

The species of *Eurytoma* Ill. with two-three strong setae on hind tibiae from Türkiye, and description of a new species from Tokat, Türkiye (Hymenoptera , Eurytomidae)

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Summary

From some parts of Türkiye, three species of *Eurytoma* Ill. with two-three strong setae on hind tibiae, viz. *E. tokatensis* n. sp., *E. pistaciya* Rond., *E. ochraceipes* Kalina, were obtained. The specimens of *E. pistaciya* were reared from the fruits of *Pistacia terebinthus*, infested by *Megastigmus pistaciae*, from galls of *Diplolepis mayri* on *Rosa* spp. and of *Neuroterus macropterus* on oak. The specimens of *E. ochraceipes* and *E. tokatensis* were swept from herbaceous plants.

An identification key for the species of this group was provided. The new species was described and illustrated.

Introduction

The species of *Eurytoma* Ill. with two-three strong setae on hind tibiae belong a definite group in the genus. Up to now, in the group four species, *E. pistaciya* Rond. (= *setigera* Mayr), *E. sipinipes* Kalina, *E. ochraceipes* Kalina and *E. arabica* Risbec, were described and recorded from some parts of the palearctic region (Kalina, 1970; Boucek, 1977; Zerova, 1978; Delvare, 1988). None of them has been recorded from Türkiye until now.

By this work three species from the group, *E. pistaciya*, *E. ochraceipes* and a new species were found. An identification key for the species of this group is provided and available biological aspects of the species were given. The new species is described and illustrated.

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The specimens of the species, in most parts, were collected and reared and also many of drawings were made by the co-author and descriptions by the first author.

Results and discussions

Key to the species of *Eurytoma* with two-three strong setae on hind tibiae

1. Pedicellus plus flagellum distinctly longer than breadth of head; funicular segments twice longer than breadth; postmarginal vein only slightly shorter than marginal vein; propodeum with distinct median furrow of large rugosities; sexes with five funicular segments *E. ochraceipes* Kalina
- Pedicellus plus flagellum distinctly shorter than breath of head; funicular segments at most 1.5 times as long as broad; postmarginal vein at most 3/4 as long as marginal vein; propodeum without median furrow, medially reticulated; female with five and male with four funicular segments 2
2. Funicular segments of female quadrate; gaster as long as broad laterally; POL 4 times OOL; postmarginal vein 1.24 times as long as stigmal vein *E. arabica* Risbec
- Funicular segments of female distinctly longer than broad, at most sixth quadrate; POL at most 2.25 times OOL; postmarginal vein only 1.16 times as long as stigmal vein 3
3. Funicular segments with three or more sensillae on one side; lowest strong seta on basal 1/3 of hind tibiae; seventh tergum of gaster longer than height laterally *E. pistacina* Rondani
- Funicular segments with one or two or at most the fifth with three sensillae on one side; the lowest strong seta on the half of hind tibiae; seventh tergum of gaster shorter than height laterally 4
4. Mesonotum and basal half of scutellum almost flat, laying in same plane; forewing 2.2 times as long as broad; marginal vein 1.30 times as long as postmarginal vein; thorax in dorsal view 1.80 times as long as breadth; head dorsally twice as broad as long; eye 1.20 times as long as broad; second and fourth funicular segments with two sensillae on one side *E. tokatensis* n. sp.
- Mesonotum and scutellum distinctly convex dorsally; forewing 1.7 times as long as broad; marginal vein 1.64 times as long as postmarginal vein; thorax 1.5 times as long as broad dorsally; eye 1.46 times as long as broad; head 1.8 times as broad as long dorsally; second and fourth funicular segments with single sensilla on one side *E. spinipes* Kalina

Eurytoma tokatensis n.sp.

(Figs. 5-8, 14, 18, 19, 22, 23)

Female : Length 1.7-2.1 mm. Body black; scape with basal half yellow, apically black, often black color reduced to a small spot or stripe ventrally; apical half and ventral part of pedicel yellow; flagellum brown, sometimes color of flagellar segments become paler ventrally; legs mainly testaceous excepts coxae which are concolorous with thorax, hind femora, also sometimes other femora and tibiae fuscous, tarsi yellow, except pretarsi which are testaceous; tegulae brown, wings hyaline, veins yellow; pubescence of head and thorax white.

Head, from above, slightly wider than thorax, about twice as broad as long; temp-

les rounded off, behind upper half of eyes very narrow, towards lower parts gradually widening; head with distinct umbilicate piliferous punctures, excepts central region of lower face which is smooth, scrobe cavity and narrow area between eyes and mouth corners which are minutely reticulated. Relative measurements : breadth of head 28; length 14; height 20; frontovertex 18; POL 9; OOL 4; eye 12:20; malar space 9; length of scapus 10; flagellum plus pedicellus 28; scrobes cavity deep, carinated basally, towards median ocellus shallower, not reaching median ocellus; genae with two longitudinal carinae on the borders between minutely reticulated area and umbilicate punctures, angled ventrally; lower margin of clypeus (Fig.5) slightly produced forward with a shallow emargination medially, clypeus smooth; antennae (Fig. 7) incerted about in middle of face; scape reaching lower margine of median ocellus, with a broad swollen above its middle ventrally, tapering apically, about 3.4 times as long as breadth; pedicellus in general appearance spherical, but basally with a short petiola, about as long as breadth in globular part; first funicular segment 1.6 times as long as broad, the others almost equal in size, slightly longer than broad, except fifth one which is almost quadrate, longitudinal sensillae very sparse, arranged in one row; first funicular segment with one sensilla on one side, 2-4 segments with two, fifth with three sensillae on one side; clava distinctly developed with two segments, first segment with one row, second with two rows of sensillae, clava about 2.4 times as long as broad.

Thorax (Fig. 8) 1.8 times as long as broad dorsally, with distinct umbilicate piliferous punctures, flattened dorsally, mesoscutum and basal half of scutellum laying on same plane; pronotal collar and mesoscutum about equal in length medially; scutellum slightly longer than mesoscutum and longer than its own width; propodeum with coarse rugosities laterally, with a broad median furrow which is minutely reticulated, sides with dense pilosity; mesepimeron with some fine horizontal striations posteriorly, with minute reticulations medially, its anterior with a straight margin and a weak carina which is connected with the anterior edge of mesopleuron and forming a small tooth, below it the edge of mesopleuron forming a slight shelf and a small tooth laterally anterior to each mid coxae; fore coxae without tooth or carina; midcoxae without lamella; hind coxae bare dorsally on basal half; hind tibiae (Fig. 22) with three long, strong setae, lowest one stronger, sometimes middle one reduced, the lowest seta longer than breadth of tibia. Forewing (Fig. 18) 2.20 times as long as broad; with marginal vein 1.5 times as long as stigmal vein which is slightly shorter than postmarginal vein (6:7), pilosity of forewing as seen in fig. 18, speculum narrow on upper surface.

Gaster (Fig.19) short, almost globular; petiole slightly longer than broad in dorsal view; gaster slightly longer than thorax; second tergite as long as or slightly longer than third tergite dorsally, fourth tergite about 1.5 times as long as the third; fifth tergite and almost basal half of the sixth tergite concealed by fourth tergite which is with a few hairs laterally; sixth tergite sparsely hairy; epipygium as long as height laterally; ovipositor sheaths slightly exerted.

Male : Length 1.4-1.8 mm. As female, but differs as follows : Antenna (Fig. 6) with scape shorter and more swollen than that of female; apical two-third of pedicellus globular, funicle four segmented, clava with three segments; funicular segments with a short thin processes in distal part and with distinct whorls of long hairs; 1st-3rd funicular

segments about equal in size, about 1.8 times as long as broad, clava about 4 times as long as broad; hind tibiae as seen fig. 23; petiole (Fig. 14) almost parallel sided in dorsal view, slightly broader in middle, 1.33 times as long as its maximum breadth, minutely reticulated all over; gaster slightly shorter than thorax, with 6 visible terga, only sixth tergum sparsely hairy.

Biology : Not known, the specimens were swept from herbaceous plants on dry lands.

Material examined : Holotype (female) : Türkiye, Tokat, 21.8.1989 (Çam leg.), (Deposited in the Museum of Plant Protection Department of Tokat Agriculture Faculty of Cumhuriyet University). Paratypes : 4 females, 3 males Türkiye, Tokat, 21.8.1989; 3 females, 2 males, 28.8.1989 (same locality); 2 male, 5.9.1989; 1 female, 12.9.1989; 1 male, 25.9.1989; 1 female, 17.8.1989, Tokat, Gümenek; 1 female, Tokat, Taşlıçiftlik, 2.8.1989; 1 female, 31.8.1989; 2 males, 7.9.1989 (all specimens were collected by H. Çam); (3 females and 3 males will be deposited in BM (NH), London, the others in the museum of Plant Protection Department of Tokat Agricultural Faculty of Cumhuriyet University).

Diagnosis : The new species very close to *E. spinipes* and *E. pistacina* in the group of *Eurytoma* species having hind tibiae with 2-3 strong setae. The new species differs from the both of them in having mainly mesoscutum and basal half of scutellum flat and laying in same plane (those of *pistacina* and *spinipes*) distinctly convex dorsally (Figs.4,8); the new species differs from *pistacina* in having pedicellus globular apically (in *pistacina* it is elongate) (Figs. 7,11); face above clypeus smooth (in *pistacina* it is umbilicately punctured); the new species differs from *spinipes* in having eyes 1.2 times as long as broad (in *spinipes* eyes 1.46 times as long as broad); head in dorsal view twice as broad as long (in *spinipes* it is 1.8 as broad as long); forewing 2.2 times as long as its maximum breadth (in *spinipes* forewing 1.7 times as long as its maximum breadth); marginal vein 1.3 times as long as postmarginal vein (in *spinipes* it is 1.64 times as long as postmarginal vein); thorax 1.8 times as long as broad (in *spinipes* it is 1.5 times as long as broad) ; the new species differs from the other species of the group by the characters mentioned in the key.

Eurytoma pistacina Rondani
(Figs. 9-13, 15, 20, 21)

Eurytoma pistaciae Rondani, 1877 : 180; Boucek, 1974 : 263; Zerova, 1978 : 298.

Eurytoma setigera Mayr, 1878 : 330; Kalina, 1970 : 115, 116, 119; Zerova and D'Yakonchuk, 1976 : 130; Askew, 1975 : 19.

Bruchophagus setigerus, Nikolskaya, 1952 : 173; Ferriere, 1950 : 402.

Eurytoma pistacina, Boucek, 1977 : 15.

Some author regarded this species in *Bruchophagus* as *setigerus* Mayr due to male antennae with four funicular segments (Nikolskaya, 1952; Ferriere, 1950; Szelenyi, 1976). Kalina compared the species as *setigera* Mayr with his newly described species. *E. spinipes* and *E. ochraceipes*. Later, Boucek (1974) synonymized *E. setigera*

with *E. pistaciae* Rondani. Zerova and D'Yakonchuk (1976) gave a redescription of the species as *E. setigera* and recorded *Megastigmus pistaciae* and *Diplolepis mayri* as its host. Boucek (1977) corrected its name as *E. pistacina* Rond. and gave its hosts as various cynipid galls on oaks and in fruits of *Pistacia* spp. Zerova (1978) gave a good redescription of the species and some biological informations and its distribution.

Following redescription is based on the material reared and collected from some parts of Türkiye due to indicate variations and to compare the species with other species of the group. *E. pictacina* is very closely similar to *E. tokatensis*, but differs as follows :

Female : Antennae, femora and tibiae sometimes fuscous to black; face completely with umbilicate piliferous punctures (Fig. 9). Relative measurements : breadth of head 28; length 15; height 22; frontovertex 20; POL 8; OOL 4; eye 12:10; malar space 7; length of scapus 10; flagellum plus pedicellus 29-scorbes cavity almost reaching median ocellus; antenna (Fig. 11) with scape reaching about middle of median ocellus; pedicellus elongate, without any petiole basally, 1.3 times as long as breadth; funicular segments with at least three or more sensillae; thorax (Fig. 12) distinctly convex dorsally; pronotal collar shorter than mesoscutum dorsally; mesoscutum about equal in length the scutellum which is as long as broad; anterior margin of mesepimeron and anterior edge of mesopleuron merging smoothly and not forming distinct tooth, but anterior edge of mesopleuron forming distinct tooth and shelf laterally anterior to each mid coxa; forecoxae with a distinct carina anteriorly and a distinct tooth medially in lateral view; forewing (Fig. 20) 1.9 times as long as broad; with speculum broad on upper surface, almost nil on lower surface; gaster (Fig. 21) with epipygium distinctly longer than height laterally.

Male : Antennae (Fig. 10) with funicular segments with at least three or more sensillae; pedicellus globular; petiole (Fig. 15) in dorsal view distinctly narrower apically; 1.23 times as long as broad in basal half, minutely reticulated with fine rugae; gaster 0.7 times as long as thorax.

Biology : Reared from fruits of *Pistacia terebinthus* which are heavily infested by *Megastigmus pistaciae*, and from the galls of *Diplolepis mayri* on *Rosa* spp. and of *Neuroterus macropterus* on oak.

Material examined : 6 females, 1 male, Türkiye, Kırşehir, August, 1984, ex *Diplolepis rosae* (Kılınçer); 1 female, 1 male, 15.4.1989 ex *Diplolepis mayri* (Çam); 1 male, 10.5.1989; 1 female, 1 male, 24.8.1989; 2 females, 6.9.1989 ex fruits of *Pistacia terebinthus*, Türkiye, Tokat (Çam); 3 males, 27.8.1989, Tokat, (Çam); 2 females, 5 males, 9.6.1989, Sivas (Karamihlioğlu); 2 females, 2 males, Tokat, Almus, ex *Neuroterus macropterus* gall on oak (Doğanlar).

Eurytoma ochraceipes Kalina

(Figs. 1-4, 16, 17)

Eurytoma ochraceipes Kalina, 1970 : 116-119; Boucek, 1977 : 15; Zerova, 1978 : 301-302.

The species was described by Kalina (1970) from female specimens which were collected from Yugoslavia. Boucek (1977) recorded it from Yugoslavia and Bulgaria without host record. Zerova (1978) redescribed the species from both sexes which were collected from some parts of USSR without host record.

The following description is based on the material collected from Tokat and Adana districts :

Female : Similar to *E. pistacina*, excepts as follows: Tegulae and ventral side of gaster testaceous. Relative measurements : Breadth of head 30; length 15; height 22; frontovertex 20; POL 8; OOL 4; eye 12:10; malar space 10; length of scapus 13; flagellum plus pedicellus 34. Scrobes cavity not reaching median ocellus (Fig. 1); antennae (Fig. 3) with scape reaching above vertex, about 5.6 times as long as broad; pedicellus elongate, 1.4 times as long as broad; funicle 5 segmented, funicular segments distinctly longer than broad, all of them almost equal in length and width, except fifth which is slightly shorter, about twice as long as broad, with two rows of longitudinal sensillae; clava two segmented, 2.6 times as long as broad. Thorax (Fig. 4) slightly but distinctly convex dorsally; pronotal collar 0.8 times as long as mesoscutum dorsally; the latter 0.67 times as long as scutellum which is as long as broad; anterior margin of mesepimeron and anterior edge of mesopleuron merging smoothly, but anterior edge of mesopleuron forming a tooth and shelf in front of mid coxae; fore coxae without tooth or lamella; propodeum with a distinct median furrow which bears three irregular carinae, along the carinae with minute reticulations, outsides of depression (furrow) with coarse alveolate sculptures; forewing (Fig. 16) 2.2 times as long as broad; with broad speculum on upper surface; postmarginal vein as long as or slightly longer than marginal vein, and about 1.5 times stigmal vein. Gaster (Fig. 17) about 1.4 times as long as thorax; 2nd tergite slightly longer than third; fourth tergite 1.7 times as long as third dorsally, fifth tergite concealed by fourth tergite; sixth tergite about as long as third tergite, densely hairy; epipygium slightly longer than height late-rally.

Male : Length 1.2-2.2 mm. similar to female excepts as follows : Antennae and hind femora black like body, fore and mid femora fuscous posteriorly, sometimes scape basally testaceous; antennae (Fig. 2) with 5 funicular segments, clava with two segments; funicular segments with 2-3 longitudinal sensillae in a row, with a thin processes distally, whorls of long hairs on each segment outstanding about 80°; clava about 3.6 times as long as broad; first funicular segment 3.37 times, the others about 3 times as long as broad; petiole 1.8 times as long as its maximum breadth, apical half broader and parallel sided, gradually narrowing basally, minutely reticulated dorsally; gaster 0.8 times as long as thorax, with 5 visible terga, fifth tergite concealed by the fourth; sixth tergite with fine hairs.

Biology : Not known, the specimens were swept from herbaceous plants on dry slopes.

Material examined : 38 females, 112 males, Türkiye, Tokat, 13.4.-6.9.1989 (Çam); 11 females, 6 males, Adana, Yumurtalık, 19.-22.8.1982 (Doğanlar).

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Özet

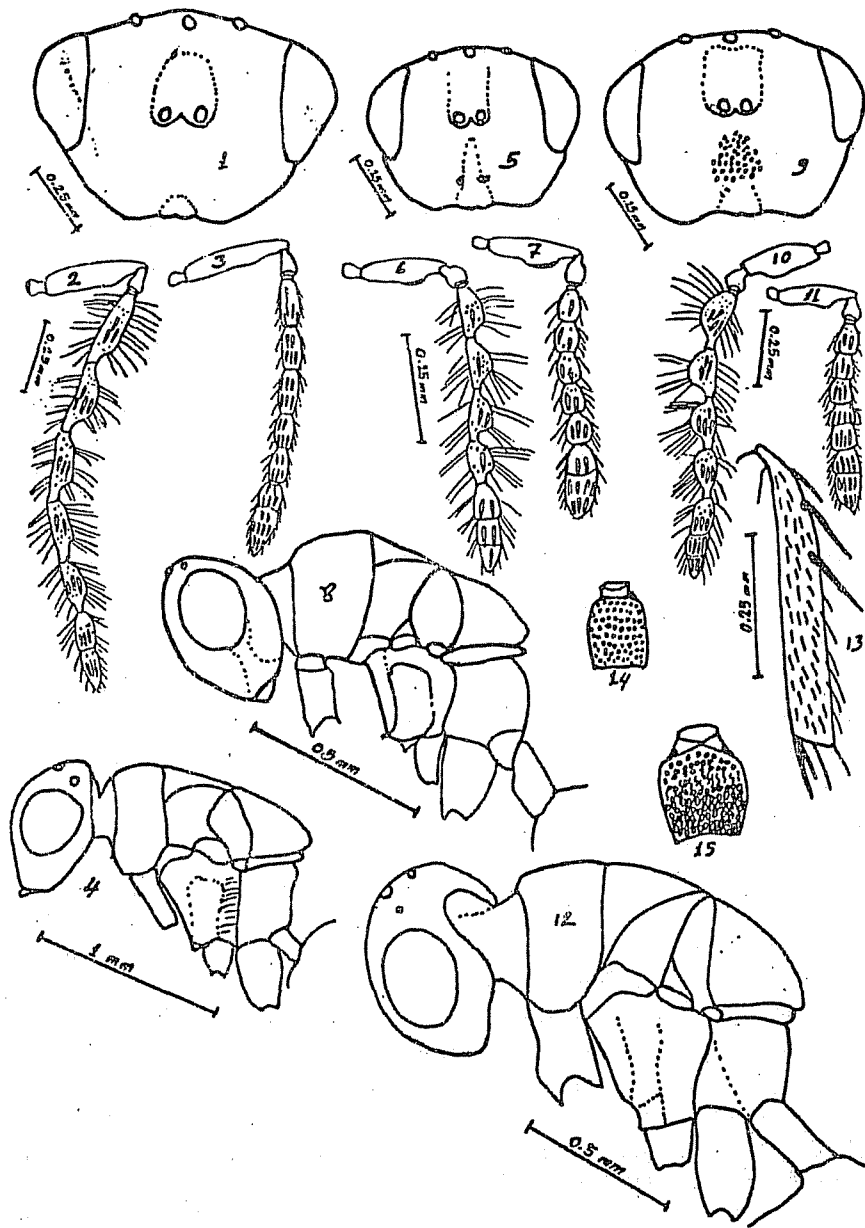
Türkiye'deki *Eurytoma* III. türlerinden arka tibiae'de 2-3 kalın setae taşıyanlar ve Tokat'ta bulunan yeni bir türün tanımı
(Hymenoptera , Eurytomidae)

Türkiye'nin çeşitli yörelerinde arka tibiae'de 2-3 kalın seate taşıyan *Eurytoma* III. türlerinden üçünün *E. tokatensis* n.sp., *E. pistacina* Rondani, *E. ochraceipes* Kalina, bulunduğu saptanmıştır. Bunlardan *E. pistacina*'ya ait örnekler, *Megastigmus pistaciae* (Torymidae) tarafından enfekte edilmiş *Pistacia terebinthus* meyvelerinden, *Rosa* spp.'deki *Diplolepis mayri* (Cynipidae) ile *Quercus* spp.'deki *Neurotherus macropterus* (Cynipidae) gallerinden üretilmiştir. Diğer iki türe ait örnekler yabancı otlardan atrapla toplanmıştır.

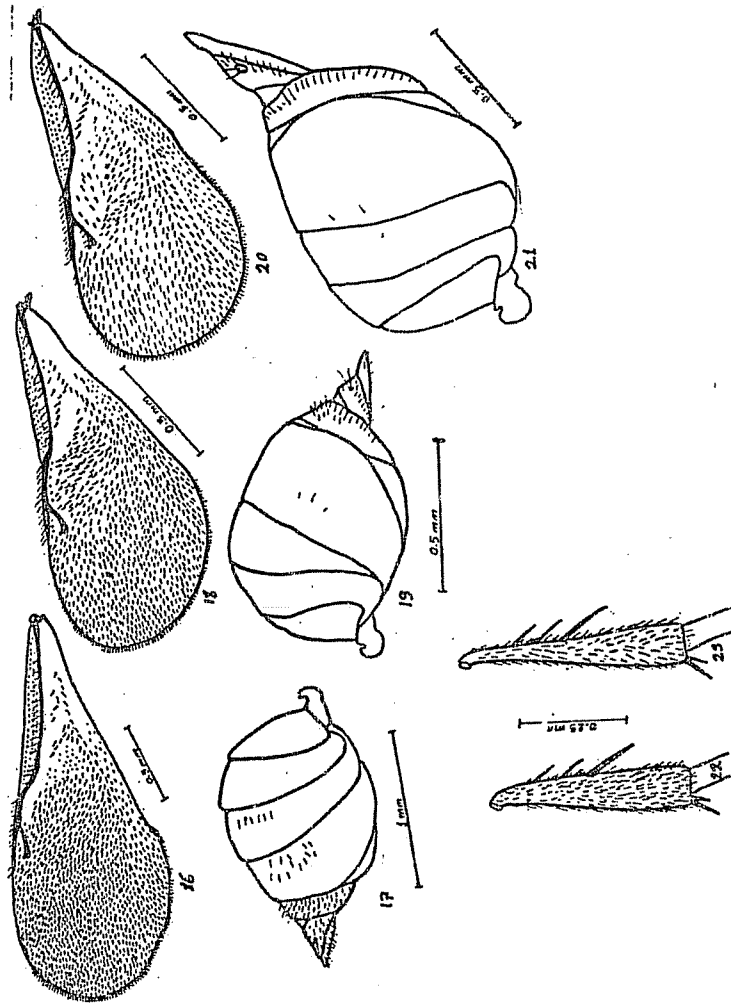
Dünyada bulunan *Eurytoma* cinsinin bu grubuna giren türleri için tanı anahtarı oluşturulmuş ve yeni türün tanımı yapılarak önemli taxonomik özellikleri belirtmek için çizimler verilmiştir.

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Figs. 1-15. *Eurytoma* spp.; 1-4. *E. ochraceipes* Kalina, 1, head; 2-3, antennae, 2, male; 3, female; 4, head and thorax in lateral view; 5-8, *E. tokatensis* n.sp. 5, head; 6-7, antennae, 6 male, 7, female; 8, head and thorax in lateral view; 9-13, *E. pistacina* Rond. 9, head; 10-11, antennae, 10, male, 11, female. 12, head and thorax in lateral view; 13, hind tibia; 14-15, male petiolae, 14, *E. tokatensis* n. sp.; 15, *E. pistacina*



Figs. 16-23. *Eurytoma* spp., 16-17, *E. ochraceipes* Kalina, 16, forewing; 17, gaster, female, inlateral view; 18-19, *E. tokatensis* n.sp., 18, forewing, 19, gaster, female, in lateral view; 20-21, *E. pistacina* Rond., 20, forewing; 21, gaster, female, in lateral view