

*NOTES ON SOME ARMORED SCALE INSECTS
(HEMIPTERA:DIASPIDIDAE) OF IRAQ

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ABSTRACT

Sixteen species of Armored Scale insects were recorded from Baghdad city during 2001-2005. Three of these are reported here for the first time *Abgrallaspis cyanophylli* (Signoret, 1869), *Aonidiella citrina* (Craw,1870) and *Chrysomphalus aonidium* (Linnaeus,1758).

The other thirteen species were recorded earlier *Aonidiella aurantii*(Maskell), *Aonidiella orientalis*(Newstead), *Chrysomphalus dictyospermi*(Morgan), *Diaspidiotus ostreaeformis* (Curtis), *Diaspidiotu perniciosus*(Comstock), *Hemiberlesia lataniae* (Signoret), *Lepidosaphes beckii*(Newman), *Lepidosaphes conchiformis*(Gmelin), *Lepidosaphes ulmi*(Linnaeus), *Mercetaspis halli*(Green), *Parlatoria blanchardi*(Targioni-Tozzetti) , *Parlatoria crypta* Mckenzie, *Parlatoria pergandii* Comstock.

Localities, date of collection and host plants were given for all species.

INTRODUCTION

Diaspididae is considered as a member of the Homoptera which has an economic importance. The number of the species of this family are 2200 species belonging to 400 genera and widespread in the world (Ben-Dov,1990),causing damage to some trees, shrubs and herbaceous plants, and they affect 189 plant families. The adults and nymphs, suck the plant sap from all the plant parts, and their feeding causes direct damage to tissues mainly through that toxicity by the saliva injected during feeding(McClure,1990). These insects cause necrosis and chlorosis of leaves , and consequently leaves fall and sometimes they can kill a host plant. Adult females are small insects: their length has a range from 1.0to2.0mm; covered by an infuse scale ,legs absent, antennae reduced to stumps; abdominal segments 5-6 fused into a pygidium which is important in the diagnosis of species. The pygidium bears a complex of specialized structures , tubular ducts , marginal lobes, plates, gland spines and the anus lies on the dorsal surface.(Mckenzie 1956, Gill 1997, Watson 2002).

The most important scales insects in Iraq are:

Aonidiella orientalis found on *Citrus*, *Rosa*, *Ziziphus* and, *Populus*. *Parlatoria blanchardi* on date palm and *Lepidosaphes beckii* on *Citrus*.

The first study on the scale insects in Iraq was by Green (1922), Followed by Bodenheimer (1943-1944) who reported 32 species of Diaspididae. Hussian (1963) recorded 17 species, Derwesh (1965) added two species and Al-Ali(1977) added five species.

This study was conducted to investigate new species of the armored scale and their biology.

* Part of PhD degree by the first author.

Notes on Some Armored Scale Insects

MATERIALS AND METHODS

A field survey on the host plants of the armored scale was carried out in different region of Baghdad province during 2001-2005. Samples of infected plants were collected randomly in a Petri dish bags and stored in the freezer to make slides identification. Adult females was inspected under Binocular dissecting microscope to make slides according to Watson (2002). Insects sample also inspected under compound microscope by using a ocular micrometer to measure length of the armored scale, drawing of each sample by Camera Lucida. Identification keys of Mckenzie (1956), Gill(1997) and Watson(2002), were used to identify species collected during this study.

RESULTS

List of species reported in this study:

***Abgrallaspis cyanophylli* (Signoret, 1869)**

Materials examined :

20 female, Grayait (Baghdad), 10.V.2004, on leaves of *Centaurea cyanus* L.

10 female Grayait, Mansoor (Baghdad) 10.V.2004, 21.IX.2004, on leaves of *Matthiola incana* L.

Five female, Grayait and new Baghdad ,10.V.2004, 21.IX.2004 on leaves of *Diospyros kaki* L.F.

Distribution in Iraq :

Baghdad

***Aonidiella aurantii* (Maskell, 1879)**

Materials examined :

200 female, Grayait, Al- Athamia (Baghdad), Al-Yarmok(Baghdad), Abu- Gharib(Baghdad), Jadyria (Baghdad), 20.IX.2003, 4.IX.2004, 2.IV.2004, 10.V.2004, 10.X.2004, 15.V.2005, on stem and branches on *Rosa* spp.

50 female, Grayait, Al-kadra (Baghdad), 4.IX.2004, 15.V.2005 on leaves of *Buxus* spp.

100 female, Grayait, Al- Athamia, Mansoor, Al-Yarmok, 10.V.2004, 4.IX.2004, 20.IX.2005, on leaves of *Cycas circinalis* L.

Distribution in Iraq :

Baghdad ,Basra (Gauhar *et. al* ,1980)

***Aonidiella citrina* (Craw, 1880)**

Materials examined :

10 female, Al-Rashidia(Baghdad), new Baghdad ,Al- Yarmok, 20.V.2004, 10.V.2004, 10.X.2004, on leaves and stem of *Rosa* spp.

Six female, Grayait, 15.V.2005, on leaves of *Buxus* spp

Distribution in Iraq :

Baghdad

***Aonidiella orientalis* (Newstead ,1894)**

Materials examined :

20 female, Mansoor, 20.IX.2004, on leaves of *Alterathera bettyichiana* L.

Seven female, Grayait, Gadyria, Al-Athamia, 20.VIII.2004, 1.V.2004, on leaves of *Celosia cristata* L.

10 female, Grayait, Abu- Gharb, 14.IX.2003, 10.X.2004, on leaves of *Zizphus spina-christi* (L.)

50 female, Al- Yarmok, Al- Latifia(Baghdad), new Baghdad, 20.IX.2002, 12.VIII.2004, 25.IX.2005, on leaves of *Populus* sp.

20 female, Al-kadra, 15.V.2004, on leaves of *Ricinus communis* L.

I. M. AL-Malo and M. S. Abdul Rassoul

50 female, Grayait, Mansoor, Gadyria, 20.IX.2002, 12.VIII.2004, 1.IX.2004, on *Rosa* spp.
100 female, Abu- Gharb, 20.IX.2002, on leaves of *Dalbergia sissoo* Roxb.
200 female, Grayait, Mansoor, 20.IX.2002, 20.VIII.2004, on leaves of *Ficus* spp.
30 female, Grayait, Al- Yarmok, 20.IX.2004, 20.X.2005, on leaves of *Cycas* sp.
10 female, Grayait, Mansoor, 12.V.2004, 1.IX.2004, on leaves of *Hedera* sp.
Five female, Al- Latifia, 25.IX.2005, on leaves of *Ficus carica* L.
400 female, Grayait, Al- Latifia, Gadyria, 20.IX.2002, 12.V.2004, 25.IX.200, on leaves, branches and fruits of *Citrus aurantium* L., *C. sinensis* L., *C. reticulata* L.
Five female, Grayait, 12.V.2004, on leaves of *Vitis vinifera* L.
10 female, Al- Yarmok, 12.VIII.2004, on leaves of *Jasminum sambac* Ait.
Three female, Grayait, 20.VIII.2004, on leaves of *Mangifera* sp.

Distribution in Iraq :

Baghdad, Basra (Bodenheimer, 1943), Ramadi (AL-Ali, 1977).

***Chrysomphalus aonidum* (Linnaeus, 1758)**

Materialss examined :

30 female, Al-Dora (Baghdad), Al- Latifia, 19.V.2004, 10.IX.2004, on leaves of *Ficus carica* L.

Distribution in Iraq :

Baghdad

***Chrysomphalus dictyospermi* (Morgan, 1889)**

Materialss examined :

10 female, Al-Rashidia, Grayait, Mansoor, 20.V.2004, 20.VIII.2004, 10.IX.2004, on leaves and fruits of *Citrus aurantium* L.

Distribution in Iraq :

Baghdad.

***Diaspidiotus ostreaeformis* (Curtis, 1843)**

Materialss examined :

Eight female, Al-Yousfia (Baghdad), 12.VIII.2002, 18.VIII.2002, on leaves of *Populus* sp.

Distribution in Iraq :

Baghdad.

***Diaspidiotus perniciosus* (Comstock, 1881)**

Materialss examined :

Six female, Mansoor, Al-kadra, 10.V.2004, 4.IX.2004, on leaves of *Pyrus communis* L.

Distribution in Iraq :

Baghdad.

***Hemiberlesia lataniae* (Signoret, 1869)**

Materialss examined :

Four female, Grayait, 15.V.2004, on leaves of *Dactylic glomerata* L

Distribution in Iraq :

Baghdad, Ramadi (Bodenheimer, 1943).

***Lepidosaphes beckii* (Newman, 1869)**

Materialss examined :

Seven female, Al-Rashidia, Al- Latifia, 20.V.2004, 5.IX.2004, on leaves and fruits of *Citrus aurantium* L.

Distribution in Iraq :

Baghdad.

Notes on Some Armored Scale Insects

***Lepidosaphes conchiformis* (Gmelin,1789)**

Materials examined :

20 female, Al-Dora, Al-Latifia,10.V.2004, 5.V.2004,20.VIII.2005,on leavesof *Ficus carica* L.

Distribution in Iraq :

Baghdad.

***Lepidosaphes ulmi* (Linnaeus,1758)**

Materials examined :

Seven female, Mansoor,20.VIII.2005,on branches and fruits of *Malus* spp.

Distribution in Iraq :

Baghdad, Chuarta (Sulaimaniya)(Bodenheimer,1943).

***Mercetaspis halli* (Green,1923)**

Materials examined :

20 female , Al-kadra,10.V.2004, on leaves of *Prunus armeniaca* L.

Distribution in Iraq :

Baghdad, Mousul,Sulaimaniya (Bodenheimer,1943).

***Parlatoria blanchardi* (Targioni-Tozzetti,1868)**

Materials examined :

300 female, Grayait, Gadyria, Abu- Gharb,2.IV.2004, 10.V.2004, 6.VI.2005, on leaves of *Phoenix dactylifera* L.

Five female, Grayait,2.IV.2004, on leaves of *Zizyphus spina-christi* (L.)

Distribution in Iraq :

Baghdad, Basra(Bodenheimer,1943), (AL-Ali,1977).

***Parlatoria crypta* Mckenzie,1943**

Materials examined :

Eight female, Al- Yarmok,20.VI.2005, on leaves of *Jasminum sambac* Ait.

Distribution in Iraq :

Baghdad, Ramadi, Shatt al Arab(Basra) (Bodenheimer,1944).

***Parlatoria pergandii* Comstock,1881**

Materials examined :

Four female, Gadyria,10.XI.2005, on leaves and fruits of *Citrus mandarin* L

Distribution in Iraq :

Baghdad, Basra, Ramadi, Ashar(Mosul) (Bodenheimer,1943).

CONCLUSION

Field survey revealed the presence of 16 species of armored scale, three of them, *Abgrallaspis cyanophylli* (Signoret, 1869), *Aonidiella citrine*(Craw,1870) and *Chrysomphalus aonidium* (Linnaeus,1758). Considered to be a new records in Iraq.

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ملاحظات عن بعض الحشرات القشرية المدرعة (HEMIPTERA:DIASPIDIDAE)
في العراق

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الخلاصة

تم تسجيل ١٦ نوع من الحشرات القشرية المدرعة في مدينة بغداد خلال سنة ٢٠٠١ -
٢٠٠٥.

ثلاثة أنواع سجلت لأول مره في العراق وهي

Aonidiella citrina (Craw,1870), *Abgrallaspis cyanophylli* (Signoret, 1869), *Chrysomphalus aonidium* (Linnaeus,1758).

وثلاثة عشر نوع مسجله سابقا هي :

Aonidiella orientalis(Newstead), *Aonidiella aurantii* (Maskell), *Diaspidiotus ostreaeformis* (Curtis), *Chrysomphalus dictyospermi* (Morgan), *Hemiberlesia lataniae* (Signoret), *Diaspidiotus perniciosus*(Comctock), *Lepidosaphes ulmi* (Linnaeus), *Lepidosaphes conchiformis*(Gmelin), *Lepidosaphes beckii* (Newman), *Parlatoria blanchardi*(Targioni-Tozzetti) , *Mercetaspis halli* (Green), *Parlatoria crypta* Mckenzie, *Parlatoria pergandii* Comstock.

حددت مناطق جمع العينات وتاريخ جمعها والعوائل النباتية لكافة الأنواع.