Türk. Bit. Kor. Derg. (1980), 4 (4) : 219 - 227

Three new species of Jumping plant lice (Homoptera, Psylloidea) from Turkey

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Summary

Three new species of jumping plant lice (**Aphorma renova** Klimasz. et. Lodos, **Cerna asetipennis** Klimasz. et Lodos and **Eutrioza bifasciata** Klimasz. et Lodos) are described in this paper. They have been all found in Turkey. This is a continuation of the previous studies on Psylloidea fauna of Turkey (Klimaszewski and Lodos 1977, 1979).

Introduction

Recent studies in Turkey (Klimaszewski and Lodos, 1.c.) have enlarged our knowledge of jumping plant lice fauna in this country. On the basis of the materials obtained in 1979 we were able to recognize the existence of three new species which have not been described yet. The recognition of them has added new information to the facts known so far about Psylloidea Fauna in Turkey as well as to our knowledge of the specific features of the genera to which they belong.

Aphorma renova sp. n.

Ground colour black, with a bright pattern of brown spots and stripes on the head and thorax. Basal and terminal segments of antennae black, the remaining with honey-brown in colour. The membrane of forewing covered by numerous black and blending spots (fig. 1).

Head 0.50 mm in width, vertex 0.31 mm in width and 0.24 mm in length. The fore edge of the vertex is slightly convex with a little notch on the

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Alınış (Received) : 16. 6. 1980

middle (in which median ocellus can be seen). Antennae 0.52 mm in length in ♂♂ and 0.60 mm in ♀♀ ; third segment 2.5 to 2.6 times longer than the following one and 4.5 times longer than the fifth. Rhinaria placed at the ends of 4, 6, 8 and 9th segments. Forewings 1.70 mm in length and 0.78 mm in width in ♂♂ and 1.96 mm in ♀♀ respectively. Approximate coefficient of the Cu_1 cell on the forewings is 2.2. Upper spines of the forewings in males are in form of circular either flat or knobby calloses of membrane of which occuring within the spots of the wing membrane only (fig. 2) ;dark areas can be seen in phase contrast which are probably the remnants of the reduced upper spines. In females, the whole membrane of the forewings covered by similar upper spines.

Abdominal termination in males: Subgenital plate with a nearly straight upper edge has no microsculpture on the surface. Male proctiger cylindrical, with scaled microsculpture on the apical part. Parameres straight and gradually narrowing towards their apex (fig. 3); with little hairs on the upperside of the top part but with long hairs throughout on their underside. The terminal section of penis somewhat ovated (fig. 4).

Abdominal termination in female: The dorsal cover of outer genitalia of female 0.55 mm in length and with 2 to 3 rows of thick spines along the edge of the terminal section. Abdominal cover of the outer genitalia 0.40 mm in length and has the concave upper edge. Abdominal lobe of the outer genitalia without spines but ending sharply.

Host plant is not known.

Holotype: Karaburun-İzmir, 28.VIII.1978, on *Thuja* sp., Leg. A. Önuçar.

Paratypes: ♂♂ and ♀♀ were taken simultaneously.

The genus of *Aphorma* Hodkinson (1974) was established basing to one species *A. bagnalli* (Laing) which is known from Britain (Laing, 1929). However, Heslop-Harrison (1949, 1952) informed the existence of the second species from Iraq, but he has neither provided its description nor the description of the genus *Aphorma* (the label used in the studies mentioned above).

Aphorma soosi (Klimasz.) Comb. nov. (=*Aphalara soosi* Klimasz., 1969) should be also included into the genus of *Aphorma* Hodkinson. The description of this species was based on one female taken in Austria (Styria). The description emphasized close similarity of *A. soosi* to *A. bagnalli*. However, without description of the male specimen, it is impossible to systematize this species accurately.

Aphorma renova sp. n. (of which described above) is the third species in this genus so far known and it is possible that it may be identical to Heslop-Harrison's species (1949, 1952) from Iraq. To make the identification of the species easier, it seems useful to provide the following key:

1. Hardly any dark spots on the forewing along the apical edge ..... *A. soosi* (Klimasz.)
— With as numerous (or even more numerous) dark spots along the apical edge on the forewing as elsewhere 2
2. Cu_1 coefficient not higher than 2.0; membrane of forewing with cellular appearance ..... *A. bagnalli* (Laing)
— Cu_1 coefficient always higher (about 2.2); membrane of forewing with large flat spines within the dark spots in males and the whole surface of females ..... *A. renova* sp. n.

Cerna asetipennis sp.n.

Ground colour is green with yellowish green dim pattern on the thorax. Antennae are pale green with brown endoss of 4 to 8 segments and brown segments 9 and 10. Head is uniformly bright green and only the part of frons next to clypeus with dark pigmentation. However, it can be seen only with microscope. Forewings transparent, with brown spots around the distal part of veins rs, cu_1a and cu_1b and whole veins of m_1+_2 and m_2+_4 (fig. 6); these spots may sometimes be blended together into one horizontale stripe. The veins on the distal part of the forewings with dark spots; these spots more numerous on the veins of rs and m.

Head 0.61 mm in width in ♂♂ and 0.77 mm in width in ♀♀ ;vertex 0.37 mm in width and 0.20 mm in length in ♂♂ and 0.51 mm and 0.27 mm in ♀♀ respectively. Antennae 0.98 mm in length in ♂♂ and of similar length in ♀♀; third segment about 1.7 times longer than the fourth. Forewings 2.10 mm in length and 0.86 mm in width in ♂♂ and 2.65 mm and 0.97 mm in ♀♀ respectively with cu_1 cell coefficient 2.3; only distal part of forewings covered by very tiny upper spines (which can be noticed under strong enlargement).

Abdominal termination in male: Subgenital plate is only a little smaller than its length and smooth (without microsculpture). Male proctiger lower than parameres and about 0.26 mm in height, with wing-like projections reaching outside subgenital plate (fig. 7). Parameres 0.29 mm in height, with distinctly widened apical part (fig. 8) and also with almost straight upper edge and without microsculpture on the underside; subapical projection is

of pole appearance with a rounded top. Terminal section of penis as seen in fig. 9

Abdominal termination in female: Outer genitalia of female lengthened and twice as long as the two covers at base taken together. Dorsal cover of outer genitalia is 0.45 mm in length and the abdominal cover 0.32 mm in length. Terminal section of abdominal lob of outer genitalia black in colour.

Host plant is not known.

Holotype ♂, Polatlı, 5.V.1979 on *Artemisia* sp., leg. N. Lodos.

Paratypes ♂♂ and ♀♀ were taken simultaneously.

The new speces is very close morphologically reminiscent to that of *C. bulgarica* (Klimasz.) and *C. intermedia* (Log.). These two species having spots simillarly placed on the forewings but, dark spots on the veins which are always present *C. lineolata* (Log.) and *C. baruunurti* (Klimasz.) are only rarely observed in *C. intermedia*. However, spots on the membrane of forewing are not observed in *C. lineolata* and *C. baruunurti* and these two species have upper spines cover completely all the cells. In addition, *C. nervosa* (Först) and *C. inarticulata* (Log.) are similar also to the new species, but they differ from one another in the number of antennal segments. As all the species belonging to the «*bulgarica*» group (which is characterized by the presence of brown spots on the distal part of forewing) can be found in Turkey, it seems useful to provide differentiating key as follow:

1. Antennae 8 segmented ..... *C. nervosa* (Först)
— Antennae 9 or 10 segmented 2

2. Antennae 9 segmented ..... *C. inarticulata* (Log.)
— Antennae 10 segmented 3

3. Upper spines exist only on the distal part of forewings
C. asetipennis Klimasz. et Lodos
— Upper spines exist everywhere on the forewings
C. bulgarica (Klimasz.)

Eutrioza bifasciata sp. n.

Ground colour rusty yellow with a very dim pattern on the body. Antennae rusty yellow, the last two dark brown. Forewings with brown stripes along the hind edge and vein m (fig. 10) and slightly yellow of distal part of cell R_1.

Head 0.54 mm in width; vertex 0.30 mm in length and 0.26 mm in width; with no middle line (satura coronalis). Antennae 0.57 mm in length with the

3rd segment 3 times longer than the following; rhinaria situated at the ends of 4, 6, 8 and 9th segments. Forewings 2.15 mm in length and 0.82 mm in width, with the high Cu_1 cell (Coefficient 1.2) are the widest in the two thirds of their length; vein $r+m+cu_1$ initially branching into two veins (cu_1 and $r+m$) though the vein $r+m$ is very quickly branching into component veins (fig. 10).

Abdominal termination in male: Hind part of subgenitale plate covered by microsculpture, with upper edge slightly concave (fig. 11). Male proctiger 0.21 mm in height with the terminal part strongly enlarged. Parameres 0.20 mm in height, narrowing towards the apex; the edge of apex is of dark pigmentation with two toothlike projections in the front part (fig. 12). Terminal part of penis intensively distended.

Host plant is not known.

Holotype : ♂, Seydişehir, 24.IV.1979 on *Berberis* sp. Leg. N. Lodos. The individual was taken together with the specimens of *Heterotrioza scotti* (Löw).

The initial branching of the vein r + m + cu_1 into cu_1 and r + m + is specific to *Eutrioza* Loginova (1964) and not characteristic of the Triozidae family (Leginova noted that the common segment of veins r + and m is not found in other Psylloidea). Only *E. opima* Log. has been included into the genus of *Eutrioza* so far is known, but it differs distinctly from the new species of which is described in this study. *Eutrioza bifasciata* sp. n. has a different head frame: vertex lacks both the middle line (sutura coronalis) and lobed forward directed projections. Face projections are also differently shaped with a characteristic narrowing at the base, whereas face projections in *E. bifasciata* take form of regular cones. Moreover the species have different wing colouring as *E. opima* has only one dark stripe on the wing along with the vein m, which is clearly seen without the help of microscope.

Özet

Türkiye'den sıçrayan bitki bitlerine ait yeni türler (Homoptera : Psylloidea)

Bu makale daha önceki çalışmaların (Klimaszewski and Lodos, 1977, 1979) bir devamıdır. Bu araştırma ile Türkiye'nin muhtelif yörelerinden toplanan 3 yeni tür : **Aphorma renova** Klimasz. et Lodos, **Cerna asetipennis** Klimasz. et Lodos ile **Eutrioza bifasciata** Klimasz. et Lodos tarif edilerek bilim dünyasına tanıtılmışlardır.

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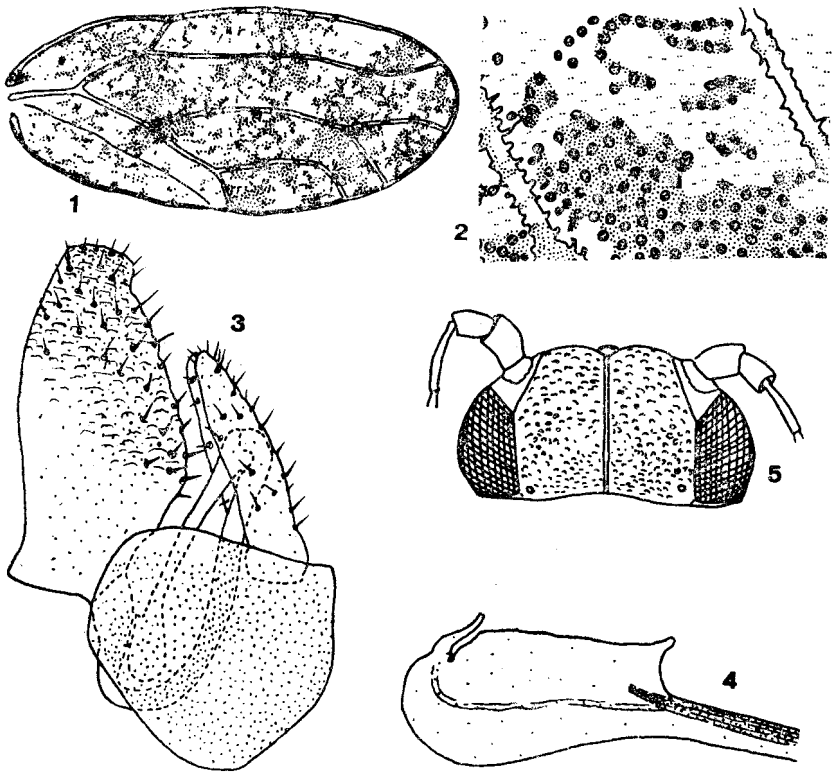

Fig. 1 - 5. **Aphorma renova** Klimasz. et Lodos: 1 - forewing; 2 - microsculpture of forewing; 3 - outer genitaliae of male (lateral view); 4 - apex of penis (lateral view); 5 - dorsal view of head.

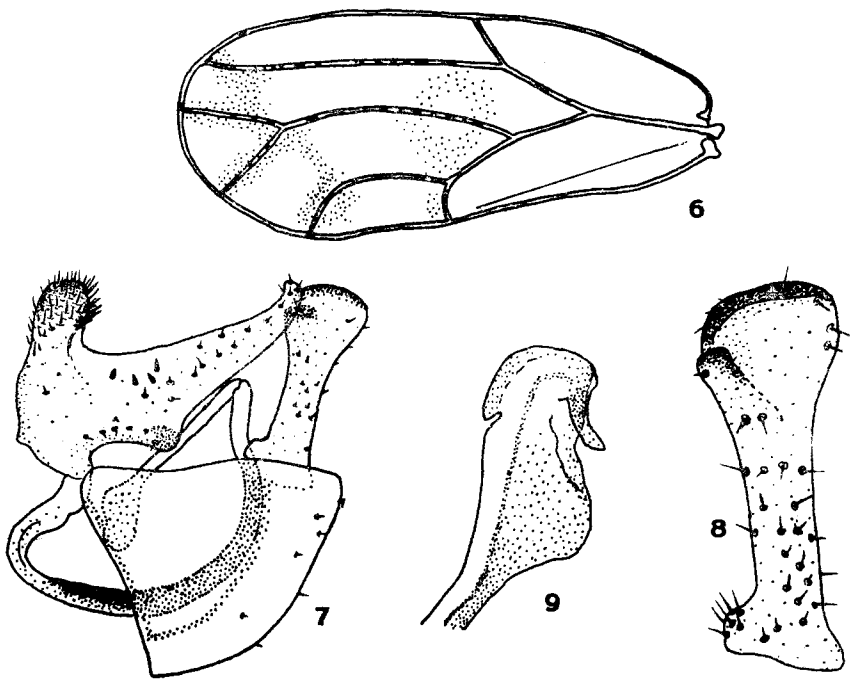

Fig. 6 - 9. **Cerna asetipennis** Klimasz. et Lodos: 6 - forewing; 7 - outer genitaliae of male (lateral view); 8 - paramere, from inside; 9 - apex of penis (lateral view).

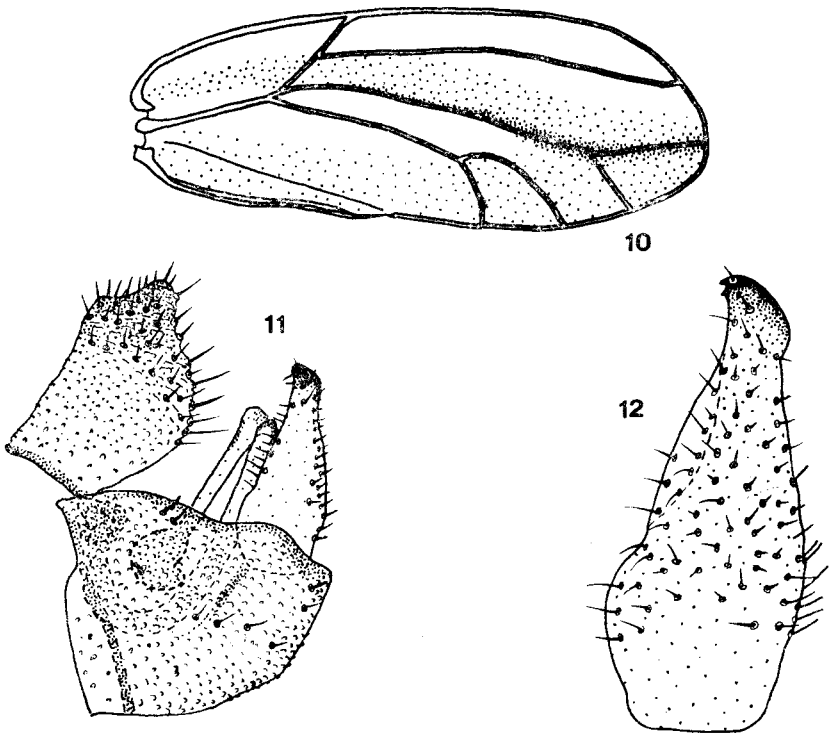

Fig. 10 - 12. **Eutrioza bifasciata** Klimasz. et Lodos: 10 - forewing, 11 - outer genitaliae of male (lateral view); 12 - paramere (from inside).