ON SOME EMPIIDID FLIES OF THE AZORES AND MADEIRA

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With 2 plates

Empidid flies collected in the Azores in 1958 and in Madeira in 1935 and 1938 were identified by R. Frey, as follows:

Two species of the Azores, Atalanta stagnalis (Haliday) and Drapetis assimilis (Fallén), have a wide geographical distribution in Europe, Africa and North America.

Three other species, Parathalassius blasigi Mik., Atalanta bipunctata (Haliday) and Drapetis acenesensis Wiedemann occur in the Azores, in Europe and in Africa.

Empis aestiva Loew, E. vitripennis Meigen, Rhamphomyia gibba Fallén, Tachydomia minuta Meigen, and Stilpnon nubila Collin are found in the Azores and in Europe.

Drapetis disparilis Frey and Chersodromia gratiosa Becker occur not only in the Azores, but also in some of the Canary Islands.

The Azores have two endemic species of Empididae: Atalanta sexmaculata Frey and Atalanta storai Frey. Both belong to the subfamily Hemerodromiinae.

Madeira has two widely distributed species of Hemerodromiinae, viz. Drapetis acenesensis Wiedemann and D. assimilis (Fallén), and three endemic species of this subfamily, Roederioides longirostris Frey, Atalanta heamorhoidalis Becker and A. rabacofii Frey.

The only two species of the Hemerodromiinae in the Canary Islands are Atalanta amarantha Becker and Wiedemannia laguna Becker. Both are endemic.

1) Report No. 35 from the Lund University Expedition in 1957 to the Azores and Madeira.
2) Zoological Institute of the University of Grenoble, France.
Dr. Brinck and Dr. Dahl kindly sent me the Empidid material they collected during their visit to the Azores and Madeira in 1957. The specimens belong to the following species:

_Tachydromia minuta_ Meigen

_Azores._ São Miguel. 2 km E of Ribeira Grande. 8.III.1957, 1 ♂. It does not belong to the variety obscuripes Strobi, but the antennae are longer than in typical specimens (the third segment is 2.5 times longer than wide) and the hairs on the front femora are less numerous. This species has already been recorded from the Azores.

_Stilpno nubila_ Collin

_Azores._ São Miguel. Fonte Grande, SE of Feteiras. 6.III.1957, 1 ♂. Already recorded from the Azores.

_Atalanta (Kowaria) haemorrhoidalis_ Becker

Specimens found on wet rocks, in the northern part of Madeira, were described by Becker. Forty eight years later, a more complete description was given from the types in the Museum of Berlin by the German dipterist E. O. Engel. But no figures were published.

Dr. Brink and Dr. Dahl sent me several specimens in perfect condition, and as _A. haemorrhoidalis_ has very characteristic male genital parts, I shall present a description and add some figures.

**MALE** (figs. 1a - 1e)

On the face, 10 - 12 setae; the two inferior ones are longer than the others. Four setae on the pronotum. Four acrostical setae on the front part of the mesonotum. On each side, 4 long dorso-central chetae, 1 humeral ch., 2 presutural ch., 1 supraalar ch. and 1 long cheta and a very small one in the sutural triangle. On the scutellum, 2 long chetae. On each side of the mesophragma, a group of very small chetae. Femur 1 with very few chetae; a pre-apical comb on the anterior side (fig. 1a) and 4 straight chetae, almost as long as the femur is wide, on the proximal 1/5 of the femur. No other special chetae or hairs on the legs. Wing (fig. 1b) with a light brown tinge. Stigmatic spot pale, as large as 2/3 of the radial cell; it starts from the tip of r₁, and ends at 2/5 of the distance between

Plate 1. _Atalanta (Kowaria) haemorrhoidalis_ Becker, _male._ a: distal part of right femur 1, b: proximal part of wing, c: genitalia, side view, d: genitalia, inside view (the ninth tergite has been split in two parts along the sagittal level and the right part is seen from the left side). e: left internal lamella, seen from the left.

_ac: aedeagus. el: external lamella. il: internal lamella._
the apex of r₁ and the apex of r₂+₃. The nerve r₄ runs almost parallel to m₄, and r₅ runs distally towards m₄.

The ninth abdominal tergite is almost spherical and more than twice as large as the eighth abdominal segment; this is a very characteristic feature. The external lamella (fig. 1c and 1d) has two branches, an anterior and a posterior one. Two ridges covered with hairs run along the bases of the branches. The internal lamella is simple (fig. 1e).

Length of the body, extended: 4.3 mm. Wing length: 3.7 mm.

**FEMALE**

Similar to the male.

**Madeira.** Terreiro da Luta, 850 m, 20.IV.1957, 8♂ 2♀. Rib. do Lago, E of Pico do Serrado, alt. 900 m, stream, 27.IV.1957, 3♂, 11♀.

*Atalanta (Kowzria) dahl n. sp.*

**MALE** (figs. 2a - 2i)

Face in its narrowest part as wide as 2/3 of eye in front view. The face widens gradually towards the mouth; it does not extend below the eyes and its lower edge is slightly convex; it bears 4 pairs of hairs, the lowermost being the longest. There are two interocellar chetae and 6 postocellar ones; on each side 1 postvertical and 6 postocular chetae which are black; the remaining postocular chetae are yellow. Mesonotum dark brown, with, on each side, a more lightly coloured stripe between the row of acrostical chetae and the corresponding row of dorso-central chetae. On each side only 4-6 acrostical chetae, 5 dc, 1 humeral, 1 presutural, 1 cheta and 1 hair in the sutural triangle, 1 prealar, 1 supraalar, 5 or 6 propleural hairs. On the scutellum 2 long chetae close together. Legs brown.

On each front femur an anterior preapical comb made of 8 or 9 short spines touching each other, and, on the proximal third of the segment, 7 to 9 ventral erect chetae longer than the other ones; some of them are almost as long as the femur is thick in its largest part. Femora II and III have 5 or 6 especially long preapical chetae; the posterocentral one is the longest. Tibiae III have, on their distal 1/4, dorsal chetae slightly longer than the other ones. The tarsi have short pulvilli and a very long empodium. The wing is a little darkened in a few places (fig. 2b); it has no special features, save a thickening of the nerve r₄-₅ just before the transversal nerve r m; the costal spot is light brown, and more than twice as

Plate 2 - *Atalanta (Kowzria) dahl n. sp.* male. a: distal part of leg 113. b: proximal part of wing. c: genitalia, side view. d: left anal lobe. e: left internal lamella, outside view. f: right internal lamella, inside view. g: right external lamella, inside view. h: one of the internal hairs on the distal part of the external lamella. i: left external lamella, external view.
long as large; it extends from the apex of r, to half the distance between
the apex of r, and the apex of r.s. The genital parts are not very
different from those of Atulanta robusta.
Length of body, extended: 5 mm. Length of wing: 3.4 mm.

FEMALE

Tibiae III have no especially long cheteae.

Azores: Faial: Nasce Água, 3 km S of Cedros, 5.IV.1957, 1 ♂. São
Miguel, Ribeira das Três Voltas, near Ribeira Chã, 16.III.1957, 1 ♀.
Holotype and allotype in the Entomological Museum, University of
Lund.

Ten species of Hemerodromiinae occur in the islands of the Atlantic
Ocean, remote from the continents. Only two of them have a wide range.
All the others are endemic of one island or of a group of islands situated
close together.

Roederioides longirostris Frey has probably an American origin, since
no species of this genus occur in Europe.

Atulanta sexmaculata Frey, A. stori Frey, A. dahl n. sp. from the Azores,
A. robusta Frey, A. haemorrhoidalis Becker from Madeira, and A. ama-
rantha Becker from the Canary Islands, all belong to the same subgenus,
viz. Kovarzio or to a subgenus closely allied to Kovarzia. They probably
have an old world origin, since there are 8 species of Kovarzia in Eu-
rope, 2 in Africa and none in America.

As to Wiedemannia lagunae Becker of the Canary Islands, this is the
only species of this genus in the Atlantic islands. There are at least 7
species of Wiedemannia in America and more than 40 in Europe.

It is of some interest to compare the fauna of Hemerodromiinae of
these Atlantic islands with that of Corsica and Mallorca in the Mediterrane-
sean Sea, islands which are close to the continent. Corsica has two widely
spread species of Atulanta, viz. A. (Atulanta) nigra Loew and A. (Kovarzia)
tibiella (Mik), one endemic species of the same genus, A. (Kovarzia) schna-
blii Becker, and only one species of Wiedemanni, W. corsicana Vaillant,
which is endemic. Mallorca has only two species of Atulanta: A. (Hydro-
dromia) stagnalis and A. (Kovarzia) dieuzeidei Vaillant, and one of Wiedem-
mannia, W. ouedorum Vaillant. All these are widely distributed in Europe
and Africa.