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NEW HOST PLANTS RECORD FOR THE BROWN SOFT SCALE *COCCUS HESPERIDUM* LINNAEUS, 1758 (HEMIPTERA: COCCIDAE) IN BAGHDAD PROVINCE, IRAQ

M.S. Abdul-Rassoul
Iraq Natural History Research Center and Museum, University of Baghdad, Baghdad, Iraq
Corresponding author: msabr_1942@yahoo.com

ABSTRACT

An investigation was provided in this work for the host range of brown soft scale *Coccus hesperidum* Linnaeus in Baghdad Province. Five plant species were found infected by this insect, three of these species, *Citrusaurantium* L. (Rutaceae); *Nerium oleander* L. (Apocynaceae); *Ficuscarica* L. (Moraceae) reported earlier, and the remaining two, *Dahlia pinnata* Cav. (Asteraceae) and Myrtuscommunis L. (Myrtaceae) are recordedhere for the first time as host plants for this pest.

Key words: *Coccidae, Coccus hesperidum*, Hemiptera, Iraq, New host.

INTRODUCTION

The brown soft scale, *Coccus hesperidum* Linnaeus, 1758 (Hemiptera; Coccidae) is a cosmopolitan species with distributional range that cover six zoogeographical regions of the world (Kozar and Ben-Dov, 1997). It is highly polyphagous pest species that infest about 90 plant families (Ben-Dov, 1993), and it is considered as a serious pest of fruit trees, particularly citrus and a wide variety of field plants, ornamental plants, house plants and greenhouse plants. It has been reported around the Northeast Africa-Southwest Asia in Afghanistan, Iran, Lebanon, Saudi Arabia, Libya, Israel, Turkey, Cyprus, Ethiopia, Iraq, Syria, Egypt, Somalia and Tunisia (Gentry, 1965). The first record of *C. hesperidum* in Iraq was reported by Bodenheimer (1943) on *Citrus aurantium* (Rutaceae). After that, Al-Ali (1977) reported *Nerium oleander* (Apocynaceae); *Ficuscarica* (Moraceae) as a host for *C. hesperidum* in addition to *Citrus* (Rutaceae).

The females and nymphs of this insect were observed on the lower leaf surface near the main vein, cause both direct and indirect damage to the plants. The direct damage caused by their piercing-sucking mouth parts, that is used for sucking sap from the plant that resulting stunting, distortion, chlorosis, and defoliation (Abdul-Rassoul, 1970, Al-Rawy *et al*., 1977; Smith *et al*.,1997). Damage also, occurs by excrete honeydew, which provides a suitable medium for the growth of black sooty mold fungi. The Black sooty mold fungi are detrimental to plants because they cover leaves, thus reducing photosynthesis and inducing plant stress (Al-Rawy *et al.*, 1977; Malais and Ravensberg, 1992).

This study wasconducted to determine*Dahlia pinnata* (Asteraceae) and *Myrtuscommunis* (Myrtaceae) as a host plants for *Coccus hesperidum*for the first time in Iraq.

MATERIALS AND METHODS

In this study, infested plants *Dahlia pinnata* (Asteraceae) and *Myrtuscommunis* (Myrtaceae) by scale insects were collected from a private garden in various locations in Baghdad province during May and June, 2013. The scale specimens were carefully removed from the leaf surfaces and were put into a tube which contained 75% alcohol. Scales were mounted on microscope slides using the method given by Kosztarab and Kozar (1988), and the identification was carried out by the author using key provided by Mohammad and Moharum (2013). Information about the characters and illustration were compiled from the previous authors. Mounted slides are deposited in the collection of Iraq Natural History Museum.

RESULTS AND DISCUSSION

In May and June 2013, during my investigation on our faunistic survey on the Iraqi insects, I have found several *Dahlia pinnata* (Asteraceae) and *Myrtuscommunis* (Myrtaceae) plants in addition to the three previous species mentioned before were heavily infested by scale insects growing in private gardens in Baghdad. Plant samples were taken to the laboratory and the pest was identified as soft brown scale, *Coccus hesperidum* Linnaeus, which easily recognized by the following characters:

Body broadly oval to round; flat to slightly convex in lateral view; light brown to yellowish-green in color with brown stippling, and 2.5 to 4.0 mm long and 2.0 mm wide (Fig.1). Dorsal tubular ducts present in a small number; sub marginal tubercles less than 10 on each side; stigmatic setae different from other marginal setae. Antennae and legs are normal; trochanter distinct; stigmatic setae exist in only one row. The dorsal surface of body without bilocular, trilocular or quadrilocular disc pores.

Figure (1): Soft Brown Scale, *Coccus hesperidum* Linnaeus on *Dahlia pinnata* leaf

The current study recorded *Dahlia pinnata* (Asteraceae) and *Myrtuscommunis* (Myrtaceae) as a host plant for *C. hesperidum* for the first time in Iraq. This finding is met with the results of Granara de Willink (1999) who record this scale on *D. pinnata* in Argentine when he provided a list of *C. hesperidum* host plant. On the other hands, our finding of this scale on *Myrtuscommunis* (Myrtaceae) agrees with the results of Green (1928) in Britain and Ben-Dov (1971) in Israel.

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تسجيل جديد للنباتات المضيفه للحشرة القشرية السمراء *Coccus hesperidum* Linnaeus, 1758 (Hemiptera: Coccidae) في محافظة بغداد، العراق

محمد صالح عبد الرسول
مركز بحوث و متحف التأريخ الطبيعي-جامعة بغداد

الخلاصة

أجريت الدراسة الحالية لغرض التحري عن المضايف النباتية للحشرة القشرية السمراء *Coccus hesperidum* Linnaeus في محافظة بغداد.

تبين وجود خمسة أنواع نباتية تصيبها هذه الحشرة ثلاثة منها: النارنج *Citrus aurantium* (Rutaceae) و الدفلة *Nerium oleander* (Apocynaceae) والتين *Ficus carica* (Moraceae) سجلت سابقا أما النوعين المتبقيين و المتمثلان بالداليا *Dahlia pinnata* (Asteraceae) و الآس *Myrtus cummunis* (Myrtaceae) فأنهما يسجلان لأول مرة كمضايف نباتية لهذه الحشرة في العراق.