Synonomy and Distribution of the Lantana Lace Bug (Hemiptera: Tingitidae)

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The lantana lace bug *Teleonemia scrupulosa* Stål (fig. 1) is autochthonous to the tropical and neotropical regions of the Americas, and was originally described by Carlos Stål (1873) from specimens collected at Rio Janeiro, Brazil. Since then the species has been recorded from numerous localities in Brazil, Peru, British and French Guiana, Colombia, Venezuela, Central America, West Indies, Mexico and southern United States (Florida and Texas). Specimens from all these regions (including one of Stål's cotypes from Brazil) have been examined by the authors, and its distribution in the western hemisphere seems to coincide rather closely with that of its verbenaceous host-plant genus *Lantana.*

In the course of studying the phytophagous enemies of the *Lantana* species of plants in Mexico (Perkins & Swezey, 1924), Albert Koebele of the Hawaiian Sugar Planters' Association made the first observations on the feeding habits and host-plant relationship of the lantana lace bug. In 1902 he introduced a number of different species of lantana-feeding insects into the Hawaiian Islands for the purpose of checking the ever-increasing spread and occupation in the pastures and lowlands of lantana plants which had been introduced some years previously as ornamental shrubs from Mexico.

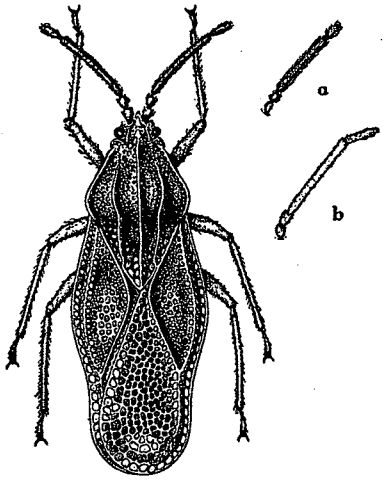

Fig. 1. *Teleonemia scrupulosa* Stål. (Drawn by Sid Horn.)

The spread of lantana shrubs in the Islands was greatly aided by two introduced exotic birds, namely, the Chinese turtle dove, *Turtus chinensis* (Scop.), and the Indian mynah, *Acridotheres tristis* (Linn.), which are voracious feeders on the aromatic berries and rapidly disseminated the seeds of lantana in the Islands.

Scrupulosa Stål is one of the most common and widely distributed tingitids in South, Central and Insular America, and Mexico. In the United States it is known only from the southern parts of Texas and Florida. It may be separated from closely allied species by the rather densely and shortly pilose antennae, impressed areolae of discoidal area, and the very finely pubescent pronotum and discoidal and subcostal areas of the elytra. The costal area is moderately wide and uniseriate, the areolae being moderately large, hyaline and nearly uniform in size. The carinae and paranota are foliaceous and also uniseriate.

All food plant records of *scrupulosa* are from *Lantana* species, save two series of specimens from Texas. One long series of nymphs and adults was collected on an undetermined species of the mint family (Labiatae), Houston, Texas, and the other on Poppy Mallow, *Callirhoë involucrata* (T. & G.) (Malvaceae), Victoria, Texas. Some of the specimens collected on mint have a shorter, slightly thicker and somewhat more densely pilose antenna (fig. 1,*a*), whereas others cannot be distinguished from those taken on lantana plants. The same statement also applies to the specimens from Poppy Mallow. As all other characters are very similar to examples from *Lantana,* it seems inadvisable to erect a varietal name for the specimens found breeding on an undetermined species of mint and Poppy Mallow. Most of the specimens of *scrupulosa* from Texas were collected on lantana and the insect does not seem to be able to breed or live very long on plants other than lantana.

In the Fiji Islands and Australia (and nearby islands), the thorny species of lantana (*L. camara*) has spread at an alarming rate and become a weed of considerable importance in low-lying areas. Large numbers of these shrubs growing close together form dense, impenetrable thickets, overrun other vegetation and claim large tracts of valuable land. The dissemination of lantana plants in the Fiji Islands and other foreign countries, as in Hawaii, has been accelerated by birds which eat the berries and carry the seed to new areas. Accounts of the introduction of the lantana lace bug into Fiji and Australia have been published by Simmonds (1928) and Fyfe (1937).

Excellent papers on the biology and ecology of the lantana lace bug have been published by the entomologists of Hawaii, Fiji and Australia. In summing up the work in Australia, Fyfe (1937, p. 186) states: "These studies indicate that if *T. lantanae* [= *scrupulosa* Stål] becomes established and flourishes in this country, it may be expected to reduce seriously the vigour of individual lantana

plants. This should often give competing plants an advantage which would enable them to displace the lantana. On a heavily infested plant, the attack may be severe enough to defoliate it and to kill it directly. As the bugs destroy the flowers and flower buds, they will limit seed production, and, consequently, check the spread of the lantana pest."

The introduction of the lantana tingitid and other lantana-feeding insects into the Hawaiian Islands from Mexico represents the first attempt to control noxious weeds by means of insects, and much credit is due the entomologists of the Hawaiian Sugar Planters' Association for initiating the first project on the biological control of weed pests by means of insects. The high specificity and stability of host-plant relationship of the lantana lace bug have been fully demonstrated by Koebele (Perkins & Swezey, 1924) and others, who introduced and colonized large numbers of this tingitid in distant countries for the suppression of the lantana weed.

Teleonemia scrupulosa Stål (fig. 1)

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Teleonemia scrupulosa haytiensis Drake (fig. 1,*b*)

Teleonemia haytiensis Drake, Ohio J. Sci., XX, 1920, no. 3, p. 53.

Haytiensis Drake is treated here as a variety of *scrupulosa* Stål and may be distinguished from the typical form by the longer third antennal segment. It is known only from the type and two other examples from Hayti.