ON THE DISTRIBUTION OF _HEILIPUS SQUAMOSUS_ (Lec.)
A PEST OF THE AVOCADO

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The curculionid _Heilipus squamosus_ (Lec.), recently recognized by Wolfenbarger (1948, 1949) as a pest of the avocado, was described over 125 years ago. Through correspondence with the Division of Insect Identification of the U. S. Bureau of Entomology and Plant Quarantine, Dr. W. H. Anderson credits J. E. LeConte (1824) with giving a description of the species under the genus _Pissodes_. In a later publication Blatchley and Leng (1916) cited _H. squamosus_ as synonymous with _H. apiatus_ Olivier. This synonymy is accepted as an error since Dr. Anderson reported that, "Olivier's species is quite different and occurs in South America." The further statement by Blatchley and Leng (loc. cit., p. 187) that _H. squamosus_, "Occurs also in French Guiana," is, therefore, not accepted by me.

The distribution of _Heilipus squamosus_ (Lec.) seems to be generally summarized in a further quotation from Dr. Anderson that, "Judging from adults in the pinned collection the species occurs in South Carolina, Georgia, Florida, Alabama, Mississippi, and Tennessee." In general, this is the southeastern part of the United States.

Plants from which the adult _Heilipus squamosus_ has been collected include, according to Dr. Anderson, sassafras, cotton, camphor, and Satsuma. These are regarded as comparatively unrelated species. Most of the specimens were collected from sassafras, a member of the laurel family. _Heilipus squamosus_ larvae have been taken only from the avocado, according to Dr. Anderson, and comprise those sent from the Sub-Tropical Experiment Station. The avocado, incidentally, is also a member of the laurel family, Lauraceae.

_Heilipus squamosus_ has existed in Florida for many years and is considered indigenous to the area of its distribution. The introduction of the avocado into Florida, on the other hand, apparently occurred about 150 years ago, according to Wolfe, et al (1949). The avocado, a subtropical or cold susceptible plant, is restricted to the warmer areas. Sassafras, on the other hand, is either absent or grows sparsely where the avocado grows. The host plants of the larvae, other than the avocado, are unknown, although there must be one or more.
Sometime after the introduction of avocado *Heilipus squamosus* found it to be a satisfactory larval host plant. Within the last two decades the abundance of the beetle has increased. This increase seems to have been following a logarithmic curve. There are those, however, who indicate that wind, water, dryness, or other factors so weakened the trees that the beetle was
able to develop in them. Extensive avocado plantings have undoubtedly resulted in the elimination of some host plants. With or without some adaptation, a transition was made to the avocado.

Although Heilipus squamosus has hitherto lacked economic importance its recent impact on commercial avocado production makes it of importance to southern Florida, where avocado production is successful. The areas of known distribution of Heilipus squamosus are illustrated roughly in Figure 1. Some meager examinations were made in other counties, Brevard for example, without finding the species. It is likely that more complete surveys will disclose State-wide distribution of the beetle.

LITERATURE CITED


A NEW PTEROBOSCA FROM FLORIDA WITH A KEY TO AMERICAN SPECIES

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A few specimens of undescribed Ceratopogonidae (Heleidae), octoparasites on dragonflies, have been given to me by Dr. J. G. Needham for study. One of these is from Florida, the first record of a member of the genus Pterobosca from the United States, facts that may be of interest to the readers of this Journal. All recorded species of the genus, more than a dozen in number, are parasites on dragonflies, attaching themselves in most cases to the wings. Tokunaga (1940) records one species (P. feminine) from Japan that attaches itself to the thorax. The Florida species described below, was likewise found on the thorax where it was firmly fixed. Pterobosca together with Lasiohelea, Euforciomyia, and Apelma, are regarded by some