

Encarsia opulenta (Silvestri) a parasite of
Aleurocanthus woglumi Ashby
(HYMENOPTERA: APHELINIDAE)¹
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INTRODUCTION: *Encarsia opulenta* (Silvestri) is one of the most effective parasitoids of the citrus blackfly, *Aleurocanthus woglumi* Ashby (Homoptera: Aleyrodidae) (Fig. 1). It was discovered by Silvestri on *A. incertus* collected in Van-Phu (Vietnam) (Silvestri 1927). In 1950, *E. opulenta* from Saharanpur (India) were released for the control of *A. woglumi* in Mexico (Flanders 1969). The parasite was then introduced to Texas in 1971 (Summy et al. 1983), and Florida in 1976 (Hart et al. 1978) to suppress and maintain under the economic threshold the population of the citrus blackfly in these states.

DISTRIBUTION: *Encarsia opulenta* has been reported as native to Asia (Vietnam and India) (Silvestri 1927, and Smith et al. 1964), and was introduced to Barbados, Cuba, Salvador, Kenya, Jamaica, Oman, Mexico, Venezuela, and USA (Texas and Florida) to control the citrus blackfly. In Florida the parasite is found in south and central Florida where the citrus blackfly occurs (Nguyen et al. 1983).

HOSTS: *Aleurocanthus woglumi* Ashby and *A. incertus* Silvestri are the only hosts reported (Silvestri 1927, and Smith et al. 1964).

DESCRIPTION: Female small (1.10 mm long) (Fig. 2). Thorax whitish to pale yellowish. Antennae 0.8 mm long, 8 segmented, and the 1st flagellum shorter than pedicel or other flagella. Wing slightly shady in the center. Abdomen with segments 3-6 dark brown, remainder yellowish. Ovipositor dark, 0.5 mm long. Male smaller than female (0.75 mm long) and different in color. Body and head of the males dark brown (Fig. 3). Male antennae 8 segmented, with the 1st flagellum almost round and wider than the succeeding segment (Silvestri 1927, Grissell 1979).

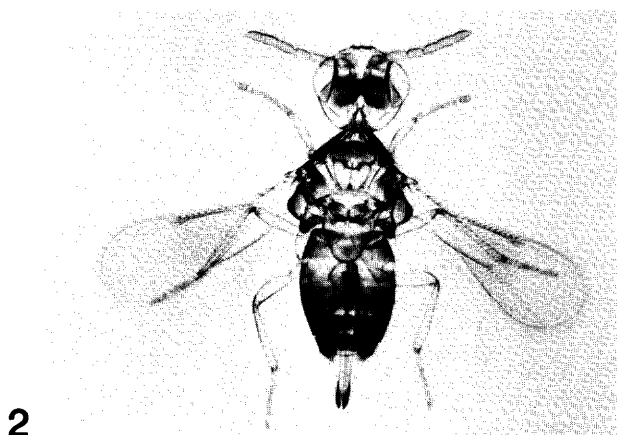
BIOLOGY: The female can live longer than 30 days with adequate nutrition and displays good searching ability. A mated female lays a single diploid egg in any nymphal stage of the citrus blackfly, but prefers the second stage, and this egg will produce a female. Under laboratory conditions (24°C) the development from egg to adult requires 30-35 days. Virgin females lay haploid eggs in the fully developed larva of the *E. opulenta* female and produce males (adelphoparasite). The sex ratio in the field is about 1:7 (male:female). *E. opulenta* is hyperparasitized by *E. smithi* (Silvestri) that was accidentally introduced to Florida by 1979. In Florida, *E. opulenta* and *Amitus hesperidum* (Hymenoptera: Platygastidae) coexist. The latter has a high rate of reproduction, and can produce 60-70 progenies per female; thus this species is very effective in suppressing high densities of the citrus blackfly. *E. opulenta* reproduces very slowly, and can maintain the population of *A. woglumi* at a low level in Florida (Nguyen et al. 1983, Nguyen and Sailer 1987, and Flanders 1969).

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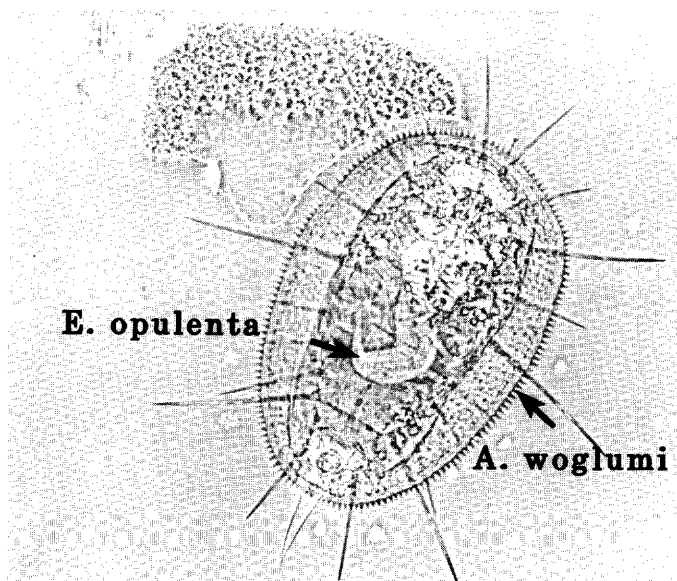
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Fig. 1. *Encarsia opulenta* larva, *Aleurocanthus woglumi* nymph.
Fig. 2. *Encarsia opulenta* female.
Fig. 3. *Encarsia opulenta* male.