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L. Tsacas and B.H. Cogan:

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II. Insectes: 13. Diptera: 19. Fam. Drosophilidae.

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MUSEE ROYAL DE L'AFRIQUE CENTRALE — TERVUREN, BELGIQUE
ANNALES — SERIE IN-8° — SCIENCES ZOOLOGIQUES — n° 215, 1976

COLLIN, J.E., 1949. — The Palaearctic species of the genus *Aphaniosoma* Becker *(Diptera, Chyromyidae).* — *Ann. Mag. nat. Hist.*, (12), 2, pp. 127-147, 12 figs.

HENDEL, F., 1933. — Neue acalypterate Musiden aus der paläarktischen Region *(Dipt.).* — *Deutsch. ent. Z.*, 1933, pp. 39-56, 1 fig.

ZETTERSTEDT, J.W., 1848. — Diptera Scandinaviae, 7, pp. 2581-2934. — Lund.

19. Fam. **DROSOPHILIDAE**

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Knowledge of the *Drosophilidae* of the isolated southern Atlantic islands, adjacent to the western coast of Africa, is only poorly documented. With the exceptions of the report by FREY, 1954, on the fauna of Tristan da Cunha, and that on Gough Island by OLDROYD, 1958, there are no records of the family from these and the associated islands of St. Helena (except the mention of *Drosophila repleta* Woll. by MELLISS), Ascension and Trinidad. This lack of previous knowledge is particularly suprising as the fauna of St. Helena is relatively rich, consisting of at least ten species assigned to three genera.

The ten species are as follows :

Drosophila (Sophophora) simulans Sturtevant

Drosophila (Drosophila) repleta Wollaston

Drosophila (Drosophila) immigrans Sturtevant

Drosophila (Drosophila) punctatonervosa Frey

Zaprionus vittiger Coquillett

Zaprionus tuberculatus Malloch

Scaptomyza (Scaptomyza) santahelenica n. sp.

Scaptomyza (Scaptomyza) mimitantalia n. sp.

Scaptomyza (Lauxanomyza) horaeoptera n. sp.

Scaptomyza (Parascaptomyza) pallida Zetterstedt

The following treatment of the family is based on the collections amassed by the members of the Musée Royal de l'Afrique Centrale (M.R.A.C.) during the course of their two expeditions to St. Helena. Additional records have been included from specimens in the collection of the British Museum [Natural History] (B.M.N.H.), the majority from specimens sent to the Commonwealth Institute of Entomology and identified by Dr. R.W. CROSSKEY. Unless otherwise stated, all the material is in the collection of the M.R.A.C.

KEY TO THE GENERA AND SPECIES OF THE *Drosophilidae* FROM ST. HELENA

1. Fore femur with at least one tuberculate excresence on the postero-ventral face. A pair of weak pre-scutellar bristles present. A pair of narrow white vittae extending

from the anterior edge of the frons to the apical angle of the scutellum ..... (Gen. **Zaprionus**) 2

— Fore femur without tubercles on the postero-ventral face. Pre-scutellar bristles lacking. Without continuous white vittae on head and mesonotum 3

2. A single tubercle on the postero-ventral face of the fore femur ..... **Z. tuberculatus** Malloch

— Four tubercles on the postero-ventral face of the fore femur ..... **Z. vittiger** Coquillett

3. Only two or four rows of acrostichal setulae between the rows of dorso-central bristles. Arista, typically, with only one ventral hair in addition to the terminal fork ..... (Gen. **Scaptomyza**) 4

— Usually six or eight rows of acrostichal setulae between the dorso-central bristles. Arista, typically, with more than one ventral hair in addition to the terminal fork ..... (Gen. **Drosophila**) 7

4. Wings with strong dark brown markings (fig. 92).. A dark brown vitta along the dorsal edge of the mesopleuron. Abdomen totally glossy blackish-brown ..... **S. (Lauxanomyza** n. sg.**) horaeoptera** n. sp.

— Wings clear or at most a slight clouding over the cross-veins 5

5. Only two rows of acrostichal setulae between the dorso-central bristles. Vertex of head and thorax, grey dusted; abdomen dark brown with some pale grey dusting on the anterior segments ..... **S. (Parascaptomyza) pallida** Zetterstedt

— Four rows of acrostichal setulae between the dorso-central bristles ..... (Subgen. **Scaptomyza**) 6

6. Vertex of head, thorax and abdomen dark brown. Wings hyaline ..... **S. santahelenica** sp. n.

— Head and thorax a uniform pale reddish brown. Wings with the posterior cross-veins lightly clouded ..... **S. mimitantalia** sp. n.

7. Wings with at minimum the posterior cross-veins (m-cu) and the apices of the 2nd (R2 and 3) and 3rd (R4 and 5) longitudinal veins clouded 8

— Wings hyaline, none of the above veins clouded 9

8. Fore femur with a row of short black spines on the antero-ventral face. Wing veins only lightly clouded ..... **D. immigrans** Sturtevant

— Fore femur without a row of short black spines. Wings strongly marked on the cross-veins and on the apices of the 2nd (R2 and 3) and 3rd (R4 and 5) longitudinal veins, in addition to a row of four dark brown round patches on the apical section of the 3rd longitudinal vein ..... **D. punctatonervosa** Frey

9. Vertex and mesonotum densely irrorate. Facial carina shallowly grooved along its' length. Wing with the costa darkened at the second break. Fore metatarsus of male lacking a tarsal comb ..... **D. repleta** Wollaston

— Vertex and mesonotum a pale reddish-brown. Fore metatarsus of male with a single tarsal comb ..... **D. simulans** Sturtevant

Gen. **Drosophila** Fallén

Drosophila Fallén, 1823, Geomyzides Sveciae, p. 4.

Type-species : *Musca funebris* Fab.; Zetterstedt, 1847, Dipt. Scand. 7 : 2542.

A genus of worldwide distribution, comprising many hundreds of described species.

Drosophila (Sophophora) simulans Sturtevant

Drosophila simulans Sturtevant, 1919, Psyche, Camb., 26, p. 153.

A small yellowish-brown species of the sub-genus *Sophophora* Sturtevant. Cosmopolitan in distribution, but not recorded from St. Helena.

Material examined.

SAINT HELENA. *Centre :* Upper Fisher's Valley, 1700 ft, 11-13.XI and 14-19.XII.1965, 2♂♂. Teutonic Hall, 1500-1700 ft, II and 20-30.IV.1967, 1♂, 4♀♀. High Central Ridge, 2500 ft, IV.1967. Rose Hill, 1800 ft, 22-28.II.1967, 1♀. High Peak, 2400-2600 ft, III.1967, 1♀. *Est :* Lower Fisher's Valley, 1000 ft, irrigations, 14-19.XII.1965, 1♂, 1♀. *Nord :* Rupert's Valley, 13-21.V.1967, 1♂, 1♀. Varney's, 4.II.1970 *(A. Loveridge),* 1♂, 1♀ (B.M.N.H.).

Drosophila (Drosophila) repleta Wollaston

Drosophila repleta Wollaston, 1858, *Ann. Mag. nat. Hist.,* 41, p. 117.

Drosophila repleta Melliss, 1875, St. Helena, p. 198.

A common cosmopolitan species, easily recognised by its dark brown irrorate mesonotum. Previously recorded from St. Helena (MELLISS, 1875).

Material examined.

SAINT HELENA. *Centre :* Teutonic Hall, 1500-1700 ft, XII.1965, II. and IV.1967, 4♂♂, 4♀♀. *Nord :* Rupert's Valley, 13-21.V.1967, 3♀♀. Varney's, 17.VIII.1961 *(A. Loveridge),* 1♀; 24.VIII.1961, 1♀; 1.VI.1961, 1♀; 8.X.1962, 1♀. Ladder Hill, 21.VII.1959 *(C.R. Wallace),* in building, 1♂; 23.VII.1959, 1♀; VII-IX.1959, in building, 1♂, 2♀♀; VII.1959, in building, 1♂, 5♀♀; 6.VII.1959, 65♂♂, 1♀. Hunts Gut, 7.VII.1961 *(A. Loveridge),* 1♀ (B.M.N.H.).

Drosphila (Drosophila) immigrans Sturtevant

Drosophila immigrans Sturtevant, 1921, Publs. Carnegie Instn, 301, p. 83.

A pale yellowish-brown species, relatively large for the genus, wing length 3-4 mm. Easily recognised by the fore femoral armature of small black spines. Cosmopolitan, although not previously recorded from St. Helena.

Material examined.

SAINT HELENA. *Centre :* Teutonic Hall, 1500-1700 ft, 20-30.IV and V.1967, 3♂♂, 3♀♀. High Central Ridge, 2300-2600 ft, II.1967, 1♀. Sandy Bay, Blarney Bridge, 28.IV.1967, 1♂. *Est :* Lower Fisher's Valley, irrigations, 1000 ft, 14-19.XII.1965, 1♀.

B.M.N.H. Scotland Station, 13.XII.1957 (Coll. *K. Sim*), on rotten banana, 4♂♂, 4♀♀. Bishops Bridge, 20.I.62 *(A. Loveridge),* 1♀. Varney's, 4.II.1970 *(A. Loveridge),* 3♀♀, 1 ex.

Drosophila (Drosophila) punctatonervosa Frey

Drosophila punctatonervosa Frey, 1954, Norwegian Exped. to Tristan da Cunha, 1937-1938, n° 26, p. 32, available name for.

Drosophila poeciloptera Duda, 1940, Annls hist.-nat. Mus. natn. hung., 33, p. 26, *nec. Drosophila poeciloptera,* 1925 *(Paramycodrosophila),* Annls hist.-nat. Mus. natn. hung., 22, p. 226.

Drosophila poecila Burla and Pavan, 1953, Rev. Brasil. Biol., 13, p. 311.

DUDA described *D. poeciloptera* in 1940 from Natal. In 1953 : 311, BURLA and PAVAN reassigned *Paramycodrosophila poeciloptera* Duda, 1925 to the genus *Drosophila,* thus creating a secondary homonym. They proposed an unwarranted replacement name of *D. poecila* for the senior homonym and this automatically became an objective synonym of *D. poeciloptera* (Duda), 1923. The junior homonym still requires a replacement name and as WHEELER points out in his discussion of the above problem (1959 : 184) *D. punctatonervosa* Frey as a junior synonym of *D. poeciloptera* Duda, 1940, is available. The senior author of this paper, has examined the type specimens of *D. poeciloptera* Duda, 1940 (♂) and *D. punctatonervosa* Frey (♀) and is able to confirm the synonymy suggested by WHEELER (1959 : 184).

The species is very distinctive. The characteristically marked wings, with strongly marked cross-veins, apices of the 2nd and 3rd longitudinal veins and brown patches along the 3rd longitudinal vein, easily distinguish this species from others in the St. Helena fauna.

The distribution of this species is curious, it is known in the literature only from the original type specimen of *D. poeciloptera* Duda, 1940 from Natal and from Tristan da Cunha (see discussion on the affinities of the fauna).

Material examined.

SAINT HELENA. *Centre :* Haute Fisher's Valley, 1700 ft, 11-13.XI.1965, 2♀♀. Teutonic Hall, 1500-1800 ft, 1-20.I.1966; II, 20-30.IV and V.1967, 11♂♂, 17♀♀. High Central Ridge, Cabbage Tree Road, 2500 ft, V.1967, 1♂. High Central Ridge, 2500 ft, IV.1967, 2♀♀. High Central Ridge, 2500 ft, Replat S-E Diana's Park, 9-12.II.1967, 1♀. High Peak, 2400-2600 ft, III.1967, 3♀♀. *Nord :* Bank's Valley, 400-600 ft, III.1967, 1♀, 1 ex. without abdomen. *Sud-Ouest :* Thomson's Wood, 1700-1800 ft, 23.XI.1965, 1♂.

B.M.N.H. Hunt's Gut, 12.VIII.1961 *(A. Loveridge),* 1 .

Gen. **Zaprionus** Coquillett

Zaprionus Coquillett, 1901, Proc. U.S. natn. Mus., 24, p. 31.

Type-species : *Zaprionus vittiger* Coquillett, 1901, *id.,* p. 32, orig. des.

Although the genus is of rather doubtful status as a distinct entity, the species of *Zaprionus* are easily recognised. Among the St. Helena fauna the fore femoral armature and the two pairs of discrete white vittae enable the two *Zaprionus* species to be readily distinguished.

The genus, in its typical form, is confined to Africa and the specimens from the M.R.A.C. collection are the first records from an Atlantic Island.

Zaprionus vittiger Coquillett

Zaprionus vittiger Coquillett, 1901, Proc. U.S. natn. Mus., 24, p. 32.

A widespread species on the African continent, distinguished from *Z. tuberculatus* by the presence of between four and six tubercles on the postero-ventral face of the fore femur.

Material examined.

SAINT HELENA. *Centre :* High Central Ridge, 2500 ft, IV. 1967, 1♀ .

Zaprionus tuberculatus Malloch

Zaprionus tuberculatus Malloch, 1932, Stylops, 1, p. 11.

Widespread in tropical Africa. Distinguished from *Z. vittiger* by the presence of a single tubercle on the fore femur.

Material examined.

SAINT HELENA. *Centre :* Cason's Gate, 2100 ft, 3.IV.1967, 1♀.

Gen. **Scaptomyza** Hardy

Scaptomyza, Hardy, 1849, Hist. Berwicksh. Nat. Club., 2, p. 361.

Type-species : *Drosophila graminum* Fallén 1823; Coquillett, 1910, Proc. U.S. natn. Mus., 37, p. 603.

Scaptomyza is predominantly a genus of temperate grasslands although it is well represented in certain areas in the tropics eg. Hawaii. It is closely allied to *Drosophila* and although sound external characters for distinguishing between the two genera are few, both have a quite distinctive habitus.

With the exception of a single widespread species, *Scaptomyza pallida* Zetterstedt, the *Scaptomyza* fauna of St. Helena is endemic to the island.

Scaptomyza (Scaptomyza) santahelenica n. sp. (fig. 73-78)

♂. *Head :* Frons reddish-brown, slightly paler on the anterior edge above the antennae. Ocellar triangle black, but with a light silver dusting. Orbits brown and well delimited, also with light silver dusting, their lower part a dirty yellow. Upper proclinate orbital bristle only 3/4 as long as the 3rd reclinate. 2nd reclinate is short and weak and inserted externally and adjacent to the first. Ocellar bristles long, slender and divergent : ocellar triangle without setulae. Post-verticals cruciate. Antennae brown, with the exception of the ventral part of the second segment and the base of the third which are paler yellowish-brown. Arista with three dorsal hairs and one lower hair in addition to the terminal fork. Dorsal hairs short and straight, the lower basal hair long. Face brown, darker on the prominent epistome. Clypeus blackish- brown and receding. Carina well marked, narrow but wider towards the epistoma. Oral bristle well developed, with an additional weaker bristle and 3/5 as long as oral. Both between these two bristles and below, are a row of setulae. Palpi yellow, darkened, broader at the apex and with an

apical bristle and a number of setulae. Cheeks narrow, a dirty yellow, concolourous with the lower part of the orbits. Eyes a sombre red; taller than wide, with the long axis vertical.

Thorax : Mesonotum and scutellum brown, with traces of a rust coloured patterning, covered in a light silver dusting. Four rows of acrostichal setulae between the two pairs of dorso-centrals. Scutellum : basal scutellar bristles long and slightly divergent, apicals short, convergent or cruciate (index 2.07). Pleura brown. Two sternopleural bristles, the anterior short and hair like, sterno-index 0.60. Two sub-equal humeral bristles. Halteres yellowish-brown. Legs pale, femora III a little darkened. Dorsal pre-apical bristle on all tibiae, an apical bristle on tibiae II and III. Anterior femora with 3 long bristles and many shorter hairs on the postero-ventral face. Wings relatively long and narrow; veins and membrane pale. Veins r4 and 5 and m1 parallel (3rd and 4th longitudinal veins). Distal break of costa with two short setae.

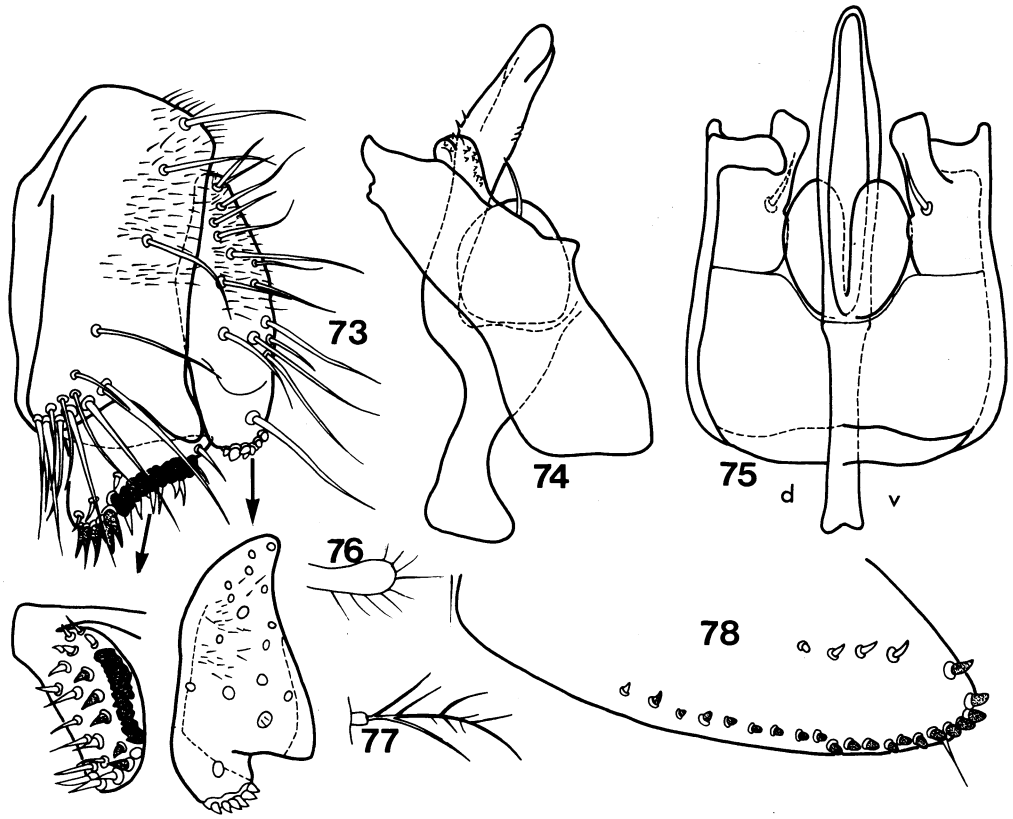


Fig. 73-78. — *Scaptomyza (Scaptomyza) santahelenica* n. sp. Holotype and allotype. — 73. Epandrium and anal plates in lateral view. — 74. Hypandrium and associated organs in lateral view. — 75. *Id.*, in dorsal view (d), in ventral (v). — 76. Palp. — 77. Arista. — 78. Ovipositor.

Wing indices : C : 3.45; 4V : 1.80; 5X : 1.60; 4C : 0.80; AC : 2.2. Fringe of third section of costa : 36 %.

Abdomen : Tergites reddish-brown, the posterior tergites darker than anterior. Sternites pale. Genitalia black, anal plates with a series of short spines on the lower extremity; forceps with a comb of short teeth and many spines on the internal face. Length of body : 1.4 mm; wing : 1.6 mm.

♀. Resembles the male. Femur III, a little darker. Ovipositor yellow with a series of rounded marginal spines, and a row of 4 spines "en retrait". Length of body : 2.1 mm; wing : 2.2 mm.

The four males dissected show a certain variability in the number and disposition of the spines and bristles on the genitalia. The most important variations are as follows : the presence of only one row of spines on the ventral extremity of the anal plates (1♂); a row of obtuse spines on the sinuous forceps (1♂). It is possible that a complex of sibling species is present and that the sample available is too small to allow its elucidation.

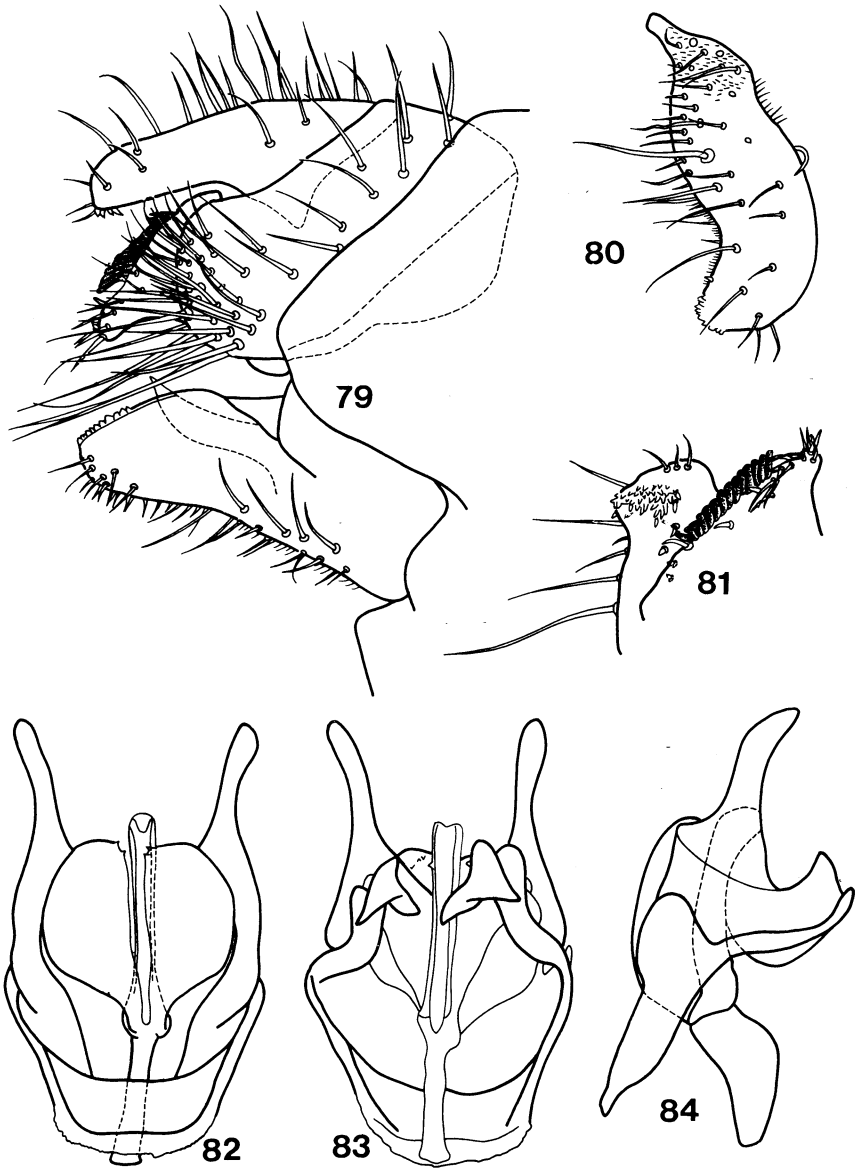


Fig. 79-84. — *Scaptomyza (Scaptomyza) mimitantalia* n. sp. Holotype. — 79. Hypopygium in lateral view. — 80. Anal plate. — 81. Forceps and tip of epandrium, internal view. — 82. Hypandrium and associated organs in ventral view. — 83. *Id.*, in dorsal view. — 84. *Id.*, in lateral view.

Holotype♂: SAINT HELENA. *Centre :* Extr. sup. Rural Retreat Gut, 2000 ft, 11-21.IV.1967, sur *Senecio prenanthiflora* (M.R.A.C.).

Paratypes : Same data as holotype, allotype ♀ and 2♀♀. *Centre :* Cason's Gate, 2400-2600 ft, 3.IV.1967, 4♂♂, 1♀. High Central Ridge, Cabbage Tree Road, 2500 ft, III

and IV.1967, 2♂♂, 1♀. Teutonic Hall, 1500-1700 ft, V.1967, 1♀. Oakbank, 1600 ft, 14.I.1966, 1♂. High Peak, 2600 ft, 23.XI.1965, 1♂. Bishops Bridge (*A. Loveridge* coll.), 20.I.1962, 1♀ (to B.M.N.H.).

2 paratypes to Paris Museum, 2 paratypes to B.M.N.H.

Scaptomyza (Scaptomyza) mimitantalia n.sp. (fig. 79-90)

♂. *Head :* Frons wide, uniformly dusky red, orbits hardly distinct, only slightly lighter in colour. 1st and 3rd orbital bristles almost equal in length. 2nd orbital slender and 1/3 length of 1st orbital; inserted ajacent to 1st orbital but closer to the eye. Ocellar

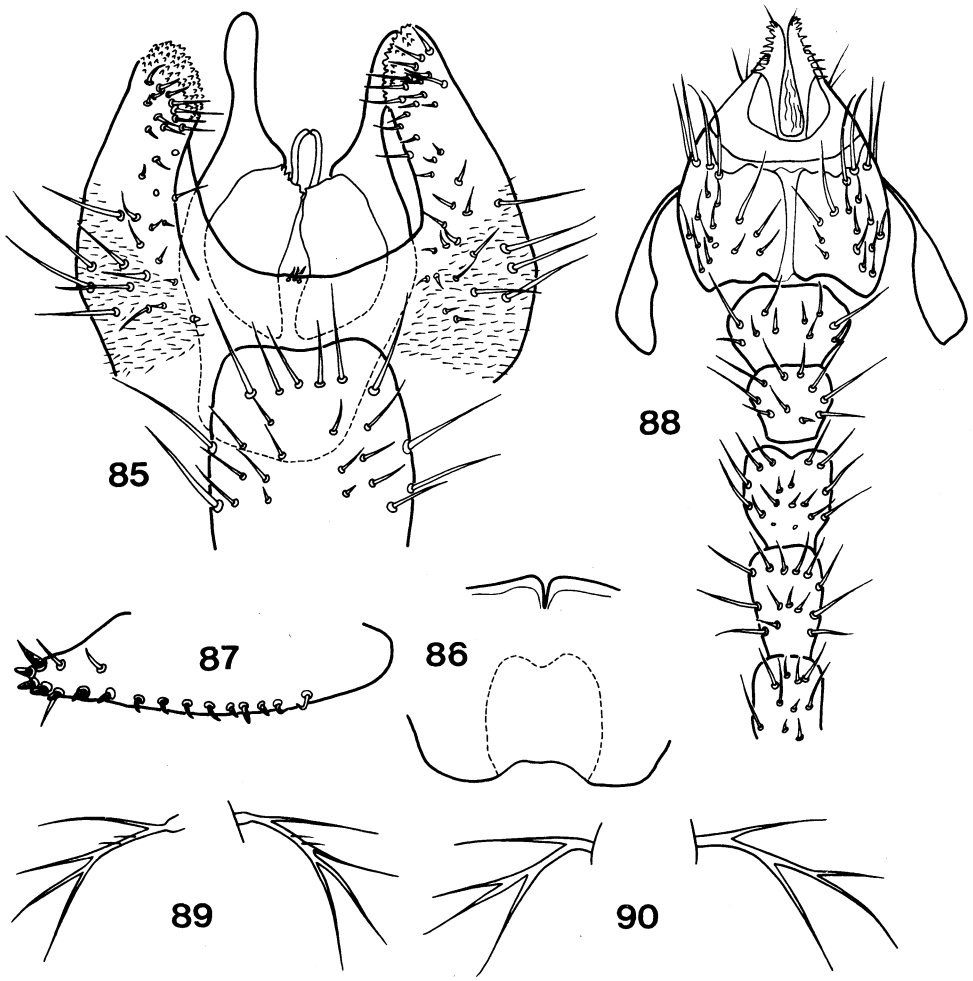


Fig. 85-90. — *Scaptomyza mimitantalia* n. sp. Holotype and allotype. — 85. Hypandrium and sternal expansion in ventral view. — 86. Bridge. — 87. Ovipositor. — 88. Tip of abdomen and sternites of the ♀, in ventral view. — 89. Arista of ♂. — 90. Arista of ♀.

triangle darker than frons, ocellar bristles long, erect and slightly divergent. Post-verticals well developed and just cruciate; inner verticals very long, equal in length to height of eye. Antennae with 2nd segment dusky red, with two small dorsal bristles; segment three, short and brown. Arista resembles that of s.g. *Tantalia,* the stalk is short, the terminal fork deep and with two dorsal hairs. Face reddish-brown, especially on carina which is well marked, narrow and long, widening towards the epistoma with

which it fuses. Clypeus brown and visible. Oral bristle large with an adjacent row of short hairs. Palpi yellow gradually tapering to the base, with an apical pair of bristles, the basal bristle half the length of the apical. Cheeks yellow and narrow. Eyes dark red.

Thorax : Mesonotum dusky reddish-yellow, darker on the posterior and lateral areas, an indistinct dark median vitta present. Four rows of acrostichals and two pairs of dorso-central bristles, the anterior pair closer to mesonotal suture than usual. Two humeral bristles, the inferior 3/4 the length of the superior. Scutellum similar in colour to the posterior mesonotum, triangular in shape with the anterior scutellars long and parallel, the posterior scutellars short and convergent. Scutellar index 1.6. Pleura darkened, two sternopleurals. Sterno-index : 0.60. Halteres reddish-yellow. Legs yellow, the last segment of the tarsi brown. A dorsal preapical bristle on all tibiae, an apical bristle on tibiae I and II. Anterior femur with a posterior sub-median bristle, a row of 2-3 bristles on the postero-ventral surface and a sub-apical bristle. Wings greyish, lightly tapered at the apex, veins reddish-brown, r4 and 5 and m (3rd and 4th longitudinal veins) slightly convergent. Distal costal break with two short setae. Wing indices : C : 3.7; 4V : 0.66; 5X : 1.6; 4C : 1.5; AC : 2.2. Fringe of third section of costa : 40 %.

Abdomen : First three tergites brown, the following yellow at the centre, brown, laterally. Sternites pale testaceous. Genitalia characterised by presence of two processes arising from the sternum.

♀. Similar to male except for arista of antenna in which the position of the aristal hairs is a little different. Ovipositor black, pointed and with a row of marginal spines. Pregenital tergite well developed, its lateral borders touching ventrally and displacing the last sternite.

Length of ♂ : 2.1 mm; ♀ : 2.5 mm.

Wing of ♂ : 2 mm; ♀ : 2.2 mm.

Holotype ♂ : SAINT HELENA. *Centre :* High Peak, 2400-2600 ft, 23-27.II.1967 (M.R.A.C.).

Paratypes : Allotype ♀, same data as holotype to M.R.A.C. *Centre :* High Central Ridge, Cabbage Tree Road, 2500 ft; III.1967, 1♂, to Paris Museum.

Subgen. **Lauxanomyza** nov.

Type-species : *Scaptomyza horaeoptera* n. sp.

This sub-genus is erected to include the species *S. horaeoptera* n. sp. which cannot be placed in any of the existing sub-genera of *Scaptomyza*. The absence of secondary forceps places it close to *Trogloscaptomyza* Frey, but the species of this sub-genus do not have any ventral hairs on the arista apart from that of the terminal fork and have a non sclerotised ovipositor. In possessing a very long inner vertical bristle it resembles *Alloscaptomyza* Hackman, but the form of the genitalia and shape of the head suggest that it is only distantly related.

The form of the epandrium with its posterior ventral elongation resembles that of the species of the sub-genus *Dentiscaptomyza* Takada. In the latter the prolongation is almost separated from the epandrium and in addition it is associated with secondary forceps which are lacking in *Lauxanomyza*.

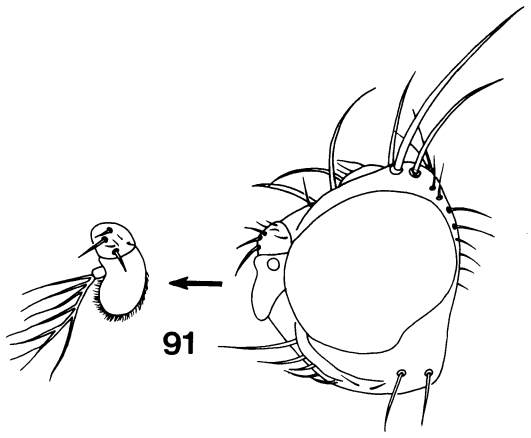
FREY (1927) described *Himantopyga scaptomyzina* noting in the description the similarity of this Lauxaniid with the genus *Scaptomyza*. In this present situation we have the reverse case, a *Scaptomyza* having the appearance of a Lauxaniid, *Noonamyia* Stuckenberg.

Lauxanomyza may be defined as follows : internal verticals longer than the height of the eyes, long axis of the latter oblique; a ventral hair on the arista in addition to the terminal fork; four rows of acrostichals, two pairs of dorso-central bristles; index of the scutellar bristles 1.1 approx.; two sternopleurals, sterno-index : 0.60 approx. Wings spotted, veins r4 and 5 and m (3rd and 4th longitudinal veins) divergent; epandrium with a ventral prolongation, no secondary forceps; ovipositor sclerotised.

Scaptomyza (Lauxanomyza) horaeoptera n. sp. (fig. 91-99)

From the Greek ωραιος = beautiful and πτερυξ = wing.

♂. *Head :* Nearly spherical, reddish-yellow. Frons wide, darker red on the vertex, with light silver dusting reaching almost to the base of the antennae. Ocellar triangle brown, the ocelli incolourous. Ocellar bristles long, black and divergent, in addition two pairs of short, weak setulae are present. Orbits well delimited, brown. Orbital bristles arise in the anterior half of the orbits. The 1st, orbital less than half the length of the 3rd which is equal to the diameter of the eye. 2nd orbital bristle inserted adjacent and outside to the 1st and is only half its length. Post-vertical bristles long and slightly cruciate. The inner verticals are very long, longer than the height of the head. 3rd antennal segment dirty yellow with a covering of relatively long hairs. 2nd segment reddish, with two dorsal bristles one longer than the segment. Arista with dorsal hairs straight and a single longer ventral hair in addition to the terminal fork. Face reddish with two black spots on top of the prominent epistoma. Carina slight. Clypeus not visible. One long oral bristle with an adjacent row of setulae. Palpi yellowish, narrowing to the base, apex with 3 apical bristles. Cheeks reddish, wide, equal in width to 1/4 height of eye. Eys pale red.



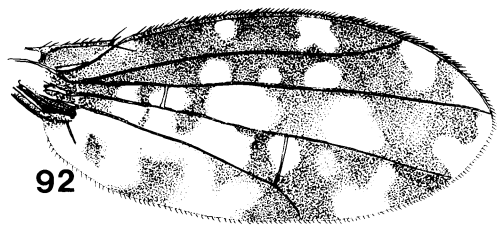


Fig. 91-92. — *Scaptomyza (Lauxanomyza) horaeoptera* n. sp. Paratype. — 91. Head in profile. — 92. Wing of ♂.

Thorax : Mesonotum yellowish with a pair of indistinct vittae along the lines of the dorso-centrals, and a pair of vittae, equally faint, along the transverse sutures between the *dcs* and the wing bases. The four vittae coalesce on the posterior margin of the

mesonotum. Light dusting on the anterior mesonotum. Two pairs of dorso-central bristles equal in length, with 4 rows of relatively long acrostichals between them. No prescutellar bristles. One humeral well developed. Scutellum brownish, especially apically. Post-scutellum brown. Anterior scutellar bristles convergent, posterior scutellars parallel or slightly divergent and nearly as long as the anterior scutellar bristles. Index : 1.1. Pleura pale yellow, with a wide blackish-brown band from the humerus to the base of the halteres. Two sternopleurals in addition to a row of five weak setulae. Sterno-index : 0.65. Halteres brown. Legs yellow, the last segment of the tarsi brownish. Dorsal preapical bristles on all tibiae, apical bristles on I and II. The apical

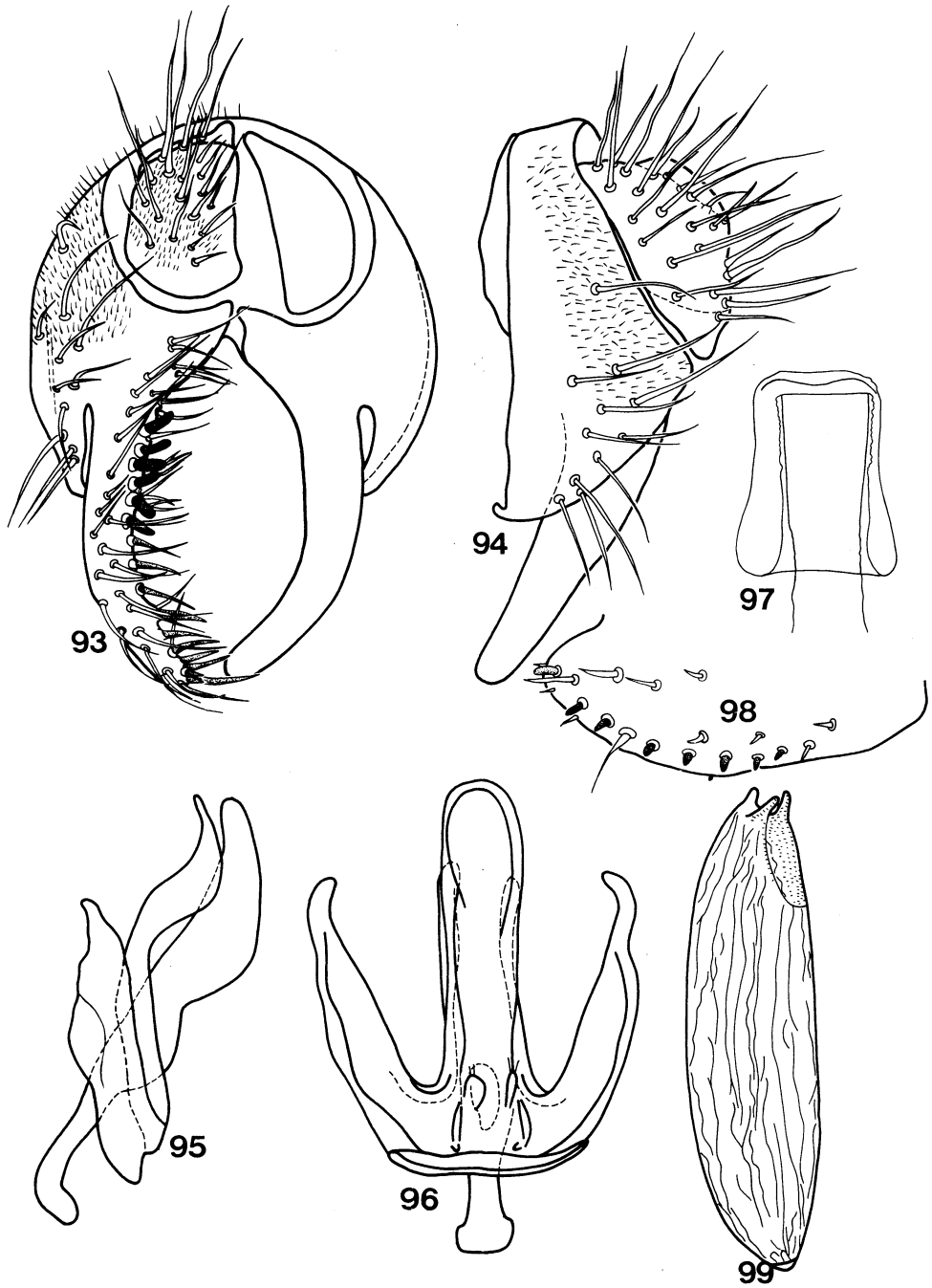


Fig. 93-99. — *Scaptomyza (Lauxanomyza) horaeoptera* n. sp. Paratype. — 93. Epandrium and anal plates in posterior view. — 94. *Id.*, in lateral view. — 95. Hypandrium and associated organs in lateral view. — 96. *Id.*, in ventral view. — 97. Spermatheca. — 98. Ovipositor. — 99. Egg.

and preapical bristles of the anterior tibiae, yellow. Anterior femur with a preapical and two rows of long bristles, one ventral, one posterior. Wings long, milky white marked with brown. Veins brown except for anal vein and cross-veins (r-m and m-cu) which are colourless. The r4 and 5 and m (3rd and 4th longitudinal veins) are divergent. Two setulae present on the distal costal break. Wing indices : C:2.56; 4V:1.38; 5X:0.87; 4C:0.95; AC:1.48. Fringe of the third section of the costa : 48 %.

Abdomen : Narrow, shining black. Genitalia black, epandrium with forceps well developed.

Length of body : 2.5 mm. Wing : 2.9 mm.

♀. Similar to male. 3rd segment of antenna brown, 2nd oral stronger, sternites yellow, anal plate and ovipositor light brown. Sclerotised ovipositor with a marginal row of obscure spines.

Internal and other characters : Spermatheca long, bell shaped, ventral receptacle very long forming very many circonvolutions. Egg with two small protuberances on either side of micropyle and longitudinal ornamentation.

Holotype♂: SAINT HELENA. *Centre :* Haute Fisher's Valley, 1700 ft, 11-13.XI.1965 (M.R.A.C.).

Paratypes : Allotype♀. SAINT HELENA. *Centre :* High Central Ridge, Cabbage Tree Road, 2500 ft, III.1967. High Central Ridge, 2300-2600 ft, 16.XI.1965 et II.1967, 1♂, 2♀♀. Cason's Gate, 2100 and 2400-2600 ft, 3.IV.1967, 2♂♂, 1♀. Teutonic Hall, 1500-1700 ft, V.1967, 1♂, 1♀. *Sud-Ouest :* Luffkins, 1700 ft, 15.I.1966, 1♀.

2 paratypes to Paris Museum, 2 paratypes to B.M.N.H.

Scaptomyza (Parascaptomyza) pallida Zetterstedt

S. pallida Zetterstedt, 1847 *(Drosophila),* Dipt. Scand., 6, p. 2571.

An abundant and widespread species in the northern temperate regions and in many places where it has been introduced. The most common species as represented in the collections made on St. Helena. Easily distinguished from the other *Scaptomyza* species on the island by the two rows of acrostichal setulae between the dorso-central bristles.

Material examined.

SAINT HELENA. *Centre :* Teutonic Hall, 1600 ft, U.V.-light, XII.1965 and 1-15.I.1966, 6♂♂, 9♀♀; same locality, 1500-1800 ft, 15-30.X.1965 and II.1967, 6♂♂, 4♀♀. Cason's Gate, 2400-2600 ft, 3.IV.1967, 1♀. *Nord :* Rupert's Valley, 13-21.V.1967, 3♂♂, 1♀. *Nord-Est :* East Longwood Plain, 1400 ft, 14.XI.1965, 1♀. *Est :* Basse Fisher's Valley, Bradley Ruins, 1000 ft, 14-19.XII.1965 and 6-13.I.1966, 6♂♂, 1♀. Pleasant Valley, Silver Hill, 1700 ft, 22.XI.1965, 3♂♂, 1♀. *South :* Sandy Bay, Blarney Bridge, 300 ft, 9.XII.1965, 5♂♂.

B.M.N.H. Hunts Gut, 7.VIII.1961 *(A. Loveridge),* 1♂, 3♀♀; 12.VIII.1961 *(A. Loveridge),* 1♂, 1♀.

AFFINITIES OF THE FAUNA

Drosophilid flies are apparently highly adaptable and very successful colonisers. In the geologically recent past where they have invaded young, isolated or basically

biologically unexploited islands they have undergone very rapid and extensive radiation. This is particularly the case in Hawaii where a very large fauna of over 650 species has developed (HARDY, *in* CARSON *et al.*, 1970:450).

Although by no means large, the Drosophilid fauna of St. Helena compares favourably with other families of flies found on this isolated island. The present fauna of St. Helena has been derived from three sources and is comprised of the cosmopolitan, Ethiopian and endemic elements. The cosmopolitain element consists of *Drosophila repleta* Wollaston, *D. immigrans* Sturtevant, *D. simulans* Sturtevant, and *Scaptomyza pallida* Zetterstedt, and is world-wide in distribution and has most probably been introduced to St. Helena by man. However, they are not all strictly synanthropic flies in the manner of many Muscids and Calliphorid flies, and for this reason the categories used by FREY (1954) and followed by OLDROYD (1958) have not been employed here. Only *D. simulans,* the "banana fly" was recorded by FREY (1954:33) from Tristan da Cunha.

The endemic element is composed only of *Scaptomyza* species, and includes *S. santahelenica, S. mimitantalia* and *S. horaeoptera,* the latter species being sufficiently distinct to warrant the erection of a new sub-genus, *Lauxanomyza.* The absence of a natural *Drosophila* fauna may be due to the destruction of the woodland flora on the island. It is a recorded fact that St. Helena was covered in woodland and forest before its colonisation by man. The predominantly grassland species of *Scaptomyza* would have been only marginally affected by the deforestation. Tristan da Cunha carries an endemic *Scaptomyza* fauna of nine recorded species, eight of which were originally described by FREY *(loc. cit)* into the genera *Parascaptomyza* and *Tristanomyia.* An additional endemic species *Scaptomyza freyi* was described by HACKMAN in 1959 from Nightingale in the Tristan Island group. The single species of *Drosophila* described by FREY from Tristan da Cunha, as endemic, *D. punctatonervosa,* is in fact, also recorded from the mainland of Africa (see below). OLDROYD (1958) recorded *Scaptomyza altissima* (Frey) and *S. frustulifera* (Frey) as their original combinations, from Gough Island.

Drosophila punctatonervosa Frey and the two *Zaprionus* species, *Z. tuberculosus* Malloch and *Z. vittiger* Coquillett, represent the Ethiopian element on St. Helena. The *Zaprionus* species are widespread on the African mainland although both were described from specimens from the Southern region. *D. punctatonervosa* Frey, originally described from Tristan da Cunha was also described by DUDA (1940) from Natal as *D. poeciloptera* (see the taxonomic section for an explanation of the involved synonymy) but surprisingly not recorded since.

All three species have most probably been recently introduced to St. Helena by man. Until recently St. Helena was often the first port-of-call and a coaling station for ships sailing from South Africa. St. Helena still has considerable commercial contact with Southern Africa.

SUMMARY

Ten species in three genera are recorded from St. Helena for the first time. Three species, *Scaptomyza santahelenica, S. mimitantalia* and *S. horaeoptera* are described as new, and a new sub-genus *Lauxanomyza* is erected to contain one of them. The composition and affinities of the fauna are briefly discussed.

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