*Bull. Iraq nat. Hist. Mus.*
*(1999) 9 (1) : 65 - 70*

# SOME LEAFHOPPERS AND A PLANTHOPPER WITH THEIR POPULATIONS IN ABU - GHRAIB , IRAQ *

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## ABSTRACT

Seven leafhoppers ( Cicadellidae ) and one planthopper ( Delphacidae ) , Homoptera were identified from a one year operated light trap at the College of Agriculture farm in Abu-Ghraib . The leafhoppers were : *Balclutha hortensis* Lind . ; *B . rufaofasciata* Merine . ; *psammctettix alienus* Dahlbem . ; *P . striatus* L. ; *Extianus capicola* . ; *Neoaliturus haematoceps* H. R. ; and *Orozius albicnctus Dist* . The planthopper was *Sogatella vibix* Haupt . one year records of their populations , indicated that *B .rufofasciata* occured during the fall from October 10 until December 18 ; *E. capicola* from October 24 until November 21 and again in the summer from March to October . The others occured only during the summer , from the end of March and early April until Mid - September and early October . *B . hortensis* was the most abundant wile *O . albicinctus* and *S . vibix* were the least abundant .

## INTRODUCTION

Despite the importance of leafhoppers , Cicadellidae and the planthoppers , Delphacidae , Homoptera , as plant pests , and some as vectors of plant diseases , little work on them have been published in Iraq , most of which was records of species found in surveys ( Al - Azawi and Al - Rubai 1992 ) . For example , the collections made by workers in the Plant Protection Department of the Ministry of Agriculture and Irrigation , throughout the years consisted of four species of leafhoppers , listed in a publication compiled by Al - Ali - 1977 . Later , more records were added to the Iraqi fauna ( Abdul - Rassoul 1978 ; Diabola , 1981 ) . Biological studies were even more limited . The only study we know was that on the biology of the grape leafhopper *Zyginia hussaini* Ghauri ( Al - Dulaimi , 1977 ) and that on sesame leafhoppers and their populations ( Al - Azawi and Al - Rubai , 1992 ) . This paper contributes to our knowledge on some leafhoppers and a planthopper with their yearly abundance in Abu - Ghraib representing the Middle section of Iraq .

*Part of M . Sc . thesis of the auther .

## MATERIAL AND METHEODS

A Light trap was left in the College of Agriculture farm for one year , between October 3 , 1983 and October 1,1984 . Once a week and throughout the year , the Leafhoppers and planthoppers were separated from the collection , and members of each species were counted . The identification of spec s were made by the Iraq Natural History Museum and by British Natural History Museum .

The light trap was made from a wooden box 62 x 62 x 90 cm . With a round hole ( 29 cm . in diam ) at the middle of the top side , A metal funnel was fitted to the hole , that the large opening ( 35 cm , in diam ) was facing upward and the narrow opening ( 8 cm . in diam ) was facing downward . A rim of a metal screw cap of a one - kg killing jar was welded to the funnel lower opening . A mesh wire cone fit the cap rim , projected into the glass jar to prevent trapped insects escaping from the jar . Directly above the large opening of the metal cone a glass sheet 35 x 50 cm . Stood upward supported by two wooden colomns . Slightly above the glass upper edge , a 100 watt light bulb was fixed and operated 12 hrs . during the night . Insects that were attracted to the light collided with the glass sheet then fell inside the killing jar .

## RESULTS AND DISCUSSION

Seven leafhoppers ( Cicadellidae ) and one plant hopper ( Delphacidae ) were identified from the light trap collection in Abu - Ghraib . The leafhoppers are *Balclutha hortensis* Lind . ; *B . rufofasciata* Merino . ; *Psammotettix alienus* Dahlbom . ; *P . striatus* L . ; *Exitianus capicola* Stal . ; *Orezius albicinctus* Dist . and *Neoaliturus haematoceps* H . R . The planthopper is *Sogatella vibix* Haupt .

In a separate study , the authors of this work have found three of these leafhoppers and the planthopper on sesame plants in Abu - Ghraib . The leafhoppers were *B . hortensis* , *O . albicinctus* and *N . haematoceps* . The planthopper was *S . vibx* ( Al - Azawi and Al - Rubai 1992 ) . Among these , *O . albicinctus* and *N . haematoceps* were considered as new record ( Al - Ali 1977 , Abdul - Rassoul 1978 , Diabola 1981 .

It is worth mentioning , that *O . albicinetus* is the vector of phyllody disease of sesame , while *N . haematoceps* is the vector of citrus stubborn disease . Both diseases are present in Iraq ( Al - Azawi and Al - Rubai 1992 ) . More over , *S . vibix* is known as the vector of maize rouph dwarp virus MRDV in the middle East ( Ammar 1977 ) .

The yearly populatuins of these hemopterous insects in Abu - Ghraib as recorded from the light trap were as follow :

1- *B . hortensis* .

This leafhopper was the most abundant among these insects . It was present from March 30 until October 1 , 1983 . During this period , it made seven peaks , the highest ones occured in May 12 ( 106 insects ) July 16 ( 175 ) , August 6 ( 190 ) and September 10 ( 38 ) Fig . 1 .

2- *B . rufofasciata .*

It made two. appearances during the year ( Fig . 1 ) . The first one took place between October 10 and December 18 ( 1983 ) with two peaks , one on October 24 ( 8 insects ) and the other on November 21 ( 23 insects ) . The second appearance began on April 2 , 1984 and ended in October 1 , showing eight peaks , the biggest one was on August 6 ( 75 insects ) , three of the remaining peaks had 20 insects , each and four had below 10 insects each .

3- *p . alienus .*

It appeared on March 27 and continued until September 17 ( Fig . 1 ) . It made seven well recognized peaks . The data and the number of insects in each peak are as follow : April 9 , ( 79 ) , May 14 ( 35 ) , May 28 ( 24 ) , June 25 ( 42 ) , July 23 ( 35 ) , August 20 ( 8 ) and September 10 ( 3 ) .

4- *P . striatus .*

It was present from April 2 , until September 24 ( Fig . 2 ) . It made eight peaks , the most recognized ones were two , the first was in July 16 , ( 63 insects ) and the second was in August 6 with 65 insects . The remaining six peaks had 4 - 17 insects each .

5- *E . capicola .*

The population of this leafhopper , appeared twice ( Fig . 2 ) The first appearance was in the fall , between October 24 and November 21 ( 1983 ) with two shallow peaks having 2 insects each . The second one was in the Summer , between April 2 and October 1 , 1984 . The summer population had nine peaks . The highest were two , one in May 28 with 23 insects and the other one was in June 25 with 25 insects . The remaining seven peaks had 5 - 12 insects each .

6 - *O . albicinctus .*

It appeared at the beginning of July and continued until September 10 ( Fig . 2 ) . Three peaks are shown in ( Fig . 2 ) , these are , July 9 with 5 insects , August 20 with 35 insects and September 3 with 5 insects .

7 - *N . haematoceps .*

Fig . 2 show that this leafhopper was present between May 14 and September 24 . It mad six peaks , the highest ones were those of June 11 with 32 insects , July 23 with 29 insects and August 6 with 42 insects . The remaining three peaks had 12 - 20 insects each .

8 - *S . vibix .*

This planthopper , appeared in April 2 and stayed until September 17 ( Fig 2 ) . During this period , the population showed eight peaks , only two of them were clearly recognized , one took place on July 30 with 35 insects and the other one in August 20 with 20 insects . The remaining six peaks had 2 - 11 insects each .

In conclusion , Fig . 1 and 2 indicate that five leafhoppers and a planthopper out of eight caught by the light trap are adapted to the

appeared during the fall between October 24 and November 21 in addition to its summer appearance between March and October 1. Of less tolerance to summer temperature is *B . rufofasciata* This leafhopper , appeared only during the period with low temperature , that was between October 10 and December 18 .

To the relative abundance of these insects , criteria are established consisting of the number of peaks during the year , total number of insects for all peaks and the average number of insects per peak . The results are shown below :

| Insects | No . peaks / year | Total insects in all peaks | Ave . No . insects / peak |
|---|---|---|---|
| *B . hortensis* | 7 | 668 | 95 . 4 |
| *P . alienus* | 7 | 226 | 32 . 3 |
| *P . striatus* | 8 | 199 | 24 . 9 |
| *B . rufofasciata* | 10 | 188 | 18 . 8 |
| *N .haematoceps* | 6 | 158 | 26 . 3 |
| *E . capicola* | 9 | 103 | 11 . 4 |
| *O . albicinctus* | 3 | 45 | 15 . 0 |
| *S . vibix* | 8 | 100 | 12 . 5 |

The above data show that *B . hortensis* was the most abundant leafhopper , followed by *P . alienus* . The least abundant one was *O . albicinctus* . The others fall in between . In addition to that , the above data indicate the number of generations per year for each species which ranges between 3 and 10 generations .

## ACKNOWLEDGMENT

Thanks are dut to Dr. M. S. Abdul - Rassoul , Iraqi National History Museum and to Dr. M. S. K. Ghauri , Commonwealth Institute of Entomology , British Museum ( Natural History) for identifying the Insects .

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## الخلاصة

شخصت سبعة قفازات اوراق ( Cicadellidae) وقفاز نبات واحد( Delphacide ) من رتبة متشابهة الاجنحة جمعت من مصيادة ضوئية في حقل كلية الزراعة في ابي غريب , شغلت لمدة سنة بين 3 تشرين الاول / 1983 وحتى تشرين الاول 1984 . كانت القفازات كالاتي

*Balclutha hortensis* Lind . و *B . rufofasciata* Merino .

*Pasammotettix alienus* Dahlbom و *P . striatus* L .

*Exitiamus capicola* Stal . و *Orozius albicinctus* Dist .

*Neoaliturus haematoceps* H . R . . أما قفاز النبات فكان *Sogatella vibix* Haupt اظهرت الدراسة السنوية للسكان بان القفاز *B . rufofaciata* كان موجودا من 10 تشرين الاول وحتى 18 كانون الاول و *E . capicola* بين 24 تشرين الاول وحتى 21 تشرين الثاني وكذلك خلال الصيف بين آذار وتشرين الاول . أما البقية فكانت موجودة في الربيع والصيف والخريف ابتداء من نهاية آذار وأوائل نيسان وحتى منتصف أيلول وبداية تشرين الاول . كان القفاز *B . hortensis* أكثرهم كثافة بينما القفاز *O . alpicinctus* ثم *S . vibix* اقلهم كثافة والبقية تقع بينهما .