



## NEW RECORD OF SPECIES *STEPHANITIS HOBERLANDTI* HOBERLANDT 2000 IN BAGHDAD PROVINCE

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### Abstract

A new record of lace bug species *Stephanitis hoberlandti* (family : Tingidae) belongs to (order: Hemiptera and sub order Heteroptera) has been collected two hundred insects (200) adult (males and females) and one hundred and twenty (120) nymph have been collected from leaves of fruit tree (*Malus domestica* and *Pyrus communis*) from different location in Baghdad province on 10/5/2017, 10/9/2017, 15/ 2/ 2017 (Abu-Gharib, Al-Mahmodia and Al-Yosifia). Insects were indentified by using taxonomic keys and morphological characters. Used camera (Lucida) has been used to draw bodies' parts and used camera to pictured.

**Key word** : Lace bug. Hump, Paranota, Carinae.

### Introduction

The family included about 2351 species belong to 300 genus (Froeschner, 1996; Laporte, 1833). The first who called lace bug for the family because seems the sculptor like net on wings.

The insect under the study belongs to family Tingidae, sub order Heteroptera, order: Hemiptera (Rosetta, 2013; Drake & Ruhoff, 1965), insects are small in size, body is oval in shape sometimes broad and depressed at surface and ventral, the hood (Hump) extended at base of head from mesonotum, mouth parts are piercing-sucking, wings membranous with sculptor as net (Hesselin, 2011; Pericart. 1979; Satti, 2003).

Female can lay hundreds of eggs in her life time (Hill, 1983). The nymph is small in size, oval in shape, dark color and carrying spines on body. Nymph has five instars. The insect hibernates as an egg. Both adults and nymphs feed on leaves at upper and lower side (Ghosh, 2008) and responsible for causing damage (Gentry. 1965). Nymphs of lace bugs are also reported to produce honeydew, which covers the leaves and becomes blackened by the development of sooty mold fungi (Gouveia & Ohlendorf, 2002). The metamorphosis is Paurametabola (egg-nymph-adult) and the species of this family is phytophagous (Alford, 2016).

### Material and Methods

Samples were collected from fruit tree (*Malus domestica* and *Pyrus communis*) from Baghdad province on 10/ 9/ 2017, 15/ 2/ 2017 from different location in Baghdad (Al-Gadriya, Al-Mahmodya and Al-yousfiya). Samples were transferred to lab by plastic

case by used smooth brush. The hosts name and date of collection were recorded.

### Result and Discussion

#### Taxonomic status

Order	: Hemiptera
Suborder	: Heteroptera- True Bugs
Superfamily	: Tingioidea
Family	: Tingidae - Lace Bugs
Subfamily	: Tinginae
Tribe	: Tingini
Genus	: <i>Stephanitis</i>
Species	: <i>hoberlandti</i>

#### Genus *Stephanitis* Stal 1873

The genus *Stephanitis* includes about 60 species feeding on fruit tree and ornamental plant, the color is dark- brown or black, head is short and circular and depressed in each side, carried 5 seta. Compound eye is red or dark- brown or black. Antenna is thin and long consist of four segments that are not equal the first is two time of second. The third segment is longer than others. All the segments carry seta, mouth parts sucking- piercing the bucculae with closed groove, the rostrum four segments (Fig. A).

The paranota is circular or curved at the tip on each side of thorax and head. The Scutellum reach to the metathorax which carries 3 lines called carinae; the middle line was long and convex, but the lateral is short, with a structure called hump. The legs are thin and long. The nymph has four- five instars.

**Damage:** The adult and nymph causes the damage; this species Polyphagous and attacks many plants (Johnson & Lyon, 1991; Alverson *et al.*, 1994). Some species developed to be Monophagous (Tsukada, 1994). And may cause death the to plant; it is reduces the

photosynthesis and transpiration (Klingeman *et al.*, 2000). The symptoms appears on upper surface of leaves as yellowish and black spots on lower surfaces (Buntin *et al.*, 1996). (Fig. B, C & D)

**Species *Stephanitis hoberlandti* Hoberlandt 2000**

**Synonyms :** *Stephanitis oschanini* (Golub, 2002)

This species is very resemble with the species *Stephanitis pyri*, but with some differences in some characters.

**Adult:** 2.14- 2.25 mm in length brown- yellowish in color. (Fig. E)

**Head:** 0.20- 0.25 mm in length. Dark brown carried 5 seta, 2 of them are in front one in the middle and 2 in the back.

**Antenna:** 1.40- 1.43 mm in length, the first is longer than the second, the third is longest the first about five times, and six times longer than the second the four segment is longer than the first and second segment and shorter than third segment.

**Thorax:** 0.54- 0.57 mm In length.

The paranota extend on each side of the pronotum; it is large and reach to base of head, and appears as cassia papers (Fig. F) and forms from 18- 19 large cell.

The hump is 0.63- 0.67 mm covered the front of the head and reached to the base of antenna, and in lateral view side appears as convex line, the Scutellum carried 3 lines (carinae) the lateral is short and the middle is long forming of 3 classes of cells.

**The legs:** white- yellowish in color with 5 seta's, tarsi with 2 segments and dark brown.(fig. G)

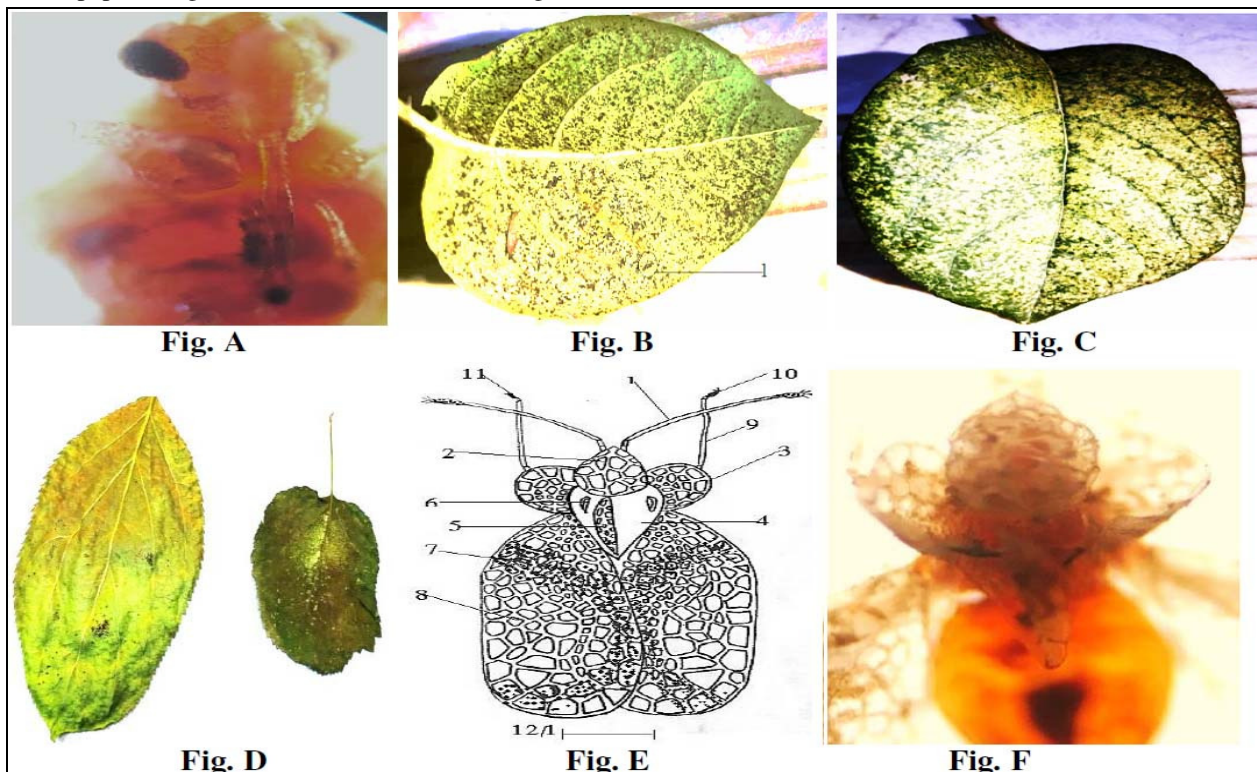
**The wings:** 1.92- 2.14 mm in length, the scale long with cut tip, Radius vein weak but medium vein reach to the middle of the wing. The coloration is un irregular and concentric in the middle near the inner margin. (Fig. H)

The tip an areola arranged in circular with contraction at middle inner margin. There is case on the medium vein.

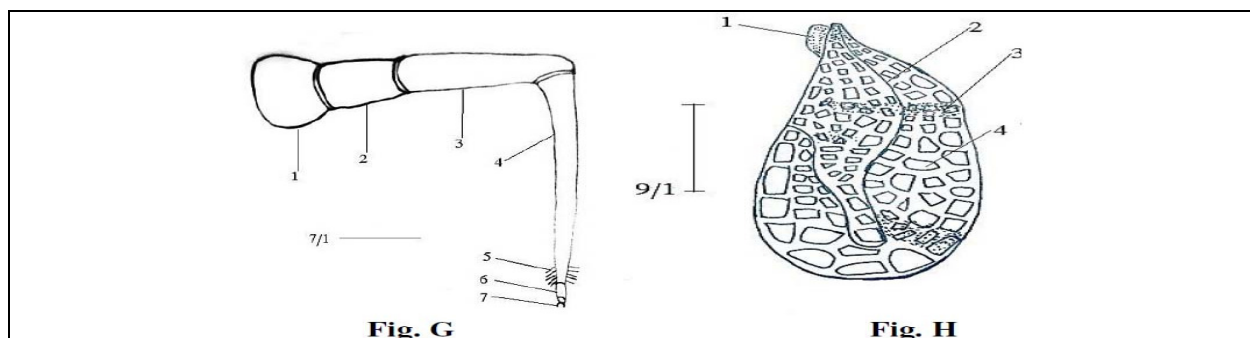
**Abdomen:** is 1.8- 1.11 mm in length, pale brown in color the ovipositor carried seta on the lateral valve in female.

**Distribution :** Found in Palearctic region (Poland, Hungarian, Italia, Jordan, North of Iraq/Erbil and shaqlawa) (Lis, 2002).

**Material exam:** 200 adult and 120 nymph is Collected from Baghdad province in 10/5/2017 and Al-Mahmodia in 10/9/2017. And Al- Yosifia in 10/9/2017 and Abu-Gharib in 15/2/2017.



**Fig. A.** the mouth part. **Fig. B, C & D.** the damage. **Fig. E.** the adult: 1- Antennae, 2- the hump. 3- paranota, 4- the Scutellum, 5- the medium carinae, 6- the lateral carinae, 7- the sculptor like net on the wings, 8- areolae, 9- the fronter legs, 10- the wrist, 11- the wrist contents two tarsi. **Fig. F.** the paranota appears like cassia paper



**Fig. G:** the legs: 1- coxa, 2- trochanter, 3- femur, 4- tibia, 5- the seta on the tibia, 6- wrist. 7- the wrist contents two tarsi. **Fig. H.** the wings: 1-scale 2- the medium vein, 3- the sculptor like net on the wing, 4- areolae.

### Conclusion and recommendation

The species under the study was collected from different plants which is cause damage and may be execute to death plants by suck the sap and excrete the honey dew that was caused a second infested. So we advise to doing more study as monitoring or observation the insects and control it.

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