Türk. entomol. derg., 1995, **19** (2) : 81-86
ISSN 1010-6960

A new species of *Eurytoma* Illiger (Hymenoptera, Eurytomidae) parasitic on *Scolytus rugulosus* Ratzeburg (Coleoptera, Scolytidae) in Turkey and some notes about it

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Summary

In this paper, a new species ***Eurytoma kemalpasensis*** n. sp. a parasitoid of ***Scolytus rugulosus*** Ratzeburg is described. Essential figures and diagnosis of the new species are provided with some notes about it.

Introduction

Among the various pests of Cherry trees, the bark beetle ***Scolytus rugulosus*** Ratzeburg (Col., Scolytidae) is an important one. These bark beetles live beneath the bark and mine the surface of the hard wood. Both adults and larvae mine under the bark. When the larvae complete their growth, they pupate at the end of their tunnels and emerge through holes eating through the bark. As a result of the heavy attack by these beetles the Cherry trees die. At the study of Tezcan and Civelek (1994) a few species of chalcids (Chalcidoidea) were collected on the immature stages of these bark beetles in Kemalpaşa district (38°26'N, 27°27'E), an important cherry production area, İzmir, Turkey. They are ***Cheiropachus quadrum*** (Fabr.) (Hymenoptera, Pteromalidae), ***Rhaphitelus maculatus*** Walker (Hymenoptera, Pteromalidae) and this new species ***Eurytoma kemalpasensis*** sp. nov. (Hymenoptera, Eurytomidae). From Europe the

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Alınış (Received): 31.10.1994

following four species of ***Eurytoma*** have already been reported as parasitic on bark beetles. They are ***E. morio*** Boheman, ***E. blastophagi*** Hedqvist, ***E. arctica*** Thompson and ***E. spessivtsevi*** (Boucek and Novicky) (Boheman, 1836; Thompson, 1875; Boucek, 1951; Boucek and Novicky, 1954; Claridge, 1959; Nikolskaya, 1962; Hedqvist, 1963, 1976 and Zerova, 1978, 1987). The present new species differs from all these species of ***Eurytoma*** and this does not fit to any of the keys of Eurytomidae by Nikolskaya (1963), Peck et al.(1964), Zerova (1978, 1987) and Narendran (1994).

Material and Methods

Branches of trees infected by ***S. rugulosus*** were cut off and the tips of which have painted with paraffin wax to reduce drying and their parasitoids were reared in cages under lab conditions (Tezcan and Civelek, 1994). At the same time they were also reared under natural conditions in cages on the branches of trees. The observations of the systematics were made using Wild M3Z stereozoom microscope. The figures were drawn using the drawing tube of the Wild M3Z stereozoom microscope and enlarged using KB enlarger of B2M model.

Abbreviations used : DPPEU= Department of Plant Protection, Faculty of Agriculture, University of Ege; DZCU= Department of Zoology, University of Calicut; F1 to F5= funicular segments 1 to 5; mv= marginal vein; OOL= ocellocular line; pmv= postmarginal vein; POL= Post–ocellar line; smv = submarginal vein; stv = stigmal vein; T = Tergite.

Results

Eurytoma kemalpasensis n.sp.

(Figures 1–4)

Description

Holotype: Female: Length 2.8 mm. Black; eye brownish yellow (reflecting); ocelli brown; antenna brown with scape pale brownish yellow ventrally; mandibles pale brown; trochanters,bases and apices of femora, bases and apices of tibiae pale brownish yellow; tarsi pale yellow; pubescence silvery; wings hyaline, veins brown.

Head (Figure 2) width in anterior view 1.2X its median length; in dorsal view head width 3.03X its median length; punctate closely; face slightly raised medially with weak and faint radiating striae; frons and face with moderately dense pubescence; clypeal margin weakly sinuate; scrobe deep, smooth, not reaching front ocellus, margins ecarinate; interantennal projection narrow apically; right mandible with three teeth, left mandible with two teeth; genotemporal margin (=posterior margin of gena) carinate;postgenal lamella extend ventrolaterally to meet the genal carina; malar groove distinct. POL a trifle over 2.5X OOL. Antennal formula 1:1:1:5:3; toruli a trifle above line of ventral margin of eye; scape not reaching front ocellus, 2.15X as long as F1; pedicel shorter than F1; a little less than 2X its width; relative measurements of length:

width of antennal segments–scape = 43:14; pedicel= 16:9; ring segment= 2:7.5; F1= 19:11; F2= 18:12; F3= 15:12; F4= 14:13; F5= 14:14; club= 35:16; funicular segments with long hairs (Figure 1).

Thorax narrower than head in dorsal view; pronotum, mesoscutum and scutellum distinctly, closely and shallowly punctate; interstices between punctures microsculptured; collum transversely striate anteriorly; pronotum without anterior carina; median length of pronotum including collum a trifle shorter than distance between scutoscutellar groove to apex of scutellum; median length of mesoscutum 0.72X distance between scutoscutellar groove to apex of scutellum; maximum width of scutellum a little more than its median length; apex of scutellum rounded; propodeum lying at 70° to longitudinal axis of thorax surface with a median longitudinal carina from which short transverse carinae running to either side (Figure 3), both median and lateral carinae lying in a broad median depression; metapleuron with distinct, close, deep punctures and with moderately dense, long pubescence; mesopleuron without

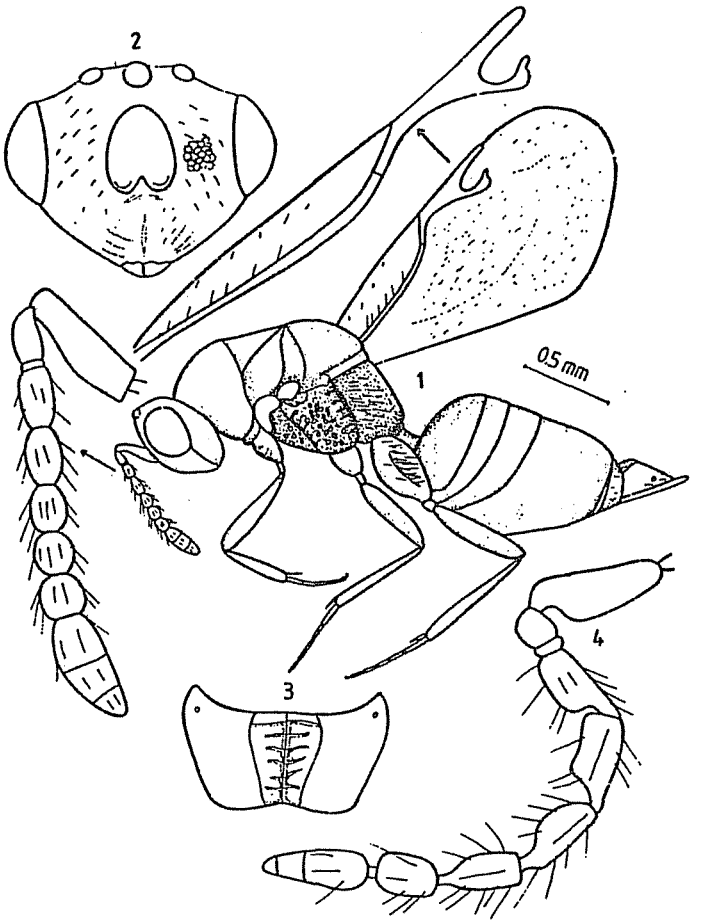

Figure 1-4. ***Eurytoma kemalpasensis*** n.sp. 1-3. Female. 1. profile; 2. head front view ; 3. propodeum. 4. male antenna.

mesosternal shelf or tooth; epicnemial carina distinct throughout but without ending in a tooth ventrally; fore coxa without anterior tooth but with a thick basal rim. Relative measurements of length of forewing veins: smv=108; mv=31; pmv=24; stv=16; mv broader towards distal end; basal part of forewing without pilosity (Figure 1).

Gaster petiolate, petiole about one–third as long as hind coxa in side view, smooth; gaster a little over 1.25X as long as thorax; smooth and shiny except T6 faintly punctate and sparsely pubescent; ovipositor sheath directed almost straight posteriorly, not tilted upwards.

Allotype: Male: Length 2.2 mm. Similar to female except in having 1) antennal funicular segments petiolate (Figure 4) and plumose; 2) gastral petiole longer than hind coxa and 3) gaster including petiole a trifle shorter than thorax.

Host: Larva of *S. rugulosus*

Material examined: Holotype: Female, Kemalpaşa, İzmir, Turkey from larva of ***Scolytus rugulosus*** Ratzeburg; Coll.S.Tezcan, 02.10.1993 (DZCU); **Allotype:** Male, same data of holotype except date 18.3.1993 (DZCU). **Paratypes:** 2 Females and 3 males, same data except date 11.3.1993; 5 females and 2 males, same data with date 15.4.1993; 4 females and 2 males, same data with date 18.3.1993; 2 females and 2 males, same data with date 10.2.1993; 4 females and 3 males, same data with date 22.1.1993; 1 male, same data with date 29.1.1993; 4 females, 15.4.1993; 1 female, 30.4.1993. Paratypes are presently being preserved in the collections of both DZCU and DPPEU.

Diagnosis

This new species ***Eurytoma kemalpasensis*** differs from all the other four species of ***Eurytoma*** parasitising barkbeetles in Europe in the following characters: In ***E. kemalpasensis*** mv is much broader towards distal end than in the case of ***E. blastophagi*** Hedqvist. Gaster of female including petiole 1.25X length of thorax in side view (in ***E. blastophagi*** gaster 1.97X length of thorax in side view). In ***E.kemalpasensis*** petiole about one–third as long as hind coxa (in ***E. blastophagi*** much shorter than one–third hind coxa). Apart from the above differences the funicular segments differ in shape in both these species. The new species differs from ***E. morio*** Boheman in having no yellow spot on pronotum (in ***E. morio*** pronotum provided with a yellow or brown spot on each side). In ***E. morio*** stv is a trifle shorter than pmv (in this new species stv is much shorter than pmv). Scape length 4X its maximum width in ***E. morio*** (in ***E. kemalpasensis*** scape length 3X its width); club length 1.25X combined length of preceding two segments in ***E. kemalpasensis*** (in ***E. morio*** club length 1.18X combined length of preceding two segments). In ***E. kemalpasensis*** F5 length in female equal to its width (in ***E. morio*** F5 longer than its width). ***E. arctica*** Thompson differs from ***E. kemalpasensis*** in having a yellow spot on either side of pronotum, in different shape of gaster, in different proportions of antennal segments and in wing venation. ***E.spessivtsevi*** (Boucek and Novicky) differs from ***E. kemalpasensis*** in having different

shape of gaster, in having T4 relatively smaller, in having yellow colour on anterior part of pronotum and in different proportions of antennal segments.

The specific name is derived from the locality of type specimens which belongs İzmir (Turkey).

Distribution of the species in area

It has been determined that new species is distributed all parts of Kemalpaşa district. Its distribution area is shown in Figure 5. Especially because ***S. rugulosus*** passes the winter season in larval stage the adults of new species were encountered in great quantity, in the observations of the branches which were brought from nature and kept in cages afterwards in all the months of the year.

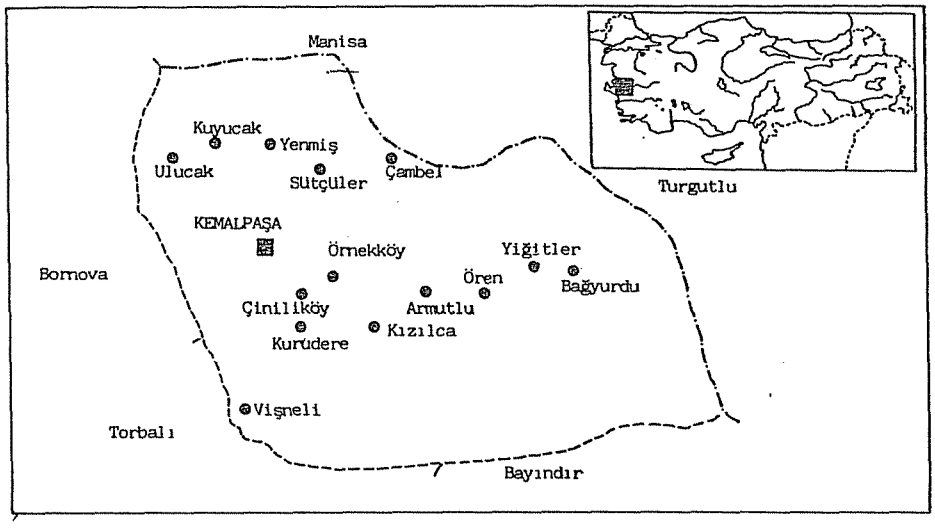

Figure 5. Distribution of the new species in Kemalpaşa district

Özet

Scolytus rugulosus Ratzeburg (Coleoptera, Scolytidae)'un parazitoidi olan yeni bir *Eurytoma* Illiger (Hymenoptera, Eurytomidae) türü ve bunun üzerine bazı notlar

Bu çalışmada Kemalpaşa (İzmir) yöresi kiraz alanlarında zararlı olan ***Scolytus rugulosus*** (Coleoptera, Scolytidae)'un ***Eurytoma*** cinsinden yeni bir parazitoidinin orijinal tanıtımı yapılarak bu yeni türle ilgili kısa bilgilere yer verilmiştir.

Acknowledgements

The authors would like to thank the Research Fund of Ege University for financial support.

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