

EXPLANATION OF FIGURES.

PLATE I.

- Fig. 1—*Ephedra aquaria* Hutt. Hypopygium from above.
 Fig. 2—*Ephedra aquaria* Hutt. Hypopygium from the side.
 Fig. 3—*Ephedra aquaria* Hutt, paratype; terminal process of hypopygium from the side.
 Fig. 4—*Ephedra assimilis* sp. n., paratype; terminal process of hypopygium from the side.
 Fig. 5—*Ephedra assimilis* sp. n., paratype; terminal process of hypopygium from above.
 Fig. 6—*Ephedra novae-zelandiae* sp. n., paratype; terminal process of hypopygium from above.
 Fig. 7—*Ephedra novae-zelandiae* sp. n., paratype; terminal process of hypopygium from the side.
 Fig. 8—*Scatella unguiculata* sp. n.; clasper of male.
 Fig. 9—*Scatella nubeculosa* sp. n.; clasper of male.
 Fig. 10—*Scatella nelsoni* sp. n.; clasper of male.

PLATE II.

- Fig. 11—*Scatella nelsoni* sp. n.; wing.
 Fig. 12—*Scatella nubeculosa* sp. n.; wing.
 Fig. 13—*Scatella nitidithorax* Mall.; wing.
 Fig. 14—*Hyadina obscurifrons* sp. n.; wing.
 Fig. 15—*Hyadina irrorata* sp. n.; wing.
 Fig. 16—*Sapromyza simillima* sp. n.; hypopygium from the side.
 Fig. 17—*Sapromyza dichromata* Walk.; hypopygium from the side.
 Fig. 18—*Trypanoides guttata* sp. n.; wing.
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NEW ZEALAND MUSCIDAE ACALYPTRATAE

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PART II.—SAPROMYZIDAE.

PLATE II.

The Sapromyzidae are most closely related to the Sciomyzidae, but may be distinguished from them by the incomplete anal vein (sixth vein) and the convergent postvertical bristles, the tibiae of all legs usually have a distinct preapical dorsal bristle, though that is sometimes very weak, or even absent, on the hind pair; the vibrissae are absent; the auxiliary vein of wing (Sc.) is present and distinct from the first vein (R_1); the mesopleura and sternopleura have generally at least one distinct bristle, and the mesonotum has two or more pairs of dorso-central bristles. The costal vein always extends to the apex of the fourth vein (M).

Eleven species of New Zealand Sapromyzidae are known to us, only two of which had been recorded previously (*Sapromyza sciomyzina* Schiner and *S. decora* Schiner originally recorded from New Zealand are Australian species and do not occur here); these species are distributed among four genera; *Sapromyza* being the only one of world-wide distribution, whereas *Poecilohetaerus* is found also in Australia; the two others are apparently endemic.

The species can be listed as follows:—

TRYPANEOIDES gen. n.

T. guttata sp. n.

SAPROMYZA Fallen.

S. dichromata Walker.

S. simillima sp. n.

S. neozelandica sp. n.

S. arenaria sp. n.

POECILOHETAERUS Hendel.

P. punctatifacies sp. n.

POECILOHETAERELLA gen. n.

P. bilineata (Hutton) (Lauxania)
= *carbonaria* (Hutton) id.

P. dubiosa sp. n.

P. punctatifrons sp. n.
var. obscura.

P. watti sp. n.

P. minuta sp. n.

Very little is known of the early stages of the members of the family, and nothing at all of that of the New Zealand species.

KEY TO GENERA.

1. Mesopleura with two strong bristles, one on hind margin, above or at middle, the other, curved downward, near middle of disc; sternopleurals both long; anterior orbital bristles long, sloping

backward. The short black setulae on costal vein extending to and abruptly discontinued at apex of third wing vein (R_5).

Trypaneoides gen. n.

- Mesopleura with only the backwardly curved hind marginal bristle present. The short black costal setulae gradually becoming weaker beyond apex of second vein ($R_2 + 3$) and discontinued before reaching the apex of the third vein ($R_4 + 5$). 2.

2. Both pairs of fronto-orbital bristles sloping backward.

Sapromyza Fall.

- Anterior pair of fronto-orbital bristles sloping inward, convergent. 3.

3. Face glossy and noticeably convex; arista white except at the base.

Poecilohetaerella gen. n.

- Face not, or but slightly, shining, almost flat; arista entirely dark.

Poecilohetaerus Hendel.

Genus TRYPANEOIDES nov.

Generic characters: Thorax with four pairs of dorsocentral and acrostical bristles, the latter about as long as the former, and, like them, with the anterior pair in front of suture; mesopleura with two strong long bristles, one backwardly curved on hind margin about middle, the other downwardly curved near middle of disc; costa as in the genus *Homoneura* v.d. Wulp; arista pubescent; frons as in the typical form of *Sapromyza*.

Genotype: *Trypanoides guttata* sp. n.

***Trypaneoides guttata* sp. n.**

Head mostly ochraceous grey, the frons with two darker submedian vittae, and small brown round spots at the bases of the bristles; face with four, each parafacial with three small brown round spots. Antennae orange, the third segment ovate, arista black, pubescent. Thorax completely covered with dense yellowish grey pruinosity and with a small brown round spot at the base of each bristle; the disc of the scutellum also with brown spots. Legs orange, femora dark at the base, before the tips, with a brown spot below, or a more or less complete ring; tibiae with a small subbasal dark area. Halteres dark, with a lighter stem.

Wings with a great number of small brown spots, arranged as shown in fig. 18, which represents the right wing of the type; the markings are paler and somewhat different in the paratypes; characteristic are the four median dark round spots on the costal margin, the apical group of spots leaving the very apex clear and the rather large dark marking round the posterior cross-vein. Abdomen grey with brown confluent spots, forming an irregular net.

Length of body and wing, 3mm.

Type: Cass, Feb., 1925 (Tonn.).

Paratypes: Aniseed Valley (Nelson), 1.XII.1923 (Tonn.); Cobb Valley, 10.XII.1921 (Philpott).

Genus SAPROMYZA Fallen.

There are many rather distinct groups in this genus, which occurs all over the globe, but it appears to be impossible to distinguish most of these very readily, and though there are two such segregates in New Zealand, we consider it advisable to include both in the same genus. We distinguish them in the key by the outstanding characters they each possess. In Australia there are even more strikingly distinct forms, but there are many intergrading species which prevent the use of subgeneric appellations for the groups.

In no New Zealand species does the fore femur have a preapical antero-ventral comb.

Sapromyza sciomyzina Schiner and *S. decora* (*Poecilohetaerus* Hendel), originally recorded from New Zealand, are Australian species, and do not occur here.

KEY TO SPECIES.

1. Face practically parallel-sided, at lower margin barely as wide as parafacials at same point ; cheek about half as high as eyes.
arenaria sp. n.
- Face much widened below, at lower margin very conspicuously wider than parafacials at same point ; cheek less than a fourth as high as eye. 2.
2. Head and thorax testaceous yellow, without dark markings ; abdomen variable in colour, either fuscous, or yellowish with dark apices to tergites, or shining black ; legs yellow, apices of tibiae, and a faint annulus at base of hind pair dark. 3.
- Face, frons, dorsum of thorax and upper part of pleurae, with chocolate-brown markings ; abdomen grey dusted, with blackish spots on dorsum ; femora, a basal ring on each tibia, and apices of same and of tarsi, black. *neozelandica* sp. n.
3. Two sternopleural bristles present ; abdomen dull fuscous or yellowish, with dark apices to tergites, or almost completely yellowish, never glossy *simillima* sp. n.
- Only one sternopleural bristle ; abdomen glossy, usually black, but sometimes more or less extensively ochreous, chiefly at the base. *dichromata* Walk.

Sapromyza dichromata Walker.

Walker, *Cat. Dipt. Brit. Mus.* p. 988 (1849).

Hutton, *Cat. Dipt. N.Z.* p. 66.

Hutton, *Trans. N.Z. Inst.* XXIII., 1900, p. 87.

This is a rather large and fairly abundant species, with testaceous yellow head, thorax, and legs, and with a dark abdomen ; the wings are distinctly tinged with yellow.

There is only one sternopleural bristle, which is abnormal for a representative of this genus (an aberrant female specimen presents however, a second weak sternopleural bristle on one side). The abdomen is always glossy and generally black, especially in males, but sometimes it is more or less yellowish at the base.

Cell Sc. either without dark spot or with only a trace of one.

Male genitalia as shown in fig. 17, with small terminal lamellae, large penis, and a pair of inferior appendages.

The type, in British Museum, came presumably from Auckland (Dr. Sinclair).

Other localities: Nihotupu, 23.II.23; Port Waikato, II.26; Waitaku; Wellington.

This species seems to occur only in the North Island.

***Sapromyza simillima* sp. n.**

This species is very similar to the preceding one, from which it can, however, be distinguished immediately by the presence of a second weak anterior sternopleural bristle (some aberrant specimens may show only one on one side). Abdomen never shining black, always more or less pruinose, and variable in colour from dark brown to ochreous yellow, usually paler in the females. The dark spot in cell Sc. is almost always well marked and the anterior cross-vein *r-m* is sometimes slightly darkened. The anterior cross-vein is placed distinctly beyond the middle of the discal cell, whereas in *S. dichromata* it is exactly on the middle. Male hypopygium with wide terminal lamellae and relatively small penis, no inferior appendages present (fig. 16).

In this and the preceding species the mid-tibia has only one strong ventral apical bristle and the preapical bristle on hind tibia is also decidedly weaker than usual; some specimens have a few weak hairs at the apex of vein R_1 .

Length of body and wing, 5mm.

This species is found all through the South Island and apparently only in the south of the North Island, in company with *S. dichromata*.

Type: Christchurch, 18.II.22 (Tonn.)

Paratypes: Christchurch, 18.II.22; Hilltop, 15.I.25; Kandallah, 30.XI.21; Akaroa, 10.XII.24; Nelson, 9.X.23; Lake Moana, XII.25.

***Sapromyza neozelandica* sp. n.**

This species is very closely related to *S. simillima*; the chaetotaxy of head, thorax, and legs is identical, and the mesonotum is also covered with fine black hairs.

Head greyish orange, with four chocolate-brown stripes on the frons, the outer ones being irregular; face with a median U-shaped marking of same colour. Thorax dull orange testaceous, a rather

broad median vitta on the mesonotum and scutellum, this vitta being homogeneous behind but in front divided by greyish and yellowish streaks ; a brown vitta on the lateral edge of the notum and the upper part of the pleurae. Legs testaceous, coxae, femora, apices and a band basad of the middle of the tibiae, as well as the apices of the tarsi, black-brown. Abdomen opaque grey, dusted, with four dark brown marks on the dorsum of each segment, and dark dots at base of setulae. Wings slightly yellowish, a dark mark at apex of Sc. inner cross vein dark.

Length of body and wing, 4mm.

Type : Aniseed Valley (Nelson), 1.XII.23 (Tonn.).

Paratype : Nelson, 14 Oct., 1921 (Philpott).

***Sapromyza arenaria* sp. n.**

Chaetotaxy of head and thorax similar to that of *S. simillima*, the anterior mesopleural bristle more developed ; the chaetotaxy of the legs differs only in the presence of two long apical ventral bristles on the mid-tibiae ; the hind tibial preapical bristle is well developed. The main difference from the two other species of this genus is to be found in the shape of the head, which is much more rounded, the cheeks are high as compared with the small eyes, the parafacials are also consequently wide and the face or mesofacial plate is quite small and about equal to the parafacial ; the clypeus is not protruded.

Face and frons yellow, the face with two small round dark spots below the antennae, vertex and occiput grey ; palpi yellow ; antennae orange, 3rd segment ovate, arista black, microscopically pubescent ; thorax pruinose, uniformly yellowish grey ; the notum covered with rather coarse small hairs rather evenly distributed, legs greyish yellow, the fore femora with a dark preapical anterior spot, the fore tibiae with dark tips, and apical segments of the fore tarsi dark. Halteres yellow ; wings yellowish. Abdomen grey, with coarse black hairs, on the sides there are some tiny round brown spots at the bases of the hairs.

Length of body and wing, $3\frac{1}{2}$ mm.

Type : Christchurch, 24.XI.24 (Tonn.).

Paratypes : same locality, 17.II.22 and 11.XI.24.

Found on plants in sandy soil.

Genus POECILOHETAERUS Hendel.

This genus was erected for the reception of *Sapromyza decora* Schiner, which was renamed *schineri* because the specific name *decora* was preoccupied in *Sapromyza*.

The genotype is Australian.

Only one New Zealand species is known so far.

Poecilohetaerus punctatifacies sp. n.

Head testaceous, with two dark brown lines on the frons and two small round blackish spots on the face; arista and the tip of the antennae dark. Thorax: ground colour testaceous, opaque, with yellow pruinosity, a dark median vitta on centre of mesonotum which is most evident from in front, and the sides of which are darker brown; this vitta is prolonged on the scutellum; sides of the notum with a brown vitta; pleurae mostly brownish. Legs tawny, fore femora with preapical dark ring, hind femora with a dark spot below, near the apex; hind tibiae with a subbasal dark ring.

Wing slightly yellowish, the veins also yellowish; halteres yellow. Abdomen brownish black, moderately shining, with black hairs.

Length: body 3mm., wing $3\frac{1}{2}$ mm.

Type: Hilltop, 15.I.25 (Tonn.).

Paratypes: Waiho, Nelson, Akaroa, Lake Brunner, Okariha, from August to April.

The coloration of this rather common species is variable, some specimens having the pleurae completely tawny and also sometime the abdomen, but these may be immature specimens.

Genus POECILOHETAERELLA nov.

This genus is very closely similar to *Poecilohetaerus*, from which it is distinguished by the characters given in the generic key on a preceding page.

KEY TO SPECIES.

1. Frons conspicuously bicoloured, central portion entirely deep black, or very slightly yellowish in centre in front, the sides or orbits densely white dusted. 3.
- Frons tricoloured, central portion entirely or largely bright orange coloured, orbits more or less conspicuously white dusted. 2.
2. Interfrontalia bright orange in centre, deep black on sides; each parafacial with a deep black spot about the middle. *dubiosa* sp. n.
- Interfrontalia bright orange, brownish on sides; each parafacial brownish above, not nearly so dark as the large black spot at anterior margin of each frontal orbit. *punctatifrons* sp. n.
3. Parafacials with a deep black median spot. *bilineata* (Hutton).
- Parafacials without median black spot. 4.
4. Orbits with a velvety black spot, mesonotum with three white, dusted vittae. *watti* sp. n.
- Orbits without velvety black spot; mesonotum with two white-dusted vittae extending over the sides of the scutellum. *minuta* sp. n.

Poecilohetaerella punctatifrons sp. n.

Head mostly orange, proboscis and palpi brown, face orange, very conspicuously shining, middle of frons opaque, orange; a small round velvety black spot above each of the antennae a little to the side; sides of the frons darker, with a greyish pruinosity forming a lateral stripe on each side behind the black spot. Third segment of antennae elongate, about three times as long as broad, more or less conical, its base orange like the first two segments, its distal part black; arista microscopically pubescent, orange at base, white distally. Thorax brownish orange, more or less shining, the notum with two greyish white stripes along the lateral margin of the rows of dorso-central bristles, these stripes prolonged over the sides of the scutellum. Legs orange, the fore femora dark towards the tips, tibiae also dark, and fore tarsi completely brown. Wing membrane and veins yellow. Halteres brownish orange. Abdomen dark brown, shining.

Length, 4mm.

Type: Otira 9.II.1922 (Tonn.).

Paratypes: Mt. Arthur, 24.XII.21; Cass, II.25; Hilltop, 15.I.1925. All these localities are more or less subalpine.

P. punctatifrons var. **obscura** nov.

Some specimens differ from the typical form of *punctatifrons* by the dark body and dark base of the wings; the legs are also much darker, the fore pair and the femora of the others being dark brown; there seems to be no structural difference, not even in the conformation of the special abdominal segments. Unfortunately the two specimens we have before us are females, the male hypopygium may differ. We consider these specimens as a variety until more material comes to hand.

Mt. Arthur, 25 and 29.XII.1921 (Tonn.).

Poecilohetaerella dubiosa sp. n.

This species closely resembles the dark variety of *punctatifrons*, but is certainly different from it and also from the typical form in the following characters:—

The frons, besides the orbital whitish vittae, has a dark margin on each side of the interfrontalia, so that only a rather narrow orange streak is left in the centre; the middle of the face is orange, but the parafacials are whitish with a black velvety spot about the middle; the thorax is brownish red; vittae as in the other species; base of the wings scarcely darkened at all.

Length of body and wing, $3\frac{1}{2}$ mm.

Type: Kennedy's Bush, 29 Jan., 1925.

Poecilohetaerella bilineata (Hutton).

Hutton : *Trans. N.Z. Inst.*, XXXIII., 1900, p. 88 (*Tasmania*).

Synom. : *Tasmania carbonaria*. Hutton, T.N.Z.I., XXXIV., 1900, p. 173.

The description by Hutton should be completed and amended as follows, from study of the type :—

Face somewhat orange, antennae not piceous but dark brown, arista yellowish at base, the distal part white ; frons velvety black ; the white vittae of the thorax extending over the sides of the scutellum.

This is a rather common species ; besides the localities given by Hutton it occurs at Nelson and Dunedin.

Poecilohetaerella minuta sp. n.

Face and cheeks orange, frons velvety black, with silvery white orbital vittae. Antennae brown, the second segment and base of the third paler ; base of arista yellow, the rest whitish ; palpi and proboscis brown. Thorax brown, very slightly shining between the two dorsal white vittae which extend over the sides of the scutellum ; legs brown, tawny on anterior coxae, bases of femora, distal part of tibiae and on the tarsi, the fore legs darker. Halteres dark. Abdomen shining black. Wings slightly yellowish, with blackish bases.

Length of body, $2\frac{1}{2}$ mm. ; wing, $2\frac{3}{4}$ mm.

Type : (female) Otira, 8.II.22 (Tonn.).

Paratype : Waiho, 28.I.21.

A male specimen from Nelson (15.XII.21) which may be somewhat immature, has a more triangular head, the oblique face making a more protruding angle with the frons. The antennae are also relatively more elongate, the third segment being about four times as long as wide. These may be sexual characters.

Poecilohetaerella watti sp. n.

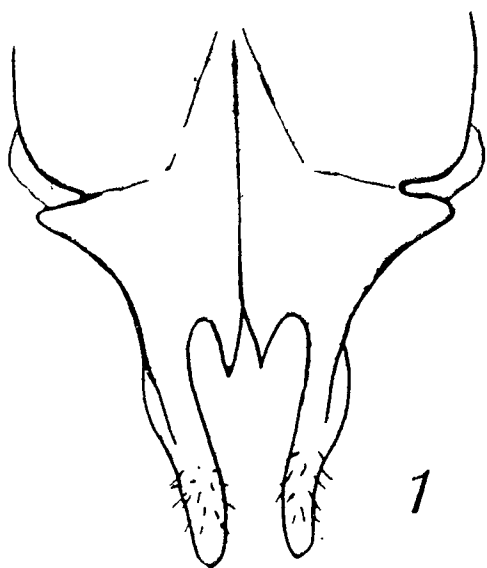
Head luteous, orbit and parafacials white dusted, each orbit with a deep velvety black spot below anterior bristle, parafacial without black spot but with a reddish tinge under the covering of white dust on upper part ; third antennal segment blackened apically ; palpi black, yellowish basally. Thorax fulvous, dorsus with traces of three darker vittae which are overlaid by white dust. Abdomen glossy, dorsum largely blackened, base and hypopygium luteous, apices of tergites black. Legs luteous, fore femora and tibiae, except bases, and entire fore tarsi, black. Wings yellowish. Halteres yellowish brown.

Intradorsocentral setulae in two series. Hypopygium large. Inner cross vein slightly beyond middle of discal cell.

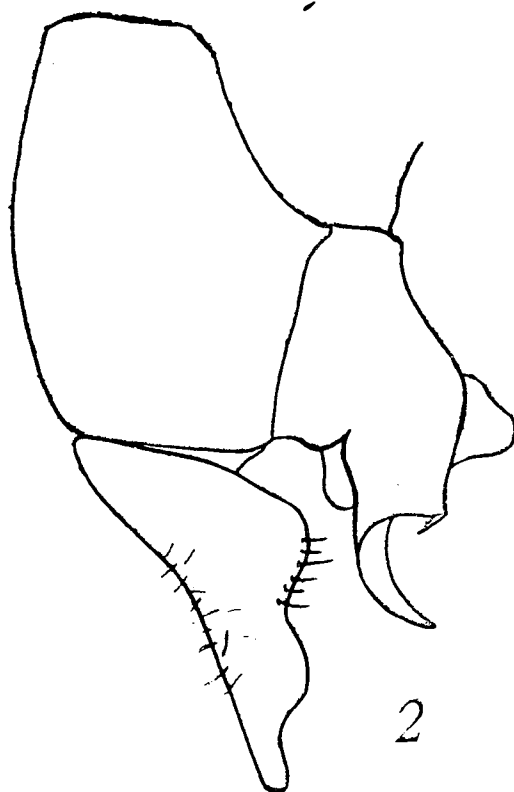
Length, $3\frac{1}{2}$ mm.

Type : (male) Wanganui, 26.IX.21 (M. N. Watt).

Named in honour of the collector, Morris N. Watt.



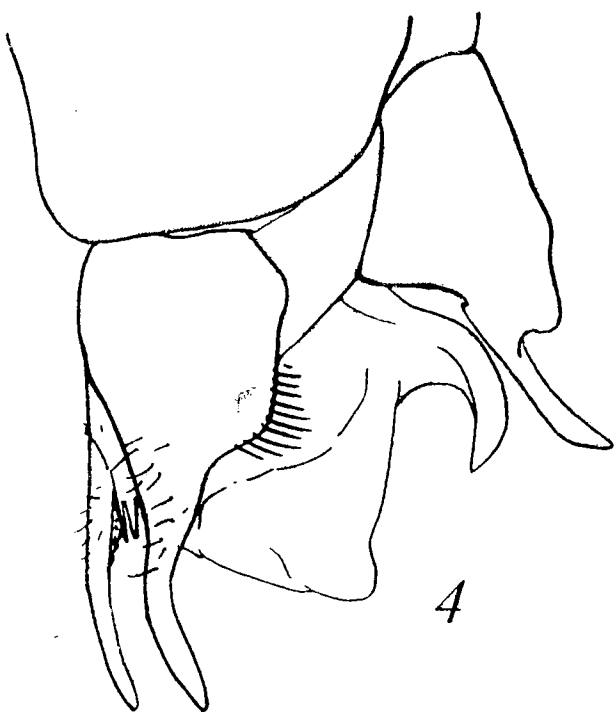
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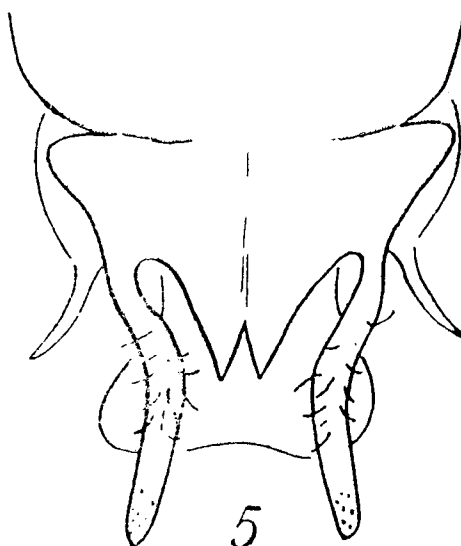
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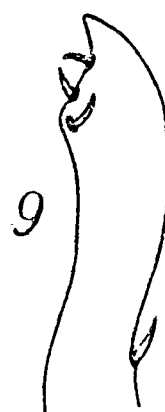
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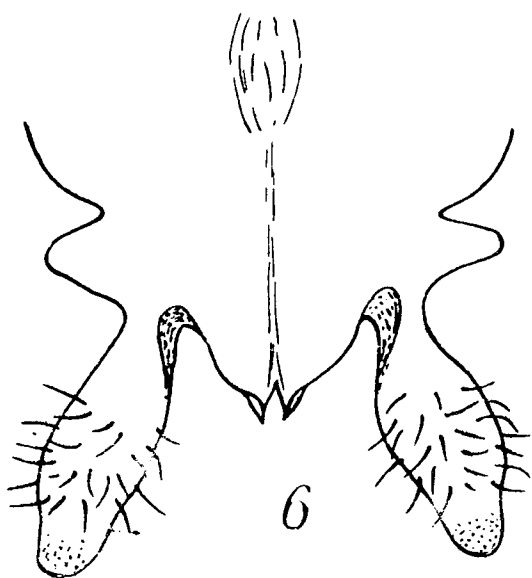
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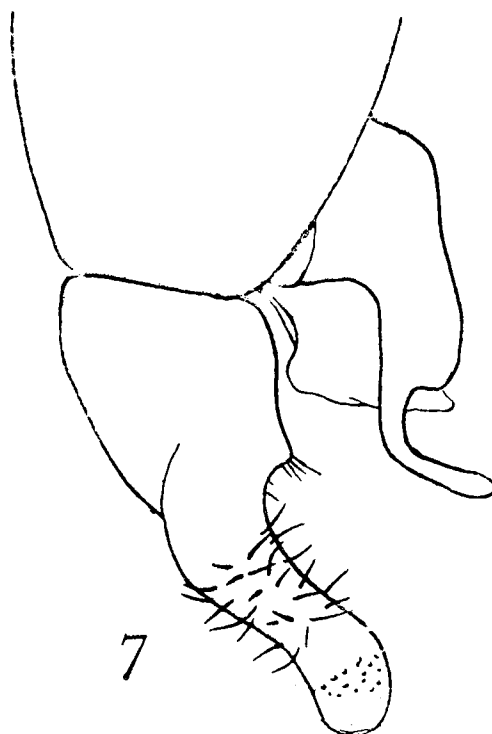
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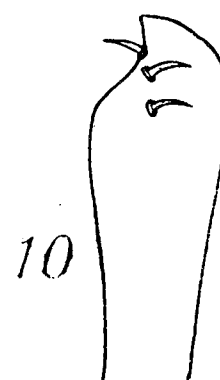
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