RE-DESCRIPTION OF *TRACHYLEPIDIA FRUCTICASSIELLA* RAGONOT, WITH EMPHASIS ON ITS GENITALIA, COLLECTED FROM PODS OF *CASSIA FISTULA* L.

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Abstract

Morphological characters of male and female specimens of *Trachylepidia fructicassiella* Ragonot collected from the pods of *Cassia fistula* L. are re-described along with the genitalia complexes.

Introduction

Swinhoe and Cotes (1889) enlisted *Trachylepidia fructicassiella* Ragonot (1887) in their catalogue of the moths of India under the family Galleridae. Hampson (1896) described the above species with reference to its external superficial characters under the family Pyralidae, in his fauna of Lepidoptera from British India. Dyar (1921) described another species *T. indecora* from Trinidad which was synonymised under *T. fructicassiella* as a junior subjective synonym by Whalley in 1964.

Khan and Zaki (2012; in press) has presented an account on a pod crop of a tree of *Cassia fistula* L. from Karachi for pod and seed characteristics of this species. They found several pods infested with larvae and pupae of *Trachylepidia fructicassiella* Ragonot. The infested pods on incubation in a glass vessel provided with thin cotton cloth over its mouth gave around 22 adult insects over a period of three months - from late December to March. These samples, on morphological study and comparison from the literature, were identified as a seed borer pyralid, *Trachylepidia fructicassiella* Ragonot.

The biology and systematics of *T. fructicassiella* has been described by Mukhtar Ahmad Khan *et al.* (1985). Bhatta and Bhatnagar (1986) reported this gilleriine moth to damage to *C. fistula* seeds in Madhaya Preadesh, India. Nine adults of this species were found to appear from two pods imported from India in UK (Martin Honey, Natural History Museum, UK, *http://goweras.blogspot.com/2009/10/alien-import.html*). In the present paper, morphological characteristics of this insect collected from pods of *Cassia fistula* L. growing in Karachi, Pakistan, along with its genital complexes are described.

Materials and Methods

Male and female specimens were collected from *Cassia fistula* pods and studied for their morphological characters along with genital complexes. The genital complexes were removed in 10% KOH solution and warmed over burner for 2-5 minutes. They were then washed with tap water and inflated under Lantz binocular microscope in the water. After examination of various structures their diagrams were made by placing them on cotton threads immersed in glycerine with the help of eye-piece. The studied parts were preserved in microvails in glycerine. The measurements of body (wing expansion) were recorded with the help of micro millimeter. The slides of fore and hind wings were prepared to draw venation under binocular.

Results

Trachylepidia fructicassiella, Rag., 1887, *Ann. Soc. Ent. Fr.* : 260; Hampson, 1896, *Faun. Brit. Ind.*; 4 : 4. Figures (1-8)

Wing Expansion: 20-32 mm.

Body Colouration: Body generally dusky brown, underside of the body light brown, eyes brackish brown (Fig. I).

Head: Frons rounded, maxillary palpi anteriorly porected, 3rd segment shortest, about 1/3rd the length of 2nd segment, proboscis short almost concealed (Fig. II).

Fore wings: Fore wings large about 1.5X of hind wings, anterior and posterior margin convex, apical margin crenulated with apical angle sub-rounded, veins R_4 and R_5 largely stalked anatomizing with R_3 and largely stalked with R_2 further originated from above upper angle of cell, M_1 originates from upper angle of cell, M_3 originates from lower angle of cell, Cu_1 and Cu_2 parallel to each other, only one anal vein (1A) is present (Fig. III).

Hind wings: Hind wings with anterior and posterior margin convex, apical margin slightly sinuated, with apical angle sub-rounded, vein $Sc+R_1$ largely stalked with Rs originating from above upper angle of cell, M_1 originates from upper angle of cell, M_2 and M_3 shortly stalked and originating from lower angle of cell, only Cu_1 is present, three anal veins (1A, 2A and 3A) are present (Fig. IV).

Male genitalia: Tegumen somewhat quadrangular shaped, uncus curved, bifurcated shorter than gnathos, later broad, inner margin of tegument prolonged into a large spine, saccus broad, V-shaped without saccular process, juxta somewhat spherical, paramere moderate, apically narrowed, medially broad, lateral margin sinuated, inner margin with a moderate thorn-like process, aedeagus short, theca tubular, membranous conjuctival lobe small, apically with a pair of a triangular shaped sclerotized plate (Fig. V-VII).

Female genitalia: Papillae anales small, somewhat rectangular with posterior margin sinuated, both apophyses very large, rod-shaped, apophysis posterior very large about 1.5X of the length of apophysis anteriors, ductus bursae proximally broad later narrow, tubular, corpus bursae balloon-like with sclerotized cornuti (Fig. VIII).

The species *T. fructicassiella* Rag., is a monotypic species and can be isolated from other taxa by its characters like palpi anteriorly porected, uncus bifurcated and theca with a prominent thecal plate and by the other characters presented in the description.

Material Examined: Four males, 18 females, Pakistan, Sindh, University of Karachi, late December-April, 2012, D. Khan, from pods of *Cassia fistula* L., lodged at the collection of S. Kamaluddin, Federal Urdu University of Science, Arts and Technology (FUUAST), Karachi.

Fig. I. Adult Female (A) and Male (B) individuals of *T. fructicassiella* Rag.

Discussions

The species *T. fructicassiella* Rag., previously recorded from Indian Punjab, and first time this species is collected from Sindh, Karachi. It is a monotypic species and plays outgroup relationships from other taxa by its antopomorphics like the third segment of palpi about one-third of the length of second segment, fore wing with veins R2, R3. R4, R5 stalked to each other and finally originate from above upper angle of cell, Tegumen almost spherical shape, uncus bifurcated, paramere with two spines at inner side, the theca with a rectangular shape thecal plate, in female the papillae anales somewhat rectangular shaped and both apophyses very large rod-shaped.

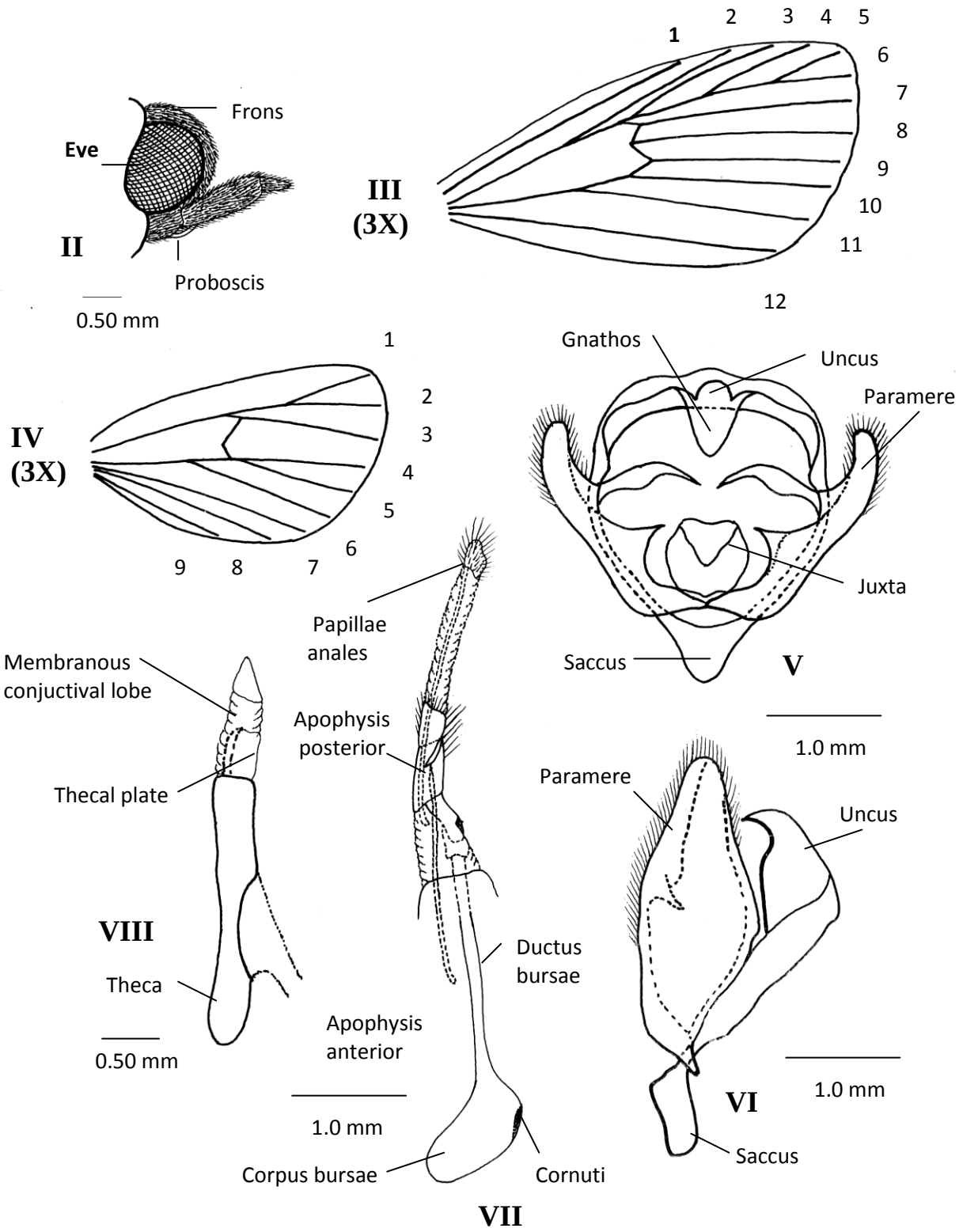

Figure II – VIII. (II. Head; III, Fore wing; IV, Hind wing; V, Tegumen (Ventral view); VI, Tegumen (Lateral view); VII, Aedeagus and VIII, Female genitalia). Key to the numbers: Fig. III (1, Suctorial vein

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(Sc); 2, Radius vein 1(R_1); 3, Radius vein 2 (R_2); 4, Radius vein 3 (R_3); 5, Radius vein 4 (R_4); 6, Radius vein 5 (R_5); 7, Median vein 1 (M_1); 8, Median vein 2 (M_2); 9, Median vein 3(M_3); 10, Cubitus vein 1(Cu_1); 11, Cubitus vein 2 (Cu_2); 12, First Anal vein (1A); Fig. IV (1, Radio-suctorial vein (Sc + R_1); 2, Radius vein; 3, Median 1; 4, Median 2; 5, Median 3; 6, Cubitus vein 1; 7, First Anal vein (1A); 8, second Anal vein (2A) and 9, third Anal vein (3A).

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