

# First Record of The Urbicola Soft Scale, *Pulvinaria urbicola* Cockerell, 1893 (Hemiptera: Coccidae) in Egypt

Soad I. Abdel-Razak<sup>1</sup>

## ABSTRACT

*Pulvinaria urbicola* Cockerell, 1893, is recorded from Egypt for the first time in Alexandria infesting *Cordia* sp. (Boraginaceae), *Psidium guajava* (Myrtaceae) and *Sanchezia speciosa* L. (Acanthaceae). Because this species has not been recorded before from Egypt, some characteristics of the adult female are given here to help in future identification in Egypt.

**Keywords:** Coccidae, Hemiptera, Egypt, *Pulvinaria urbicola*.

## INTRODUCTION

In Egypt, the genus *Pulvinaria* Targioni Tozzetti, 1866, is represented by four species, i.e. *P. chrysanthemii* Hall, *P. floccifera* (Westwood), *P. psidii* Maskell and *P. tenuivalvata* (Newstead) (Mohammad and Ghabbour, 2008). *P. urbicola* Cockerell, was first described by Cockerell, (1893), from specimens collected in Kingston, Jamaica, on *Capsicum* sp (Solanaceae). It has long been suspected that *P. grabhami* Cockerell, described by Cockerell (1903) from Madeira, and known throughout much of Africa, south of the Sahara, might be identical to *P. urbicola*, it is now clear that both species are identical (Williams, 2007). Furthermore, as suspected by Qin and Gullan (1992), *Pulvinaria peninsularis* Ferris, described from Lower California and Mexico, by Ferris (1921), was also identical to *P. urbicola* and this was confirmed by Williams (2007). *Pulvinaria urbicola* is now common in many tropical and temperate areas and has a wide host range of about 86 plant species in 42 plant families (Ben-Dov *et al.*, 2012). By examining the collected specimens, it was found that they are not any of the recorded species in Egypt, therefore the aim of this study is to record this soft scale as new to the Egyptian insect fauna and give the important taxonomical characters distinguish this species from its allies.

## MATERIALS AND METHODS

8 ♀♀, collected from King Fouad Greenhouse, ElMontazah garden, Alexandria, Egypt, II. 2009, host: *Sanchezia speciosa*. S. I. Abdel-Razak coll.; 3 ♀♀

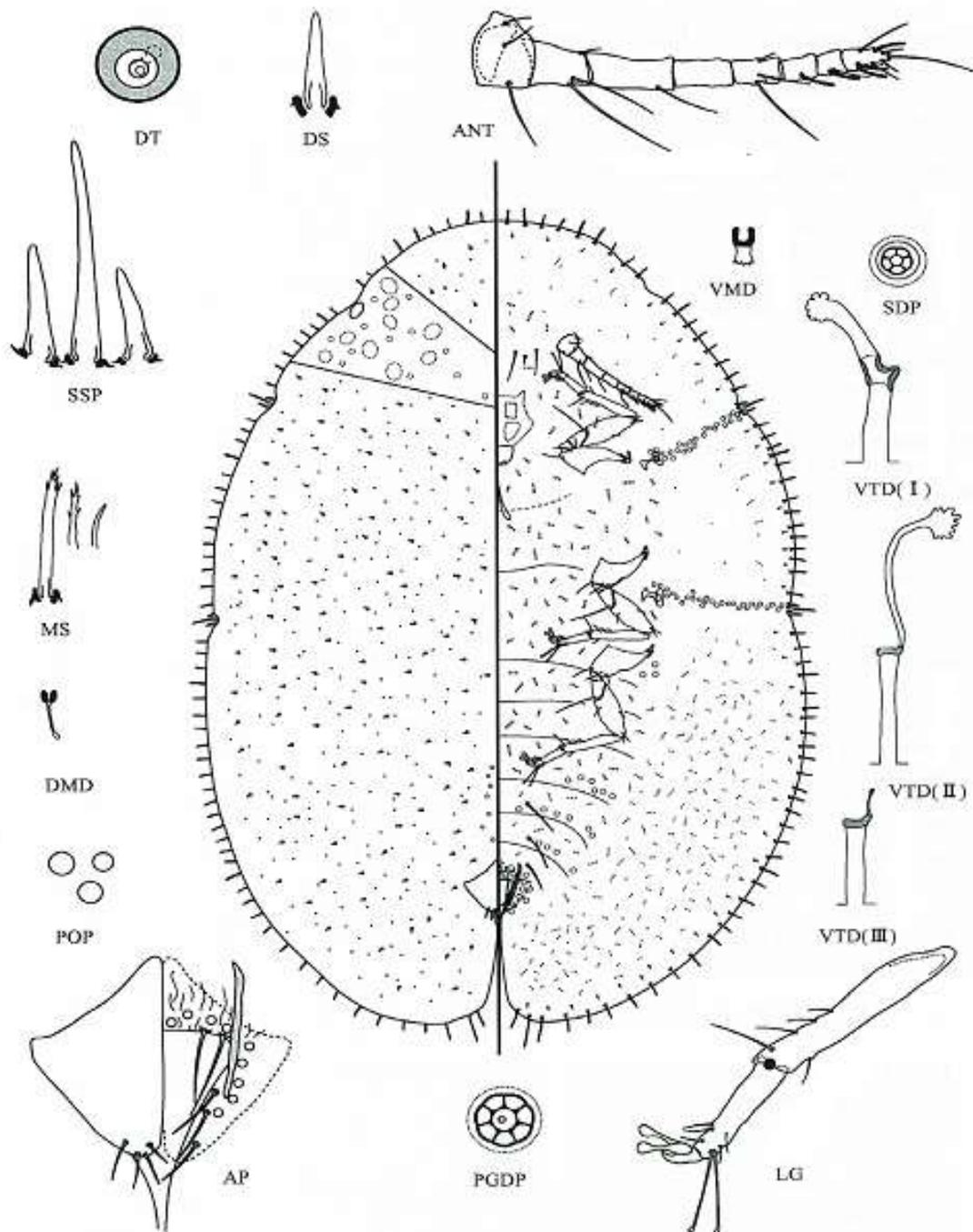
Experimental Farm of Agricultural Research center, Alex. Egypt, XII. 2008, host: *Cordia* sp. S. I. Abdel-Razak coll.; 2 ♀♀ Experimental Farm of Agricultural Research center, Alex. Egypt, VII. 2009, host: *Psidium guajava* S. I. Abdel-Razak coll. 3 ♀♀ MNHN no. 10126.1-3 from Guadeloupe on *Coccoloba uvifera*.

A severe attack of *P. urbicola* was observed on the leaves of *Sanchezia speciosa* in King Fouad greenhouse in Alexandria governorate, Elmontazah garden; *Cordia* sp., and *Psidium guajava* in the Experimental farm of the Agricultural Research Centre, Alexandria.

## Comments:

The species under study which was identified as *P. urbicola* (Fig. 1) resembles the Egyptian species *P. chrysanthemii* and *P. floccifera* in its general appearance. All are oval; slightly convex light or dark yellowish green. Ovisac elongate, straight or curved ribbed longitudinally about 4 - 9 mm. However, it differs from both in possessing dermal areolations on the submarginal area of the dorsum and a few ventral tubular ducts in the marginal area of the head. Also in *P. urbicola*, the anal plates each with 4 apical setae and 3 subapical setae, but in *P. chrysanthemii* there are 4 apical setae and 4 subapical setae, and in *P. floccifera*, there are 4 apical setae and 2 subapical setae. Also, dorsal submarginal tubercles in both *P. urbicola* and *P. chrysanthemii* are absent but they are present in *P. floccifera*. According to Williams and Watson (1990), this species is variable morphologically and several forms are known. The specimens collected from Egypt have a well-developed articulatory sclerosis between the tibia and tarsus, thus being similar to the specimens described by Tanaka *et al.* (2006) (Fig. 1) from Japan and the series and specimens described by Williams and Watson (1990) from Papua New Guinea, Tuvalu, Cook Islands, New Caledonia, Kiribati and Irian Jaya. But differs from the other specimens described from Papua New Guinea, Kiribati, Solomon Islands, Western Samoa, Vanuatu, Fiji, and Tuvalu, which have a weak articulatory sclerosis between the tibia and tarsus, and from the specimens described by Qin and Gullan (1992)

<sup>1</sup>Muséum national d'Histoire naturelle, Entomologie, UMR 7205 MNHN-CNRS, 45, rue Buffon- Paris 75005, France. Current address: Scale insects and Mealybugs Department, Plant Protection Research Institute (PPRI), Agricultural Research Center (ARC), Sabahia, Baccous, P.O Box 21616, Alexandria, Egypt. Corresponding Email: [soadramadan@hotmail.com](mailto:soadramadan@hotmail.com)



*Pulvinaria urbicola*, adult female — ANT, Antenna; AP, anal plates; DMD, dorsal microduct; DS, dorsal seta; DT, dorsal tubercle; LG, leg; MS, marginal setae; PGDP, pregenital disc pore; POP, preopercular pores; SDP, spiracular disc pore; SSP, stigmatic spines; VMD, ventral microduct; VTD, ventral tubular ducts of Type I–III.

**Fig. 1. Adult female *P. urbicola* morphological characteristics after (Tanaka, H., H. Amano and T. Uesato, 2006)**

from Australia, which lack ventral tubular ducts on the head. Also they stated that the absence of submarginal tubercles in Australian specimens distinguishes *P. urbicola* from *P. decorata*, *P. floccifera*, *P. polygonata* and *P. psidii*.

#### ACKNOWLEDGEMENTS

Appreciation is extended to Gillian W. Watson, California Department of Food and Agriculture, Sacramento, California, U.S.A., for identifying the specimens of *Pulvinaria urbicola* in 2009, and to Thierry Bourgoïn (Muséum national d'Histoire naturelle, Paris), who allowed me to work at the Entomology Department. I thank Danièle Matile-Ferrero at the same museum for her guidance and support. I thank Jon Martin, Natural History Museum, London, for sending me the type of *Pulvinaria chrysanthemi*. Also, I thank Douglas Williams, at the same museum, for his comments, discussions and review, which improved significantly the manuscript. This work was supported by a MNHN grant for visiting scientist on 2011.

#### REFERENCES

Ben-Dov, Y., D.R. Miller, & G.A.P. Gibson (2012). Scale Net: a database of the scale insects of the world, Catalogue Query Results, *Pulvinaria urbicola* Cockerell. [http://www.sel.barc.usda.gov/catalogs/coccidae/Pulvinaria\\_urbicola.htm](http://www.sel.barc.usda.gov/catalogs/coccidae/Pulvinaria_urbicola.htm). Accessed 20 June, 2012.

- Cockerell, T.D.A., 1893. X. Two new species of *Pulvinaria* from Jamaica. Trans. Entomol. Soc. London, 41: 159-163.
- Cockerell, T.D.A., 1903. A new coccid from Madeira, allied to *Coccus tuberculatus* Bouche. Entomologist, 36: 261-262.
- Ferris, G.F. 1921. Report upon a collection of Coccidae from Lower California. Stanford University Publications, Biological Sciences. Palo Alto 1: 61-132.
- Mohammad, Z.K. and M.W. Ghabbour, 2008. Updating list of super family Coccoidea (Hemiptera) as known to exist in Egypt. J. Egypt. German Soc. Zool., 56E: 147-162.
- Qin, T.K. and P.J. Gullan, 1992. A revision of the Australian pulvinariine soft scales (Insecta: Hemiptera: Coccoidea). J. Nat. History, 26: 103-164.
- Tanaka, H., H. Amano and T. Uesato, 2006. A new record of *Pulvinaria urbicola* Cockerell, 1893 (Hemiptera, Coccidae) from Japan. Jpn. J. Syst. Entomol., 12(2): 177-181.
- Williams, D.J. and G.W. Watson, 1990. The Scale Insects of the Tropical South Pacific Region. Part 3: The Soft Scales (Coccidae) and Other Families. CAB International Institute of Entomology, London, UK., Pages: 267.
- Williams, D.J., 2007. The soft scale insect *Pulvinaria urbicola* Cockerell (Hem., Coccoidea, Coccidae) and its synonyms. Entomol. Monthly Mag., 143: 91-96.

#### الملخص العربي

تسجيل لأول مرة للحشرة القشريه الرخوة (*Pulvinaria urbicola*) (رتبه نصفية الاجنحه:

فوق عائلة الحشرات القشريه) في مصر

سعاد ابراهيم عبدالرزاق

ولأن هذه الحشرة لم تسجل ولم تدرس من قبل في مصر، لذلك تم توضيح بعض الصفات التقسيمية لأنثى هذه الحشرة والتي تميزها عن الانواع المعروفة في مصر للمساعدة في التعريف المستقبلي.

تم في هذا البحث تسجيل الحشرة القشريه الرخوة (*Pulvinaria urbicola*) لأول مره في مصر والتي تنتمي الى رتبة نصفية الاجنحه:فوق عائلة الحشرات القشريه وذلك بمحافظه الاسكندريه. حيث اوضحت الدراسه تواجدتها على ثلاث عوائل مختلفه وهم اشجار المخيط والجوافه ونبات السنكازيا.