

**The Resistance by Encapsulation of the Pyriform Scale
Protopulvinaria pyriformis (Cockerell) to Successful Parasitization by
the Encyrtid Parasitoid *Metaphycus Stanleyi* Compere**

Daniel Blumberg

Department of Entomology, Agricultural Research Organization, The Volcani Center,
Bet Dagan, Israel

Abstract. Since the early 1980's, the pyriform scale, *Protopulvinaria pyriformis* (Cockerell) (Homoptera: Coccidae), has been an important pest of avocado in the Coastal Plain of Israel. Encapsulation of eggs of the introduced parasitoid, *Metaphycus stanleyi* Compere (Hymenoptera: Encyrtidae, by the scale under both greenhouse and field conditions occurred almost the year round (1986-1988). Encapsulation rates varied considerably during the year and were correlated with the ambient temperatures. The rates of efficient encapsulation (percentage scales wherein encapsulation completely prevented parasitoid development): (i) in scales infesting *Hedera helix* and *Schefflera arboricola* under greenhouse conditions, were lowest during December to May (6-17%) and highest during July to September (78-100%); (ii) in scales infesting avocado in a Bet Dagan orchard, were lowest during October to May (0-11%) and highest during June to August (54-57%). Under greenhouse conditions, encapsulation rates did not differ in scales grown on *H. helix* and *S. arboricola*, but were significantly lower in scales grown on avocado. The increased resistance by encapsulation of *P. pyriformis* to successful parasitization of *M. Stanleyi* during summer may account for the inability of the parasitoid to prevent the autumn and winter outbreaks of the pest.