly wrinkled, notopleural suture absent. Supra-alar area almost always pruinose anterolaterally, lateral margin with 12 - 18 strong black bristles, usually several weaker bristles also on postalar callus. Anterior notal wing process with microscopic pile, with short rugae anteriorly and at the inner margin. Scutellum short (length : width = 0,57 - 0,61), with pale hairs or with some black hairs intermixed, without pruinescence, posterior margin slightly serrated, without ventral fringe. Katepisternum posteriorly with broadly separated dorsal and ventral hair patches, the latter consisting of few

Table 2: Characters to distinguish adults of *Eumerus tuberculatus* Rondani, 1857 (specimens examined: 100♂ 100♀ from A, D, F, LV, CDN, USA) and *E. vandenberghaei* spec. nov.For figures of posterior leg, S4, and ♂ genitalia of *E. tuberculatus* see Collin (1920).***E. vandenberghaei* spec. nov.****♂ and ♀**

scutum with a large patch of black hairs

hairs of postsutural area of two distinct lengths, the long hairs numerous, 2 - 2 1/2 times as long as the short

many specimens have the alula partly bare of microtrichia

t with ± numerous black hairs on the anterior, posterior or dorsal side, often predominantly black haired

pruinose spots on T4 as large as the spots on T3, much smaller in dwarf specimens only

♂

f3 basoventrally with a big hump (fig. 17)

S8 most often with numerous black hairs, sometimes all hairs black

posterolateral corner of S4 more produced, thus posterior margin of each half of sternite deeply emarginated (fig. 19)

posterior end of surstylus broad spoon-shaped (fig. 12)

posterior surstyle lobe without swelling on outer side (fig. 13)

ventral ridge of surstylus at the anterior part drawn dorsally, thus the accessory lobes on inner side usually visible in lateral view (figs 12 - 13)

♀

frons largely pruinose

T5 without depressions medial to the sublateral swellings

T5 with black hairs

E. tuberculatus* Rondani*♂ and ♀**

scutum at most with few black hairs

hairs of postsutural area short, with or without (many ♀) some longer hairs 1 1/2 - 2 times as long as the short

alula entirely microtrichose

t except for the ventral side at most with few black hairs

pruinose spots on T4 most often much smaller than those on T3, rudimentary, or absent, especially in ♂

♂

f3 basoventrally with a small hump

S8 at most with few black hairs

posterolateral corners of S4 less produced, posterior margin of each half of sternite less emarginated

posterior end of surstylus more slender

posterior surstyle lobe with distinct swelling on outer side

ventral ridge of surstylus ± straight in lateral view, the accessory lobes on inner side hidden

♀

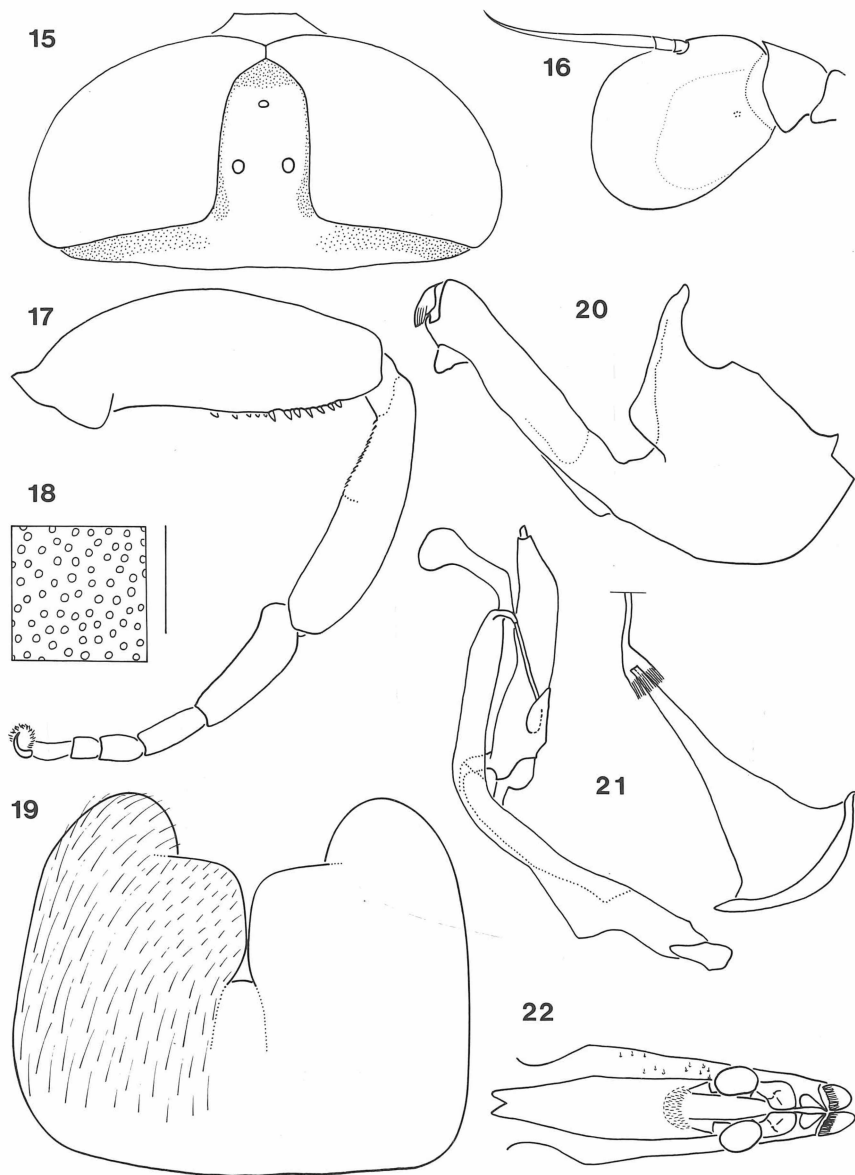
frons pruinose along eye margins only, bare in the middle

T5 anterolaterally with a pair of ± deep depressions medial to the sublateral swellings (may be indistinct)

T5 without black hairs

hairs only. Pleural pile pale, some black hairs may occur at the posterodorsal corner of the anepisternum and/or on the anepisternum. Pleurae with whitish pruinescence except for: the posterodorsal corner of the katepisternum behind the hair patch, a large central patch of the anepimeron, the barrette, the upper and sometimes also the posterior margin of the anepisternum. Hypopleuron bare. Halteres yellow. Wings without markings, except for the \pm dark brown pterostigma, veins dark, basally only little paler. Costa almost reaching apex of wing. R4+5 little curved. Upper marginal crossvein with two external spurs. Crossvein Sc-R absent. Epauklet entirely hairy. Wing bare of microtrichia on basal $1/3 - 1/2$ of bm, varying parts of br and an, also often part of the alula. Wing membrane beyond marginal crossveins not undulated. Legs predominantly dark, the following parts are reddish: the distal margin of fore and mid coxae, the apices of all f (posteriorly at most $1/10$ of length), the basal $2/5 - 1/2$ and extreme apices of all t, at least the basal tarsomeres of all ta ventrally and often partially dorsally. The long hairs on the posterior side of f1+2 predominantly pale, distally with \pm numerous black hairs, the short adpressed hairs on the anterior and dorsal surface usually predominantly black. Pile of all t predominantly pale or (often on t2) predominantly black. ta dorsally with predominantly black hairs, otherwise with pale hairs. Tarsomeres of ta1 with weak mostly pale bristly hairs, of ta2 with numerous strong black setulae. t1 apicoventrally with few weak pale bristles, t2 apicoventrally with strong mostly black bristles. Mid coxa posteriorly without hairs. Hind trochanter simple. f3 thick (about 3 times as long as deep) (fig. 17) with a strong basoventral hump, in lateral view ventrally basal to the posterior row of spines slightly concave or straight, with a bare stripe along entire length, preapically with an anteroventral row of 4 - 7 and a posteroventral row of 7 - 10 short stout spines, the latter directed outward, the posterior row extended farther basally than the anterior row. t3 on basal half with an anteroventral ridge armed with closely adpressed short spinules. First segment of ta3 posteroventrally with a basal projection (fig. 17). Legs (almost) entirely dusted, except for large parts of f3 and t3.

Abdomen. Slightly less than two times as long as wide, only slightly tapering. Tergites blackish in the median part, laterally and posterior half of T4 purplish or (greenish) bronze, without pale translucent spots of the integument. T2-4 with very strong spots of white pruinescence, their anterior margin slightly concave on T3+4, large (about 5 times or less as wide as long), on T4 almost always as large as on T3. Pile short, laterally erect, otherwise \pm adpressed, laterally, on the pruinose spots and on about the posterior $1/3$ of T4 pale, otherwise black. Lateral margin of T4 with a narrow stripe of pruinescence. Punctuation about as strong as on scutum, but in median part of T2+3 denser. T3 up to 2 times as wide as long, T4 $4/3 - 3/2$ as long as T3. S8 with black pilosity or with mixed black and pale pile, very exceptionally (1 paratype) entirely pale. S3 about as long as wide, without peculiar structures. S4 (fig. 19) flat, posterolateral corners strongly developed, laterally with long, medially with shorter pale hairs. Genitalia figs 12 - 14, 20 - 22. Cerci small, without



Figs. 15 - 22: *Eumerus vandenberghae* spec. nov. ♂ - 15. head, dorsal view, stippling on vertical triangle and postocular orbit showing extent of pruinescence; - 16. left antenna, external view; - 17. left hind leg, anterolateral view; - 18. punctuation of scutum (submedian area of posterior half; the area equals 0,1 mm², scale 0,25 mm); - 19. sternite 4, ventral view; - 20. hypandrium, lateral view; - 21. aedeagus with accessory structures, lateral view; - 22. distal part of hypandrium, ventral view.

peculiarities. Distal end of surstyli spoon-shaped, on inner wall with several unusually thick bristles (fig. 14), the „handle“ without hump on outer side. Interior accessory lobe of posterior surstyle lobe entirely densely covered with strong bristles. The ventral ridge of anterior surstyle lobe is shifted dorsally, thus two accessory lobes of the inner side are visible in lateral view. S9 below insertion of subepandrial sclerite with a pair of strong triangular projections (fig. 20). Distal part of hypandrium short (approximately reaching posterior end of the interior accessory lobe of the posterior surstyle lobe), slender, apex not exceeding ctenidion. Chitinous plates well developed, triangular in lateral view (fig. 20). Hamus club-shaped (fig. 21). The membrane connecting the phallapodeme with the lingula region hairy. Anterior part of phallapodeme strongly compressed dorsoventrally, without lateral wings, ventral wing present.

Female

Size: body length 5 1/2 - 8 1/2 mm; wing length 4,4 - 5,9 mm.

Except for the usual differences between sexes very similar to the ♂. Fundamental differences are: Width of vertex 0,25 - 0,27 (1 specimen 0,23) the width of head. Distance from a posterior ocellus to the upper eye corner less than the distance between posterior and anterior ocellus. Frons largely covered with pruinescence, often a small area above lunule bare of pruinescence. First flagellomere deeper, thus more rounded, only little longer than deep, about 2 times as deep as the pedicel. Basal hump of f3 smaller. First segment of ta3 without posteroventral projection. T4 posteromedially with a swelling of varying size, occasionally indistinct. T5 sublaterally strongly inflated, thus the lateral margins not visible in dorsal view, with predominantly or entirely black hairs.

Discussion

Using the key in Stackelberg (1961) *E. vandenberghiei* spec. nov. runs to *E. tuberculatus* Rondani, 1857. The differences between these species are listed in table 2. They are obviously closely related as they share the following characters, which are presumed to be apomorphic within the genus:

- 1) base of f3 ventrally with a distinct hump
- 2) f3 ventrally with a bare stripe proximally (almost) reaching the basal hump
- 3) posteroventral corner of the first tarsomere of ta3 of ♂ basally with a laterally compressed projection
- 4) T5 of ♀ with sublateral swelling

Furthermore S4 and all parts of the ♂ genitalia are similar, only differing in details.

Perhaps *E. reichardti* Stackelberg, 1952, and *E. caucasicus* Stackelberg, 1952 (both unknown to me) belong to the *tuberculatus* group, too. Compared with the information and figures given by Stackelberg (1961) *E. vandenberghiei* spec. nov.

differs by the long pruinose stripes on scutum, the well developed pruinose spots on T4, the usually predominantly black pile of S8, the bigger size (rarely less than 6 mm), the wider vertical triangle. In addition *vandenberghiei* differs from *caucasicus* by the more densely haired eyes, the dense pruinescence on face and frons, and the less slender first flagellomere, and from *reichardti* by the longer distance between the posterior ocellus and the upper eye corner, the dorsally evenly curved f3, the lack of a ventral notch on t3, and the presence of a basal posteroventral projection on the first segment of ta3. Some of the differences from *reichardti* are quite distinct and *E. vandenberghiei* is without doubt a separate species. But the differences from *caucasicus* are less certain. Each of the characters mentioned above has a strong intraspecific variation in many *Eumerus* species. The description of the shape of S4 of *caucasicus* by Stackelberg (1961) is not adequately precise. No figures of S4 and the ♂ genitalia have been published so far. *E. vandenberghiei* is deemed to be a distinct species, because no specimen has been found that has the character states claimed for *caucasicus*, whereas some of the studied specimens of *tuberculatus* run to *caucasicus* using Stackelberg (1961). Furthermore, in the material of *Eumerus* from the Mediterranean studied by me no specimens of *vandenberghiei* from outside Corsica have been found. Therefore it is probably endemic.

Acknowledgements

Due to the kindness of Mr O. Niehuis, Dr E. van den Berghe, and Dr M.C.D. Speight I received the material of the new species. From Mr C. Claußen I received a paratype of *minotaurus*. Dr H. Schumann made the type of *longicornis* available. Additional specimens of *longicornis* have been kindly provided by Dr A. Ssymank and Mr M. Hauser. I would like to thank Mr C. Claußen, Mr U. Schmid and Dr M.C.D. Speight for critically reading the manuscript. The English text was kindly checked by Dr M.C.D. Speight.

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Band/Volume: [2](#)

Autor(en)/Author(s): Doczkal Dieter

Artikel/Article: [Description of two new species of the genus Eumerus Meigen \(Diptera, Syrphidae\) from Corsica 3-19](#)