

setae. Seventh sternites with 12–15 setae, four to seven of these being macrosetae. Ventral arc produced anteriorly as a finger-like process, its posterior edge with eight fine setae, the two median setae much shorter than the others. *Male*: Hypopygium very long and prominent; sternum VII+VIII dorsally with two conspicuous macrosetae a little beyond middle, and medial and slightly posterior to these, two setae that are more than half as long as the macrosetae; tergum IX dorsally with a row of four macrosetae. Gonapophyses gradually tapered and curved from base to knobbed apices; sides with scattered microsetae, chiefly on apical third, a few anterior to macroseta; ventral macroseta inserted at about apical third; accessory seta minute.

Measurements:	BL	TL	WL	WW
Male	2.53–2.80	0.88–0.93	1.76–1.92	0.82
Female	2.89–3.16	0.93–0.99	1.87–1.92	0.82–0.88

TYPE MATERIAL: PANAMA.—Holotype male and allotype female (slides), from *Diaemus youngii cypselinus* (host no. 11422), Armila (San Blas), 4 March 1963, C. O. Handley, Jr. and F. M. Greenwell. In the collection of Chicago Natural History Museum.

Paratypes.—6, same data as the holotype; 4, same host and collectors, Isla Bastimentos (Bocas del Toro). **COLOMBIA.**—7, same host, Río Raposo (Valle de Cauca), 10 August 1962, C. J. Marinkelle and W. Thornton; 1, same host, Río Mecaya (Caqueta), 1851 meters elevation, 2 March 1952, P. Hershkovitz, CNHM Colombian Zoological Expedition (1948–52). **PERU.**—14, same host, Río Calleria, Colonia Calleria, “15 km. from [?Río] Ucayali” (Loreto), 8 October 1961, B. Malkin and J. S. Hurley. Paratypes in the collections of Chicago Natural History Museum; the United States National Museum; and C. J. Marinkelle, Universidad de los Andes, Bogota, Colombia.

OTHER MATERIAL EXAMINED: 2, from “bats,” Orinoco River, VENEZUELA, collected by Olalla, [MCZ, det. as *mirabilis* by Bequaert].

REMARKS: The only host known for this species is *Diaemus youngii*, a vampire bat which often attacks poultry (Goodwin and Greenhall, 1961).

***Strebula consocius* Wenzel, new species.** Figures 124B, 125A, 128.

Closely related to *S. tonatiae* (Kessel) but differing in the greater angle formed by the anterior margin of the postvertex, the convex, multi-faceted eyes (a single hyaline lens in *tonatiae*), and in not having a conspicuous macroseta at apex of costal wing vein.

DESCRIPTION: *Head.*—Frontoclypeus without apical detached plates. Anterior plate of laterovertices with six setae; postocular sclerite distinct. Dorsal surface of postgenae not emarginate laterally, posteriorly with about 10 short setae, as well as a conspicuous macroseta near inner posterior margin and lateral to it a shorter but conspicuous seta. Postvertex and occiput as illustrated (fig. 124B) but anterior margin generally a little more pointed and the festoon setae usually more like those shown on right side. Eyes relatively small, multi-faceted, about seven facets of varying sizes, visible from above. Ventral ante-ctenidial area wider than long (29:22).

Thorax (fig. 128).—Prescutum without second or anterior transverse suture; epaulets usually with five to six setae; discal setae relatively sparse, setose area not quite reaching epaulets along sides; arc of longer setae not distinguishable, though long outer seta is present. Antescutellar setae conspicuously longer than other scutals. *Wings.*—All veins except sixth setose to base. Costa without a macroseta at apex. R_s only about a fourth longer (23:17) than distance from fork to crossvein *r-m*. *Legs.*—Protibiae with about eight conspicuously long macrosetae, mesotibiae with nine to ten. Metatibiae with six or seven conspicuously long macrosetae along dorsal edge, the apical ones

longest. First segment of hind tarsus about as long as next two segments combined, the ventral surface with two irregular rows of conspicuous plantar bristles and an inner row of much shorter ones; plantars of following segments minute, inconspicuous.

Abdomen.—Inner dorsal margins of tergum I+II with five to six setae. *Female*: Tergum VII with two macrosetae and posterior and medial to them a pair of setae nearly half as long. Supra-anal plate with four apical macrosetae only. Seventh sternites

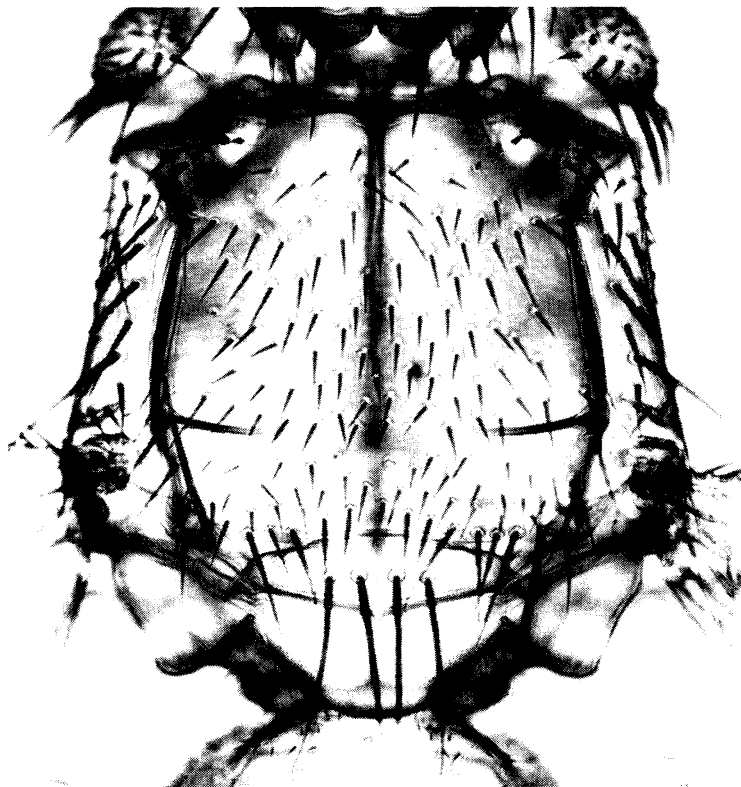


Fig. 128. Thorax, dorsal view, *Strebli consocius*, new species, female paratype from *Phyllostomus hastatus* (CNHM no. 87115), Santa Rita, Iquitos (Loreto), PERU.

with 11–12 setae, about five of these very long and coarse, one much longer than the others. Ventral arc very narrow, with two longer setae and eight minute ones along middle. *Male*: Hypopygium as in *diphyllac*. Gonapophyses heavy anteriorly, ventral margin nearly straight, the dorsal margin gradually curved to near apex where both are markedly curved, apices knobbed. Sides with scattered microsetae from apices nearly to base; ventral macroseta inserted slightly beyond middle, extending nearly to apex; accessory seta minute.

<i>Measurements</i> :	BL	TL	WL	WW
Male	2.86–2.97	0.96–0.99	1.76–1.90	0.82–0.93
Female	3.08–3.11	0.96–1.04	1.98–2.23	0.91–0.99

TYPE MATERIAL: Holotype male and allotype female (slides), from *Phyllostomus h. hastatus* (CNHM host nos. 61915–19), cave, Guanapo Heights, TRINIDAD, Frank Wonder, CNHM Trinidad Zoological Expedition (1947). In the collection of Chicago Natural History Museum.

Paratypes: TRINIDAD.—From *Phyllostomus h. hastatus*: 9, same data as holotype; 4, same locality, 11 July 1954 and 1 same locality, 1 October 1957, T.H.G. Aitken [TVL]; 1, Tamana Cave, Mount Tamana, 20 November 1957, T.H.G. Aitken [TVL]. From *Carollia p. perspicillata*: 1, same data as the preceding. *Without host*: 5, same locality and date as the preceding. VENEZUELA.—From *Phyllostomus hastatus* subsp.: 1, San Sebastian Cave (Aragua), 2 September 1961, Carlos Bordon [FCUCV]. SURINAM (CNHM Guianan Zoological Expedition, 1960–62).—From *Phyllostomus h. hastatus*: 6, Lelydorplan (Surinam), 21 January 1962, Philip Hershkovitz; 12 (3 lots), Kaiserberg Airstrip, east of Zuid River, elevation 900 feet, 15 October to 23 November, H. A. Beatty. From *Phyllostomus* sp. (probably *hastatus*): 2, same locality and collector as the preceding, 12 October 1960. PERU (CNHM Peru Zoological Expeditions, Celestino Kalinowski).—From *Phyllostomus* sp.: 6, Mann, (Madre de Dios), 17 October 1954; 10, Santa Rita, Iquitos (Loreto), 16 October 1956. From *Trachops* sp. (!): 9, Quebrada Esperanza, Río Yauari-Mirim, Maynas (Loreto), 22 September 1957. *Without host* (removed from cloth wrappings containing numerous preserved bats): 1 each, presumably from Huajyumbe (Cuzco), 16 September 1950, and Marcapata (Cuzco), 24 August 1950.

REMARKS.—The specimen with doubtful host from Huajyumbe was resting lightly on the fur of an alcohol-preserved specimen of *Mesophylla macconelli*. The specimen from Marcapata was doubtfully associated with *Molossus rufus*. No species of *Strebla* are known to us from these host genera. The association with *Molossus* seems especially dubious. The only streblids known to us from this genus are species of the genus *Trichobius* (see *Trichobius dunni*).

S. consocius seems to be restricted to *Phyllostomus hastatus* in north-eastern South America and Amazonian Peru. It probably occurs on this host elsewhere in the Amazonian region, but we are unable to verify this from the limited material collected in that region.

Strebla tonatiae (Kessel). Figure 129A.

Euctenodes tonatiae Kessel, 1924, *Parasitology*, 16: 411–412, figs. 7, 8—Gualaguiza, Ecuador, from *Tonatia brasiliensis* (British Museum of Natural History); 1924, *Jour. N. Y. Ent. Soc.*, 33: 30, pl. 4, fig. 26. Stiles and Nolan, 1931, *Bull. Nat. Inst. Hlth., Wash.*, no. 155, p. 654. Pessoa and Guimarães, 1937, *Ann. Fac. Med. São Paulo*, 12: 255 ff., figs. 10–12. Jobling, 1949, *Parasitology*, 39: 316 ff.

We have not seen the type of *S. tonatiae* (Kessel), but our Peruvian specimens agree well with Kessel's figure and with the host of *tonatiae*. The identity of the host of our Peruvian specimens has been verified by Mr. Philip Hershkovitz of Chicago Natural History Museum. The host of the type of *S. tonatiae* has not been checked.

S. tonatiae and *S. hoogstraali* n. sp. differ from all others known to us in possessing a long conspicuous macroseta at the apex of the costal wing vein. The eyes of both species consist of a single hyaline lens as in *S. machadoi* n. sp., but they differ markedly from this species in the shape of the postvertex and in having the frontoclypeus entire (without apical detached plates). They appear to be most closely related to *S. consocius* n. sp.,

In 1830, Wiedemann added his interpretation and description of the "eyes" and slightly altered the illustration (now black and white) to change the wing somewhat and to add conspicuous setae on the hind tibiae. Macquart's (1835) figure is copied from this. Wiedemann again referred to the specimen as being in the Copenhagen Museum and it is assumed that the

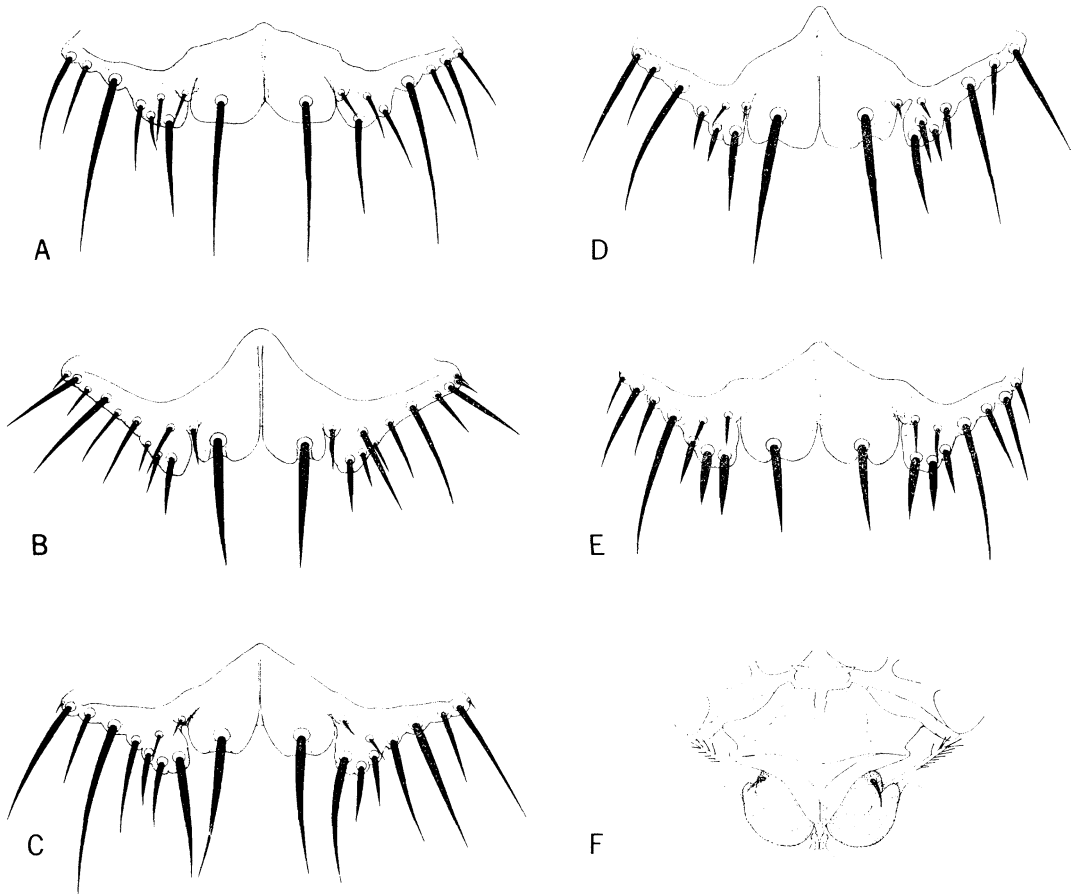


Fig. 124. A-E, postvertex and occipital plates (of head) of species of *Strebla*. A, *S. diaemi*, new species, paratype from *Diaemus youngii*, Río Raposo, COLOMBIA. B, *S. consocius*, new species, paratype from *Phyllostomus h. hastatus* (TVL nos. 1406-21) Guanapo Heights, TRINIDAD. C, *S. diphyllae*, new species, paratype from *Diphylla ecaudata centralis*, San Lorenzo, N.E. of Volcan de Jumay (Jalapa), GUATEMALA. D, *S. machadoi*, new species, holotype. E, *S. christinae*, paratype from *Phylloderma stenops* (no. 11986). F, antennae and frontoclypeus, *S. galindoi*, new species.

revised figure, too, was based on the type. Poor though the figure is, the illustration of the hind tibiae clearly shows the fly to be a species of *Euctenodes*, since the species regarded as *Strebla vespertilionis* by Speiser and Kessel (loc. cit.) has elongated hindlegs and lacks metatibial macrosetae.

Thus, *Euctenodes* should be synonymized under *Strebla*, and a new name is needed for *Strebla* (not Wiedemann, 1824) of Speiser, Kessel *et al.*

The genus *Strebla* is taxonomically very difficult. In the past, a number of closely related species have been confused under *mirabilis* (Waterhouse). Only one other species was described (*tonatiae* Kessel). In our studies, we have segregated 15 species, 12 of them new. We considered it desirable to present a preliminary revision of the genus here, since 12 of the 15 species have been collected in Panama. After this study was completed, three additional new species from Colombia, Venezuela, and Surinam came to our attention, and it is likely that more will be discovered in the future. Further, some of the host data suggest that cryptic species exist which we presently are unable to separate on morphological grounds (see remarks under *S. mirabilis*). Many of the species appear to be restricted to a single host.

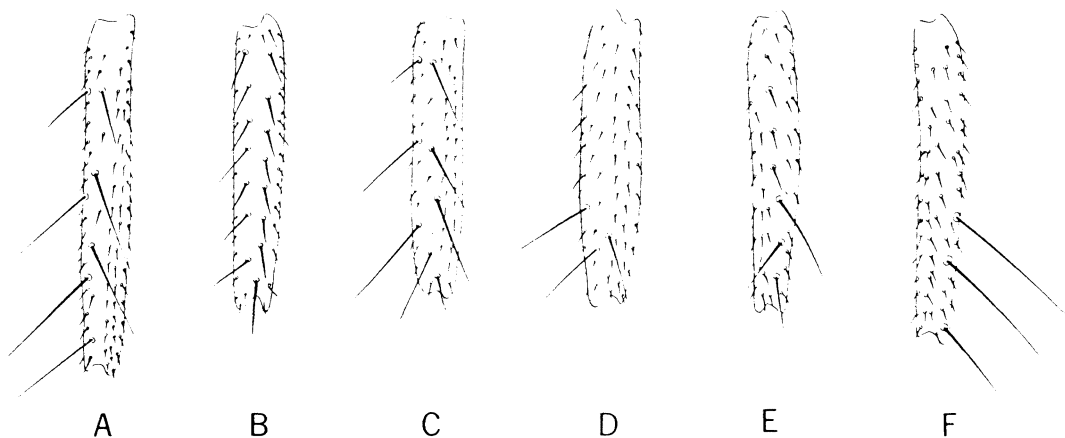


Fig. 125. Metatibiae, dorsal view. A, *Strebla consocius*, new species. B, *S. vesperilionis* (Fabricius). C, *S. diaemi*, new species. D, *S. galindoi*, new species. E, *S. mirabilis* (Waterhouse). F, *S. hertigi*, new species.

KEY TO THE SPECIES OF *STREBLA*

1. Frontoclypeus entire (fig. 122B). The second, anterior pigmented mesonotal suture lacking or indistinct (fig. 127B).....2
 Frontoclypeus with a pair of apical detached plates (fig. 122A) or with an unsclerotized median suture (fig. 124F). Second anterior pigmented mesonotal suture usually distinct, as in fig. 134, though absent in *christinae* n.sp.6
2. Upper edge of posterior tibiae with two or three macrosetae (fig. 125D-F). Anterior margin of postvertex as in fig. 122B. Eyes consisting of a single row of about four facets. Hosts: *Phyllostomus* spp.*hertigi* n.sp.
 Upper edge of posterior tibiae with six to eight macrosetae (fig. 125A-C)3
3. Anterior margin of postvertex forming an obtuse angle (fig. 124A). Prescutum (fig. 127A), anterior to the transverse mesonotal suture, broader than long; with a row of short bristles extending across entire width behind the anterior margin. Host: *Diaemus youngii**diaemi* n.sp.
 Anterior margin of postvertex forming an angle less than or only slightly greater than 45° (figs. 123H, 124B). Prescutum, anterior to the transverse suture, longer than broad; short, stout bristles near anterior margin limited to a group on each side, near the anterior angles (figs. 128, 129)4