

Article VIII.—NOTES ON TRICHOBIUS AND THE
SYSTEMATIC POSITION OF THE STREBLIDÆ.

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The genus *Trichobius* was erected by Gervais in 1844¹ for the reception of *T. parasiticus* from South America.² Since that time two other species have been added: *T. molossus* Gigl.³ from eastern Asia, and *T. major* Coq.⁴ from the southern part of the United States.

The American Museum has recently come into possession of a number of specimens of *T. major* Coq., collected last March by Prof. J. H. Comstock and Mr. Carl Hartmann in a cave at McNeil, near Austin, Texas. All of the specimens were found on bats belonging to the species *Myotis incautus* Allen. As this Dipteron has never been figured, I take this opportunity to present some of the details of its structure and to give a more complete description than that given by Coquillett.

Trichobius major Coq.

Canadian Entomologist, 1899, p. 334.

Head small, scarcely one third as wide as the thorax, rounded in front and much constricted behind, provided above with numerous large bristles, below clothed with more delicate hairs. Eyes very small; each composed of eight ommatidia, a central one and a single circle of seven others. All the ommatidia are distinctly separated and of hemispherical form. The integument surrounding the eyes is white and membranous, while the remainder of the head is darker and much more thickly chitinized. Palpi large, greatly flattened, and hairy, each with a single very large macrochæta at the tip, projecting far beyond the front margin of the head. Proboscis short, its basal segment of soft consistency and much swollen, the terminal portion sharply pointed and apparently adapted to piercing. Antennæ composed of two joints of nearly equal size; the first slightly cup-shaped and partially enclosing the second on the dorsal side.

¹ Atlas de Zoologie, p. 14.

² Later redescribed by C. H. T. Townsend (Ent. News, 1891, p. 106) as *T. dugesii* from Mexico.

³ Quart. Journ. Micr. Sc., IV, 1864, p. 24.

⁴ Canad. Ent., 1899, p. 334.

Thorax nearly circular in outline when seen from above, divided at the middle by a transverse suture which is marked by a sharp black line; the anterior half is also divided laterally by a median longitudinal suture similarly marked. Dorsum shining, finely hairy at the middle, and growing bristly toward the sides. Scutellum rhomboidal, bare, except for a transverse row of eight long, backwardly directed macrochætæ.

Abdomen considerably longer and narrower than the thorax, distinctly angulated at the sides near the base, the angulation provided with a dense brush of reddish bristles; at the tip with finer and less distinct bristles, these latter, however, quite conspicuous in the male.

Legs very stout; the femora considerably swollen, hairy, especially above where the hairs are very long. Tibiæ gradually dilated toward the apex. Tarsi with the four basal joints of nearly equal length, together hardly longer than the large fifth joint; claws sharp, with a large lobe at the base; empodia large, fleshy.

Wings oval, slightly longer than the body, tinged with brown, the veins yellowish brown. Costal vein extending as far as the tip of the third vein, the cilia at its base very weak. All the wing veins of nearly equal strength, beset with fine bristles.

In all of the specimens which I have seen (some 25), the color is deep reddish yellow everywhere, except on the discal portion of the abdomen, where it is light grayish yellow.

The males and females are very similar in size and form, and can be distinguished only by the contour of the external genital organs. Some sections through the abdomen of a male specimen show large bodies of irregular polyhedral shape which fill out almost the entire cavity. These seem to consist of a gelatinous, yolk-like substance, and at first sight might easily be mistaken for maturing eggs. The testes are, however, plainly visible, extending along each side of the median line in the anterior portion of the abdomen.

The three families, Nycteribiidæ, Streblidæ, and Hippoboscidæ, have always been considered as more or less closely related forms, and the three are usually separated and regarded as quite distinct from other Diptera.

Recently Speiser¹ has summarized the more important characters of the Streblidæ, which serve to distinguish them from the Hippoboscidæ on the one hand and from the Nycteribiidæ on the other. Briefly stated they differ from the former

¹ Archiv f. Naturg., Band L (1900), p. 33.

by the relatively large and freely movable head; the small size and degenerate structure of the eyes, or even their complete absence in some forms; by the large, dorso-ventrally

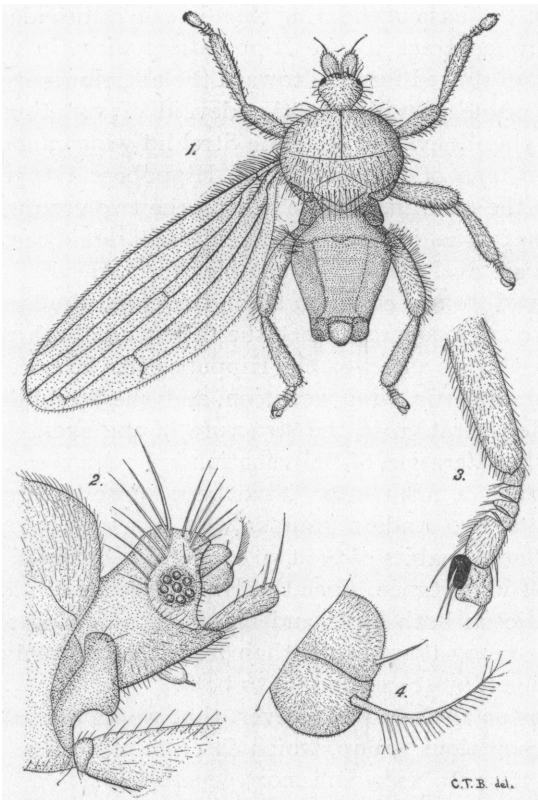


Fig. 1.—*Trichobius major* Coq. Female, dorsal view, with the right wing and left middle leg removed; 2. Head of same, in profile; 3. Terminal portion of leg; 4. Antenna, lateral view, more highly magnified.

flattened palpi, which do not form a sheath for the proboscis as in the Hippoboscidae; and by the wholly different wing venation. Differences from the Nycteribiidae are not so evident. They rest principally on the different form of the head, thorax, and legs.

An examination of the wings of *Trichobius* reveals the fact

that they are of a very generalized type, since the veins are distributed evenly throughout the entire extent of the wing. There are six longitudinal veins, all nearly parallel; and three cross-veins, anterior, posterior, and anal, the latter much further from the base of the wing than in other Muscidae. This is in sharp contrast to the Hippoboscid wing, in which the veins are all shifted forward toward the anterior margin, leaving their whole posterior portion devoid of venation. From this it is plainly evident that the Streblid wing cannot be derived from one of the specialized Hippoboscid type. With regard to the condition of the eyes in the two groups, exactly the reverse is true. The Hippoboscidæ still retain these organs in a comparatively large and complex form.

If derived from a common stem, therefore, the two groups must have been separate since the time when both possessed generalized wings and eyes, the Hippoboscidæ later developing their characteristic wing venation, and the Streblidæ undergoing a degeneration in the structure of the eyes. Of these changes the alteration of the venation is by far the more profound. Such a form must have been quite different from either of the two modern groups.

The different habits of the two can hardly be urged as a distinction of importance, since the Hippoboscidæ are known to be parasitic on both birds and mammals, showing a greater diversity among themselves, than from the Streblidæ, which are confined almost exclusively to bats.

It seems on the whole, however, that we have to deal with a most anomalous group, which is certainly quite different from the Hippoboscidæ and more generalized.