

**Melanostoma wollastoni sp. n. (Diptera, Syrphidae)
from Madeira, Portugal**

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Summary

Inspection of type material has revealed that *Syrphus babyssa* Walker, 1849 is in fact conspecific with *Xanthandrus parhyalinatus* (Bigot, 1884), *syn. n.* The name *babyssa* Walker has since 1908 been applied to a hitherto undescribed species of *Melanostoma*, known since 1855 when it was first collected by Thomas Wollaston. This paper gives the first formal description providing a valid name for this species, which is hereby named *Melanostoma wollastoni sp. n.*

Introduction

Walker (1849) described a species of Syrphidae from the Island of Madeira and named it *Syrphus babyssa*. The holotype female is held in The Natural History Museum, London. This specimen is labelled as follows: red-edged circular 'Holotype' label; green-edged circular 'Type' label (typically used on Walker type specimens); circular white label with 'Madeira' written on one side and the accessions number "45 90" on the other; and two other labels, both hand-written by E.E. Austen at a later date, one 'Madeira 45.90' and the other 'Syrphus babyssa Wik'.

Becker (1908) misidentified the Madeiran black *Melanostoma* as *babyssa*, giving a detailed description of the female. Following Becker's concept of *babyssa*, Frey (1939) repeated this misidentification, and provided the first description of the male. Although neither had seen the type, both Becker and Frey treated *babyssa* as a separate species from *Xanthandrus parhyalinatus*. Subsequent authors, such as Frey (1949), Gomes and Báez (1990) and Barkemeyer (1999), repeated this misidentification. Thompson (1980) examined the type of *babyssa* and discovered that it should be placed in *Xanthandrus*. As a consequence, Dirickx (1994) and Charles-Tolra (2002) listed two species of *Xanthandrus* as occurring on Madeira, i.e. *parhyalinatus* and *babyssa*, but only one species of *Melanostoma*, i.e. *mellinum* (Linnaeus, 1758). There have been no published records of any other *Melanostoma* species occurring on the island.

Inspection of the holotype of *babyssa* revealed that Thompson (1980) was correct. Walker's specimen is a female and is conspecific with type material of *Xanthandrus parhyalinatus*, as stated by Peck (1988). *X. parhyalinatus* is therefore a junior subjective synonym of *X. babyssa*. This means that the Madeiran melanic *Melanostoma* does not have a valid name and the current paper has been written to rectify this situation. Thomas Vernon Wollaston (see Salmon and Wakeham-Dawson 1999) captured a specimen at Cruzinhas, Madeira in 1855. The specimen is held in The Natural History Museum, London and is hereby designated as the holotype of *Melanostoma*

wollastoni sp. n. The full list of type material is provided below, using the following abbreviations: AWD = A. Wakeham-Dawson; AMcC = A. McCullough; AMFA = A.M.F. Aguiar; JTS = J.T. Smit; ICLAM = the collection of Laboratório Agrícola da Madeira. All capture locations are on Madeira.

Melanostoma wollastoni sp. n.

Male

Face entirely shining black, with a shining metallic blue-black hue (this more obvious in living specimens), slightly dusted; mostly flat in profile except for prominent median tubercle and slightly protruding mouth-edge (Fig. 1). Frons rather densely haired, the hairs mainly black. Eyes bare, contiguous for distance slightly longer than length of ocellar triangle (Fig. 2), angle of eyes slightly more than 90 degrees; antenna with basal two segments brownish, third segment mostly blackish but with conspicuous pale yellow-orange area basoventrally on inner surface. Arista black, thickened in basal third, with microscopic hairs much shorter than width of arista.

Thorax and scutellum: shining black with a metallic bronze hue (this more obvious in living specimens), covered with fine pale tawny-yellow hairs, scutellum with some longer and darker hairs around margin. Legs: colour varies between specimens with some almost totally dark, others almost totally fulvous. Coxae black, the apex often lighter, trochanters yellowish-brown. Front and middle legs with femora black, but orange-yellow at the extreme base and on the apical fourth to third (sometimes up to half), tibiae mostly orange-yellow except for diffuse dark median band, tarsi mostly broadly yellowish on the basal two or three segments. Hind leg darker, with orange-yellow restricted to basal third of tibia and extreme apex of femur, sometimes the basal two tarsal-segments brown-orange. Wing almost entirely covered in microtrichia, except for the 1st costal cell and a small area at the base of the 1st and 2nd basal cells, stigma brownish-yellow; wings with a brownish tinge.

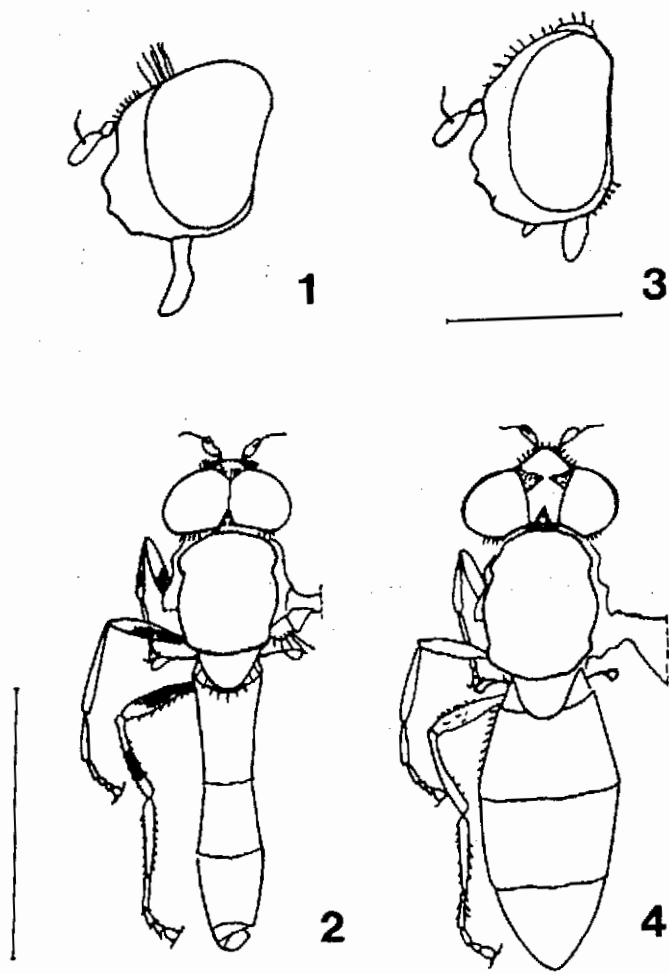
Abdomen: rather elongated in appearance, similar to *Melanostoma scalare* (Fabricius, 1794) (Fig. 2); narrowed at junction of tergites 2 and 3, but widening again posteriorly, broadest at junction of tergites 3 and 4 (abdomen more parallel-sided in living specimens); tergites entirely black, somewhat shiny, the front corners of tergites 3 and 4, and to a lesser extent on tergite 2, narrowly and inconspicuously bronze-metallic (best seen when viewed from behind). Sternites entirely shiny black. Tergites covered with fine pale and erect hairs basally and laterally, and with short dark appressed hairs medially and posteriorly. Genitalia: parameres with two widely spaced spine-like projections visible when viewed dorsally (Fig. 5).

Length: Body: 6.5 – 9.0mm. Wing: 6.0 – 8.5mm.

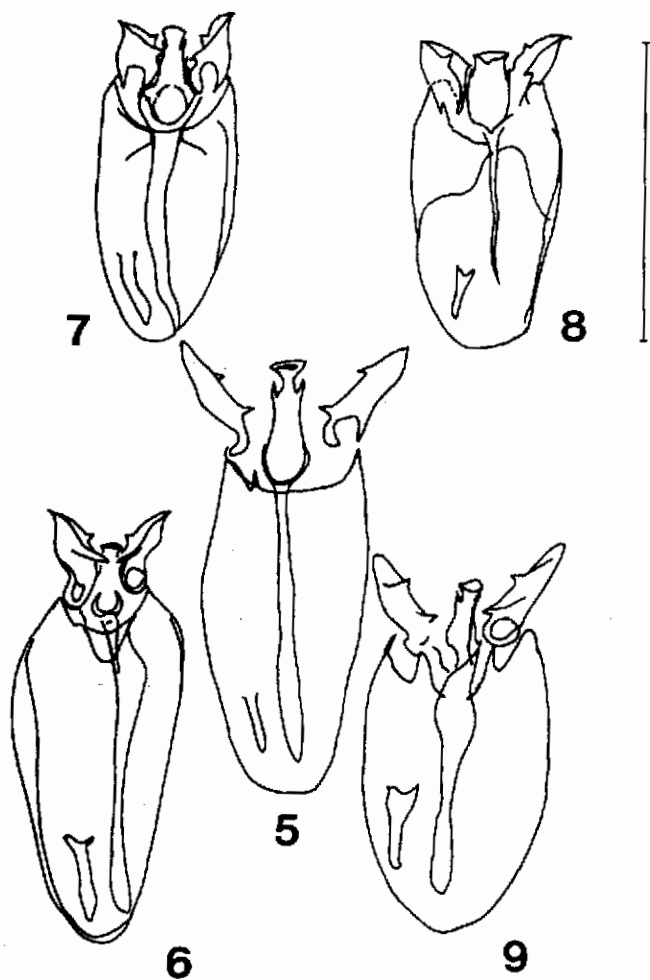
Female

Head: frons with two lateral triangular areas of grey dusting when viewed from above, similar to *M. scalare* although less conspicuous (Fig. 4), often nearly joining in centre of frons, and more conspicuous in some specimens than others. Frons with shorter hairs than in male, these all black. Face in profile with median tubercle less prominent than in male (Fig. 3).

Thorax covered with short hairs and less densely than in male. Scutellum with some longer, darker hairs on margin, but which are shorter than in the males. Legs entirely fulvous, except for the coxae, which are black; the legs can be darker in some specimens. Hind leg a little darker, with some (inconspicuous) black shading on the top third of the femur and a diffuse dark median band on the top half of the tibia. All tarsi darkened towards the apex, the hind tarsus sometimes completely dark.



Figs 1-4. *Melanostoma wollastoni* sp. n. 1, male head, lateral view; 2, male, dorsal view with wings, and legs on right, removed; 3, female head, lateral view; 4, female, dorsal view with wings, and legs on right, removed (scale bars = 1mm for heads, 5mm for dorsal views).



Figs 5-9. Male hypandrium of *Melanostoma* species: 5, *M. wollastoni* sp. n.; 6, *M. scalare* (Fabricius) (Europe); 7, *M. mellinum* (Linnaeus) (Europe); 8, *M. dubium* (Zetterstedt) (Europe); 9, *M. incompletum* Becker (Tenerife, Canary Islands) (dorsal views; scale bar = 0.2 mm).

Abdomen widest at base of tergite 3 then tapering posteriorly (Fig. 4), entirely black, somewhat shining. Sternites completely shining black.

Material examined. **Holotype** ♂, Cruzinhas, Madeira, 1855, leg. T.V. Wollaston, coll. Natural History Museum, London.

Paratypes: Rabaçal, 2♂, 11-25.v.1998; 1♂, 3♀, 8-15.vii.2002 leg. & coll. AWD; 1060 m, 3♂ (no. 687), 1.vi.1996, leg. & coll. AMFA; Portela, 2♂, 7.iii.2001 leg. & coll. AWD; Ribeiro Frio-Portela, 1♂, 2♀, 8-15.vii.2002 leg. & coll. AWD; 2♂, 1♀, 10-17.iv.2003 leg. AMcC, AWD & AMFA, coll. Natural History Museum, London; Encumeada, 1♂, 8.x.2001 leg. & coll. AWD; 1♀, 16.iv.2003, leg. AMcC, AWD & AMFA, coll. Natural History Museum, London; 1♀ (no. 423), 990m, 23.ix.1989, leg. & coll. AMFA; 970-1007m, 1♀ (no. 0821), 27.v.1989, leg. AMFA, coll. ICLAM; Chão de Ribeira, Seixal, 19♂, 6♀, 19.v.1998; Fajã de Nogueira, 4♂, 1♀, 10.iii.1998, leg. & coll. JTS; 600-800m, 1♂ (no. 0370), 7.v.1993, leg. AMFA, coll. ICLAM; Achada do Garamacho, 1♂ (no. 423), 23.ix.1989, leg. & coll. AMFA; Levada do Risco, 1045m, 2♂ (no. 688), 1.vi.1996, leg. & coll. AMFA; Queimadas, Santana, 880m (no. 1272), 1♀ (no. 1272), 26.viii.1999, leg. & coll. AMFA; 880m, 1♀ (no. 0822), 26.viii.1999, leg. AMFA, coll. ICLAM; Chão dos Louros, 850m, 1♂ (no. 0820), 2.vi.2000 leg. AMFA, coll. ICLAM.

Additional material (all leg. and coll. JTS): Chão da Ribeira, Seixal, 1♂, 1♀, 20.iii.1998; 2♂, 21.iii.1998; 1♂, 3♀, 15.iv.1998; 2♂, 3♀, 23.v.1998; Loreto, 1♂, 5.v.1998; Montado do Barreiro, 1♂, 15.v.1998; Portela, 2♂, 17.vii.1997; 2♂, 3♀, 19.vii.1997; 1♀, 31.vii.1997; Rabaçal, 1♂, 5♀, 20.vii.1997; 2♂, 2♀, 21.v.1998; Ribeira de Santa Luzia, Corujeira, 1♂, 2♀, 24.v.1998.

Etymology. This species is named after Thomas Vernon Wollaston (1822-1878) who collected the male specimen that we have designated as the holotype of *M. wollastoni*.

Diagnosis (comparison with other Western Palearctic *Melanostoma* species)

M. wollastoni is one of five *Melanostoma* species known from the Western Palearctic. The others are *M. dubium* (Zetterstedt, 1838), which is an alpine species, *M. incompletum* Becker, 1908, which is endemic to the Canary Islands, and two widespread species *M. mellinum* and *M. scalare* (Fabricius, 1794). The abdomen of *M. wollastoni* is always completely black in both sexes, while the other Western Palearctic *Melanostoma* usually has yellow markings on at least some of the abdominal tergites, though melanitic specimens of these sometimes occur. The area of yellow on *M. dubium* is variable and is usually much reduced or may even be absent, and the areas of yellow on *M. incompletum* are consistently reduced in comparison to *M. mellinum*. Of these five species, only *M. mellinum* and *M. wollastoni* have been found on Madeira.

In its general structure, *M. wollastoni* is most similar to *M. scalare*, both sharing an elongate appearance. *M. dubium*, *M. mellinum* and *M. incompletum* have a different appearance, which is mainly due to their having a proportionately shorter abdomen than either *M. wollastoni* or *M. scalare*. However, the structure of the male genitalia suggests a different grouping (Figs 5-9): *M. dubium* (figured from a Swiss specimen in the Natural History Museum collection), *M. scalare* and *M. mellinum* have parameres with spine-like projections close together, while *M. wollastoni* and *M. incompletum* have these projections much more widely separated.

Ecology

This species is endemic to Madeira, where it is found in forested areas, mainly in the endemic laurisilva and *Erica* forest and to a lesser degree in the *Acacia/Eucalyptus* Plantation forests (see Press and Short 1994; Capelo *et al.* 1999). It flies between March and November at altitudes between 500 and 1500m above sea level (Smit *et al.* in preparation). The adults are present at forest-edges and in forest clearings often sitting on leaves up to three metres above the ground, but rarely in direct sunlight. They have been observed feeding on yellow flowers of *Ranunculus* species (including *R. cortusifolius*), Asteraceae and Apiaceae. The immature stages of this species are unrecorded.

Acknowledgements

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