Introduction

The purpose of this revision of Leptopteromyia (Diptera: Asilidae: Leptogastriinae) is to improve the overall species descriptions and species diagnosis using morphological characters. There are currently 8 described species of Leptopteromyia: *L. gracilis* Williston, 1908; *L. americana* Handy, 1947; *L. lapisi* Martin, 1971; *L. peruviana* Martin, 1971; *L. brasiliensis* Martin, 1971; *L. colombiae* Martin, 1971; *L. mexicanae* Martin, 1971; and *L. argentinae* Martin, 1972 (Martin, 1971, 1972). One of the few things known about the ecology of Leptopteromyia is that the genus has a possible parasitic association with Embioptera (true bugs), an order of insects (Fig. 1). Dr. R. H. Beamer also reported seeing adults *L. americana* in association with Aleyrodidae (white flies), presumably in the act of predation.

Leptopteromyia is restricted to the new world, ranging from Mexico in the north to Tiucumán, Argentina in the south (Fig. 2). Hawaiian specimens not shown. Some date points are overlapping and are not visible.

At the start of this revision, Leptopteromyia americana (Fig. 3, from Riverside, CA) was the only species described from the United States, ranging from California in the west to Georgia in the east. However, we currently divide *L. americana* into two species, with the western group representing *L. americana* sensu stricto and the eastern group representing Leptopteromyia sp. n. 1 (Figure 4, from Gainesville, FL). Note that the dots for *L. mexicanae* are red, as for *L. americana* (Fig. 2). Refer to the “New Synonymies” section for more details.

New Species

Preliminary results suggest the discovery of 13 new species. The two specimens shown below are among the best defined so far. Leptopteromyia sp. n. 3 is predominantly grey with pigmented costa and no stripes on the scutum (Fig. 5). Leptopteromyia sp. n. 5 is predominantly yellow with one longitudinal stripe on the scutum and no spots on the pleura (Fig. 6).

Some authors may interpret these differences as warranting a new genus, but we currently place *L. sp. n. 8* within Leptopteromyia, as representing the sister group to all other Leptopteromyia species. We have found that the morphology of *L. sp. n. 8* agrees with most other characters characteristic of Leptopteromyia. Future phylogenetic studies and additional specimens may warrant the designation of a new genus.

Materials & Methods

Specimens examined in this revision were part of the National Museum of Natural History, Washington, D.C. (USNM) collection or were loaned from the following institutions or private collectors: AHS - Archbold Biological Station, Venus, FL; AMNH - American Museum of Natural History, New York City, NY; CAS - California Academy of Sciences, San Francisco, CA; EMF Coll. Fisher, El Dorado Hills, CA; CZMA - Coleção Zoológica do Maranhão, Universidade Estadual do Maranhão, Caxias, Maranhão, Brazil; FSCA - Florida State Arthropod Collection, Gainesville, FL; INPA - Instituto Nacional de Pesquisas da Amazônia, Manaus, Amazonas, Brazil; LACM - Natural History Museum of Los Angeles County, Los Angeles, CA; MZU - Museu de Zoologia, Universidade Estadual de São Paulo, São Paulo, Brazil; SEMC - Snow Entomological Collection, University of Kansas, Lawrence, KS; TAMU - Texas A&M University, College Station, TX.

Acknowledgments & References

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Conclusion

The taxonomic revision of Leptopteromyia is still ongoing, and there is still much work to be done with this genus. Based on the current results, we will synonymize *L. lapisi* with *L. gracilis* and *L. mexicanae* with *L. americana*. We will also describe 13 new species, although the final number may change as more morphological evidence is accumulated.

While still preliminary, there is evidence that we have discovered a new species from the eastern US and Central America, which has previously been misidentified as *L. americana* or *L. mexicanae*. If true, this would be a rare example of a new species being described from the United States.

We have recently received specimens from Maui, Hawaii that we have identified as *L. americana*. There are no robber flies known from the Hawaiian Islands, so this is almost certainly an introduction. It is likely that Leptopteromyia sp. n. 8 are transported in the webs of Embioptera, which are known to travel and become introduced around the world. It is thus possible that this genus has become established in areas in which it is not native, greatly complicating this revision.