

## Notes on the Camillidae (Diptera) in Strobl's Collection and on the Biology of Camilla

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Amongst the Drosophilidae sent from Graz (BASDEN, 1961) were Strobl's specimens of *Camilla* Hal. DUDA (1934) had not seen these and he was uncertain of the identity of STROBL's species. Therefore the opportunity is taken of reporting on them here.

In his various papers STROBL recorded one species (*glabra* Fall.) and three new varieties (*atrimana*, *nigripes* and *rufipes*), which I treat here as species; as well as a Spanish female of *glabra* with black antennae, and two male forms of *glabra* from Austrian Littorale.

Data of the specimens in the collection are included in the final list in the paper on STROBL's Drosophilidae (BASDEN, 1961), which should be consulted. Notes on the species are given below.

***Camilla atrimana* Strobl** (= *atripes* Duda). New synonymy.

This was described (1910: 210) as a variety of *C. glabra*, from 2 ♂, Admont and Seitenstetten. The two existing specimens are 1 ♂ (No. Str 146 of the collection) and 1 ♀ (Str 147). The ♂ is obviously the original specimen and has been selected and labelled by me as Lectotype of *Camilla atrimana* Strobl. The female must be the other »♂«, as it is from Ybbsthal (Seitenstetten), therefore it has been selected and labelled as syntype. No further specimens of

*atrimana* were recorded, but No 147 may have been recorded previously, as *Drosophila glabra*, (STROBL, 1880: 35).

Both agree with STROBL's description and with that of *C. atripes* Duda (1934: 5), which species DUDA clearly thought might be the same as *atrimana*, and I have no hesitation in confirming the name *atripes* Duda as a synonym of *atrimana* Strobl. (DUDA gives the date of the latter as 1900 instead of 1910).

In STROBL's specimens the arista is long and drooping to just below the vibrissae; antennae wholly brown (♀), 3rd. jt. black (♂), 3rd jt. long-haired in both sexes. Cheeks below lowest point of eye narrower than width of 3rd. antennal jt. First legs wholly black (trochanter brown); 2nd and 3rd legs with coxae and femora black, last tarsal jt. brown, rest of legs yellow; ♂ front femur somewhat swollen. One-third from end of 1st femur is a quite small but distinct antero-ventral spine (as in *glabra* (= *subfuscipes* Coll.)); behind (not level with) the longest postero-ventral bristle. Tergite 3 of abdomen with central triangular area of micro-pubescence reaching back almost to hind margin (♂) or to half way (♀). The stronger costal fringe of wing extends halfway between ends of 2nd and 3rd veins (♂) to slightly beyond (♀). The label beside the ♂ refers to the penis, but Strobl does not mention this organ in his description, though he does for *C. nigripes* (1906: 372). Genitalia not examined.

***Camilla nigripes* (Strobl) = *acutipennis* (Loew). New synonymy.**

The Strobl species was described (1900a: 5) as *Noterophila* (*Noteromyia*) *acutipennis* Lw. var. ? *nigripes* (sic), 1 ♂ 1 ♀ from the Sierra Morena, Spain. STROBL was not sure that these Spanish specimens were distinct from LOEW's Grecian ones (of *N. acutipennis*), though later (1906: 372; CZERNY & STROBL, 1909: 280) the ? is dropped. Loew described *acutipennis* in January, 1866.

There are 4 ♂, 8 ♀ in the collection (Str 286—291) but the Ronda ♂ of 1906 is absent. Str 289, 290 are Becker specimens (labelled *Camilla acutipennis*) from Athens, which STROBL (1906: 372) reported as agreeing completely with his Spanish ones. Even so he still recorded the latter as *acutipennis* var. *nigripes*. All 12 specimens are undoubtedly *acutipennis* Lw., so the name *nigripes* Strobl becomes a synonym, as was doubtfully surmised by DUDA (1934: 4).

Becker also sent Greek specimens of *acutipennis* to Oldenburg, who (1914: 28) discussed its characters and suggested semi-seriously the generic nickname (Spitzname) »*Oxycamilla*» for it, as separate from *Camilla*. But in the following part of the sentence he refutes this separation as not absolutely essential and that it should not be done in this case. Therefore I do not accept *Oxycamilla* as a valid name.

In 1922 Enderlein selected *Noterophila acutipennis* Lw. as genotype of his new, monobasic genus *Ambacis*, in the Drosophilidae. This manoeuvre was

overlooked by DUDA and others, but it does not seem necessary to retain *Ambacis* above subgeneric rank.

Str 286 are the original pair, from Cardenas, which place STROBL described in Part I of his series on Spanish Diptera (1898, Wien Ent. Ztg., 17 (10): 294) as, »... Venta de Cardenas, einer einsamen Station inmitten der Sierra Morena, die ich am 23. und 24. April [1898] untersuchte.» The male has been selected and labelled as Lectotype and the female as Syntype of *Noterophila nigripes* Strobl. The female, being loose on the minuten pin, was gummed by me to the pith mount.

DUDA (op.cit.) says that the anteroventral spine on front femur is wanting, but it is present as a minute rudimentary black peglet, much smaller than in *glabra* or *atrimana*, one-third distant from the end. Legs wholly blackened, with in some specimens the hinder tarsi and ventral trochanter area browner. Arista shorter haired above and below than in *atrimana*, only the basal 3—4 hairs above being long, the rest of the arista pectinate to pubescent, and pubescent below, and 3rd antennal jt. not so obviously hairy. Thorax glossy, with traces of dusting at sides and anteriorly; 3rd tergite with dusting on basal third. The stronger costal fringe extends to the 3rd vein in all specimens except in the one wing of the ♀ syntype, where it extends only halfway between 2nd and 3rd veins. Cheeks broader than usual, especially posteriorly; below lowest point of eye quite as wide as or wider than width of 3rd antennal jt. A shining, metallic black insect.

### ***Camilla rufipes* (Strobl) (? = *fuscipes* Coll.).**

In 1893 (p. 132) Strobl recorded three forms of *Noterophila glabra* Fln., taken by G. B. Novak at Zara (Dalmatia). These were (1) 1 ♂ with femora almost wholly brown-black; (2) 1 ♂ with legs almost wholly yellow-red; and (3) 1 ♀ with legs almost entirely red, and with cheeks, part of the face and a transverse band over the antennae red. To the last specimen he gave the name var *rufipes*. He referred to it again in 1898 (see Strobl, 1900 b).

In the collection are 6 specimens under *glabra* (Str 148—153) but none is labelled *rufipes*. Str 148, ♀, stands next after STROBL's long green label in the box, »*Noterophila glabra* F11. v (— ? —) Zara (Strobl.) ♀», but with no date. The words in brackets are in STROBL's usual shorthand, but unfortunately the first is not clear but could be »gesichtet lagert» (Mecenovic, *in litt.* 11. 3. 1960). This reasonably suggests a reference to the face (Gesicht). The specimen agrees with the description of *rufipes*, fitting it the best of the 6 specimens. Cheeks, side edges of face (parafacialia) and front of the frons are yellow-brown; and the legs, with coxae and femora are (now) uniformly yellow-brown, with no darkening. 3rd antennal jt. black; 1st and 2nd light brown.

Although STROBL himself collected at Zara in 1879 (STROBL, 1893: 29) he records (see above) only Novak specimens of any *Camilla* (*Noterophila*) from

there, but the main label in the collection has »Zara», with »Strobl» in shorthand. However, he states (l.c.) that he took possession of Novak's specimens that he (Strobl) determined, therefore the Novak specimens would be in Strobl's collection not in Novak's (which is or was at Zagreb (= Agram)). Therefore I consider Str 148 is the type and it has been selected and labelled as Lectotype of *Noterophila rufipes* Strobl. The left wing, being loose, was transferred to a balsam pin-mount.

*C. fuscipes* Collin (1933: 273; 1956: 226) appears to be conspecific with *C. rufipes* (Strobl), but the former usually has coxae and femora darkened. More continental specimens need to be examined to decide any synonymy.

**Camilla glabra** (Fln.) (= *subfuscipes* Coll.).

It appears that STROBL considered this species should have some darkening on the legs for he mentions (1898: 266) that *Drosophila nigricolor* n.sp. differs from *Noterophila glabra* in having wholly red legs. The female with black antennae, from Elche, Spain (Czerny & Strobl, 1909: 280) is not in the collection, but the following 6 specimens are: —

Str 149, ♀, from Kalocsa is a typical *glabra*. (Kindly confirmed by J. E. COLLIN). Not recorded by Strobl. The label bears the letter v as though indicating a variety but it might be part of the date.

Str 150, ♂, from Austrian Littorale is *glabra*. The femora are quite dark and it could be the No. 1 form collected by Novak at Zara (see under *rufipes*).

Str 151, ♂, from Arriach (Strobl, 1901: 240, as female) is *glabra*. (Confirmed by J. E. COLLIN).

Str 152, ♂, from Zara (Novak) is *glabra*. This could well be the No. 2 form mentioned under *rufipes*, the legs being unicolorous light brown, the femora appearing darkish when in the shade of the body.

Str 153, ♂, without label is unknown to me. Coxae and femora blackened, 3rd antennal jt. black, a long spine on 1st femur, only a little dusting on thorax and 3rd tergite, and 4th tergite longer than previous three together (as in *glabrata* Coll.). Wings torn.

The arista of specimens 150—152 are not quite typical of normal *glabra*, the upper hairs decreasing evenly in length towards tip instead of only the 3 or 4 basal ones long. However, some English specimens in my collection have the same type of arista.

The *C. glabra* of Duda (1934) is not Fallén's species but appears to be a mixture of *C. glabrata* Coll. and *C. fuscipes* Coll.

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With the STROBL specimens was sent a pair of »*Drosophila glabra*» from the Collection Joanneum, Graz (No. Jo 303). They were labelled *Asch 18 7 873* (7's crossed), and thus can be assumed to be Kowarz specimens. Both

are *Camilla glabrata* Collin (1956), the female having 5th tergite extensively yellow (var. *flavicauda* Duda, 1922: 152, which is known only in this sex). The male was confirmed by J. E. COLLIN. *C. glabrata* is further taken in Finland (HACKMAN 1958: 58 as *C. glabra*). The yellow variety of the female is known also from Germany. It is of interest to note that COLLIN's new species *subfuscipes* = *glabra* (Fln.) was also described from Kowarz specimens (Collin, 1933: 274).

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Since the biology of *Camilla* has been little reported, the opportunity is taken of summarising my own rearings in England. From these it is evident that the species are associated with small mammals, particularly with the floor-soil in warrens at entrance to rabbit burrows (*Oryctolagus cuniculus* (L.)), from which they can be reared in large numbers. None has been obtained from rabbit nests, of which many have been taken.

*C. atrimana* Str. 1 ♂ em. 7th May, 1931 from puparium found in subterranean nest of small rodent (? shrew), Bucks (Farnham Royal). 1 ♀, 15th September, 1934, in entrance to rabbit burrow, Berks (Temple). 1 ♀, em. 17th May, 1935 from entrance-soil of rabbit burrow taken August 1934, Berks (Temple).

*C. fuscipes* Coll. Hundreds of specimens reared during May to October of 1932—1935 from soil collected every month of the year in entrance to rabbit burrows. Live adults were taken in entrances during all months from May to November. Bucks (Burnham, Burnham Beeches, and Bockmer End); Berks (Temple).

*C. glabra* (Fln.) 1 ♀ em. 19th June, 1934 from entrance-soil taken 16th June, 1934 from rabbit burrow, Burnham. 1 ♀ em. 21st May, 1935, also from entrance-soil, taken 29th December, 1934, Burnham.

*C. glabrata* Coll. Twenty-four specimens of both sexes were reared from entrance-soil of rabbit burrows or were actually in the entrance, during May, June, August and September, 1934—1935. All Burnham except 1 pair from Temple, in May.

The soil was kept in gauze-covered tins in an unheated insectary.

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