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# A new parasitic species of Megastigmus Dalman (Hymenoptera : Torymidae) from Tokat, Turkey

Miktat DOĞANLAR*

## Summary

Megastigmus almusiensis n.sp., reared from the galls of Neuroterus macropterus (Hartig) (Hymenoptera : Cynipidae) on twigs and branches of Quercus cerris L., is described and illustrated, and compared with its nearest species of the genus Megastigmus dorsalis (F.).A diagnostic key for known parasitic species of the genus is prepared. The galls from which the specimens of the new species were collected from Almus district, Tokat.

## Introduction

In the palearctic region, seven species of Megastigmus Dalman were reported as parasite in cynipid oak galls by several authors; these are M. stigmatizans (F.), M. dorsalis (F.), M. synophri Mayr (Nikolskaja, 1952; Peck et al. 1964; Askew, 1966; Wall, 1984), M. habui Kamijo, M. viridescens Kamijo (Kamijo, 1962), M. nipponicus Yasumatsu and Kamijo and M. maculipennis Yasumatsu and Kamijo (Yasumatsu and Kamijo, 1979).

Kamijo (1962) divided the species of Megastigmus into two groups such as entomophagous and phytophagous groups, and also the entomophagous ones into two subgroups such as stigmatizans group and dorsalis group. He gave some diagnostic characters for separating them.

In Turkey, Schimitschek (1944) collected and recorded some phytophagous species of the genus and Doğanlar (1984) reared and recorded a few of them.

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* Cumhuriyet Üniversitesi, Tokat Ziraat Fakültesi, Entomoloji Anabilim Dalı, Tokat, Turkey
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Recently, the galls of Neuroterus macropterus (Hartig) (Hymenoptera: Cynipidae) on twigs and branches of Quercus cerris L. were collected from Almus, Tokat. A species of Megastigmus was reared from the galls and it was found as a new species.

**Material and Methods**

The galls, from which the specimens of the new species were reared were collected from twigs and branches of Quercus cerris in the district of Almus, Tokat. The galls were brought to laboratory and caged in rearing boxes in order to obtain the adults of parasite and cynipid specimens. The specimens of the new species were studied and illustrated.

**Results and discussions**

For the placement of the new species, a diagnostic key is prepared for the entomophagous species of Megastigmus by using the characters given by Kamijo (1962), Yasumatsu and Kamijo (1979), Bouček (1970, 1982).

Key to the entomophagous species of Megastigmus

1. Gaster petiolate; ovipositor sheaths shorter than gaster; forewing stigma rounded; first funicular segment barely shorter than pedicellus; speculum reduced ..... M. dumicola Bouček

- Gaster sessile; ovipositor sheaths longer than gaster; other characters variable ..... 2

2. Ovipositor sheaths longer than thorax plus abdomen combined; first and second segments of antennal club strongly oblique at apex; sensillae on funicle segments short and numerous; post marginal vein much longer than marginal ..... ..... stigmatizans group of Kamijo ..... 3

- Ovipositor sheaths shorter than thorax and abdomen combined; first and second segments of antennal club not oblique at apex; sensillae on funicle segments sparse, at most in two rows on each segment; postmarginal vein as long as marginal ..... ..... dorsalis group of Kamijo ..... 4

3. Ovipositor sheats longer than body; forewing stigma elongate, at least 1.4 times but mostly about twice as long as broad; first funicle segment in female clearly longer than pedicellus plus annellus combined; mesoscutum and scutellum finely sculptured; hairs on the lower face and thoracic dorsum pale ..... ..... M. stigmatizans (F.)

- Ovipositor sheaths a little shorter than body; forewing stigma clearly broader than long; first funicle segment in female as long as pedicellus plus annellus combined; mesoscutum and scutellum coarsely sculptured; hairs on sides of lower face and thoracic dorsum black ..... ..... M. habui Kamijo

4. Hind half of scutellum smooth and shiny; pleurae partly metallic in color ..... M. synophri Mayr

- Hind half of scutellum sculptured; pleurae metallic or pale ..... 5

5. Ovipositor sheaths a little longer than gaster; speculum of forewing reduced; scape slightly shorter than transverse diameter of eye ..... ..... M. maculipennis Yasumatsu and Kamijo

- Ovipositor sheaths a little shorter than thorax plus abdomen combined; speculum developed; scape at least a little longer than transverse diameter of eye ..... 6

6. Costal cell of forewing on its lower surface with dense pubescense; basal cell open in proximal half; cloud below stigma absent ..... ..... M. nipponicus Yasumatsu and Kamijo

- Costal cell of forewing on its lower surface with at most three rows of bristles; basal cell closed below; stigma surrounded by cloud ..... ..... 7

7. Thoracic pleurae blackish with greenish reflections; mid lobe of mesoscutum and scutellum coarsely and strongly sculptured; propodeum with distinct transverse carina ..... M. viridescens Kamijo

- Thoracic pleurae always yellow; mid lobe of mesoscutum and scutellum finely sculptured; propodeum without transverse carina ..... 8

8. Mid lobe of mesoscutum finely rugulose (fig.6); pronotum with 8 rows of hairs; flagellum plus pedicellus combined 3.0-3.2 times transverse diameter of eye; club slighltly shorter than three preceding segments combined; hypopygium as seen in fig 7 ..... M. dorsalis (F.)

- Mid lobe of mesoscutum with dense transverse striae (fig.2); pronotum with at least 16 rows of hairs; flagellum plus pedicellus combined 3.4-3.7 times transverse diameter of eye; club only slightly longer than two preceding segments combined; hypopygium as seen in fig. 7 ..... ..... M. almusiensis n.sp.

## Megastigmus almusiensis n.sp.

(Figs. 1-4.,8)

Female: Length of body 2.5-3.0 mm (plus ovipositor 1.7-1.9 mm). Body pale yellow, with metallic green parts as follws: a broad spot on the vertex between ocelli and slightly widenning after posterior ocelli onto occiput; 4/5 posterior part of pronotum medio-dorsally and mid lobe of mesonotum, scutellum; a broad blackish spot on propodeum medially, gaster dorsally and ovipositor sheaths infuscate; antenna black, scape and pedicellus yellowish beneath; forewing hyaline, stigma surrounded by infumation.

Head in dorsal view 1.45 times as broad as long; temples rounded posteriorly, in dorsal view about 0.6 length of eye; PO:OOL as 3:2; in frontal view 1.2 times as broad as high; clothed with pale hairs. Relative measurements: eye 15:12; malar space 7; width of head 32; high of head 26; length of scapus 14; flagellum plus pedicellus combined 42 (i.e.1.3 times width of head, 3.4-3.7 times transverse diameter of

eye); pedicellus dorsally 2.25 times as long as broad, barely shorter than first funicle segment (0.8 times); 1-3 funicle segments equal in length, about twice as long as broad; 4-6 funicular segments gradually shorthening, but barely longer than broad; 7. funicular segments a little shorter than sixth, quadrate; club slightly longer two preceding funicular segment combined, and about three times as long as broad (fig.1).

Thorax (fig.2) dorsally twice as long as breadth of mesoscutum; pronotum densely hairy, at least 16 rows of hairs, 0.8 times as long as broad, with rather densely cross-striation; mesoscutum with fine and dense cross-striae and with minute punctures between striae; scutellum slightly longer than broad, on about anterior two-thirds transversely reticulate-striate, frenal furrow distinct, frenum with logitudinally reticulate-striate; propodeum rugose, with distinct spiracular sulcus, median carina indistinct. Forewing (fig.3) rather densely hairy, basal cell closed by complete cubital and basal hair lines, with 4-5 isolated hair; marginal vein as long as postmarginal; stigmal vein slender with large oblique stigma which is slightly broader than length (uncus not included).

Gaster 0.3 times as long as length of thorax; ovipositor sheaths about 0.7 times as long as thorax plus gaster combined, and 2.3 times as long as hind tibiae.

Male : Length of body 1.5-2.6 mm. Similar to female except as follows: flagellum fumose, scape and pedicellus infuscate dorsally; gaster brownish dorsally; pronotum and mesonotum with rather sparse cross-striae; pronotum 0.73-0.83 times as long as broad; club 0.8 times as long as three preceding funicular segments combined (fig.4).

Biology:All specimens were reared from the galls of N. macropterus on twigs and branches of Q. cerris.

Holotype (female), Turkey, Tokat, Almus, 20.II.1987 (Lab.reared) (Doğanlar, leg.), in Doğanlar Collection.

Paratypes : 2 females, 4 males, same data as holotype; 2 males, 3.IV.,2 males, 4.IV., 3 males, 6.IV., 1 male, 7.IV., 2 males, 1 female, 8.IV., 2 females, 9.IV., 1 male, 10.IV., 4 females, 11.IV., 1 female, 12.IV.1989, Tokat, Almus (Doğanlar, leg.) (Lab. reared). Two of female and males of paratypes were deposited in British Museum (N.H.), London, UK. The other paratypes are in Doğanlar Collection.

Diagnosis : The specimens of the new species were compared with the specimens of M. dorsalis collected from some parts of Germany by the author when he was been studied there. M. almusiensis n.sp. is distinguished from M. dorsalis by dense transverse striae on pro-and mesonotum (in M. dorsalis transverse striae on pro-and mesonotum rather sparse, and mesonotum with dense rugosity) (Figs.2,6); by at least 16 rows of hairs on pronotum (in dorsalis pronotum with 8 rows of hairs); by frenum with longitudinally reticulate striae (in dorsalis frenum rugate);pedicellus plus flagellum combined 3.4-3.7 times transverse dia-

meter of eye (in dorsalis it is 3.0-3.2 times transverse diameter of eye); by club silghtly longer than two proceding funicular segments combined (in dorsalis club slightly shorter than three preceding segments combined) (Figs.1,5).


## Özet

### Türkiye'den yeni bir entomofag Megastigmus Dalman türü (Hymenoptera:Torymidae)

Almus, Tokat yöresindeki Quercus cerris L.'in bir yıllık sürgünlerinde Neuroterus macropterus (Hartig) (Hymenoptera: Cynipidae)'un oluşturduğu gallerden elde edilen torymid örneklerin yeni bir tür olduğu saptanmış, Megastigmus almusiensis n.sp. olarak isimlendirilmiş ve tanımlanmıştır. Megastigmus cinsinin entomofag türleri için yeni bir teşhis anahtarı oluşturulmuştur.


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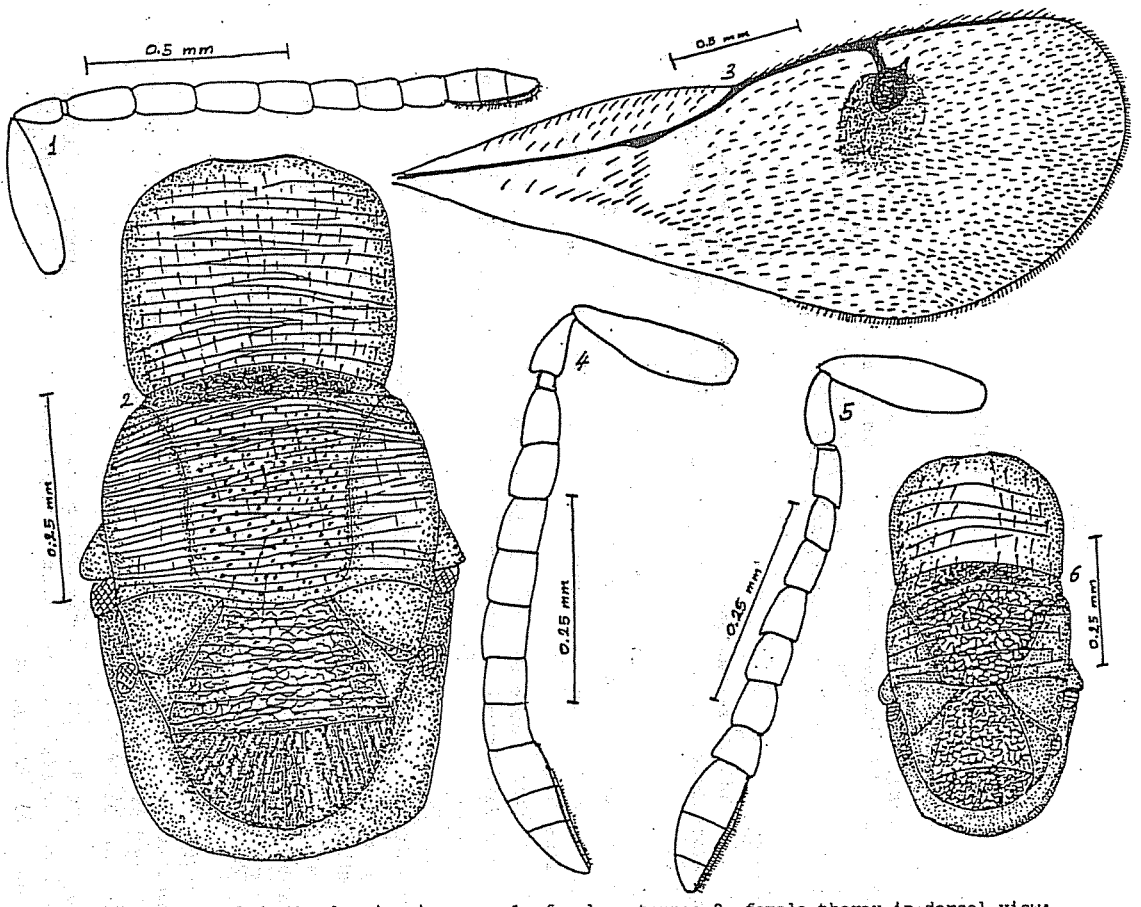
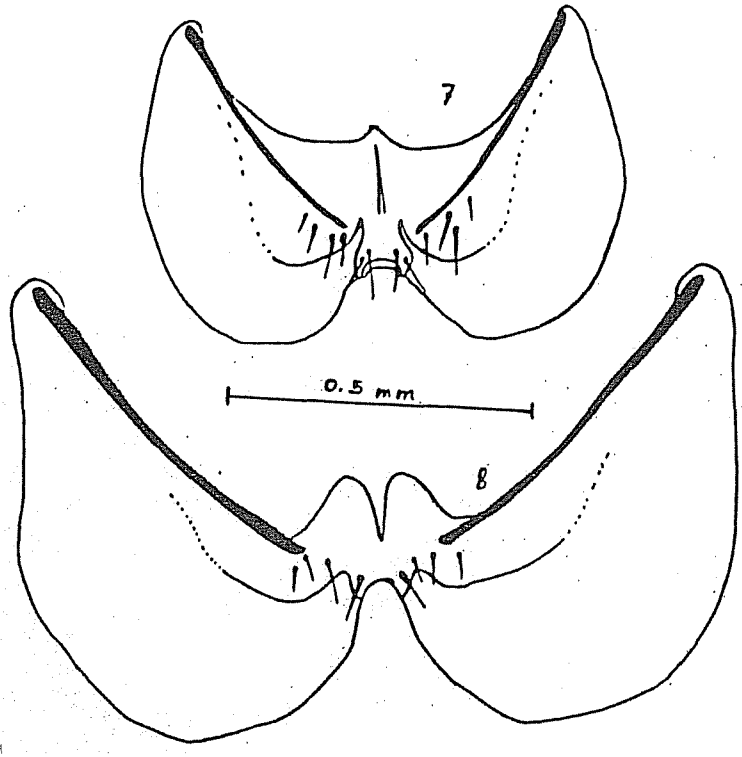



Figs.1-6. Megastigmus spp. 1-4. M. almusiensis n.sp. 1, female antenna; 2, female thorax in dorsal view; 3, female forewing; 4, male antenna; 5-6. M. dorsalis (F.), 5, female antenna; 6, female thorax, in dorsal view,




Figs. 7-8. Megastigmus spp. Hypopygia, 7, M. dorsalis (F.); 8, M. almusiensis n.sp.