

A Reclassification of the Sabethine Genus
*Trichoprosopon*¹

by

Thomas J. Zavortink
Department of Biology
University of San Francisco
San Francisco, CA 94117

My study of *Trichoprosopon* may be considered an example of a classical taxonomic revision of a group of mosquitoes. As used here, the word "classical" signifies that the bulk of the taxonomic characters used in this study were morphological rather than, for example, behavioral or biochemical, and that the classification is based on the taxonomic philosophy of phyletics rather than the more extreme philosophies of phenetics or cladistics.

Trichoprosopon, as defined by Lane and Cerqueira in their 1942 study of American sabethine mosquitoes, comprises the New World sabethine species without obvious specializations in structure or coloration of the adult stage. These same species had been included in two genera, *Trichoprosopon* and *Goeldia*, by Edwards in 1932 and in three genera, *Joblotia*, *Goeldia* and *Isostomyia* by Dyar in 1928.

This group of mosquitoes is distributed from Central Mexico through Central America south to Ecuador on the Pacific side of South America and south to Argentina on the Atlantic side of South America. With the exception of one species, *perturbans*, which is found in the Lesser Antilles, the group is absent from the West Indies.

Like all other sabethines, the immatures of this group are found in small bodies of water associated with plants. Some specific habitats are leaf axils of aroids, bromeliads, calatheas and heliconias; flower bracts of calatheas and heliconias; fallen leaves and palm spathes; cut, broken and punctured bamboo internodes; fallen coconuts and cacao pods; and treeholes.

Lane and Cerqueira recognized 29 species in *Trichoprosopon*. These species were placed into seven subgenera that were distinguished by one or two characters of the adults only. These subgenera were *Trichoprosopon*, for the species with hairs on the clypeus and long male palpi; *Limamyia*, for the single species *brevipes* with short legs and short male palpi; *Vonplessenia*, also monotypic, for *vonplesseni*, a species with an elongate thorax; *Ctenogoeldia*, for the species with silver scales on the scutellum and short male palpi; *Shannoniana*, for the species with a postmedian white band on the hind tibia and long male palpi; *Isostomyia*, for the species without silver scales on the scutellum but with short male palpi; and *Hylaconops*, for the remaining species with long male palpi. This classification of Lane and Cerqueira has been accepted, with only minor alterations, to the present. One change is that the name *Runchomyia* has replaced *Hylaconops*.

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In the nearly 40 years since Lane and Cerqueira's study, it has become obvious that the immature stages of mosquitoes provide a wealth of taxonomic characters that are of great value both in recognizing species and in indicating their relationships. My revision of *Trichoprosopon* is based on a study of not only the adults, but also the male genitalia and immature stages. I recognize 50 species, an increase of 21. More importantly, I believe these species belong to four separate phyletic lines, which I recognize as four separate genera. These genera are amply distinct in all stages and some are more closely related to other sabethines than to each other. The genera I recognize are *Trichoprosopon*, *Shannoniana*, *Johnbelkinia* and *Runchomyia* (Zavortink 1979).

In my reclassification, the genus *Trichoprosopon* comprises 21 species, several of which are undescribed. The genus includes those species with hairs on the clypeus and other species lacking these setae that have been placed in *Limamyia*, *Vonplessenia* and *Runchomyia*. Larvae of this group are characterized by a circular foramen magnum; a maxillary suture that extends to the posterior tentorial pit; an elongate and modified mandible; an unmodified maxilla with a distinct palpus; the absence of hair 8-M; and a short siphon with a large, multiple hair 1-S and no pecten. Pupae are characterized by the unmodified hair 1-C; the very small hair 5-III-VI; and the absence of a dorsal sensillum on segments III-V. Adults are characterized by a short proboscis; a long row of lower sternopleural setae; and absence of a postmedian band on the hind tibia. The male genitalia are generalized. This genus seems not to have any close relatives.

The genus *Shannoniana* has 15 species, most of them undescribed. Scores more probably await discovery in the field. One collection from Panama has five undescribed species in it. All previously described species were placed in *Shannoniana* by Lane and Cerqueira. Larvae are distinguished by a circular foramen magnum; a maxillary suture that does not reach the posterior tentorial pit; an unmodified mandible; a highly modified maxilla with a free, cylindrical palpus and an unusual, strong articulation with the head capsule far ventrad of the palpus; a small hair 8-M; and a short siphon with a small hair 1-S and no pecten. Pupae are characterized by the sigmoidally curved seta 1-C; a large hair 5 on at least abdominal segments III-V; and the absence of a dorsal sensillum on segments III-V. Adults have a short proboscis; a long row of lower sternopleural setae; and a postmedian light band on the hind tibia. The male genitalia are distinguished by the large teeth on the aedeagus in concert with the pair of strong tergite IX lobes. I believe this genus is closely related to the subgenus *Rachisoura* of *Tripteroides* from the Australian zoogeographical region.

Johnbelkinia contains three species, *longipes* and its relatives, that were previously placed in *Runchomyia*. Larvae have a circular foramen magnum; a maxillary suture that does not extend to the posterior tentorial pit; an unmodified mandible; a maxilla modified for grasping, but in a way totally unlike that of *Shannoniana*, with the palpus fused to the body of the maxilla and without an unusual articulation with the head capsule; a large hair 8-M; and a long siphon with a long row of multiple accessory midventral hairs and no pecten. Pupae have a sigmoidally curved hair 1-C; strongly developed hair 5-IV-VI; a dorsal sensillum on only segments IV and V; a large spiculose paddle; and a very large male genital lobe. Adults have a long proboscis; a short row of lower sternopleural setae; and white tarsal markings. The male genitalia are unusual and easily distinguished from the other genera. The affinities of this genus are not known.

The genus *Runchomyia* is comprised of 11 species. Larvae are distinguished by a slitlike foramen magnum; a maxillary suture that extends to the posterior tentorial pit; an unmodified mandible; a maxilla modified for grasping, but again without a strong articulation with the head capsule far ventrad of the palpus and with the palpus fused with the body of the maxilla basally; a large hair 8-M; and a long siphon with a filamentous pecten. Pupae are characterized by a sigmoidally curved hair 1-C; a large hair 5 on some abdominal segments; and the presence of a dorsal sensillum on all three segments III-V. Adults have an elongate proboscis; usually a short row of lower sternopleural setae; and dark tarsi. The male genitalia are varied; in two groups of species they are unusual, but in the third group they are generalized and very similar to those of *Trichoprosopon*. This genus is divided into three subgenera, *Cteno-goeldia*, *Isostomyia* and *Runchomyia sensu stricto*. The affinities of *Runchomyia* are not clear, but they are undoubtedly with other groups that have the slitlike foramen magnum in the larva. *Runchomyia magna* is very similar to species of the Old World genus *Malaya* in larval structure and chaetotaxy, adult ornamentation and male genitalia.

In conclusion, the techniques of classical taxonomy are still valuable for acquiring a better knowledge of mosquitoes. In the case of *Trichoprosopon*, my study based on morphological features of all stages in the life cycle has resulted in a 72% increase in the number of species and a much changed higher classification.

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