

# A Morphological Study and a New Species Registration of Genus *Xerophloea* Germa, 1839 Sp.nov. From sub-family Ledorinae Fairmai, 1855 of the Leafhopper (Hemiptera: Cicadellidae) in Iraq

Rawa' J. H. Al-Kaissy

Department of Biology, College of Education for Pure Science (Ibn Al-Haitham), University of Baghdad/Iraq.

## Abstract

The external morphology was studied and registered for a new species of genus *Xerophloea* Germa, 1839 where the samples were collected during the seventh month in 2018 of the Adhamiyah region in Baghdad city, Iraq and 3♀ using the light trap. The samples were diagnosed using taxonomic keys and the parts of insect were described and photographed successively, the adult insect, vertex, head, pronotum, mesonotum, abdomen, the front wing, as well as female genitalia, using Lucida's camera.

**Keywords:** Hemiptera, Cicadellidae, Ledorinae.

## Introduction

The family of Cicadellidae Latreille, 1825, which returns to the order of Hemiptera, is a widespread family, spreading in tropical and subtropical areas, estimated to be about 22,000 species [1], and has several sub-families, including the family of Ledorinae Fairmai, 1855, which includes approximately 70 genus, 450 species, 5 tribes of Stenocotini, Petalocephalini, Ledorini, Xerophloeophloeiini, Thymbrini. New tribes have been added, namely Hesperedrinini, Afrorubrinini, Rubrinini, thereby rearranging those tribes [2, 3]. The members of these sub-families are widely spread in Africa, Australia and South-East Asia, and their members prefer to feed on herbs, shrubs and some trees including *Eucalyptus Ablioua* L.,

Her. 1789, where the members of the tribe Xerophloeini, 1943, dominate the earthy green of the tribe that the simple eye position on the vertex and closer to some of the complex eyes as the leg and femur of the fore-leg with spines and in the order of 1 + 2 at the apex of the femur. The genus *Xerophloea* Germar, 1839 returns to this tribe and its members are characterized by the head is flat and narrower than the pronotum, and its anterior margin is rather sharp.

The simple eyes are near the vertex, and the fore-wing is long and with an external margin at its wide apex, a member of this genus family prefers Gramineae family [2, 4].

## Material and Method

Samples ♀ 3 were collected in July 2018 from Adhamiyah region in Baghdad city using the light trap [5] in the picture [1]. The samples were pasted on a white cardboard measuring 1 × 1 cm and then registered both the place and date of the collection. Then photographed the adult insect followed that the general morphological diagnostic characteristic were installed, then the parts were separated successively using forceps and a dissecting microscope where the vortex parts, head, pronotum, mesonotum, front wing, abdomen, and different magnification powers.

Then the female genitalia was separated by the forceps and placed in a test tube containing 10% KOH and put the tube on a heat source for 10 minutes then the samples were washed using distilled water to remove the traces of KOH. After that put the sample in a watch glass and alcohol 70% was added for the examination then draw the ovipositor and the addition of glycerine material for the samples for preservation [6, 7, 8].



Picture 1: Light trap

## Results

Description and registration of a new species of *Xerophloea* Germa, 1839 sp. nov.

- Body: Cylindrical, general color earthy with several spots brown overall length 5-7 mm.
- Vertex: Yellow with several irregular brown spots occupying most of them, the anterior margin AM strongly convex with a pneumatic tape, posterior margin PM almost plane; the coronal suture CSu clear mediates the complex eyes, the posterior margin PM is roughly plane, the compound eyes CE dark kidney shape, simple eyes OC clear circular shape with color orange.
- Face: The width is larger than its length, earthy color with several brown spots in the form of strips occupy most of fronto-clypeal FC, epistomal suture EPSSu almost clear plane, lorum LO is prolonged, anterior clypeus AC round, gena G prolonged.
- Pronotum: Earthy with several irregular brown spots, anterior margin AM slightly convex, lateral margin LM convex, lateral angular LA is a cut slash and posterior margin PM is slightly convex.
- Mesonotum: Prescutum PS is yellow with irregular brown spots, Scutellar suture SLSu is clear and convex, scutum S brown with a rather sharp end, posterior lateral angle PLA is sharp protruding outward and little around.
- Fore wing: shining yellow with several white spots with brown margin prolonged occupying most of the wing with a dark spot when the wing is tears, its anterior margin AM is round, costal margin CM slightly curved, clavate CL is free of winding veins with a note of several anal vein AV, inner apical cell IAC the largest elongated cells, median apical cell MAC is elongated, external apical cell EAC roughly square and is the smallest cell as well as the subcostal apical cell was a little elongated.
- Abdomen: Yellow free of spots, spindle with sharp-ended and a number of hairs on the capsule that surrounds the ovipositor.
- 7<sup>th</sup> sternum: Bright yellow, its anterior margin AM slightly convex closer to the planning, its posterior margin LM slightly oblique, its lateral margin PM is zigzag.
- Female genitalia: Female genitalia or what is known as ovipositor consists of three pairs of valves, the first pair V1 and the second pair V2 as they apply, they are the create ovipositor, while the third pair is a cover for that ovipositor [9]. Below is a description of the first two valves V1 and V2.
- The first valve V1: its upper margin with irregular teethed, its lower margin is smooth, its apex is slightly tapered.
- The second valve V2: Its upper margin has a small regular teethed, smooth bottom margin and a slightly protruding apex.

Samples studied: 1♀ Holotype

2♀ Parertype

Host plant: unknown.

Place and date of collection: Seventh month 2018, Adhamiyah, Baghdad, Iraq.

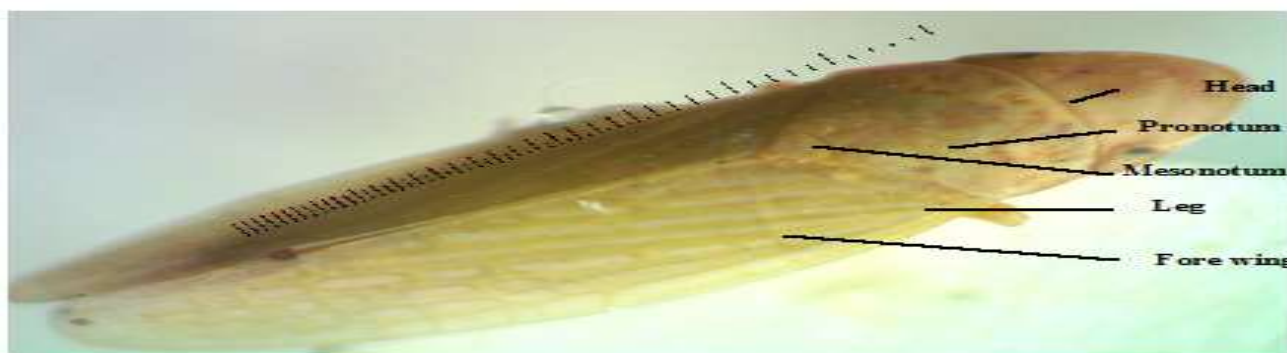
This species is under study *Xelophloea* Germa, 1839 resembles the species

*Xelophloea viridis* Fabricius, 1794 but it differs from the following: Small female body length 5.7-6.3 mm, overall color green, head

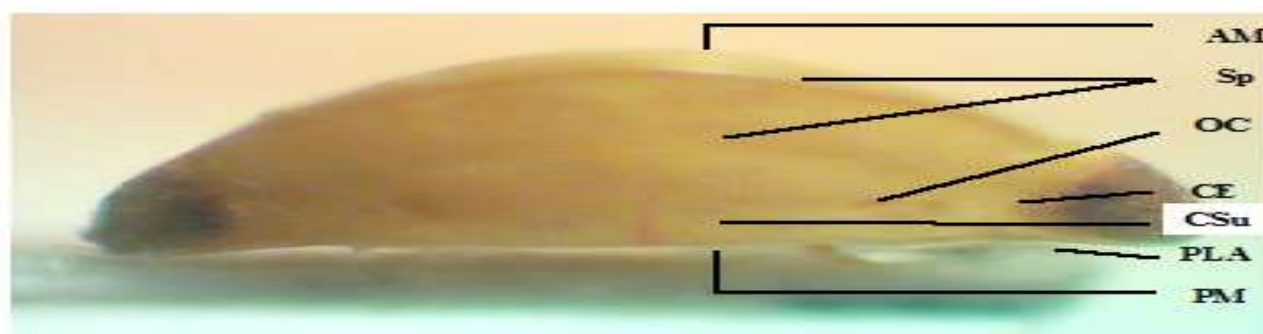
short, pronotum double head size, there is a black line at the length of the head with brown spots occupying the bottom of this line at the center [10].

## References

1. Hammad MM, Jabar AS, Abd-Alqader AA (2015) Description two types of leafhoppers *Emoascaa decedens* (Pooli, 1932) (Hemiptera: Cicadellidae) and *Emoascaa fabae* (Harris, 1891) Thi-Qar Univ. J. Agric. Res., 4(1).
2. Jones J, Deitz L (2009) Phylogeny and systematics of the leafhopper subfamily Ledorinae (Hemiptera: Cicadellidae). Zootaxa. Mongolia press. Auckland New Zealand, 2186-1-120.
3. Deitrich CH (2005) Key to the families of Cicodomorpha and subfamilies and tribes of Cicadellidae (Hemiptera: Auchenorrhyncha). Florida. Entomomogist., 88(4): 502-517.
4. Szwedo J (2002) Studies on Xerophloeini Leafhoppers with description of *Pariacoca icanensis* gen. sp.nov. From (Hemiptera: Cicadellidae). (Cicodomorpha: Ledorinae) Wroclaw, 30 VI., 13(2): 153-163.
5. Shimoda M, Honda K (2013) Insect reactions to light and its application to pest management. Appl. Entomol. Zool., Doi: 10.1007/s13355-013-0219-x.
6. Yu-Jian L, Zi-Zhong L (2011) Description of three new species of *Petaloccephala* Stal, 1853 from China (Hemiptera: Cicadellidae). Mun. Ent., 2001. 6: 1.
7. Al-Asady HS (2015) External morphology of *Neophilaenus lineatu* (Linnaeus, 1758) (Homoptera: Cerocopidae). New record species Ibn-Al-Haitham. J. for pure and apple. Sci., 13: 28.
8. Fletcher MJ (2009) Identification key and check lists for the Leafhopper plant hoppers and their relatives occurring in Australia and Night boring areas (Hemiptera: Auchenorrhyncha) New South Wales. Government of primary industries. Biosecurity collective.
9. Hummel NA, Zalon FG, Peng CY (2006) Structure of female genitalia of glassy-wing and sharpshooter (*Homalidisca coagulata*) (Hemiptera: Cicadellidae). Elsevier. Arthropoda structured. Development, 35: 111-125.
10. www.dpr.ncparks.gov. Bug Guide net.

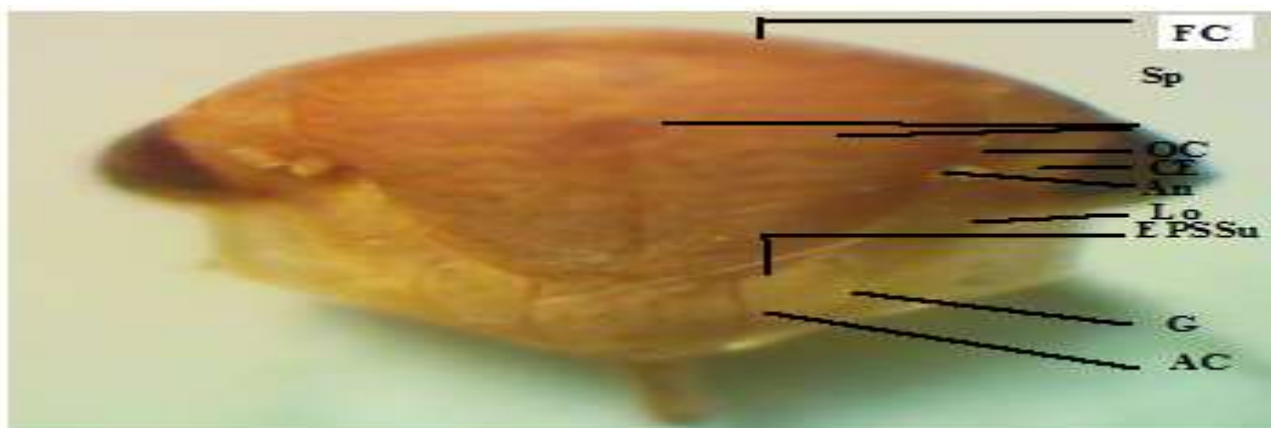


Adult Insect 4x

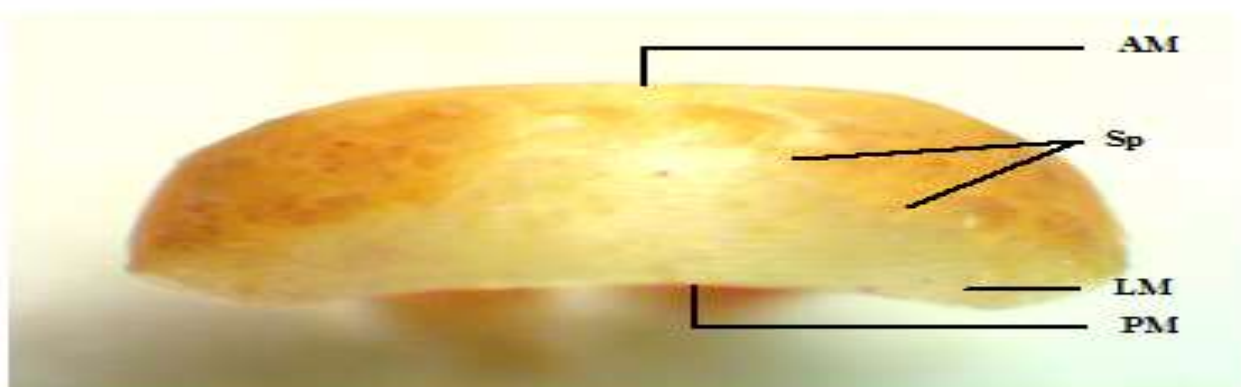


Vertex 4x

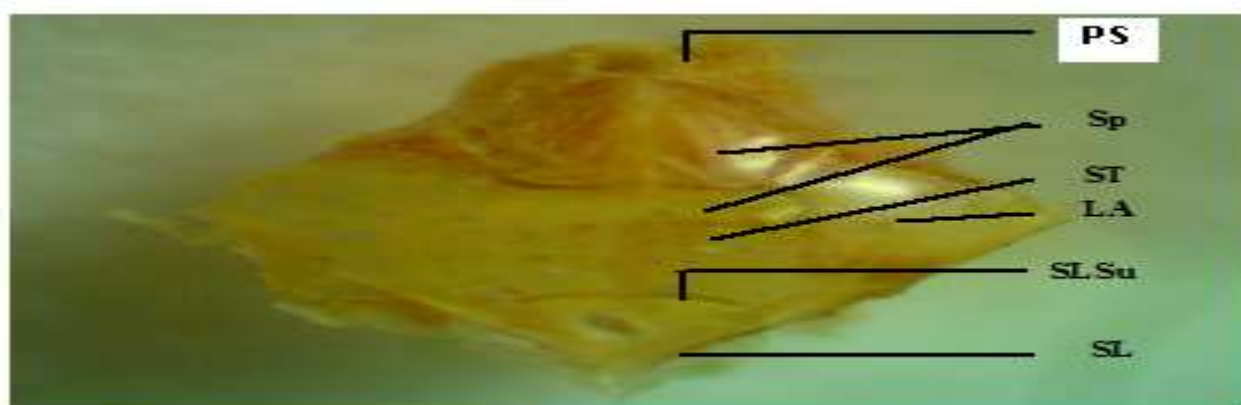




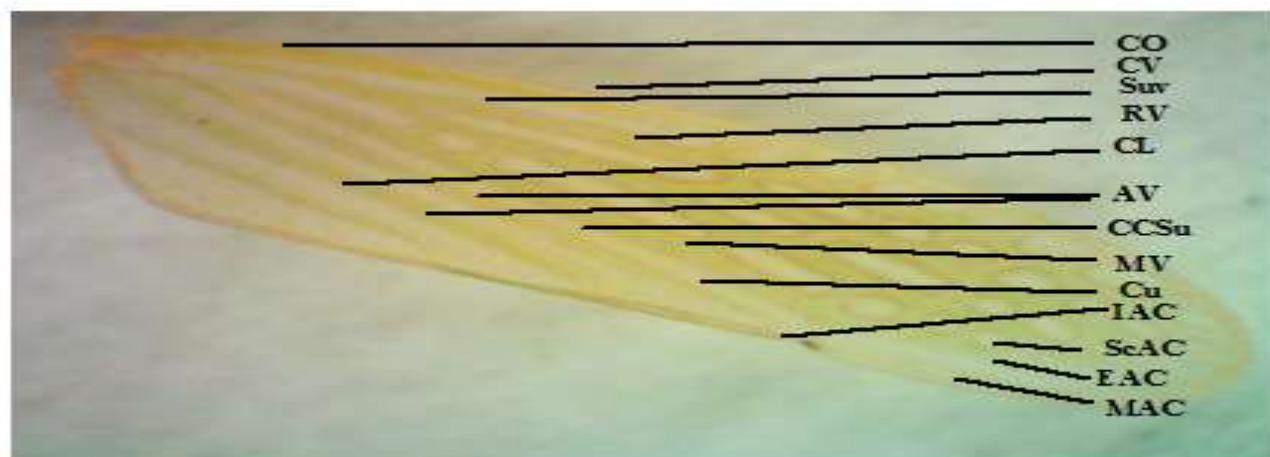
Face 10x



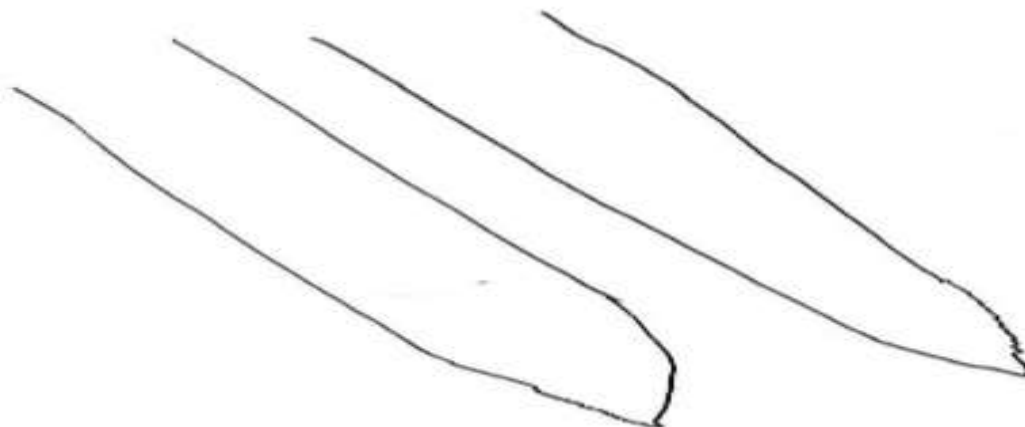
Pronotum 10x



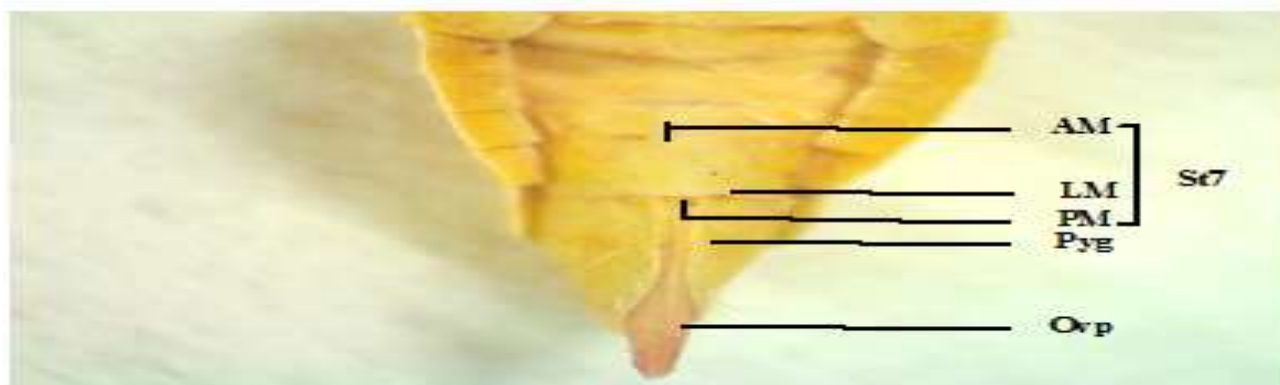
Mesonotum 10x



Fore wing 4x



Ovipositor



Abdominal of Female (Ventral view) 4x



Abdominal of female (Dorsal view) 4x