THE GENITAL-MORPHOLOGICAL DIFFERENCES BETWEEN *EUZOPHERA BIGELIA* ZELLER AND *EUZOPHERA PUNICAEELLA* MOORE (*LEP. PYRALIDAE, PHYCITINAE*)

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The genus *Euzophera* Zeller comprises, among the numerous species cited by the various entomologists, two injurious ones attacking quince and pomegranate in Iran. Adults of these two pyralids are very similar in external appearance, so that we almost considered them as synonyms or at least two geographical races.

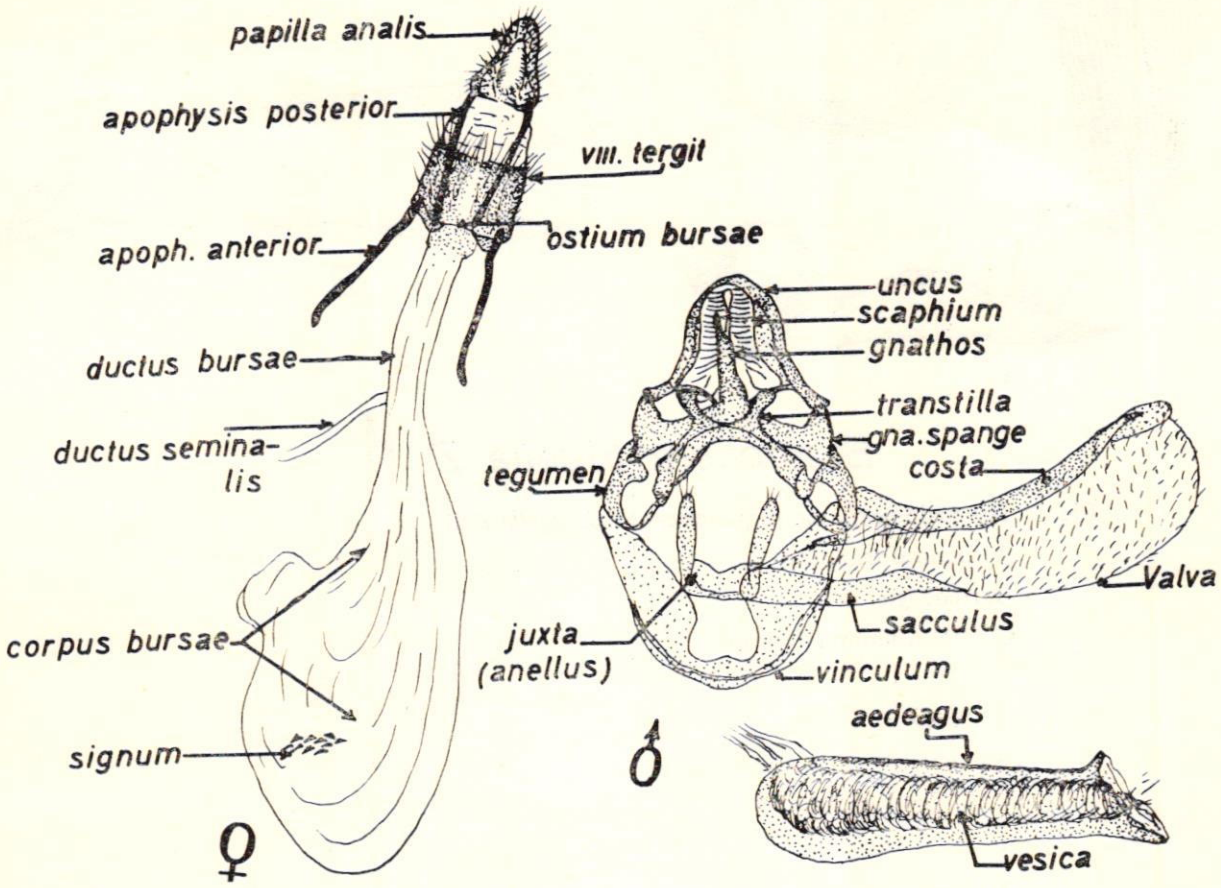

Fig. 1: Schema of male and female genitalia of the genus *Euzophera* Zeller

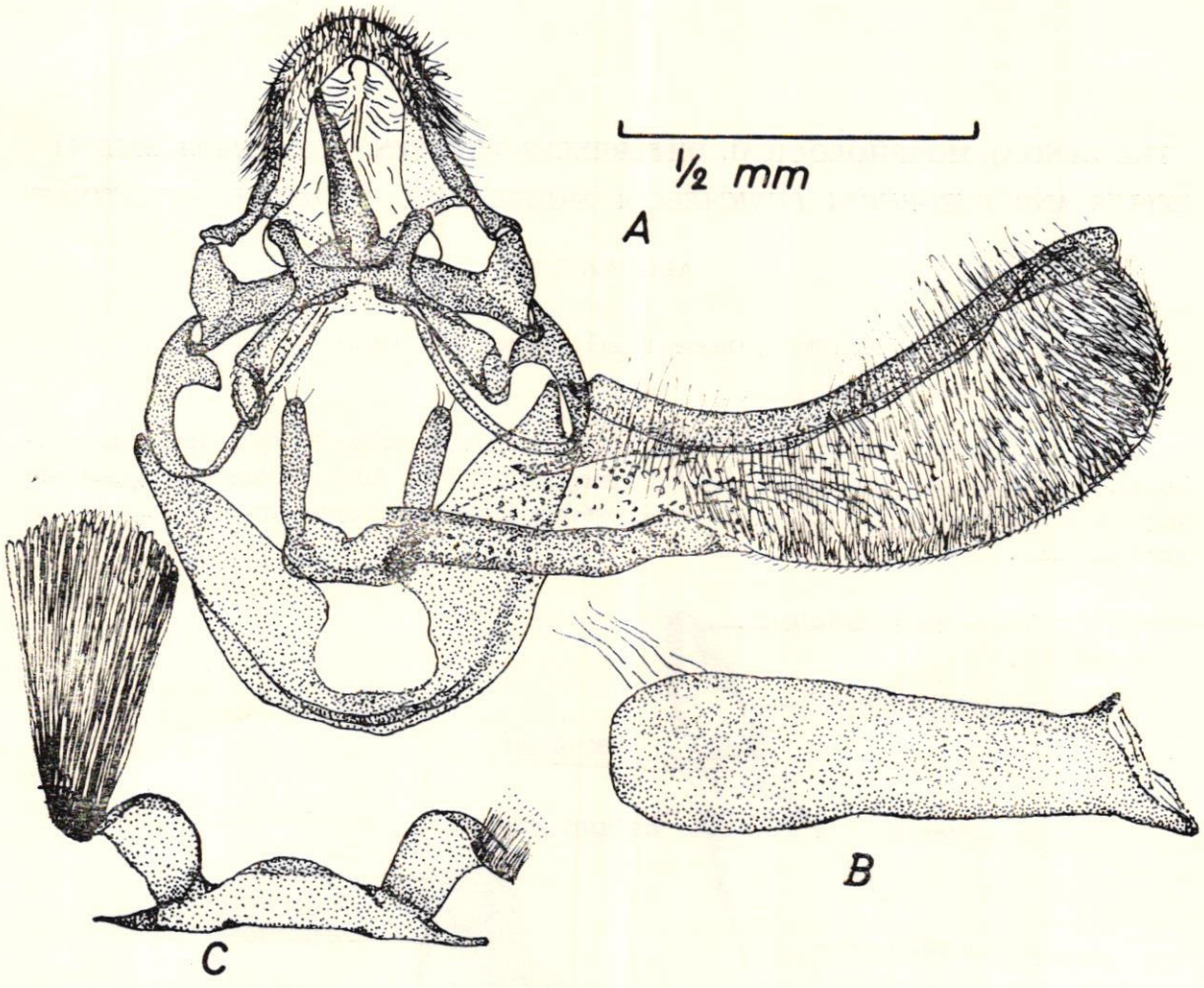

Fig. 2: The male genitalia of quince moth *E. bigella* Zell.

A: Genital armature

B: Aedeagus

C: VIII Abdominal sternit

The one injurious to quince and apple, had been sent by the Agricultural Faculty of Karadj to Zürich, where it was determined by Dr. Sauter as *Euzophera bigella* Zeller, while Kuznetsov V.I. (1957) believes the pyralid attacking pomegranate is *Euzophera punicaeella* Moore. He offers to compare the genitalia of both the species in order to obtain better recognition.

Giving the answer on this question, we have studied the genitalia of 40 specimens of males and females of these reared from pomegranate of the Ghom region, as well as those reared from quince of the Karadj region. These studies have shown remarkable differences in the morphology of genitalia indicating two different species.

Euzophera bigella Zeller

Male Genitalia (Fig. 2): *Uncus* subtriangular, it's basic-lateral angles ending to a processus. *Scaphium* tongue-shaped, with subparallel edges distally and broad base. *Gnathos* slightly short and slender, with a thicker base tapering distally. *Gnathosspange* relatively short and thick, distally ending to a round processus, which is pointed anteriorly and rounded posteriorly. *Transtilla* has at it's distal part two rather slender and short, symmetrical and spaced processi, with rounded ends. *Tegumen* normally developed. *Juxta* U-shaped, with nearly rectilinear arms bearing three small spines distally. *Valva* relatively elongate with a round distal end. The ratio of it's length to it's width is equal to 3.62:1, being a little narrower in the middle part. The ratio of the vertical length of genitalia (from the top of *Uncus* to distal end of *Vinculum*) is equal to 0.92:1. *Costa* with parallel borders and reaching the apex of the *Valva*. It has a rather big concavity in the middle. It's distal end is broad and round. *Sacculus* well developed. *Vinculum* U-shaped and well developed, with a round base. *Aedeagus* more voluminous than that of *E. punicaeella*. The ratio of it's length to it's maximum width is equal to 3.73:1. It's distal part bears a spine-like apical processus. *Vesica* without *Cornuti*. *Culcita* with rather long scales.

Female Genitalia (Fig. 4,A): *Ovipositor* contracted lengthwise. *Papillae anales* relatively widened. The eighth abdominal tergit short and wide, it's width a little longer than it's length. *Apophyses posteriores* a little shorter than *Apophyses anteriores;* the ratio of their length to each other is 1:1. 13. *Ductus bursae* relatively short and wide. *Corpus bursae* large, rather widened, having the shape of an irregular ellipse, with a gland-shape processus on the caudal half. *Signum* nearly reduced, with a few sclerotized teeth, placed perpendicular to cephalo-caudal line.

Euzophera punicaeella Moore

Male Genitalia (Fig. 3): *Uncus* subtriangular, it's basic-lateral angles ending to a processus. *Scaphium* tongue-shaped, with convex borders. *Gnathos* relatively short, with a more voluminous base, and a finger-like distal end. *Gnathosspange* relatively long, with a thick proximal part becoming more and more slender, it's distal end thickened and foot-shaped, with a pointed apex and a round heel. *Transtilla* with a rather short and thick distal part without any ramification. *Tegumen* nearly well developed. *Juxta* well developed, rather U-shaped, with curved convex arms, which approach together distally, their ends broader and bearing some spines. *Vinculum* nearly U-shaped, rather flattened, the two lateral

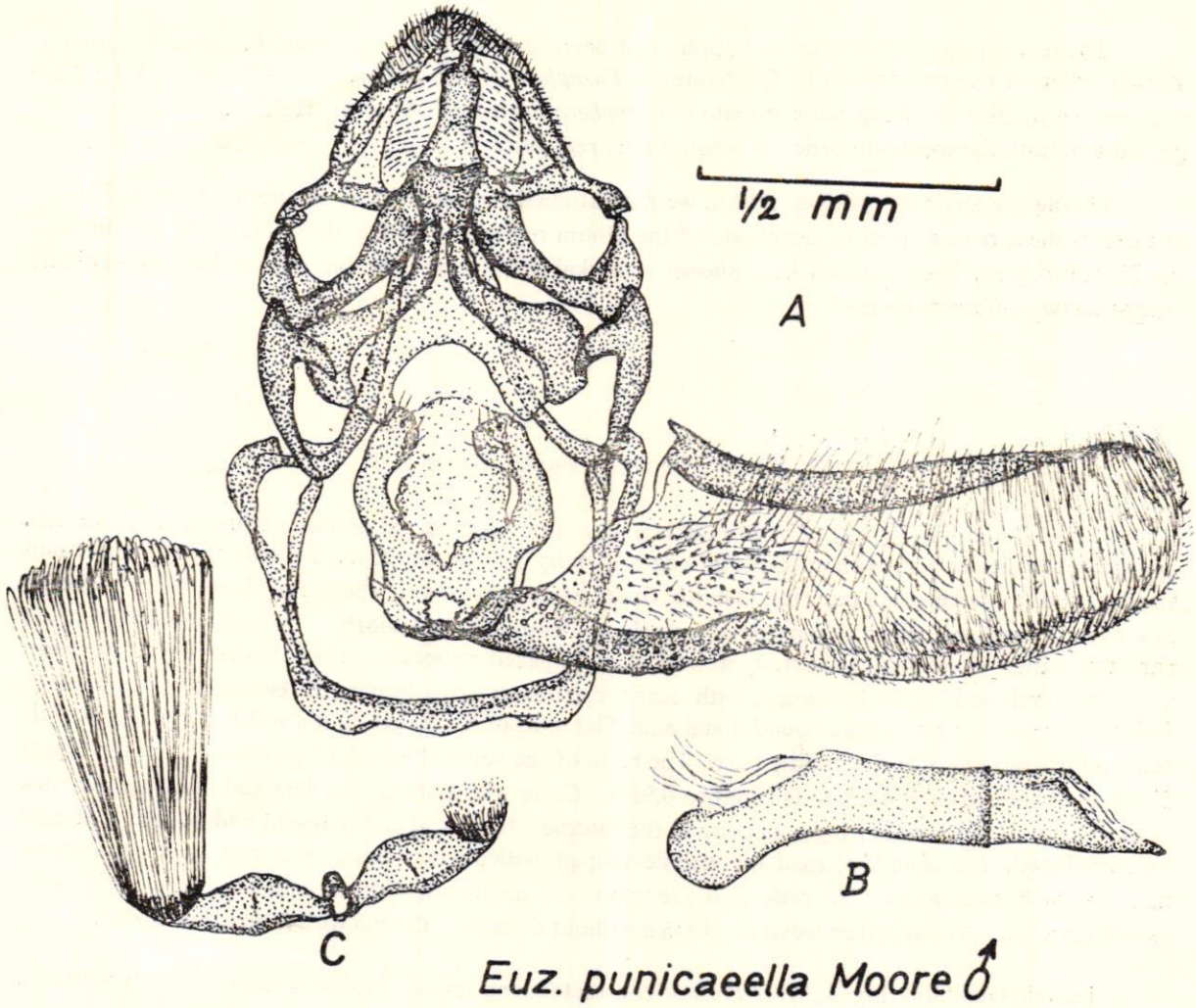

Fig. 3: The male genitalia of pomegranate moth *E. punicaeella* Moore
A: Genital armature
B: Aedeagus
C: VIII Abdominal sternit

arms of it's distal part slightly angulated. *Valva* relatively short and broad, the ratio of it's length to it's width is equal to 3.33:1, and the ratio of the vertical length of genitalia to the length of *Valva* is equal to 1:1. Both sides of *Valva,* nearly parallel with a round distal end. *Costa* slightly widened, not reaching precisely the tip of the *Valva,* pointed at the apex and slightly concave in the middle. *Sacculus* well developed. *Aedeagus* relatively small, curved and convex. The ratio of it's length to it's maximum width is equal to 4.73:1. *Culcita* with long scales.

Female Genitalia (Fig. 4,B): *Ovipositor* elongate and slender. *Papillae anales* slender. The eighth abdominal tergit, rather long and slender. *Apophyses posteriores* slightly shorter than *Apophyses anterio-*

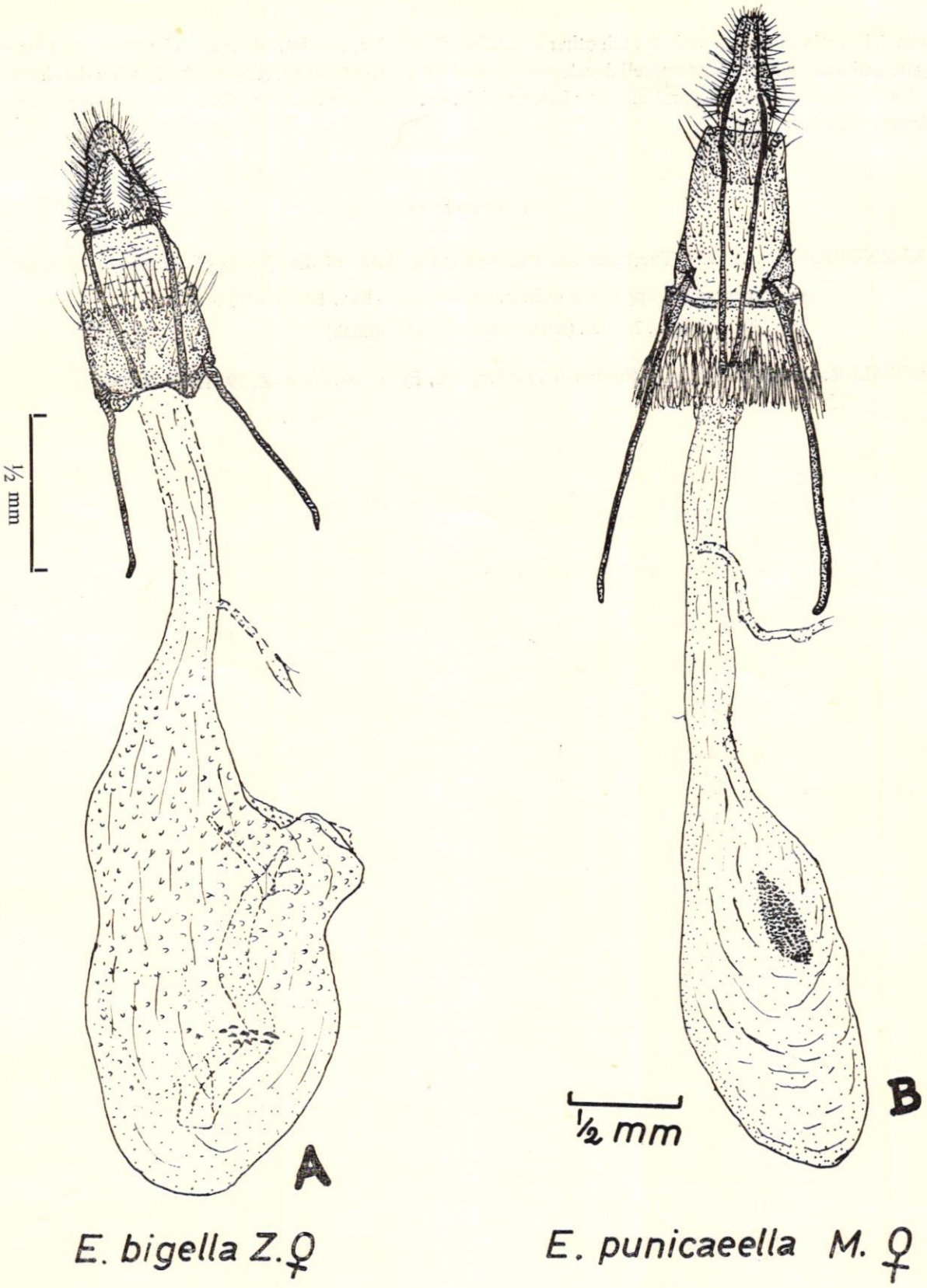

Fig. 4: A: Female genitalia of *E. bigella* Zell.
B: Female genitalia of *E. punicaeella* Moore

res. The ratio of their length to each other is 1:1.20. *Ductus bursae* relatively long. *Corpus bursae* elongate and oval shaped. *Signum* well developed, formed by numerous sclerotized teeth. showing the shape of a long ellipse, placed parallel to cephalo-caudal line. The central sclerotized teeth of *Signum* are longer than the others.

Literature

KUZNETSOV, (V.I.) 1957, The bionomic and systematic status of the species of *Euzophera* injurious to pomegranate, apple and quince. (in Russian)–Rev. Ent. URSS 36pt. 1pp. 59-71, 3 figs., 25 refs. (with a summery in English).

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