Type Collections of Drosophilidae

(*Diptera*)

1. The Strobl Collection

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(With 2 plates and 14 figures)

Contents

I. Introduction

This is the first of a series of papers on the old type collections of European *Drosophilidae*. The original intention was to complete the Fallén and Zetterstedt collections but it has been more practicable to deal with Strobl's collection first.

The purpose of the series is (1), to decide the correct identity of species from an examination of type specimens; (2) to select and label the types if this has not already been done; (3) to re-identify all specimens in the collections in the light of present-day knowledge of the group, and so to correct or confirm distribution records; (4) to bring the descriptions up to date; and (5) to obtain a thorough appreciation of the underlying principles and interpretations of the author concerned. This last I consider to be important, and it can be accomplished only by combining a sympathetic study of the author's collections and his writings.

Besides the original papers and some other relevant publications, the work used as a standard throughout this series is O. Duda's "Drosophilidae" in E. Lindner's "Die Fliegen der Palaearktischen Region".

The redescription of flies in such collections is essentially that of specimens rather than of species. Therefore it may be in more detail than usual;

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but this does not exclude comparative notes with other specimens or species, or discussions on the identity of species.

The terms used are mostly those in general use but a few will need defining, and also attention is drawn to structures not normally included in descriptions. As used in this series they are as follows.

Head

Vertex — the transverse region between top of eyes, limited above by the postvertical bristles or by the vertex rim if the postverticals are definitely on the occiput (as in *Amiota* and *Stegana*), below by and including median ocellus. Therefore the ocellar patch bearing the 3 ocelli is on the vertex but the ocellar triangle extends below it. Frons — between but excluding bottom ocellus and antennae, and excluding frontal lunule. Front — the vertex plus the frons, i. e. all the region between the eyes above

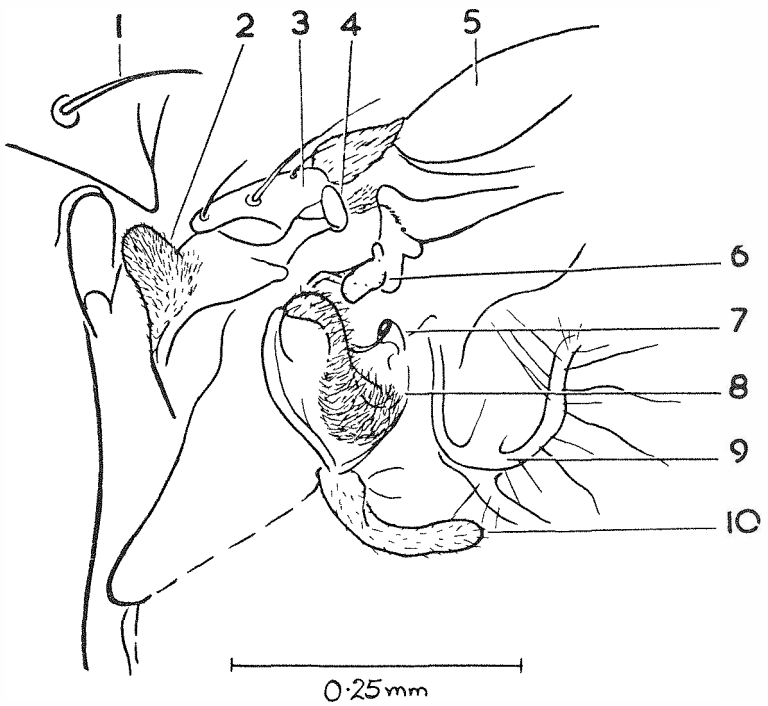

Fig. 1. Pteropleuron of *Drosophila funebris* (Fabr.) 1, postr. notopleural bristle on notopleural callus. 2, pteropleural knob (pre-epaulet of Lowne). 3, tegula (epaulet of Lowne). 4, tegular organ (hypopterygium of Lowne). 5, base of costa. Between costa and tegula is the basicosta (sub-epaulet, Lowne; humeral plate, Ferris). 6, axillary plate (hamulus of Lowne). This articulates with the sclerotised grooved ridge on ventral base of auxiliary vein (lower part of remigium, Lowne), where it coalesces with common base (radius) of veins I—III. (Ferris, fig. 15b, incorrectly calls this ridge the 1st. axiallary). 7, nodulus of lower (thoracic) projection of 2nd axillary (unguiculus, Lowne). 8, upper squamal callus. The ridges immediately around this bound the sacculus of Lowne, but in *Calliphora* there is no hairy callus on the sacculus. 9, squama. 10, lower squamal callus (epicosta, Lowne). This is a lower continuation of the ridge antr. to upper squamal callus

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the antennae. The length of the front is measured medially where, by curvature of vertex and bottom arch of frons, the length may be a little less than near the eyes. Jowl (cheek, bucca, or Backe of authors) — the region below bottom edge of eye, from vibrissal angle backwards to bottom of occiput. The width (i. e. height) is measured at the narrowest, i. e. from lowest point of eye to mouth edge. Thus the peristoma and its oral hairs (= peristomal hairs of authors) are included in the jowl. Epistoma — this lies across bottom of face immediately above mouth edge, between the vibrissae. Face — extends from arch of frons down to mouth edge and thus includes epistoma [1]). Clypeus (prelabrum) — the separate structure projecting just below epistoma.

Head chaetae — Usually only 1 vibrissa (= 1st. oral of Drosophilists), the next bristle or hair in line with it is the 2nd oral. If 2nd oral is strong the description would be "two vibrissae". Oral hairs often 2-rowed near vibrissa, the upper hairs the finer, but the term usually refers to the lower row of stronger hairs. On rear part of jowl are 2 or 3 downwardly directed jowlar bristles (Backenborsten of Hendel), sometimes on disc of jowl sometimes close to mouth edge; the most posterior one if on rear of mouth opening may be called the postoral. On back of head (occiput) are three main series: (1) occipitals, usually 2—5 inwardly directed hairs just behind verticals; (2) postoculars, outwardly directed, continuing down from occipitals close to postr. eye border to rear of jowl, usually single rowed above, 2—3 rowed below and ending at jowlar bristles; (3) cerebrals, a double patch of short upwardly adpressed hairs just above neck (called by Ferris (1950: fig. 2c) occipital setae, which clashes with the more generally accepted usage). There are 3 orbitals, the top one (upturned = reclinate) designated orb 1 (= p. r. orb. of Duda), the mid (2nd reclinate) orb 2 (= a. r. orb.), the bottom one (downturned = proclinate) orb 3 (= p. orb.). In *Chymomyza* orb 2 and orb 3 are transposed.

Thorax

Dorsum — the whole dorsal area above the wings, excluding humeri, scutellum, and the pleura but including notopleuron. Postscutellum — all the visible region posteriorly below scutellum (variously termed metanotum or postnotum by authors). Metapleuron (metanotum of Ferris; "Pt" of Hendel, fig. 19) — the antr. boundary stretches from a level with postr. spiracle up to lower corner of scutellum, and posteriorly runs just antr. to haltere; it is divided by an oblique suture into lower (anterior) sclerite and a larger upper (postr.) one, which latter is not very sharply demarcated from side edges of postscutellum. Wing-base — on pterothorax are various small structures usually ignored (figs. 1, 2) viz: (1) Tegular organ, a sometimes microscopic structure (but large in *Steganinae*) with a short pedicel and a yellow, orange, or blackish elongate knobbed head lying against distal end of tegula; (2) Pteropleural-knob — an upright velvety prominence, usually dark, at uppermost antr. corner of pteropleuron and at base of tegula; (3) two squamal-calli, which border antr. and lower limits of wing-base-structures; the upper, a somewhat elongate lump, curved, pilose, thicker below, usually dark, and placed obliquely immediately below tegular organ; and a lower horizontal one, usually more slender and paler and sometimes not so pilose.

Thoracic chaetae — Sutural hairs — a transverse row of usually 2—4 strongish recumbent hairs just anterior to transverse suture, usually a little stronger than nearby dorsum hars; the innermost one might be mistaken for a presutural dorsocentral. Discal sternopleural hairs — a few very delicate hairs on antr. disc of sternopleuron and usually overlaid by front coxae; these are distinct from the sternopleural bristles and their attendant (posterior) sternopleural hairs. Sternopleural bristles — The antr. sterno. in some species is consistently preceded by a small hair, in other species

[1]) In *Protostegana*, etc. where a definite frontal lunule is present the face extends from upper base of antennae.

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(e. g. *D. melanogaster* Mg.) the hair is absent. In some species there are only 2 sternos. (antr. and postr.) which then often are at the same level on sternopleuron. More usually a third (mid) is present and the postr. sterno is below the level of antr. and mid sternos.

The extent of the hairs on dorsum is worth noting. Sometimes the presutural bristle (when present) is at their extreme lateral limit, sometimes not; there may not be hairs between the two supra-alars, or between the 2 dorsocentrals (DC); and in some species the postr. postalar bristle is the most posterior of all hairs and bristles.

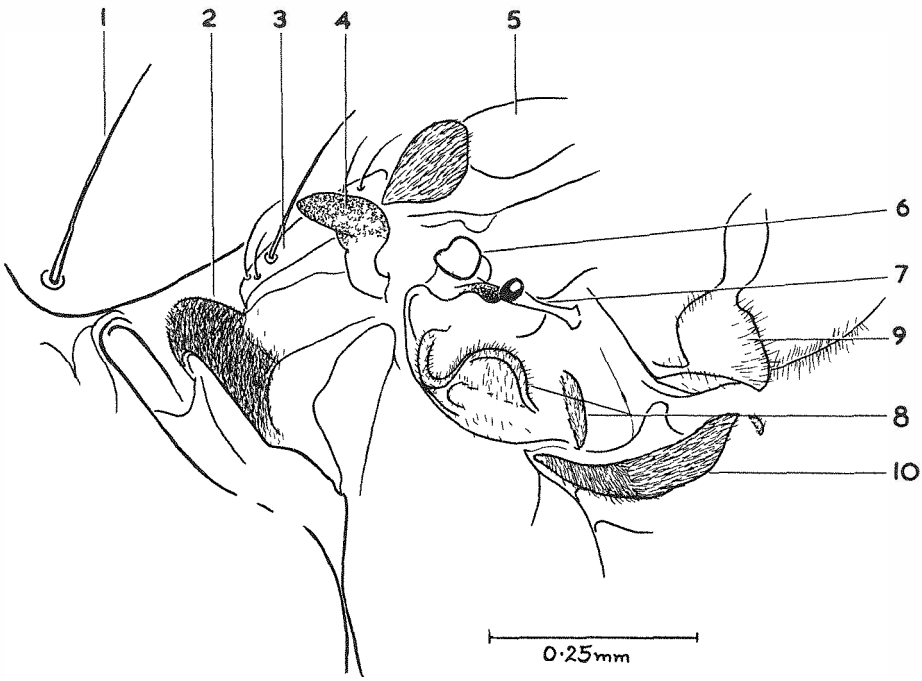

Fig. 2. Pteropleuron of *Stegana "stroblii"* Mik. (Specimen Winth 32) For parts see fig. 1

Measurements

Wing veins — Most of the longitudinal veins are divided into sections by X-veins or by intersections of other veins. They are designated here as e. g. Cost 3 (= 3rd section of Costa from base of wing); IV 4 (4th section of 4th long. vein from base); V3 (3rd section of 5th long. vein from base), etc. The wing breadth is measured at its widest point.

Nearly all measurements of parts are in units, usually placed between brackets without any explanation, e. g. Arista (3.3) dark, only 1 ray (1.3) below. This method allows immediate length or size comparison with other parts and is more precise than the use of such terms as "longer", "wider", or "about half as long".

Measurements are carefully done by means of a calibrated squared eye-piece, with the parts quite horizontal. With curved structures (bristles, veins, eyes, etc.) it is the straight line (shortest) distance from base to apex. The unit measurement may vary for different species or different parts of a species if the whole cannot be seen at too high magnification, but the unit is always given in the text.

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Abbreviations

A few obvious abbreviations are used, such as ant—antenna or antennal; antr—anterior; DC—dorso-central bristles; jt—joint; L—left; postr—posterior; R—right; seg—segment.

II. Gabriel Strobl (3 Nov. 1846—15 March 1925)

Gabriel Strobl was born at Unzmarkt in Upper Styria, where his father was "Lederermeister". His mother died early so Strobl was brought up by an aunt in Rottenmann. He entered Innsbruck University in 1872 and graduated 1876, and from then he was Professor (i. e. grammar-school master) of Natural History in the Benedictine school at Seitenstetten. From 1880 to 1887 he taught in the Benedictine school at Melk. He then took over a private school in Admont, becoming at the same time Kustos of the new Natural History Museum of the Benedictine monastery there. He had entered this monastery as a novice in 1866, a year after its natural history collections had been destroyed by fire, leaving it as a Priest in 1870. He built up its entomological collections to be in Austria second only to those of Vienna.

Until 1879—1880 his main interests had been botany (on which he wrote many papers), geology, and conchology, but from 1880 he specialised in entomology, mainly *Hymenoptera* and *Diptera*. His first paper on the latter order appeared in that year. He went on many collecting expeditions, the results of which are given in his papers. In his last year or so of activity Strobl was busy identifying the immense *Diptera* stocks of the firm of Rolle, Berlin, who allowed him to retain species not in his collection.

He suffered a cruel stroke 7 Sept. 1910, having finished the last part of his "Dipteren von Steiermark" only the previous spring. After that he remained paralysed and inactive until he died in 1925. He must, however, have retained an interest as his name continued to be listed as a member of various Societies, the first of which he joined in 1867. Further biographical details will be found in Skofitz (1886) and Kiefer (1941).

Strobl worked during an interesting period of Dipterology, at a transitional period between the old masters and the new. He was early enough still to be strongly influenced by Schiner's Fauna Austriaca Diptera of 1862—4 (much to Bischof's annoyance, 1901) and late enough to appeciate the recent work of Becker. Therefore his collection, as he himself left it, serves as a valuable guide to the interpretation of species of those days.

III. The Strobl Collection

According to Horn & Kahle (Über entomologische Sammlungen, p. 271, 1936) Strobl's collections were then at the Benedictine Monastery at Admont. Kiefer (1941, p. 191) recorded that the Diptera and other collections at Admont were ordered by the then Styrian authorities in 1938 to be trans-

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ferred to the Landesmuseum Joanneum, Graz. The public show-cases, however, remained at Admont. (These may well contain further STROBL specimens of *Drosophilidae*, but I have not been able to check this). In 1961 the whole Diptera-collection will be transferred from Graz back to Admont (MORGE, i. l.).

In 1956 I was most fortunate to be allowed to borrow the *Drosophilidae*. Since STROBL's *Diptera* are in many dozen cabinets and boxes and are not always arranged systematically, some further specimens may yet be found. The *Drosophilidae* appear to be exactly as left by STROBL and not revised by later workers.

As received by me the collection of *Drosophilidae* (s. l.) consisted of 352 specimens on 304 pins. It included 44 specimens of *Asteia*, *Camilla*, etc., which are not now included in *Drosophilidae*, though they were in STROBL's day. Each pin was numbered consecutively from 1 to 296 (including 26a, 180a, 234a, 253a, 270a, 271a, 281a, 295a), following the original position of the specimen in the collection, and these numbers are used by me. At the same time, Dr. MECENOVIC sent some *Drosophilidae* from the Joanneum collections (numbered 297—328) and a few of these are included here as they are STROBL specimens. Their numbers are distinguished as Jo320, etc. A list of all the specimens, with names and data, is appended to this paper.

The specimens were arranged under species with usually a separate name label with data, at the head of the series. These separate labels were mostly long (23 mm × 6—8 mm), light green in colour with a black or red inked border. In nearly all cases the data on these labels pertained to the first specimen next after the label. The labels on the specimens themselves were mostly the same pale green, or blue-green, pink, or white. Not every specimen bore a label.

The majority of specimens were pinned by minuten pins onto pith strips of long (35—40 mm) pins, but many larger specimens were pinned direct on the long pin. The general condition of the specimens is very good and clean, with only an occasional lost wing, leg, bristle, or head, and it has obviously been carefully kept.

STROBL's writing is clear and distinctive and usually there was no difficulty in recognising a non-STROBL label. An interesting characteristic of his labels is that most (118) of them had data written in GABELSBERGER's shorthand besides in normal script (Plate 1). Another characteristic is that STROBL never crossed his 7's or Z's in the usual continental manner.

STROBL did not designate types of his species, but typical material is usually indicated by m. or n. sp. on the labels. The present writer has selected and labelled the appropriate types.

IV. The Varieties of Strobl

STROBL named several varieties of *Drosophilidae* and I accept them as specific names. His attitude to varieties is best explained in his own words, which also explain the usual attitude of other Dipterists. In the Übersicht of the last part (II. Nachtrag) of his "Die Dipteren von Steiermark" (1910: 284) he writes: —

"In der Einleitung und am Schlusse des IV.Teiles gab ich eine Übersicht der steirischen Dipteren, wonach 2855 Arten und 309 Varietäten bekannt sind; dazu kommen in diesem Bande ungefähr 633 Arten und 138 auffallendere Varietäten; von letzteren habe

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ich nur den kleineren Teil benannt; da die Grenzen zwischen Arten und Varietaten oft noch nicht genau zu bestimmen sind, können auch von den 3518 steirischen Arten manche zu den 447 Varietäten gehören und umgekehrt."

And earlier (1904:519) he appears somewhat apologetic for their erection: —

"Auch die maßvolle Aufstellung von Varietäten nach den Grundsätzen, die Herr Weise in der Wiener entom. Zeit. 1882, p. 115, angeführt hat, halte ich für ersprießlich; die Aufstellung von Varietäten ist zwar bei den Dipterologen viel weniger gebräuchlich als bei den Koleopterologen und Lepidopterologen; doch hat schon Loew, unstreitig der größte Dipterolog, Varietäten aufgestellt."

This was written because Bischof (1901:116) had attacked him on this point, to which Strobl had replied the same year (1901b).

V. The Species in the Collection

All the species or varieties of *Drosophilidae* (s. strict.) mentioned by Strobl or those not mentioned but which are in the collection are considered here. In his day the family, treated as the subfamily or "Gruppe" *Drosophilinae*, included some genera now excluded, e. g. *Camilla* (*Noterophila*), *Asteia*, *Aulacigaster*, and *Leiomyza*, and doubtfully when first described, *Pseudopomyza*. These are not discussed here. On the other hand, *Cacoxenus* was then in the *Milichinae* but being a drosophilid it is included here.

Under each species the specimen numbers are given; numbers not in brackets are specimens of that species, whether identified so by Strobl or not, those in brackets are not that species but were associated so by Strobl. Any transcribed Galelsberger is given within brackets. All data on the labels are given in the appended numerical List, and are not always repeated in the text. It should be emphasised that this List is the only reliable guide to the collection and to Strobl's records, since he misidentified quite a number of specimens. Specimens recorded by him but which are not represented in the collection are usually of doubtful identity.

1. *Stegana coleoptrata* (Scop.), *S. nigrithorax* Str., and *S. stroblii* Mik

Str17 (♀); 252—254 (4♀ 1♂); 255 (♀) — The species of the genus are being revised by the present writer, and the correct identity of Strobl's specimens will be reported later. The types of *nigrithorax* and *stroblii* are in the collection. *Steganina* Wheel., 1960, is a new name for this genus.

Strobl did not have a specimen of *coleoptrata* ("besitze ich leider nicht"), but he concluded that some specimens he did have ("An Ennsufern im Gesäuse Ende Juni ♂♀") were a new variety, which he described as *coleoptrata* var. *nigrithorax* (1898a:266). Later (1910:210) he reported a further 2♂ of this variety, "um Admont", and also "♂♀ einer Übergangsform zur Normalform". Five of the 6 specimens are in the collection, Str252 (♂♀) being selected and labelled by me as Lectotype and Syntype respectively of *Stegana nigrithorax* Str. A sixth specimen (No. 17) may belong here but it is labelled as *S. curvipennis*.

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S. stroblii was described by MIK (1898:216) from a female collected by STROBL from Siebenbürgen (= Transylvania). Since STROBL's paper on "Siebenbürgische Zweiflügler" appeared the year before and he did not write on that region again, this explains his never mentioning *stroblii* himself. According to the specimen (255) it was collected 2 August 1896 at Bucsecs (near Kronstadt). It is selected and labelled by me as Lectotype of *Stegana stroblii* MIK.

2. *Protostegana furta* (LINN.) (= *curvipennis* (FLN.)). (new Synonymy.)

Str1—16, 18—24 (10♂ 15♀) (Str17) — I have seen the type specimen of *Musca furta* L. from THUNBERG's collection at Uppsala and it is the same as *Drosophila curvipennis* FLN., which types I also have seen. Therefore the name *furta* is used here, but a full account will be published elsewhere. When STROBL's specimens were returned the identity of *furta* had not been proved, therefore they are labelled by me as *curvipennis*.

STROBL recorded "*Stegana curvipennis*" as follows: — Seitenstetten, ". . . an Gebüsch und Waldrändern mehrmals gestreift[1]); auch an der Trefling und im Conventgarten; in letzterem sogar häufig." (1880:35): "Auf Bachgebüsch bei Admont ziemlich selten; Mürzhofen (Pok.). Um Seitenstetten sehr häufig. Mai—Juli." (1894:129): "Seither um Admont ziemlich häufig bis auf die Voralpen." (1898a:266): "Travnik, 2 eksemplara (Thalh[ammer].)" (1898b:580 = 1900b:636): ". . . bewohnt wohl ganz Steiermark; ich traf sie seither auch um Cilli und Lichtenwald" (1910:210).

The localities represented by specimens are Seitenstetten, Palten Waldwege, and Admont, but the other recorded specimens were probably correctly identified.

3. *Leucophenga maculata* (DUF.)

Str73—78 (5♂ 2♀); (Jo320) — The STROBL specimens are labelled as *Argyrolampra maculata* DUF. *Argyrolampra* is a manuscript name and was used only once by STROBL (1893b:283), where in a footnote to the description of *L. quinquemaculata* he writes, "*Leucophenga* MIK, Wiener Entomolog. Ztg. 1886, pag. 317. Diese schon von Schiner (Collect. Schin. i. litt.) als *Argyrolampra* von *Drosophila* gesonderte Gattung zeichnet sich durch . . ." In this same footnote he mentions he has 9 examples of *maculata*. SCHINER himself does not use the name in any publication, he including *maculata* in *Drosophila*. STROBL continued to use *Leucophenga* throughout except that Jo320 is labelled as *Drosophila maculata*, and this too in 1893! Since the main label with the specimens is dated 1883 it is obvious that STROBL was using SCHINER's MS name until MIK erected *Leucophenga* in 1886.

STROBL recorded *L. maculata* from: — Waldbächen um Admont nicht sehr selten, auch in Laubwäldern um Radkersburg, Steinbrück; Mürzhofen

[1]) gestreift, taken by sweeping with a net (= gekeschert)

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(Pok.). Juni-August (1894:130): Suha, 6♂ 1♀ (Thalh[ammer]) (1898b:580 = 1900b:636): and Villach 1♀ (1901a:240 = 70 of Sep.). Specimens in the collection are from Admont, Steinbrück, Radkersburg and Gesäuse (see List). The female variation noted by Strobl (1894:130) is but normal sexual variation. Jo320 is *Cacoxenus indagator*, q. v.

4. *Leucophenga quinquemaculata* Strobl

No specimen — The species was described (1893b:283) from "Styria sup., 1300 m, 1♀", and apparently the same specimen was re-reported (1894:130) as "Unter Felswänden im Strechengraben bei Rottenmann (4000′) 1♀. Mitte August."

It should be noted that he describes the shading at the ends of veins II and III and on X-veins as broad. In specimens from Finland I have noticed that this shading is narrow, parallel-sided, much narrower than shown in Duda's plate (1935, Taf. 2, fig. 13). Duda's specimens may be the more typical, but he draws attention to the great variability of the body colouring. Oldenberg (1914a:18) described a var. *marginalis*, which varied from Strobl's description in the position of the wing spots and by having a lighter body colour. Therefore the Finnish form may be within normal variation, but a wide collection of specimens is needed to decide this.

Oldenberg erected for this species the new genus *Paraleucophenga*, which he changed because preoccupied to *Neoleucophenga* (1914b:93), but Duda correctly returned it to *Leucophenga*.

5. *Amiota* spp.

Str256(♂) — With this one specimen four specific names are involved, viz. *alboguttata* (Wahl.), *obscuripes* Strbl., "*nigripes*", and *albilabris* (Roth). Strobl synonymised *Amiota* with *Phortica* and he first recorded (1894:130) *alboguttata* as once collected (sex not given) from Melk, and new to Austria as indicated by the asterisk. He later complains (1910:210) that this record was overlooked in Becker et al's Katalog (1905). At the same time (1910:210) he describes the new variety *obscuripes* of *Phortica alboguttata* as *follows*: — "Schenkel ganz glänzend schwarzbraun, Schienen dunkelbraun, nur die vordersten lichter; Tarsen ganz weißgelb. Bei Steinbrück 1♀; 1♂ dieser Var. sammelte ich bei Melk. Die 3. und 4. Längsader konvergieren — wie bei varieg[ata]. — bedeutend, wovon Zett. nichts erwähnt.". He gives no other record.

In the collection there is only one specimen of *Amiota*, a male, with a separate label: "Phort. alboguttata Whlb v. nigripes (sic) m. ♀ (Steinbrück)", and a printed label on the pin, "Süd-Steierm. Strobl." This agrees with Strobl's description of *obscuripes* and I accept it as the Steinbrück specimen, as Melk is not in Styria. (Also Strobl did not always sex his specimens correctly). *Phortica* (*Amiota*) *nigripes* is nowhere mentioned by Strobl and I consider "*nigripes*" to be a *lapsus* or an earlier MS name for

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obscuripes. Therefore specimen 256 has been selected and labelled by me as Lectotype of *Phortica obscuripes* STROBL. It seems evident that the Melk specimen of *alboguttata* is the same one he later recorded as *obscuripes*, but it is not in the collection.

Str256 has been compared with ROTH's type of *Drosophila albilabris*. The former differs as follows: — arista slightly shorter-haired above and below; genitalia with lobes of antr. parameres of slightly different proportions, 2 or 3 more teeth on clasper comb, toe of clasper broader, and genital arch longer. Until more specimens are studied the constancy of these differences will not be known, therefore STROBL's *obscuripes* is best considered as a sub-species of *albilabris* Roth.

The author of *albilabris* is usually given as ZETTERSTEDT, in whose work (1860:6425) the description was first published, but ZETTERSTEDT distinctly gives it as "*Dr. albilabris* Roth n. sp.", and on the following page (p. 6426, misprinted 2426) says "Roth in litteris" after the first description. Also in the index to Vols. 13 and 14 (1860:6573) ZETTERSTEDT again has "albilabris Roth. ♂. — Zett. XIV. p. 6425". Therefore *albilabris* is ROTH's species not ZETTERSTEDT's.

6. *Phortica variegata* (FLN.)

Str25—28 (4♂ 1♀) — STROBL's records of *P. variegata* are: — "In Murauen bei Radkersburg 1♂. Juli" (1894:130): "Grab n. S., ♂♀ (Thalh[ammer].)." (1898b:580 = 1900b:636): "Einzeln an Waldrändern bei Cilli und Lichtenwald". (1910:210). He appeared to be indifferent whether the species should be *Phortica* or *Amiota* (misprinted *Amista*, 1898b), but used only *Phortica* in 1910. Specimens in the collection are from Melk, Radkersburg, Grab, and Lichtenwald (see numerical List at end). They may represent a distinct species which occurs in mid and south Europe, and will be reported on later.

7. *Gitona distigma* MG.

Str29—72 (28♂ 17♀) — This species, which always seems to be correctly identified, was recorded by STROBL as follows: — "An Fenstern um Admont nicht selten, besonders gegen den Winter; Graz (Schieferer!), Mürz-hofen (Pok.)" (1894:130): "Trnovo, 1 eksemplar (Thalh[ammer].)" (1898b:580 = 1900b:636): "Oberes Geniltal (St[robl])". (1909:279). The actual specimens are from Melk, Seitenstetten, and Admont. Str66 has both postr. X-veins forked and irregular.

8. *Cacoxenus indagator* LW.

Jo320 (♂); none in STROBL collection — STROBL recorded this species in the *Milichinae*, from Travnik (THALHAMMER) (1898b:584 = 1900b:639) and in Ennsauen Mitte Oktober 1♂ (1910:214).

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Specimen 320 bears Strobl's label "Drosophila maculata Dūf Gesäus (Waldgraser) 19/6 893. ♂ Strobl". The label has another pin-hole larger than the present pin and since Strobl would not have mistaken *Cacoxenus* for *Leucophenga* (*Drosophila*) *maculata* the label must, I think, have wandered from some other specimen.

9. *Acletoxenus formosus* (Lw.)

Str295 (? sex) — This one specimen has a separate label, *Aglaoxenus syrphoides* Frnf., the same name, with ♀, being repeated on the pin together with Villach l. Tief. The same generic spelling is used by Strobl re Tief's collection (1901a:240 = 70 of Sep.) where he recorded it as new to Kärnten (Carinthia), "1♀; stimmt genau mit einem von Frauenf. selbst stammenden ♂.", though he earlier had given this Karnten record (1900b:637). I have not elsewhere come across this emendation of the generic name, Strobl's only other and earlier record (1898b:581 = 1900b:637) being given correctly as *Acletoxenus syrphoides*, and he repeats von Frauenfeld's original record from Lesina, with the additional interesting observation, "imam po Erber-u jedan tip Frauenfeld-ov." (= "ich besitze durch Erber eine Type Frauenfeld's"). On an earlier page (1900b:552) he describes Erber as a natural-history dealer, "dessen Aufsammlungen Loew determinirte, und von dem ich durch Kauf die Typen von fast sämtlichen interessanten Arten erwarb." Frauenfeld himself nowhere suggested the name might be spelt *Aglaoxenus*; and his specimen that Strobl acquired is not in the collection.

10. *Chymomyza caudatula* Old.

Str233—234 (2♂) — Strobl recorded these as *Drosophila costata* Zett. (later as sub-genus *Chymomyza*). The first record, new to Austria, being, "In der Kematenbachschlucht bei Admont Mitte August 1 ♀. Auch bei Melk im Juni 1 ♀" (1894:130), followed by a description, but he mistook the large male claspers, characteristic of *caudatula*, for the female ovipositor of *costata*. His further records were: — new to Kärnten, 2 ♀ (1901a:240); and "sehr selten" (1910:211).

The Kematen (233) and one of the Kärnten (234) specimens are in the collection. The missing Melk specimen was probably *caudatula* as well, though *costata* is also recorded from Austria (Oldenberg, 1914a:16, Gastein), but the identity of Oldenberg's specimens are not yet confirmed. There is no specimen of the real *costata* in Strobl's collection.

Ch. caudatula appears to be very rare and known only from males. The only other specimens known to me are Oldenberg's type male (Herkulesbad, Hungary, 20 July 1912), and a male seen by Duda (1934:42) from Homorod-furdo (? Rumania), 22 July 1931. Strobl's specimens represent a new record for Austria. They will be discussed in more detail in a general paper on *Chymomyza* spp.

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In 1893b (p. 283) and 1894 (p. 130) STROBL drew attention to the characteristic arrangement of the orbital bristles of *Drosophila costata* and *D. nigrimana*, and it was this that decided CZERNY (1903) to erect the new genus *Chymomyza* for these two species. But in 1910 (p. 211) STROBL considered this character to warrant only sub-generic rank!

11. *Chymomyza fuscimana* (ZTT.) (= *C. distincta* sens OLD. nec (EGG.))

Str121—125 (4♂ 3♀); (Str126) — STROBL's specimens are named and recorded as *Drosophila distincta* EGG., but they are the true *fuscimana*, having now been compared with ZETTERSTEDT's and EGGER's types and with OLDENBERG's specimens. The real *distincta* is not in the collection. It has already been shown (BASDEN, 1956:5) that OLDENBERG (1914a:15) also misinterpreted *Ch. fuscimana* (ZTT.) and *Ch. distincta* (EGG.), transposing the names to the wrong species.

STROBL's records of "*distincta*" are: — "aus Ob.-Österr. durch Pr. Mik; wahrscheinlich auch im Gebiete" (1894:131): "Zara, 1♀ (Novak)" (1902: 503 = 1904:565): and, "distincta Egg. kann ich nach 1 von Professor Mik mir aus Oberösterreich gesendeten Ex. durchaus nicht davon [*fuscimana*] unterscheiden" (1910:211).

MIK's specimen is not in the collection but the separate label before 121 doubtless belonged to it, Hammern (near Freistadt) being in Upper Austria, it being caught on a pile of timber. The Zara specimen (126) is *Dros. melanogaster*. STROBL's specimens are from Admont (122—124); and there appears to be a TIEF specimen (125) from Carinthia as indicated by the small golden label (STROBL, 1901a; 172 = 2 of Sep.). Str121 are OLDENBERG specimens from Wölfelsgrund, correctly named by him as *fuscimana*. This correct identification is not so surprising, as OLDENBERG admitted (1914a: 16) that he earlier considered *fuscimana* and *distincta* to be only *fuscimana*; and on p. 17 he gives Wölfelsgrund only for "*distincta*".

12. *Chymomyza nigrimana* (MG.)

(Str124, 125) — Besides "*costata*" and "*distincta*" STROBL records one other species of *Chymomyza*, at first (1893b:283, 1894:131, 1898a:268) as *Drosophila nigrimana* MG. He draws attention (1894) to the anomaly where ZETTERSTEDT (1847:2556) by mistake credits his own species, *fuscimana*, to MEIGEN. Later (1910:211) STROBL switches to the use of "*fuscimana* Zett. (= *nigrimana* Mg. ?)" in subgenus *Chymomyza*. The only specimens labelled as *nigrimana* (124, 125) are in the collection under *distincta*, but prove to be *fuscimana* (ZTT.). Since STROBL (1910:211) could not distinguish between *distincta* and *fuscimana*, this might account for their all being under *distincta*, the more definite name (with no doubtful synonymy) and being a species described from Austria.

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No. 124 was definitely recorded as *nigrimana* — "Am Schafferwege bei Admont Ende August 1♀" (1898a:268); and No. 125 appears to be an unrecorded specimen from Carinthia, but the other records (im Sunk; Melk; um Admont) cannot be confirmed.

The name *nigrimana* Mg. is older (1830) than either *fuscimana* (1847) or *distincta* (1862), but the true identity of *nigrimana* is uncertain. Therefore I am not using it at the moment, but from Meigen's description it is probably *distincta*, not *fuscimana*.

13. *Microdrosophila* (*Incisurifrons*) *zetterstedti* Wheel. (= *nigriventris* (Zett.))

Str292 (♂) — Wheeler (1959:184) has correctly given Zetterstedt's species a new name since *nigriventris* Mcq. of 1843 was already in *Drosophila*.

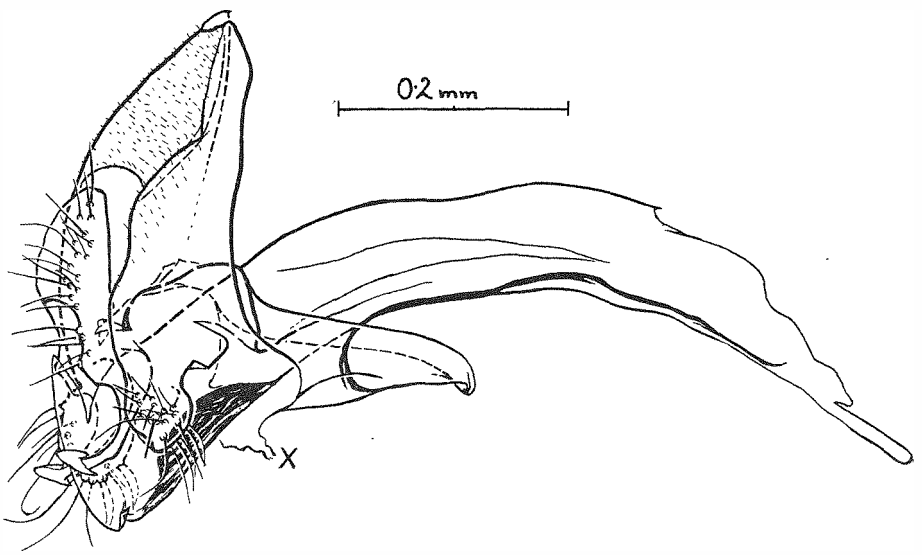

Fig. 3. Genitalia of *Microdrosophila zetterstedti* Wheel. Specimen Str292. X, attachment of sternites

Strobl's only mention of *zetterstedti*, as *nigriventris*, is (1894:132): — "... halte ich [*Drosophila*] *nigriventris* Zett. und *approximata* Zett. für Färbungs- und Geäder-Varietäten [von *Dros. fenestrarum* Fall.]". There is no specimen labelled as *nigriventris* but No. 292 labelled as *D. approximata* Ztt. is actually *nigriventris*. (Another "*approximata*" (293) is *Parascaptomyza pallida*, q. v.). For *D. approximata* see p. 185.

The colour of the specimen is entirely yellow, including the abdomen, which is shrunken (teneral). Zetterstedt (1847:2557) described the species from 1♂ 1♀, both with abdomen black, and Duda (1934:51) saw 1♂ 3♀, also with black-brown abdomens. Therefore the genitalia of Str292 was

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compared with that of ZETTERSTEDT's Type of *Drosophila nigriventris* (Ztt94) and found to be identical. A full description of 292 will be included in a forthcoming paper on ZETTERSTEDT's collection.

Genitalia (Fig. 3). To balsam pin-mount. Of curious construction. No bristles, only hairs (one apparently broken bristle on L clasper is not present on R). No clasper teeth. Anal plates hairy either side but bare in centre and at side edges, ending below as a barbed prolongation. Penis appears to be represented by an upturned membranous envelope over end of genitalia and hinged below. In Zett94 this "envelope", in the dry fly, was a flattened, brown, horny-looking structure. A dark spermatophore-like mass is on floor in distal region of genitalia. Sternites densely short-haired either side, with about 30—45 hairs in each patch, the two patches mingling at centre.

14. *Drosophila* (*Spinodrosophila*) *nigrosparsa* STROBL

Str269—271 (1♂ 3♀) — STROBL (1898a:267) described this species from 1♂ (on alpine meadows of the Kreuzkogel, near Admont, mid July) and 1♀ (on the Natterriegel, mid June). Later (1910:211) he recorded 2♀ from meadows near Hohentauern and in the Monastery garden, Admont, and remarks — "sie ist also nicht ausschließlich alpin." All these specimens are in the collection, the male (269) being selected and labelled as Lectotype, and ♀ 270 as Syntype of *Drosophila nigrosparsa* STROBL.

In 1925 DUDA rejected his subgeneric name of *Spinodrosophila* because it was "badly formed" and replaced it by *Acanthopterna*, but the former must remain. The position of the species in the family is rather obscure and BURLA (1950:502) considered it to have the exceptional haploid number of 7 chromosome elements (2 having fused), which number of separate elements is known otherwise in the genus only in *Dros. trispina* WHEELER of the *funebris*-group. As far as the European species is concerned *nigrosparsa* is best considered to belong to the *nigrosparsa*-group of the subgenus *Spinodrosophila*.

Although the species is very distinctive in several characters (arista not forked at end and only 1 ray below; only 1 humeral; antr. X-vein well beyond 2nd costal break; ♂ with horny projection on hind metatarsus; and genital opening more ventral than usual; etc.) some notes additional to the descriptions of STROBL (1898a) and DUDA (1934:53) are necessary.

Unit measurement, 1.0 = 0.083 mm, except where stated for wing.

General colouration greyish olive-brown, resembling some Anthomyidae; matt. Body length (frons to tip of abdomen), ♂ 269, 2.75 mm; ♀ 270, 3.18 mm.

Head. Same width as thorax. Occiput straight, slightly convex. Facial keel slightly sulcate in 1♂ 2♀. Frontal hairs, 6 to 11 at bottom of frons. Orb 1 slightly nearer to orb 3 than to inner vert. Postverticals crossed. Postoculars 2 rowed. Palpi spatulate, with 2 strong sub-apical bristles.

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(Duda (ibid.) and Oldenberg (1914a:8) both give 1 bristle; Burla (1951: 126), 2—3 bristles). Vertical eye diam. and narrowest jowl, 6.5:2.0 (♂ 269); 6.3:2.0 (♀ 270) — Duda says 4:1. Jowl broadens considerably behind, it much broader there than 3rd ant. jt. The 3rd ant. jt. only little longer than wide (1.9:1.6), round ended, short haired (hairs barely longer than the short, dense eye pilosity), dark, narrowly pale ventrally. 2nd ant. jt. yellow, with 2 stout bristles (upper 1.6, lower 1.2, Type). Arista (4.7, Type) with no end fork; dorsally with 2 (Str271) or 3 long rays (longest 2.2, Type), the distal (3rd) much shorter (1.2), all in basal half; distal half with only 1 or 2 very short hairs (0.3); ventrally only 1 long ray at basal quarter; inner surface with 4—5 very short hairs. Strobl incorrectly states, "oben nur mit 3—4, unten mit 2 langen Strahlen".

Head-bristle measurements

	♂ 269	♀ 270	♀271
postvertical	2.7	—	3.1
occipital	1.6	1.8	1.7
vertical, inner	3.9	—	4.0
vertical, outer	3.8	3.7	3.6
ocellar	4.2	3.6	3.9
orb 1 (reclinate)	3.4	—	3.1
orb 2 (reclinate)	1.2	1.6	1.5
orb 3 (proclinate)	2.7	2.7	2.7
vibrissa	3.1	3.3	3.3
2nd oral	1.5	2.0	2.0
jowlar, antr.	L 1.8 R 1.7	2.0	1.8
jowlar, mid	L 2.0 R 1.4	2.0	2.1
jowlar, postr.	L 1.7 R 1.6	2.1	1.6

Thorax. The thorax is well described by Strobl. The transverse- and humeral-sutures also are brown, and in ♂ the mid dorsal stripe is evident only posteriorly. The spots from which bristles and hairs arise are not colour spots as in the *repleta* group but are the black pits at base of the bristles, although a few hairs and bristles may stand on the brown stripes, as mentioned by Strobl. The same type of "spots" occur in *Gitona distigma*. Notopleural callus not obviously protruding. Prosternal plates black, heavily grey dusted, hairless. Pleura grey-brown, with broad brown stripe across rear half of meso- and all of ptero-pleuron. Scutellum with broad brown stripe down middle, this widening posteriorly to postr. scutellars, tip itself grey.

Thoracic chaetotaxy. No prescutellars; prescutellar hairs only slightly elongate and placed a little posteriorly to postr. postalars. Acrostichals 6-rowed; 1 hair between DC, close to and a little outside postr. DC. Only 1 humeral, with 4 or 5 hairs. Two slightly elongate sutural hairs. Presutural

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at outer limit of hairs, no hair outside it. No prothoracic hair above front coxa. Only 2 sternopleurals, the postr. below level of antr., with only a weak hair (1.0) between them; the usual fine hair just before antr. sterno. A single row of fine hairs leads completely down from the mid hair to sternal bristle (2.2). An irregular row of 3-4 discal sternopleuralhairs. Scutellars probably disarranged in most specimens; tips of apicals reach beyond tips of laterals; apicals meet at tip in 270a and would do so in 269except R disarranged, but they diverge in 271; laterals slightly diverge in 270a, slightly converge in 271, (BURLA 1951:126, says they converge in Swiss specimens). Postr. scut. closer together than to antr. scut. (as 2.0:3.0, types). 2 fine hairs vertically between supra-alars.

Thoracic-bristle measurements

	♂269	♀ 270	♀ 271	♀ 270a
humeral	4.4	—	4.5	
presutural	4.6	5.1	5.3	
notopleural, antr.	4.0	—	4.5	
notopleural, postr.	2.5	—	2.5	
supra-alar, antr.	1.8	—	2.3	
supra-alar, postr.	5.0	—	5.3	
post-alar, antr.	6.6	7.3	7.8	
post-alar, postr.	2.4	2.4	2.6	
DC, antr.	4.4	5.0	4.5	
DC, postr.	6.4	6.8	6.4	
scutellar, antr.	—	7.4	7.6	6.9
scutellar, postr.	7.1	—	7.3	6.4
sternopleural, antr.	2.6	3.2	3.1	
sternopleural, postr.	5.0	5.8	5.6	
sternal	2.2	2.3	—	

Abdomen. Strobl's 1st, 2nd, etc. segments are actually the 2nd, 3rd, etc. The dark transverse bands may touch antr. edge of segment at centre, where they are broadest, and in ♀ 271 the 4th band extends to rear edge; the 2nd band is broken at centre. Hairs less dense than on dorsum, especially on postr. part of segs. Ventral intersegmental membranes dark. Sternites as dark as tergites, in ♀ mostly longer than wide but in ♂ (partly hidden) they appear to be broader. Ovipositor guide (fig. 4) yellow; anal tuft (♀) yellowish; the guide has an oblique row proximally of 5 strong spines, of which usually only 4 are visible. Genitalia (fig. 5) with clasper teeth not heavily sclerotised. Penis a broad membranous-like structure divided down centre, the ventral edges of either half wavy. At postr. (distal) end of each half, dorsally, is a shallowly bifid lobe (thus 4 penial lobes altogether), the upper lobe being recurved and pointed. At the end of the anal plate, below the surface, is a straight close "comb" of short

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bristles. Duda described the genitalia apparently from dry specimens. The genital opening is more ventral than usual in *Drosophila*.

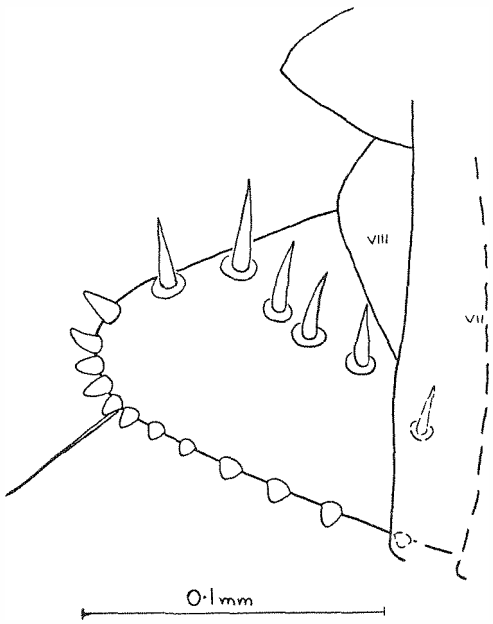

Fig. 4. *Drosophila* (*Spinodrosophila*) *nigrosparsa* Str. Ovipositor guide of syntype (Str270); with addition, to right, from Str271 with more exposed guide

Legs. As described by Duda. Femora mostly dark grey, especially of 1st and 3rd legs, those of original female lighter than the two later females. 1st femur postero-ventrally with a row of 3—4 strong bristles and some strong hairs. 1st metatarsus of ♂ equal to 2nd and 3rd jts. together (as 3.5:3.5); of ♀ a little longer (4.0:3.5). Tarsal jts. evenly haired; claws quite long (1.0). Hind metatarsus of ♂ at base, ventrally with the characteristic flattened, triangular, horny projection, which is drawn adequately by Duda (1924b, fig. 2) and by Burla (1951, fig. 40). In Str269 the L tarsal jts below the outgrowth are missing. In the same position the ♀ has only the usual stiff hairs. The outer bristle of hind coxa is longer than inner one (2.1:1.7). Hind trochanter below has 2 or 3 short stiff hairs.

Wing measurements (all in larger units, 1.0 = 0.212 mm.)

	♂ 269	♀ 270	♀ 271
Cost 1 (excl. basicosta)	4.3	4.4	4.6
2	9.9	9.6	10.3
3	2.6	2.6	2.9
stronger costal fringe	L 1.4, R 1.2	1.2	1.7
4	1.4	1.3	1.4
IV 2	3.3	3.8	3.7
3	3.7	3.4	3.6
4	6.0	5.9	6.3
V 3	1.7	1.5	1.6
Postr. X-vein	1.6	1.4	1.5
Wing lenght	16.1	16.6	17.4
breadth	6.2	6.4	6.3

Note: The syntype was later badly damaged when sent through the post a second time, and the fragments (head, body, wings, bits of legs) were gummed onto a card point.

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Dorsal preapical of 1st and 2nd tibiae small, of 3rd tibia longer, more prominent. A strong ventral apical only on 2nd tibia, the usual fugitive weak one on 1st, none on 3rd.

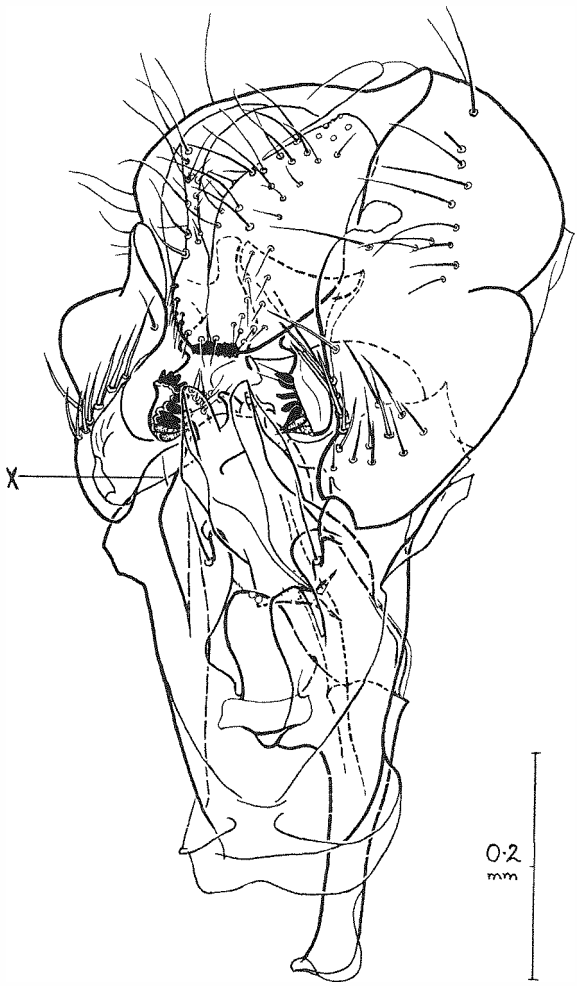

Fig. 5. *Drosophila* (*Spinodrosophila*) *nigrosparsa* Str. Genitalia of Lectotype (Str269). Penis outlined by stippling. X appears to be a hair but none visible other side.

Wing. (Duda 1935: Taf. III, fig. 19). Brown, slightly darker anteriorly as described by Strobl. X-veins shaded. Costa ends at 4th vein. 2 equal spines (1.4) at 2nd costal break. Stronger costal fringe extends about half way between ends of II and III (see table below). Anal vein straight, reaching half way to border. Antr. X-vein well beyond 2nd costal break, as in *Amiota*. Postr. X-vein a little beyond centre point of Cost2 (as 5.2:4.7

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(269); 5.4:4.2 (270); 5.5:4.8 (271) — larger units). Tegular organ minute, yellow. Halteres yellowish.

15. *Drosophila* (*Hirtodrosophila*) *oldenbergi* Duda

Str180a(♀) — This species was not known to Strobl, it being described by Duda in 1924 (1924a:204, more fully 1924b; 265—266) in the new subgenus *Hirtodrosophila* which name he later changed unnecessarily to *Dasydrosophila*. Only two species are known from the western Palaearctic, *oldenbergi* Duda and *lundstroemi* Duda. A broader interpretation by some authors would, however, include *trivittata* Strobl, a quite distinctive species. Duda based both descriptions on males only, and although one or two females of *oldenbergi* are now known (Hackman, 1957:17), there is nowhere a description of the latter sex. Therefore the opportunity is taken of noting some characters of the present specimen, which I consider to be the female of *oldenbergi*.

This is pinned on the same strip of pith as a female *D. subobscura*, with the label Steinbrück (Laubwald) ♂ (und am [?]Nitschberg) ♀, they being arranged under *obscura*. The *oldenbergi* ♀ may have been thought to be *rufipes* by Strobl as mentioned under *rufifrons*, p. 204. I accept the latter locality for *oldenbergi*, since with its more prominent ovipositor guide it would more likely be recognised as the female. The specimen has been in contact with a Lepidopteron as a trifid scale is imbedded in joint of R. hind trochanter and another scale is attached to oral cavity.

Unit measurements, 1.0 = 0.083 mm., except where stated.

General colour now shiny yellow-tawny-brown (?faded); lightest around humeri, bottom of frons, and jowls; with some greyishness on pleura, ocellar triangle, mid scutellum and prescutellar area.

Head. Same width as thorax; from above short (i. e. narrow), 11. 5 wide ×4.4. long, fairly concave behind. Front at centre wider than long (5.7:4.4), more level than usual and only little sloping forwards. Face slightly longer than front, as 5.0:4.4. Facial keel obscured by the large 3rd ant. jt., but it appears to be absent. 3rd ant. jt. obviously large, reaching to clypeus, (3.0 long ×1.9 wide, excluding hairs), thus not twice as long as wide (vide Duda), densely long-haired (hairs 0.4—0.5). Arista (4.5 long, including fork (0.9)), excluding fork with 4(L) or 5(R) rays above and only 1 (distal) ray below, just behind fork. Rays normal length (longest 2.0), the 5—6 inner hairs quite short. Eyes round (5.6 diam.). Jowls broad, at narrowest (lowest eye to mouth edge) 1.5. Proboscis with stiff hairs (0.8) at end.

Head chaetotaxy. A single, regular row of postocular hairs, remaining single rowed on jowls where they end at antr. jowlar. Occipitals not specially large (1.2), 4 either side. 12 frontal hairs on frons, longest 0.8. 2(R) or 3(L) fine fronto-orbital hairs. 7 ocellar hairs, behind the bristles. Distances,

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bristle to bristle: — orb3—orb2 (0.5) — orb1 (1.0); orb3—orb1 (1.4) — inner vert. (1.7) — outer vert. (0.7); orb2, 0.6 from eye margin. Only 2 jowlars. About 10 oral hairs, very small and fine (0.5—0.7) and in this agreeing more with DUDA's description of *lundstroemi* ♂ than of *oldenbergi* ♂.

Head-bristle measurements. orb1 (reclined) 3.4, orb2 (reclined) 1.2, orb3 (proclined) 2.5; vertical, outer 4.0, inner 3.9; postvertical (convergent) 3.1; ocellar (diverging 60°) 3.6; vibrissa, 3.8; jowlar, antr. 1.6, postr. 1.8 (Only 2 jowlars).

Thorax. Chaetotaxy. No prescutellars. No prothoracic. 3 recumbent sutural hairs (1.2). 2 or 3 very fine discal sternopleural hairs. Mid sternopleural bristle represented by a very fine hair (0.6), i. e. only 2 sternopleurals. (Not noted whether these at same level on sternopleuron). No hair just anterior to antr. sternopleural. At least 4 fine hairs lead down from mid sterno hair (thorax here squashed in by pin). Antr. scutellars slightly diverge; postr. scut. crossed.

Measurements. humeral, upper 2.6, lower 1.9; presutural 3.6; notopleural, antr. 3.9, postr. 2.0; supra-alar, antr. 2.2, postr. 4.6; postalar, antr. 5.8, postr. 2.3; DC, antr. 3.3, postr. 5.6; scutellar, antr. 5.1, postr. 6.0; sternopleural, antr. 2.7, postr. 5.3.

Abdomen. Tergites 2—6 yellow anteriorly, brown posteriorly, bands not broken; side edges wholly brown. Tergite 8 (from above appears to be 7th) yellow. Anal tuft yellow. The characteristic ovipositor guide (fig. 6) is brown, pointed-slipper shape, broad (1.8) and flat below. Sternites (where visible) light yellow, not heavily chitinised, smallish.

Wing. Broad, clear, yellow tinged (DUDA's "graugelb" would not apply), veins yellow. Only 1 strong bristle (1.6) at 2nd costal break, at inner (upper) edge. (DUDA implies there are 2 unequal ones in the ♂). The stronger costal fringe short, and petering out indefinitely at 7/16 distance between veins II and III. Costa continues weakly from III to IV. Vein III ends at wing tip, curving downwards at end, thus III and IV converge. Anal vein straight, reaching nearly to wing margin. Postr. X-vein placed slightly before mid point of Cost2, as 4.0:4.4.

Measurements. All in larger units (1.0 = 0.212 mm.) Cost1 (excl. basicosta) 3.9, Cost2 8.4, Cost3 3.3, Cost4 1.0; IV2 (from missing X-vein) 1.8, IV3 3.7, IV4 6.2; V3 1.7; postr. X-vein 1.3; Wing length 15.0, breadth 5.9.

The R wing from which the measurements were made was later accidentally damaged by me.

Legs. A dorsal preapical bristle on only hind tibia (1.5 long); a ventral apical spine only on mid tibia (1.4 long). 1st coxa apparently with only 1 bristly hair (1.9) on front edge at distal third; otherwise normal. 1st tibiae measurements: — metatarsus 4.0, jt.2 1.8, jt.3 1.2, jt.4 0.9, jt.5 1.1.

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Body length. Frons to tip of ovipositor, 2.86 mm. (head and thorax 1.58 mm, abdomen 1.28 mm.)

16. *Drosophila trivittata* Strobl

No specimen in the Collection — *D. trivittata* was described from 1♀ from Admont (1893b:282—283), with the further information (1894:131), "Im Stiftsgarten von Admont 1♀, Juli." It is unfortunate that the specimen

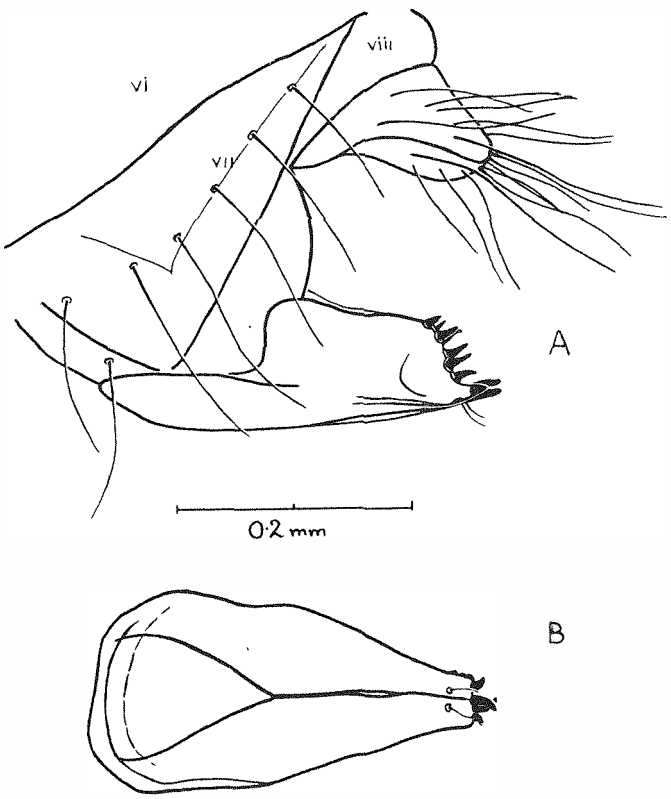

Fig. 6. *Drosophila* (*Hirtodrosophila*) *oldenbergi* (Dud.) Ovipositor guide of Str180a A, side view. B, from below

is missing, for recent work on the group in Japan and Korea shows a medley of species there, and the same may apply in Europe. However, Jugoslav specimens I have seen (Coe, 1959:199) agree well enough with Strobl's description and with that of Oldenberg (1914a:7), who draws attention to the very variable marking of the abdomen, and of Duda (1935:98), who describes the new var. *ussurica* from south-east Siberia. Becker (1908: 155—6) describes *D. rubrostriata* a closely related species from the Canary Islands. The Jugoslav specimens are certainly distinct from Korean and Japanese specimens given the name *trivittata* by Okada.

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It is of interest to mention here that EVERSMANN (1834:431) used the name *trivittata* in a bare list (no author names or data) of 10 species of *Drosophila* from between "Wolgam fluvium" and the Urals. Eight were known species (*funebris*, *phalerata*, *fenestrarum*, *transversa*, *melanogaster*, *glabra*, *graminum* and *incana*); one was given as "*Pusilla*, mihi."; and between *melanogaster* and *glabra* was "*Trivittata*". On applying to Professor STACKELBERG, Leningrad, he informed me (in litt 10. v. 59) that these two species were nowhere described and no specimens are in EVERSMANN's collection there. The name *trivitatta* as used by EVERSMANN in 1834 is thus a nomen nudum, as also is *pusilla*.

17. *Drosophila obscura* FLN.

Str179, 182 (1♂ 1♀); (Str180—181, 183—184, 294) — STROBL gave many records of *obscura* (1893a:133, 1894:130, 1897:28, 1898b:580, 1900a:5, 1898b:580 = 1900b:636, 1901a:240, 1906:372 and 1909:279). He also recorded a dark variety (unnamed) from Malgrat (1906:372) and another which he named as var *tinctipennis* (q. v.). Some further specimens were identified as var *rufipes* MG., later as *rufifrons* LW., q. v.

An examination of the 10 specimens under *obscura* (179—184) show that only 2 are *obscura* (179, 182), the 8 others being *subobscura*, *helvetica* or the extraneous *oldenbergi* (q. v.). This is not surprising as recent studies have shown that the old European "*obscura*" is a group of 8 species.

The above mentioned "recht dunkles ♂" from Malgrat (Spain), with greyblack head and antennae and brown-grey femora is in the collection (No. 184) and is *D. subobscura*, now faded to brown. Other "*obscura*" records can be corrected from existing specimens, e. g. the ♂♀ from Brincola and Iativa (1900a:5) are *subobscura* (Str183); 2 specimens from Steinbrück (1894:130) are *subobscura* ♀ and *oldenbergi* ♀ (180a); and a Dalmatian specimen collected by NOVAK, but not known whether from Zara or Lesina (1893a:133, 1900b:636) is *subobscura* ♀ (181).

18. *Drosophila tinctipennis* STROBL

Str294 (2 ♂) — The name *D. tinctipennis* has been completely overlooked until now, doubtless because it was published in a little-known journal (1901a:240 = 70 of Separat), where it was described as a variety of *obscura* FLN.: —

"*var. *tinctipennis* m. (Die Rand- und Unterrand-zelle in der Spitzenhälfte sehr auffallend braun tingiert und bisweilen die ganze Flügelspitze braun gesäumt; nach abwärts verblaßt die Bräunung allmählich; auch die hintere Querader merklich braun gesäumt; sonst normal.) Villach, Schlesien 2♂, 2♀." (* = new to Kärnten).

The specimens are on one mount and stand against a separate label, "D. obsc. v. tinctipen nis m. ♂ Schlesien", with a small golden square on the pin itself. The latter indicates (op. cit.: 172 = 2 of Separat) that the specimens are TIEF's from Freundenthal in Österr.-Schlesien. The larger,

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better marked ♂ is selected and labelled as Lectotype and the smaller ♂ as Syntype of *Drosophila tinctipennis* Strobl. The specimens are *D. tristis* Fln., so *tinctipennis* Str. is herewith sunk as a synonym of *tristis* Fln. (new synonymy). One wonders what the two females would be as the ♀ of *tristis* has clear wings, but these specimens, presumably from Villach (in Kärnten = Carinthia) are not in the collection.

19. *Drosophila subobscura* Collin

Str180a, 181, 183, 184 (2♂ 3♀) — Strobl did not know this species as it was not described until 1936. 5 specimens in the collection were all arranged under *obscura*, q. v.

20. *Drosophila tristis* Fln.

Str294 (2♂) — The only specimens in the collection are the types of *D. tinctipennis* Str., q. v. Strobl nowhere mentions *D. tristis*, probably because Schiner (1864:277) did not differentiate it. Schiner unknowingly included *tristis* in *obscura*, as he says "Flügel recht merklich bräunlich tingirt", but in a footnote he relates it to *distincta* Egg.

21. *Drosophila ambigua* Pom.

Str169, 170 (2♂) — Amongst the *D. funebris* were these two specimens of *ambigua*, a species described by *Pomini* in 1940. They appear to be specimens from Prague.

22. *Drosophila helvetica* Burla

Str180 (1♂ 1♀) — These were identified by Strobl as *obscura*, but are *helvetica* Burla, described 1948. They were caught at Seitenstetten (Ybbsbachrand), on 21 May (no year), but Strobl does not list *obscura* s. l. in his paper on Seitenstetten (1880).

The *Drosophila fenestrarum* aggregate of Strobl

The old authors and Strobl later were bemused about the limits of *fenestrarum* Fln. At one time or another Strobl included 6 species under *fenestrarum*, viz. *fenestrarum* Fln., *melanogaster* Mg., *fasciata* Mg., *nigrithorax* Str., *nigriventris* Ztt., and *approximata* Ztt., the last five as varieties. Later he described the new species *andalusiaca*, which is of the *fenestrarum*-group but which Strobl failed to recognise as such. All these species are dealt with separately but the names in the numerical List at the end of this paper will show the confusion. Only *fenestrarum* and *andalusiaca* of the above species belong to the real *fenestrarum*-group (see p. 186).

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The application of the above names as used by STROBL can be summarised as follows: —

"*fenestrarum*"	= *fenestrarum* FLN.
"*melanogaster*"	= *fenestrarum* FLN.
"*fasciata*"	= *testacea* VON ROSER
"*nigrithorax*"	= *testacea* VON ROSER
"*nigriventris*"	= ? (No specimen, and none recorded)
"*approximata*"	= *Microdrosophila zetterstedti* WHEEL.

23. *Drosophila melanogaster* MG. (= *ampelophila* LW.)

Str114—120, 126, 284 (2♂ 7♀); (Str109—113) — The identification by STROBL of these specimens was as follows: 114, *melanogaster* correct; 115 bis 120 as *D. ampelophila* LW., which today is accepted as a synonym of *melanogaster* and which the specimens are; 126 (♀) as *D. distincta*; 284 (2♀) as *fenestrarum* (perhaps not det. STROBL); and for 109—113 he used the name *melanogaster* though they are *fenestrarum*. This shows that the name *ampelophila* was mostly used for the species *melanogaster*, and the name *melanogaster* was used for *fenestrarum*.

STROBL recorded *melanogaster* mostly as a variety of *fenestrarum* but in his first paper (1880:35) he gives it full species rank. The only record of "*melanogaster*" with a specimen possibly represented is — "An Waldrändern selten gestreift, auch im Conventgarten" [Seitenstetten] (1880:35). This is No. 109, a *fenestrarum*.

The following cannot be confirmed from specimens: — In Hohlwegen und Bachschluchten um Admont vereinzelt (1894:132); Suha 2♀, THALHAMMER (1898b:581 = 1900b:637); Schlesien 1♀ (1901a:240); and Zara, leg SIEBÄCK (1904:571).

Of *ampelophila*, STROBL does not list this as a variety of *fenestrarum* but as a good species, with *uvarum* ROND. as its synonym. His attention was doubtless recently drawn to this by BECKER's paper of 1903 (p. 184). STROBL's records are: — Lesina, Zara, ♂, ♀ häufig, NOVAK, Sarajevo ♂, ♀ nicht selten, WINNEG. (1904:564); and Madrid, 1♂, leg. LAUFFER (1906: 372). Only Zara (NOVAK) specimens are in the collection (116, 118) and these are *melanogaster*; there is also a BEZZI specimen from Milan (115).

24. *Drosophila fasciata* MG.

(Str127—131) — The 2♂ 6♀ "*fasciata*" in the collection prove to be *D. testacea* v. Ros., q. v. STROBL reported *fasciata* usually as a variety of *fenestrarum*: — In feuchten Hainen 1♂, Seitenstetten (1880:35): "... nach meiner Überzeugung nur Var. [*von fenestrarum*]; die Entfernung der Queradern ist zu schwankend, als daß man auf kleine Differenzen ein Gewicht legen könnte. Im Stiftsgarten und an feuchten Waldstellen um Admont vereinzelt, Juli-Sept." (1894:132): Auch von *fasciata* findet sich eine Var. ♂ mit ganz schwarzbraunem Thorax. (1894:131): Schlesien 1♀ (1901a:240).

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The above records except the last are confirmed by specimens (127—131) to be of *testacea*, the schwarz-braun var. being Str131, which is discussed under *D. nigrithorax* Strobl.

25. *Drosophila nigrithorax* Strobl

Str131 (1♂ 1♀); (234a, 235) — The name *nigrithorax* has been entirely ignored or overlooked. [It is now included in Wheeler's catalogue (1959)]. Strobl (1894:132) described it as a variety of *fenestrarum*: —

> "var. nigrithorax *mihi. thorace nigrofusco, nitido.*. Hielt ich wegen des schwarzbraunen Thorax und Schildchen früher für eigene Art, doch finden sich, besonders beim ♀, Übergänge in die Normalfärbung.
>
> An schattigen feuchten Stellen des Stiftsgarten und Mühlauerwaldes bei Admont mehrmals; auch um Seitenstetten 6 Ex.; Juni-Sept."

On p. 131 (op. cit) there is a separate note, which, as we will show, belongs here: —

> "Nota. Auch von fasciata Mg. findet sich eine Var. ♂ mit ganz schwarzbraunem Thorax".

Strobl never mentioned *nigrithorax* in any subsequent publication.

There are 3 specimens clearly labelled as *nigrithorax*, viz. Str234a (♀) and Str235 (1♂ 1♀), the respective labels reading, "fenestr v. nigrit Kaiser au (Kalbling) 17/6 95. ♂ (sic)." and "Dros. fenestrar. v. nigrithorax m. ♂♀ Duino (Lagunen) 25/7 Strobl."

The specimens are the yellowish form of *Parascaptomyza pallida* (Ztt.), with pale yellow abdomens (browner in ♂ 235), legs and lower pleura, and a largely yellow head. The dorsum, scutellum, upper pleura, upper front, and occiput are yellowish-grey or grey; ♂ 235 is the darker grey, ♀ 234a is reddish grey, and ♀ 235 yellowish grey. The grey thorax of ♂ 235 could at a stretch be described generally as *nigrofusco* (schwarzbraun) when allowing for transitional lighter forms of the female (as particularly mentioned in the description) to which ♀ 234a and ♀ 235 would belong. However, the specimens cannot be described as *nitido* (shining) as they are quite matt (except end segments of ♂ abdomen) and much less shiny than other "fenestrarum" specimens in the collection. Moreover the localities on the labels do not agree with the text. What, then, are these specimens and what is the real *nigrithorax*?

In 1910 (pp. 211—212) Strobl happened to describe 3 specimens of "*Scaptomyza gracilis* Walk. Beck.", as follows: —

> "Auf Voralpenwiesen bei Admont 1♂; besitzt nur 2 Reihen von Acr[ostichal]. B., unterscheidet sich aber von der typ. gram[inum]. durch rotgelben Hinterleib und etwas gelblich durchscheinende Grundfarbe des Thorax; doch ist die Bereifung des Rückens so stark, daß man die Grundfarbe kaum erkennt; dieses ♂ besitzt eine dunkle Rückenstrieme; bei Duino traf ich ein sonst identisches ♂, aber ohne deutliche Rückenstrieme und 1♀ mit ganz dunklem Thorax und dunkler Hinterhälfte des Hinterleibes".

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This description fits Str234a and 235 precisely except that he confuses the sexes and that the "♂" (really ♀) from Duino does have a slight dorsal midstripe. Also the localities agree, Kaiserau Kalbling being at c. 1300 m near Admont (STROBL, 1893c:3), and "Lagunen bei Duino" on Gulf of Trieste is where STROBL visited July-August 1879 or 1883, (STROBL, 1893a: 29—). Therefore there is no doubt that these are the specimens STROBL considered to be *gracilis* in 1910, soon after BECKER (1908:157), following COQUILLET (1900:463), had drawn attention to the significance of 2- and 4-rowed *Scaptomyza*. Their *nigrithorax* labels may have been transferred from other specimens (though other pin-holes in the labels could have been made by the present pins) or STROBL earlier mislabelled them. It is not likely that he could seriously have taken them to be *nigrithorax* or of the *fenestrarum* complex, although this yellow form of a normally grey species might confuse him. Therefore I do not accept 234a or 235 as representatives of *nigrithorax*.

Attention was earlier drawn to a detached note on page 131 re a *fasciata* ♂ with schwarzbraun thorax. This renders it indistinguishable from the description of *nigrithorax*. Since the description of var *nigrithorax* immediately follows another note on var *fasciata* on page 132 it seems evident that it is to a dark form of *fasciata* that STROBL gives the new name.

In the collection there are 8 *fasciata* (127—131), which all prove to be *testacea* VON ROSER. Of these, 7 are from the *nigrithorax* localities (and also from localities recorded for *fasciata* (q. v.)), but only 1♂ 1♀ (Str131) from the Stiftsgarten, have a dark brown thorax. Their's is the only label with v [var]., and the only specimens dated June. (*Fasciata* is recorded for July-September; *nigrithorax* June—September). STROBL's description of *nigrithorax* fits these specimens well. Amongst all the specimens included in his *fenestrarum*-complex in the collection no others, except 293 (medium-grey thorax) and 283 (thorax brownish posteriorly) have any sign of a darkened thorax.

Therefore it is certain that the name *nigrithorax* STROBL was applied to dark specimens of *testacea*, a shining species whose colour commonly varies from yellow-brown to black-brown. Therefore *Dros. nigrithorax* STROBL becomes a synonym of *D. testacea* VON ROSER (new synonymy). It would be unwise, however, to select Str131 as Lectotype (♂) and Syntype (♀) of *D. nigrithorax*, though I have indicated the association on the label, and this species must rest content without a type.

Drosophila nigriventris ZETT. — See *Microdrosophila zetterstedti* (species No. 13).

26. *Drosophila approximata* ZETT.

(Str292, 293) — STROBL at first treated *approximata* as a variety of *fenestrarum*. His first record (1900b:637) is Suha, 1♀ (THALHAMMER, det. STROBL), but earlier than that (1894:132) he stated, without recording any

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specimen, that he considered *approximata* and *nigriventris* to be colour and vein varieties of *fenestrarum*. In 1910 (p. 211) he reported it as a species new to Styria — "In Waldschluchten um Admont und am Sirbitzkogel ♂♀." These last two specimens are in the collection, the Admont one being *Microdrosophila zetterstedti* (q. v.) and that from Sirbitzkogel is a yellow form of *Par. pallida*. (It should be noted that this specimen was gummed onto the side of the minuten pin as though it had been loose at some time). The identity of the Suha female is unknown.

D. approximata is today considered to be a synonym of *D. melanogaster* Mg. and this is here confirmed. The 3 female specimens of *approximata* in Zetterstedt's collection (Ztt96, 97, 98) are definitely *melanogaster* Mg. (= *fasciata* Mg. of Duda).

27. *Drosophila testacea* von Roser

Str99, 127—131, 138—141, 168 (7♂ 9♀) — The name *testacea* was unknown to Strobl who was not aware of von Roser's papers of 1834 and 1840. Therefore the *testacea* specimens in the collection appear under other names, e. g. *phalerata* (99), *fasciata* (127—131), *rufifrons* (= "*obscura* var. *rufipes*") (138—141), and *funebris* (168). With such a colour-variable species this is not surprising if he followed Schiner's and others keys of the period. The main character of *testacea*, the presence of a pair of long presutural acrostichal bristles, was overlooked until Duda drew attention to it in 1924 (1924a:203, 1924b:260), which character induced him to erect the new sub-genus *Acrodrosophila* for the species. Today, however, *testacea* is included in the *testacea*-group of *Drosophila* s. strict. The localities and dates of Strobl's specimens will be found in the list at the end. As noted under Species 25, *nigrithorax* Str. is a new synonym of *testacea*.

Drosophila fenestrarum-group s. strict.

The *fenestrarum*-group within *Drosophila* (Basden, 1954: 620) is distinctive, as already pointed out by Collin (1952, Ent. mon. Mag.: 197), and needs to be included in a new subgenus. The name ***Lordiphosa*** n. subgen. (feminine) is proposed. Type, *Drosophila fenestrarum* Fallén. The subgenus has the following characters:

Facial carina small and confined to upper part of face. The 3 sternopleural bristles increase in length from the antr. to postr., the mid sterno being longer than the antr. instead of shorter as usual. Acrostichal hairs 4-rowed, sometimes irregularly 6-rowed anteriorly. 1 or 2 enlarged presutural DC. Arista behind end fork with 2 or 3 rays below, one in basal half. Upper pleura usually darkened. Wings rather long and narrow. Metatarsus of first leg of male antero-ventrally with a tuft of pale silky hairs at end, and a less obvious tuft on 2nd jt. Inside face of 3rd antennal jt concave, particularly in older living specimens; in pinned specimens it is more definitely

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bent inwards[1]). Two other characters may be diagnostic, though more groups need to be compared, (1) Of the 2 or 3 dorso-lateral bristles in distal

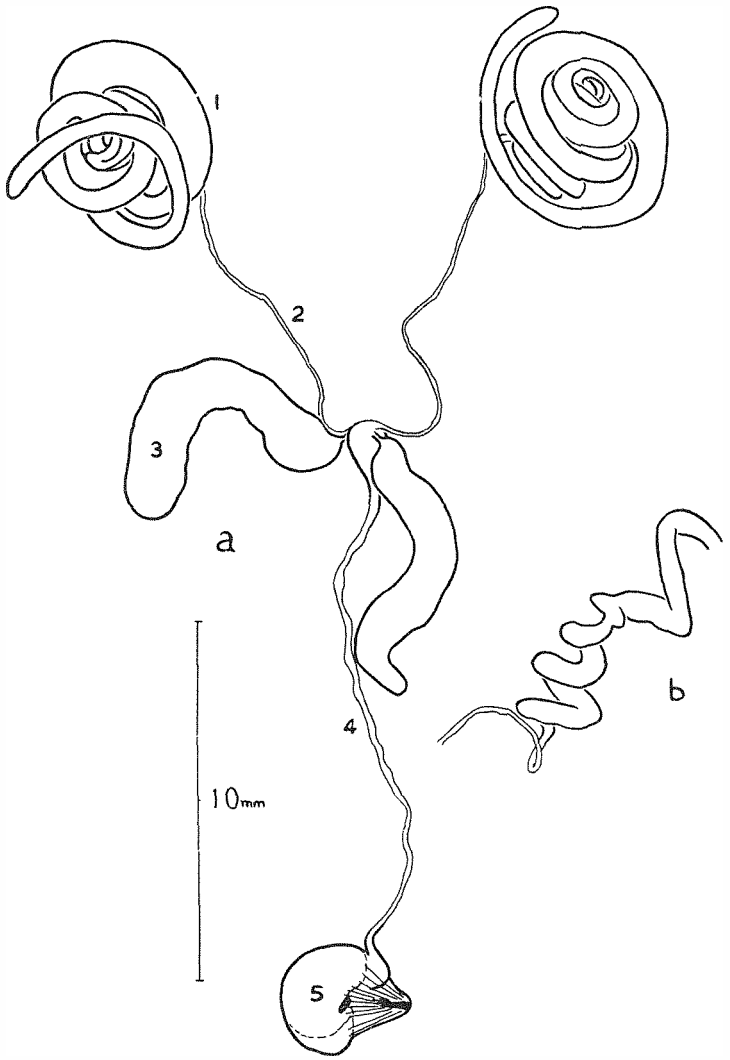

Fig. 7. Internal male genitalia of *Drosophila* (*Lordiphosa*) *andalusiaca* Str. a, complete. b, showing change of coiling of testes at third inner coil.
1, testes. 2, vas deferens. 3, paragonium (accessory gland). 4, ejaculatory duct. 5, sperm pump (ejaculatory bulb)

half or two-fifths of 1st femur the one nearest the middle is definitely the strongest and often the strongest bristle on femur, particularly in females

[1]) This was noted by Fallén, 1823, in his description of *fenestrarum*.

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except *acuminata*; (2) the two strongest spines at base of hind metatarsus are practically side-by-side. The internal genital characters of only *andalusiaca* (Stock 398 F 27, Dunglass, Scotland) have been studied (figs. 7, 8). Male testes lemon-yellow, tightly coiled, with 2—3 outer coils and 5 inner

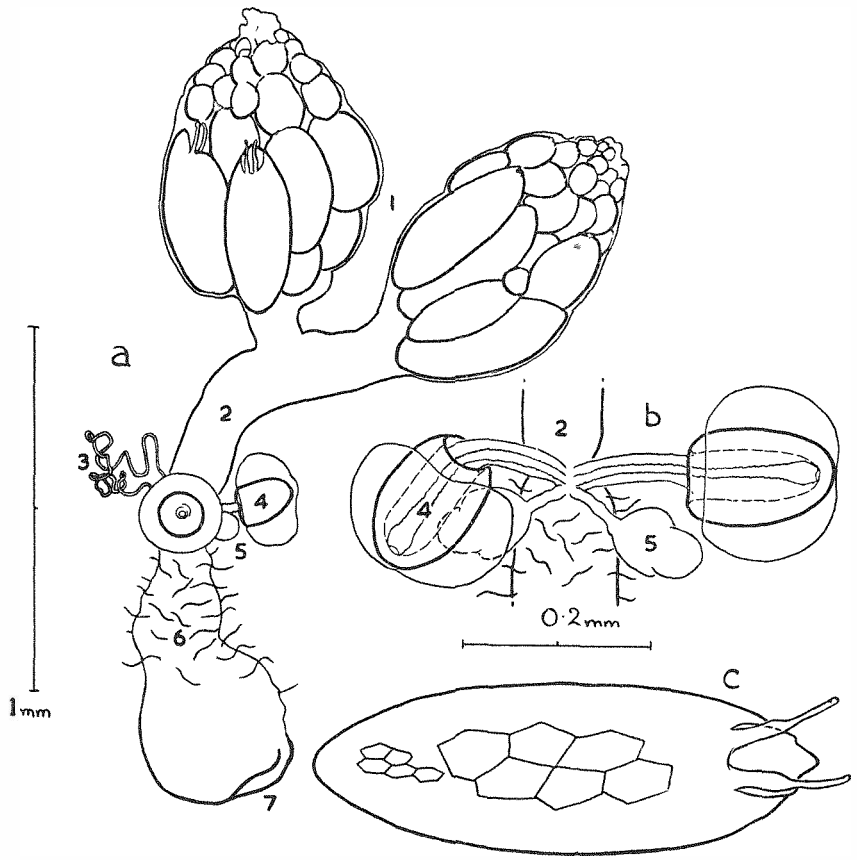

Fig. 8. Internal female genitalia of *Drosophila* (*Lordiphosa*) *andalusiaca* Str. a, complete. b, spermathecae and parovaria enlarged. c, egg, with reticulation of chorion at same scale and enlarged.
1, ovaries. 2, oviduct. 3, seminal receptacle (ventral receptacle) 4, spermatheca, with enveloping fat tissue. 5, parovarium (accessory gland). 6, vagina (uterus), with attached muscle fibres. 7, vaginal opening

coils. The coiling is reversed at the end of 3rd inner coil. Female spermathecae chitinized; seminal receptacle long, very narrow and loosely looped. Eggs with 2 short filaments.

The species included in *Lordiphosa* are *Drosophila fenestrarum* Fln., *D. variopicta* Beck., *D. andalusiaca* Strbl. (= *forcipata* Coll.), *D. hirsuta* Duda, *D. acuminata* Coll., and *D. basdeni* Wheel. According to the male genitalia

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the species can be classified as two subgroups, (a) the *fenestrarum* subgroup with large claspers and large, extensively glossy genital arch (*fenestrarum*, *andalusiaca*, *variopicta*), and (b) the *acuminata* sub-group with weak claspers and smaller pubescent genital arch (*acuminata*, *basdeni*). The species are known from only the western Palaearctic, Sumatra and the Nearctic.

28. *Drosophila fenestrarum* Fln.

Str109—113, 282—3, 285 (6♂ 3♀); (Str284) — These specimens shared in the general confusion, 109—113 (3♂ 2♀) being incorrectly identified as *melanogaster* Mg.; 284 (2♀) being named *fenestrarum* (probably not det. Strobl) but are *melanogaster*; and the rest (4♂ 1♀) were correctly identified. It is obvious that at some time Strobl thought *fenestrarum* to be Meigen's *melanogaster*.

Strobl recorded "*fenestrarum*" as follows: — An Fenstern und auf feuchten Wiesen selten; Admont and Hohentauern (1894:132): 1♂ in flight in a damp grove, Fröschelau, Seitenstetten, mid April (1880:35); 1♂, Sarajevo (Apfelbeck) (1898b:581 = 1900b:637): and Dalmatia (leg Siebäck) (1904:571). Only damp meadows (feuchten Wiesen) is represented by the present specimens (282, 285, from Enns Auen); the species of the other places cannot be confirmed.

29. *Drosophila andalusiaca* Strobl (= *forcipata* Collin)

Str145 (1♀) — Strobl (1906:372—373) recorded and described only one specimen of *andalusiaca*, a female from Algeciras, Spain. The specimen bears a printed label, "Algeciras Andalusien Prof. G. Strobl", with his separate handwritten label, "Dr. andalusiaca Str Algeciras ♀", the specific name being underlined. There is no m. or n. sp. as on labels of his other new species but after careful comparison of the specimen with the lengthy description I have no hesitation in selecting and labelling it as Lectotype of *D. andalusiaca*.

Although the specimen now has no head and most bristles on antr. dorsum are rubbed off it is definitely the dark-ovipositor form of the female of *D. forcipata* Collin, 1952. Also breeding tests with Scottish material show that both black- and yellow-ovipositor F1 females can be obtained form one wild-caught parent female. Therefore *forcipata* becomes a synonym of *andalusiaca*, as already mentioned by Basden in Waddington (1957:26).

The specimen has the arrangement of sternopleural bristles typical of subgenus *Lordiphosa*, the 3 increasing in lenght posteriorly, but the small antr. one was not considered by Strobl, he mentioning only 2 bristles. Also he described the X-veins as "nur die 2 Queradern schwärzlich und sehr schmal dunkel gesäumt, beinahe ungesäumt." This is misleading, the X-veins are not shaded (and they do not appear to have faded since the fly was caught in 1904) but in certain lights the postr. X-veins appears slightly

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diffuse, as usual with this vein and as in recent specimens of the species. A detailed description of the specimen has been prepared and will be given in a paper on the *fenestrarum* group. A photograph of the wing (Plate 2, Fig. 1) and a fig. of the ovipositor (fig. 9) are given here.

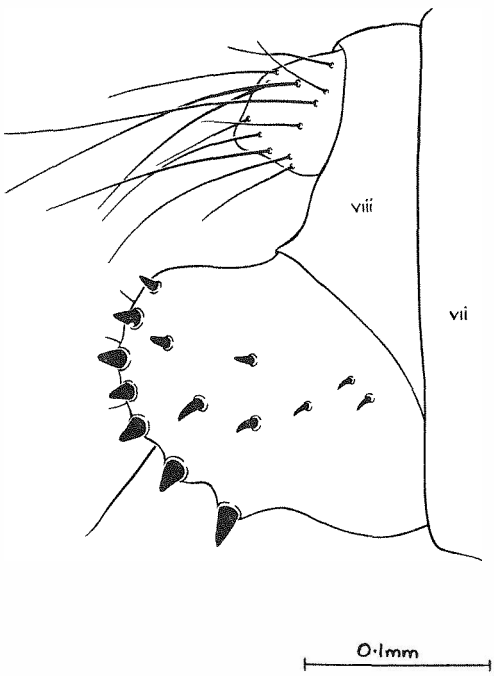

Fig. 9. *Drosophila* (*Lordiphosa*) *andalusiaca* Str. Ovipositor guide of Lectotype (Str145)

30. *Drosophila nigricolor* Strobl

Str277—281a (1♂ 5♀) — Strobl described *nigricolor* in 1898 (1898a: 266—267) from 1 Pärchen (pair in cop) "im Gesäuse Mitte Juni". He further recorded it (1901a: 240) as new to Kärnten (= Carinthia), 3♂ 1♀ in Tief's collection; and (1910: 211) as repeatedly around Admont and Lichtenwald, as well as "erhielt 4 Ex. aus Villach und 1♀, eine Var. mit größtenteils schwarzbraunen Beinen, aus Bregenz." The 4 examples from Villach (Carinthia) may be the 3♂ 1♀ of 1901. The specimens in the collection are three from Gesäuse (277, 278, 281), one from Kematenwald, Admont (281a), and two of Tief's (females) from Villach (279, 280). The darklegged variety from Bregenz is not present, so its specific identity remains in doubt.

The selection of types was not immediately straightforward as none of the Gesäuse specimens is dated June; and all three could qualify as original specimens as they are labelled "nigricolor m." (No. 277 has label separate). Two, both females, are dated May (10/5 95 and 20/5), the male (281) is not dated. Therefore I assume the month is recorded erroneously. Although 4 females are mis-sexed as males Strobl could recognise the sexes, as he described the "ziemlich kolbiges Hinterleibsende" of the male, and the "kurz vorstehender Legeröhre" of the female. Therefore the mis-sexed ♀ from Gesäuse (278) is excluded as a syntype. It is probably an original specimen (but not recorded), because its cancelled identification as *rufipes* agrees with Strobl's observation (1898a: 266) that *nigricolor* is "zunächst verwandt mit *rufipes*". The correctly sexed ♂ (281) and ♀ (277) are selected and labelled as Lectotype and Syntype respectively of *D. nigricolor* Str.

Advantage is taken of the specimens to augment here the descriptions of *nigricolor* by Strobl (1898a) and Duda (1935: 89).

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The species has affinities with the subgenus *Lordiphosa* (*fenestrarum* group), the facial keel being short (but stouter more pronounced), the sterno-pleural bristles increase in length posteriorly, the first metatarsus of ♂ has a few long fine hairs at the end, and the following 2 joints have long fine hairs along whole ventral surface. The black body colour however is not typical of the yellow-brown *fenestrarum* group. STROBL's specimens are now somewhat faded, nigger-brown to brown.

Unit measurement 1.0 = 0.083 mm., except where stated.

Head. As wide as thorax. Occiput straight, convex. Facial keel short, scarcely 2/3 as long as face. Front darker than face, at centre broader than long (as 4.5:3.0). Jowls yellowish to blackish, narrower than 3rd ant. jt.; at narrowest 1/6 to 1/7 eye height. Proboscis and palpi yellow-brown; palpi slender, elongate, narrower than jowls. 3rd ant. jt. roundish, barely longer than broad, curved inwards in dry specimens (as in *fenestrarum* group), longish haired (the hairs longer than eye-pile). Arista rather short (4.0), with, excluding end fork, 4 rays above 2 below (all 6 specimens), the rays long (up to 2.5).

Head chaetotaxy

	Str277, ♀	Str278, ♀	Str281, ♂
postvertical (upright)	2.2	2.1	2.0
ocellar	3.3	3.2	2.9
occipital	1.6	1.7	1.3
vertical, inner	4.0	3.8	3.3
outer	3.8	3.4	3.0
orb 1 (reclinate)	3.4	3.7	3.0
orb 2 (reclinate)	0.8	0.7	0.7
orb 3 (proclinate)	2.2	1.9	1.9
vibrissa	2.2	2.5	1.9
2nd oral	1.4	1.5	1.5
jowlar, antr.	1.5	1.2	1.3
postr.	1.3	—	1.3

Frontal hairs — very few, inconspicuous. Only 2 jowlars. Postverticals quite upright, not converging as in *fenestrarum*-group.

Thorax. Dorsum, scutellum, and pleura now unicolorous niggerbrown (Thorax was originally described as pure black; by DUDA (1924b:309) as braunschwarz, and (1935:90) as schwarz). Notopleural callus small but distinctly protruding. Prosternal plates (between 1st coxae), yellow-brown (? faded), matt.

Thoracic chaetotaxy. Upper humeral weaker than the lower. Acrostichals irregularly 4—6 rowed before DC. An elongate postsutural DC hair. 2 or 3 elongate sutural hairs. No prothoracic hair. No prescutellars. Antr. scutellars slightly diverging, postr. sc. crossed; tips of antr. sc. reach

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farther back than tips of postr. sc. Sternopleurals increase in length from antr. to mid to postr. (in most *Drosophila* the mid is the shortest); the postr. much the strongest, the others hair-like (weaker than corresponding ones of *fenestrarum*-group); mid sterno. slightly closer to antr., postr. sterno almost directly below mid; no fine hair just anterior to antr. sterno; a row of 4 or 5 very fine hairs lead down from mid sterno half-way to sternal (1.6). The usual row of 3 or 4 very fine discal sternopleural hairs. Measurements:

	♀ 277	♀ 278	♂ 281
humeral, upper	1.7	1.6	1.7
lower	2.7	2.5	2.4
presutural	3.6	3.4	—
notopleural, antr.	—	3.0	3.0
postr.	—	2.0	—
supra-alar, antr.	1.7	1.6	—
postr.	4.0	4.0	3.4
postalar, antr.	4.1	4.3	—
postr.	1.2	2.3	2.4
DC, antr.	3.6	3.1	3.0
postr.	5.3	4.8	4.6
scutellar, antr.	6.8	6.2	5.9
postr.	4.4	4.2	—

Sternopleurals

	Str277		278		279		280		281		281a	
	L	R	L	R	L	R	L	R	L	R	L	R
antr.	1.6	1.4	1.5	1.5	1.7	1.6	1.8	1.7	1.4	1.2	1.6	2.5
mid	2.1	1.6	1.6	1.8	2.0	1.8	2.4	2.2	1.5	1.6	2.0	1.3
postr.	4.6	5.0	4.1 + tip off	4.8	4.6	4.6	4.6	4.9	4.4	4.4	4.5	4.6

Abdomen. Slender; tergites with hairs about half as dense as on dorsum, the hairs quite long (up to 2.0 units on postr. segments). Sternites (♂) becoming progressively wider, the last 2.5× wider than long and with 11 longish hairs (up to 1.5) along postr. part. Previous sternites with a few (shorter) hairs across disc as well. Anal tuft of ♀ yellow. Ovipositor guide (fig. 10) yellow, rounded, similar to that of *andalusiaca*. Male genitalia (fig. 11) heavily pigmented; with genital arch (7th visible tergite) small and rotund (kolbig (Strobl) describes it well), being similar to that of *D. acuminata* (Collin, Ent. mon. Mag., 88, fig. 6, 1952). In the preparation the penis and two pairs of penial processes are unfortunately obscured.

Wing (Duda, 1935: Taf. IV, fig. 34). Costa continues weakly to vein IV. Vein III ends at wing tip. Anal vein short, vestigial. Mid point of postr. X-vein placed before mid point of Cost 2, as 3.2:4.3 (larger units,

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1.0 = 0.212 mm.). Two spines at second costal break, the inner (upper) one slightly the longer. Stronger costal fringe extends about three-eights of Cost 3, as 2.7:7.2 (Str277), 2.6:6.5 (278), 2.8:6.4 (281). Veins III and IV more or less parallel (Str277) or slightly converging. Tegular organ minute, yellow.

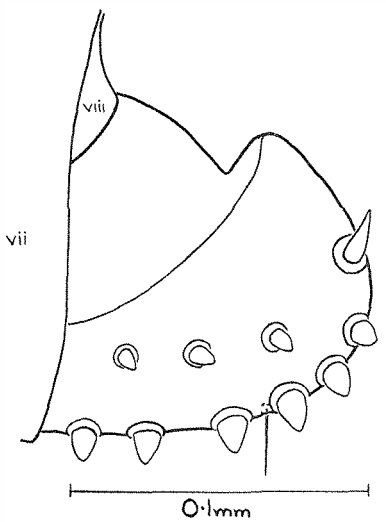

Fig. 10. *Drosophila nigricolor* Str. Ovipositor guide of Str280

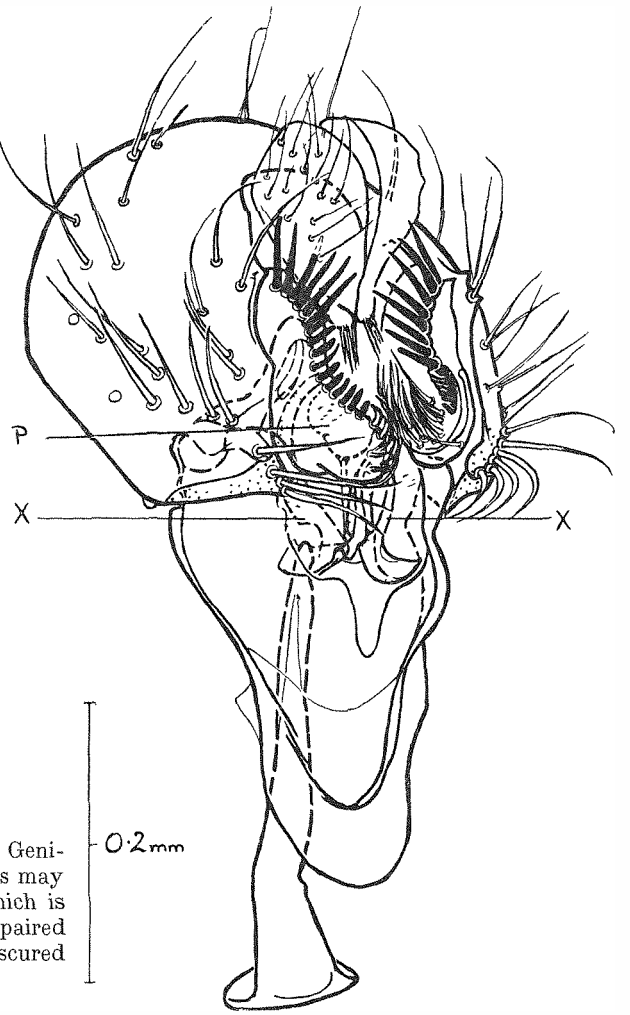

Fig. 11. *Drosophila nigricolor* Str. Genitalia of Lectotype (Str281). P, this may represent the head of penis, which is obscured in the preparation. X, paired penial process, the ends being obscured

Legs. Legs yellow. (Strobl later mentioned a specimen from Bregenz with mainly black-brown legs but this is lost) Strobl's description says "außer der Praeapical-borste ohne Borsten", but the following can be noted, supplementary to Duda's description: — 1st femur dorsally with 1 longish bristly hair near apex; posterodorsally with 1 near base, 1 at distal third;

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Measurements

	♀ 277	♀ 278	♂ 281
Cost 1 (excl. basicosta)	8.0	8.8	—
2	19.8	19.1	16.9
3	7.2	6.5	6.4
4	2.8	2.4	2.3
IV 2 (from missing X-vein)	3.7	3.7	3.7
3	8.0	8.0	6.9
4	15.0	14.1	13.3
V 3	5.5	4.5	4.0
Postr. X-vein	2.7	2.6	2.4
Wing length (1 unit = 0.212 mm.)	13.4	13.0	11.5(R)
Wing breadth (1 unit = 0.212 mm.)	5.2	4.8	4.3(L)

posteroventrally with 2 or 3 long bristly hairs at about distal third. 1st femur slightly stouter in the ♀'s than in the ♂. Dorsal preapical on all tibiae; ventral apical on mid tibia and the usual indefinite one on 1st tibia. First tarsi of male as follows (first description): — metatarsus uniformly short-haired below, but with a few longer, finer hairs at end, these distinct but not obvious (not shown in Duda's fig. 37 of 1924b); jts. 2 and 3 with long fine hairs (longer than diam. of joint) along whole ventral surface. 1st metatarsus slightly longer than the 3 next joints together. Hind coxa, outer bristle 1.5, inner 1.3.

Body length, frons to tip of adbomen: — Str277, 2.3 mm; 279, 2.0mm; 281, 2.1 mm.

31. *Drosophila unimaculata* Strobl

Str295a (1♀); (Str273—276, 296) — Strobl (1893b:281) described *unimaculata* from Seitenstetten and Admont, both sexes ("♀♂"), but gave no habitats, dates, or number of specimens. In 1894 (p. 131) he recorded it, "An Felswänden des Veitlgraben bei Admont sehr selten. August. Auch um Seitenstetten". Later, however, he writes (1910:211), "unimaculata Str. ist synonym mit maculipennis Gim., wie mir von Herrn Sintenis aus Lievland gesendete Ex. bewiesen; ich fand an Ennsufern noch 5♂."

From the existing specimens a different story can be told: — 295a (1♀) — The original female from Seitenstetten. It is *unimaculata*, and is selected and labelled by me as Lectotype of *D. unimaculata* Str. 296 (1♂ 2♀) — Labelled Admont (Ennsufer) 28/8 ♂. These are three of the five "males" mentioned 1910. They are *D. littoralis* Mg. (q. v.). 273—276 (1♂ 2♀ 1 ?) — The Livland „*maculipennis*" sent by Sintenis. They are *D. littoralis* Mg., q. v. N. B. The earlier specimens are placed later in the collection.

It is unlikely that the original male *unimaculata* could have been *littoralis* because, although there are some resemblances between these two species, Strobl's description of the abdomen could not apply to the unicolorous

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dark abdomen of *littoralis*, and also he repeatedly likens his *unimaculata* to *phalerata* (see p. 200), which species, as interpreted by STROBL, *littoralis* does not well resemble.

The Type of *unimaculata* is pinned through the dorsum on a long (30 mm.) pin. It is in good condition, except L mid leg gone, eyes sunken, and wings frayed (L wing, less alula, later to slide by me). The Type agrees in lighter (more yellow) colouration with an English ♀ (Eng ♀)[1]) and with 2♂ 2♀ German specimens (Arnsberg, 1953, B. HERTING) rather than with greyer Swiss specimens (1♂ 2♀, Bex 1956, H. BURLA) in my collection. The Type has been carefully checked against the descriptions of STROBL (l. c.) and DUDA (1935:98) and additional or supplementary notes are as follows. These refer to the Type unless stated although all specimens were compared. BURLA (1951:109) has given a good description of Swiss specimens.

Unit measurement 1:0 = 0.083 mm., except where stated.

General colour yellow-brown; dorsum diffusely striped; postr. X-vein broadly clouded; antr. X-vein slightly shaded.

Head. Same width as thorax. In general matt yellow (STROBL's beingelb fits well); face greyish yellow (all specimens), not blackish as described; clypeus and peristomal ridge (bearing the oral hairs) brown; 2nd

Head bristle measurements

	Type ♀	Eng ♀	Swiss ♂
Postvertical (converging)	3.5	4.0	3.2
Ocellar	4.9	5.6(L), 5.2(R)	4.8
Occipital	2.1	2.9	2.0
Vertical, inner	broken	5.7	4.8
outer	5.0	5.3	4.6
Orb 1 (reclinate)	4.5	4.6	4.1
2 (reclinate)	2.0(L), 2.5(R)	2.3	2.0
3 (proclinate)	3.0	3.3	3.0
Vibrissa	4.3	4.5	3.3
2nd oral (a fine hair)	1.9	2.1	1.6
Jowlar, antr.	2.2(R)	2.4	2.0
mid	2.6(L)	2.6	2.1
postr.	2.4(R)	2.6	2.0
Frontal hairs	total 12	total 11	total 10
Fronto-orbital hairs	5—6 either side	7 either side	5—6 either side

ant. jt. marked with brown; 3rd jt. brown above, narrowly paler below; the broad V-shaped frontal stripe brown (as described by STROBL). Facial keel rather narrow, nose-like in profile, surface slightly sulcate at end (more definitely sulcate in Swiss ♀♀, but not appreciably sulcate in Eng ♀ and Swiss ♂). Front at middle broader than long (Type 6.7:4.6; Eng ♀ 7.5:4.9). Vertical

[1]) The English female (Oswestry, Shropshire, 5. ix. 1936, C. H. WALLACE PUGH) is the only known British example, this being a new record for Britain.

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stripes reach two-thirds down frons. Jowl at narrowest about as wide as 3rd ant. jt. (as 1.7:1.8). 3rd ant. jt. short-haired, about 1.3 longer than wide (Type 2.3:1.8; Eng♀ 2.5:2.1) (Duda says almost double as long). Arista (5.0 units to tip), excluding end fork with 4(L) or 5(R) long rays above, 2 long rays below spaced about one-third and two-thirds along (longest rays 2.3 units). (Strobl gives 3 rays below but he doubtless included lower ray of fork). 2nd ant. jt. with the usual 2 bristles (the upper (2.0) slightly diverging, the lower (1.7) proclined), and with 14—17 hairs within the line of the bristles, and 1 longish hair (0.9) between them. Palpus yellow, broad, rather hairy, with 2 subterminal thin bristles (1.7) and a slightly shorter one nearer base. Mentum of proboscis with the usual 2 pairs of long, fine hairs (2.4), the pairs set about ½ their own length apart. Eye evenly oval (6.6 wide × 7.7 high), the longest diam. vertical.

The jowlars are near bottom edge of jowls, the mid jowlar slightly the highest. Oral hairs double rowed near vibrissa, the lower row with 4 to 5 stronger, fairly even hairs.

Thorax. Markings of dorsum largely obscured by the pin, but after comparison with English and Swiss specimens it can be described as greyish-yellowish-brown, with a central grey-brown stripe (3—4 acrostichal rows wide) down whole length; a reddish brown blotchy stripe inside of each D.C. area (the stripes not extending to antr. edge of dorsum, which edge is yellow, and ending posteriorly before postr. D.C.); and with a longer less definite brown stripe at side of dorsum. Scutellum with a broad sharply defined longitudinal brown stripe, latter's base almost as wide as distance between postr. D.C. Across upper pleura (above sternopleuron) of Type and Eng♀ are two discontinuous blotchy brown stripes (best seen from front), the upper on a level with wing base; these stripes in Swiss specimens masked by the uniformly darker pleura. Notopleural callus normal, not obviously protruding. Prosternal plates (between 1st coxae) yellow-brown (grey-brown in Swiss flies), matt, smooth, two thirds wide at base (2.2) as long.

Thoracic chaetotaxy. No propleural hair above front coxa; no prescutellars; 4 longish, reclinate sutural hairs, the longest (2.5) nearest centre of dorsum; D.C. have one hair between them (2 on R of Eng♀), the 3 postsutural D.C. hairs are strong; acrostichals 6-rowed antr. to D.C.; 2 subequal humerals, with 12 longish hairs (c. 1.2) in front of them; presutural, as usual, at extreme edge of nearby hairs (Eng♀ and Swiss ♂ have 1 hair slightly beyond it). Only 2 strong sternopleurals, the postr. below level of antr.; mid sterno. a fine hair (1.7), slightly nearer to antr. bristle; a fine hair (1.0) as usual in front of antr. bristle, with a row of c. 6 others reaching half way down pleuron; ventrally only the 1 sternal bristle, with no accompanying hairs. The usual row of 3—4 very fine discal sterno. hairs hidden by 1st coxa. Scutellars of Type broken or disarranged; in English and Swiss specimens postr. scutellars crossed at nearly half their length, antr. scut. divergent, tips of all 4 in line.

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Thoracic bristle measurements

	Type ♀	Eng ♀	Swiss ♂
Humeral, upper	4.9	5.2	4.3
lower	4.2	4.6	3.6
Presutural	5.6	6.1	5.0
Notopleural, antr.	5.3	5.9	4.9
postr.	3.0+(tip off)	4.0	3.0
Supralar, antr.	3.2	3.7	3.0
postr.	gone	7.1	6.0
Postalar, antr.	8.7	8.9	8.2
postr.	5.2	6.0	4.9
Dorsocentral, antr.	6.1	6.3	5.7
postr.	7.0+(tip off)	9.2(L); 9.6(R)	8.1
Scutellar, antr.	9.0	10.1	8.8
postr.	L gone, R broken	9.2	7.8
Sternopleural, antr.	5.6	6.0	5.4
mid (hairlike)	1.7	2.2	1.6
postr.	6.0+(tip off)	7.7	6.6
Sternal	2.0(bent)	3.5	2.1(L); 2.7(R)

It will be noticed that this is one of the species with strong postr. postalars.

Abdomen. Fairly shining, though dusted on all segments. STROBL says considerably more matt than *phalerata* but this applies only to tergites 5 and 6, which are quite glossy in *phalerata*. STROBL and DUDA describe the abdomen well but the interrupted bands on segs. 2 and 3 of Type are somewhat triangular, less straight edged anteriorly than the rest. In Eng♀ all are more or less straight edged. The bands narrow towards the edges (as described), then expand to fill the whole side edges. At dorsal fusion of tergites 1 and 2 either side is a black spot. (This not checked on Type specimen before it returned). Ovipositor guides, yellow, as fig. 12. Male genitalia. HSU (1949:117) gives a partial description and figure of the male genitalia, but it seems appropriate here to give a complete figure of this STROBL species, the Swiss male (Bex, Vaud, Sept. 1956, H. BURLA) being used (fig. 13).

Legs. STROBL and DUDA describe the legs as yellow, with the femora and tibia browned, especially of the hinder legs. In Type the legs are now uniformly yellow, with, as also in Eng♀, the femora barely perceptibyl brownish. The 5th tarsal jt. of all legs is brown; the 4th of 1st leg less

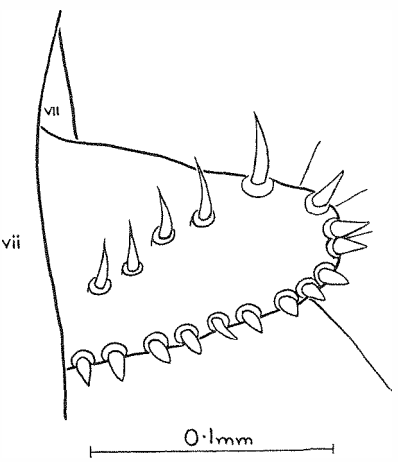

Fig. 12. *Drosophila unimaculata* STR. Ovipositor guide of Lectotype (Str295a)

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brown. Dorsal preapicals on all tibiae; a strong ventral apical on mid tibia, and usual indefinite one (part of terminal fringe) on 1st. 1st femur postero-ventrally with 2 strong bristles (2.7) in distal half (in distal three-sevenths in other specimens), these longer than widest diam. of femur (2.1); a

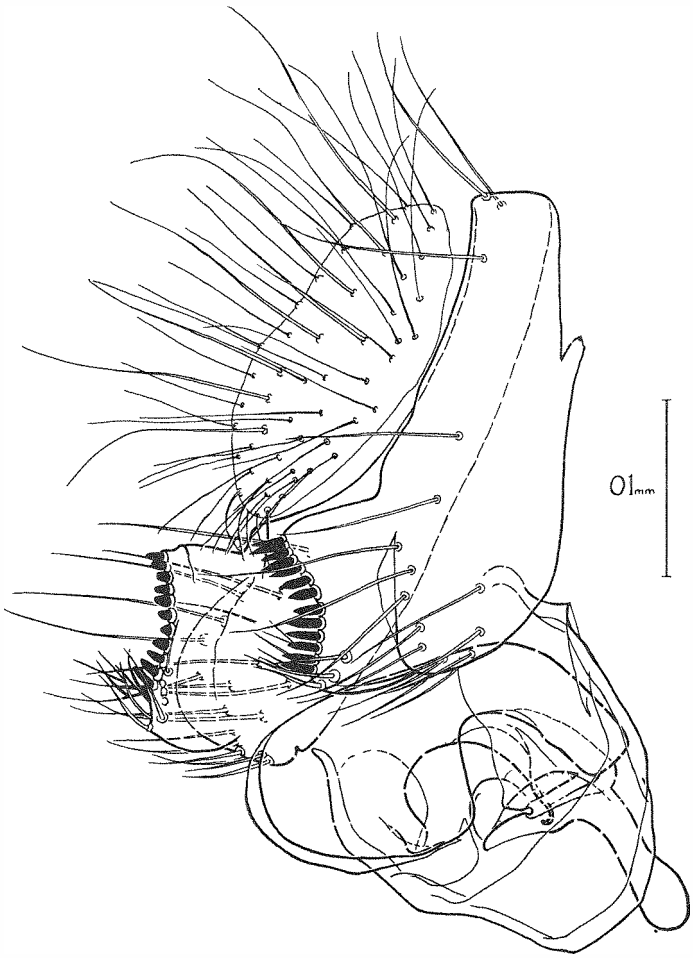

Fig. 13. *Drosophila unimaculata* Str. Genitalia of male (Bex, Switzerland)

similar bristle postero-dorsally about one-fifth from end; laterally, slightly dorsally in basal half is a row of 3 strong bristles, the farthest the strongest but broken; the 2 others 2.3 units (the one nearest base sometimes weak in other specimens); nearer base are the usual 2 very fine long hairs (1.5), 1 laterally, 1 ventrally. On 1st coxa of Type the uppermost of the 2 curved bristles on front edge is exceptionally long (3.5), whereas in the other specimens, some of which are larger, it appears normal (e.g. 3.1 in Eng♀).

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Tarsal measurements (1st leg)

	Type ♀	Eng ♀	Swiss ♂
Metatarsus	4.3	5.8	5.0
2nd jt.	2.2	2.7	2.4
3rd	1.4	1.6	1.4
4th	0.9	1.1	1.1
5th	1.3	1.5	1.4

The metatarsus is slightly longer proportionally in Eng♀ than in Type ♀.

Wing (Plate 2, figs. 2, 3). Distinctly brownish (Type, Eng♀) or grey (Swiss). Postr. X-vein broadly shaded, the shading oval (2.8 across middle); antr. X-vein slightly shaded. DUDA says veins III and IV apically "eine Spur konvergent", but in Type they are slightly but distinctly divergent, and in the other specimens strictly parallel. The shortest distances between III and IV are (Type), at postr. X-vein 1.9 units; at halfway to end 1.7; at end 2.1. Costa continues weakly from III to IV; III ends slightly above wing tip in Type. The stronger costal fringe between veins II and III extends about halfway, varying 1.5 of 3.6 (Type) to 1.9 of 3.7 (Eng♀). Centre of postr. X-vein is below centre point of Cost 2 (as 5.2:5.0). Anal vein fades out halfway to margin; the continuing anal crease is curved. Two spines at 2nd costal break; the inner (upper) the stronger (as 1.7:1.3). Tegular organ minute, yellow.

Wing measurements (N. B. All in larger units 1.0 = 0.212 mm.).

	Type ♀	Eng♀ (on slide)	Swiss ♂
Cost 1 (excl. basicosta)	5.0	5.6	5.0
2	10.2	12.8	11.3
3	3.6	3.7	3.4
4	2.2	1.7	1.6
IV1 (to absent X-vein)	1.5	1.7	1.4
2 (from ditto)	2.9	3.6	3.3
3	4.4	5.4	5.0
4	6.9	7.8	6.7
V3	2.2	2.3	2.3
Postr. X-vein	1.6	2.0	1.6
Wing, length	19.0	21.9 [1])	19.0
breadth	7.4	8.7	7.4

[1]) Measurement from unmounted (L) and mounted (R) wings)

Body Length. Frons to tip of abdomen 3.7 mm.

32. *Drosophila maculipennis* GIMM.

(Str273—276, 295a, 296) — It has been shown above that the specimens referred to *D. maculipennis* by STROBL prove to be *D. unimaculata* and *D. littoralis*, q. v. The identity of *maculipennis* is discussed here.

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The original specimens of *maculipennis* were collected by Kawall from Kurland, Latvia and were described as a new species of *Drosophila* by Gimmerthal in two papers (1845:105, no. 8; 1847:199, no. 3). The earlier of course takes precedence, though Wheeler (1959) quotes only the later. The 1845 paper contains a much more complete description, whereas only the short latin diagnosis is repeated in 1847. Schiner (1846a:280) suggested it was a *Diastata*, giving no reason, but in his Catalogus (1864b:56) he includes it in *Scaptomyza*; and Becker et al. (1905:221) list it as a good species of *Drosophila*. Strobl (1910:211) sank his own *unimaculata* as a synonym of *maculipennis* upon the evidence of specimens sent as the latter by Sintenis from "Lievland" (= Livonia, Latvia), but Oldenberg (1914a: 10) pointed out this synonymy must be in error, as shown by Gimmerthal's description (1845, but which Oldenberg refers to as 1847). Oldenberg than gives a description of *maculipennis*, but his description does not agree with Gimmerthal's, and it is doubtful if he was considering the same species. He adds that the species is hardly a *Drosophila*. Duda (1934, *Diastatidae*: 6—7) sank *maculipennis* as a synonym of *Diastata nebulosa* (Fall.), which is a reasonable assumption, though apparently he did not base this upon Gimmerthal but upon Oldenberg.

Soon after *maculipennis* was described it was evidently suspect for inclusion in *Drosophila* but that it continued to be included up to the time of Storbl may have been because only the incomplete description of 1847 was followed. It should have been evident from the earlier full description of *maculipennis* that the Sintenis specimens of *littoralis* (Str273—276) could not be *maculipennis*. Duda (1935:88) records 4 specimens of *littoralis* in the Leningrad Museum, which had been identified as *maculipennis*, from Dorpat (Estonia) and thus from the same area as the Latvian specimens.

I understand from Professor Stackelberg that there are no specimens of *maculipennis* in Gimmerthal's collection at Riga. However, the type specimen may be in Kawall's collection there. Until this has been seen I follow Duda in considering *maculipennis* to be *Diastata nebulosa*.

33. *Drosophila littoralis* Mg.

Str190, 273—276, 296 — Strobl nowhere refers to *littoralis*, probably because Schiner (1864a) did not include it in his descriptive key. Therefore the specimens in the collection are included elsewhere, with *maculipennis* and *unimaculata* (q. v.). Str190, amongst *Scaptomyza* specimens and labelled only "♀", has, I would think, been misplaced from its intended position. If so it may belong to the same series as Str296 i. e. from Ennsufer, Admont, which Strobl (1910:211) recorded as *unimaculata* = *maculipennis*.

34. *Drosophila phalerata* Mg.

Str79, 83, 89, 91—93, (94—96), 97—98, (99) (101), 102—104, (105—106), 107—108, (259) — Strobl recorded *phalerata* from many places (1880:35;

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1894:131; 1897:28 = 20 of Sep.; 1898b:580 = 1900b:636; 1901a:240; 1906:372; 1910:210), but all his specimens are not that species. Of the published records the following can be checked from specimens: — An Fenstern des Stiftes nicht selten (Seitenstetten) (1880) — Nos. 94—99 (with the additional data "und gestreift"), 2 being *phalerata*, 3 *limbata*, 1 *testacea*: In den Jbbsauen bei Amstetten (1880) — Nos. 101 (*transversa*), 102 (*phalerata*): Um Admont mit *transversa* nicht selten (1894) — Nos. 105—108, of which 2 are *limbata*, 2 *phalerata*: Suha 1♀, THALHAMMER (1898b) — this may be 103 (*phalerata*, labelled ♂) or 86 (*transversa* ♀ and so det. STROBL) but the latter species STROBL did not record in that paper. (Both specimens are labelled Kalocsa, where THALHAMMER taught, not Suha, so STROBL probably used this as a "generic" place name for THALHAMMER's captures). The only other record that can be confirmed is that of the ♀ variety with more darkened X-veins and barely darkened abdomen from Vlašić, THALHAMMER (Strobl, 1898b), which specimen (259) proves to be a teneral male *kuntzei* DUDA, q. v. Not recorded is Str104 (Seitenstetten, 1891), *phalerata*, and so det. STROBL.

Therefore it is not surprising to find 6 specimens of *phalerata* included by STROBL amongst the 15 "*transversa*" (see 79—93 of the List), and STROBL was no clearer about *phalerata* than was ZETTERSTEDT in 1847, of whose interpretation STROBL writes (1894:131), "Zett. als Var. [von *transversa*]; durch Mittelformen mit der Normalform verbunden." STROBL admits this in 1910 (p. 210) by describing *phalerata* with *transversa* as "oft kaum unterscheidbaren var. *phalerata* Mg.".

Although STROBL recorded *phalerata* mostly as a variety of *transversa*, he used *phalerata* on its own as a comparison with *unimaculata* and *andalusiaca*, thus consciously admitting its specific status. Also the *kuntzei* specimen mentioned above is labelled as a variety of *phalerata*, not of *transversa*, whereas from the text of the paper one would imply it to be a variety of *transversa*, of which he there gives *phalerata* as a variety.

35. *Drosophila kuntzei* DUDA

Str259(♂) — *D. kuntzei* was not described until 1924. STROBL had only the one specimen, which he listed (1898b:580 (99 of Sep.) = 1900b:636) after *transversa* var. *phalerata* as (German translation of the original Serbian): — "var. Queradern zwar sehr deutlich gesäumt, die Querbinden des Hinterleibes aber kaum angedeutet. Vlašić ♀ (Thalh., det. Str.!).". The specimen is so labelled (Plate 1). The typical darkened bands on abdomen are not developed in this teneral specimen and the shading of the X-veins is now faint, but as usual is more extensive than in *phalerata*. The genitalia decided its identity.

36. *Drosophila limbata* VON ROSER

Str94—96, 105, 106 (1♂ 4♀) — As mentioned under *testacea*, STROBL was quite unaware of VON ROSER's contributions to Dipterology, and he included

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limbata in *D. phalerata*. The first three (♀'s) are under the general label Seitenstetten (Fenster und gestreift) ♂; and the last two are labelled Admont (Bachschluchten) 24/7 91, ♀. The species is more likely to be "gestreift" (e. g. in woodlands) than to occur on windows, which habitat doubtless applied to the accompanying *phalerata*.

37. *Drosophila transversa* Fln.

Str80—82, 84—88, 90, 101; (Str79, 83, 89, 91—93) — Strobl recorded *transversa* from various habitats in Seitenstetten (1880:35), around Admont and Radkersburg and at Mürzhofen (1894:131), Villach and Silesia, 1 ♂ 5♀ (1901a:240), and all Styria (1910:210). However, he did not always distinguish this successfully from *phalerata* (q. v.), which he considered a variety of *transversa*. Of seven specimens (79—85) standing in the collection under the general label Seitenstetten Waldrand, two are *phalerata*. Of Admont specimens, two females from "sumpfig Waldrand" (87, 88) are correctly named; but of two females from Stiftsgartenmauer one is *phalerata*. The Radkersburg specimen (91) is *phalerata*. A Kalocsa specimen (86) is not recorded by Strobl and neither are 2♀'s (92,93) from Seitenstetten (1892), both the latter being *phalerata*. Conversely there is one *transversa* amongst the *phalerata* (No. 101), from Amstetten (1880:35).

38. *Drosophila histrio* Mg.

Str132—137 (5♂ 1♀) — Strobl's records of *D. histrio* were: — An schattigen Stellen des Conventgartens 2♂, in feuchten Waldbachschluchten 4♂, Seitenstetten (1880:35) — represented by specimens 132—135: In Mühlauerwalde bei Admont 1♂; häufiger in Waldschluchten um Seitenstetten (1894: 131) — represented by No. 136: Villach, Schlesien 2♂ (1901a:240) — not in the collection. The specimen from Kematen (137) is not recorded. (All the specimens were correctly identified, doubtless from Schiner's key, but Duda (1935:100) claims that Schiner's specimens of *phalerata* at Vienna are mostly identified as *histrio*.)

39. *Drosophila confusa* Staeg. (= *vibrissina* Duda)

Str260—261 (2♂); (262, 263) — Strobl recorded *confusa* from few localities, i. e. Im Conventgarten (Seitenstetten) 1♂ gestreift (1880:63): Nach S[chiner]. 279 sehr gemein; ich traf sie bisher nur um Seitenstetten (1894: 132, as confusa Mg): and Čemerno ♂, ♀ (Thalh., det. Str.!); Dolina Stavnje kod Sarajeva = Stavnjathal bei Sarajevo, 1[eg]. Apfelbeck ♀ (Mus. Sar.!) (1898b:581 = 1900b:637).

The only representatives in the collection are a male from Stavnjathal (260) and a male from Cemerno (261). Besides these, four further specimens (262—3) are identified as *confusa* but prove to be *funebris*. These are interesting, however, as apparently they are Oldenberg specimens, with his

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labels. OLDENBERG nowhere mentions this species, but his parenthical mention of *funebris* (1914a0:12, 13) indicates he knew the real *funebris*.

A secondary sexual character not so far reported for this species is that the first femur of male is enlarged, rather swollen.

40. *Drosophila cameraria* HAL. (= *unistriata* STROBL.)

Str271a, 272 (1♂ 2♀) — STROBL described *unistriata* in 1898 (1898b: 580—581 = 99—100 of Separat.) in Serbian, with a short diagnosis in Latin — "*unistriata* n. sp. ♂♀. Differt a funebri corpore minore (2—2.5 mm.), thoracis medio nigrostriato." The species was redescribed in a German translation (1900b:636—637) and it is the latter date that is usually, but erroneously, given to *unistriata*. The species was described from 1♂ 2♀, Dubrovnik, na poluostrvu Lopudu (Dubrovnik, on the peninsula of Lopud). The German translation has Ragusa, auf Lapad, Ragusa being another name for Dubrovnik. The three specimens are in the collection, all being caught in April. The male (No. 271a) has been selected and labelled by me as Lectotype, and the two females (272) as Syntypes of *D. unistriata* STROBL. The shorthand on label of 272 reads Ombla, auf J. ac., which data are not given with the original description. (Ombla is Rjeka, a river near Ragusa; J. ac. probably means *Juncus acutus* — MECENOVIC, in litt.)

The specimens prove to be the same as *D. cameraria* HALIDAY, whose type specimens at Dublin I selected & labelled in 1952, so *unistriata* becomes a synonym of *cameraria* (new Synonymy). DUDA (1935:91) wrongly sank *unistriata* as a synonym of *pallida* ZETT., which actually is a *Parascaptomyza* (q. v.) and (p. 81) wrongly sank *cameraria* as a synonym of *fasciata* MG. = *melanogaster* MG. Followers of DUDA have erroneously used the name *pallida* for the present species. An excellent coloured figure of *cameraria* is given in J. CURTIS's British Entomology **10**, pl. 473, 1833.

The characteristic dark, broadening stripe down dorsum is wanting in front of suture in one STROBL female, but is complete in the other, being 4-rows wide anteriorly, as noted by STROBL. In the male, it continues only narrowly to near front edge, and this and the first female are the two specimens he mentions. The abdomen of the male is not always completely black as stated by STROBL but frequently the anterior margins of tergites are yellow, with the dark bands narrowly interrupted down centre. The "hochgewölbten letzten Bauchringe" of STROBL's male is due only to drying, the last sternite remaining convex while the others have collapsed. A useful distinguishing character for this species, not previously recorded, is the presence below mid femur, basally, of a long bristly hair, this as long or slightly longer than widest diameter of femur. A similar hair occurs in *D. confusa*, as noted by DUDA (as *vibrissina*).

In his description of *andalusiaca*, STROBL (1906:373) through a lapsus refers to *unistriata* as *univittata*.

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41—42. *Drosophila rufifrons* Lw. and *D. rufipes* Mg.

Str142—144 (2♂ 1♀); (138—141, 180a, 278) — Strobl associated *rufifrons* with *rufipes*, which latter he considered to be a variety of *obscura*. The development of his understanding of the species is shown in his records: —

"Drosophila *obscura* Fall. S[chiner] 277. Zara, Lesina (Nov[ak].); auch bei dieser Art finden sich ♀ mit braungelber Vorderstirn, größtentheils braungelbem Untergesicht, fast ganz braungelben Brustseiten nebst Schultern und lichter gelbbraunen Beinen; diese lichtere Var. fällt höchst wahrscheinlich mit *rufipes* Meig. vi. 87 zusammen; auch *rufifrons* Lw. Berliner Ent. Ztschr. 1873, Nr. 63, scheint wenig abzuweichen." (1893a:133).

"*obscura* Fall., Zett. 2549, S. 217 (sic.) [= 277]. Eine Var. des ♀, wahrscheinlich = *rufipes* Mg. vi. 87 . . . An Waldbächen und Waldhohlwegen um Admont und Steinbrück selten, die ♀ meist in der Var. *rufipes*. Juni bis August." (1894:130).

[*D. nigricolor* n. sp.] "ist eine echte Drosophila, zunächst verwandt mit rufipes Mg. . ." (Distinctions given) (1898a:266—267).

"*obscura* Fall var. (sic) *rufipes* Mg. Str. in Wien. ent. Z. 1893. Schlesien 1♀." (1901a:240 = 70). As new to Carinthia.

"Die von mir als obscura var. rufipes Mg. beschriebene Form unterscheidet sich von obsc. spezifisch durch rotbraune Stirn und ungefleckte Vordertarsen; sie ist rufifrons Lw. und stimmt genau mit Ex. Bezzis' aus Pavia; ♀ traf ich um Admont bis auf die Hochalpen mehrmals, 2♂ am Bachern; rufipes Mg. ist teste Becker eine Scaptomyza." (1910:210—211). The ungefleckte Vordertarsen is a reference to the tarsal combs of the male *obscura*.

Since the records for *rufipes* are not clearly distinguished from those for *obscura*, it is not certain which specimens may represent the former. All except one under *obscura* (q. v.) do belong to that group, so these can be eliminated. The exception (180a in part), a yellow-brown ♀ *oldenbergi* (q. v.) from Steinbrück, might well have been thought to be *rufipes*. There remain those under *rufifrons* (138—144) and specimen 278. Of the former the 6 Strobl specimens (138—141) are *testacea*, (checked against von Roser's types) a variable species often with reddish frons; but the 3 of Bezzi's (142—144) are certainly *rufifrons*, (checked with Loew's types). Nos. 138 and 141 may be the Admont specimens reported in 1894 and 1910. Bezzi's *rufifrons* are dated 14 July 1910, but presumably are the very specimens referred to by Strobl in that year. (It is of interest to mention here that Oldenberg (1914a:12) also received Pavia specimens of *rufifrons* from Bezzi). There are no other *rufifrons* in the collection, so it remains uncertain whether Strobl ever collected this species in the Austria of those days.

Str278 is a female *nigricolor*, a species described by Strobl in 1898 and which he likened to *rufipes*. The specimen was originally labelled as ?*rufipes*

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but this has been crossed through. It is not recorded as *rufipes*, but is the only specimen with a *rufipes* label. The true identity of *rufipes* Mg. is not known to me.

43. *Drosophila funebris* (Fabr.)

Str154—167, 171—178, 262—263, Jo323; (Str168—170) — Strobl recorded *funebris* frequently (1880:36, 1894:131, 1897:28, 1898b:580 = 1900b: 636, 1901:240 (70 of Sep.), 1902:503 = 1904:564 (46 of Sep.), 1909:279, 1910:210). According to the specimens, from only Seitenstetten and Admont, he identified the species correctly. (Three non-*funebris* (168—170) under *funebris* have, I consider, been misplaced in the collection, and No. 262, 263 (4♀ *funebris*, but under *confusa*) were not identified by Strobl).

Three specimens (159, 167, 175) appear to have atypically narrow ovipositor plates, these being similar to *D. confusa*, instead of the usual broad triangular ones with sharp dorsal hump. This "narrow" condition is widespread, as I have seen it in specimens from Sweden and England and others from Austria. However, the plates have not flattened out dorsally but are rolled over, thus slenderising the outline. Their similarity to *confusa* is enhanced in the more yellow apecimens (as Str175) with well marked abdomens and perhaps it is not so surprising that at one time *confusa* was considered a synonym of *funebris* or that normal specimens of *funebris* had been named *confusa* by Oldenberg (Str262, 263).

44. *Drosophila repleta* Woll. and *D. adspersa* Mik

No specimens in the collection — *D. repleta* was not actually mentioned by Strobl but Czerny (in Czerny & Strobl, 1909:279) records it thus: 1596. *Drosophila repleta* Wollast. Algeciras (Cz[erny]), "Escorial, an der Fuente Teja (L)". Von Mik auch in Niederösterreich gefangen und als *Dr. aspersa* (sic) beschrieben." *D. adspersa* Mik was referred to by Strobl (1898a:267) as being the only species to which *D. nigrosparsa* n. sp. was related, doubtless basing this upon both species having spotted thoraces. But the spots are of different formation and the two species belong to distinct groups. I have not seen Mik's specimens, but *D. adspersa* is considered to be the same as *D. repleta*.

45—50. *Scaptomyza* spp.

We now come to a group whose species have been widely misunderstood, and amongst which earlier and later workers have floundered. Up to the time of his paralysis Strobl also was obviously not too sure of the distinctions between the various grey species (see for example, 1910:211) and this is reflected in his collection, as will be gathered from the appended numerical list.

The species he records (mostly as *Drosophila*; occasionally (1894, 1910) in *Scaptomyza*, as subgenus) are *graminum* Fln., *griseola* Zett., *tetrasticha*

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Beck., *gracilis* Walk., and *flaveola* Mg. Species he did not know, but which are represented in the collection are *Sc. atlantica* Hckmn., and *Parascaptomyza pallida* (Ztt.). He did not use the name *apicalis* Hdy., which is the name I use in the sense of his *flaveola*.

45. *Scaptomyza graminum* (Fln.)

Str188—189, 191, 196, 199, 202, 206, 209, 212, 218—221, 223, 227—229, 231—232, Jo328 (12♂ 11♀); (Str198, 200—201, 203—205, 207—208, 210 to 211, 213—217, 222, 224—226, 230, Jo.324—326) — Strobl recorded *graminum* in most of his papers but the records are worthless unless checked against specimens. The most reliable source is the list at the end of this paper. Of 42 specimens in the Collection under *graminum* (199—232), only 18 are genuine *graminum*, the rest being *Sc. apicalis* (mostly the grey form) or *Parascaptomyza pallida*. Also there are 4 *graminum* amongst the *griseola* (185—197) and a similar one in Coll. Joanneum.

46. *Scaptomyza griseola* (Zett.)

(Str185—197, Jo327—328) — Strobl recorded this as often as he recorded *graminum* and usually as a var. of *graminum*, and he remarks (1894: 132), "Nicht immer sicher von *gram.* unterscheidbar und wohl dunklere Var. derselben.", an opinion he kept to his last paper, except he then (1910: 211) thought it more akin to Becker's recent species *tetrasticha*. There is no specimen of the real *griseola* in the collection, those labelled as such are *Para. pallida* or *Sc. graminum*. (The specimen of *D. littoralis* (No. 190) is, I consider, misplaced in the collection.)

47. *Scaptomyza tetrasticha* Beck.

(Str198, 199, 206) — Becker (1908:158) proposed the name *tetrasticha* for a common *Scaptomyza* with 4 rows of acrostichals, leaving the name *graminum* for the 2-rowed species. Unfortunately he misinterpreted *graminum*, a 4-rowed species, transposing the names, so now *tetrasticha* is considered a synonym of *graminum*. As far as I know, however, no one has examined the types of *tetrasticha* in the light of recent developments in *Scaptomyza*. Becker's "*graminum*" is *Parascaptomyza pallida* (Ztt.). Strobl (1910:211) mentions *tetrasticha* as an uncertain variety of *graminum*, from the high alps and all Styria; and Czerny (in Czerny & Strobl, 1909: 280) records it from Spain. In the collection are 5 named specimens. Two pairs of these are Becker specimens, No. 198 being ♂♀ *Scapt. atlantica* (q. v.), No. 199 being ♂♀ *graminum*. The fifth specimen (206) is ♀ *graminum*.

48. *Scaptomyza gracilis* (Walk.)

(Str234a, 235) — Strobl (1910:211—212) mentions 3 specimens of "*gracilis* Walk. Beck.", which specimens are actually *Parascapt. pallida* and which are shown on a previous page to be ones he earlier had labelled as

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Drosophila nigrithorax, which see for fuller details. There is no specimen actually labelled as *gracilis*.

It is appropriate here to make a few remarks on *gracilis*, though it is not intended to discuss its correct identity. It has been widely assumed that WALKER (1853:239) described *gracilis* as a *Scaptomyza*, whereas he actually described it in *Drosophila*, as already noticed by DUDA (1934:56). WALKER refers only two species to *Scaptomyza*, viz. *graminum* FLN. and *apicalis* HDY., but *gracilis*, which follows them, is not so included. Even WHEELER (1959) has omitted it from his catalogue of *Drosophila*. In the next volume of WALKER's work (1856:xiv) HALIDAY referred *gracilis* to *Opomyza*, but even so, whenever listed since it has been included in *Scaptomyza*, and this was followed by BECKER (1908:159). The *Tanygastrella* (*Drosophila*) *gracilis* DUDA, in WHEELER (op. cit. 190) will have to be renamed if it remains in *Drosophila* s. strict. No species has yet been described as "*Scaptomyza gracilis*" or "*Parascaptomyza gracilis*". In the literature one sometimes comes across the name, *Scaptomyza gracilis* BECKER, or *Parascaptomyza gracilis* BECKER, but there is no such species. BECKER only interpreted *Sc. gracilis* (WALKER) and the correct nomenclature would be, *Sc. gracilis* (WALK.) sensu BECK. Although *Sc. gracilis* (WALK.) is considered by some (e. g. DUDA 1934:56) to be the same as *Anthomyza gracilis* FLN., STROBL recorded the latter species as well, in *Geomyzinae* (e. g. 1894:133, 1910:212), as also did BECKER et al. (1905:223, 231).

49. *Scaptomyza apicalis* HDY. (= *flaveola* (MG.) sensu STROBL)

Str213—214, 216, 222, ?231, 264—268 (7♂ 2♀ 1 ? sex) — STROBL was barely more successful in recognising this species, which he called *flaveola*, than other *Scaptomyza*. The greyer specimens were included by him in *graminum* and 3 of the 5 specimens under *flaveola* are OLDENBERG specimens (265—267). STROBL's records of *flaveola* are as follows: — Kerkafälle (1893a: 133); auf Voralpenwiesen des Natteriegel Mitte Juni 1♂ (1898a:268); Slapovi Krke ♂ (1898b:581) = Kerkafälle ♂ (1900b:637); Rennstein 4/4 1♀, Schlesien 1♂ (as new to Carinthia) (1901a:240 = 70 of Sep.); wiederholt um Admont und im Gesäuse, aber spärlich (1910:212).

Specimens are present from Seitenstetten (213, 214 — recorded as *graminum*); Hohentauern (Wiesen) (216 — recorded as *graminum*); Kaiserau auf *Glyceria* 8/8 83(222); Admont (Stiftsgarten, Kematenbach), 18. 8. 92 (231 in part); Natteriegel 15/6 (264), and Schlesien, TIEF (268), as well as OLDENBERG's (265—267) from Wannsee, June 1897.

As regards the use of the name *apicalis* (1849), the identity of this is certainly known, whereas that of *flaveola* MG. (1830), which most authors (except DUDA, 1934:60) use instead of *apicalis*, is not certainly known, it being described as a *Notiphila*. HALIDAY (in WALKER, 1856:xiv) appears to be the first to synonymise *apicalis* with *flaveola*, and he has been blindly

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followed. A full study on this and on *flava* (Fln. 1823) is being prepared, but for the time being I will use the name *apicalis*.

50. *Scaptomyza atlantica* Hack.

Str198 (1♂ 1♀) — Becker (1908:158) drew attention to a yellow form of his *Sc. tetrasticha* from Teneriffe, Canary Islands. To this form Hackman gave the name *atlantica* (1955:8). There is a pair of this species from Orotava (Teneriffe) in the collection, with Beckers' labels. One assumes they were sent to Strobl as examples of *tetrasticha*. Hackman describes the

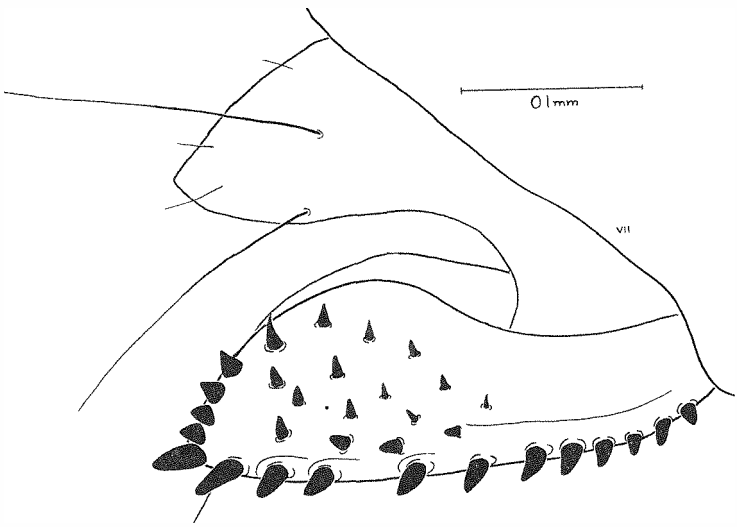

Fig. 14. *Scaptomyza atlantica* Hack. Ovipositor guide of Str198. Most hairs on anal tuft omitted

ovipositor guide of *atlantica* to be "as in *graminum*". In the Strobl specimen, although similar it is quite distinctive (fig. 14), being lighter brown (spines black), more pointed, and with the marginal spines stouter, especially the terminal one, and set farther apart. Also the apical scutellars are longer in proportion than in normal *graminum*, reaching back (crossed) almost to tips of the marginals. The male specimen has the characteristic disc-ended penis as shown in Hackman's fig. 24.

51. *Parascaptomyza pallida* (Ztt.) (= *disticha* (Duda))

Str185—187, 191—195, 197, 200—201, 203—305, 207—208, 210—211, 215, 217, 224—225, 230, 234a—235, 293, Jo324—327 (13♂ 28♀) — Strobl identified this species mostly as *Dros.* (*Scapt.*) *graminum* or *D.* (*S.*) *griseola*, and some of the yellower specimens (234a, 235) as *gracilis* (q. v.). There is also a yellowish specimen (293) under *approximata* (q. v.), but since this

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appears to have been remounted it may not actually belong there. Localities, etc. for this species will be seen in the list appended.

DUDA used the name *pallida* incorrectly for the species we now know is *cameraria* HALIDAY, as I pointed out in 1952 (p. 201) and 1954 (p. 642). A few authors, however, have persisted in using *pallida* for *cameraria*, so their records do not concern the present species, the *Drosophila pallida* of ZETTERSTEDT.

ZETTERSTEDT's type specimens of *Drosophila pallida* when sent to me in 1955 were in a very poor condition. They were recognisable as *Parascaptomyza* but not certainly at the species level. Hence my reference to them in 1957 (p. 209) as *Parascaptomyza* only. As they are the yellow form it was necessary first to examine other yellow specimens from various countries to check whether these were of another species than the normally grey *disticha*. All yellow specimens since examined have been conspecific with *disticha* and therefore, by elimination, it was quite sound to consider ZETTERSTEDT's types to belong to the same species. Therefore ZETTERSTEDT's older name of *pallida* takes precedence over *disticha* DUDA, and this has already been confirmed by HACKMAN's (1959:41) using the same name.

Camilla spp. (*Camillidae, Diptera*)

The species of *Camilla* will be considered in a separate paper but for completeness the specimens and Type selections are included in the appended numerical list of STROBL's *Drosophilidae* (s. l.).

VI. Acknowledgments

It is a great pleasure to thank the abbot of the Benediktiner-Stift, Admont, for permitting the sending of STROBL's *Drosophilidae*. I am particularly grateful to Dr. KARL MECENOVIC (Custos of the Zoologisch-Botanische Abteilung, Steiermärkisches Landesmuseum Joanneum, Graz) for so carefully sending the specimens and for his very efficient and patient help in searching for missing specimens, answering many questions and in other ways. For deciphering the Gabelsberger shorthand on the labels I am more than indebted to Dr. MARIANNE V. HERZFELD, Edinburgh, who worked with me long hours to unravel this important information. Those that Dr. HERZFELD did not decipher or which were uncertain were most efficiently completed by Dr. J. KAPPEL of Graz. Dr. MAX BEIER (Naturhistorisches Museum, Vienna) most obligingly sent some STROBL and other papers not generally available in Britain. Finally, I much appreciate the background support of Professor C. H. WADDINGTON of this Institute, and the helpful editing of Professor Dr. HANS SACHTLEBEN of the Deutsches Entomologisches Institut. Without all these persons the work could not have been accomplished.

VII. Summary

1. A critical review is presented of the 308 specimens of *Drosophilidae* (s. str.) in STROBL's collection at Graz, Austria. A total of 68 species or their synonyms is discussed. Some new synonymy is proposed. A few MS names and nomina nuda are exposed.

2. *Lordiphosa* n. subgen. is proposed for the *fenestrarum* group of *Drosophila*.

3. Types of the following species are here selected (original genus given): *Stegana nigrithorax* STR., *St. stroblii* MIK, *Phortica obscuripes* STR., *Drosophila nigrosparsa* STR., *D. tinctipennis* STR., *D. andalusiaca* STR., *D. nigricolor* STR., *D. unimaculata* STR., and *D. unistriata* STR.; and the type association of *D. nigrithorax* STR. is determined.

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4 Some morphological terms are defined or clarified

5 A list is appended of all *Drosophilidae* (s l) in the collection, including *Camilla* spp (*Camillidae*) with Types, *Asteia* spp (*Asteidae*) and *Aulacigaster* (*Aulacigastridae*)

Zusammenfassung

1 Eine kritische Revision von 308 Exemplaren der Familie *Drosophilidae* s str aus der Sammlung G Strobl (Graz) wird vorgelegt Insgesamt werden 68 Arten und deren Synonyme behandelt, einige neue Synonyme sowie einige MS Namen und nomina nuda festgestellt

2 Fur die *fenestrarum* Gruppe der Gattung *Drosophila* wird eine neue Untergattung vorgeschlagen (*Lordiphosa* n subgen)

3 Fur die folgenden Arten (mit dem ursprunglichen Gattungsnamen zitiert) werden Lectotypen fixiert *Stegana nigrithorax* Str , *St stroblii* Mik, *Phortica obscuripes* Str , *Drosophila nigrosparsa* Str , *D tinctipennis* Str , *D andalusiaca* Str , *D nigricolor* Str , *D unimaculata* Str und *D unistriata* Str Die Zugehorigkeit der typischen Exemplare von *D nigrithorax* Str wird geklart

4 Einige morphologische Termini werden definiert oder geklart

5 Beigefugt ist eine Liste aller *Drosophilidae* (s l) der Sammlung G Strobl ein schließlich der *Camilla* spp (*Camillidae*) mit Typen, *Asteia* spp (*Asteidae*) und *Aulaci gaster* (*Aulacigasteridae*)

Резюме

1 Представляется результат критической ревизии 308 экземпляров семейства *Drodsophilidae* s str из коллекции Г Стробля (Грац) Всего обсуждаются 68 пидов и их синонимы, обнаруживаются некоторые новые синонимы и некоторые названия M S, а также nomina nuda

2 Для группы fenestrarum рода Drosophila предлагается новое подсемейство (*Lordiphosa* n subgen)

3 Для следующих видов (цитируемых первоначальным родовым названием) установляются лектотипы *Stegana nigrithorax* Str , *St stroblii* Mik, *Phortica obscu ripes* Str , *Drosophila nigrosparsa* Str , *D tinctipennis* Str , *D andalusiaca* Str , *D nigricolor* Str , *D unimaculata* Str и *D unistriata* Str Выясняется принадлеж ность типичных экземпляров *D nigrithotax* Str

4 Дефинируются или выясняются некоторые морфологические термины

5 В приложении находится список всех *Drosophilodae* (см 1) коллекции Г Стробля включ *Camilla* spp (*Camillidae*) с типами *Asteia* spp (*Asteidae*) и *Aula cigaster* (*Aulacigasteridae*)

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[1]) Several of Strobl's papers were reprinted as separate publications. The page references to such papers in the present work are to the original paper.

In many papers he is given as Prof. P. G. Strobl, the P standing for Pater and not being part of his name.

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IX. Numerical List of *Drosophilidae* (s. l.) in Strobl's Collection

1—296, Collection Strobl. 297—328, Collection Joanneum. containing only a few Strobl specimens. Every specimen was labelled by E. B. B. with its correct name, the Lectotypes with red label, Syntypes with blue. All types were selected 1958, except Str. 147 in 1959. A few pins carry more than one specimen, and this is indicated in the List.

All handwritten labels are by Strobl except where stated. Most labels are on the pins with the specimens, but at the head of each species-series is usually a separate l.g.l. (= long green label)

No.	Present Identification	Sex	Exact details of labels (top one first). = different labels. Printed words italics. (—), original in shorthand. [—], notes by E. B. B.
	1—24. In Collection as *Stegana curvipennis* Fll.		
1.	*Protostegana furta* (L.) (= *curvipennis* (Fln.))	♂	Separate l. g. l.: — Stegana curvipennis Fll. Seitenstetten. ♂ (und) ♀.
2—10.	,,	10♀	No label
11.—12.	,,	2♂	No label
13.	,,	♀	No label
14—16.	,,	3♂	No label
17.	*Stegana* sp.	♀	Stegana cur vipennis ♀ (Palten Waldwege) 6/7 (—?—) *Styria Strobl.*
18—19.	*Protostegana furta* (L.) (= *curvipennis* (Fln.))	2♀	No label
20.	,,	2♂	Steg curvip Seitenstetten (Bachgebüsch aus einem Käfig) 2/7 ♂.
21.	,,	2♀	♀.
22.	,,	♂	Adm ont (Gebüsch Bachufer) 21/7 ♂♀
23.	,,	♂	No label
24.	,,	♀	No label [Egg protruding from ovipositor]
	25—28. In Collection as *Phortica variegata* Fll.		
25.	*Phortica* sp.	♂	Separate l. g. l.: — Phortica variegata Fll. Melk (Donau Au gestreift) 2/7. ♀
26.	,,	♂	Rad-kers-burg (Murauen.) ♂.
26a.	,,	♂	Phortic. var. ♂ Cilli (Waldwege) 17/7 03.
27.	,,	♀	*Thalhammer Grab a. d. s.* / Phortica variegata [Not Strobl writing — Label upside down]
28.	,,	♂	(Lichtenwald) *Sud* ♂ *Steiermark* *Prof. G. Strobl*
	29—72. In Collection as *Gitona distigma* Mg.		
29.	*Gitona distigma* Mg.	♀	Separate l. g. l.: — Gitona distigma Mg. Melk (Fenster) ♂ (und) ♀
30—65.	,,	24♂ 12♀	No label

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No.	Present Identification	Sex	Exact details of labels (top one first). / = different labels. Printed words italics. (—), original in shorthand. [—], notes by E. B. B.
66.	*Gitona distigma* Mg.	♂	No label [Both postr. X-veins forked and irregular]
67.	,,	♀	No label
68.	,,	♂	Git. distigm Seitenstetten 24. 9. 891. ♀. [i. e. 1891]
69.	,,	♂	No label
70.	,,	2♀	No label
71.	,,	♀	No label
72.	,,	♂	Adm ont- (Fensterrand) ♂.
	73—78. In Collection as *Argyrolampra maculata* Duf.		
73.	*Leucophenga maculata* (Duf.)	♂	Separate l. g. l.: — Argyrolampra maculata Duf. Admont: (Mühlauerfall) 25/8 83. ♂.
74.	,,	♂	Stein brück (Laubwald) 27/7 ♂.
75.	,,	♂	No label
76.	,,	2♂	Admont (Kematenbach, Schwarzenbach) 22/8 92. ♂.
77.	,,	♀	Radkers burg (Laubwald) 26. 7. 92. ♀
78.	,,	♀	Leucophenga maculata Duf [written Daf] ♀ (Gesäus)
	79—93. In Collection as *Drosophila transversa* Fll.		
79.	*D. phalerata* Mg.	♀	Separate l. g. l.: — Drosophila transver-sa Fll. Seitenstetten (Waldrand) ♂.
80.	*D. transversa* Fln.	♂	No label
81.	,,	♀	♀
82.	,,	♂	No label
83.	*D. phalerata* Mg.	♂	No label
84—85.	*D. transversa* Fln.	2♂	No label
86.	,,	♂	transvers. Kalocsa 1888 (Thalhammer) ♀
87.	,,	♀	Admont (Sumpfig Waldrand) 19/7 ♂.
88.	,,	♀	No label
89.	*D. phalerata* Mg.	♀	Admont (Stiftsgartenmauer) 17/7 ♀
90.	*D. transversa* Fln.	♀	♂
91.	*D. phalerata* Mg.	♀	Radkers burg (Laubwald) 26. 7. 92. ♀.
92.	,,	♀	Seitenstet ten (Stiftsgarten) 21. 6. 92. ♀.
93.	,,	♀	No label
	94—108. In Collection as *Drosophila phalerata* Mg.		
94.	*D. limbata* von Roser	♀	Separate l. g. l.: — Drosophila phalerata Mg. Seitenstetten (Fenster und gestreift.) ♂.
95—96.	,,	2♀	No label
97.	*D. phalerata* Mg.	♀	No label
98.	,,	♂	No label

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No.	Present Identification	Sex	Exact details of labels (top one first). / = different labels. Printed words italics. (—), original in shorthand. [—], notes by E. B. B.
99.	*D. testacea* VON ROSER	♀	No label
100.	*Chloropidae*	♀	♀ [Probably *Thaumatomyia circumdata* MG.]
101.	*D. transversa* FLN.	♂	Amstetten (Ybbsauen, gestreift.) ♂.
102.	*D. phalerata* MG.	♂	No label
103.	,,	♂	Dr. phaler. Kalocsa (Frühjahr) 1889.♂.
104.	,,	♀	Seitenstet-ten (Bergschluchten) 9. 5. 1891. ♂.
105.	*D. limbata* VON ROSER	♀	Admont (Bachschluchten) 24/7 91. ♀.
106.	,,	♂	No label
107.	*D. phalerata* MG.	1♂ 1♀	Admont (Stiftsgartenmauer) 17/7 92♂♀.
108.	,,	♂	No label.
	109—114. In Collection as *Drosophila melanogaster* MG.		
109.	*D. fenestrarum* FLN.	♂	Separate l. g. l.: — Drosophila melanogaster Mg Seitenstetten. (Waldbäche) ♂ (und) ♀.
110.	,,	♀	No label
111.	,,	♂	Veitlgra-ben (gestreift) 8/8 ♂.
112.	,,	♂	melanog. Veitlgraben 8. 8. 91. ♀.
113.	,,	♀	Drosophil. me-lanogaster Mg. Admont (Veitlgraben [?]Ebler), 20/595. Strobl. ♀.
114.	*D. melanogaster* MG.	♀	No label
	115—120. In Collection as *Drosophila ampelophila* LW.		
115.	*D. melanogaster* MG.	♀	Separate l. g. l.: — Dros. ampelophila Lw. Mailand. Bezzi ♀ On pin: — Milano/Drosophila ampelophila Lw M Bezzi♀ [Both BEZZI's labels]
116.	,,	♂	ampeloph. ♂ Zara (Nofak) [= Novak] [3vibrissae either side; genital process stout]
117.	,,	♂	No label
118.	,,	♀	ampeloph Zara ♀ (Nofak)
119—120.	,,	2♀	No label
	121—126. In Collection as *Drosophila distincta* EG.		
121.	*Chymomyza fuscimana* (ZTT.) (= *distincta* sens OLD.)	2♂	Separate l. g. l.: — Drosoph. distincta Eg. Hamern (sic) (auf Klafterholz 17/7 81. ♂ On pin: — Wolfelsgn (sic) 19. 6. 05 [OLDENBERG label] / Drosoph [STROBL writing] Chymo- myza fus- (sic) cimana Z. ♂ [OLDENBERG writing]
122.	,,	♀	(Seewiese[?]) *Admont* ♂ *Steiermark PROF. G. STROBL*
123.	,,	2♂	No label

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No.	Present Identification	Sex	Exact details of labels (top one first). / = different labels. Printed words italics. (—), original in shorthand. [—], notes by E. B. B.
124.	*Chymomyza fuscimana* (Ztt.) (= *distincta* sens Old.)	♀	Dros. distincta Egg. ♀ nigrimana Admont (Schafferweg) 21/8 Strobl [nigrimana added later, squeezed in]
125.	,,	♀	Small golden square / Dr. nigri mana Mg ♀
126.	*D. melanogaster* Mg.	♀	distincta Zara ♀ (Nofak)
	127—131. In Collection as *Drosophila fasciata* Mg.		
127.	*D. testacea* von Roser	♀	Separate l. g. l.: — Drosophila fasciata Mg. Seitenstetten (Bachufer.) ♀.
128.	,,	♀	fasciata Mg Schafferweg (licht Waldstelle) 26/8. ♀.
129.	,,	1♂ 1♀	Seitenstet ten (Gansbergergraben) 7/7 11(sic) ♀ 1♂.
130.	,,	2♀	Admont (Stiftsgarten und Mühlau) ♀.
131.	,, (= *nigrithorax* Str.)	1♂ 1♀	Dros. v. fas ciata Mg (Stiftsgarten) 18/6 ♂♀
	132—137. In Collection as *Drosophila histrio* Mg.		
132.	*D. histrio* Mg.	♂	Separate l. g. l.: — Drosophila histrio Mg Seitenstetten (Waldbäche) ♂ (und) ♀.
133—135.	,,	3♂	No label
136.	,,	♀	Admont (Mühlauerwald) 1/9 ♂.
137.	,,	♂	Dros. hi- strio Mg ♂ (Kematen) 8/10 *Styria Strobl*
	138—144. In Collection as *Drosophila rufifrons* Lw.		
138.	*D. testacea* von Roser	2♂	Separate l. g. l.: — Dros. rufifrons Lw. Admont (Mühlauer, Stiftsgarten) ♂.
139.	,,	2♂	Seitenstet ten (Stiftsgartenmauer) 21. 6. 92. ♂.
140.	,,	♀	♀
141.	,,	♂	(am Bachern) *Süd-* ♂ *Steiermark* *Prof. G. Strobl*
142.	*D. rufifrons* Lw.	♂	Pavia 14. vii. 10 / Drosophila rufifrons Lw. ♂ M Bezzi [Both Bezzi's labels]
143.	,,	♀	No label
144.	,,	♂	No label
	145. In Collection as *Drosophila andalusiaca* Str.		
145.	*D. andalusiaca* Str. **Lectotype** (= *forcipata* Collin)	♀	Separate l. g. l.: — Dr. andalusiaca Str Algeciras ♀ [The name is underlined by Strobl, which he rarely did on the labels] On pin: — *Algeciras Andalusien* *Prof.G. Strobl*

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No.	Present Identification	Sex	Exact details of labels (top one first). / = different labels. Printed words in italics. (—), original in shorthand. [—], notes by E. B. B.
	146—147. In Collection as *Camilla glabra* var. *atrimana* STR.		
146.	*C. atrimana* STR. **Lectotype** (= *atripes* DUDA)	♂	Separate bluish label: — Cam. glabra v. atrimana m. Admont (Penis) 5/7 ♂ l. Strobl.
147.	*C. atrimana* STR. **Syntype**	♀	Drosophila gla bra Fll (Ybbsthal gestreift) ♀
	148—153. In Collection as *Noterophila glabra* FLL.		
148.	*Camilla rufipes* (STR.) **Lectotype** of *Not. rufipes* STR.	♀	Separate l. g. l.: — Noterophila glabra Fll. v. (—?—) Zara (Strobl.) ♀. [L. wing mounted. 3 vibrissae R., 2L.]
149.	*C. glabra* (FLN.)	♀	Dros. glabra Kalocsa v. 11. 93 ♀. [det. J. E. COLLIN]
150.	,,	♂	(?...) *Österr.* ♀ *Litorale PROF. G. STROBL*
151.	,,	♂	*Arach. 20.7* / ♀ [det. J. E. COLLIN]
152.	,,	♂	Zara ♂ Novak.
153.	*Camilla* sp.	♂	No label.
	154—178. In Collection as *Drosophila funebris* FBR.		
154.	*D. funebris* (F.)	♀	Separate l. g. l.: — * (sic) Drosophila funebris Fbr. Seitenstetten (Mauern, Waldrand.) ♀.
155—156.	,,	2♀	No label.
157—158.	,,	2♂	No label.
159.	,,	♀	No label. [Narrowed ovipositor]
160—161.	,,	2♂	No label.
162—163.	,,	2♀	No label.
164—165.	,,	2♂	No label.
166—167.	,,	2♀	No label [No. 167 has narrowed ovipositor]
168.	*D. testacea* VON ROSER	♀	Melk. (Winden[?] Waldgras) 14/7 83. ♀.
169.	*D. ambigua* POM.	♂	26/5 [? Strobl label] / Prag (Chow[?]) ♂. [Genitalia topin mount]
170.	,,	♂	No label [Genitalia to pin mount]
171.	*D. funebris* (F.)	♂	Dros. funebr Seitenstetten (Abtrittsmauern) 6/5—1/7 ♂.
172—174.	,,	3♂	No label
175.	,,	♀	♀ [Narrowed ovipositor]
176.	,,	♀	Adm- ont (an unserem) 16/8. ♀. [An unserem ?Abtritt]
177—178.	,,	2♀	No label
	179—184. In Collection as *Drosophila obscura* FLL.		
179.	*D. obscura* FLN.	♂	L. g. l. on pin: — Drosoph. obscura Fll. Admont (Kalkofener Waldbach) 15/8 ♂

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180.	*D. helvetica* Bur.	♂♀	Dros. obscur. Seitenstet- ten (Ybbsbachrand) 21/5 ♀.
180a.	*D. subobscura* Coll. / *D. (Hirto.) oldenbergi* D.	♀ / ♀	Steinbrück (Laubwald) ♂ (und am [?] Nitschberg) ♀
181.	*D. subobscura* Coll.	♀	Dalmatia Novak ♂.
182.	*D. obscura* Fln.	♀	Dros. obscura Fll ♀ Styria (Kaiserau Kalbing) 17/6 Strobl.
183.	*D. subobscura* Coll.	♂♀	obscur. Iativa 7/4 ♀. Brin cola 2/5 ♂ Spanien
184.	*D. subobscura* Coll.	♂	obscura var. Malgrat ♂ *Südspanien* PROF. G. STROBL

185—197. In Collection as *Drosophila griseola* Z.

185.	*Parascaptomyza pallida* (Zett.)	♀	Separate l. g. l.: — Drosoph. griseola Z. Gstadtm. hochalpe 26/8. ♀.
186.	,,	♀	Hochsc hwung (Bachrand gestreift) 30/8 83. ♂
187.	,,	♀	Melk (Donau Au Waldgras) 25/6 85. ♂.
188.	*Scaptomyza graminum* (Fln.)	♀	Melk (Pielach Weissdornblüthen) 30/5 ♂.
189.	,,	♀	Melk (Winden Rain) 2/6. ♂. [Ovipositor teeth atypical. Specimen lost by E. B. B.]
190.	*Dros. littoralis* Mg.	♀	♀. [? Misplaced, ? = 296 a]
191.	*P. pallida* (Ztt.) / *S. graminum* (Fln.)	♀ / ♀	D. griseola Z. (Seitenstetten Fröschelau gestreift.) ♀.
192.	*P. pallida* (Ztt.)	2♀	Steinbrück (Rain) 21/7 ♀♂.
193.	,,	♀	Kai- serau (Sumpfwiesen) 7/8 ♀
194.	,,	♀	Admont (Eichelau Schilfwiese) 21/7 ♀. [Pale yellowish specimen]
195.	,,	♀	Hohen tauern (Teichwiesen) 27. 5. 91. ♂.
196.	*Sc. graminum* (Fln.)	♀	No label
197.	*P. pallida* (Ztt.)	3♀	griseola Kalocsa (Ufer) 10. 5. 889 ♂♀ [i. e. 1889]

198—232. In Collection as *Drosophila graminum* Fll.

198.	*Scaptomyza atlantica* Hack.	♂♀	Separate l. g. l.: — * (sic)Drosophila graminum Fll. Seitenstetten (gestreift.) ♂ (und) ♀. [This label does not belong to No. 198] On pin: — Orotava ♂♀ 46949—I [Becker's label] / Drosophil Scaptomyza tetrasticha B. *det Becker* Scptomyz gelbl var [Becker's labe overwritten by ? Strobl]

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199.	*Sc. graminum* (FLN.)	♂♀	W/2/5 Scaptomyza graminum fall. (sic) v tetrasticha Bck ♂♀ [Doubtless BEKKER's label; last 4 words added by STR.]
200.	*P. pallida* (ZTT.)	2♀	S. Celoni 19/5 Dros. grami num Fll ♂♀ *Südspanien PROF G. STROBL*
201.	,,	♂	♂.
202.	*Sc. graminum* (FLN.)	♀	No label
203.	*P. pallida* (ZTT.)	♂	No label
204.	,,	♀	♀.
205.	,,	♀	No label
206.	*Sc. graminum* (FLN.)	♀	(wie Kuhstriegelborsten) 4 (reihig, [?] siehe) tetra sticha Bck
207.	*P. pallida* (ZTT.)	♂	No label
208.	,,	♂	Amstetten (Auen gestreift.) ♀.
209.	*Sc. graminum* (FLN.)	♂	Seitenstetten (auf Leber) ♂.
210.	*P. pallida* (ZTT.)	♂	No label
211.	,,	1♂ 3♀	No label
212.	*Sc. graminum* (FLN.)	♂	No label
213.	*Sc. apicalis* HDY.	♀	No label
214.	,,	?	No label [Grey form. No abdomen]
215.	*P. pallida* (ZTT.)	♀	No label
216.	*Sc. apicalis* HDY.	♂	Hohentauern (Wiesen.) [Grey form. Teneral]
217.	*P. pallida* (ZTT.)	♀	No label
218.	*Sc. graminum* (FLN.)	♀	Veitlgra ben (gestreift.) 8/8 ♂.
219—220.	,,	2♂	No label
221.	,,	♂	Reiter alm (von) Sens. s. (gestreift) 31/8 83. ♂.
222.	*Sc. apicalis* HDY.	♂	Kaiser au (auf) Gly ceria 8/8 83. ♀
223.	*Sc. graminum* (FLN.)	♂	Melk. ♂. (Pfunder[?] Waldwiesen gestreift) 19/6
224.	*P. pallida* (ZTT.)	♂	Melk (Winden Waldgras) 4/7 85. ♂.
225.	,,	♂	No label
226.	*Anthomyzidae*	—	[Probably *Anthomyza sabulosa* Hal.]
227.	*Sc. graminum* (FLN.)	2♂ 1♀	graminum Hohentau ern (Wirthsgraben Pestwurz) 1. 8. 1891. ♂.
228.	,,	♂	Seitenstet ten (Lärchenwald) 17/5 ♂♀
229.	,,	♀	No label
230.	*P. pallida* (ZTT.)	♂	No label
231.	*Sc. graminum* (FLN.) *Sc. ?apicalis* HDY.	♂ ♂	Admont (Stiftsgarten, Kematenbach) 18. 8. 92 ♂.
232.	*Sc. graminum* (FLN.)	♂	Gesäus 18. 8. 92. ♀

233—234. In Collection as *Drosophila costata* ZTT.

233.	*Chymomyza caudatula* OLD.	♂	Separate l. g. l.: — Drosoph. costata Ztt Admont (Kematenbachschlucht) 18/8 92. ♀
234.	,,	♂	Villach Tief. ♀.

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	234a—235. In Collection as *Dros. fenestrarum* var. *nigrithorax* Strbl.		
234a.	*Par. pallida* (Ztt.)	♀	fenestr v. nigrit Kaiser au (Kalbling) 17/6 95. ♂.
235.	,,	1♂ 1♀	Dros. fenestrar. v. nigrithorax m. ♂♀. Duino(lagunen) 25/7 Strobl.
	236—239. In Collection as *Asteia concinna* Mg.		
236.	*A. concinna* Mg.	♀	Separate l. g. l.: — Asteia concinna Mg Melk (Wachberg [?]Pastinak) 14/7 883. ♀. [i. e. 1883]
237.	,,	♀	Steinbrück (trockener Rain) 21/7. ♀
238.	,,	1♂ 1♀	Asteia concinna Mg. ♂♀ [?Oldenberg's label]
239.	,,	2♀	Berlin ♀ Jungfernheide 6.97 [Oldenberg's label. 7 not crossed]
	240—245. In Collection as *Asteia amoena* Mg.		
240.	*A. amoena* Mg.	♂	Separate l. g. l.: — Asteia amoena Mg. Admont (Krumauwiesen) 25/8 891. ♂ [i. e. 1891]
241.	,,	♂	Radkers- burg (Sumpfwiesen) 26. 7. 892. ♂. [i. e. 1892]
242.	,,	♀	Asteia amoe- na Mg ♂
243—245.	,,	3♀	Each with: — *Thalhammer Kalocsa* / A. amoe na [?Thalhammer's writing. Label upside-down] [No. 244has A. a- moena]
	246—251. In Collection as *Aulacigaster rufitarsis* Mg.		
246—247.	*A. leucopeza* (Mg.)	2♂	Separate l. g. l.: — Aulacigaster rufitarsis Meg(sic) ♂ On pin of each: — *Thalhammer Kalocsa.*
248.	,,	♀	*ThalhammerKalocsa*/ ♀.
249—251.	,,	♀♂♀	*Thalhammer Kalocsa*
	252—254. In Collection as *Stegana coleoptrata* var. *nigrithorax* Strbl.		
252.	*Stegana* sp. **Lectotype** (♂), **Syntype** (♀) of *Steg. nigrithorax* Str.	♂♀	Separate l. g. l.: — Steg. coleoptrata Scp. v. nigrithorax m. On pin: — Stegan col. v nigrithorax (Gesäus) 24/6 ♂♀. *Styria Strobl*
253.	*Stegana* sp.	♂	Col. v. nigrith Veitlgraben 18/7 ♂ Strobl
253a.	,,	♂	St. coleopt. v (Übergangsform zu) v. nigr Veitlgraben 18/7 ♂ Strobl
254.	,,	♂	*Admont Steierm. Strobl* / St. coleopt v nigrithorax m. (Gesäus) ♂

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			255. In Collection as *Stegana stroblii* Mik
255.	*Stegana* sp. **Lectotype** of *S. stroblii* Mik	♀	Separate large blue label: — Stegana Stroblii Mik ♀ [Mik's label] On pin: — Bu 2/8 96. ♀ *Transsylva Strobl.* [Bu = Bucsecs]
			256. In Collection as *Phortica alboguttata* var. *nigripes* (sic) Strbl.
256.	*Amiota albilabris* (Rth.) subsp. *obscuripes* (Str.). **Lectotype** of *Phort. obscuripes* Str.	♂	Separate l. g. l.: — Phort. alboguttata Whlb v. nigripes m. ♀ (Steinbrück) On pin: — *Süd- Steierm. Strobl* [Genitalia to pin-mount. Wings and L hind leg to slide.]
			257—258. In Collection as *Asteia elegantula* Ztt.
257.	*A. elegantula* Ztt.	2	Separate l. g. l.: — Asteia elegantula Ztt. Berlin (Oldenberg) 11♂ 11♀ [elegantula underlined] On pin: —*Berlin Jungfernheide* 5. 7. 04 / Asteia elegantula Z. ♂ *det Oldenberg* [Both Oldenberg labels. The Z is crossed.]
258.	,,	2	*Berlin* ♀ *Jungfernheide* 5. 7. 04 [Oldenberg label]
	[The 7's are not crossed. Apparently Oldenberg started to cross 7's c. 1906]		
			259. In Collection as *Drosophila phalerata* Mg. var.
259.	*D. kuntzei* Dud.	♂	*Thalhamme(r) Vlašic* / Drosophila phalerata Mg v. (Querardern sehr deutlich gesäumt, die Querbinden des Hinterleibes aber kaum angedeutet.) ♀
			260—263. In Collection as *Drosophila confusa* Stg.
260.	*D. confusa* Stgr. (= *vibrissina* Duda)	♂	Separate l. g. l.: — Drosoph. confusa Stg. Bosnien ♀. On pin: — *Stavnja-* (sic) *Th. b Saraj.*
261.	,,	♂	*Thalhamme(r) Cemerno* / Drosophil confusa ♂ (———)
262.	*D. funebris* (Fbr.)	2♀	Drosoph. confusa Staeg ♀ [?Oldenberg's label; ♀ in another ink]
263.	,,	2♀	Berlin W 11. 98. [Oldenberg's label]
			264—268. In Collection as *Drosophila flaveola* Mg.
264.	*Scaptomyza apicalis* Hdy.	♂	Separate white label: — Dros. flaveola Mg. ♂. (Natterriegel) 15/6 *Styriae alp Strobl.*
265.	,,	♂	Wañsee(sic) 6. 97 / Drosoph. ♀ flaveola Z[BothOldenberg's labels. Z crossed.]

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266—267.	*Scaptomyza apicalis* Hdy.	♂♀	Each with: — Wañsee(sic) 6.97 [Oldenberg's label. Abdomen of 266 restuck on by E. B. B.]
268.	,,	♂	Small golden square / Schlesi-en ♂ Tief [?Tief's label] / Dr. flaveo- la Mg ♂
	269—271. In Collection as *Drosophila nigrosparsa* Strbl.		
269.	*D. nigrosparsa* Str. **Lectotype**	♂	Separate white label: — Dros. nigro-sparsa n. sp. ♂ [♂ added on top of ♀] (Scheibleggerhochalpe gestreift) 13/7 *Styriae alp Strobl.* [Genitalia to pin mount]
270.	*D. nigrosparsa* Str. **Syntype**	♀	Dros. nigro sparsa n. sp ♀ (Natter-riegel) 15/6 *Styriae alp Strobl.*
270a.	*D. nigrosparsa* Str. (Not type)	♀	nigrospars Hohentau ern (Wiesen) ♀ Str.
271.	*D. nigrosparsa* Str. (Not type)	♀	(Stiftsgarten) *Admont* 1/5 ♀ *Steier-mark PROF. G. STROBL.*
	271a—272. In Collection as *Drosophila unistriata* Strbl.		
271a.	*D. cameraria* Hal. **Lectotype** of *D. unistriata* Str.	♂	Separate l. g. l.: — Dros. unistriata m. Ragusa (Lapad) 23/4 97. ♂.
272.	*D. cameraria* Hal. **Syntypes** of *D. unistriata* Str.	2♀	Dros. 1 stri ata. m.♀ Ragusa (Ombla auf J. ac) [?Juncus acutus L.] 15/4 Strobl
	273—276. In Collection as *Drosophila maculipennis* Gim.		
273.	*D. littoralis* Mg.	?♂	Separate label: — Dros. maculi pennis Gim. 1♂ 3♀ Livland (Sintenis.) On pin: — 3/9 91 [?Sintenis's label]
274.	,,	♀	31/8 99 [?Sintenis's label]
275.	,,	♂	viii/19 88 [?Sintenis's label]
276.	,,	♀	31/8 99 [?Sintenis's label]
	277—281a. In Collection as *Drosophila nigricolor* Strbl.		
277.	*D. nigricolor* Str. **Syntype**	♀	Separate white label: — Dros. n. sp. nigricolor m. ♀. (Gesäus) 10/5 95. *Styria Strobl.*
278.	*D. nigricolor* Str.	♀	Dros. rufi- pes Mg. ♂ ? [rufi- pes Mg and ? crossed through] nigricolor m. (Gesäus) 20/5 *Styria Strobl.*
279.	,,	♀	Villach Tief ♂
280.	,,	♀	Villach Tief. ♂.
281.	*D. nigricolor* Str. **Lectotype**	♂	*Admont Steierm. Strobl.* / Dr. nigrico-lor m ♂ (Gesäus) [Genitalia to pin-mount]
281a.	*D. nigricolor* Str.	♀	nigricolor Admont (Kematenwald) 25/9 ♂

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	282—285. In Collection as *Drosophila fenestrarum* Fll.		
282.	*D. fenestrarum* Fln.	2♂	Separate l. g. l.: — Drosoph. fenestrarum Fll. Bamberg Funk ♂. On pin: — ♂. (Enns Auen) 7/7
283.	,,	♂	No label
284.	*D. melanogaster* Mg.	2♀	Drosophila fenestralis(sic) [?whose writing]
285.	*D. fenestrarum* Fln.	♀	Drosoph. fe- nestrarum ♀ (Enns Auen) 18/8 *Styria Strobl.*
	286—291. In Collection as *Noterophila acutipennis* var. *nigripes* Strbl.		
286.	*Camilla acutipennis*(Lw.) ♂ **Lectotype**, ♀ **Syntype** of *Not. nigripes* Str.	♂♀	Separate l. g. l.- — Noterophila acutipennis Lw. v. nigripes m. On pin: — Spanien: Cardenas ♂♀. Strobl.
287.	*C. acutipennis* (Lw.)	2♂ 1♀	♂*AlgecirasAndalusienPROF.G.STROBL*
288.	,,	1♂ 2♀	♀*AlgecirasAndalusienPROF.G.STROBL*
289.	,,	2♀	Separate label: — Camilla acutipennis Lw. ♀ *det. Becker* On pin: — Athen IV. 49908. [Both Becker's labels.IV 's with stroke above]
290.	,,	♀	Athen IV. 49908. ♂ [Becker's label]
291.	,,	♀	*AlgecirasAndalusien PROF. G.STROBL* Dros. acutipennis Lw. v. nigripes Str ♀. [one label]
	292—293. In Collection as *Drosophila approximata* Ztt.		
292.	*D. nigriventris* Ztt.	♂	Separate l. g. l.: — Dr. approximata Z. Admont (Kematen) 25/9 ♀. [Genitalia to pin mount]
293.	*Parascaptomyza pallida* (Ztt.)	♀	Dr approx Sirbitz- Kogel. ♂ [Abdomen yellow]
	294. In Collection as *Drosophila obscura* var. *tinctipennis* Strbl.		
294.	*D. tristis* Fln. **Lectotype** and **Syntype** of *D. tinctipennis* Str.	2♂	Separate white label: — D. obsc. v. tinctipen nis m. ♂ Schlesien On pin: — Small golden square.
	295. In Collection as *Aglaoxenus syrphoides* Frnf.		
295.	*Acletoxenus formosus* (Lw.)	?sex	Separate l..g l.: — Aglaoxenus [underlined] syrphoides Frnf. On pin: — Villach l. Tief. / Aglaoxenus syrphoides Frf ♀. [Pink label]
	295a—296. In Collection as *Drosophila unimaculata* Strbl.		
295a.	*D. unimaculata* Str. **Lectotype**	♀	Separate l. g. l.: — Dr. unimaculata m. Seitenstetten (Bachschluchten.) ♀. [L wing to slide]
296.	*D. littoralis* Mg.	1♂ 2♀	Admont (Ennsufer) 28/8 ♂ Strobl

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	COLLECTION JOANNEUM		
	Only the specimens associated with Strobl are included here		
320	*Cacoxenus indagator* Lw	♂	Drosophila maculata Dūf(sic) Gesaus (Waldgraser) 19/6 893 ♂ Strobl [Pink label, folded]
323	*D funebris* (Fabr)	♂	Drosophila fu- nebris Fbr ♂ Admont (Fenster) 28/8 [Pink label, folded]
	324—326 In Collection as *Drosophila graminum* Fll [„Admont, leg Strobl", Mecenovic in litt]		
324	*Parascaptomyza pallida* (Ztt)	♂	*No label*
325	,,	♂♀	No label
326	*P pallida* (Ztt)	♂	No label
	Scapt ? graminum indet	?sex	
	327—328 In Collection as *Dros graminum* var *griseola* Ztt ["Admont, leg Strobl", Mecenovic in litt]		
327	*Pai pallida* (Ztt)	3♀	No label
328	*Sc graminum* (Fln.)	♀	Dros griseola Ztt Admont (Bachrand) ♀

Explanation of Plates 1—2

Plate 1

Specimens of Strobl's labels

The Gabelsberger shorthand is transcribed in the numerical List

Fig 1 *Drosophila kuntzei* Duda. (Str259) (9 5×12 5 mm) — Fig 2 *Phortica* sp (Str26a) (7×8 mm) — Fig 3 *Phortica* sp (Str28) (11×5 mm) — Fig 4 *Phortica* sp (Str26) (6×9 mm) — Fig 5 Long green label of *Amiota albilabris obscuripes* Strbl (Str256) (23×5 5 mm) — Fig 6 *Stegana* sp (Str17) (10×9 mm) — Fig 7 *Stegana* sp (Str253a) (9 5×10 mm)

Plate 2

Fig 1 *Drosophila* (*Lordiphosa*) *andalusiaca* Str ♀ Left wing of Lectotype (Str145) Actual length of preparation 3.10 mm

Fig 2 *Drosophila unimaculata* Str ♀ Left wing (minus alula) of Lectotype (Str295a) Note diverging veins III and IV Actual length of preparation 3 90 mm

Fig 3 *Drosophila unimaculata* Str ♀ Right wing of English specimen (Oswestry, Shropshire, 5. 9 1936 C H Wallace Pugh) Note parallel veins III and IV Actual length of preparation 4 47 mm

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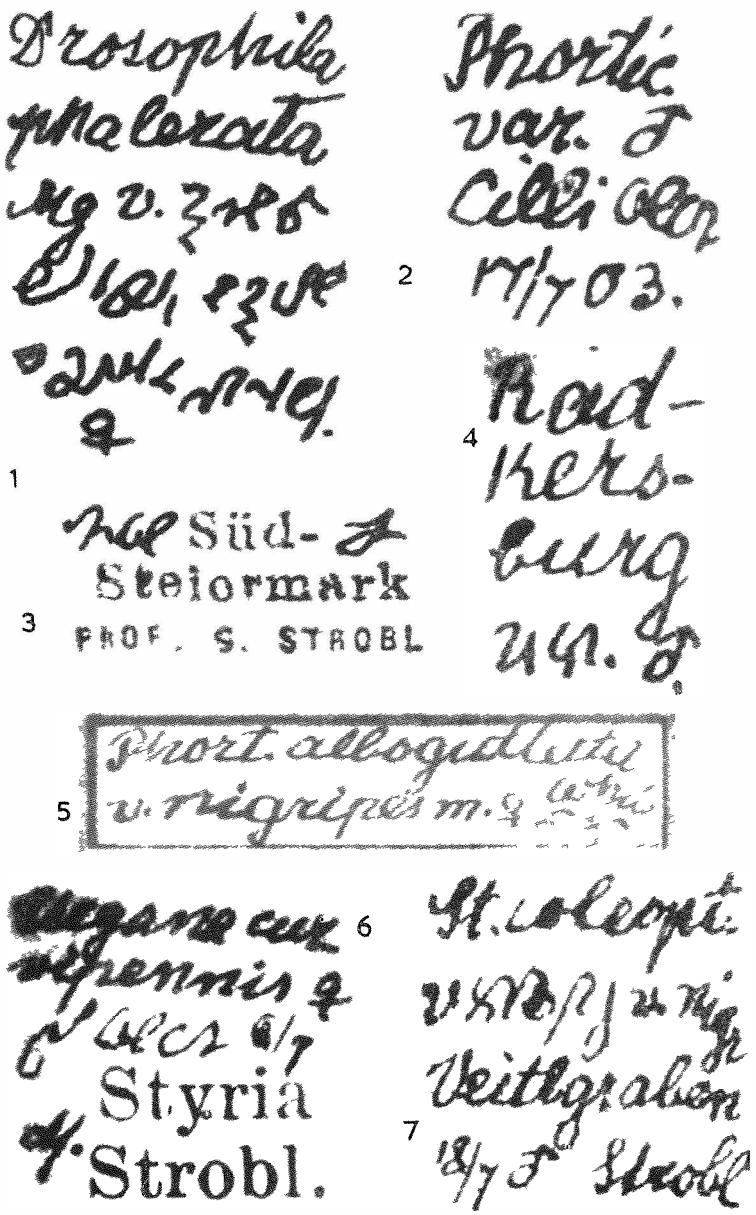

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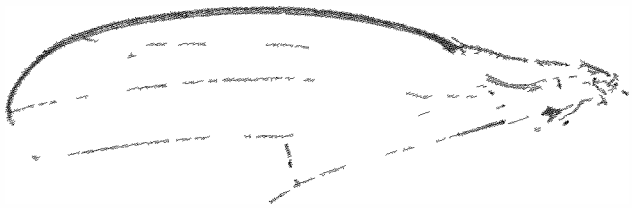

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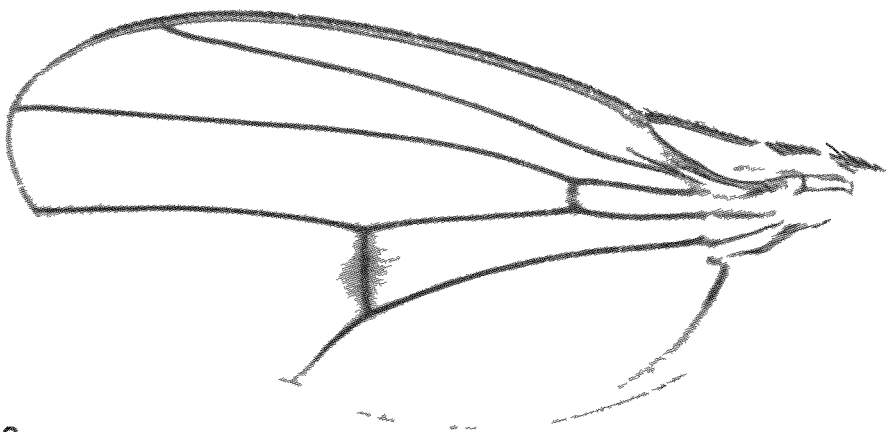

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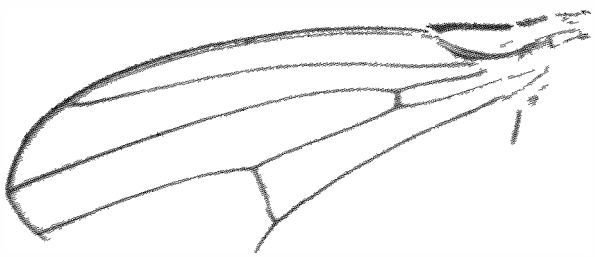

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