

External Morphology of Planthopper *Dictyophara iranica* Germar 1833, (Hemiptera: Dictyopharidae) from Iraq

A. J. SABER

**Department of Biology, Colleg of Education Ibn Al-Haitham,
University of Baghdad**

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Abstract

The external morphology of planthoppers belong to the genus *Dictyophara* Germar 1833, has been described.

The study included detailed description of the external morphology of *Dictyophara iranica* Germar 1833.

External morphological characters of the head, thorax and their appendages were used. Those characters were supported by studying the male genitalia.

Key words:- Planthopper , Hemiptera , DiscriPtion

Introduction

The Genus *Dictyophara* Germar 1833, belongs to family Dictyopharidae Spinola 1839, subfamily Dictyopharinae, Spinola 1839.

The subfamily Dictyopharinae comprises about 700 species belongs to 150 genera, worldwide distributed, from temperate to subtropical and tropical zones [1,2,3], it is known from many parts of the world from Asia including Russia, India and Pakistan [4] to Europe including Denmark and United Kingdom to U.S.A.[5], yet a comprehensive generic description is not available [6].

The majority of members subfamily Dictyopharinae feed on the phloem tissues of woody or herbaceous plants; however, some feed on fungi, mosses, horsetails, or ferns [7,8].

Members of Dictyopharinae are small to medium size insects, body dorsoventrally compressed head narrower than pronotum, and is greatly produced in front of compound eyes, tegmina membranous, venation regular with a number of cross veins, costal vein with numerous cross veins, aedeagus semi sclerotized with membranous and sclerotized apical processes [9].

Materials and Methods

The specimens of *Dictyophara iranica* were collected from the following regions: Adhmyia (April 2008), Kadhmyai (July 2008) and Mahmodyai (October 2008).

Samples were collected by Light Trap, then they were fixed on a thick paper and kept in insect box. Date, place of collection were recorded. The out shape feature for the sample was written down [10].

Studies were made using a dissecting microscope (OLYMPUS JAPAN 426315) and compound microscope (OLYMPUS JAPAN 275282), using normal light.

All figures have been improved with ocular micrometer [6].

The areas of collection consist of field and common gardens cultured with different types of trees, herbs, grasses and shrubs.

Results

Length from Vertex to end of abdomen in repose varying from 1.4 cm to 1.5 cm.

The Head (Fig. -1-)

Vertex: Yellow, extended anteriorly, its length as four times as its width.

Apex: Black in color, in the end of rostrum, rounded in shape.

The head contains tricarinate extended to apex, one median and two lateral carina.

Compound eyes bulging

Pronotum (Fig. -2-)

Yellow, width longer than length, with two short lateral carina behind each eye, median carina absent.

Lateral edge of sloping downwards.

Anterior margin concave while posterior one convex.

Mesothorax (Fig. -3-)

Yellow, with disc flattened, lateral carina parallel, median carina distinct, all carina not reaching anterior margin of mesothorax.

Legs

Slender. Fore coxa elongate, black, femur shorter than fore tibia, which bear rows of delicate setae along inner margin, basitarsomere shorter than mid tarsomere, apical tarsomere with claws and arolium longer than combined length of basi- and mid tarsomeres (Fig. -4-). Mid and fore legs of same length, mid tarsomere longer than basitarsomere of mid leg (Fig. -5-). Hind leg longer than fore and mid leg, hind tibia large in size, outer margins with three lateral spines, seven apical teeth, equal combined length of mid and apical tarsomere, mid tarsomere as long as apical tarsomere with row of seven apical teeth, apical tarsomere with distinct tarsal claws and wide arolium (Fig. -6-).

Wings

Fore wing: Membranous, large, extending behind abdomen, with apex broader than the rest of wing and rounded; apical part possess reticulate venation, with transverse veins irregularly arranged in three rows; stigma covering 21 cells, basal cells narrow, stems Sc + R and M leaving basal cell at common point; branch Sc with three terminals, stem R branch with RA and RP, branch RA with five terminals, branch RP with six terminals; branch M with three terminals, stem Cu reaching outer margin with out branched, branch stem A with two terminals (Fig. -7-).

Hind wing: Membranous, shorter than fore wing, with apex broader than the rest of wing, stem C extending along anterior margin of wing, stem Sc branch with three terminals, stem R branch with RA and RP, branch RA with two terminals, branch RP with three terminals, stem M forked basally of veinlets r – m, with five terminals, stems Cu A forked before outer margin of wing (Fig. -8-).

Male genitalia

The 9th segment modified into a ring or cup-like structure, known male genitalia.

Style: It is a pair of clasper-like structures, elongate and have two spines on dorsal margin (Fig -9-).

Aedeagus: Simple shape, small in size, tube-like structures (Fig -10-).

Connective: Elongate, extends to the base of aedeagus and given with aedeagus "Y-shape"(Fig -10-).

A "Y-shape" connective attaches the base of style to the base of aedeagus.

Genital plate: Semi triangular, wide at base,

narrowing towards apex, curved to inner margin with five teeth, three in the wide part and two in apex, this plate contain three long delicate setae in the dorsal end of its wide base (Fig -11-).

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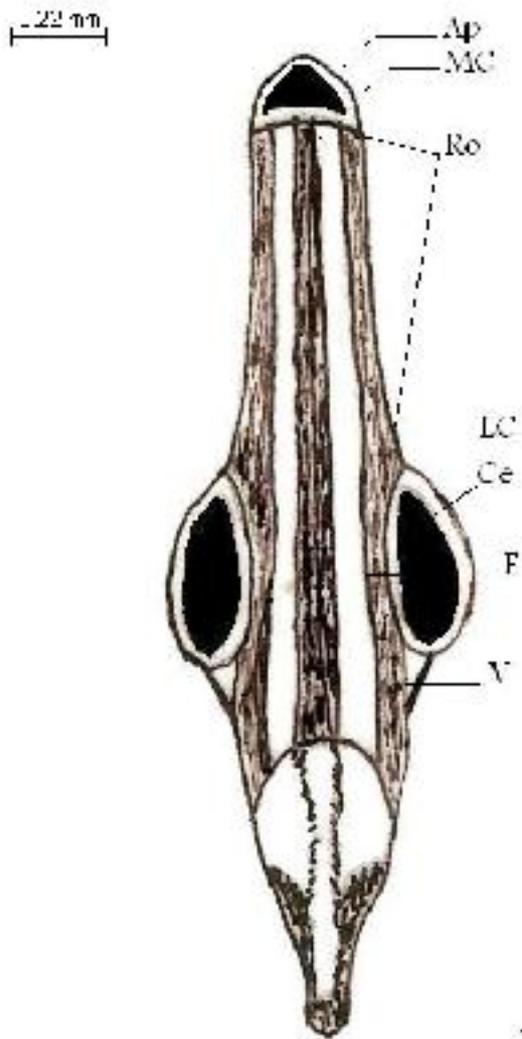


Fig. (1) Head

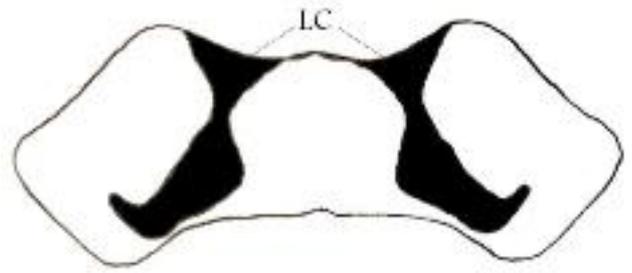


Fig.(2) Prothorax

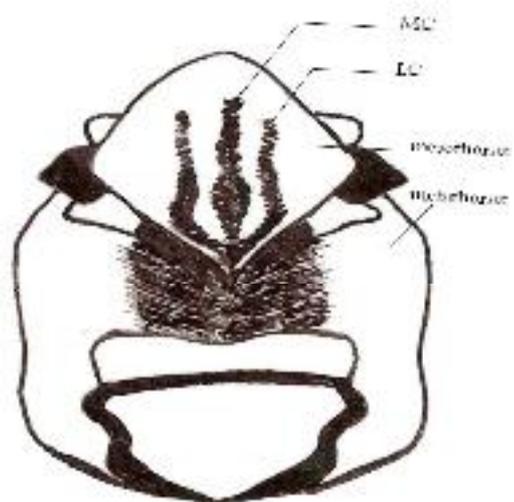


Fig.(3) Pterothorax

22 mm

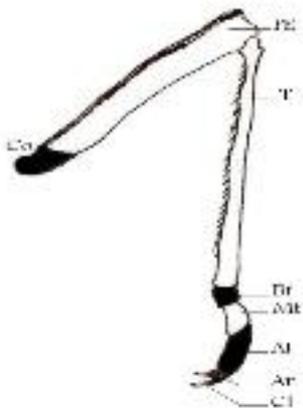


Fig (4) Fore leg

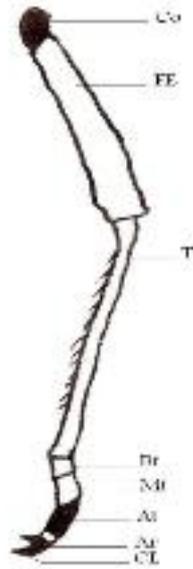


Fig. (5) Mid leg

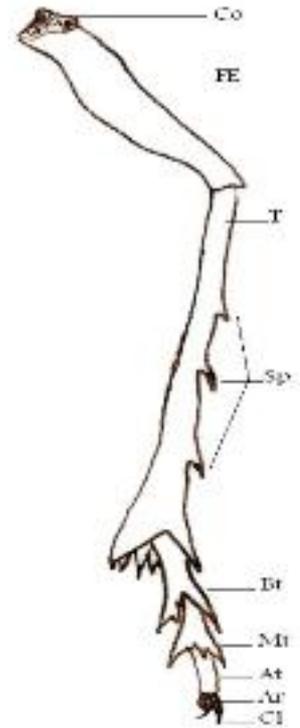
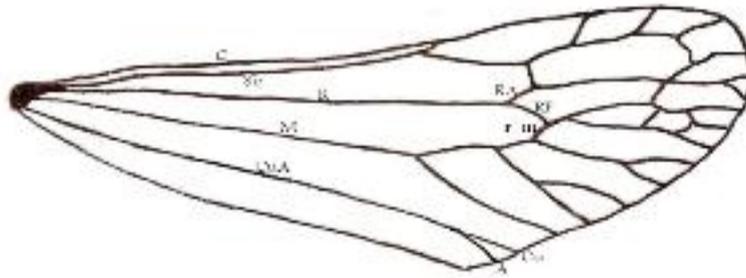


Fig. (6) Hind leg



Fig(7) Fore wing

0.22 mm



Fig(8) Hind wing

0.10 mm



Fig. (9) Genital Style

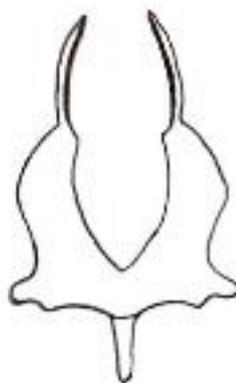


Fig.(10) Aedeagus & Connective



Fig. (11) Genital plate

List of Glossary

Anal vein	A
Apex	Ap
arolium	Ar
apical tarsomere	At
basitarsomere	Bt
Costal vein	C
Compound eye	CE
Claw	CL
Coxa	C
Cubital vein	Cu
Front	F
Femur	FE
Lateral carina	LC
Medial vein	M
Median carina	MC
Mid tarsomere	Mt
Redial vein	R
r – m veinlets	r – m
Rostrum	Ro
Subcostal vein	Sc
Spine	Sp
Tibia	T
Vertex	V

المظهر الخارجي لقفاز النبات
Dictyophara iranica Germar 1833,
(Hemiptera: Dictyopharidae) من العراق

أحمد جميل صبر
قسم علوم الحياة، كلية التربية -أبن الهيثم، جامعة بغداد

استلم البحث في 19، كتون الاول، 2010،
قبل البحث في 8، شباط، 2011

الخلاصة

وصف المظهر الخارجي لقفاز النبات المتمثل بالجنس *Dictyophara* Germar 1833. يتضمن البحث وصف النوع *Dictyophara iranica* Germar 1833، أذ استعملت في الوصف صفات المظهر الخارجي للرأس والحلقات الصدرية الثلاثة ولواحقها (الأرجل والأجنحة)، كما عُرِّزت صفات المظهر الخارجي بالاعتماد على السوءة الذكرية.

الكلمات المفتاحية: - قفاز النبات، نصفية الاجنحة، وصف