Entomology Circular No. 311
October 1988

Fla. Dept. Agric. & Consumer Serv.
Division of Plant Industry

Amitus hesperidum (Hymenoptera:Platygasteridae), a parasite of the citrus blackfly *(Aleurocanthus woglumi)*[1]

Ru Nguyen[2]

INTRODUCTION: ***Amitus hesperidum*** Silvestri is one of the most effective parasites of the citrus blackfly, ***Aleurocanthus woglumi*** Ashby. This parasite was described by Silvestri in 1927 from ***Aleurocanthus citriperdus*** in Hong Kong and Singapore (Silvestri 1927). It was collected in India and introduced into Mexico for controlling citrus blackfly (Smith et al. 1964). Because of the success in Mexico, it was imported into Texas (Summy et al. 1983) and Florida (Hart et al. 1978) to suppress the population of citrus blackfly in these states.

DISTRIBUTION: ***Amitus hesperidum*** has been reported as native to Asia. It is found in Ceylon, China (Hong Kong, Szechuen), India, Java, Malaya, Pakistan, and has been introduced into Guam, Venezuela, Mexico, and the United States (Florida, Texas) to control citrus blackfly (Silvestri 1927, Smith et al. 1964, Flanders 1969). In Florida, it was released in Brevard, Broward, Collier, Dade, Highlands, Hillsborough, Indian River, Lee, Manatee, Martin, Monroe, Okeechobee, Palm Beach, Pinellas, Sarasota and St. Lucie counties.

HOSTS: ***Aleurocanthus citriperdus*** Quaintance and Baker, ***A. spiniferus*** (Quaintance), and ***A. woglumi*** Ashby are reported as hosts (Silvestri 1927, Smith et al. 1964).

DESCRIPTION: Female shiny black, tiny (0.75mm long). Antenna 0.65mm long, 10 segments with the last three closely united and forming a club (Fig. 1); wings shiny; hind tarsus 5-segmented. Male similar to female, antenna ten-segmented filiform, scape curved, with all flagellar joints longer than wide and covered with short erect hairs (Fig. 2) (Silvestri 1927).

BIOLOGY: This species is non-polyembryonic and biparental in reproduction with a sex ratio of 1:1. It lays eggs in all three larval stages of the host, with a preference for the first stage. A female of the citrus blackfly usually produces 2, 3, occasionally 4 adult parasites (Fig. 3); whereas a male host pupa produces only one. Both male and female parasites can be produced from a female of the citrus blackfly pupa. ***Amitus hesperidum*** females have a life span of 4-5 days, and males live 3-4 days. Life cycle from egg to adult varies from 45-60 days under laboratory condition (T = 27°C).

In the field, ***A. hesperidum*** is well synchronized with the host and has a high rate of reproduction. A female can produce more than 60 offsprings; it is very effective with high density of the citrus blackfly in Florida; however, the female has a poor searching capability and survives only 4-5 days under field conditions. The parasite population will die out soon after suppressing ***A. woglumi*** population (Flander 1969, Nguyen et al. 1983).

---

[1]Contribution No.688, Bureau of Entomology

[2]Entomologist; Bureau of Methods Development, FDACS, Division of Plant Industry P.O. Box 1269, Gainesville, FL 32602

REFERENCES CITED:

Flanders, S. E. 1969. Herbert D. Smith's observations on citrus blackfly parasites in India and Mexico and the correlated circumstances. Can. Entomol. 101:467-480.

Hart, W. G., A. Selhime, D. P. Harlan, S. J. Ingle, R. M. Sanchez, R. H. Rhode, C. A. Garcia, J. Caballero, and R. L. Garcia. 1978. The introduction and establishment of parasites of citrus blackfly, ***Aleurocanthus woglumi***, in Florida (Hemiptera: Aleyrodidae). Entomophaga. 23:361-366.

Nguyen, Ru, J. R. Brazzel, and C. Poucher. 1983. Population density of the citrus blackfly,***Aleurocanthus woglumi*** Ashby (Homoptera: Aleyrodidae), and its parasites in urban Florida in 1979-81. Environ. Entomol. 12:878-884.

Silvestri, F. 1927. Contribuzione alla conoscenza degli Aleurodidae (Insecta: Hemiptera) viventi su citrus in Estremo Oriente e dei loro parassiti. Boll. Lab. Zool. Portici. 21:1-60.

Summy, K. R., F. E. Gilstrap, W. G. Hart, J. M. Caballero, and I. Saenz. 1983. Biological control of citrus blackfly (Homoptera: Aleyrodidae) in Texas. Environ. Entomol. 12:782-796.

Smith, H. D., H. L. Maltby, and E. J. Jimenez. 1964. Biological control of the citrus blackfly in Mexico. U.S.D.A. Tech. Bull. 1311:1-30.

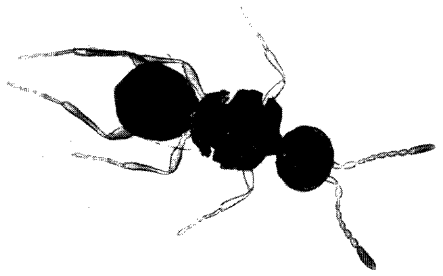

Fig. 1. ***Amitus hesperidum*** female

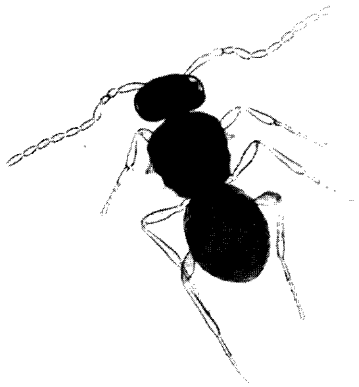

Fig. 2. ***Amitus hesperidum*** male

Fig. 3. Empty ***Aleurocanthus woglumi*** nymphal case after ***A. hesperidum*** emergence.

This publication was issued at a cost of $ 493.40 or $ 0.14 per copy to provide information on proper recognition of plant pests. PI88T-40