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Dr. Kotagawa
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SECOND SERIES—VOLUME XVI.
ZOOLOGY.

THE PERCY SLADEN TRUST EXPEDITION
TO
THE INDIAN OCEAN IN 1905,
UNDER THE LEADERSHIP OF
MR J. STANLEY GARDINER, M.A.
VOL. V.

Lamb. C.G.



LONDON:

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1913—1914.

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REPORTS

OF THE

PERCY SLADEN TRUST EXPEDITION

TO

THE INDIAN OCEAN IN 1905,

UNDER THE LEADERSHIP OF

Mr J. STANLEY GARDINER, M.A.

VOLUME THE FIFTH

[BEING THE SIXTEENTH VOLUME OF THE SECOND SERIES, ZOOLOGY, OF THE
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No. XV.—DIPTERA: HETERONEURIDÆ, ORTALIDÆ, TRYPETIDÆ,
SEPSIDÆ, MICROPEZIDÆ, DROSOPHILIDÆ, GEOMYZIDÆ, MILICHIDÆ.

By C. G. LAMB, M.A., B.Sc., *Clare College, Cambridge.*

(COMMUNICATED BY PROFESSOR J. STANLEY GARDINER, M.A., F.R.S., F.I.S.)

(Plates 19—21 and 48 Text-figures.)

Read 4th March, 1914.

THIS paper concludes the description of the Acalyptrate muscids of the Seychelles expedition. Among the families treated of there are several forms which, in the rather fluid state of the classification, must be regarded as possibly needing relegation to other or even to new groupings when the world forms are more fully known. Hence it has been thought desirable to refer fairly fully to the chaetotaxy even in individuals which are placed in genera already founded. To save space the following abbreviations are used:

f. o.	fronto-orbital bristles.	prescut.	prescutellar bristles.
i. v.	inner vertical bristles.	p. a.	post-alar bristles.
o. v.	outer vertical bristles.	s. a.	supra-alar bristles.
p. v.	post-vertical bristles.	i. a.	infra-alar bristles.
oc.	ocellar bristles.	st. p.	sternopleural bristles.
post orb.	the row of post-orbital bristles.	mesopl.	mesopleural bristles.
d. c.	dorso-central bristles.	acr.	the acrostichal row.
h.	humeral bristles.	div.	divergent.
n. p.	the two notopleural bristles.	conv.	convergent.
presut.	presutural bristles.		

In describing the head a systematic method has been adopted: the insect is adjusted in the field of the binocular microscope by means of a gimbal-like stand which enables all possible rotations and translations to be made. It is first adjusted to view the vertex perpendicularly, this is called the Top View; it is then twisted about to view the face perpendicularly, and this is called the Front View; finally it is adjusted to look at the side of the head, and this is the Side View. These views correspond to the Plan and Elevations of the engineer's drawings. The structures seen in each view are then described in detail and in order. This method obviates the troublesome process of continually shifting the position of the insect when comparing it with a given description.

The detailed figures in the plates have been reduced from large scale *camera lucida* drawings; the insect was in all cases carefully set in the proper plane by means of sighting the orbital bristles and the vibrissæ etc. till they just came over one another. Most of the drawings are thus exact views of the individual insect's head; in some cases the insertions only of the bristles are shown, giving a more diagrammatic view.

Most of the wings were photographed from dry slide specimens; a large scale was adopted from which the figures were reduced: in the case of a unique specimen, or a very small set in which one specimen could not be spared for the mount, a large scale *camera lucida* drawing was made as for the heads.

Since nearly every species has its wings figured, no description of the venation is (in general) given in the text. In some cases the wings of species that have already been described by others are figured where no such figure exists in the original papers².

Heteroneuridæ.

HETEROMERINGIA Czerny, Wien. Ent. Zeit., xxii. (1903), p. 72.

1. *Heteromeria plumicornis*, n. sp. (Fig. 1 and Plate 19, fig. 1).

This species is a very pale form, and from the description and figures of *Hendelia Beckeri*, Cz. (Czerny, t. c., p. 84 and Taf. 2, figs. 1, 2, 3) must have a considerable superficial resemblance to that species.

Head. Eyes bare. Top view:—frons entirely orange and shining, paler towards the front: the small central area between the three ocelli is shiny black. Hind margin somewhat concave. Chetotaxy normal; front f. o. b. touching at tip; next pair parallel; hind pair somewhat divergent; i. v. parallel; o. v. divergent; p. v. finer, long, much divergent, inserted just on vertex very close together; cc. fine, divergent, inserted between front and side ocelli; post oc. row longest just at back of head. All the bristles somewhat orange. Front view:—antennæ well separated at base, face about square; usual two convergent vibrissæ with minute following row: face all pale yellow, slightly hollowed. Side view (Plate 19, fig. 1):—likewise all yellow in colour as are the palpi and the thickened hairy tongue. Antennæ yellow, except that the upper basal part of third joint is black: the second joint has an elegant calyx-like form and a well-marked spine; the arista is very stout, black, and profusely haired all round with stout black hairs.

Thorax. Orange, shining, covered with fine bristles, and with two brown stripes extending from near the front to the scutellum. Pleurae shining, darkened from below humeri to abdomen, scutellum a little darkened laterally on the disk. Two d. c. b. on each side along the inner margins of the brown stripes; one h., two n. p., one i. a., one s. a. bristle. Scutellum with two small dorsal bristles and two large subparallel terminal ones.

Wings, as Fig. 1, glassy with brown veins; a little darkened at tips. Halteres orange. Legs, pale yellow, all the tibiae and tarsi somewhat infuscate. Front femora with a regular row of spines on lower face, middle femora with a similar strong row beneath;

* A first set of the material, including the Types of all new genera and species, will be placed in the British Museum. A second set will be retained in the Cambridge University Museum.

the pre-apical tibial bristles are small except on the middle pair of legs which have also a stout terminal tibial spine; the legs all clothed with small black bristles.

Abdomen. Dark shining brown, covered with long bristly yellowish hairs. The male has a well-marked knobbed hypopygium with the usual pair of scale-like appendages.

Size, including antennæ, 2.8 mm.; wing, 2.1 mm.

Localities. Seychelles. Silhouette: Mare aux Cochons, IX. 1908; low coconut-planted country near Pointe Étienne, 17. IX. 1908. Mahé: Anonyme Island, I. 1909.



Fig. 1. *Heteromeringia plumicornis*, n. sp. $\times 35$.

2. *Heteromeringia nigrifrons*, n. sp. (Fig. 2 and Pl. 19, fig. 2).

This is a black somewhat shining species and is more like the normal forms of the genus than is the last one.

Head. Eyes bare. Top view:—hind margin distinctly concave; frons uniformly and entirely shining black; chaetotaxy normal; front f. o. b. touching, next two pairs parallel; i. v. converging; o. v. fairly divergent; p. v. very divergent, inserted just on vertex between hind ocelli; these bristles are black; oc. h. very minute and pale. Front view:—antennæ nearly touching at base; vibrissæ touching, a row of fine following bristles; face all yellow-orange. Side view (Plate 19, fig. 2):—jowls orange in front getting blacker to hind of head which is shining black behind the eyes. Post-ocular bristles extending along top of eye. Hind jowls with bristles, a few long ones on hind margin of head. Antennæ all clear orange yellow, except the flagellum of the arista which is darkened; the 2nd joint has one upper and two lower bristles and a row of minute marginal bristles; the pubescence of the arista follows the aristal colour and is normal. The finely bristled palpi are much flattened in the horizontal plane; the distal third is orange the rest black; tongue orange.

Thorax. Entirely black, the dorsum and scutellum very slightly roughened, pleura and metanotum very shining. The chaetotaxy is normal: two principal d. c. b., a third rather smaller just in front of the front pair, h., two n. p., strong s. a. and p. a. Dorsum covered with fine bristles, except behind. Scutellum with two long terminal h., and two small dorsal near them. A stout mes. p. and st. p. h. Legs yellow except the end of the front femora, all the front tibiae and tarsi, and the hind tibiae (except tips) which are black; all the femora with rows of bristles: front femora with a close set lower row and a row of 4 or 5 longer ones behind; middle femora with two rows below, front

short and stout, back long and stout, hind femora with lower row on distal third; very stout spur on middle tibia. Legs all bristly; front tarsi distinctly flattened.

Wings, as Fig. 2, slightly infusate, especially round the distal $\frac{2}{3}$ ths of the 2nd vein. Halteres with infusate heads and yellow stalks.

Abdomen similar to the thorax, clothed with black bristly hairs, a small pair of scale-like appendages are visible, somewhat remote (vertically) from the tip.

Males only were present.

Size 3 mm.; wing, $2\frac{1}{2}$ mm.

Localities. Seychelles. Silhouette: Mare aux Cochons plateau, over 1000 feet, IX. 1908. Mahé: Cascade Estate, ca. 800 feet, 1908—9.

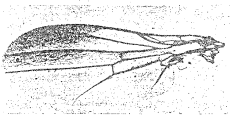


Fig. 2. *Heteromeria nigricornis*, n. sp. $\times 30$.

3. *Heteromeria nigricornis*, n. sp.

Two specimens, one σ and one τ , were present, which were practically identical in their principal structural details with the previous species. The differences in colour are, however, very marked, and in default of evidence of dimorphism in the males it is thought best to describe them as a distinct species, at least provisionally.

σ Head. The face is entirely black instead of yellow, so that there is no pale colour at all on any part of the head, except that the lower eye-margins are slightly orange in some lights. The tip of the third antennal joint is blackened: only the extreme tip of the palpi is orange.

Legs. The whole of the front femora, except the extreme tips, is black: the mid and hind femora have, basally, a slightly darkened ring.

The τ has the same differences in the head colours but the front femora are only blackened at the tip, and the others have no rings.

Size as last species.

Locality. Seychelles. Mahé: Cascade Estate, 800 feet or over, 1908—9.

ALLOMETOPON Kertész, Ann. Mus. Nat. Hung., iv. (1906), p. 320.

A single specimen, in a rather battered condition, can be referred with practical certainty to this genus. The genus was described from a New Guinea species.

4. *Allometopon flavum*, n. sp. (Fig. 3 and Plate 19, fig. 3).

The species is entirely shining yellow except for slightly browner lines on the thorax, brownish tarsi, and the deep black third antennal joint and arista. The bristles are all distinctly yellow or brownish.

The chaetotaxy agrees fairly with Kertész's generic description, except that the ocellar bristles are not strikingly long.

Head. Eyes bare. Top view:—frons orange, finely punctulate, darker and smoother on vertex round ocellar area: ocellar patch shining, eye-margin rather shining. Four f. o. b., all subparallel; nearly parallel i. v., divergent o. v., all these bristles arise from small papillæ: p. v. small, divergent, inserted just behind middle of hind ocelli; oc. small, divergent, inserted just on ocellar patch. The crossed bristles on front of frons are comparatively stout.

In front view the antennæ are seen to touch at base: the face is very narrow and short. In this view the stout subcylindrical yellow palpi are easily seen. Side view (Plate 19, fig. 3):—the antennæ much as Kertész's description and figure i.e., p. 331. The orange 2nd joint is beautifully calyx-like, with bordering spines, one at the top being very long. The rounded rather flattened black third joint has a long blackish, distinctly pubescent arista. A stout vibrissa, followed by a row of marginal mouth bristles; orange jaws, bristly behind, with one very long yellow bristle quite behind: six large post-orbit. bristles on top.



Fig. 3. *Allometopon flavum*, n. sp. $\times 20$.

Thorax. Shining orange, with three narrow brown-orange stripes, evanescent behind: surface all covered with small bristles. The chaetotaxy agrees fairly with Kertész's description: two hind d. e. b., a much smaller one in front; two prescut.; h. and n. p. are visible. The rounded orange scutellum has very fine pale pubescence: divergent terminal bristles, basal side bristles (scars only visible), 4 discal (on one side an extra one in the actual specimen).

Wings, Fig. 3: yellowish with brown veins; costa with strong double rowed bristles.

Halters, orange.

Legs. The front femora are strongly spined beneath from apex to base: the middle femora are also strongly spined in a row behind, the spines becoming progressively shorter from base to apex; the hind femora are unarmed; the middle tibia has two very stout black end-spurs.

Abdomen. Orange with rows of short discal, and long marginal bristles.

Size, $3\frac{1}{2}$ mm.; wing, $3\frac{1}{2}$ mm.

Locality. Seychelles. Praslin; Côtés d'Or Estate, XI. 1908.

Ortalidæ.

This family has been revised recently by Dr Hendel, and in the course of his work the material from the British Museum was placed at his disposal; this included several new species from the Seychelles. Only one further undescribed species is therefore dealt with here, namely, a member of the genus *Acrosticta* (Loew): this genus is an interesting occurrence, since it has hitherto been known only from North and South America, with the exception that one species (*A. pallipes* Grinshaw) is common both to Bolivia and Peru and Hawaii (see Hendel, Wien. Ent. Zeit., xxviii. (1909), p. 249).

Platystominiæ.

PLAGIOSTENOPTERINA Hendel, Wien. Ent. Zeit., xxxi. (1912), p. 3.

5. *Plagiostenopterina ruficeps* Hendel, Wien. Ent. Zeit., xxxi. (1912), p. 3.
Wing, Fig. 4.

9 specimens.



Fig. 4. *Plagiostenopterina ruficeps*, Hend. $\times 15$.

Localities. Seychelles: Silhouette, coast (La Passe), 1908; Mahé, VII. 1908 (Long Island). Aldabra: 1908—9 (Fryer). Assumption: 1909 (R. P. Dupont).

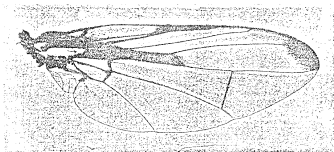


Fig. 5. *Plagiostenopterina cyanosoma*, Hend. $\times 15$.

6. *Plagiostenopterina cyanosoma* Hendel, Wien. Ent. Zeit., xxxi. (1912), p. 4. Wing, Fig. 5.

13 specimens.

Localities. Seychelles: Silhouette, plateau of Mare aux Cochons, over 1000 feet, IX. 1908; Mahé; Cascade Estate, 800—1500 feet, 1908—9; Forêt Noire district, 1908; slopes of Morne Seychellois, over 1500 feet, 4. II. 1909; 1907 (Thomasset); 1905. Aldabra: 1907 (Thomasset).

7. *Plagiostenopterina submetallica* Loew, Bericht. Akad. Berl., 1852, 660. 29. Wing, Fig. 6.

Locality. Seychelles. Mahé: Cascade Estate, 800—1500 feet, 1908—9.

Also known from various parts of Africa.



Fig. 6. *Plagiostenopterina submetallica*, Loew, $\times 15$.

SCHOLASTES Loew, Mon. Dipt. N. Amer., vol. iii. (1873), p. 38.

8. *Scholastes cinctus* Guérin, Voyage Coq., Zool., 299.

Localities. Seychelles: Mahé; Cascade Estate, ca. 800 feet, 1908—9; Long Island (near sea-level), VII. 1908. Chagos Islands: Salomon Atoll and Diego Garcia, 1905.

9. *Scholastes vicarius* Hendel, Wien. Ent. Zeit., xxxi. (1912), p. 4.

Locality. Seychelles. Mahé: Anonyme Island (near sea-level), I. 1909.

PARARDELIO Hendel, Wien. Ent. Zeit., xxxi. (1912), p. 1.

10. *Parardelio pilosa* Hendel, l.c., p. 2. Wing, Fig. 7.



Fig. 7. *Parardelio pilosa*, Hend. $\times 20$.

Locality. Seychelles. Mahé: 1906, a number of specimens (Thomasset); from near Morne Blanc, X.—XI. 1908; Cascade Estate, 800—1500 feet, 1908—9.

Ulidinae.

PSEUDEUXESTA Heudel, *Genera Insectorum*, 106, p. 30.

11. *Pseudeuxesta prima* Osten-Sacken, *Ann. Mus. Gen.*, xvi. p. 470. Described from Celebes and New Guinea. Wing, Fig. 8.

Localities. Seychelles. Mahé: from beach, Long Island, VII. 1908, 10 specimens; from near Morne Blanc, X.—XI. 1908, 1 specimen.

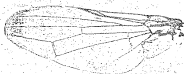


Fig. 8. *Pseudeuxesta prima*, Ost. Sack. $\times 15$.

ACROSTICTA Loew, Berlin. *Ent. Zeitschr.*, xi. (1867), p. 293.

See Heudel, *Wien. Ent. Zeit.*, xxviii. (1909), p. 247.

12. *Acrosticta exul*, n. sp. (Fig. 9 and Plate 19, figs. 4, 5).

This species approximates to *A. scrobiculata* Loew.

Head. Eyes bare. Top view:—hind boundary flat; vertex rather shining greenish-black, finely punctate; broad triangular eye-margins the same; frons with parallel sides, from tip of ocelli to forehead rather shining brownish-red, paler in front. The forward eye-margins, beyond f. o. b., are narrowly silvery. Frons pitted all over, except just in front of ocelli: each pit carries a fine bristly hair, the centre ones converging. Front eye-margins bordered by a regular outward bent row of such bristles. The bristles on paler part in front bend forwards, the others are irregularly oriented.

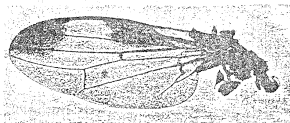


Fig. 9. *Acrosticta exul*, n. sp. $\times 20$.

There are two upper f. o. b. bristles on the shiny upper eye-margins, equal sized verticals, i. v. bent towards one another, the o. v. outwards; divergent oc. between front and back ocelli, divergent p. v. well below vertex; a double row of post-ocular bristles on upper half of the hind eye-margins.

Front view (Plate 19, fig. 4):—antennæ well separate at base, face orange in that place, eye-margins well marked, densely pollinated: upper lip shining greenish-black, as is the protuberant clypeus. Side view (Plate 19, fig. 5):—face deeply excavate, lower edge of broad lower eye-margins with a row of bristles: the bristly hind jowls and the back of head all grey pollinated. The bristly tongue is retracted in the specimen, but it can be seen that the palpi are orange: there is a hind lobe to the tongue which is chitinated like the clypeus and is also greenish-black.

The antennæ are darkish orange, the second joint singly spined above, the almost bare flagellum of the arista alone being blackish.

Thorax. Somewhat shining greenish-black with regular rows of fine hairs. The pleura are shining bluish-black, very slightly scrobiculate. The specimens are rather damaged, but the following bristles can be made out: hind d. c., hum., n. p., 2 s. a., p. a. Scutellum bare, subtriangular, coloured as thorax; divergent terminal and smaller basal bristles.

Wings, Fig. 9, slightly suffused, with brown veins, darkened at tip, on stigma and below it to 2nd vein. Halteres, knobs yellow, stalks darkened at the base. Legs entirely dark reddish-black except about the distal third of the femora and the knees which are orange, the under surface of the femora (when legs are stretched horizontally) shows signs of a purplish chitination. The legs are covered with small spines, and on the front femora beneath the spines are longer and form a regular row. All the femora (in the dried specimens) are remarkably flattened sideways. There is a strong black spine at the end of the middle tibia.

Abdomen and metasternum coloured as the thorax, the 2nd and 3rd segments making up most of the length, the surface with sparsely scattered black bristles.

Two ♀.

Size, $3\frac{1}{2}$ mm.; wing, $3\frac{1}{4}$ mm.

Locality. Seychelles. Mahé: from near Morne Blanc, X.—XI. 1908.

CHRYSONOMYZA Fallen, Scenop. i. (1817).

13. *Chrysomya aenea* Fabr., Ent. Syst., iv. (1794), p. 335; Hendel, Zool. Anz., xxxiv. (1909), p. 614.

Localities. Seychelles. Mahé: Cascade Estate, ca. 800 feet, 1908—9: very common in the plantations, sitting on leaves of bushes, &c.

14. *Chrysomya azurea* Hendel, Wien. Ent. Zeit., xxxi. (1912), p. 5.

Localities. Seychelles: Silhouette; from near Mont Pot-à-eau, ca. 1500 feet, and Mare aux Cochons plateau, over 1000 feet, VIII.—IX. 1908: Mahé; from near sea-level (Long Island), VII. 1908; Forêt Noire district, X.—XI. 1908; Cascade Estate, ca. 800 feet, 1908—9. Chagos Islands; Salomon Atoll, 1905.

In the Ann. Soc. Ent. France, lxiv. (1895), p. 366, the species *Chrysomya demandata* Macq. is recorded by Giglio-Tos.

Trypetidae.

CERATITIS MacLeay, Zool. Journal, xvi. (1829), p. 462.

15. *Ceratitis capitata* Wied., Anal. Entom. (1824), 55 (*Trypeta*).

Localities. Seychelles: Mahé; Cascade Estate, and Mare aux Cochons district (1000 feet or over), 1908—9; Dennis Island, VIII. 1908: Praslin, a number of specimens from an introduced creeper (*Passiflora foetida*), 30. XI. 1908. Amirantes: Poivre Island, 10. X. 1905, ♂ and ♀ in coitu.

OXYNA Robineau-Desvoidy, Myodaires, 755, iii. (1830).

16. *Oxya sororcula* Wied., Ausserour. Zweifl. Ins., ii. (1830), 509. 52.

Described by Wollaston from Madeira as *Ensina vacillans*, Ins. Dipt. Mad., A.M.N.H., i. (1858), 117.

Localities. Seychelles. Mahé: Port Victoria, from grass in Botanic Gardens, XII. 1908; Cascade Estate, ca. 800 feet, 1908—9; country above Port Glaud, XI. 1908; Mare aux Cochons district, 1000 feet or more, 1909. Silhouette: plateau of Mare aux Cochons, and coconut-planted country near coast (Pointe Étienne), IX. 1908.

ACIDIA Robineau-Desvoidy, Myodaires, 720. 14 (1830).

17. *Acidia seychellensis*, n. sp. (Fig. 10 and Plate 19, fig. 6).



Fig. 10. *Acidia seychellensis*, n. sp. × 20.

A single female specimen of this genus was collected; generically it agrees well with the British species but the eyes occupy a little more of the side of the head.

Head. Eyes with a very few almost invisible hairs. Top view:—frons slightly widening from vertex to forehead, chestnut brown, slightly shining, the short strips on which upper f. o. stand and the black ocellar area together with a small depressed triangle in front of it are quite shining. The duller part is very minutely shagreened and has scattered tiny hairs in front. Three pairs crossed front f. o., the corresponding absolute eye-margins with a row of tiny hairs along them; two pairs parallel but backward-bent upper f. o. Long slightly conv. i. v. just at eye-angle on vertex; div. o. v. just on hind eye-margin—roughly forming a triangle with these is a small bristle behind the head: in this view the long post-orb. row can be seen running up to the

outer v. b. The p. v. parallel and rather bent backwards, inserted on the sloping back of vertex, the distance between each and the next i. v. is the same. Oc. fine, subparallel, inserted each side of the large front ocellus. Front view:—face brown, same width as frons to just below 2nd antennal joint, then widening uniformly to jaws. The lunular crescentic furrow continued round and demarcating eye-margin from face. A very shallow broad triangular keel forms two shallow foveæ. Antennæ almost touching at base, divergent. Side view (Plate 19, fig. 6):—antennæ orange, the 2nd joint is very bristly inside, outside smooth, neat bordering row of bristles below, a spine about midway above; 3rd joint long, straight upper and curved lower profile; arista with pale pubescent lower joints, darker flagellum with short hairs all round in no definite rows. The narrow front jaws with short bristle below, orange; hind ones deeper, universally bristly with one long spine: hind head below black and bristly. Palpi flattened laterally, very bristly below, orange; tongue the same. The shining clypeus is visible.

Thorax. Dorsum, pleura, scutellum and metanotum all shining black, the dorsum covered with fine hairs: the chaetotaxy as *Acidia cognita* though possibly not relatively so strongly developed: there is a pair of d. c. rather forward, being roughly in a line with wings; long prescut., h., n. p., prescut., a large post-a.; the pleura has fine sparse bristles, but the pinning renders the macrochetes doubtful though a sterno-pl. can be seen. Scutellum a blunt shallow triangle, the terminal bristles crossed at tip, the large side pair ending off nearly level with them.

Wings, as Fig. 10, with brown-black coloured marks, 1st and 3rd veins bristly above.

Halters with black knobs and orange stalks.

Legs. All the coxæ and femora black; the rest yellow-orange, except that the basal half of the hind tibia is blackened. Front femora with the two hind rows of spines and the long lower row: middle with long spinous hairs; hind with similar hairs, more conspicuous below at base, and one or two at tip on top. Hind tibiæ with longish spiny hairs, a somewhat regular row dorsally.

Abdomen. Black, pointed, with adpressed hairs and long marginal bristles, ovipositor not extruded.

Size, 4 mm.; wing, 3½ mm.

Locality. Seychelles. Silhouette: plateau of Mare aux Cochons, IX. 1908.

18. *Acidia* (?) *ocellata*, n. sp. (Fig. 11 and Plate 19, figs. 7, 8).

There is a single specimen of a fine Trypetid from Marie Anne Island which does not seem to agree well in its characters with any of the well-known genera. Its general affinities seem nearest *Acidia*, and hence it is provisionally referred to that genus pending a revision of the whole family. The description will therefore be given in full.

Head. Eyes under high power, with a very few fine scattered hairs: frons widening a little from back to front. Top view:—frons, vertex (as well as hind head) entirely pale orange, dull except for the ocellar area and the upper and lower eye-margins, which are shining: the latter have about 3 irregular rows of fine bristles. On them stand the three lower crossed f. o. pairs, the middle one being crossed almost

half-way; the two upper f. o. pairs are sub-parallel and bent backward. V. b. on distinct pits, the i. v. very long, sub-parallel and bent a little backward, inserted just behind upper eye angle, the o. v. long and div., inserted in a line with post-orb. row, a little remote from eye: the latter row is seen to be stout and consists of bristles alternately longer and shorter. Well below on back of head is a smaller bristle forming a triangle with the v. b.; the p. v. are shortish, stout, and well below vertex, they diverge. The oc. are stout, div. and are inserted one each side of the front ocellus. There are small scattered bristles on the frons. The lunular arch is demarcated from the frons by a red shallow suture. Front view (Plate 19, fig. 7):—much as last species, but the central "keel" is merely a broader triangular swelling merging below with the lip. Side view (Plate 19, fig. 8):—the pale orange antennae have the second joint bristled inside, bare outside, with marginal bristle row there and below, a long spine on base at tip; third joint parallel-sided; the arista quite bare under a high power. The jowls are pale orange, hairy and bristly below with a long stout spine just behind lowest point of eye. The head immediately behind eyes is bare, but bristly behind. Palpi orange, flattened, bristly below. The tongue is retracted in the specimen.

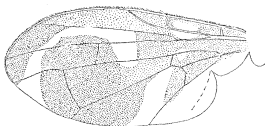


Fig. 11. *Acidia (f) ocellata*, n. sp. $\times 13$.

Note. The specimen has an extra f. o. b. on the left side in front of the normal front bristle.

Thorax. Orange, and covered with very many irregularly arranged dorsal bristles; the pleurae, &c. yellow. A pair of d. c. further behind than last species, large prescut., very strong h., n. p., presut. low down, three strong alar (two on edge of disc, one in line with prescut.). Scutellum with strong basal bristles near angle, the tenninal pair is broken off, metanotum yellow-orange. There is a strong st. pl. br.

Wings, Fig. 11. The striking feature about the wings, as seen without a lens, is the two large blackish ocelli occupying a large part of the wing, and bordered almost all round by a whitish border; the rest of the wing is suffused with honey coloured pigment, which borders the costa and forms a rough W-shaped mark behind the black spot. Under the microscope the costa is seen to be very bristly; a strong spur occurs at the breach by the auxiliary branch; the 1st vein is stoutly bristled, as is the third from its junction with the second to a point about $\frac{2}{3}$ the distance between the cross vein and the end. The anal cell is well pointed. The small calypters are beautifully bordered with dark margins and silky hairs. The whole hind wing-margin

is also very neatly ciliated in black. Halteres orange. Legs all orange: front femora with the usual two back rows of bristles and a very stout row of 6 bristles below; the coxæ have two very stout spines and a few others: tibiae spurred. The middle femora are hairy; the tibiae have a row of 5 stout though comparatively strong spines in the middle part (somewhat nearer base) on tip, a crown of orange spines with one excessively strong black one below; all the tarsal joints have the curious stout spines at the basal sides of each joint that are found in *A. casio* (Harris). The hind femora have 3 or 4 stout spines on the apex in front, tibiae with a central row of some 7 spines in front: the long 1st tarsal joint has beautiful golden hairs on it: each joint has two basal spines, smaller than those on the middle legs.

Abdomen. Orange at base merging to black towards the end of 2nd segment: 2nd segment very long, next two about equal, last about as long as previous two; triangular in profile. The globular hypopygium is orange: it is complex, and in profile can be seen a pair of upper scales and a pair of lower more pointed ones.

The last segment of the abdomen bears a border of very strong downward pointing spines; the rest of the abdomen is covered with short bristly orange hairs, the marginal ones being scarcely longer.

Size, about 7 mm.; wing, about $6\frac{1}{2}$ mm.

Locality. Seychelles. Marie Anne Island, from forest, 2. XII. 1908.

TEPHRITIS Latreille, Hist. Nat. Crust. Ins., xiv. (1804), 389.

19. *Tephritis aldabrensis*, n. sp. (Fig. 12 and Plate 19, fig. 9).

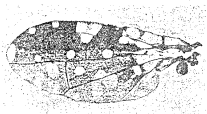


Fig. 12. *Tephritis aldabrensis*, n. sp. $\times 20$.

Head. Eyes bare. Top view:—frons orange-yellow, rather shining but minutely granulate: margins and ocellar area and vertex a little greyer. Lunule demarcated by a red arc. Frons quite parallel-sided: in this view the 1st and 2nd joints of antenna are seen to be very bristly, the former with 3 or 4 longish pale bristles, the latter with many small black ones, chaetotaxy normal, viz. 3 pairs rather con. front f. o., two pairs parallel and backwardly bent hind f. o., the pair nearer vertex being smaller and crossing the very stout parallel upright i. v.; o. v. smaller, white, p. v. the same, parallel and well down head; between the o. v. and p. v. is another similar bristle, and these bristles (viz. o. v., p. v., extra pair) are continuous with the very stout post orbital row (extending half-way down eyes) and like them are white.

The oc. are very long and arched, div. and inserted one each side of front ocellus. There are practically no tiny bristles on the head. Front view:—face yellowish-white, no foveae or keel; antennae orange, the overlap of 2nd joint swollen inside, the 3rd joint long, oval and rounded at tip, the arista with pale base and darker flagellum, the latter just perceptibly pubescent. The antennae are just separated at the base by a narrow projection from the lunule over the antennae. Side view (Plate 19, fig. 9):—mouth margin projecting somewhat, the sides bristly as is edge of jowls and the swollen hind jowls; the latter have a long bristle on them. The post-orb. row can be seen to have small bristles between the large ones. Palpi flattened, pale yellow and hairy.

Thorax. Ground colour dark and covered with grey pollen in a good specimen, and also dorsally with tiny white bristles, which are, however, long just over the scutellum, chaetotaxy normal, being all very long: two d. a., one just behind cross suture, one a little further than half-way from front pair to end of thorax. A very stout bristle and a clump of small stubbly ones on the orange humeri, large and small h., presut., two s. a., one long and smaller ones by the mesopl. suture, one st. pl.; the pleurae all with bristly hairs except in front. The bare pollinated scutellum has a rather small terminal pair, crossed half-way, and excessively long parallel side pair. The wings are maculated as in Fig. 12, the darkening being bright brown, paler towards the hind margin. Halteres yellow with orange stalks. Legs all orange; the lower row of bristles on front femora very stout and long.

Abdomen. Brown, slightly shining, covered with pale hairs. The ante-penultimate segment in the male is nearly as long as the three previous ones: in top view it is bordered by some 5 or 6 long pale bristles. The hypopygium below the last segment is shining chestnut brown. The terminal segments of the female are shining black as is the long dorsally flattened ovipositor sheath, which is longer than the rest of the abdomen.

Size, $3\frac{1}{2}$ mm.; wing, 3 mm.

Locality. Aldabra, 1908 (Fryer).

RHABDOCHATA de Meijere, Bijdr. t. d. Dierkunde, xviii. (1904), p. 109.

20. *Rhabdochata spinosa*, n. sp. (Fig. 13 and Plate 19, fig. 10).

A considerable number of an insect occurred which seems to fit in best with de Meijere's genus, though it will be seen that the characters do not agree absolutely with his definition of the genus.

Head. Eyes bare. Frons about as broad as long, nearly parallel-sided, the ridge of the vertex from eye to eye very sharp; orange in front, greyish-yellow round ocellar area and eye-margins: lunular arc with flattish ridge and linearly darkened: ocellar spot black. The bristles are of two characters, (α) long darkish ones coming gradually to a point (viz. the two main front f. o. and the inner v.); the others (β) are white, long or short, but roughly cylindrical up to the tip where they attenuate much more suddenly, or are even greatest in diameter about half-way. There are two long

true (a) front f. o., upright and conv. to centre; in front (above a black side spot on the face) is an auxiliary bristle (type β). Two very slightly div. and backward bent hind f. o.: the distal one is practically of type α and is inserted inside the proximal front f. o. so that the distal hind f. o. and proximal front f. o. are nearly in the same transverse line: the proximal pair of hind f. o. is of type β . I. v. of type α , very long, upright though slight conv. and bent back, inserted close to eye and absolutely on the vertical ridge. What represent the outer v. are of type β and are a little down the eye orbit pointing back and separated from the stout post-orb. row (of type β) by a few tiny black bristles. P. v. of type β , below vertex, almost touching at tip, bent up. Between each of these and the o. v. is another bristle of type β . Oc. very long, of type β though more pointed, straight, div., inserted practically in a line with front ocellus but with bases a little further from it than hind ocelli are from one another: the oc. are so long that they cross the hind f. o. at the ends. On the frons about $\frac{2}{3}$ down from front ocellus is a parallel pair of type β projecting over the forehead. Apart from the macrochetes the frons is bare. Front view:—face very gently arched, the eyes approach nearest about $\frac{2}{3}$ down from antennal base to mouth margin. Antennæ touch at base and in this view the 2nd joint is seen to have a small internal finely bristled flap over the base of 3rd. The mouth margin is much curved in outline with the upper lip just projecting bluntly from the curve: face all yellow except the side margins of mouth which are brown lined. In this view the black spots between



Fig. 13. *Rhabdocheila spinosa*, n. sp. $\times 25$.

the eyes and antennal bases on each side below f. o. are well seen, as are the blackened compressed bristly palpi. Side view (Plate 19, fig. 10):—the triangular yellow projection of frons, with the above mentioned spot, is very prominent: the profile is concave and the projection of the lip well seen. At lower angle of jowl is a bristle of type β followed by a pointed one of type α . The jowls are yellow merging into the blackened back of head, the lower part of latter with pale bristles. The antennæ are orange, 2nd joint a little greyer: below, the 2nd joint has a fringe of pale marginal bristles but is practically bare on the outside (see however above, front view); 3rd joint very long, roughly pyramidal with pointed tip, pubescent and darkened at tip: arista with orange basal joints and paler flagellum: it is closely covered with moderately long pale hairs. Palpi as above, tongue orange, hairy at tip.

Thorax. In good specimens the colour is pale grey all over except that the sides are a little darker. When this grey pollination is rubbed off or otherwise spoiled, the ground colour is black with the humeri and a patch between them and the wing bases distinctly orange. The dorsum is rather irregularly clothed with small bristles of type β arising from scattered tiny irregularly distributed black dots. These small bristles are larger on the prothorax and a pair just on edge behind head is very distinct. The ground colour shows to a more or less extent through the orangish grey pollen, and one may often distinguish it to form indistinct thoracic lines, e.g. one from the above mentioned pair of small bristles in front down to the level of the first d. c. pair. The macrochetes stand on dark spots; these are: 2 pair d. c., the front just behind cross suture, h., n. p., presut., 3 a. a., also st. p. and mesop. All these are of type α . Scutellum as thorax with two large div. discal bristles on blackened spots, a small black crossed terminal pair not on spots: sometimes there are in addition one or two small scattered bristles of type β . The outline of the scutellum is a shallow rounded triangle. The metanotum is large, two ridged, grey on top and blackened beneath.

Wings as in Fig. 13. They have the remarkable "bullae" characteristic of this and the related genera, the position of these being shown in the figure. The general scheme of colour is as shown in the figure, and is black. The venation is not typical. In de Meijere's description and figure the distances on the costa between the end of the second vein and that of the 3rd is about equal to that between the 3rd and 4th. In this species, the second vein meets the costa roughly midway between 1 and 3, and is curved up; also, the 4th vein is not straight, but is remarkably undulate as shown. The dotted line in Fig. 13 just below the third vein shows where a fold occurs (the "sulcus cubitalis" of Girschner, see Kertész, Ann. Mus. Nat. Hung., 1903, p. 358); when viewed from beneath this appears as a well chitinized extra vein. Unlike de Meijere's figure and description (where no discal cross vein is shown or mentioned) that vein is here well developed. The coxal nick and its two bristles are very well developed. The rest of the venation is readily seen from the figure. No bristles occur on any veins. The halteres are clear orange-yellow.

The legs are yellow except for two incomplete darkened rings at the ends of front femora, the whole of mid and hind femora are darkened except at the tips, and there is a dark ring near the base of the middle and hind tibiae. Two upper rows of bristles on front femora all weakly developed, black, and with 4 bristles each: a lower row of 3 stouter bristles, the first black, the next two white; terminal spine to mid-tibiae, no other well-marked bristles.

Abdomen. ♂ darkish grey with silvery hairs; the hypopygium very projecting from below base: last segment bordered with stout black bristles. ♀, last segment forming a flattened sheath about as long as rest of abdomen.

Size ♂, over $2\frac{1}{2}$ mm.; wing, about 3 mm.

Localities. Seychelles. Silhouette; from near Mont Pot-à-eau, ca. 1500 feet, VIII. 1908. Mahé: from near Morne Blanc, X.—XI. 1908; Cascade Estate, ca. 800 feet, 1908—9. This species was swept from grass in forest-clearings &c.

Sepsidæ.

Sepsis Fallen, Dipt. Suec. Ortal., 20 (1820).

21. *Sepsis rufa* Macq., Dipt. Ex., Suppl., iv. (1850), 296. 3; Becker, Mitt. Zool. Mus. Berlin, ii. (1903), p. 144.

There is a long range of a variable species which all agree very closely in the chatotaxy of head, thorax, abdomen and legs: they divide roughly into a large pale form (typical *rufo*) and a smaller dark form, but a few intermediates occur. The sole difference appears to be that the middle femora in the pale form have three stout bristles underneath at middle, while the dark one has only one or two there, and all the bristles are weaker in the smaller form. The front femora and tibia agree with the description of Becker (*l.c.*) and with the description given by de Meijere, Ann. Mus. Nat. Hung., iv. (1906), p. 179, and with his figure, *l.c.* tab. II., fig. 11. De Meijere in that paper draws attention to the same fact, namely that *S. rufa* seems very variable in body, leg, and head colour, and also in size, which he finds varies from $2\frac{1}{2}$ to 4 mm.: in all his specimens he also finds the chatotaxy similar.

As far as can be seen without detailed dissection, the genitalia are the same in all the male specimens. On the whole the females are darker than the males.

Localities. Seychelles: from a number of localities, both near sea-level and in the high mountain-forests. Silhouette: near Mont Pot-à-eau, ca. 1500 feet, VIII. 1908; Mare aux Cochons, IX. 1908. Mahé: Cascade Estate, ca. 1000 feet; from near Morne Blanc, X.—XI. 1908; Anonyme Island, I. 1909.

22. *Sepsis albopunctata*, n. sp. (Plate 19, fig. 11).

The collection includes three specimens of a male with pale white spots at the tips of the wings, and indistinct black spots by them, which do not agree with any of the published descriptions.

Head. Bright shining yellow; on vertex, upper eye-margins, space round each ocellus, a broad line below and above, brown orange. Antennæ yellow with usual dorsal bristle on 2nd joint, and orange arista. Chatotaxy normal, viz. oc, post-v., inner and outer v.; there is a group of bristles each side on back of head between neck and eye-margin, and the usual clump just over neck. Three well-marked vibrissæ followed by a row of equal hairs on the mouth-margin behind them.

Thorax. Shining orange yellow, pleuræ somewhat lighter, a silvery patch on upper half of sternopleura. Two d. c., the line of these continued to the front by a line of bristles, which are much more distinct than usual: acrostichals in two irregular rows of the same character as last bristles; other bristles normal. There is a notable dark orange line from humeri to wing base along the suture.

The wings have quite normal venation: 2nd vein slightly turned up at tip, 3rd and 4th parallel: a terminal white spot (involving the tip of 3rd vein) between 4 and 2, a palish dark spot just over the tip of 2, bounded by the pale spot in front, and extending downwards to 3rd; the distance between 2 and 3. The discal cross vein somewhat beyond the

middle of cell; the distance between cross veins on 4 slightly longer than abbreviated end of 5 beyond the last cross vein. Discal cross vein about half length of last one. Halteres yellow, brown stalks. Legs all yellow except the darkened terminal two or three tarsal joints. Front pair (Plate 19, fig. 11):—femur with a hump on middle carrying two large and several small thorns, proximally two stout spines and smaller one, a few hairs behind these; bristly on tip, one bristle near distal one-third is bigger; tibia bent and distorted, proximally three bristles, then a small hump with four bristles on it. When viewed in profile, the ventral side of tibia is seen to be excavated, principally near the hump, so that it can receive the femoral hump to a greater or less extent; a minute preapical bristle; tarsi with first joint strongly pectinate below, especially at base. Middle pair:—femur with one bristle on outer side towards middle; tibia with three bristles on hind edge (as stretched out) from middle towards tip, preapical, two small terminal, one beneath about middle; tarsi, first two joints with double row of side bristles pointing backwards. Hinds legs; femur with one outside bristle two-thirds from base; tibia clubbed in distal half, a ring of three bristles at middle; tarsi as middle legs.

Abdomen with very humped and knobbed shining yellow second segment, the others purplish shining black, with beginning of petiole and end cavity more orange: second bristled all over, stronger at side: others with smaller sparser general bristles and large bordering macrobristles.

Size, about 3 mm.; wing, about 2 mm.

Locality. Seychelles. Mahé: Cascade Estate, 800 feet or over, 1908—9; marshes on coastal plain of Anse aux Pins and Anse Royale, I. 1909.

In addition to the above there are a few specimens of the female of a dark species with white and black spots on the wing.

Localities. Seychelles. Mahé: Cascade Estate, and marshes on coastal plains at Anse aux Pins and Anse Royale, 1908—9.

Micropezidae.

Nereius Fabricius, Syst. Antl., 264 (1805).

23. *Nereius alluaudi* Giglio-Tos, Ann. Soc. Ent. France, lxiv. (1895), p. 366.

There is a long series of a species of *Nereius* which agrees well with the description of this Seychelles species. Giglio-Tos says that one of his specimens had three longitudinal lines of which the middle was much narrower. All the present specimens possess the three lines, the two outer and broader ones of which extend from the calli to the scutellum: the middle one is much narrower and only extends about half-way down the dorsum. The breadth of the lines varies somewhat in the different specimens.

Localities. Seychelles. Silhouette: near Mont Pot-à-eau, ca. 1500 feet, VIII. 1908; Mare aux Cochons and forest above, over 1000 feet, IX. 1908. Mahé: Forêt Noire district, and high forest of Morne Blanc and Pilot, X.—XI. 1908; Cascade Estate and forest above, ca. 1000 feet and over, 1908—9; Mare aux Cochons district, 1000—2000 feet, I.—II. 1909; 1905 (Gardiner); 1892 (Alluaud).

This species is very characteristic of the damp endemic mountain-forests, throughout which it is found.

Drosophilidæ.

DROSOPHILA Fallen, Dipt. Suec., Geomyz., 4 (1823).

Many species of this genus were collected, only two of which can be referred to known species from published descriptions.

The genus is represented by a large variety of forms, some of which might well be considered subgenera or even genera, but as these are represented by single species it is thought best to merely indicate such possible divisions.

For convenience of reference to what follows the species may be grouped as follows:—

I. Species with costa to third vein (*Leucophenga* Mik.).

sericea, p. 326.

grossipalpis, p. 328.

II. Species with remarkably constricted waist and short wings.

**notabilis*, p. 329.

*III. Species with a remarkable slit to the costa, the end provided with spines and bristles.

fracticosta, p. 329.

nigerrima, p. 331.

nigrobrunnea, p. 332.

IV. Species like *Chymomyza*:

**punctiscutellata*, p. 333.

V. Species with remarkable transverse eyes:

**aberrans*, p. 334.

VI. Species with remarkable spines on front tarsus:

**spinipes*, p. 336.

VII. Species with curious curled hairs on front legs:

**hirtipes*, p. 337.

VIII. Species with marmorated thorax.

punctulata Loew, p. 339.

jucunda, p. 339.

*IX. Species with a distinct shining vertical triangle.

finitima, p. 340.

caliginosa, p. 341.

pallipes, p. 342.

triangulifer, p. 343.

rufuloventer, p. 344.

X. Species of ordinary pale form recalling *melanogaster*.

nasuta, p. 346.

melanogaster Mg., p. 347.

similis, p. 347.

It is highly probable that the species and groups marked thus * should be raised to generic or at least subgeneric rank, but as so few specimens are available, this course is not adopted.

24. *Drosophila sericea*, n. sp. (Fig. 14 and Plate 19, fig. 12).

A very handsome species in which the male has a very silvery thorax.

♂ Head. Eyes bare, red. Top view:—Frons nearly parallel-sided from the vertex downwards, a little over one-fifth of maximum axial breadth from eye to eye; creamy white; the area within the ocelli is grey with silvery reflections; ocelli bright red. The pair of lower f. o. are inserted nearly midway on the frons and point forward; the first pair of outer backwards-pointing f. o. are inserted nearly level with the former, the second pair roughly midway between them and the vertical bristles. These f. o. bristles are lower down the eye-margins than in the European species *L. maculata*: approximated i. v., div. o. v.; a small pair of deeply crossed p. v. b., stout oc.; a row of minute crossed bristles on the centre of the frons; a row of similar bristles below front f. o., so that it can be looked on as a continuous row of fine orbitals. Front view:—Face coloured as frons, slightly diverging to insertion of vibrissae, practically flat in section, a strong pair of vibrissae. Side view (Plate 19, fig. 12):—Back of head darkish grey; the post orb. continuous round mouth-margin; a stout bristle on lower hind angle of jawl. Antennae with the just visible first joint and the second joint coloured like the frons, slightly beistled, second with one longer outer dorsal b.; third joint parallel-sided with rounded tip, finely pubescent, slightly darkened; arista pale for first half, then darker: six upper rays, three lower rays (1st near middle), terminal ray: on the under face of the plane of the arista is a row of tiny rays, denser for the proximal third and then extending more sparsely to nearly the end*.

Palpi blackened and shining; tongue yellow, rugose at the tip: the mouth opening in vertical view is long and narrow, and the margin is blackened laterally.

The thorax and scutellum are both brilliantly silvery in good specimens, the ground colour beneath being orange; the dorsal surface is covered with small bristles. There are two d. c., the front pair the smaller, small present., one h. and a few smaller bristles on humeri, two n. p., three bristles over wing, the p. a. large. The small thoracic bristles can be looked on as forming 8 or 10 aer. rows between the d. c. lines. Scutellum slightly arched, almost circular in profile, quite bare, with two large side bristles on large grey ill-defined spots, and two stout crossed terminals. Pleura somewhat orange-yellow with a darkened irregular stripe from the metanotum to the sternopleura. Two large st. p. Wings as Fig. 14, veins brown, the costa darker: the latter extends to 3rd: a fine dense black short bristly ciliation extends to about half-way between the ends of 2 and 3; it here becomes sparser, and between that termination and the end of 3 are four or five minute black tubercles inserted just on the lower edge of the costa. In macroscopic view the costal margin is distinctly infuscate. Halteres with white knobs, and yellowed stalks. Legs entirely pale yellow-white except that the mid and hind knees are narrowly darkened. The usual preapicals

* This inner row of small rays is a useful character: it varies in strength of ray, and in number, and is occasionally quite absent. It is plainly visible in *L. maculata*. It will likewise be found in other insects: for example, in *Lonelaea phanaia* (see last paper, *Trans. Linn. Soc.*, Vol. xv, Part 3, 1912, p. 303) it is almost as strong and evident as the upper and lower rows and is complete from end to end.

on hind and mid tibiae, front femora with a few longer fine bristles beneath and outside.

Abdomen. The ground colour is yellow, the second segment is bristly only on its upper angles and margins and is silvery; third pale yellow, rather silvery, with long marginal and a few scattered discal bristles, fourth with three large black marks, the side ones extending right over the edges and from front to back, the middle also extending from front to back, hence the orange-yellow ground only shows as two rather irregular dark orange lines; the three black bars are nearly equal in width: the fifth segment has also three marks, the middle extending right across, the side ones sometimes only reaching over the side margins and not front and back: sixth segment with a small dark central spot. These last three segments have long scattered dorsal and longer marginal bristles.

♀ The female differs in its colour scheme as follows. The thorax is more or less silvery in side view on tip, but always quite visibly so on the sides of the thorax, and on the upper part of the pleura. The dorsum is brownish orange, darkish, with two dim darkenings forming side stripes along the d. c. lines, and darkened again before scutellum. The latter is darkened except at the tip which is white.

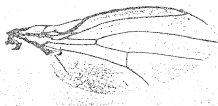


Fig. 14. *Drosophila sericea*, n. sp. × 25.

The abdomen has its second segment creamy with large dark triangular spots occupying the sides and most of the lower margins, but well separated distally on the centre line. The next two segments have the orange ground much covered with black somewhat shining colour forming two large side and one large middle mark, both extending from margin to margin: these segments could also be collectively described as being shining black with two orange stripes separating three broader black ones. The fifth segment has three spots like the male, as has the sixth segment, the last has two large side spots with a narrow line between.

A certain amount of variation occurs, the blackening being variable in extent in both sexes.

Size, $2\frac{1}{2}$ mm.; wing, $2\frac{1}{2}$ mm.

Localities. Seychelles. Silhouette: forest near Mont Pot-à-eau, ca. 1500 feet, VIII. 1908; Mare aux Cochons, IX. 1908. Mahé: Cascade Estate, ca. 800 feet and over, 1908—9; Morne Seychellois, over 1500 feet, II. 1909; high forest of Morne

Blanc and Pilot, 1908 ; Mare aux Cochons district, over 1000 feet, 1909. Throughout the damp endemic mountain-forests.

25. *Drosophila grossipalpis*, n. sp. (Fig. 15 and Plate 19, fig. 13).

♀ Head (Plate 19, fig. 13):—very much like last species in all essentials of bristles and structure; frons all bright orange-yellow, finely rugose longitudinally for the proximal two-thirds: the ocelli red with a grey area inside. Face and orbits the same as frons; back of head rather darker. The antennae are also yellow-orange. Palpi orange, very stout, flattened in vertical plane. Tongue orange.

Thorax. All rather dull orange, chaetotaxy as last species. Pleura rather lighter orange including the humeri: a brown ill-bounded spot below the sternopleural bristles. Scutellum, etc., coloured as thorax, the same in shape as the last species.

Wings as Fig. 15, blackened on costa. Halteres orange. Legs all yellow-orange.



Fig. 15. *Drosophila grossipalpis*, n. sp. $\times 20$.

Abdomen. 1st segment orange, 2nd all black (except just at front margin in centre) extending well over sides; 3rd all orange with darker spot on centre line near distal margin and a much smaller brown spot near the proximal margin; 4th, mid line yellow-orange with similar central spots as the 3rd, then entirely black well over the sides, then orange and finally (on belly side) black; 5th orange with two small oval black side spots; 6th orange. The whole is covered with black discal bristles and long marginal bristles.

The central spots on 3rd and 4th segments are often almost absent or very small.

There are three imperfect specimens of what may be the male of this species: it agrees in all respects with the females described above, but the abdomen is entirely black, the narrow margins being a little paler: the specimens are in no way silvery or sericeous.

Size as last species.

Localities. Seychelles. Silhouette: near Mont Pot-à-eau, ca. 1500 feet; Mare aux Cochons, highest forest, ca. 2000 feet. Mahé: near sea-level, Long Island, VII. 1908; also throughout the endemic mountain-forests (Cascade Estate; Morne Seychellois, over 1500 feet; Mare aux Cochons district, over 1000 feet). Félicité: from drier type of forest near sea-level, XII. 1908. Praslin: XI. 1908, one of the three ♂.

D. Hippelotithyren by Wheeler 1939-1941
D. Hippelotithyren a. minor

LAMB.—DIPTERA: HETERONEURIDÆ, ORTALIDÆ, TRYPETIDÆ, SEPSIDÆ, ETC. 329

26. *Drosophila notabilis*, n. sp. (Fig. 16 and Plate 19, figs. 14, 15).

A remarkable form with constricted waist, small wings, and a very peculiar frontal marking.

Head. Eyes finely and sparsely pilose. Top view (Plate 19, fig. 14):—frons very broad, shining, with broad eye-margins and a remarkably demarcated central area as figured. This central area is translucent greyish bordered by brown-orange, the broad eye-margins are similar in colour. The front f. o. points forward, the hind one outwards and backwards, i. v. convergent, o. v. divergent, p. v. absent. The co. stand nearly upright, parallel and bending forward at the tip. Front view:—the face is shining orange with an elongate knob between antennæ.

Side view (Plate 19, fig. 15):—the eyes are rounded in front; the mouth projects somewhat; the antennæ are orange, 3rd joint paler: 2nd joint swollen and nearly as big as the 3rd with a fine short bristle in front; the 3rd is pubescent, especially so at tip, the arista with six upper, three lower and a terminal ray, the inner row is evident though sparse.

Fine single vibrissæ, a few bristles on the hinder jowl; orange hind head, with fine post-orb. row. The clypeus above the palpi is very large indeed; palpi darkened, club-shaped, hairy; tongue darkened and hairy.



Fig. 16. *Drosophila notabilis*, n. sp. $\times 30$.

Thorax darkened orange. Two d. c. with fine small rows extending in a line to the front. The aer. bristles indistinct, two rowed. No sign of humeral bristles, one behind the humeri which may be a single notopleural; two close together on the side above and just before base of wing. Scutellum tawny-orange, crossed terminal bristles, a very minute basal pair.

Wings as Fig. 16, translucent with brown veins. Halteres with longish white heavy and bituberculated darker stalks.

Legs. Yellow, bristles very few; one inner outstanding pre-apical on front femora; pre-apical and 2 or 3 small crowning bristles on the mid tibia: the rest are not clearly visible owing to the state of the specimen.

Abdomen with much constricted waist, the first 3 segments dull orange, the last segments shining black, all sparsely bristled, the marginal bristles the longer.

Size, over 2 mm.; wing, under $1\frac{1}{2}$ mm.

Locality. Seychelles. Mahé: marshes on coastal plain, Anse aux Pins and Anse Royale, I. 1909; Anonyme Island, I. 1909.

27. *Drosophila fracticosta*, n. sp. (Fig. 17 and Plate 19, fig. 16).

This (and the next two species) have a remarkable break at the end of the first section of costa; this ends in a swollen projection of the costa which is somewhat spear-shaped, black, and very bristly.

The present species must be near to *D. gratiosa*, de Meijere (Tijdschr. v. Ent., 54, 1911, p. 404) with which it agrees fairly closely in general facies and in head and thoracic characters, but the abdominal characters are quite different.

♀ Head. Eyes bare. Top view:—frons slightly narrowing in front, about half width of head at back, dull black from the vertex forward, brown-orange from the forehead backwards, the colours merging in two indistinct boundary lines from ocellar area to outer edges of lunular boundary. Eye-margins broad and shining black from front f. o. to vertex and back of head. Front f. o. sub-parallel and forwardly bent, hind f. o. divergent and backwardly bent, inserted rather close together; a row of fine bristles extends from latter to forehead, the first, between the two f. o., being the longest. Convergent i. v., divergent o. v., p. v. crossed at tip, oc. inserted between basal and front ocelli, long and divergent. Post-oc. rows evident. Front view:—antennae touching basally; a well-marked snout or keel extending from the base of the antennae to two-thirds down face, widening to the end which has a rounded margin: face black, with sparse pale orange pollen, the snout much more orange, clypeus prominent. Side view (Plate 19, fig. 16):—antennae darkened orange, 2nd joint with a large basal bristle and a smaller bristle in front; 3rd joint silky, arista orange with darker rays, the top row with 5 progressively smaller rays; bottom row with one ray between 3 and 4 on top; one end ray, a few fine rays of the inner row. There is a stout vibrissa close to the eye-margin followed by a row of smaller ones on the darkened jowl; hind jowls orange with 2 or 3 bristles; palpi clubbed, flattened, black, with a few short bristles: tongue more orange.

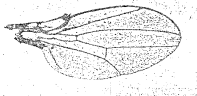


Fig. 17. *Drosophila fracticosta*, n. sp. $\times 20$.

Thorax. Dorsum, scutellum, and pleura above a line from the wing base to below the humeral calli and the metanotum, all intensely black; the dorsum very shining, other parts duller, humeri slightly orange in tone, duller; scutellum minutely granulate: lower pleura and sternum entirely pale yellowish-white. Only the last pair of d. c., two h., n. p., three bristles over wing base, one large and one small st. p.; the dorsum all covered with fine bristles; the acrostichals form about eight rows between d. c., but are entirely the same in character as the rest of the small bristles. The scutellum is rounded in outline and swollen in profile; the terminal bristles just cross at tip, small side bristles inserted somewhat nearer the terminal bristles than to the base.

Wings, Fig. 17, yellow with yellow veins: the costal slit is very marked, and ends in a black callosity provided with spines, and turned over so as to lie roughly perpendicular to the plane of the wings. Costa to 4th vein. Halteres with black knobs and pale stalks. Legs entirely whitish-yellow: the front femoral rows weak, one spine at end of middle tibia.

Abdomen. 2nd segment whitish-yellow with black margins wider at sides; 3rd black with two faintly defined transverse elongate marks each side of the centre line; 4th black with two large roughly semicircular pale spots with their diameters on the base of the segment, distal margin narrow and pale; 5th similar but with smaller elongate spots; 6th black with a central pale line which is widest proximally; genital segments pale. In side view the whole of the abdomen appears black. The belly is pale on the centre line. There is a small amount of variation in the exact shape of the spots and amount of orange on the 3rd segment.

Size, about $2\frac{1}{2}$ mm.; wing, about $2\frac{1}{2}$ mm.

Localities. Seychelles. Mahé: Cascade Estate, at or above 300 feet, 1908—9. Praslin: Côtes d'Or Estate, XI. 1908.

28. *Drosophila nigerrima*, n. sp. (Fig. 18 and Plate 19, fig. 17).

This is close to the last in many structural points, but is remarkable for its almost entirely black colour and its coriaceous texture.

Head. Eyes bare, colour entirely black, except for the brownish antennæ and lighter face. Top view:—frons dull black and finely granulate, except for the ocellar area, a line from it to forehead, and the broad eye-margins, which are shining; the frons narrows slightly from behind to the front; sub-parallel front f. o., slightly divergent back f. o., the usual fine row of bristles continuing the latter to forehead, the first (between the f. o.) being the longest of them; strongly convergent i. v. nearly touching at tips, divergent o. v.; p. v. directed backwards, nearly meeting at the tips, inserted just below the vertex; divergent oc. on the ocellar triangle. Front view:—antennæ just separated at base by the beginning of the facial keel which widens downwards in a uniform manner to about three-fifths of the depth of face. The face is all dark except that the snout formed by the keel is paler than the rest especially on its side surfaces. The black prelabrum is very evident. The palpi are included, so cannot be described. Side view (Plate 19, fig. 17):—the 3rd antennal joint is brownish and pubescent; 2nd joint with a well marked spine on tip and a much smaller curved one in front; arista with 4 top, 2 bottom, one terminal ray: some 3 or 4 sparse rays of the inner row are visible. Convergent vibrissæ with a following row of fine bristles; hind jowls with a few longer bristles. The post-orb. row is present, but the bristles are not quite so evident as in most cases.

Thorax entirely black, slightly shining, dorsum finely punctulate and uniformly covered with very short adpressed hairs: the last pair of d. c., two smallish h., n. p., small presut., p. a., one larger and one or two smaller bristles over the wing, no acr.; pleural bristling not visible owing to the position of the single specimen. Scutellum more velvety black, rounded in outline and profile; crossed terminal, and two smaller side bristles, nearer the terminal than base.

Wings as Fig. 18, smoky with dark-orange veins; costal break well marked, black, spiny, and turned up perpendicular to the wing-plane. Costa to 4th. Halteres dull brown-orange with suffused tips. Legs black except for somewhat orange knees

and tarsi, a moderately developed lower front femoral row of bristles, stout terminal spine on the middle tibia.

Abdomen. Black, in dorsal view the following spots can be seen: on the second segment, two indistinct silvery patches at the upper angles, which are rather bristly on the sides; 4, 5, and 6 have each two pale silvery spots, transversely elongate, with the front border coincident with the proximal margin, the curved lower boundaries extending to about one-third the segmental breadth; the spot on the 6th extends more over the side margins, and that segment is more greyish black than the others. All the segments except 1st are bristled dorsally and marginally, the latter bristles being the longer. In side view two inferior silvery spots can be seen on edges of 2nd just below the upper angles and two inferior round silvery patches on 3rd (which is immaculate above), these are nearly as big in diameter as the segment's breadth. A further silvery patch can be glimpsed on the belly of the 4th segment.



Fig. 18. *Drosophila nigerrima*, n. sp. $\times 30$.

Size, 3 mm.; wing, 3 mm.

Locality. Seychelles. Mahé: a single specimen, Cascade Estate, at or above 800 feet, 1908-9.

29. *Drosophila nigrobrunnea*, n. sp. (Fig. 19 and Plate 19, fig. 18).

This is the 3rd species with a well-marked costal slit and swelling.

There are but three specimens, one headless, and one gummed which has consequently lost its proper colouring.

Head. Eyes bare. Top view:—frons dull brown-black behind merging into dull orange over the forehead; ocellar area slightly shining; eye-margins very shining dark brown (there is a slight silvery sheen on the frons in side view). The eyes project much backward, so that the hind margin is very concave. Parallel forward pointing f. o., slightly divergent hind f. o.; the continuing row of bristles from the latter is absent, except for the 1st small bristle between the two f. o.; strongly convergent i. v., smaller straight and divergent o. v.; p. v. behind the vertex, crossed about two-thirds from the tip; rather long divergent oc., inserted between back and front ocelli. Front view:—face dullish grey-orange; antennae with the large 2nd joints touching at the base; a very well-marked keel between the 3rd joints, which widens gradually till it meets the rather swollen upper lip, being demarcated therefrom merely by a sulcus: two deep antennal foveae are thus formed. Clypeus evident; darker. Side view (Plate 19, fig. 16):—the head bristles seem rather more adpressed than usual; 2nd joint of antennae

with a well-marked outwardly divergent tip bristle, and a smaller one outside towards the end: it is orange in colour; 3rd joint suffused darker orange, pubescent; arista with five upper, two lower, one terminal, and two or three sparse inner rays. Vibrissa convergent, followed by an extra fine hair row; a few bristles on the hind jaw: post-orb. row well behind the eyes. Palpi small, very slightly clubbed, orange. Tongue orange.

Thorax. Shining brown-black up to a line extending from below the humeri to the abdominal insertion, paler on the humeri; the pleura and sternum yellowish white. Dorsum covered with fine pale hairs. One d. c. pair, two h., n. p., small presut., three over wing (one being the post-alar), two strong sternopl. Scutellum minutely pubescent, rounded in outline, and swollen and rounded in profile; terminal bristles crossed at tip, smaller side ones fairly near base. The metanotum is well developed in breadth and is shining brown.

Wings as Fig. 19. Yellowish with brownish veins; a little more darkened just below the costal swelling: the slit is well-marked, and ends in a rather rounded upwardly bent black hairy process. Costa to 4. Halteres pale yellow.

Legs entirely yellowish white, lower and hind rows of bristles on the front femora present, the bristles weak: mid tibial spur strong.



Fig. 19. *Drosophila nigrobrunnea*, n. sp. $\times 50$.

Abdomen. Somewhat shining brown-black except that (1) the base is paler and (2) the fifth segment has two large pale yellow spots which occupy the proximal margins of the segment except for about one-third its breadth, and extend in a roughly triangular form over the segment nearly to the distal margin, (3) the sixth segment has its sides yellow: it is more shining than the others. The second, third and fourth segments are about equal in width, the fifth and sixth are nearly twice as wide; genital segments orange-yellow.

Size, just under 2 mm.; wing, just under 2 mm.

Localities. Seychelles. Mahé: Cascade Estate, 800 feet or over. Praslin: Côtes d'Or Estate, XI. 1908.

30. *Drosophila punctiscutata*, n. sp. (Fig. 20 and Plate 20, fig. 19).

This is a single ♀ specimen of a narrow form which has a strong superficial resemblance to *Chymomyza*. Oc. bristles on front of ocellar triangle.

Head. Eyes densely though shortly pubescent. Top view:—frons entirely shining black; with a side light the eye-margins and a long triangle nearly reaching the forehead can be seen to be differentiated by being rather greyer in tone. The frons is about as broad in front as its axial length, and widens in a curved line along the eyes to the vertex. It is concave behind. The ocelli stand out brilliantly as three silvery spots. The front f. o. parallel and forward bent, hind f. o. inserted close behind them, bent back and continued by a row of equal fine bristles to the front. I. v. just off vertex, much conv.; o. v. just at angle of vertex close to i. v., div.; p. v. just on curve of vertex, crossed well below tips; oc. long. div., inserted on frons in front of front ocellus and with bases further apart than

hind pair. A few tiny bristles on ocellar area. Post-orb. row well-developed especially behind v. b. Front view:—the face is whitish brown, deeply hollowed, the antennae contiguous basally, no central keel. Side view (Plate 20, fig. 19):—the 2nd antennal joint swollen and hairy, bearing a longer dorsal and a front spine; 3rd joint small and pubescent, both joints dark brown; the arista dark with six upper, three or four lower, one end ray and a sparsely scattered inner row. The black cheeks have a long vibrissa at the angle followed by some finer hairs. The post-orb. bristles evident on the black hind head, but rather remote from the orbits. Tongue orange. Palpi black, knobbed, with bristles.

Thorax. Dorsum orange with indistinct lines a bit darker along d. c. line, covered with sparse bristles. In front where it touches the head it is darker. There are two pairs d. c., the first just about the level of the cross suture: h., n. p., two s. a., presut.: pleural bristles destroyed by pin. Scutellum orange in mid line with two large black spots on sides up from base: these bear basally two long bristles, and on their extreme tips are the crossed terminal pair.



Fig. 20. *Drosophila punctisutata*, n. sp. $\times 50$.

Wings as Fig. 20; glassy with orange veins; costa well-marked to the end of 3 with fine black ciliation, less marked to 4 with paler ciliation. Halteres with rather elongate orange heads and darker stalks. Legs entirely yellow, 2 or 3 longer bristles distally and behind on the front femora.

Abdomen. Entirely shining black except for the orange ovipositor and the centre line of the belly, bristled discally with longer marginal bristles.

Size, about 2 mm.; wing, about $1\frac{3}{4}$ mm.

Locality. Seychelles. Mahé: Mare aux Cochons district, 1000—2000 feet. I. 1909.

(*Diacheta* phom.) 31. *Drosophila aberrans*, n. sp. (Fig. 21 and Plate 20, figs. 20, 21).

This species is aberrant in general facies; the eyes are very oblique, and project backwards behind the vertex: the oc. b. are inserted well outside the ocellar area.

♂ Head. Eyes strongly pubescent, red. Top view (Plate 20, fig. 20):—frons mainly orange, eye-margins slightly grayish yellow, a fine silvery border to the eyes can be seen in some lights extending forward from the hind f. o. The actual vertex, as well as the back of head, are like the eye-margins. The area surrounding the ocelli down to the oc. b. is blackened. The rest of the frons is (as stated above) orange, fairly shining,

and faintly ridged in a more or less longitudinal direction. Head bristles black and strong; front f. o. pointing forward and outward and more remote from eye boundary than usual, the distance between their insertions being about half the frontal breadth at the corresponding cross line; hind f. o. about half-way between the front f. o. and the i. v., pointing backwards; a continuing row of 6 or 7 small bristles to the forehead. Convergent i. v., divergent o. v.; p. v. on vertex behind ocelli, crossed half-way; oc. inserted well *beyond* front ocellus (much in the position shown in Plate 20, fig. 22), divergent and stout. In this view the hind angles of eyes can be seen to project behind the head. Front view—the head is very broad, about $2\frac{1}{2}$ times as broad as deep, owing to the projecting eyes. The face to the ridged mouth margin is pale with a definite though narrow central keel forming two antennal foveæ: these are slightly darkened at the bottom. The clypeal edge is blackened; palpi clubbed, black, and bristled; tongue yellow and hairy. Side view (Plate 20, fig. 21):—antennæ darkened grey, paler inside, the lighter third joint with white pubescence; second joint with four or five stout spines and smaller hairs. Arista stout, with the inner row of rays very marked and strong; upper row with about four straight rays at base, then three curved ones; lower row with one long straight ray below the upper, two or three curved ones, a terminal one. A pair of very stout vibrissæ followed along the mouth edges by finer bristles. The hind jaws with three or four longer bristles. A well-marked post-oc. row. In this view the eyes are much elongate, the hind facets are perceptibly smaller than those in front.

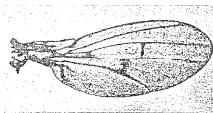


Fig. 21. *Drosophila aberrans*, n. sp. $\times 30$.

Thorax. Brown with orange tone, dull: some sign of sparse paler pollination in front; two ill-defined narrow paler lines along the d. c. lines. The dorsum is covered with small bristles arranged in regular longitudinal lines. Only the last pair of true large d. c.: the fine bristles between the d. c. lines form 6-rowed acrostichals. The humeri bear some 3 or 4 somewhat prominent bristles round the edge. Two n. p., presut., two b. over wing-base, two on alar callus, the inner smaller. The pleura below the line from wing-base to point below humeral callus is more or less darkened: the sternopl. has one stout lower and two smaller upper bristles. Scutellum rounded, bare, dull, colorous with the thorax except for a slightly lighter tip and margins; two stout basal, and two stout crossed terminal bristles. Wings, as Fig. 21, suffused, with brownish veins, the two cross veins being somewhat blackened; costa to 4th, no costal break, but 1 or 2 spines there. Halteres orange. Legs yellowish-white, bristled in rows, the under

row on the front femora uniform from base to tip; the last joint of the front tarsi with rather unusually well-developed pads and claws, and a few long hairs.

Abdomen somewhat variable in colour; usually rather blackened with yellowish margins at the sides only of segments 2 to 4, 5 with a broader continuous yellow proximal margin. The extent of dark and light areas varies a little. There is a large hypopygial knob, black and shining above; just beneath it is yellow and pointed, and has an opposing yellow appendage springing from a previous ventral segment.

♀ The female differs as follows: the third antennal joint is generally much darker, the oc. b. are not inserted as in the ♂, but outside the line joining ocelli (Plate 20, fig. 20); the thorax has a somewhat lighter ground colour, especially in front, so that in one or two specimens we may distinguish a darkened middle line between the inner acrostichal row and another pair of lighter lines followed by darker ones parallel to them. Some specimens were immature. Front feet normal.

Size, about $1\frac{1}{2}$ mm.; wing, 2 mm.

Localities. Seychelles. Silhouette: Mare aux Cochons, IX. 1908. Mahé: near Morne Blanc, X. 1908; Cascade Estate, 800 feet or above, 1908—9.

32. *Drosophila spinipes*, n. sp. (Fig. 22 and Plate 20, figs. 22, 23, 24).

This is a remarkable species represented only by 5 rather imperfect female specimens; unlike nearly all the known species, these females have specialised characters on the front tarsi. The oc. are in front of ocellar area.

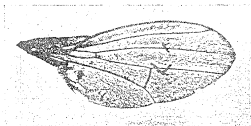


Fig. 22. *Drosophila spinipes*, n. sp. $\times 35$.

♀ Head. Eyes quite bare. Top view (Plate 20, fig. 22):—slightly concave behind; behind the front f. o. b., dull orange, the upper eye-margins more shining, beyond these bristles merging to yellow: the ocellar area is not demarcated from the rest of frons, it is clothed with bristly hairs, which are exceptionally long: many similar (but shorter) small convergent bristles exist on the front part of head beyond front f. o. The front f. o. are parallel, there are two true hind f. o. b., slightly divergent, with the usual continuing row of fine bristles down to the forehead; these are very well marked and regular. I. v. nearly meeting at tips; o. v. much divergent; p. v. nearly meeting at the tips; the oc. are quite parallel, and are inserted in front of the front ocellus. All the bristles are brown. Front view:—face rather narrow, about twice as high as broad, fairly parallel-sided; yellow: the large 2nd antennal joint approximated at base, no true central keel,

but a shallow depression for the antennæ. Side view (Plate 20, fig. 23):—antennæ; 2nd joint large, orange, covered with pale bristles with one spine at top; small darkened 3rd joint, the arista with basal joints very distinct; three upper, one lower, one terminal ray, the inner row is absent. Short stout vibrissa with usual following row of fine bristles. Palpi orange, clubbed; tongue with remarkable file-like surface. The post-orbital row is strongly developed just behind the v. b.

Thorax. Orange, entirely covered with pale brown bristles, last pair d. c. very close to scutellum; humeri with two large and a few other bristles, 2 n. p., presut., 3 over wing-base, one small and one large sternopl. Scutellum orange, bare, flattened, shaped like a triangle with much-rounded apex; terminal bristles crossed about $\frac{1}{3}$ from tip, a long bristle on side of scutellum, slightly convergent to centre line. Wings, Fig. 22, slightly yellowish; costal slit present, but no thickening; costa to 4. Halteres orange. Legs all orange, femoral rows of bristles weak; front tarsi with remarkable spines beneath (Plate 20, fig. 22), black claws and a few curious long hairs on the last joints. The other tarsi have no spines, but possess the black claws and the hairs. All the other spines are very weak, though there is a moderate terminal mid-tibial spur.

Abdomen broad, browner on disc with scattered discal and marginal bristles. The genital segments are large, forming in profile a blunt triangle whose length is roughly equal to that of the rest of the abdomen; this triangle's axis is about perpendicular to the body-axis. There is the usual hairy hump behind, and the tip of the triangle is formed by the ovipositor, which has a crown of stout short black spines.

Size, about $1\frac{1}{2}$ mm.; wing, a little over $1\frac{1}{2}$ mm.

Localities. Seychelles. Mahé: near Morne Blanc, X. 1908. Silhouette: Mare aux Cochons, IX. 1908. Praslin: Côtes d'Or Estate, XI. 1908.

33. *Drosophila hirtipes*, n. sp. (Fig. 23 and Plate 20, fig. 25).

There are two specimens of this species, both males: the dorsal sides of the front tibia and tarsus are provided with remarkable long curved hairs.

♂ Head. Eyes minutely and closely pubescent, the hairs very short, and rather fine. Top view:—eye-margins from vertex to front f. o., dullish brown-orange; the ocellar area the same, with a rounded front margin; between these the frons is more shining orange: the ocellar area from in front to the vertex as well as the front of the frons is clothed with distinct bristly hairs. Front f. o. sub-parallel, hind diverging; the continuing bristle row of the latter well marked down to forehead, its first bristle (just behind and outside the lower f. o.) much the largest. I. v. nearly touching at the tip, o. v. divergent; behind these (just below the top eye-margins) the last 2 or 3 bristles of the strongly marked post-orbital border are especially prominent, and converge to the centre. P. v. inserted on the vertical angles of the ocellar area, somewhat convergent. Oc. long, much divergent, inserted just outside and behind the front ocellus. Front view:—the large 2nd joints of the antenna are separated by a distinct space, in the middle of which is the upper narrow-part of the facial keel; this broadens uniformly to the thickened upper lip with which it is almost confluent. The mouth-opening

is unusually large: the face is all blackish with minute pollination, except for the space between the antennal bases. Owing to the broad face, the antennal foveae are rather shallow, the bottom being but little below the level of the eye-plane. Side view (Plate 20, fig. 25):—the large 2nd antennal joint is orange, its inner face with long hairs; there is an especially conspicuous top bristle, and two near the front margin, a fourth lying between the top one and the others; the smallest dark 3rd joint is slightly silky; the arista has 6 straight upper, 2 lower and a terminal ray, the inner row has some 5 or 6 rays. On each side of the face there is a clump of about 4 stout vibrissae, followed by a strong row along the lower eye-margin: hind jowls, &c., with many bristles, 3 or 4 being especially long. Palpi dark, clubbed, strongly bristled at the end; tongue rather paler, a few long bristles behind, and very bristly at the tip.

Thorax. Moderately shining black with minute sparse golden pollen: the surface is covered with exceptionally stout and long discal bristles, which form acrostichals which are irregularly 6-rowed between the two pairs of approximated d. c.; the last discal bristles might be considered to form 4 true (though small) prescutellars. The humeri are somewhat orange, and bear two bristles; n., presut., alar and p. a. as usual, but very strong. Two very long sternopl.: the pleurae more orange. Scutellum as thorax, but entirely bare: rather spade-shaped in profile, and flattened; two crossed terminal and two long slightly convergent side bristles, inserted at about one-third the distance from the base to the terminal pair. Wings, Fig. 23, slightly yellowish with brown veins:



Fig. 23. *Drosophila hirtipes*, n. sp. $\times 30$.

costa more bristly than usual, extending to 4, but the bristles ending before 3: no true costal slit. The alulae have quite long ciliation. Halteres orange. Legs all orange, the front legs with an inferior femoral row of three very stout bristles, the back row of 3 or 4 is much less strong: strong spur and preapical to the middle tibia. All the legs with neatly arranged rows of general bristles. The most remarkable character is in the front legs. The tibia has two irregular rows of long hairs which begin a little before half-way; they number some 8 or 9: each is bent upwards in side view and inwards in front view. The first tarsal joint is similarly provided with 8 to 10 hairs, and a few more occur at the ends of the next 2 or 3 joints.

Abdomen. All brownish-black with numerous discal, and long marginal, bristles.

The whole insect is remarkably bristly for a *Drosophila*.

Size, about 3 mm.; wing, about $2\frac{1}{2}$ mm.

Localities. Seychelles. Mahé: Cascade Estate, 800 feet or above; marshes on coastal plain, Anse aux Pins and Anse Royale, I. 1909.

34. *Drosophila punctulata* Loew, Cent. ii. 100, Berlin. Ent. Zeitschr., vi. (1862).

Becker, in his paper on the Diptera of Madeira, says that Wollaston's *D. repleta* (Ann. Mag. Nat. Hist., Ser. 3. i. (1853), 117), is the same species. It seems fairly cosmopolitan, being known from Madeira, Cuba, &c.

The specimens agree with the description, although there is some variability in respect to the spotting of the thoracic dorsum. It may be noted that the costa is distinctly slit, spined and swollen at the end of 1st section. Two pairs d. c. are present. The inner row of arisal rays are present, though but 5 in number.

Localities. Seychelles. Mahé: Cascade Estate, 800 feet and over, 1908—9.

35. *Drosophila jucunda*, n. sp. (Fig. 24 and Plate 20, fig. 26).

An elegant species with beautifully marked thorax, &c.

Head. Eyes bare. Top view:—frons yellow, darkened and slightly curvilinearly ridged between eye-margin and pale centre line. The ocellar area is also darkened. Eye-margins rather shining. Front f. o. nearly parallel, inserted on inner edge of eye-margins; hind f. o. somewhat divergent: a row of fine bristles from there forward to frons. The div. i. v. and conv. o. v. are situated on two black triangles on the vertex; these are continuous with the black back of head; crossed p. v.; div. oc. inserted rather close to front ocellus. Front view:—2nd joints of antennæ touching at base; a sharp, rather narrow keel most prominent in centre. Clypeus black margined, rest of face dusky

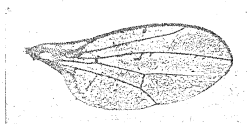
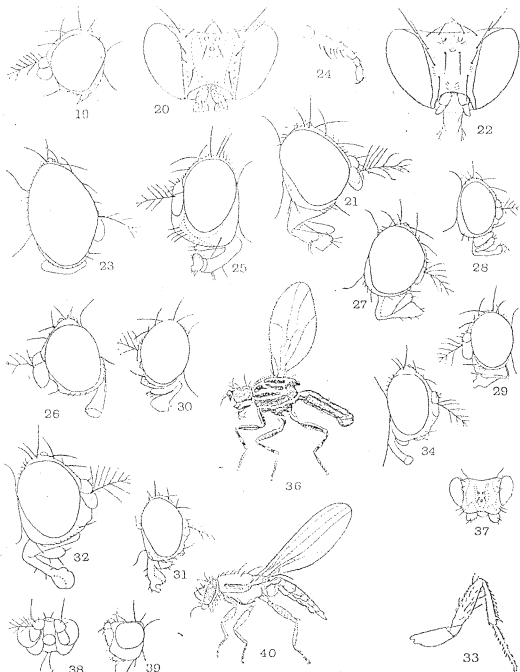


Fig. 24. *Drosophila jucunda*, n. sp. $\times 40$.

orange. Side view (Plate 20, fig. 26):—the black top of vertex is very prominent; antennæ; basal joints yellow, one evident spine on top; 3rd joint suffused and pubescent; arista pale to branching of lower ray except where rays leave it, 4 upper rays, the first close to base, two lower and one terminal, no sign of any inner rays. Vibrissa stout with even row of rather stout small bordering bristles. Palpi rounded stick shaped, black, tongue orange. A few long bristles on hind jowl. Post-orb. b. strongest above.

Thorax. Dull black with small discal bristles in rows and well-defined orange pollinated marks as follows: two longitudinal slightly interrupted stripes from front to about level of front d. c. b.: the black band between carries 4 acr. rows. In front of the cross suture is a short transverse line each side. An ill-defined sparse pollination on the front of the thorax lies between these and the front of the central pale line. Just outside the end of the longitudinal lines is a short oval line, outside which again are



two small spots above wing base: a similar very small spot behind the last d. c. b. Hünneri orange, as is an irregular spot above the n. p. b. The pleurae are dusky orange in varying degrees of intensity. The bristles are two d. c., one h., n. p., presut. (small), two over wing, p. a. Scutellum as thorax, with two pollinated basal side spots and a terminal one. Terminal b. crossed at tip, side-basal ones somewhat convergent. The wings, as Fig. 24, pellucid with orange veins, costa strong to third, weaker to fourth; no slit at end of 1st segment, but bristles there. Halteres orange. Legs pale with darkened front femora, and faint indistinct darkened rings proximally and distally on other femora and proximally on the tibiae, the middle one of which has a long terminal spur.

Abdomen. Dorsal view; 2nd segment yellow with black distal margin, interrupted in middle third; 3rd segment yellow with similar interrupted margin, but can best be described as black with three yellow spots, two lateral ones extending to proximal margin, mid one sub-triangular and extending across segment; 4th black with three yellow spots attached to proximal edge; 5th with three similar but much smaller spots; rest all black. All the distal edges are narrowly yellow. In side view, 2, 3, 4 have distinct yellow spots: genitalia yellow. All segments with fairly stout bristles, both discal and marginal.

Size, $1\frac{1}{2}$ mm.; wing, about 1.6 mm.

Localities. Seychelles. Praslin: Côtes d'Or Estate, XI. 1908, 7 specimens. Mahé: Mare aux Cochons district, 1000—2000 feet, I. 1909.

(Jap.)

36. *Drosophila finitima*, n. sp. (Fig. 25 and Plate 20, fig. 27).

Head. Eyes closely and finely pubescent, vertex somewhat concave behind. Top view:—frons matt orange; the eye-margins, and a rather small though definite triangle surrounding and including the ocellar area, shining. Nearly parallel front f. o., slightly div. hind f. o.; the continuing row of bristles present, the first large and opposite front f. o. Conv. i. v.; div. o. v.; p. v. crossed about one-third from tip, inserted below vertex; div. ocellar based between the large front ocellus and the side ones. Ocellar area with small bristles; 3 or 4 small crossed bristles on front of frons and a few more over the antennal bases. Front view:—face slightly greyish-yellow: large 2nd antennal joints touching at base: a central keel starts just below them and runs down to level of third joint, widening a little, and cut off from upper lip by a groove. Side view (Plate 20, fig. 27):—orange 2nd antennal joint, bristled, with two longer ones: 3rd joint a little suffused; arista long-rayed, five top, two bottom and a terminal ray, inner row continuous but of fine bristles. One vibrissa, with stoutish bristle-row along edge of orange lower eye-margin, orange hind jowls with bristles; post-orb. row especially strong behind v. h. Palpi and tongue orange; former slightly clubbed and bristled at end.

Thorax. Brown-orange, somewhat shining, bristled dorsally to a little beyond level of first d. c., then bare. Two pairs d. c. with little bristles forming six-rowed acrostichals between them, and eight-rowed beyond: 2 smallish h., n. p., pr. sut., 2 s. a., p. a.; 3 nearly equal st. pl. Scutellum as thorax, bare, crossed terminal and equal side bristles

inserted fairly near base. Wings, Fig. 25, slightly yellowish with brownish veins; costa as usual, dark ciliated to between 3 and 4, five and rather long cilia to fourth. Halteres pale orange. Legs: all yellow-orange, a rather weak distal hind row of 3 or 4 front femoral bristles: usual mid-tibial spur.

Abdomen. Brownish-black to black in mature specimens, sometimes paler at base: third segment shining black at base except in middle, fourth with basal half shining, last almost all shining. In the female the bands are usually indistinctly dull orange: there is a certain amount of variability in the abdominal colour: in one or two females there is no sign of marks, and the abdomen is uniformly black.

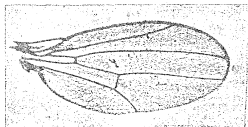


Fig. 25. *Drosophila flautina*, n. sp. $\times 40$.

Size, about $1\frac{1}{2}$ mm.; wing, about $1\frac{1}{2}$ mm.

Localities. Seychelles. Silhouette: Mare aux Cochons and forest above, IX. 1908; highest forest, ca. 2000 feet, 1908. Mahé: high forest of Morne Blanc and Pilot, X.—XI. 1908; slopes of Morne Seychellois, over 1500 feet, II. 1909; Cascade Estate, 800 feet or above.

(*Say.*)
37. *Drosophila caliginosa*, n. sp. (Fig. 26 and Plate 20, fig. 28).

This is a small dark species which should be near *D. nigra* (de Meijere, Tijdschr. Ent., li. (1908), p. 153) but the legs differ from his description.

Head. Eyes with dense, short, stubby pubescence. Top view:—frons entirely black, eye-margins shiny, extending beyond front f. o. in a blunt point, a well-marked shining frontal triangle extending two-thirds towards forehead, with very sharp bounding lines; the rest of the frons (forming a Y-shaped area with broad stalk on forehead, and arms narrowing to vertex) is dull black. Front f. o. sub-parallel and bent forward; hind bent outwards and backwards, the row of small bristles from this to frons are present, the first being quite large. I. and o. v. as usual; p. v. rather small, just crossed; oc. almost parallel, inserted one outside each side of, and nearly in line with the front ocellus: the ocellar area has a few minute bristles. Front view:—the lunular edge over the antennae is somewhat orange: the antennae are separated at the base by the median keel, which widens out along the line of the third antennal joint to form a well-marked snout extending down to the somewhat swollen mouth-margin, but well separated therefrom. The face is all dark, but slightly pollinated. Side view (Plate 20, fig. 28):—second

antennal joint rather swollen, with spines, two in front being long; small oval third joint, pollinated, but hardly pubescent; both joints dark, but sometimes with slight orange tone; arista with five rays on top, two below and one terminal; inner row short, but quite evident. Stout pair vibrissae, followed by mouth bristles which are moderately strong, approximating to small extra vibrissae; hind jaw with a few bristles. Post-orb. row well developed, the last one or two (behind outer v. b.) being quite stout and converging to mid-plane of head. Palpi clubbed, bristly, black; tongue blackened with paler tip.

Thorax. Entirely black, moderately shiny, dorsum entirely covered with regular rows of small dark bristles: two pairs d. c., inserted rather close together, the front pair smaller; the small discal bristles form 8 acrostichal rows just in front of the d. c., and 6 between them: small but evident prescut. pair; two h., usual n. p., presut. and wing bristles; three sternopl. and several much smaller ones. Scutellum bare, duller black, very minutely granulate, almost dull brassy; terminal bristles just touching at tips, small side bristles inserted midway along sides. Wings, Fig. 26, translucent with yellow veins: costa to 4th, the fine black bristling ending a little before 3. There is a distinct costal slit, but no callosity. Halteres dusky-brown. Legs: except tarsi, entirely brownish-black, tarsi yellowish-white, but the dark bristles render this less conspicuous. Front femora with only three moderate bristles of lower row; no conspicuous hind row. Mid-tibiae with moderate spine and few other small crowning bristles; preapicals small.

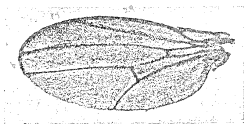


Fig. 26. *Drosophila caliginosa*, n. sp. $\times 45$.

Abdomen. Same colour as thorax, about two irregular cross rows of discal bristles, and a marginal row of somewhat longer ones: these bristles appear black, but when reflecting light are paler than the ground colour.

Size, a little over $1\frac{1}{2}$ mm.; wing, a little under $1\frac{1}{2}$ mm.

Localities. Seychelles. Mahé: Cascade Estate, 800 feet or above; marshes on coastal plain at Anse aux Pins and Anse Royale, I. 1909.

38. *Drosophila pallipes*, n. sp. (Fig. 27 and Plate 20, fig. 29). = *lamb*: *Ande*
not before 1946

There is a single male specimen of this species.

Head. Eyes with profuse short pubescence. Top view:—frons with broad black shining eye-margins and a well-marked large black shining frontal triangle, between the eye-margin and the triangle is a long triangular stripe which narrows to practically zero

at the vertex; it is dark dull black-brown, merging in front with the rest of the frons, which is orange. The ocelli form conspicuous silvery spots on the triangle. Parallel front f. o.; subparallel hind f. o.; the row of bordering bristles starts with the usual large one inserted just outside front f. o. and extends to forehead; long subparallel i. v., divergent o. v.; p. v. inserted below the vertex and crossed; oc. inserted between basal and front ocellus, somewhat divergent; the ocellar area has some 6 or 8 minute but stout bristles on it; there are two rows of minute pale bristles extending to the forehead along the centre lines of the narrow triangles and over the frons. Front view:—antennæ just separated basally, a central keel which widens but very little extends nearly to the upper lip, but does not meet it. The face is orange. Side view (Plate 20, fig. 29):—second antennal joint pale yellow, with upper and outer spines and a few small bristles; 3rd joint brown, silky; arista pale at base with long feathers, five upper, two lower and a terminal: the inner row is represented by only one or two hairs. Stout vibrissa followed by usual row of fairly strong bristles; jowls orange and hind head black. Post-orb. row well-marked, three or four behind the v. b. being very stout. Tongue and palpi yellow, the latter rather small, slightly thickened at end.

Thorax. Shining black with rows of small dorsal bristles except behind; these bristles are brown in most lights; two d. a.: two s. n. The other bristles cannot be seen owing to the method of pinning. Pleuræ black, two st. p. Scutellum, black, but pollinated with minute palish pollen: long crossed terminal, long slightly divergent side bristles. Wings, Fig. 27, very slightly darkened with brown veins; costal ciliation black and strong to before 3 then finer to 4. Halteres with pure white knobs and slightly yellow stalks. Legs all very pale yellow including the coxæ: all the bristles weak, and but little sign of the femoral rows.

Abdomen blackish, except for the two basal segments: the fourth segment has two very shiny black spaces along the proximal margin towards the sides, the last segments are largely shiny.

Size, just under $1\frac{1}{2}$ mm.; wing, about $1\frac{1}{2}$ mm.

Locality. Seychelles. Mahé: Mare aux Cochons district, 1000—2000 feet, I. 1909.



Fig. 27. *Drosophila pallipes*, n. sp. $\times 35$.

(5-43)
39. *Drosophila triangulifer*, n. sp. (Fig. 28 and Plate 20, fig. 30).

This species must be closely related to *D. pallipes*, but its legs are all darkened.

Head. Eyes densely pubescent with fine stout hairs. Top view:—the well-marked frontal triangle extends about three-fourths down to forehead; both it and the broad eye-margins are shining black and meet on the vertex. The front of frons is orange, and is prolonged backwards in two triangular stripes between vertical triangle and eye-margins. These narrow uniformly to their ends, and are more brown orange, darkening as they narrow. Front f. o. nearly parallel as are the hind; the small bristles beyond the

former extend down to forehead, the first one about, just opposite the base of front f. o. Considerably convergent i. v., divergent o. v., inserted rather close together; p. v. just below the vertex, crossed at one-third from tip, oc. divergent, inserted midway between the end and side ocelli. A few fine bristles on front of frons and on ocellar area. Front view:—antennae just not touching at base of large second joints; a well-marked facial knob widening below, most prominent just about level of end of third joint; much concave mouth margin; face all orange. Side view (Plate 20, fig. 30):—second antennal joint yellow orange, bristly, with two spines; third joint orange, sparsely silky, arista with long curved rays, five on top, two below, one terminal; inner row well-marked, and somewhat longer than usual. Vibrissa, and row of following bristles on orange eye-margins, which form the jowls: hind jowls with two or three long bristles: the post-orb. row longer below and behind v. b. Clypeus very evident; palpi and tongue dark orange, the former bristled.

Thorax. Entirely shining black including the pleurae and scutellum: dorsum very sparsely (almost imperceptibly) pollinated and covered with moderately long lines of bristles; scutellum much more densely pollinated. Two d. c., the dorsal bristles forming six rows of acrostichals; two h., n. p., presut., s. a. bristles, large lower and two smaller upper st. pl., scutellar terminal b. crossed just beyond half-way; the equal side bristles near base, just divergent. Wings, Fig. 28, very slightly smoky with brown veins: usual costal ciliation to between 3 and 4 and then on to 4.

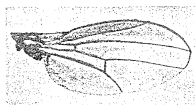


Fig. 28. *Drosophila triangularifer*, n. sp. x 40.

Halters with almost white heads, stalks darkened. Legs mostly dusky white, front coxae black, femora darkened except at the tips (in mature specimens), front femora only moderately spined behind.

Abdomen. Shining black, more shining than rest on proximal half of the third segment (except in centre) and on most of the proximal part of the next segment except in centre.

The dorsum with rather long irregularly arranged bristles, longer on the margins.

Size, a little over $1\frac{1}{2}$ mm.; wing, about $1\frac{1}{2}$ mm.

Localities. Seychelles. Silhouette: Mare aux Cochons, over 1000 feet, IX. 1908. Mabé: high forest of Morne Blanc and Pilot, X.—XI. 1908; slopes of Morne Seychellois, over 1500 feet, II. 1909; Mare aux Cochons district, 1000—2000 feet, II. 1909; Cascade Estate, at or above 800 feet, 1908—9.

(*laps.*)

40. *Drosophila rufuloventer*, n. sp. (Fig. 29 and Plate 20, fig. 31).

A dark species with black thorax and a dark russet-brown abdomen.

Head. Eyes densely but shortly pilose. Top view:—vertex and frons entirely rather shining intense black, with the large frontal triangle and the eye-margins still more shining; slightly concave behind. Parallel front and hind f. o., the continuing row of small bristles to frons evident, the first bristle of these being large and just outside the

front f. o. Convergent i. v., divergent o. v.: p. v. convergent, inserted just below vertex. Oa. divergent, inserted nearer front ocellus than hind. Ocellar area and front of frons with a few minute bristles. The head bristles are all proportionately rather stout for their length. Front view:—face shining black with a little sparse pale pollen; large second antennal joints separated at base by the beginning of the middle keel, which broadens into a distinct elongated knob reaching a little below the level of the third antennal joint. The forehead forms an arched recess in which the second joints of antenna are partly hidden; mouth-margin much convex. Side view (Plate 20, fig. 31):—second antennal joint with two spines and a few bristles, rather ochreous; third small, also ochreous, arista with five top, two bottom and one end ray: inner row of five or six small and equal rays fairly evident. Vibrissa each side, with a row of fine bristles on margin of the broad, somewhat shining ochreous lower eye-margins. Hind jaws black and bristled. The post-orbital row strongest behind the verticals. Palpi dark ochreous and bristly as is the tongue. The shining clypeus is very evident in profile.

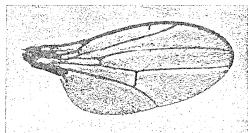


Fig. 29. *Drosophila rufilobenter*, n. sp. $\times 40$.

Thorax. Entirely rather shining black, including the pleuræ and the somewhat duller scutellum: the latter and the dorsum are covered with minute sparse pale pollen very regularly and beautifully spaced. The dorsum is also covered with regular bristles, pale in side illumination, which extend nearly to the back of the same. Two d. c., the discal bristles forming six-rowed acrostichals: the middle row of these ends in two small true presc. b. Two h., two n. p., presut., two sup. a., small post a. The scutellum is flattened on its posterior half: terminal bristles crossed about middle, equal side bristles subparallel. Wings, Fig. 29, with brownish veins. Halteres darkened orange. Legs much darkened orange; front femora rather blackened, front tibiae darker than rest; inferior row of four distally placed front femoral bristles.

Abdomen. Darkish russet brown, paler towards the tip. About two lines of discal bristles, and slightly longer marginal ones.

Size, about $1\frac{1}{2}$ mm.; wing, about $1\frac{1}{2}$ mm.

Locality. Seychelles. Mahé: Cascade Estate, at or above 800 feet, II. 1909.

41. *Drosophila nasuta*, n. sp. (Fig. 30 and Plate 20, fig. 32).

A somewhat large pale orange form with well-marked facial knob.

Head. Eyes densely covered with short bristly hairs: hind eye-angles projecting a little behind plane of head. Top view:—frons light-orange, not shining (see below "front view"), eye-margins very slightly greyer in tone. No triangle; the areas between eye-margins and ocellar area ending off in rounded margins on the vertex. A very narrow and shallow groove runs from the front ocellus to the forehead. Ocelli red. Front f. o. a little diverging, hind the same; the small bristle row from latter begins with a stout bristle nearly between the two f. o. (instead of as usual nearly opposite the front), the continuing small bristles only number four or five. Slightly convergent i. v., divergent o. v., p. v. crossed at tips inserted just on curve of vertex. Oc. long and divergent, inserted outside the line joining the ocelli and just behind the front one. A few small bristles on the ocellar area and behind it; two tiny crossed pairs by the central furrow just over the forehead. Front view:—the large second joints just separate at base: just below them starts the snout which widens gradually till it joins the swollen upper lip; two deep foveae formed for antennae by the frons and snout. Face all orange: in this

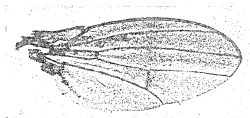


Fig. 30. *Drosophila nasuta*, n. sp. $\times 30$.

view (with a side light) the frons of the male is seen to be quite silvery. Side view (Plate 20, fig. 32):—second antennal joint orange with fine bristles, especially inside; one upper and one front spine. Third joint somewhat darkened distally and inside; arista with long straight rays, seven on top, one terminal, three below; the inner row exceptionally well-developed, of some eight to ten rays. A stout vibrissa, with following row of diminishing bristles on lower eye-margin; three or four bristles on hind jowl; post-orbital row well seen, strongest and bent upward behind v. b. Palpi rather clubbed at end, orange and bristly as is the tongue.

Thorax. Dorsum non-shining orange, very uniformly covered with small bristles, forming eight acrostichal rows before the d. c. lines and six between the two pairs of d. c. Humeri much paler, as is a stripe from them to the wing base; this is succeeded by a dark orange stripe from prothorax to halteres: the rest is pale yellow orange. Two h., n. p., presut., three over wing and another (post a.) just above scutellar base; large and two small st. pl. The scutellum is flattened with well-marked margin; terminal b. crossed about two-thirds down, smaller side ones inserted on the edge and slightly convergent. Wings, Fig. 30, somewhat yellowish with brownish veins. Halteres orange. Legs all

orange, covered with very regular rows of fine bristles. Three distal bristles in front inferior femoral row: large spur to middle tibia.

Abdomen. All orange, about 2 irregular lines of discal and a line of slightly longer marginal bristles.

The female has little or no silvery sheen on the head; she has a short stout pointed ovipositor, the hump is rather conical and hairy: the abdominal segments are sometimes a little darkened distally.

Size, $2\frac{1}{2}$ mm.; wing, just under $2\frac{1}{2}$ mm.

Localities. Seychelles. Silhouette: Mare aux Cochons, over 1000 feet, IX. 1908; near Mont Pot-à-eau, ca. 1500 feet, VIII. 1908. Mahé: Cascade Estate, at or above 800 feet; Mare aux Cochons district, 1000—2000 feet, II. 1909. Félicité: XII. 1908.

42. *Drosophila melanogaster* Meig., System Besch., vi. (1830), 85. 9.

This insect under the above name and the synonym *D. ampelophila* Loew (see Austen, Ent. Mag., 1905, p. 276) has been recorded from most parts of the world.

There are many specimens in the collection that can be referred without doubt to the males of this species.

Localities. Seychelles. Silhouette: Mare aux Cochons, over 1000 feet. Mahé: Cascade Estate. Félicité: XII. 1908.

43. *Drosophila similis*, n. sp. (Fig. 31 and Plate 20, figs. 33, 34).

♂ This is a small species which is exceedingly like *D. melanogaster*. Its front legs, however, are devoid of the extraordinary combs that are found in the latter species.



Fig. 31. *Drosophila similis*, n. sp. $\times 40$.

Instead of these concentrated combs, under a high power (about 60) one can see on the under side of the first two joints of the tarsus a row of smaller combs each of about half a dozen teeth (Plate 20, fig. 33): the first joint has 4 such tiny combs, the next has about 3. All the joints are covered with stout bristly short hairs as well. In all the characters of colour, chaetotaxy, &c., the two species appear to be almost absolutely indistinguishable. The hind f. o. is rather differently inserted, being slightly nearer the front one and more remote from the j. v. than in *D. melanogaster*, and the auxiliary bristle between the f. o. is a little more in line. There is also some difference in the front and

side views (Plate 20, fig. 34). It is, however, impossible to be absolutely certain of the constancy of the various minute differences that are apparent on prolonged examination, nor can they be exactly expressed in a manner suitable for description.

The venation of the two species is practically identical (Fig. 31).

Size and wings as last.

Localities. Seychelles. Silhouette: Mare aux Cochons, over 1000 feet, IX. 1908. Mahé: Cascade Estate, at or above 800 feet, 1908—9.

♀♀ Corresponding to the above are many specimens of females, but it is practically impossible to sort them out, as apparently none were caught paired with males.

Localities. These ♀s were collected in Silhouette, Mahé (Cascade Estate and Mare aux Cochons district), and Félicité Islands.

44. *Drosophila*, sp.

♀ There are 5 specimens of a female of the *melanogaster* group which can be separated from the last two species by the second vein meeting the costa further down. In all other respects they are practically identical. In the absence of a male, the species is left undescribed.

Localities. Seychelles. Silhouette: Mare aux Cochons, over 1000 feet. Félicité.

ZAPRIONUS Coquillett, Proc. U. S. Nat. Mus., xxiv. (1902), 31.

45. *Zaprionus vittiger* Coq., l.c. 32.

Four specimens of this African species were collected.

Localities. Seychelles. Silhouette: near Mont Pot-à-eau, ca. 1500 feet, VIII. 1908; Mare aux Cochons, IX. 1908. Mahé: Cascade Estate, 800 feet or over, 1908—9.

CHYMONMYZA Czerny, Zeitschr. für Syst. Hym. u. Dipt., iii. (1903), p. 199.

A single specimen of a new species of this genus was present.

46. *Chymomyza bicolor*, n. sp. (Fig. 32 and Plate 20, fig. 35).

Head. Eyes, very faintly and sparsely pubescent under high power. Top view:—frons shining, yellow, slightly lined; a very shallow narrow central depression from the ocelli to the large dull orange lunular arc; eye-margins broad and shining yellowish grey, extending forward to near the forehead. There are present the front f. o. parallel and bent backwards; the middle f. o. inserted fairly near the former, nearly meeting in centre of head and slightly bent forward; hind f. o. bent outwards and backwards, the tiny bristle between front and mid o. b. is present; conv. i. v., div. o. v., both long; p. v. very minute, inserted well below vertex; div. oc. inserted between ocelli, but a little inside line joining their centres. A few tiny bristles on orange lunular patch and on edge of a little triangular piece between the antennal bases, also a small divergent pair on ocellar area behind ocelli. Front view:—face shining yellowish, very slightly concave; large 2nd antennal joints quite touching at base, and covered with small bristles. Side view (Plate 20, fig. 35):—the 2nd joint is yellow with 3 or 4

exceptionally large bristles; 3rd joint small, darkened, somewhat silky; arista darkened except for basal one-fourth; 3 or 4 upper, 3 lower, terminal, and a few fine inner rays. The yellow face is very slightly concave; large vibrissa, the following bristles just on mouth margin, they are 4 in number and very stout, nearly as big as the vibrissæ; hind jowls yellow with two spines: a long one on back of mouth. Post-orb. row evident, two long ones behind v. b.

Thorax. Shining orange, a slightly darkened spot just behind humeri, entirely covered with fine bristles which form some 8 irregular acr. rows. Two d. c., the front the shorter, h., n. p., presut., 3 over wings. Scutellum as thorax but bare, tip rather obtusely rounded; two sub-basal bristles, two long terminal, slightly converging towards tips. Wings, Fig. 32, tip white, costa darkened up to this tip; all the veins pale. Halteres whitish yellow. Legs: front coxae pale, femora and tibiae black, except at base, 1st tarsal joint black, the others yellow. Mid and hind legs all yellow.



Fig. 32. *Chymomyca bicolor*, n. sp. x 50.

Abdomen. Entirely shining black, covered with short dark bristles, which show up light in oblique illumination.

Size, over 2 mm.; wings, about $1\frac{3}{4}$ mm.

Locality. Seychelles. Mahé: Cascade Estate, about 1000 feet, I. 1909.

DETTOPSOMYIA, n. g.

There are 5 somewhat badly preserved specimens of a very remarkable *Drosophilid* of quite unusual facies, which must be referred to a new genus (Plate 20, fig. 36).

Head. Top view (Plate 20, fig. 37):—head wider across eyes than long, the eyes are covered with short bristly hairs, they project backwards. Frons broader than wide, roughly rectangular in form with a well-marked sutural fold over the antennæ. Eye-margins very wide. Ocelli nearly in the middle of the frons. The chetotaxy is abnormal: in front over antennæ are two f. o., the smaller forward inner one being slightly bent forward, the neighbouring backward outer one being longer, and slightly bent back. On the swollen hind eye-margins are two more bristles, which can best be looked on as the vertical pairs: the front bristle (corresponding to inner vertical) is nearly upright, the hind (or outer vertical) bends outwards. The p. v. pair are strongly crossed and are low down on back of head; the oc. are divergent and are situated almost on the ocellar area, but the bases are outside the line joining the front to the side ocellus. Front view (Plate 20,

fig. 38):—the face is almost entirely occupied by a large broad knob or snout extending from the frons to the mouth-margin: this knob separates the antennae widely at the base. Side view (Plate 20, fig. 39):—sub-quadrate in form with a projecting frons on the edge of which the antennae are inserted. Jowls deep, the irregularly oval eyes projecting backwards over the head. Mouth-margin projecting, so that the face is concave in profile. Antennae with spine and hairs on second joint, third joint oval with a strongly pectinate arista bearing upper and lower rays, and a few short rays of the inner row. Vibrissa on side of snout with a row of long bristles above mouth-margin. Palpi flattened, paddle-shaped.

Thorax. Fairly normal in shape: as far as the rather damaged state of the specimens permits, there can be made out the following bristles:—a hind pair of d. c., and another forward pair just behind the cross-sutural line: just across the suture are two more small bristles on the same d. c. line: acrostichals in two rather sparse rows. Two h., presut. just above them., n. p.; alar bristles not to be seen clearly, two long st. pl. The scutellum has long terminal bristles crossed about two-thirds down, and long side bristles: the scutellum is evidently swollen. The wings are peculiar, Fig. 33: there is a very well-

dc. 4 pairs
ac 2 rows

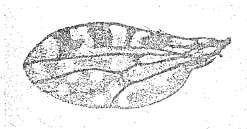


Fig. 33. *Dettopsomyia formosa*, n. sp. x 50.

marked Milichid-like nick in the costa with two spines (such as in *D. fracticosta*, &c.), the end is pointed, the costa to fourth, all the veins much undulated, the second bends sharply up to the costa half-way between first and third.

The abdomen and legs show no specially noteworthy characters. The whole insect (except the abdomen) is diversely and beautifully variegated.

Type. The following species.

47. *Dettopsomyia formosa*, n. sp. (Fig. 33 and Plate 20, figs. 36, 37, 38, 39).

Head. Vertex; broad eye-margins shiny greyish-white, swollen behind; bordering the eye-margin inside is a black line joining the black vertex behind, broader than the margin in front, narrower behind, in front each of these lines is divided into a short fork by two silvery-orange spots over the lunule; the central area of frons orange-silvery with an elongate oval ocellar area which is black: it may also be described by saying that the frons is all black between the eye-margins except for an elongated horseshoe-shaped area from the antennae to the vertex, which is orange-silvery, as well as the above two orange spots. The facial knob is dark brown on top half, with a silver-orange dorsal spot,

lower part and mouth-margin silvery-orange; the jowls like upper eye-margins, but in side view more shiny brown on mouth-margin. Hind head dark, except where the swollen upper eye-margins extend downwards. Antennae dark brown, except the outer margin of second joint, which is paler; arista pale with four or five upper, three lower, and one terminal stout hair. Palpi dark blackish brown; tongue yellow. Chaetotaxy and eyes as in generic description.

Thorax. The dorsum is elegantly variegated in light grey and darkish-brown. A brown-black central stripe from the front to back, which carries the aer. row; on each side is a broad grey stripe which is divided longitudinally by an interrupted brown stripe forming a brown elongate spot on the grey just before suture, and an irregular brown mid-line thence to scutellum: this line is just joined to the middle brown line by a little bar about midway between the two pairs of d. c.'s; from humerus to wing bases is another brown line, attenuated in front. Humeri grey, a very fine line of grey along the suture to the wing base; below this the pleurae are brown, followed by a grey line parallel to the brown one and starting from the front coxae; the sternopleura brown. Scutellum, brownish-black, two indistinct white basal spots, and a distinct terminal one. Wings with venation and mottling as shown in Fig. 33. Halteres darkish orange-grey, paler stalks. Legs: coxae black-brown, femora same except for white tips; tibia with 5 sub-equal rings, beginning basally these are white, brown, white, brown, white; tibia orange. Front femora with two or three long bristles below, and outside.

Abdomen. All dark shining brownish black.

Size, just under $1\frac{1}{2}$ mm.; wing, about $1\frac{1}{8}$ mm.

Localities. Seychelles. Mahé: Cascade Estate, 800 feet and over, 1908—9; near sea-level (Anonyme Island), I. 1909.

ECHINOCEPHALUS, n. g.

There are 5 specimens of a species which is allied by its venation to *Liomyza*. In general macroscopic appearance it is much like the new Geomyzid genus *Amygdalops* (p. 357), and it is remarkable that such a close superficial similarity in facies exists (Plate 20, fig. 40).

Head. Eyes entirely bare. Top view (Plate 21, fig. 41):—head more than twice as broad as long, excessively excavate behind, so that plan is like a crescent with rounded horns: the frons widens gradually from the antennae to just beyond last f. o., it then widens suddenly to the vertex, which is about twice as wide (along the margin) as the breadth of frons. There are three f. o., a small one just on the edge of the frons, a stouter one behind, and a still stouter about the level of the front ocellus; all the f. o. are slightly bent backwards and very slightly outwards; i. v. sub-parallel, o. v. slightly diverging; beyond these, and a little below the vertex is a pair of much smaller divergent bristles; there is a row of small post-orbital bristles. Tiny p. v. down behind vertex. Long sub-parallel oc. inserted outside the line joining ocelli, but equidistant from them. Front view (Plate 21, fig. 42):—the face is very small, broader than high; the antennae

nearly reach the eye-margins, the overall breadth from eye to eye is nearly five times the depth of the face; if the mouth is viewed somewhat from below, the opening is seen to be excessively wide. Side view (Plate 21, fig. 43):—a long flattened oval, eyes much projecting backwards, and hiding the face in front; the jowls are not seen, being apparently bent in sideways; hind head visible below. The antennae have the second joint with three longish spines and a few small bristles; third joint irregular oval with elegant recurved hairs at the tip, arista bare and inserted rather close to second joint. On the lower angle of the facial mouth-margin is a long stout vibrissa, converging and pointing downwards; it is followed by four downward-pointing bristles just below the eyes; the hind head is bristly. Thorax: dorsum smooth and bare; eketotaxy: two evident d. e. behind the suture, continued in front by about three much finer bristles, diverging to the humeral callus. The aer. bristles are represented by two or three longish bristles in a single line from the front of the thorax up to the cross suture: just in front are a few fine bristles on the front margin of the thorax. The hind notopleural is large, and above it is an evident pre-alar, between the line joining these and the humeral knob are many much smaller bristles, but it is scarcely possible to specify which is the second notopleural, &c.; the humeri and below are covered with fine bristles. Scutellum with short divergent end pair, and behind these and little further apart is a much smaller sublateral pair; two small sternopleurals, and one above, are all that are very evident. The metanotum is much developed: when the insect's thorax is viewed perpendicularly to its horizontal plane, the metanotum's outline projects beyond the scutellar boundary. Venation as Fig. 34, rather like *Lionysa*. No special leg characters.

Type. The following species.

48. *Echidnocephalus barbatus*, n. sp. (Fig. 34 and Plate 20, fig. 40, Plate 21, figs. 41, 42, 43).

Head. Structure as described and figured for the genus. Frons and vertex pale shining orange, darkened inside the ocelli, and somewhat darkened in a roughly U-shaped mark above the antennae: the mouth-margin (viewed from below) is darkened, especially on the front lip.



Fig. 34. *Echidnocephalus barbatus*, n. sp. $\times 30$.

Thorax. Orange on dorsum and on pleura down to a rather narrow line starting just below the humeri and extending below the wing insertion to the abdomen; this line is darker brown-orange: below this the thorax is all yellow. Wings slightly smoky, more intensely so between the costa and the long second vein: all the veins brown. Halteres with long brownish knobs and lighter stalks. Legs all yellow: front femora with row of four or five long bristles on top and about five behind on the distal half; small terminal spine on the mid-tibia; distinct preapical spine on the hind femur.

Abdomen. Dark shining orange-brown, sparsely bristled; the narrow margins and the belly, paler.

Size, $2\frac{1}{2}$ mm.; wing, about $2\frac{1}{4}$ mm.

Localities. Seychelles. Félicité, XII. 1908. Mahé: Cascade Estate, ca. 800 feet; marshy ground near sea-level at Cascade, II. 1909.

ASTEIA Meigen, System Beschv., vi. (1830), 88. 209.

49. *Asteia nigra*, n. sp.

A single specimen of an exceedingly dark form, quite distinct from any other; it is all shiny black except the abdomen and parts of the legs: the wings are rather shorter in proportion than usual.

Head. Entirely shiny black, face rather translucent, a little silvery beneath antennæ; antennæ black, slightly rufous centrally inside and outside, about four upper and four lower pectinations to black arista; one pair f. o., inner and outer v., ocellar, stout long vibrissæ. Palpi black, tongue rather orange.

Thorax. Entirely bare shiny black including all the pleura, extremely indistinctly and distantly pollinated, 1st and 2nd d. c., other bristles rather damaged. Wings slightly yellowed with yellow veins; costal fringe very fine, distinct, especially on anal angle. Halteres black. Legs: front, coxa and femur black, tibia black at base, tarsi yellow. Middle coxæ pale, femur black except at ends, tibia black at tip, tarsi yellow; hind coxæ pale, femur black-ringed on distal third with pale knees, tibia with a narrow black ring near base, tarsi pale.

Abdomen. Entirely orange.

Size, 1 mm.; wing, $1\frac{1}{4}$ mm.

Locality. Seychelles. Mahé: from near Morne Blanc, X.—XI. 1908.

Geomyzidæ.

CHIROMYIA Robineau-Desvoidy, Myodaires, 621 (1830).

There is a rather unsatisfactory set of some 17 specimens that can be referred to this genus. They all (with one exception) possess the crossed frontal bristles, and that specimen agrees absolutely in other characters with several others. The facies of the species is unlike that of the European ones: the acrostichal rows are indistinguishable from the general thoracic dorsal bristles which are all small and dark instead of long and pale. The large hind d. c. are present, but the forward row of smaller ones is absent. All the macrochetes are shorter and darker. In view of the known diversity of the chetotaxy in this genus (see the specific descriptions in Becker's paper on *Pelctophila*, Zeit. für Syst. Hym. und Dipt., iv. pp. 131—133) it is not thought desirable to make a new genus for the present species.

50. *Chiromyia dubia*, n. sp. (Fig. 35 and Plate 21, fig. 44).

There are 11 specimens of two sexes which appear to be best treated as one species, although they differ in abdominal colour. There are no perceptible differences in structure.

♀ Entirely orange and yellow.

Head. Top view:—yellow, dull except for a small triangular projection in front, and a narrow edge surrounding the red ocellar area, and the extreme edges of the eye-margins; these are rather shining. The basal ocelli nearer than distance from front to basal. Conv. front f. o. pair, two backwardly pointing hind f. o. pairs (in one specimen the former are missing; in another there are 3 hind f. o. on one side). Between the 3 f. o. pairs are a few very minute bristles. The surface of the frons has also a few small scattered bristles. I. v. conv., almost in line with the f. o., o. v. div. Tiny crossed p. v. below vertex. Much div. oc. inserted between ocelli. There are about 4 small evident bristles behind the v. b.: these are possibly the last bristles of the post-orb. row, but the true p. o. row is somewhat separated from this group and its bristles are much smaller than the above 4 and are directed sideways and not upward. Front view:—the yellow antennae are closely touching and half lie in a deep pit in the white face. The orange palpi are best seen in this view: the eyes are nearest just below base of antennae. Side view (Plate 21, fig. 44):—the eyes are somewhat oval (though nothing like *C. minima*, Beck.), the long axis being about 30° to the horizontal head axis. Jowls broad (see fig.) all covered with palish hairs. Crossed vibrissal pair followed by another nearly as stout and a few similar ones behind them. The black flagellum of the pale yellow antennae is very conspicuous.

Thorax. The dorsum is orange and is covered with small black bristles, the humeri pale yellow as is the area behind them and all the pleura. The last d. c. pair is large and fairly close to back of thorax, it is followed by a distinct row of bristles, the first 2 or 3 being longer than the others and diminishing to the size of the ordinary discal bristles, which form 6 scattered and irregular rows of aer. b. Humeri with a large hind and small front b.; usual 2 n. p., a presut., the alar bristles are not very distinguishable from the dorsal bristling. There is a distinct mesopl. and a sternopl. bristle. The yellow scutellum is bare with a pair of approximated terminal bristles and two smaller side ones:



Fig. 35. *Chircomyia dubia*, n. sp. $\times 45$.

the top is somewhat flattened. Wings, Fig. 35, normal, glassy with pale yellow veins. Halteres with conspicuous pale yellow knob. The legs are all yellow with flattened femora and black claws.

Abdomen. Orange, with small dark bristles. The last segment is knobbed with longer bristles and two small dark side spots.

♂ Two perfect and two headless specimens are possibly the males of the above. In any case they cannot be separated without much more material.

The head characters are almost the same as above, but the bristles are rather stronger. The thorax is also the same, but again the bristles are stronger; the bristle in front of the d. c. is stronger, and there is a very strong prescut. pair, which is quite absent from the above.

The abdomen is dark brown with narrow pale margins.

Size, over $1\frac{1}{2}$ mm.; wing, over $1\frac{1}{2}$ mm.

Locality. Seychelles. Mahé: Cascade Estate, 500 feet or over, 1908–9.

51. *Chironomyia sexspinoso*, n. sp. (Fig. 36 and Plate 21, fig. 45).

Four males of a very distinct form.

Head. Top view:—colour and chaetotaxy as last species except as follows: ocelli in an equilateral triangle, post-orb. row much longer. Front view:—the eyes are nearest just above antennal bases. Side view (Plate 21, fig. 45):—jowls a little deeper and hairy, but the broad true eye-margins are bare. Antennæ rather more orange. Palpi &c. as last.

Thorax. Very much as last but all the bristles much stouter, the p. a. especially so; small presut., only one h. bristle that is of any size. Colour the same.

Scutellum bare, in no way flattened; sub-parallel terminal, two side, and two small discal bristles behind the terminal. Wings, Fig. 36, much as last, as are the halteres and legs.

Abdomen. Dark orange, basal segment with extensively blackened upper corners, the others with a distinct round spot each side and an indistinct darkening in centre line.

Size, 2 mm.; wing, about $1\frac{3}{4}$ mm.

Locality. Seychelles. Mahé: Cascade Estate, 800 feet or over, 1908—9.

52. *Chironomyia hirtiscutellata*, n. sp. (Fig. 37 and Plate 21, fig. 46).

Two males: this species has bristles nearly as pale as the European forms.

Head. Top view:—pale yellow with very slight shininess. The basal ocelli nearer together than distance from basal to front. The chaetotaxy is quite normal, though slightly longer than the other species. The small upward pointing bristles behind the v. b. are very regular and well developed; the post-orb. group behind the eye is composed of much longer bristles than usual and overlaps the true p. a. row: p. v. crossed half-way. Front view:—the eyes are nearest below the bases of the touching antennæ: face white. Side view (Plate 21, fig. 46):—the eyes are rather rounded, antennæ yellow with browner flagellum, and a yellow hair on 2nd joint above. The jowls are very broad behind, covered with yellow bristles except on eye-margins; 3 distinct vibrissal pairs meeting or just crossing.

Thorax. Coloured as usual; the d. c. pair preceded by a smaller auxiliary pair: dorsal bristling profuse but irregular. A very large and strong h. b.; n. p., and p. a. are also very long and strong, a smaller presut. and s. a. Single mesop. and st. pl. Scutellum slightly flattened, long touching terminal, shorter side bristles, and some 6 or 8 small discal bristles. Wings, Fig. 37, quite normal. Halteres with bright yellow knobs. Legs normal.

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Fig. 36. *Chironomyia sexspinoso*, n. sp. x 35.



Fig. 37. *Chironomyia hirtiscutellata*, n. sp. x 40.

Abdomen. 1st segment orange: others with distal two-thirds darker or even brown-orange, the margin yellow, bristled all over, bristles longer on genital segment.

Size, about $1\frac{3}{4}$ mm.; wing, about $1\frac{1}{2}$ mm.

Localities. Seychelles: Mahé, Cascade Estate, at or above 800 feet. Amirantes: Eagle Island, X. 1905.

APHANIOSOMA Becker, Mitt. Zool. Mus. Berlin, ii. (1903), Dipt. Abg., p. 186.

See also Czerny and Strohl, Verh. Zool.-Bot. Ges. Wien, lix. (1909), p. 283.

There are a few specimens of a small fly which appear more nearly placeable in this genus than elsewhere, though not agreeing entirely with the generic characters as given by Becker or as interpreted by Czerny. In both the species *A. approximatum* Beck. and *A. quadrinotatum* Beck. as noted by Czerny (*l.c.*) the front f. o. b. are absent, and not present and crossed as in *Chiromyia*. The present insect agrees in that respect. But in the above two species (as also noted by Czerny) there are but two true o. b. placed rather far down the frons and a few more forward bristles much smaller in size. The present insect has a third upper o. b. between the normal two of the genus, and the succeeding row of 3 or 4 bristles not very small, though they are distinctly smaller and paler. Again, in both the above species the single d. c. are succeeded by a row of fair sized bristles with two well-marked moderate aer. rows between. The present species has the dorsum covered with rows of quite small bristles which give about 6 aer. rows. The facies, head structure and venation &c. agree well with the ordinary species; it is hence thought undesirable to erect a new genus on the above points.

53. *Aphaniosoma serritata*, n. sp. (Fig. 38 and Plate 21, fig. 47).

Head. Eyes bare, head hollowed behind: frons yellow, narrowing in front to about half the width just at back of frons: round each ocellus is a small reddish ring: the central area of the frons is very slightly depressed and is a little rufous in tone. The three f. o. mentioned above are followed by 3 or 4 progressively smaller bristles more nearly on the side of the eye. Div. o. v., conv. i. v.; much conv. p. v. inserted just below vertex opposite each of the hind ocelli; oa. div., rather upright, inserted between ocelli: a pair of small bristles on ocellar area between hind pair; some 5 pairs of small bristles on frontal area, and a few overhanging forehead. Front view:—pale 2nd antennal joints touching, face small, a deepish central pit: all pale yellow. Side view (Plate 21, fig. 47):—2nd joint hidden in pit; 3rd rounded finely silky, yellow; arista darker on flagellum, quite bare. Convergent vibrissæ, the large jowls with many stout bristles on side and below. Post-orb. row stout on upper hind orbits, especially behind v. b. Tongue and palpi yellow.

Thorax. Orange with six appreciably darkened stripes, two from post-alar calli to humeri, practically vanishing about the cross suture; two starting from scutellum extending about three-fifths over thorax, one between each of above stripes, starting at back of thorax, and ending about the cross suture. The narrow line between mid-pair is pale yellow. The prothorax (where head touches) is darkened brown. The disc is covered with rows of small bristles. Pleura pale yellow. Scutellum bare, rounded and arched, the disc rather darker. Last pair d. c. followed by smaller bristles in a row, the

pair next to the d. c.'s are little bigger than others which are like the other general bristles of the dorsum. The fine dorsal bristles form six approximately regular acr. rows; h., two n. p., presut., rather large p. a., small presut., two basal, two terminal; scutellars just crossed at tip. Metapleura dark grey brown. Wings as Fig. 38; veins pale brown. Halteres with almost white head and orange stalks. Legs pale yellow, a row of small spines on top of front femora.

Abdomen. Second to fourth segments grey with narrow pale margins; next with two dark spots confluent proximally on fifth segment, discrete and smaller on the next.

Size, about 1.4 mm.; wing, about 1½ mm.

Locality. Seychelles. Mahé: Cascade Estate, at or above 800 feet, 1908—9.



Fig. 38. *Aphanisoma sexciliata*, n. sp. $\times 30$.

AMYGDALOPS, n. g.

See Plate 21, fig. 48.

Head. Eyes sparsely pubescent under high power. Top view (Plate 21, fig. 50):—frons about as wide as eye-breadth: somewhat convergent in front. Hind head concave, but little excavate. Front and back pair of f. o. parallel to axis, bent a little backwards; front pair near antennæ with small ancillary bristle in front: hind mid-way between hind end eye-margin and the front one. I. v. conv. (only the insertions shown in fig.), o. v. div., inserted right on edge of vertex and rather close together. P. v. crossed at tip, inserted below vertical ridge and each opposite a hind ocellus. Long fine oc. inserted just outside middle of line joining front to back ocellus. Front view (Plate 21, fig. 49):—face narrowest about level of end of third antennal joint, no keel, but two fine furrows demarcating the front eye-margins. The antennæ touch at the base. Side view (Plate 21, fig. 51, the axis of head is much inclined to horizontal in the fig.): head much longer than deep, the eyes much pointed at the projecting hind upper angle. Forehead very visible in front. Antennæ erect at base, second joint with an upwardly-directed bristle above at end; third sub-triangular, with the rounded tip very elegantly haired. Arista very like a *Drosophilid*: upper set of rays, longer and closer at base, lower set and an evident inner row (see p. 326). The jowls deepen from front to back; there is a pair of strong vibrissæ each side and hairs along margin of jowl. The post-orb. row is confined to the upper hind angle, and is small. The palpi are rather long, slightly clubbed and flattened in vertical plane.

Thorax. Normal in form; scutellum somewhat arched, roughly triangular in plan, with rounded tip. Last pair d. c., four rowed acr. conv. in front, h., n. p., two small b. over wing, div. somewhat upwardly-arched long terminal scutellars and two small sub-discal bristles. Two rather small st. pl. Wings, Fig. 39: there is a fine regular black costal bristling between ends of 1 and 2, beyond it is a pale ciliation. The end of 5 is remote from the margin. Legs normal, a few long bristles in a row below front and hind femora.



Fig. 39. *Amygdalops thomasi*, n. sp. $\times 30$.

Note. This form has many *Drosophilid*-like characters.

Type. The following species.

54. *Amygdalops thomasetti*, n. sp. (Fig. 39 and Plate 21, figs. 48, 49, 50, 51).

The chaetotaxy is as given in the generic description; the present species has a fine row of bristles extending from the d. c., the first (in front of d. c.) being somewhat longer than the rest; the acrostichals form four well-defined rows in front, less well defined behind, the mid-rows diverge at base of thorax. Other small bristles (like the acrostichals) are on the general surface of the dorsum. The following details refer to colour characters principally.

Head. Vertex and frons shining orange, with a long darkened triangle from the vertex to about the mid-frons. The base of this vertical triangle is about half the distance between eyes in middle of frons: forwardly it is bounded by fine darker lines which do not meet. Eye-margins very broad, orange, silvery especially towards front. Hind head hollowed and darkened orange. Face orange with narrow silvery eye-margins broadening out sideways into the broadish somewhat silvery-orange jowls. Antennæ orange, arista a little darker: upper hairs are, dorsally five or six very long ones on basal half, three or four shorter ones beyond; below some four fine hairs, and a very evident inner row; palpi and tongue yellow with a few hairs.

Thorax. Dullish dark brown, two narrow orange stripes from the neck to the cross suture. A pale side stripe from right over humeri along line of bristles and base of wing to the entirely yellow halteres. Below this a sharply defined parallel brown stripe from the neck to the abdominal insertion. All the rest of the thorax below the pale yellow is orange. The rounded arched scutellum dark brown. Wings, as Fig. 39, suffused from just before whole length of third vein to just beyond fourth and fifth veins: this darkening is very strong (almost forming a terminal spot) from just before where the second vein ends to the tip of wing: rest of wing pale, veins brown on the dark part, yellow on the uncoloured part. Legs entirely palish yellow. Front femora with two roughly complete rows of fine long bristles, one row inside, one out, both pointing downwards and outwards. Mid-tibia with terminal spine: the fine ciliation below front and hind first tarsal joints form two fairly conspicuous clumps just at beginning of these joints.

Abdomen. Dark brown on top and sides, yellow below. Sub-marginal bristles small: a few others scattered on the dorsum. The male hypopygium is in the form of a small hemispherical knob below the last segment.

Size, 2.1 mm.; wing, under 2 mm.

Localities. Seychelles. Silhouette; Mare aux Cochons, IX. 1908. Mahé: near Morne Blanc, X.—XI. 1908; marshes on coastal plain, Anse aux Pins and Anse Royale, I. 1909. Praslin: Côtes d'Or Estate, XI. 1908.

Milichidæ.

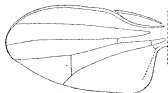
MILICHIA Meigen, System. Besch., vi. (1830), 131.

55. *Milichia superba*, n. sp. (Fig. 40 and Plate 21, fig. 52).

This species is one with entirely silvery abdomen.

♂ Head. Entirely black. Top view:—frons entirely covered with dark somewhat olivaceous pollination: lunular arch shining black. The area surrounding the brown ocelli is not quite so pollinated, but is a little shining, as are two narrow triangular eye-margins down to front f. o. Two f. o. very slightly divergent from centre line: front forward, hind backward bent; below front one a row of smaller orbital bristles alternately smaller and larger. Parallel i. v., div. o. v.; sub-parallel p. v.; oc. stout, inserted between ocelli; on ocular area and just behind it are two small div. pairs; row of small bristles along orbital stripe from inside v. to top f. o. Scattered frontal bristles two pairs of which are rather striking, a forward crossed pair over frons, a backward crossed pair about middle; between these is a third pair and others. Front view:—antennæ separated at base by a projection of the black lunule: two smooth black longitudinal foveæ with narrow ridge between; mouth emarginate, the centrally projecting part of the lip is dark orange pollinated. Side view (Plate 21, fig. 52):—second joint of antennæ rather elongate with front bristles, pollinated with grey; third joint black, the arista brown with just perceptible pubescence under high power ($\times 45$), the basal joints abruptly thicker than flagellum; three stout vibrissæ with stout following row and similar bristles on hind jowl. Palpi black, stout and somewhat flattened laterally, spiny. Tongue black and spiny, recurved tip just perceptibly orange toned. The eyes occupy nearly the whole view, the margins below mid-line being wider than above.

Thorax. Black, somewhat suffused with ochreous pollen. Dorsum covered with bristles which are somewhat variable in length, so that it is impossible to discriminate exactly between any possible front dorso-centrals and the other bristles: the hindmost pair of these is however very large, and just behind them is a smaller pair of prescutellars; h., n. p. and presut., three stout st. pl., but the supra-alars have been destroyed by the side pinning. Scutellum as thorax with two stout basal and two stout crossed terminal bristles. Metanotum rather more pollinated. Wings as Fig. 40. The costal slit well marked with two short terminal spines: the costa is black bristled along margin to just beyond the second vein; thickened to fourth but only ciliated. Halteres all shining black. Legs all black, femora all with two inferiorly-pointing rows of bristles, those on the hind legs the longest.

Fig. 40. *Milichia superba*, n. sp. $\times 20$.

Abdomen. All covered densely with silver except first segment: the second segment nearly as long as the next two, these and the last sub-equal. The margins edged with minute black bristles, the terminal segment with long bristles. The silver extends well over the sides on to the belly, but less so on the base of the second segment.

♀ The frons is somewhat wider and has a few more, but rather smaller, scattered bristles; the lunular area has dark orange pubescence.

Abdomen. Concolorous with thorax, covered with fine bristles except on basal part of second segment, and about the basal third of the next two which are smooth. The legs are altogether stouter than in the male, the bristles less conspicuous, and the first tarsal joint of hind legs is swollen.

Note. It is just possible that this is the ♀ of another species, though the two occurred in the same locality.

Size, $3\frac{1}{2}$ mm.; wing, $2\frac{3}{4}$ mm.

Locality. Seychelles. Mahé: Cascade Estate, at or about 800 feet, 1908—9.

MILICHIELLA Giglio-Tos, Ann. Soc. Ent. Fr., lxiv. (1895), p. 367, Dipt. des Seychelles.

56. *Milichiella lacteipennis* Loew, Berlin. Ent. Zeitschr., ix. (1865), Cent. vi. 185, 97.

Several specimens of this species occurred: it is apparently very widely spread over the world.

Localities. Seychelles. Mahé: from near Morne Blanc, X.—XI. 1908; Cascade Estate, at or above 800 feet, 1908—9.

57. *Milichiella tristis*, n. sp. (Fig. 41 and Plate 21, fig. 53).

This species has no silvery sheen in the male, but is in both sexes entirely slightly shining brown-black, none of the abdominal segments being in any way shining or even brassy.

Head, black. Top view:—dull black, the ocellar area and upper eye-margins rather shining, narrow lower ones pollinated. On these lower ones are two inwardly bent f. o. with 5 or 6 smaller bristles; two upper f. o., the first outwardly bent, the other backward, a small bristle between, another behind. Conv. i. v., div. o. v. on the shining triangular ends of upper eye-margins. Two nearly parallel backward bent p. v. inserted just behind hind ocelli. Stout oc. inserted between the ocelli: tiny bristles on ocellar area, and a small div. pair just on vertex between ocelli. From front of ocellar triangle to near the frons are two rows of about 4 pairs of converging bristles, and there are scattered bristles just over the forehead. Front view:—antennae separated at base by projection of shining lunule. Two long oval black foveae with moderate separating ridge. Mouth edge arched, upper lip but little projecting and orange in tone. Side view (Plate 21, fig. 53):—in this aspect the frons is seen to be greyish in colour. Antennae black with one stout spine and smaller bristles on 2nd joint: 3rd orbicular with black arista suddenly thinning to flagellum which is slightly though evidently pubescent. Vibrissae 4 or 5 each side, the first much the longest; a following row of small mouth marginal bristles. Palpi stout, black and bristly. Tongue orange at the tip. The eye neck is subtriangular with apex nearer top than bottom.

In the female the shining parts of frons are more evident, and the small bristles rather smaller than in the male.

Thorax. Black, slightly shining, very finely covered with minute lighter pollination, disc covered uniformly with small bristles. The last pair of d. c. present and almost in the same cross line with them are two small prescutellars. The specimens are not in very good condition, but one can make out p., n. p., presut., and two on the post-alar calli. The scutellum is coloured like thorax, bare with two basal and two slightly converging terminal bristles. Metanotum, shining, somewhat pollinated in one specimen. Wings, Fig 41, glassy with quite pale veins: costa with usual two-spined break, minutely bristled to just beyond the junction with the second vein which is bent along costa in the usual way; it is then slightly thickened to the end of 4. Halteres with orange knobs and darkened stalks. Legs black except for the orange tarsi, the last 4 tarsal joints are suffused in part, giving a spotted appearance to the feet: there are no specially outstanding bristles on the legs, the bristle clothing being as usual more or less in lines, except for a terminal spine on the mid-tibiae.



Fig. 41. *Milichiella trisulca*, n. sp. $\times 30$.

Abdomen. Somewhat shining black brown. In oblique bright light, one might say it was the colour of dull oxidized copper. It is dorsally covered with bristles except for the basal half of the 2nd segment; this is about the same length as the 5th, each is about as long as the 3rd and 4th together. Terminal segment with a few long bordering bristles. There is no sign of any silvery or truly shining parts at all.

The female is much like the male; the relative sizes of 2nd to 5th segment of abdomen is about the same in one of the two ♀, but in the other the mid segments are relatively longer; this is probably due to the extension of the body with eggs; in both a fleshy annulate ovipositor is visible.

Size, about $1\frac{1}{2}$ mm.; wing, about 1.7 mm.

Locality. Seychelles, Mahé: Cascade Estate, at or above 800 feet, 1908–9.

Another species of the genus was recorded from the Seychelles by Giglio Tos (Ann. Soc. ent. France, lxiv., 1895, p. 367) as *M. argentea* Fabr.: this has been identified as being distinct from that species and is now called *M. tosi* Becker (Ann. Mus. Nat. Hung., v. (1907), p. 535).

Eccortomina Becker, Ann. Mus. Nat. Hung., v. (1907), p. 540.

This genus was founded by Becker for certain Chilean species which differed from *Milichiella* mainly in the very profuse and stout bristles on the thorax. Two males from Mahé can be referred to a new species of this genus.

58. *Eccortomina solitarium*, n. sp. (Fig. 42 and Plate 21, figs. 54, 55).

♂ Head, black. Top view:—frons narrowing much from vertex to forehead, being about 4 times as broad behind as in front. The eye-margins and minute ocellar triangle are shining, the rest is most elegantly and minutely rugulose, two sets of the minute pits forming lines from outside the i. v. to the lunule; there is a minute furrow

from the tip of the ocellar triangle. The head bristles are long. There are two pairs lower f. o., the first just above the lunular level the other behind, the first pair is crossed half-way, the other at tip: between them and down to forehead are several small bristles. Right down on tips of lunular arch (at side of base of 1st antennal joint) is another pair of orbital bristles bent backwards. The two pairs of upper f. o. are roughly parallel to axis of head, the first forwardly, the second backwardly bent, inserted rather close with a fine bristle between. The mid area of frons (between the pitted lines mentioned above) has some few longish thin bristle-pairs, two pairs about one-third way down are bent back and are more conspicuous. l. v. nearly parallel, o. v. div., between is a third extra somewhat smaller bristle; true p. v. well on hind head, slightly div., between and a little above is a somewhat smaller div. pair; oc inserted between ocelli on the small ocellar area, rather upright, slightly div.; between hind ocelli is another smaller div. pair. Front view:—forehead below lunule dark chestnut, face black with greyish pollen, narrowest midway from forehead to mouth edge at point where vibrissal row starts; it is furrowed; antennae touching at base. Side view (Plate 21, fig. 54):—antennae black, 2nd joint with 3 bristles, top one longest; 3rd joint with orange silky pubescence; arista brownish, lower joints thickest, flagellum diminishing slowly in diameter from them, finely pubescent. Main pair of vibrissae crossed, the 7 or so following ones stout, straight. Mouth strongly bristled below. Small regular post-orb. row; well-marked nick at hind head as figured.

Thorax. Black with sparse ochreous pollen. The dorsum is very bristly, some of the general bristles being nearly as stout as the macrochetes. One can readily distinguish three dorso-central pairs behind the suture which are very long: there is also a fourth bristle almost in the line of these before the suture: this bristle, with the humeral and side presuturals form an evident cross line of larger bristles from one humerus to the other: this row is partaken in by certain of the general bristles which lie in its direction and are larger than the rest. This is a distinct, though smaller, prescutellar pair, which form another evident cross row with the last pair of dorso-centrals, an extra bristle each side between the prescutellar and the dorso-centrals, and the bristles over the wing bases. Pleurae bare between humerus and cross suture, with a stout bristle just behind and below the humeral bristle; three stout sternopleural bristles. Scutellum rounded in profile



Fig. 42. *Eocryptomus saltatorius*, n. sp. $\times 30$.

and section, with two basal and two terminal bristles, apparently crossed (only one is present). Wings, as Fig. 42: glassy with brown veins; costal slit present as usual with two short stout spines: costa black bristled and bordered to just beyond 2nd vein, the thickening going to the 4th vein. Halteres black. Legs black, the tarsi slightly paler in parts, especially the front 1st tarsal joint. The front femora with abundant stout hairs on hind side

for about the distal half. The other femora with downwardly pointing long bristly hairs.

Abdomen (Plate 21, fig. 55). Silvery except for the 1st segment and the central area and middle of the base of the second segment. The sides are much bent under and the silvery shine is carried over the edges on the lower half of second segment and all the others: the first segment is swollen at the upper corners and is there covered with black hairs on its outer edge: it is pointed in the centre as usual and is all very shiny black. The second segment bears a tuft of black hairs at each of its upper corners: its dorsum has small bristly black hairs, some of which form two moderately regular lines parallel to the posterior edge: the 3rd and 4th segments have two similar rows: the last segment has the usual long bordering bristles. The relative sizes will be seen from Fig. 55.

Size, $3\frac{1}{2}$ mm.; wing, $2\frac{3}{4}$ mm.

Locality. Seychelles. Mahé: Cascade Estate, at or above 800 feet, 1908—9.

DESMOMETOPA Loew, Berlin. Ent. Zeitschr., ix. (1865), 185, vi. Cent.

59. *Desmometopa M-nigrum* Zett., Dipt. Scand., vii. 2743, 10.

Five specimens are in no way distinguishable from forms of this species.

Localities. Seychelles. Mahé: near Morne Blanc; Cascade Estate, at or above 800 feet; marshes on coastal plain, Anse aux Pins and Anse Royale.

60. *Desmometopa inauratum*, n. sp. (Fig. 43 and Plate 21, fig. 56).

This species is very near to *D. M-nigrum* in most of its characters, including the scheme of frontal marks, but the thorax is covered (in good specimens) with a very dense golden pollination, and the jaws are less deep.

Head. Top view:—the frons is deep dullish black down to the antennæ except that there is a large equilateral sharp pointed ocellar triangle, the upper eye-margins joined to this triangle, and two narrow parallel stripes on the frons (carrying the usual two rows of mid-frontal bristles) which are all bright grey: a very distinct black M is thus formed on the frons. Lower two pairs f. o. slightly conv., with fine bristles between, and a rather larger small bristle on extreme front of eye-stripes. Two pairs much overhanging hind o. b., small bristles between them, and a rather large upright small bristle between last and the i. v. I. v. bent a little back and a little conv., o. v. bent much out; p. v. on vertex just outside and behind hind ocelli, slightly conv.; two small bristles between o. v. and p. v. and small pair behind and between hind ocelli. Oc. inserted between the bright-brown ocelli, rather upright, div. The rows of bristles on the light frontal stripes end in a rather larger forward bent pair. Front view:—facial pit deep and black with a shallow dividing ridge which is greyer: with a side light the pits are also grey. Side view (Plate 21, fig. 56):—hind and lower eye-margins black, the jaws greyer beneath these. Antennal second joint black bristled, the top bristle long, third joint slightly pollinate, in the ♂ conspicuously reddened beneath, sometimes nearly all red, in the ♀ black. Stout vibrissæ with a row of small bristles along the absolute lower edge of jaw; a large bristle on hind jaw. Palpi stout and bristled at the tip, in the ♂ much reddened on the proximal one-third to two-thirds; in the ♀ usually only

reddened at the base, though sometimes more extensively so. The long tip of tongue is ochreous.

Thorax. The ground colour is black, but in good specimens it is densely covered with a fine close granular ochreous-yellow pollination, which is best developed on the hind part of the thorax and on the bare scutellum: this is demarcated from the thorax by an extremely shallow line which is greyer. The dorsum (except the basal part) is uniformly clothed with short black bristly hairs. Last two pairs of d. c., the hind pair largest, presut., two h., n. p., presut., three small bristles above wing, a very long one on postalar callus, with a shorter one inside it. No distinct pleural bristle except a stout sternopl. over middle coxæ. Scutellum with two basal and two long apical bristles crossed at the tips. Wings, Fig. 43, glassy with pale, almost white, veins. Costal bristles long at the base, bristly as usual on first segment with two spines at nick: black bristles as far as second vein, the thickening extending, but attenuating, to the fourth. Halteres clear yellow, the stalks slightly darkened. Legs brownish black, middle and hind tarsi tawny orange, knees narrowly the same.

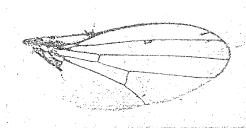


Fig. 43. *Desmometopa inarctata*, n. sp. $\times 30$.

Abdomen. Black, slightly shining, covered with bristly hairs, the submarginal row being the longer, and especially so on the last segment, which is obtusely pointed, longer than the preceding one, which is again longer than the next.

Size, 2 mm.; δ a little smaller; wing, 2 mm.

Localities. Seychelles. Silhouette: Mare aux Cochons, over 1000 feet, from vegetation on the plateau, VIII.—IX. 1908. Mahé: Cascade Estate, at or above 800 feet, 1908—9; marshes on coastal plain, Anse aux Pins and Anse Royale, I. 1909.

In addition to the above species, which are represented by a fair number of individuals, there are two more, one with but two specimens, the other unique: all are unfortunately in rather bad condition, but the species are so marked in character that short descriptions can be given.

61. *Desmometopa microps*, n. sp. (Fig. 44 and Plate 21, fig. 57).

There are two specimens, both rather damaged.

Head. Top view:—frons, &c., much as last species: as far as can be seen the bristles are practically the same. Front view:—face black, rather less deep than normal. Side view (Plate 21, fig. 57):—this is the most abnormal. The antennæ are normal, but the jowls are very large and swollen, and the hind eye-margins are also very wide; vibrissæ very large, followed by a few small bristles. The palpi are black and the tongue is pale and horny.

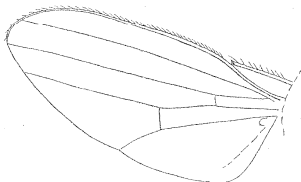


Fig. 44. *Desmometopa microps*, n. sp. $\times 50$.

Thorax. Much as last but the pollen has mostly disappeared; chaetotaxy the same as far as can be seen. The venation, Fig. 44, calls for no remark, except that the last cross vein is a little nearer the wing margin.

In other respects, including the size, the species agrees with the last, except that the abdominal segments are more nearly equal.

Locality. Seychelles. Mahé: Cascade Estate, at or above 800 feet, 1908—9.

62. *Desmometopa approximatonevris*, n. sp. (Fig. 45 and Plate 21, fig. 58).

This is a single female of a small species which has its cross-veins extremely close together. It is in rather a battered condition; much stress cannot be laid on the degrees of "shininess" of the head, &c., as the specimens may be somewhat "greasy."

Head. Top view:—frons black with browner line over forehead. Two lower f. o., two upper f. o. bent as usual, a finer bristle between each of above. I. v. and o. v. normal; crossed p. v., small parallel pair between these; oc. div., between ocelli. The two frontal rows of three pairs of bristles are quite long, there are a few over forehead. The post-orb. row is long behind o. v. Front view:—the large antennæ take up nearly all the face, the pit is deep. Side view (Plate 21, fig. 58):—jowls very narrow, pale; hind head narrow black. Antennæ black, second joint spined above, third large, round, brownish black, arista moderately pubescent. Long vibrissa with inferior small bristles on jowl edge, hind jowl with one or two bristles. Palpi pale orange, longer and less clubbed than usual, bristly at end. Tongue long and thin, chitinous.

Thorax. Shiny black with sparse yellow pollen, covered with fine bristles except just at base. Stout hist d.c., very fine present. A stout bristle on p. a. callus, other bristles destroyed by pinning. Scutellum very minutely rugulose, two moderate basal, two long terminal bristles, crossed at tip. Wings, as Fig. 45, moderately strong ciliation in first section costa, there are none of the strongish black bristles visible on costa to end second vein, but the stout ciliation is uniform in character up to the fourth vein. Halteres brown, a little darker on tip. All the legs brownish black with the tarsi paler tawny.



Fig. 45. *Desmanotopa approximatomeris*, n. sp. $\times 30$.

Abdomen. Shiny black, with brownish tone in parts, covered with black hairs, the last segment is nearly twice as long as the previous one; the next are roughly equal in length.

Size, about 1.4 mm.; wing, about 1.4 mm.

Locality. Seychelles. Mahé: Cascade Estate, at or above 800 feet.

MADIZA Fallen, Dipt. Succi., Oscinid., 3 (1820).

63. *Madiza albipennis*, n. sp. (Fig. 46 and Plate 21, fig. 59).

This is an almost entirely shining black insect with markedly milky wings.

Head. Top view:—frons black and shining, narrowest about opposite front ocellus, widening just perceptibly in front: it is paler just over the forehead. The first of the front f. o. is close to the forehead, the second just in front of the hind pair: between are three small bristles; both converge a little. The narrow eye-margins extend to the front of the hind pair of f. o., they are more shining than the rest in side illumination, as is an evident ocellar triangle. The hind f. o. are fairly close, they diverge over eyes, have a small bristle between, and then two or three small ones up to the i. v.: these converge somewhat; o. v. bent out, a small bristle between the i. and o. v. bent inwards: this is really the last of the regular post-orb. row. P. v. almost exactly on vertex, pointing back and sub-parallel. Oc. inserted rather nearer front ocellus than side one: a few small bristles on ocellar area; four in a row over the forehead, a small pair on middle of frons. Front view:—antennae widely separated at the base by an orange triangular projection of the lunular arch which nearly meets a more obtuse orange upward projection of the lower lip just about the level of the end of the antenna. The face has a roughly circular outline almost cut into two deep pits by these two projections. Side view (Plate 21, fig. 59):—second antennal joint with a spine; third almost quite spherical, blackish with pale silky pollen, arista slender, just perceptibly pubescent under a high power ($\times 50$). A large upper vibrissa is apparently present, but its end is broken off, below it a smaller one: jowl-margin with fine bristles. The jowls are very deep, shining black, and in good light can be seen to be minutely striate longitudinally. Hind angle of jowl with a few extra long bristles. When looked at from below the mouth is seen to be orange. Palpi rather flattened and strap-like: rather orange dorsally, black below, sparsely bristled at end and below. Tongue long and horny with a pointed tip.

Thorax. Quite smooth shining black clothed with fine black bristly hairs. Chaetotaxy normal, except that a small pair of d. c. bristles are visible in front of the usual last pair, and the tiny prescutellars are more visible. Scutellum somewhat brassy, its surface minutely granulate; the usual four bristles, terminal crossed. Wings, as Fig. 46, milky-white with pure white veins: the costa black bristled to just beyond the second vein, then slightly thickened to the fourth. Halteres with long yellowish-white heads and slightly suffused stalks. The legs are black except the end of front coxae, front and middle trochanter, and the middle and last tarsi which are paler orange coloured except at the distal ends of each joint. The hind femora are distinctly flattened; middle tibiae with terminal spine.



Fig. 46. *Moulia albipennis*,
n. sp. $\times 30$.

Abdomen. Shining black, last segment a little longer than others, all clothed with small moderately sparse black hairs: the long fleshy ovipositor is nearly half as long as the abdomen.

Size, about 2.1 mm. without ovipositor; wing, $1\frac{3}{4}$ mm.

Locality. Seychelles. Mahé: Cascade Estate, at or above 800 feet.

RHICNOESSA Loew, Wien. Ent. Monatschr., vi. (1862), p. 174.

64. *Rhinoessa ferruginea*, n. sp. (Fig. 47 and Plate 21, fig. 60).

Head, distinctly concave behind in top view. Top view:—frons orange, slightly shining; ocellar triangle grey; eye-margins and two fine frontal stripes more yellow, one outstanding lower f. o. bent out, two upper f. o. bent out and last somewhat back; tiny bristles between the f. o., and an inner row of small bristles from level of middle f. o. to forehead. I. v. and o. v. on the back of the somewhat swollen vertex, finer convergent p. v. well down on back of head; two ocellar inserted nearer front than side ocellus, two small bristles between the hind ocelli, also between them and a few other bristles on the ocellar area; the yellow frontal lines bristled from the level of front of the ocellar triangle to lunule; three pairs of these bristles are very much larger than others, and form three well-marked macrochaetal crossed pairs: a similar pair overhang the forehead. Front view:—the antennal bases touch, so that the yellow depression below lunule forms but a single shallow triangular depression, in which is a pair of small bristles; the yellow lip is arched and the clypeus very visible. Side view (Plate 21, fig. 60):—antennae orange; 2nd joint bristled above, one being very long; 3rd a little darkened, disc-shaped; arista with lower joint stout, orange, second less stout, black pubescent flagellum. Strong convergent true vibrissae on upper angle of mouth, followed by two large supplementary vibrissae and a few stoutish mouth bristles. Hind jaws bristly all over, especially long below mouth. Post-orb. row regular from middle of eye upwards, a few strong bristles behind v. h. Palpi orange, somewhat flattened laterally, slender and black haired: tongue orange.

Thorax. Ferruginous-ochreous, faintly pollinated with grey, only just perceptibly greyer in a narrow central line; covered dorsally with uniform small black bristles; between the lines of the d. a. these form six somewhat irregular rows of acrostichal bristles. (1 + 3) d. c., the hind pair not in line with the other, but further apart; prescutellars; a few small bristles on humeri, n. p., present, 3 alar. There are also two small bristles over the front coxae, one sternopleural, one large and one smaller one above along the side of the mesopleural suture, almost in line with last notopleural. Scutellum bare, same colour as thorax, flattened on disc, rounded, two basal and two crossed terminal bristles. Wings, Fig. 47, slightly yellowish with yellow veins; 1st segment of costa rather bristly, the small nick with few bristles, costa attenuating to 4th vein, with similar ciliation all along. Halteres all orange. Legs all yellow orange: a few longer bristles on front femora, terminal spine to mid and last femora.



Fig. 47. *Rhinoessa ferruginea*, n. sp. $\times 35$.

Abdomen. Darker orange, almost brown-black in many cases, but much lighter on the margins; covered with black bristly hairs, which are longer on the margins and sides of the segments and very long on margins of the last three segments.

Size, about $2\frac{1}{4}$ mm.; wing, about $1\frac{3}{4}$ mm.

Localities. Seychelles: Mahé; a large series from seaweed on beach, Anonyme Island, I. 1909; Long Island, VII. 1908, 1 specimen. Aldabra: 1908—9 (Fryer).

65. *Rhinoessa aurisetulosa*, n. sp. (Fig. 48 and Plate 21, fig. 61).

This is an almost entirely greyish-yellow species with small eyes. All the bristles are golden brown in side light, the macrochetes being a little darker, the small ones quite pale.

Head. The chaetotaxy is very like the last species, but will be repeated here for convenience. Frons pale orange, ocellar area grey inside, pale pollinated grey just round it as is the vertex, the narrowish eye-margin, and the paler frontal stripes. 3 f. o. as last, the small row on inside eye-margins rather longer than last. 1. v., o. v., p. v. &c. much as last. Front view:—the antennae quite touch at base, face pale yellow. Side view (Plate 21, fig. 61):—eyes much smaller, antennae all paler, 2nd joint similarly bristled but rather more stoutly, arista very slightly slenderer. Jowls similarly bristled, but with pale bristles: palpi quite yellow, almost pale, as is the tongue. The true approximating

vibrissa on the mouth angle is followed along the edge by 4 or 5 extra ones progressively diminishing in size, and pointing away from vertical plane of head.

Thorax. Orange with a minute orange-grey granulation, dorsum all bristly with fine bristles which form very irregular acrostichal rows of some 6 bristles wide between the d. c.'s. There are (1+3) d. c., the last somewhat outside the line of the first three; prescutellars, one large humeral and two other smaller ones on the humeral callus; two not.; presut., mesopleura with bristles, of which three are practically macrochetes, a stout bristle and smaller one on prothorax over coxa. Scutellum flattened, same colour as thorax, the dorsum with a few scattered bristly hairs, a basal and crossed terminal pair. Wings, as Fig. 48, glassy with pale yellow veins, no distinct variation in costal bristles, though they are stouter from 2nd vein to base than from 4th to 2nd. Halteres all yellow. Legs all yellow, no very outstanding bristles, except upper and lower row on front femora; the mid tibia with terminal spines.

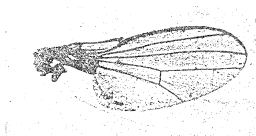


Fig. 48. *Rhinoessa aristulosa*, n. sp. $\times 30$.

Abdomen. In male each segment (2nd to last) has its basal half orange, sometimes getting black from internal discolouration, and the distal half greyish orange: the line of demarcation is very sharp; bristles on dorsum, longer along hind margins, somewhat tufted bristles (in top view) at upper side of 2nd segment. There is a rounded knobby genital segment at end, not bent beneath, with small scale-like appendages; the ♀ abdomen is all orange, segments subequal, with a soft ovipositor.

Size, just over $2\frac{1}{2}$ mm.; wing, just over 2 mm.

Localities. Seychelles. Mahé: from seaweed on beach, Anonyme Island, I. 1909, a considerable number; from seaweed, Long Island, VII. 1908, 6 specimens.

Addenda and corrigenda to the author's report on Sapromyzidæ, Chloropidæ &c.
(Vol. xv of these Transactions, Part 3, 1912, pp. 303—348, and Plates 15, 16).

OMISSION. Family Sapromyzidæ.

In the paper on the Sapromyzidæ (*op. cit.*, pp. 307—316) the condition of the terminal scutellar bristles of the genus *Sapromyza* was unfortunately omitted. They are crossed or much convergent except on *S. nudiuscula* where they diverge strongly.

NOMENCLATURE. Family Chloropidæ (*op. cit.*, pp. 329—343).

Just previously to the publication of the above an important paper by Herr T. Becker appeared in the Ann. Mus. Nat. Hung. for 1912. In that paper the names *oculata* and *longipennis* were used for two species of *Oscinis*. Hence those names are preoccupied. On communicating with Herr Becker he was good enough (at the author's request) to suggest names for the two Seychelles species whose names are preoccupied; these names are *complicata* for *oculata* and *colorata* for *longipennis*.

Further, on p. 249 of the same paper Herr Becker describes an *Oscinella acuticornis* from Abyssinia which is the same as the *Oscinis acuticornis* of the above Seychelles paper. Herr Becker also states that he considers this species and a similar one to be representative of a new genus *Paroscinella*. The synonymy must therefore read:—

Os. oculata Lamb (*op. cit.*, p. 340) = *Os. complicata* Beck., nom. nov.

Os. longipennis Lamb (*op. cit.*, p. 342) = *Os. colorata* Beck., nom. nov.

Os. acuticornis Lamb (*op. cit.*, p. 340) = *Oscinella acuticornis* Beck.

Note on Geographical Distribution.

Owing to the little knowledge there is of the enormous number of acalyptrate forms that must exist in the world fauna, it is very difficult to draw any strong conclusions from the insects recorded in this and the previous paper. This matter is rendered still more inconclusive by reason of the fact that so many Dipterous genera have representatives over almost all the world. The general aspect of the Seychelles acalyptrates, however, is that of the African fauna. Several species are common to both (as for example *Ilythea invenata*, *Anatricus arenaceus*, *Zaprionus vittiger*, *Plagiostenoptera submetallica*), while many others are manifestly related to African forms (e.g. *Sapromyza striata*, *Meroscinis*, *Rhabdochata*).

The occurrence of the typical S. American genus *Acrosticta* is of much interest, as it occurs also in Hawaii. A similar case is that of the Chilean genus *Ecoptomma*. The New Guinea genus *Alometopon* is worth noting.

It is probable that further research will show that several of the new species are really very widely spread, but the collecting of small flies is so much neglected, that it will be long before any adequate information is available on the question.

The author desires to express his gratitude to Mr J. E. Collin, F.E.S., of Newmarket, and to Herr F. Hendel of Vienna; both gentlemen freely placed their unrivalled knowledge and judgment at his service.

EXPLANATION OF PLATES 19—21.

PLATE 19.

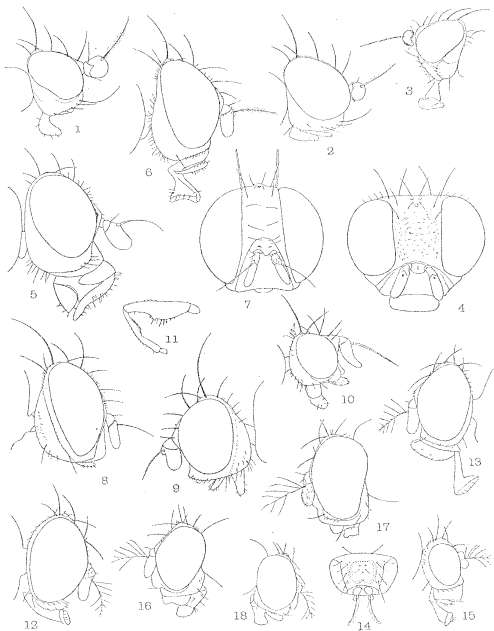
- Fig. 1. *Heteroneuringia plumicornis*, n. sp., side view of head, $\times 40$.
 Fig. 2. " *nigrifrons*, n. sp., side view of head, $\times 40$.
 Fig. 3. *Alloemecyon flavus*, n. sp., side view of head, $\times 25$.
 Fig. 4. *Acrosticta exalt*, n. sp., front view of head, $\times 36$.
 Fig. 5. " " n. sp., side view of head, $\times 40$.
 Fig. 6. *Acidia seychellensis*, n. sp., side view of head, $\times 32$.
 Fig. 7. *Acidia* (?) *ocellata*, n. sp., front view of head, $\times 20$.
 Fig. 8. " " n. sp., side view of head, $\times 20$.
 Fig. 9. *Tephritis aldabrensis*, n. sp., side view of head, $\times 36$.
 Fig. 10. *Rhabdochaeta spinosa*, n. sp., side view of head, $\times 36$.
 Fig. 11. *Sepsis albopunctata*, n. sp., front leg of σ , $\times 33$.
 Fig. 12. *Drosophila sericea*, n. sp., side view of head, $\times 36$.
 Fig. 13. " *grossipalpis*, n. sp., side view of head, $\times 36$.
 Fig. 14. " *notabilis*, n. sp., diagrammatic top view of head, $\times 36$.
 Fig. 15. " " n. sp., side view of head, $\times 36$.
 Fig. 16. " *fracticoستا*, n. sp., side view of head, $\times 36$.
 Fig. 17. " *nigerrima*, n. sp., side view of head, $\times 36$.
 Fig. 18. " *nigrobrunnea*, n. sp., side view of head, $\times 36$.

PLATE 20.

- Fig. 19. *Drosophila punctiscentata*, n. sp., side view of head, $\times 45$.
 Fig. 20. " *aberrans*, n. sp., top view of head, $\times 45$.
 Fig. 21. " " n. sp., side view of head, $\times 45$.
 Fig. 22. " *spinipes*, n. sp., top view of head (diagrammatic), $\times 45$.
 Fig. 23. " " n. sp., side view of head, $\times 45$.
 Fig. 24. " " n. sp., front tarsus, $\times 50$.
 Fig. 25. " *hirtipes*, n. sp., side view of head, $\times 45$.
 Fig. 26. " *jucunda*, n. sp., side view of head, $\times 45$.
 Fig. 27. " *finitus*, n. sp., side view of head, $\times 45$.
 Fig. 28. " *caliginosa*, n. sp., side view of head, $\times 45$.
 Fig. 29. " *pallipes*, n. sp., side view of head, $\times 45$.
 Fig. 30. " *triangulifer*, n. sp., side view of head, $\times 45$.
 Fig. 31. " *ruficinctus*, n. sp., side view of head, $\times 45$.
 Fig. 32. " *usata*, n. sp., side view of head, $\times 45$.
 Fig. 33. " *similis*, n. sp., front leg of σ , $\times 40$.
 Fig. 34. " " n. sp., side view of head, $\times 45$.
 Fig. 35. *Chymomyza bicolor*, n. sp., side view of head, $\times 45$.
 Fig. 36. *Dettopsomyia farinosa*, n. sp., side view of insect, $\times 50$.
 Fig. 37. " " n. sp., top view of head, $\times 45$.
 Fig. 38. " " n. sp., front view of head, $\times 45$.
 Fig. 39. " " n. sp., side view of head, $\times 45$.
 Fig. 40. *Belidnocephalus barbatus*, n. g. and sp., side view of insect, $\times 20$.

PLATE 21.

- Fig. 41. *Echidnocephalus barbatus*, n. sp., top view of head, $\times 45$.
 Fig. 42. " " n. sp., front view of head, $\times 45$.
 Fig. 43. " " n. sp., side view of head, $\times 45$.
 Fig. 44. *Chiropteryia dubia*, n. sp., side view of head, $\times 45$.
 Fig. 45. " *saxipinosa*, n. sp., side view of head, $\times 45$.
 Fig. 46. " *hirtiscutellata*, n. sp., side view of head, $\times 45$.
 Fig. 47. *Aphantosoma saccittata*, side view of head, $\times 45$.
 Fig. 48. *Amygdalops thomsoni*, n. g. and sp., side view of insect, $\times 25$.
 Fig. 49. " " n. sp., diagrammatic top view of head, $\times 45$.
 Fig. 50. " " n. sp., diagrammatic front view of head, $\times 45$.
 Fig. 51. " " n. sp., side view of head, $\times 45$.
 Fig. 52. *Mitichia superba*, n. sp., side view of head, $\times 32.5$.
 Fig. 53. *Mitichiella tristis*, n. sp., side view of head, $\times 45$.
 Fig. 54. *Eccoptomma solitarium*, n. sp., side view of head, $\times 32.5$.
 Fig. 55. " " n. sp., top view of abdomen, $\times 15$.
 Fig. 56. *Desmanotopa imauratum*, n. sp., side view of head, $\times 45$.
 Fig. 57. " *microps*, n. sp., side view of head, $\times 45$.
 Fig. 58. " *approximatonervis*, n. sp., side view of head, $\times 45$.
 Fig. 59. *Madiza albipennis*, n. sp., side view of head, $\times 45$.
 Fig. 60. *Melicocesa ferruginea*, n. sp., side view of head, $\times 45$.
 Fig. 61. " *aurisetulosa*, n. sp., side view of head, $\times 45$.



DIPTERA

