

EXTERNAL MORPHOLOGICAL STUDY OF THE LEAFHOPPER
NEOALITARUS FENESTRATUS HERRICH-SCHAEFFER
1964(HOMOPTERA: CICADELLIDAE) FROM IRAQ

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ABSTRACT

The present work introduces, external morphological study of the leafhopper *Neoalitarus fenestratus* Herrich-Schäffer (Deltocephalinae:Oposiini), particularly the male genitalia which were dissected and illustrated.

INTRODUCTION

The genus *Neoalitarus* belongs to the subfamily Deltocephalinae. This is a large subfamily, worldwide distribution. Its largest number of species in the Palaearctic and Nearctic regions. The majority of species feed on grasses, clovers and other low plants thus they transmit viral diseases to them, although few found on trees and bushes (Le Quesne, 1969).

Members of this genus are characterized by a pair of ocelli on the transition between frons and vertex; green to red brown color; posterior tibia and apex of femur with strongly developed spines; forewing without punctuation or with it only at base; veins of corium forked or linked by cross veins (Ribaut, 1952; Emel'yanove, 1962 and Le Quesne, 1969).

The species *Neoalitarus fenestratus* Herrich-Schäffer 1964 was firstly recorded in Iraq by (Dlabola, 1946) although Derwesh (1965) included the species in his list of some identified insects and arachnids in Iraq.

MATERIALS AND METHODS

Specimens were collected using light trap. They were mounted and preserved in insect box. They were put in a beaker with suitable amount of water, care was taken in that the specimens should be not in touch with water. They were left for 48 hours to wet and soften body parts. Forewing, hindwing, head, pronotum and mesonotum were isolated and mounted separately on suitable sized rectangular hard paper for examining and drawing. Abdomen and genital capsule were separated and dissected each alone using 70% alcohol and watch glass to isolate the abdominal apodemes and genital parts, which were preserved in glycerin after drawing. Dissecting microscope, insect micropins and squared eyepiece with ocular micrometer were used for dissection and illustrations.

RESULTS

Neoalitarus fenestratus Herrich- Schäffer 1964
(=*Circulifer fenestratus* Herrich- Schäffer 1834)

Body small, slender; general coloration deep brown with red tinge; total length of males and females 3.9 to 4.5 mm.

Vertex (Fig. 1) Deep brown with reddish tinge; arch like; anterior margin rounded and slightly protruded medially; lateral posterior angles narrow and slightly pointed; posterior

Morphology of *Neolitarus fenestratus*

margin strongly concave medially; permanent white spots mostly regular in shape and size occupy the area between compound eyes.

Face (Fig. 2) Deep brown with reddish tinge; a pair of light yellowish brown ocelli situated at the tip of frontal suture close to the transition area between frons and vertex ; frons with permanent white spots mostly regular in shape and size much densely toward vertex ; lorae deep brown oval and distinctly elevated.

Pronotum (Fig. 3) Deep brown; anterior margin obtuse; lateral posterior margin obliquely truncate; posterior margin narrow in respect to anterior one; concave interiorly; spotting pattern as explained in vertex and face.

Mesonotum (Fig. 4) Mostly light brown; apex rounded and slightly protruded anteriorly; lateral median margins distinctly pointed; parapsidal sutures distinct, their posterior ends close together; prescutum rounded and anteriorly protruded; scutellum deep brown.

Forewing (Fig. 5) Mostly deep brown; appendix distinct running close and round apex; the latter rounded; apical third with irregularly shaped and sized whitish patches; veins of distal third forked and linked by cross veins.

Hindwing (Fig. 6) White with silver tinge so as the veins; base narrow; apex wide and obliquely truncate; peripheral vein distinct goes around apex ending at the jointment between C and Sc1; anal folds are clearly indicated by two notches.

Male genitalia: Aedeagus (Fig. 13) oval, narrowing at both ends; its apex biforked; the connective at the base of aedeagus biforked posteriorly. Genital plate (Fig. 12) triangular; its outer lateral margin with a row of mostly identical spines. Genital style (Fig. 11) elongated, its apex pointed and directed externally; lateral flange at the distal third of the outer lateral margin; the socle small and wide, strongly sclerotized situated opposite to the flange; first and second abdominal apodemes, male and female abdominal sterna are shown in figures 7, 8, 9 and 10 respectively.

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Morphology of *Nealitarus fenestratus*

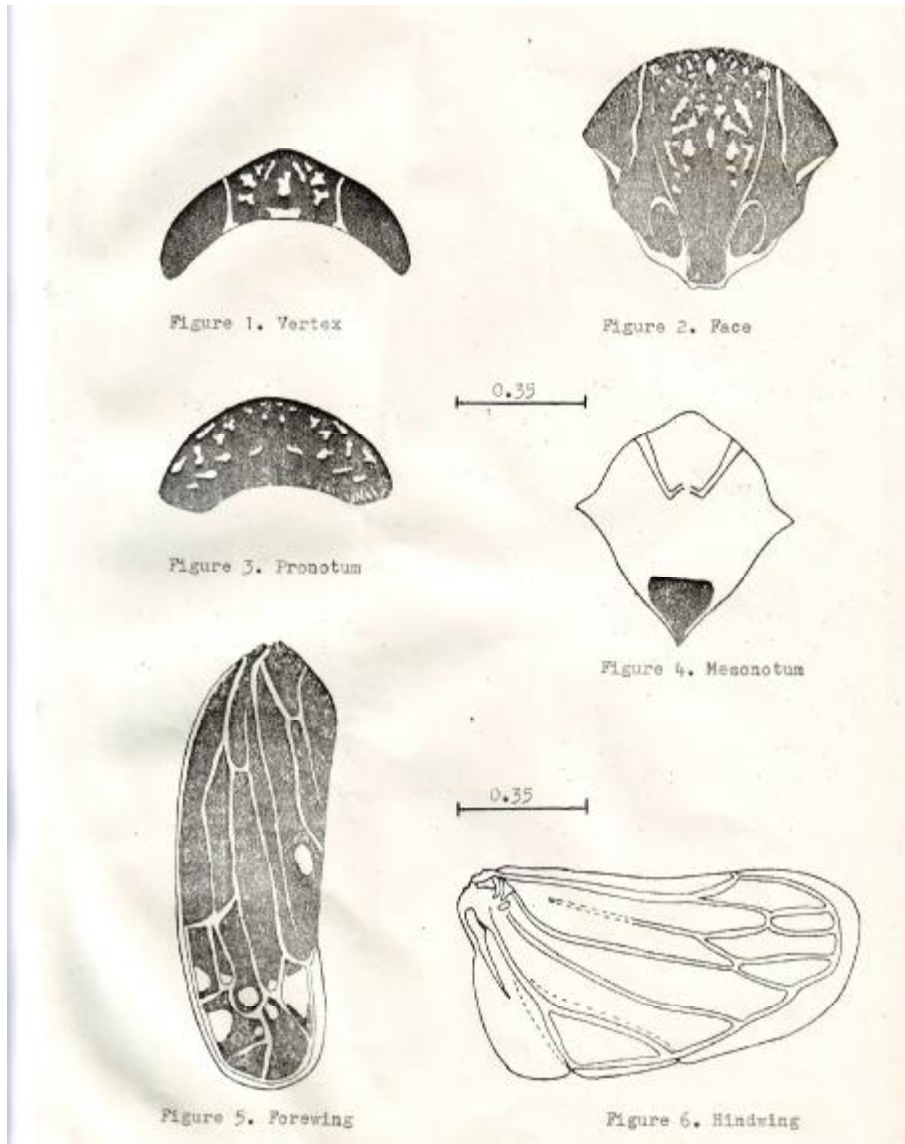




Figure 7. First Abdominal Apodeme



Figure 8. Second Abdominal Apodeme

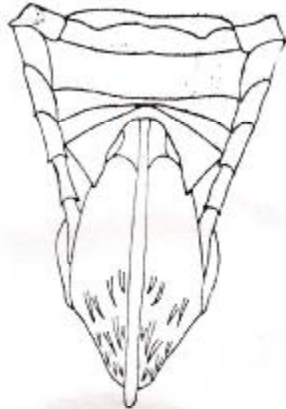


Figure 9. Female Abdominal Sterna

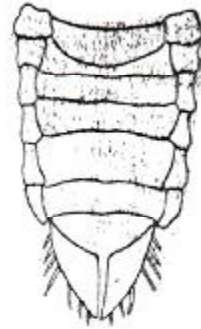
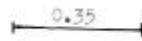


Figure 10. Male Abdominal Sterna

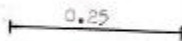


Figure 12. Genital Plate



Figure 13. Aedeagus and Connective