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# *Phenacoccus solani* Ferris (Homoptera Coccoidea) on ornamental plants in Italy

**Abstract** - A new record in Italy of the mealybug *Phenacoccus solani* Ferris (Homoptera Coccoidea) on *Encephalartos* sp. (Cycadaceae) in cold greenhouse is reported together with some morphological comments.

**Riassunto** - Phenacoccus solani *Ferris (Homoptera Coccoidea) su piante ornamentali in Italia*
Viene segnalata la presenza in Italia dello pseudococcide *Phenacoccus solani* Ferris (Homoptera Coccoidea) raccolto su piante di *Encephalartos* sp. (Cycadaceae) coltivato in serra fredda e ne vengono illustrati alcuni caratteri morfologici.

**Key words**: Cycadaceae, morphology, scale insects, Sicily

## INTRODUCTION

Ornamental plants cultivation has a great economic interest for Sicilian agriculture since the climatic conditions of several coastal areas allow breeding and production in cold greenhouse or in open field of numerous exotic plants, for garden, park etc. Together with propagation materials are often introduced also numerous species of sap sucking insect; they are only occasionally able to survive and to reproduce in the new colonized areas (Longo *et al.*, 1998). Referring to Homoptera Coccoidea, in these last years a continuos introduction of exotic scale insects has been recorded; a lot of them has a relevant phytopathological interest (Pellizzari & Dalla Montà, 1997).

Therefore, the Istituto di Entomologia agraria of the University of Catania (now Dipartimento di Scienze e Tecnologie Fitosanitarie) has carried out a monitoring program for the detection of noxious scale insects in a lot of Sicilian ornamental plants production and marketing centres (Longo *et al.*, 1994). During these researches in a nursery near Catania several mealybug specimens has been found on leaves of

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*Encephalartos* sp. (Cycadaceae), coming from South Africa in plastic pot. The species has been identified as *Phenacoccus solani* Ferris, 1918 and it is discussed in this note.

Solanum mealybug is regarded as a pest of Solanaceae, on potato tubers in California (Flanders, 1944) and on tobacco in Africa (Williams *et al.*, 1985) and as an economically important pest of tropical plants (Hamlen, 1975); it is also recorded on many ornamental plants, enclosed Cycadaceae (De Lotto, 1974).

## MORPHOLOGICAL CHARACTERS

Adult female has an oval body, covered by powdery wax and with marginal short wax filaments. It measures 2.16-2.80 mm in length and 1.38-1.79 mm in width.

The species possess 18 pairs of cerarii (Williams & Granara de Willink, 1992), occasionally 17 pairs (according to McKenzie, 1967), each with 2 enlarged lanceolate setae. Multilocular disc pores are absent from the dorsum, but on the venter they are normally present in the median areas in single rows on abdominal segments IV-IX, although they are sometimes present only as far forward as segment V. Quinquelocular pores are absent from the venter and small tubular ducts are sparse, normally present across abdominal segment V and the posterior segments; occasionally 1 or 2 are present in the median areas of the head and thorax. Antennae normally with 8 segments, but occasionally with 7 or sometimes 9, the apical segment partially divided. The legs are well developed, with denticles on the claws, and the hind tibiae with translucent pores. Circulus small and oval.

## COMMENTS

Sicilian specimens differ from the description reported by Williams & Granara de Willink (1992) in some characters:

- cerarii numbering 16-17 pairs each with 1 or 2 enlarged lanceolate setae;
- very few tubular ducts on thorax and abdominal segments;
- few multilocular disc pores on abdominal segments V-IX.

These differences can be regarded as an intraspecific variability of a species "that is increasing its range of variation around the world fairly rapidly" (Williams, *in litteris*). Similar variations have also been observed from Authors in another species of the same genus, *Ph. yerushalmi* Ben-Dov, 1985, that showed, in Sicilian specimens than those described in Israel (Ben-Dov, 1990), a lower number of multilocular pores; such differences have been considered as effect of the host plant (Mazzeo *et al.*, 1994).

On the other hand, in mealybugs number and distribution of pores such as body size are also related to other environmental factors as temperature, and relative humidity (Cox, 1983).

In this case the infested plants have been maintained in isolated cold greenhouse

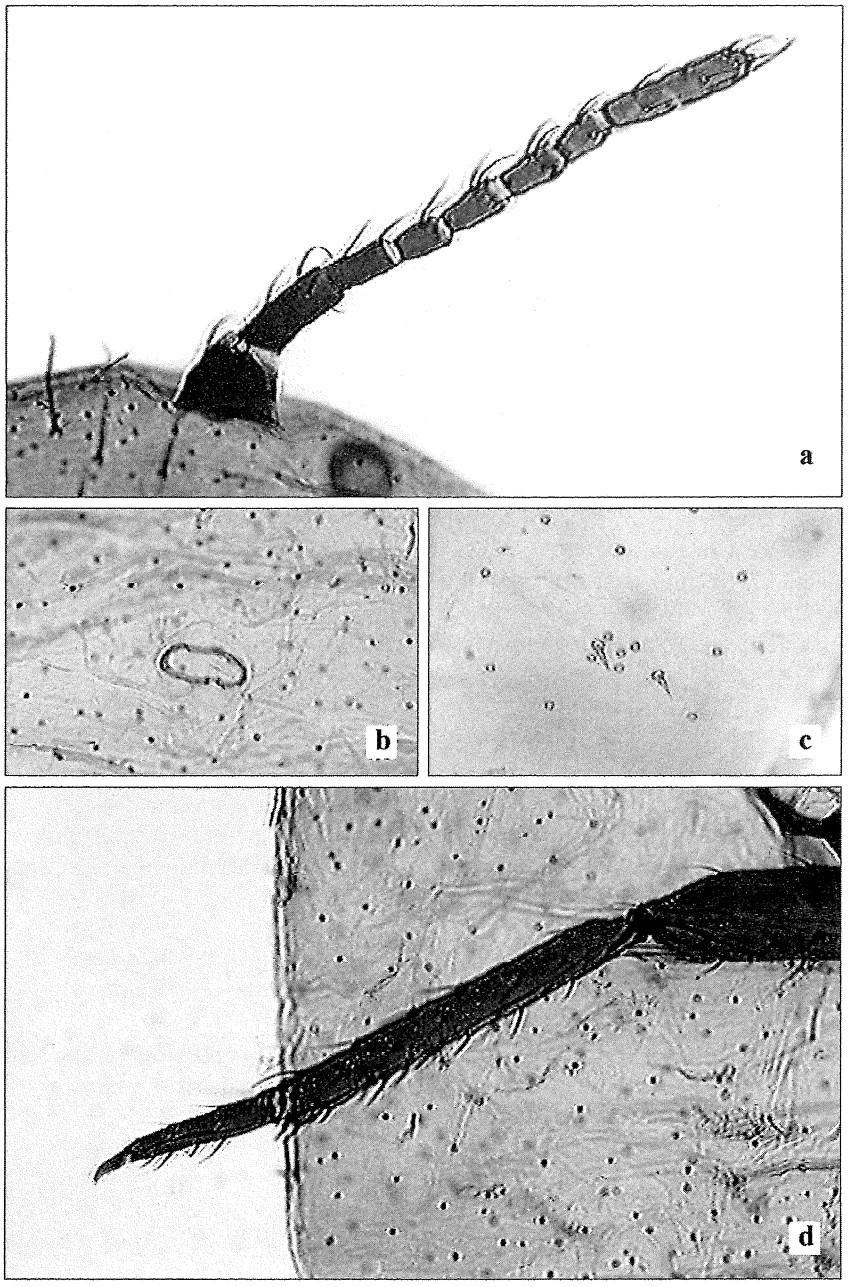


Fig. 1 - Adult female of *P. solani*: a) antenna, b) circulus, c) cerarius, d) hind tibia with translucent pores.

for about 8 years, in relation to some business problems, allowing the mealybug to perform several generations in the new colonization area.

## DISTRIBUTION

The species is reported in Ethiopian (South Africa, Zimbabwe), Nearctic (California, Canada British Columbia, Colorado, Florida, Louisiana, New Mexico, Oregon, Texas), Neotropical (Brazil, Curaçao, Ecuador, Guatemala, Mexico, Peru, Puerto Rico, Trinidad and Venezuela), New Zealand and Pacific Regions (Gilbert Islands, Hawaii, Kiribati, Marshall Islands) (Ben-Dov, 1994). The Sicilian record could represent the first one for the Palearctic Region.

## HOST PLANTS

*P. solani* is polyphagous; it has been recorded on many host plants belonging to different families: Aizoaceae, Amaryllidaceae, Boraginaceae, Chenopodiaceae, Compositae, Crassulaceae, Cruciferae, Cycadaceae, Cyperaceae, Euphorbiaceae, Goodeniaceae, Gramineae, Iridaceae, Labiatae, Leguminosae, Liliaceae, Malvaceae, Orchidaceae, Orobanchaceae, Polygonaceae, Portulacaceae, Rutaceae, Scrophulariaceae, Solanaceae, Verbenaceae, Violaceae (Ben Dov, 1994).

## MATERIAL EXAMINED

9 females, Italy, Catania, Contrada Primosole, on *Encephalarthos* sp., 19.I.1999: 7 females deposited at Dipartimento di Scienze e Tecnologie Fitosanitarie, University of Catania, Italy; 2 females deposited at Department of Entomology, The Natural History Museum, London (Dr. D. J. Williams).

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