

A contribution to the knowledge of the eastern Mediterranean Myzinidae I. Subfamily Mesinae (Hymenoptera, Aculeata)

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Summary

Subfamily Mesinae, parasites of white grubs (Scarabaeidae) and the species of Tenebrionidae is first recorded from Turkey, together with the association of the already unknown female of *Taywola palestinella* (Guiglia). Generic diagnosis and additions to the original description of the species are given with synonymical notes and distribution.

Introduction

The Myzinid wasps of the region concerned here have been studied by many specialists in the past, and a number of species have been described. Among these species of earlier authors, however, a considerably number remain doubtful. This because of their customary, sometimes terse original descriptions, in which occasionally there are no diagnostic characters mentioned even for recognition of the genera involved. All these species are demanded to be re-examined and described. The present paper will contribute in this respect. Contains a discussion of the species *Taywola palestinella* (Guiglia) (Hymenoptera, Myzinidae), the westernmost outpost of the subfamily Mesinae, represented by numerous species in Central Asia, in the Afrotropical and Oriental zoogeographical regions.

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In the Department of Plant Protection, Faculty of Agriculture of the Atatürk University in Erzurum, a fairly big collection of Aculeata Hymenoptera was accumulated in the last decades from Turkey. Among these, numerous of Myzinidae, which all are parasites of the white grubs (larvae of Scarabaeidae) and of darkling beetles (Tenebrionidae). The host larvae are soil dwellers, sometimes generating a very serious damage to roots of fruit trees, bulbs and tubers of the vegetables, to the grasses and cereals, to ornamentals, and to young plantations of forest trees. As a result of infection, the plants are weakened, their growth in general diminished, and they gave a very poor quantity of green pods. Representatives of the Myzinidae are natural enemies of these pests; those of the subfamily Mesinae are parasites of the white grubs, of Meriinae living in the darkling beetles. This is the first record of Mesinae from Turkey. Accordingly, the genus **Taywola** is a tertiary tropical relic in the fauna of East Europe and the eastern Mediterranean Basin.

Acknowledgements and abbreviations

We wish to extend our sincere thanks to all the institutions and individuals who generously lent their material for our present study; together with abbreviations used in the main text: AEU- Atatürk University, Erzurum, Dr. E. Yıldırım; MG - Muse Civico di Storia Naturale di Genova, Genova, Dr. V. Raineri; TAU - Tel Aviv University, Tel Aviv, Dr. A. Freidberg; QAC - stand for Q. Argaman Collection, Yavne.

Genus **Taywola** Argaman, 1994

Taywola Argaman, 1994; 91. Type-species: **Mesa palestinella** Guiglia, 1963.

Diagnosis: Abdominal petiole constituted by sternum only in both sexes; palpal formula 4-6, all segments of labial palpus almost equal in length, basal three segments of maxillary palpus dorso-ventrally flattened, apical three segments cylindrical, longer than wide; inter margin of mandible with preapical tooth; male antenna apparently 12-segmented, as pedicellus hidden in apical cavity of scape; male submandibular triangle developed, extended outwardly up to outer condyle of mandible, and anteriorly touching clypeus; anterior pronotal margin without gular carina or lateral spine; first tergum of apparent abdomen, excluding propodeum, globular, at most as long as wide, with

anterior slope almost perpendicular to petiole; seventh tergum with lateral carinae, not excised at apex, surface chagrined, without medial keel; female antenna apparently 11-segmented, as pedicellus hidden in apical cavity of scape; apex of metanotum convex, produced over metanotal-propodeal suture; marginal cell of fore wing closed apically, pterostigma unusually long, four times as long as wide; stout spines on outer aspect of mid and hind tibia of same coloration as tibia; disc of pygidium punctate on basal half or more.

Distribution: Palaearctic; monotypical genus.

Biology: Unknown; other representatives of the subfamily Mesinae, tribe Mesini, are parasitic on the white grubs (larvae of Scarabaeidae, Melolonthinae), in the soil.

Taywola palestinella (Guiglia, 1963)

Mesa palestinella Guiglia, 1963: 242, male.

Taywola palestinella Argaman, 1994: 91, figs, 51-54.

Material: 2 females and 11 males; Greece: 1 female (QAC) "Corfu, 23.VII.-4.VIII.1954, P.M.F. Verhoeff"; 1 female (QAC) "Rhodos, Ixia, 1-4.IX.1962, P.M.F. Verhoeff"; Israel: 1 male, holotype (TAU) "Jerusalem, 13.VIII.1940, H. Bytinski-Salz", "Typus" in pink, "*Mesa palestinella* sp. n., det. Dott. D. Guiglia"; 1 male paratype (MG) "Jerusalem, 8.VIII.1940, H. Bytinski-Salz", headless, antenna and genitalia on recticard; 5 males (TAU, QAC) "Jerusalem, 13 and 16.VIII.1940, 9.VIII.1942, H. Bytinski-Salz"; 1 male (TAU) "Kefar Juri, 29.VIII.1943, H. Bytinski-Salz"; headless; Turkey: 1 male (AUE) "Erzurum, 14.VIII.1966, H. Özbek"; 2 males (AUE, QAC) "Pehlivanlı, Tortum, Erzurum, 13.VIII.1991, E. Yıldırım".

Male: Length 11.5-13.5 mm, length of fore wing 7.0-7.7 mm; head and thorax black; antennae, mandibles, palpi, tegulae, pterostigma, venation of wings, legs including coxae, and abdomen piceous, often very intensively so; tibial spurs dirty yellow; membrane of wings dark fumose to subhyaline; vestiture snow-white, except apical fringe of sixth tergum and setae of seventh tergum brownish yellow.

Head: Mid clypeal lobe protruding trapezoidal in outline, transversely truncate apically, often emerginate and bidentate; upper half of clypeal disc with a thin medial, longitudinal carina surface of disc very densely, rugosely punctate, more sparsely on extreme sides,

above articulation of mandibles; inner eye orbit sinuate within, with moderately deep emargination; frontal lobe subhorizontal, protruding, V-shaped both dorsally and apically; lower front very densely punctate, interspaces acute septa; upper front and vertex less densely punctate, with numerous shiny interspaces comparable with own diameter of punctures; frontangle of ocellartriangle right angle; occipital carina complete; antennae short, reach base propodeum; scape 1.6 times as long as wide, its ventral margin convex, dorsal margin straight, surface densely punctate and pubescent; first flagellar segment conical, 1.5 times as long as wide, with a large shallow pit on its ventral aspect, filled with shiny, silvery placoid sensillae; remaining flagellar segments twice as long as wide, covered on dorsal aspect with acute black spiculae.

Thorax: As wide as head, 1.4 times as long as wide; sides of pronotum parallel, posterior pronotal margin weakly concave; pronotal disc as long mesally as scutellum, densely punctate on anterior half, sparsely on posterior one; anterior pronotal margin transverse; lateral lobe of pronotum punctate anteriorly, on posterior half with numerous smooth, mostly longitudinal ridges; mesoscutum and scutellum shiny covered with scattered large setigerous punctures; metanotum very densely punctate with minute and deep punctures; mesopleuron with small and large punctures densely punctate, interspaces less than punctures themselves; metapleuron and anterior half of lateral propodeum covered with longitudinal striation, carinae of which gradually increasing in size posteriorly; propodeum otherwise rugoso-punctate; mid dorsal, horizontal area of propodeum as long as scutellum.

Wings: Pterostigma elongate, parallel-sided, thrice as long as wide, obliquely truncate apically; relative length of basal four sectors of radial vein are as 1.0:5.0:6.0:3.5; basal vein of fore wing interstitial with transverse-medial vein.

Legs: Outer aspect of mid and hind tibia with two-three irregular, longitudinal rows of stout red spines, each 2-3 times as long as basal width; apical tarsal segment of hind leg 1.5 times as long as penultimate segment.

Abdomen: First tergum shiny, rather sparsely punctate throughout; following terga very uniformly covered with relatively dense, minute and deep setigerous, punctures, except sixth tergum with more scattered and larger punctures; first sternum shiny, with large

punctures on sides; second sternum with rather uniformly distributed small punctures; following sterna with a densely punctate basal stripe, and very sparsely punctate apical two-thirds.

Female: Length 11.0-11.5 mm, length of fore wing 7.3 mm; body black; antennae, clypeus, mandibles, palpi, tegulae, pterostigma and wing venation, fore and mid legs mostly, hind coxa, abdominal sterna and pygidium piceous; ventral aspect of flagellar segments, outer aspect of mid tibia and hind leg, except coxa, bright red; membrane of wings moderately dark fumose; vestiture snow-white, save setae of outer-dorsal sulcus of mandible golden-yellow.

Head: Mid clypeal lobe tridentate apically; upper front and vertex broadly impunctate; scape conical, tapering to base, 2.46 times as long as wide, ventral aspect densely punctate, dorsal aspect almost impunctate; flagellum fusiform, wide at middle, tapering to base and to apex; first flagellar segment as long as wide, about half as wide as first segment.

Thorax: Pronotal disc uniformly, although not very densely covered with large setigerous punctures, 1.3 times as long mesally as scutellum; mesoscutum and scutellum rather sparsely punctate; metanotum smooth, with few very small and shallow punctures; medial-longitudinal furrow of dorsal propodeum deep, septate from base to apex, scale-like.

Wings: Pterostigma narrow, four times as long as wide; relative length of basal three sectors of radial vein are as 1.0:0.5:1.0 (female from Corfu), 1.0:0.7:0.9 (female from Rhodes), 1.0:1.0:1.0 (female from Russia).

Legs: Outer aspect of mid and hind tibia with three-four irregular, longitudinal row of stout red spines, each 2-3 times as long as wide basally; inner spur of hind tibia 0.75 times as long as hind basitarsus, slightly bent basally, tapering to apex; ventral aspect of hind basitarsus without pecten, with scopa, constituted by spaced, stronger yellow setae on basal half, very dense, thin silvery setae on apical half; last tarsal segment of hind leg 1.3 times as long as penultimate segment.

Abdomen: Punctures moderately dense, save the compact preapical row of setigerous punctures on first to fifth terga; disc of first sternum densely micropunctate, but with large punctures on sides; punctures of following terga large and spaced; disc of pygidium

punctate on basal half or more, rugose to striate subapically, apex chagrined.

Distribution: Greece, Israel, Russia, Turkey

Variation: The holotype and all other males collected from Israel possess a straight, transversely truncate mid clypeal lobe, and very dark fumose wings. The males from Turkey, on the contrary, maintain an emarginate and bidentate mid clypeal lobe. In addition, the two males from Pehlivanlı (Erzurum) have subhyaline wings. It was thought that it is a distinct species involved, but the only male from Erzurum has a very dark wings, however, exactly as in the type. Also the female from Russia, described as *viktorovi*, differs from the females from Greece with the equal sectors of the radial vein of fore wing. Another character, which is again not constant withing the material examined. Despite of these variations mentioned, we can not find any convincing additional morphological differences between males from Israel and Turkey, or between females from Greece and Russia. Thus we assume that only one species is represented by the material before us.

Özet

Doğu Akdeniz yöresi Myzinidae familyası üzerinde bir çalışma I. Altfamilya Mesinae (Hymenoptera, Aculeata)

Scarabaeidae ve Tenebrionidae familyalarına giren kimi türlerin parazitlerini içeren Myzinidae familyasının bir altfamilyası olan Mesinae ve buna bağlı olarak *Taywola palestinella* (Guiglia) türü, Türkiye faunasında ilk defa bu çalışma ile tespit edilmiştir. Ayrıca bu türün daha önce bilinmeyen dişisi bulunmuş, cins ve tür tanımları yapılmış, sinonimleri belirlenmiş ve dağılışı verilmiştir.

Literatür

- Argaman, Q., 1994. Generic synopsis of Myzinidae (Hymenoptera: Scoliidea). **Annls. Hist.-Nat. Mus. Natl. Hungar.**, **86**: 85-104.
- Gorbatovsky, V.V., 1979. *Mesa viktorovi* sp. n. (Hymenoptera, Tiphidae, Myzininae) - a new species of Myzininae wasps from Lower Volga area. **Proc. All-Union Entom. Soc., New Insect Spec.**, **61**: 167-168 (In Russian).
- Guiglia, D., 1963. Contributo alla conoscenza delle Myzininae palearctiche (Hym.). Myzininae della Palestina. **Bull. Soc. Entom. Suisse**, **35** (3-4): 233-234.