

NEW SPECIES OF *STROBLIOMYIA* FROM  
NEW GUINEA AND NEW BRITAIN  
(Diptera: Tachinidae)<sup>1</sup>

By Hiroshi Shima<sup>2</sup>

*Abstract*: Five new species of the fissicorn *Strobliomyia* are described from New Guinea and New Britain. They are *S. pectinata*, *S. trifurcata*, *S. illugiana*, *S. sedlaceki*, and *S. hirsuta*. The male genitalia and male antennal segments are illustrated and a key to species is included.

The genus *Strobliomyia* Townsend is a distinctive group of the tribe Siphonini (= Actiini) by the strong downwardly directed lower prostigmal bristle, 3+4 *dc*, wing vein An almost always reaching hind margin, etc. As far as I know, only 4 species—*S. fergusonii*, *S. valida*, *S. uniseta* and *S. baldwini*—have been known as the fissicorn *Strobliomyia* from the Indo-Australian area. Five additional fissicorn species from New Guinea and New Britain are described below.

In his key Malloch (1930b) mentioned on "*fergusoni*" as having "lower stigmal bristle very short and fine, directed upward (Subgenus *Schizoceromyia*)", but Mesnil (1963) treated the genus *Schizoceromyia* Townsend (type-species: *Schizotachina fergusonii* Bezzi) as a synonym of *Strobliomyia*. Judging from the characters given in the original description of *Schizotachina fergusonii* Bezzi, such as 2+3 *dc*, only 2 *stpl* and anal wing vein not reaching wing margin, I consider "*fergusoni*" as belonging to another genus. Though I have seen no examples of "*fergusoni*" and even if "*fergusoni*" does belong to *Strobliomyia*, all the species described below are different from any other known species.

I wish to express my hearty thanks to Prof. K. Yasumatsu of Kyushu University and Dr J. L. Gressitt of Bishop Museum for their kind guidance and encouragement.

All the type specimens will be deposited in the collection of the Entomology Department, B. P. Bishop Museum, Honolulu.

***Strobliomyia pectinata*** Shima, new species      Fig. 1.

This species is very closely allied to *S. baldwini* Malloch from Queensland, but is different in the bare wing vein R<sub>1</sub> and long 2nd arisal segment.

♂. Head reddish brown in ground color, occiput darker and interfrontal area yellowish; parafrontals, parafacials, face and gena pale yellow-white pollinose; occiput with gray-white

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pollinosity; antenna brownish, 1st, 2nd and base of 3rd segments reddish yellow; arista brown; palpus yellow. Vertex nearly as wide as eye-width; frontal length distinctly shorter than facial one (2:2.5); parafacials narrowed below, concave and invisible in profile; interfrontal area slightly widened anteriorly, nearly  $1.5 \times$  as wide as parafrontal; gena  $1/6$  of eye-height. Inner vertical bristle nearly  $1.5 \times$  as long as outer one; ocellar bristle strong, proclinate and divergent; 2 reclinate inner orbital bristles; 2 strong proclinate outer orbital bristles; 5 frontal bristles, of which 2 are very fine; the undermost frontal bristle nearly on level of base of 3rd antennal segment; parafrontal hairs short, fine and sparse, only 1-2 descending below undermost frontal bristle; upper occiput without any black seta behind postocular row. Antenna long, 3rd segment with a narrow branch which bears many forked or simple filaments on one side; such filaments with dense short and very fine pubescence. Arista with dense fine and very short hairs, nearly as long as total length of 2nd and 3rd antennal segments; 2nd segment slightly shorter than 3rd; 3rd segment thickened on its basal  $1/2$ . Palpus clavate.

Thorax black in ground color, posterior apex of scutellum pale reddish; mesonotum with dense gray-yellow pollinosity; pleura rather thinly grayish pollinose; pollinosity on scutellum rather thin. Propleura bare; prosternum setulose; sternopleura bare in front of mid-coxa; 3+4

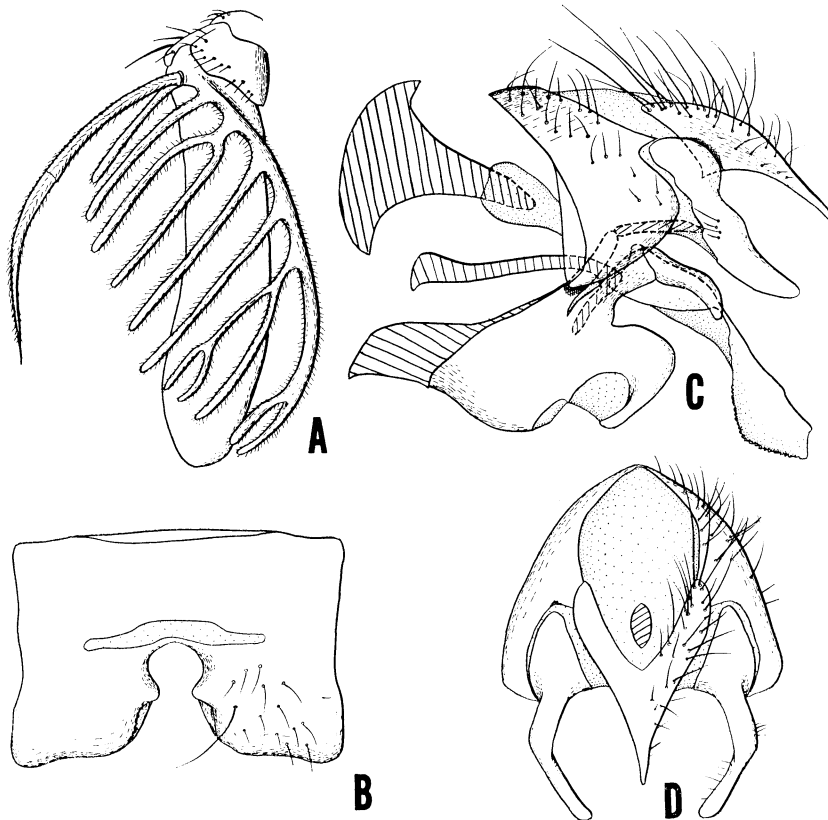


Fig. 1. *Strobliomyia pectinata* n. sp.: A, male antenna (left side); B, male 5th sternum (ventral view, hairs on left side are not drawn); C, male hypopygium (lateral view); D, same (dorsal view, hairs on left side are not drawn).

*ac*; 3+4 *dc*; lower prostigmatical bristle strong and downwardly directed; 3 *stpl*; subapical scutellar bristle nearly  $2 \times$  as long as scutellum; apical scutellar bristles fine,  $2/3$  as long as scutellum, horizontal and crossing each other. Distance between 2 subapical scutellar bristles nearly  $1.5 \times$  as long as that between basal and subapical ones of same side.

Wing hyaline; basicosta pale brownish or yellowish; calypter pale brownish white. Vein  $R_1$  bare; vein  $R_{4+5}$  setulose along almost entire length dorsally, ventral surface with only 1 seta basally; vein  $Cu_1$  bare. Ultimate section of vein  $Cu_1$  nearly  $4/5 \times$  as long as penultimate section of  $Cu_1$ , and nearly  $2.5 \times$  as long as crossvein M-Cu; vein An reaching wing margin.

Leg black; coxa, trochanter and tibia reddish brown or reddish yellow; pulvillus yellow. Fore tibia with rows of anterodorsal and posterodorsal setae and 1 posterior seta; mid-tibia with 1 anterodorsal, 2 posterodorsal and 1 ventral setae; hind tibia with rows of anterodorsal and posterodorsal setae and 4 ventral setae. Claw and pulvillus very short.

Abdomen shining black, venter of 3rd and 4th terga reddish centrally; dorsum of anterior  $1/3$  of 3rd and 4th terga and anterior  $1/4$  of 5th tergum thinly gray-white pollinose; pollinosity on central dorsal parts of 3rd and 4th terga extended to anterior  $1/2$  but very thin and only visible when seen from behind; mid-dorsal longitudinal line distinct on 3rd to 5th terga. Third tergum with 2 strong median and 1 lateral marginal bristles; 4th tergum with 2 strong median and 2 lateral marginal bristles; 5th tergum with a row of marginal bristles; discal bristle entirely absent.

♂ genitalia: 5th sternum nearly parallel-sided, with rather sparse hairs; cercus tapering to apex, pointed at apex; surstylus longer than cercus, with only a few hairs on outside, sparsely haired inside; basiphallus without any dorsal process; spines on distiphallus confined to ventral part.

♀. Unknown.

Body length: 3.5-4.2 mm.

HOST: Unknown.

Holotype ♂ (BISHOP 8960), Illugi, 220 m, Upper Warongoi Valley, Gazelle Pen., New Britain, 15.XII.1962, J. Sedlacek, Malaise trap.

Paratypes: 2 ♂♂, same data as holotype; 1 ♂, Gaulim, 130m, Gazelle Pen., New Britain, 28.X.1962, J. Sedlacek.

### ***Strobliomyia trifurcata* Shima, new species** Fig. 2.

This species is very characteristic in its 3-branched ♂ 3rd antennal segment, bare wing vein  $R_1$ , not very long 2nd aristal segment and surstylus of ♂ genitalia fused with epandrium at base.

♂. Head mostly reddish brown in ground color, occiput darkened; parafrontals, parafacials, gena and face with dense whitish, somewhat grayish pollinosity; occiput grayish pollinose; interfrontal area reddish yellow; antenna reddish brown, 1st, 2nd and basal  $1/3$  of 3rd segments reddish yellow; palpus yellow. Vertex slightly wider than eye-width; frontal length distinctly shorter than facial one (4: 4.5); interfrontal area parallel-sided, nearly  $1.5 \times$  as wide as parafrontal; parafacials distinctly narrowed below, but visible in profile; gena nearly  $1/5$  of eye-height. Inner vertical bristle nearly  $1.5 \times$  as long as outer one; ocellar bristle strong, proclinate and divergent; 2 reclinate inner orbital bristles; 2 proclinate outer orbital bristles; 5-6 frontal bristles, of which the undermost one is sitting nearly on level of middle of 2nd antennal

segment; parafrenal hairs nearly descending to level of base of arista; occiput with only some fine black setae behind postocular row. Antenna with 3rd segment trifurcated, each subequal in length, the lowest lobe wider than others. Arista with very fine short hairs; 2nd segment nearly  $4 \times$  as long as wide; 3rd segment thickened on its basal  $1/3$ . Palpus slightly clavate.

Thorax black in ground color, posterior apex of scutellum pale brown; mesonotum with dense yellow-gray pollinosity; pleura rather thinly gray-white pollinose; pollinosity on scutellum dense yellowish gray. Propleura bare; prosternum setulose; sternopleura bare in front of mid-coxa;  $3+4 ac$ ;  $3+4 dc$ ; lower prostigmatal bristle strong and downwardly directed;  $3 stpl$ ; subapical scutellar bristle nearly  $2 \times$  as long as scutellum; apical scutellar bristles horizontal and crossing each other, slightly shorter than scutellum. Distance between 2 subapical scutellar bristles nearly  $1\frac{1}{3} \times$  as long as that between basal and subapical ones of same side.

Wing hyaline; basicosta reddish yellow; calypter pale yellowish white. Vein  $R_1$  bare; upper surface of vein  $R_{4+5}$  setulose along its almost whole length, lower surface with only 1 seta basally; vein  $Cu_1$  bare. Ultimate section of vein  $Cu_1$  nearly  $7/10$  as long as penultimate section, and nearly  $2.5 \times$  as long as crossvein  $M-Cu$ ; vein  $An$  reaching wing margin.

Leg brownish black, trochanter and tibia reddish yellow; pulvillus yellowish. Fore tibia with rows of anterodorsal and posterodorsal setae and 1 posterior seta; mid-tibia with 1 anterodorsal,

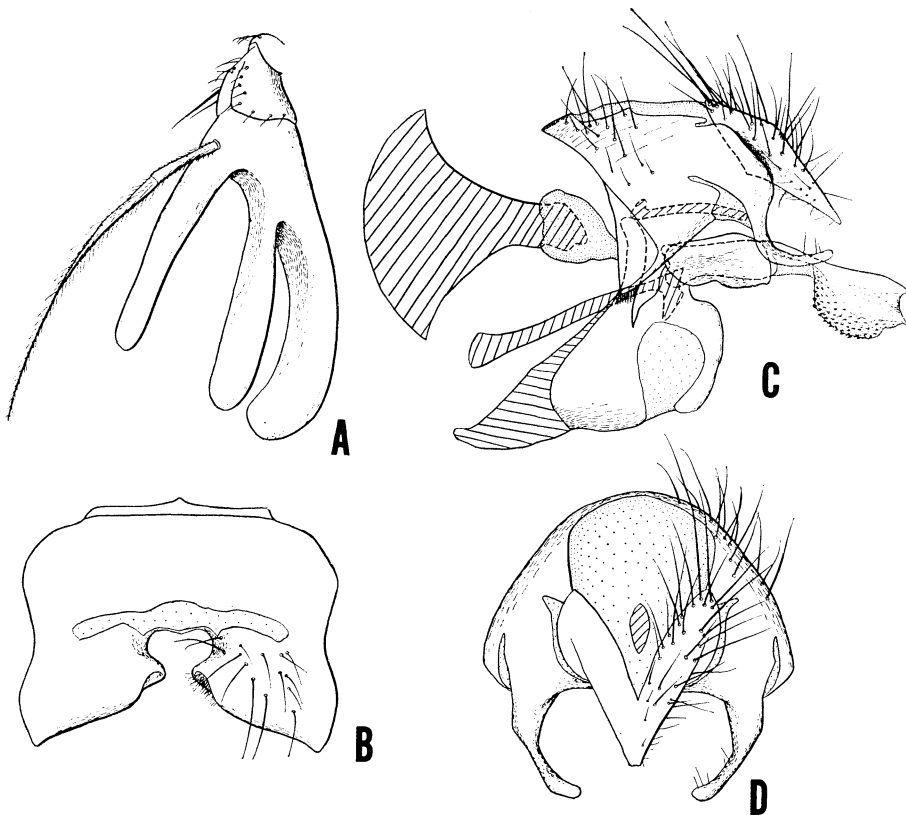


Fig. 2. *Strobliomyia trifurcata* n. sp.: A, male antenna (left side); B, male 5th sternum (ventral view, hairs on left side are not drawn); C, male hypopygium (lateral view); D, same (dorsal view, hairs on left side are not drawn).

2 posterodorsal and 1 ventral setae; hind tibia with rows of anterodorsal and posterodorsal setae and 3-4 ventral setae. Fore claw and pulvillus very short.

Abdomen shining black, venter somewhat reddish; dorsum of anterior 3/4 of 3rd and 4th terga and anterior 1/2 of 5th tergum thinly whitish pollinose; mid-dorsal longitudinal line distinct on 3rd and 4th terga; venter thinly whitish pollinose on narrow anterior margin of each tergum. Third and 4th terga with 1-2 lateral and 2 median marginal bristles; 5th tergum with a row of marginal bristles; discal bristle absent.

♂ genitalia: 5th sternum slightly narrowed at middle of each side, inner posterior side of produced part with very fine short pubescence; cercus tapering to apex, not pointed at apex, with rather strong hairs; surstylus fused with epandrium at base, in profile strongly curved at apical 1/2; basiphallus without any dorsal process; distiphallus with very distinct spines on membranous area of ventral 1/2.

♀. Unknown.

Body length : 3-3.7 mm.

HOST: Unknown.

Holotype ♂ (BISHOP 8961), Popondetta, 60 m, SE New Guinea, 2-4.IX.1963, J. Sedlacek.

Paratypes: 1 ♂, Pindiu, 860 m, Huon Pen., NE New Guinea, J. Sedlacek; 2 ♂♂, same locality as holotype, 30-31.VIII.1963, J. Sedlacek, Malaise trap; 7 ♂♂, same locality as holotype, 2.IX.1963, J. Sedlacek, Malaise trap; 2 ♂♂, same data as holotype.

***Stroblomyia illugiana* Shima, new species** Fig. 3.

This species is closely related to *S. uniseta* Malloch from Malaya, but is different in its wing vein  $R_1$  setulose along its whole length on upper surface, ultimate section of wing vein  $Cu_1$  shorter (ultimate section is nearly  $1/2 \times$  as long as penultimate section) and 2nd arisal segment shorter (nearly  $2 \times$  as long as wide).

♂. Head reddish brown; parafrontals, parafacials, face and gena with dense yellow-white pollinosity; occiput brown, with grayish pollinosity; antenna reddish, 3rd segment slightly becoming darker to apex; palpus yellow. Vertex nearly as wide as eye-width; facial length nearly  $1.5 \times$  as long as frontal one; interfrontal area slightly narrowed anteriorly, nearly  $2 \times$  as wide as parafrontal at middle; parafacials distinctly narrowed below, but visible in profile; gena nearly  $1/5$  of eye-height. Outer vertical bristle nearly  $2/3 \times$  as long as inner one; ocellar bristle strong, proclinate and widely divergent; 2 reclinate inner orbital bristles; 2 very strong proclinate outer orbital bristles; 5 frontal bristles, of which 2 are stronger than others; the undermost frontal bristle nearly on level of anterior end of 2nd antennal segment; hairs on parafrontal fine and rather sparse, only 2-3 hairs descending below undermost frontal bristle; upper occiput with only 2-3 fine black setae behind postocular row. Antenna with 2nd segment very short, nearly  $1/6 \times$  as long as 3rd; 3rd segment cleft from near base to apex, upper lobe narrow, with dense and very fine hairs, lower one broad, with dense fine and very short hairs outside. Arista shorter than 3rd antennal segment, with very fine short hairs; 2nd segment only  $2 \times$  as long as wide; 3rd segment thickened on its basal 1/2. Palpus rather short, slightly clavate.

Thorax mostly dark brown, apex of scutellum reddish yellow; mesonotum with dense gray-yellow pollinosity; pleura thinly whitish pollinose; pollinosity on scutellum very thin. Propleura bare; prosternum with some fine black hairs on its sides; sternopleura bare in front of mid-coxa; 3+4 *ac*; 3+4 *dc*; lower prostigmatal bristle strong and downwardly directed; 3 *stpl*; subapical scutellar bristle strong, nearly  $2 \times$  as long as lateral one and scutellum; apical scutellar bristle fine but distinct, nearly  $2/3 \times$  as long as scutellum; distance between

2 subapical scutellar bristles slightly longer than that between basal and subapical ones of same side.

Wing hyaline; basicosta yellow; calypter yellowish white. Upper surface of vein  $R_1$  setulose along its entire length, lower surface bare; vein  $R_{4+5}$  setulose along almost entire length dorsally, with only 1 seta on its base ventrally; vein  $Cu_1$  bare. Ultimate section of vein  $Cu_1$  nearly  $1/2 \times$  as long as penultimate section of  $Cu_1$ , and nearly  $1.5 \times$  as long as crossvein  $M-Cu$ ; vein  $An$  reaching wing margin.

Leg: Coxa reddish brown, femur darker; tibia somewhat yellowish; pulvillus yellow. Fore tibia with a row of anterodorsal, 3-4 posterodorsal and 1 posterior setae; mid-tibia with 1 anterodorsal, 2 posterodorsal and 1 ventral setae; hind tibia with rows of anterodorsal and posterodorsal setae and 3-4 ventral setae. Claw and pulvillus very short.

Abdomen mostly black, somewhat shining, venter of each tergum reddish centrally; dorsum of anterior  $2/3$  of 3rd and 4th terga and whole 5th tergum with very thin whitish pollinosity;

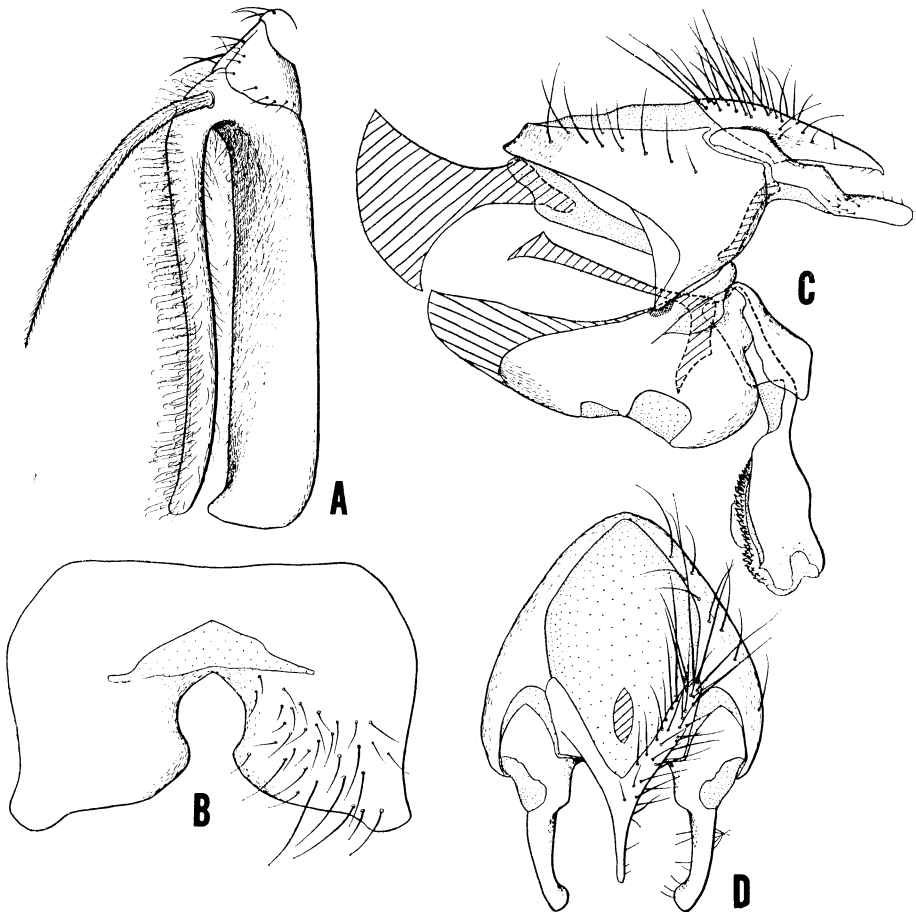


Fig. 3. *Stroblomyia illugiana* n. sp.: A, male antenna (left side); B, male 5th sternum (ventral view, hairs on left side are not drawn); C, male hypopygium (lateral view); D, same (dorsal view, hairs on left side are not drawn),

mid-dorsal longitudinal line present on 3rd and 4th terga. Third tergum with 2 very weak median and 1 lateral marginal bristles; 4th tergum with 2 median and 2 lateral marginal bristles; 5th tergum with a row of marginal bristles; discal bristle entirely absent.

♂ genitalia: 5th sternum very slightly narrowed at middle of each side; cercus tapering to apex, in profile very slightly bent ventrally at apex; surstylus longer than cercus; basiphallus without any dorsal process; distiphallus with strong spines on ventral part of sclerotized area.

♀. Closely resembling ♂ but differing as follows: 3rd antennal segment normal, nearly 4 × as long as 2nd; lower surface of vein  $R_1$  with some fine setae on its apical 1/3; abdomen more or less reddish brown at side.

Body length: 4.3-4.5 mm.

HOST: Unknown.

Holotype ♂ (BISHOP 8962), Illugi, 220 m, Upper Warongoi Vall., Gazelle Pen., New Britain, 15.XII.1962, J. Sedlacek, Malaise trap.

Paratypes: 1♂, 1♀, same data as holotype.

***Strobliomyia sedlaceki* Shima, new species** Fig. 4.

This species seems to be related to *S. similata* Malloch from South East Asia, but the ♂ 3rd antennal segment of *sedlaceki* is entirely different and upper surface of wing vein  $R_{4+5}$  is setulose along nearly its whole length.

♂. Head mostly reddish brown in ground color; parafrontals, parafacials, face and gena with dense pale yellow-white pollinosity; occiput darker, with dense gray-white pollinosity; interfrontal area reddish brown; antenna brown, 1st, 2nd and base of 3rd segments reddish yellow; palpus yellow. Vertex very slightly narrower than eye-width; frontal length slightly shorter than facial one; interfrontal area nearly parallel-sided, 1.5 × as wide as parafrontal; parafacials distinctly narrowed below, but well visible in profile; gena nearly 1/6 of eye-height. Outer vertical bristle nearly 2/3 × as long as inner one; ocellar bristle strong, proclinate and divergent; 2 reclinate inner orbital bristles; 2 strong proclinate outer orbital bristles; 5 frontal bristles, of which 2 are stronger; the undermost frontal bristle slightly above level of base of 3rd antennal segment; hairs on parafrontals sparse, descending to level of base of arista; occiput with only a few black setae. Antenna with 2-branched 3rd segment, upper lobe shorter than lower one, the lower one nearly 2 × as wide as upper one at middle; both rounded at tip. Arista with very fine and dense hairs, nearly as long as total length of 2nd and 3rd antennal segments; 2nd segment nearly 4 × as long as wide; 3rd segment thickened on nearly its basal 1/3. Palpus slightly clavate.

Thorax black in ground color, posterior apex of scutellum reddish brown; mesonotum densely yellow-gray pollinose; pleura with very thin grayish pollinosity; scutellum rather dense yellowish gray pollinose. Propleura bare; prosternum setulose; sternopleura bare in front of the mid-coxa; 3+4 *ac*; 3+4 *dc*; lower prostigmatal bristle strong and downwardly directed; 3 *spl*; subapical scutellar bristle nearly 2 × as long as scutellum; apical scutellar bristles fine, slightly shorter than scutellum, horizontal and crossing each other. Distance between 2 subapical scutellar bristles slightly longer than that between basal and subapical ones of same side.

Wing hyaline, basicosta yellow; calypter yellowish white. Vein  $R_1$  setulose on its apical 1/3 dorsally, bare ventrally; vein  $R_{4+5}$  setulose along almost entire length dorsally, ventral basal node with only 1 seta; vein  $Cu_1$  bare. Ultimate section of vein  $Cu_1$  nearly 2/3 × as long as penultimate section of  $Cu_1$ , and nearly 2.5 × as long as crossvein M-Cu; vein An reaching wing margin.

Leg blackish; coxa brownish; tibia yellowish brown or reddish yellow, especially on fore tibia;

pulvillus yellowish. Fore tibia with rows of anterodorsal and posterodorsal setae and 1 posterior seta; mid-tibia with 1 anterodorsal, 2 posterodorsal and 1 ventral setae; hind tibia with rows of anterodorsal and posterodorsal setae and 4-5 ventral setae. Claw and pulvillus very short.

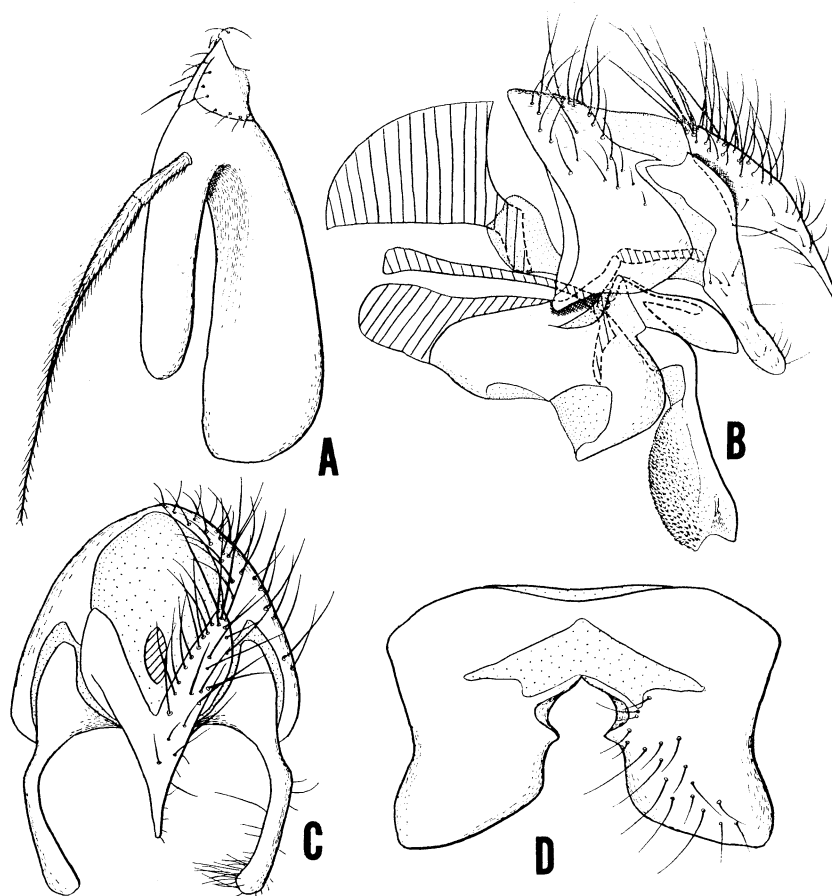


Fig. 4. *Stroblomyia sedlaceki* n. sp.: A, male antenna (left side); B, male hypopygium (lateral view); C, same (dorsal view, hairs on left side are not drawn); D, male 5th sternum (ventral view, hairs on left side are not drawn).

Abdomen black, somewhat shining, venter reddish centrally; dorsum of anterior 1/2 of 3rd and 4th terga and anterior 1/3 of 5th tergum thinly whitish pollinose; mid-dorsal longitudinal line distinct on 3rd to 5th terga; venter very thinly whitish pollinose evenly. Third tergum with 2 strong median and 1 strong lateral marginal bristles; 4th tergum with 2 strong median and 2 lateral marginal bristles; 5th tergum with a row of marginal bristles; discal bristle absent.

♂ genitalia: 5th sternum slightly narrowed at middle of each side, hairs on posterior produced part rather sparse; cercus being slender to apex, with rather strong hairs; surstylus longer than cercus, with somewhat dense hairs on apical part of inner surface; basiphallus with a narrow dorsal process; distiphallus with very fine spines on ventral 1/2 membranous area,



♀. Unknown.

Body length: 3.3–3.7 mm.

HOST: Unknown.

Holotype ♂ (BISHOP 8963), Popondetta, 60 m, SE New Guinea, 2–4.IX.1963, J. Sedlacek, Malaise trap.

Paratypes: 7 ♂♂, same data as holotype.

***Strobliomyia hirsuta* Shima, new species**      Fig. 5.

This species is very closely related to the preceding one but is different in the following points:

♂. Parafrontal hairs descending to nearly upper 1/3 of parafacials; upper lobe of branched 3rd antennal segment wider, nearly  $3/4 \times$  as wide as lower one; arista shorter, nearly as long

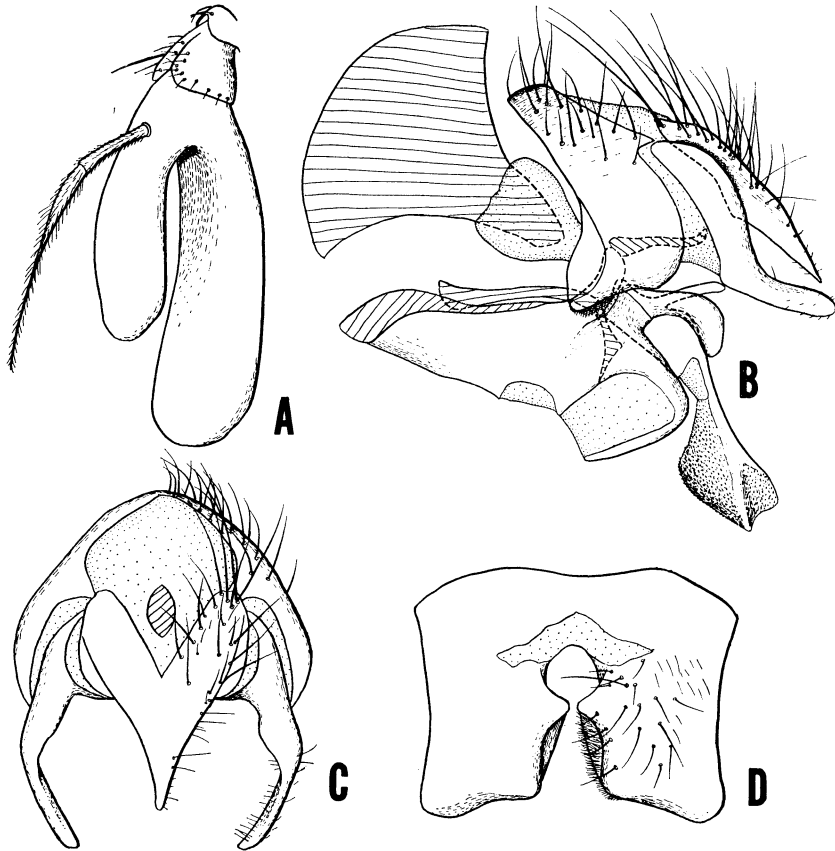


Fig. 5. *Strobliomyia hirsuta* n. sp.: A, male antenna (left side); B, male hypopygium (lateral view); C, same (dorsal view, hairs on left side are not drawn); D, male 5th sternum (ventral view, hairs on left side are not drawn).

as 3rd antennal segment; upper surface of wing vein  $R_1$  setulose along its entire length, lower surface bare; dorsum of anterior 2/3 of 3rd and 4th abdominal terga and anterior 1/2 of 5th tergum with thin whitish pollinosity. ♂ genitalia: 5th sternum not much narrowed at middle of each side, inner side of produced part with very fine and short pubescence; cercus slightly wider than in preceding species, hairs rather weaker; inner surface of surstylus with sparse hairs; surstylus slightly bent dorsally at apical 1/3 in profile; basiphallus of aedeagus with a narrow dorsal process; spines on membraneous area of distiphallus finer.

♀. Unknown.

Body length: 3.3-3.6 mm.

HOST: Unknown.

Holotype ♂ (BISHOP 8964), Popondetta, 60 m, SE New Guinea, 2.IX.1963, J. Sedlacek, Malaise trap.

Paratypes: 7 ♂♂, same data as holotype.

#### KEY TO FISSICORN SPECIES OF PAPUAN STROBLIOMYIA

1. First wing vein ( $R_1$ ) bare; ♂ 3rd antennal segment 3-branched or with many filaments ..... 2
  - $R_1$  setulose dorsally, at least apical 1/3; ♂ 3rd antennal segment 2-branched, without filaments ..... 3
2. Second arisal segment elongated, nearly as long as 3rd; parafacials very narrow, invisible in profile; only 2-3 fine hairs present below undermost frontal bristle; ♂ 3rd antennal segment with a branch bearing many forked or simple filaments ..... **pectinata** n. sp.
  - 2nd arisal segment shorter, at most  $1/3 \times$  as long as 3rd; parafacials narrow but visible in profile; parafacial hairs descending to level of base of arista; ♂ 3rd antennal segment 3-branched ..... **trifurcata** n. sp.
3. Ultimate section of 5th wing vein ( $Cu_1$ ) short, nearly  $1/2 \times$  as long as penultimate section; 2nd arisal segment at most  $2 \times$  as long as wide; ♂ 3rd antennal segment long, upper lobe and outside of lower lobe with very fine and dense hairs; vein  $R_1$  setulose along its entire length ..... **illugiana** n. sp.
  - Ultimate section of vein  $Cu_1$  longer, nearly  $2/3 \times$  as long as penultimate section; 2nd arisal segment at least  $4 \times$  as long as wide; upper lobe of ♂ 3rd antennal segment without such hairs ..... 4
4. Wing vein  $R_1$  setulose only on its apical 1/3 dorsally; arista nearly as long as total length of 2nd and 3rd antennal segments; upper lobe of ♂ 3rd antennal segment nearly  $1/2 \times$  as wide as lower one ..... **sedlaceki** n. sp.
  - $R_1$  setulose along its entire length dorsally; arista shorter, nearly as long as 3rd antennal segment; upper lobe of ♂ 3rd antennal segment at least  $3/4 \times$  as wide as lower one ..... **hirsuta** n. sp.

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