

# The Species of Tryphoninae (Hymenoptera: Ichneumonidae) in Turkish Thrace\*

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**Abstract:** This study was carried out to investigate the species of the subfamily Tryphoninae (Hymenoptera: Ichneumonidae) in Turkish Thrace between 1992 and 1994. A total of 89 samples were collected from 42 localities and 26 species belonging to 11 genera were determined. Diagnostic keys to the species, subgenera and genera were prepared. In order to distinguish morphological characters that were mentioned in the keys, 31 original figures are given.

Of these species, *Phytodietus polyzonias* (Foerster), *Netelia (Prosthodocis) japonicus* (Uchida), *N. (Bessobates) cristatus* (Thomson), *N. (Netelia) ocellaris* (Thomson), *N. (Netelia) rufescens* (Tosquinet), *Neleges proditor* (Gravenhorst), *Dyspetes arrogator* Heinrich, *Ctenochira angulata* (Thomson), *Exyston sponsorius* (Fabricius), and *Acrotomus lucidulus* (Gravenhorst) are new records for the fauna of Turkey. Moreover, the species *N. (N.) silantjewi* (Kokoujev), *N. (N.) valvator* Aubert, *Tryphon (Tryphon) atriceps* Stephens, *Monoblastus luteomarginatus* (Gravenhorst), *Polyblastus (Labroctonus) alternans* Schiodte, and *Kristotomus laetus* (Gravenhorst) are new records for fauna of Turkish Thrace.

**Key Words:** Thrace, Hymenoptera, Ichneumonidae, Tryphoninae, Fauna

## Trakya Bölgesi (Türkiye) Tryphoninae Türleri (Hymenoptera: Ichneumonidae)

**Özet:** 1992-1994 yılları arasında Trakya Bölgesi'nin Tryphoninae ( Hymenoptera: Ichneumonidae ) türlerini saptama amacı ile yapılan bu araştırmada 42 lokaliteden 89 örnek toplanmış ve 11 cins'e ait 26 tür saptanmıştır. Cins, altcins ve tür tanı anahtarları hazırlanmış, ayrıca anahtarlarda geçen ayırıcı morfolojik özelliklerle ilgili 31 orjinal şekil verilmiştir.

Saptanan türlerden; *Phytodietus polyzonias* (Foerster), *Netelia (Prosthodocis) japonicus* (Uchida), *N. (Bessobates) cristatus* (Thomson), *N. (Netelia) ocellaris* (Thomson), *N. (N.) rufescens* (Tosquinet), *Neleges proditor* (Gravenhorst), *Dyspetes arrogator* Heinrich, *Ctenochira angulata* (Thomson), *Exyston sponsorius* (Fabricius), *Acrotomus lucidulus* (Gravenhorst) Türkiye faunası için; *N. (N.) silantjewi* (Kokoujev), *N. (N.) valvator* Aubert, *Tryphon (Tryphon) atriceps* Stephens, *Monoblastus luteomarginatus* (Gravenhorst), *Polyblastus (Labroctonus) alternans* Schiodte, *Kristotomus laetus* (Gravenhorst) Trakya faunası için yeni kayıttır.

**Anahtar Sözcükler:** Trakya, Hymenoptera, Ichneumonidae, Tryphoninae, Fauna

## Introduction

Tryphoninae are known as parasitoids of numerous species such as Lepidoptera and Hymenoptera (Thendridinidae) (1).

The Tryphoninae fauna of Turkey is not well known. Several researchers have recorded 16 species of Tryphoninae from Turkey (2-8). The first detailed faunistic study of Tryphoninae in Turkey was carried out by Kolarov and Beyarslan in 1994 and identified a total of 14 species (9). In recent studies, Kolarov et al. recorded three new species (10), and Kolarov et al. found five new

species (11). Consequently, the number of species recorded was increased to 33. In the Palaearctic region, approximately 270 species belonging to 33 genera were determined in this subfamily (12).

Our study area, Turkish Thrace, is 23,485 km<sup>2</sup>, which is one third of the total area of Turkey. Deciduous and scrofulous forests cover 20% of Turkish Thrace. These forests are mainly situated on the Ganos and Koru Mountains in the south and on the Yıldız (Istranca) Mountains in the north. The study area consisted of 20% meadows and 60% cultivated land.

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## Materials and Methods

Adult species of Tryphoninae from different habitats in Turkish Thrace were collected between 1992 and 1994. The materials were obtained from grass-type plants by using a standard sweeping-net. Then they were transferred into a hand-made aspirator and were immediately killed by potassium cyanide (KCN). The samples were brought to the laboratory and prepared by labelling according to convenient taxonomical methods for further analyses.

The materials were examined by using the related literature and were compared to museum materials of Tryphoninae species that had already been collected and determined from Bulgaria by Dr. J. Kolarov. We thank Dr. Kolarov for checking some identified material. In taxonomical analyses, methods from the literature were used (12-17). The terminology for the subfamily Tryphoninae (Hymenoptera: Ichneumonidae) followed Townes (13).

## Result and Discussion

In 89 samples collected from 42 localities, 26 species belonging to 11 genera were determined. Diagnostic keys of the species, subgenera, and genera were prepared as follows;

### Tribe: PHYTODIETINI

#### Key to genera of Phytodietini

- 1(2). Mandible not twisted its lower tooth as large as upper tooth; eye margin not clearly notched opposite the antennal socket; ovipositor approximately 4 times as long as apical depth of abdomen. *Phytodietus* Gravenhorst
- 2(1). Mandible twisted so that the upper tooth is considerably forward of much shorter lower tooth; eye margin notched opposite the antennal socket; ovipositor 1.0 to 2.0 times as long as apical depth of abdomen. *Netelia* Gray

Genus: *Phytodietus* Gravenhorst, 1829

*Phytodietus polyzonias* (Foerster, 1771)

*Ichneumon polyzonias* Foerster, 1771. Nov. Sp. Ins., 85.

*Phytodietus polyzonias*: Morley, 1908. Brit. Ichneum. III, 241.

Syn: *Phytodietus segmentator* Gravenhorst, 1829. Ichn. Rur., II, 944.

*Phytodietus crassitarsis* Thomson, 1877. Opusc. Ent. VIII, 774.

Table: Studied localities in Turkish Thrace.

1. İstanbul-Belgrad Ormanları-Bilezikçi Çiftliği
2. İstanbul-Silivri-Küçüksinekli
3. Kırklareli-Demirköy-İğneada
4. Tekirdağ-Çorlu-Seymen
5. Kırklareli-Demirköy-İğneada-Sislioba
6. Kırklareli-Vize
7. Kırklareli-Demirköy-Karacadağ
8. Kırklareli-Pınarhisar-Yenice
9. Kırklareli-Demirköy-Sarpdere
10. Tekirdağ-Muratlı-Müsellim
11. Kırklareli-Lüleburgaz-Evrensekiz
12. Kırklareli-Üsküp-Çukurpınar
13. Tekirdağ-Merkez
14. Tekirdağ-Muratlı-Hanoğlu
15. Kırklareli-Lüleburgaz-Celaliye
16. Kırklareli-Dereköy-Çağalayık
17. Kırklareli-Lüleburgaz-Türkgeldi
18. Tekirdağ-Şarköy-Güzelköy
19. Kırklareli-Koççaz-Ahlatlı
20. Tekirdağ-Hayrabolu-Kandamış
21. Kırklareli-Babaeski-Alpullu
22. Kırklareli-Koççaz-Aşağıkanarya
23. Kırklareli-İnece
24. Tekirdağ-Malkara-Karamurat
25. Tekirdağ-Hayrabolu
26. Tekirdağ-Malkara-Çınarlıdere
27. Tekirdağ-Hayrabolu-Soylu
28. Edirne-Havsa-Necatıye
29. Edirne-Havsa-Çukurköy
30. Edirne-Uzunköprü-Çöpköy
31. Edirne-Havsa-Söğütüdere
32. Tekirdağ-Malkara-Tekkeköy
33. Edirne-Lalapaşa-Doğanköy
34. Edirne-Lalapaşa-Hamzabeyli
35. Edirne-Uzunköprü-Çakmak
36. Edirne-Merkez
37. Edirne-Keşan-Karahisar
38. Edirne-Büyükismailçe
39. Edirne-Meriç-Hasırcıarnavut
40. Edirne-Budakdoğanca
41. Edirne-İpsala
42. Edirne-Meriç-Küplü

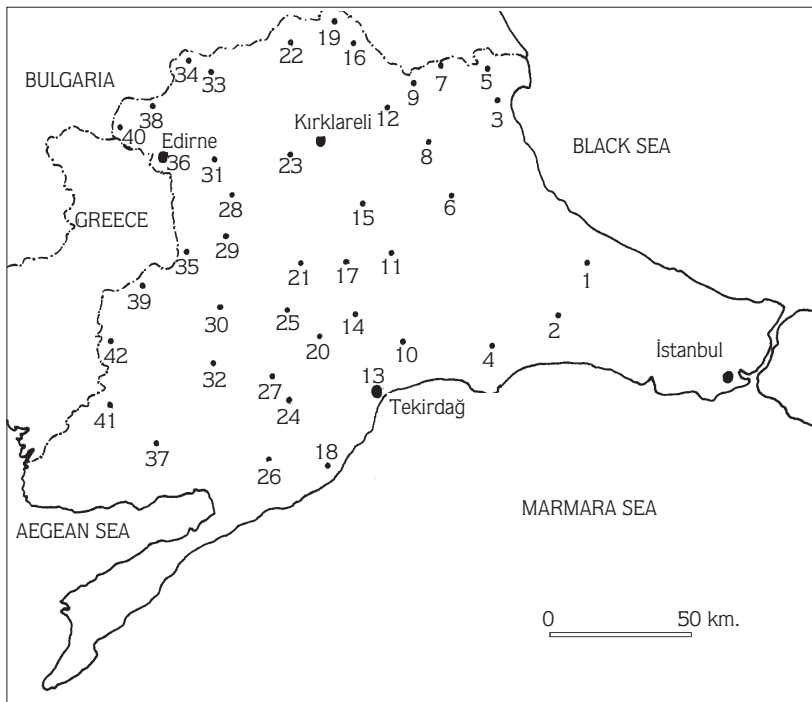


Figure 1. Studied localities in Turkish Thrace.

Material examined: 1 ♀

Belgrad Forest of İstanbul-Bilezikçi Farm (24.06.1993, 25 m, 1 ♀, mixed forest).

General distribution: Europe (18).

New record for the fauna of Turkey.

Key to subgenus of *Netelia* Gray

- 1(4). Occipital carina absent (Fig. 2); lateral edge of scutellum extending or not to apex.
- 2(3). Lateral edge of scutellum is maximum 0.7 of its length; ovipositor shorter than depth of abdomen.  
*Bessobates* Townes, Townes and Gupta
- 3(2). Lateral edge of scutellum longer than 0.7 of its length; ovipositor longer than depth of abdomen.  
*Prosthodocis* Enderlein
- 4(1). Occipital carina present (Fig. 3); lateral edge of scutellum extending to apex. *Netelia* Gray

Subgenus: *Prosthodocis* Enderlein

*Netelia (Prosthodocis) japonicus* (Uchida, 1928)

*Parabatus cristatus* var. *japonicus* Uchida, 1928, Jour. Faculty Agr. Hokkaido Imp. Univ., 21:196.

*Netelia (Prosthodocis) japonicus*: Townes et al., 1965. Mem Amer. Inst. Ann. 5.

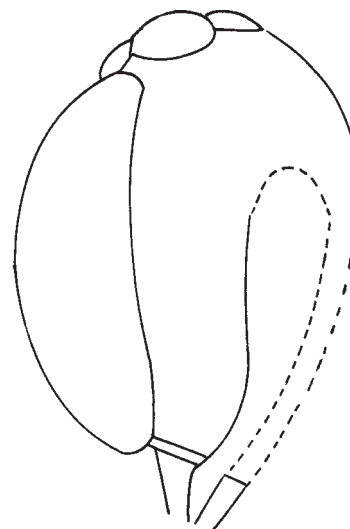


Figure 2. *Netelia (Bessobates) cristatus* (Thomson): Occipital carina.

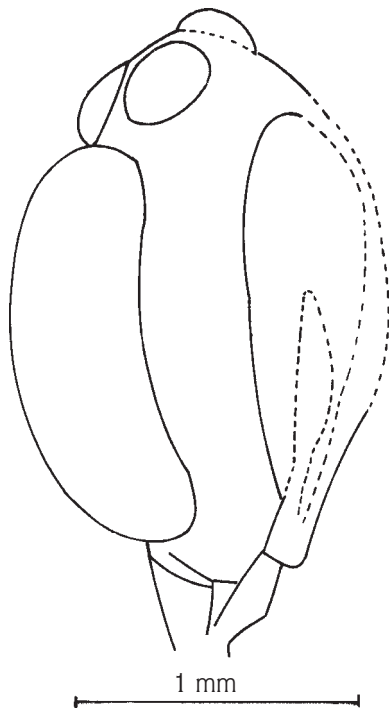


Figure 3. *Netelia (Netelia) fuscicornis* (Holmgren): Occipital carina.

Material examined: 1 ♀

Edirne-Sarayıcı-Tavuk ormanı (18.07.1994, 40 m, 1 ♀, mixed forest).

General distribution: France, Germany, Italy, Japan, Kuril Islands, Switzerland, Taiwan (15).

New record for the fauna of Turkey.

Subgenus: *Bessobates* Townes, Townes and Gupta, 1961

*Netelia (Bessobates) cristatus* (Thomson, 1888)

*Parabatus cristatus* Thomson, 1888, Opusc. entom. 12:1197

*Netelia (Bessobates) cristatus*: Townes et al., 1965. Mem Amer. Inst. Ann. 5.

Syn.: *Parabatus franki* Brauns 1889

Material examined: 1 ♀

Edirne-Karaağaç (09.10.1992, 40 m, 1 ♀, clover field).

General distribution: China, England, Finland, France, Italy, Japan, Korea, Netherlands, Russia, Spain, Sweden, Switzerland (15).

New record for the fauna of Turkey.

Subgenus: *Netelia* Gray, 1860

Key to species of *Netelia* Gray, 1860

- 1(6). Ocellar area black.
- 2(3). Nervulus separated from basal section by more than half of its length (Fig. 4); mesonotum mat.  
*Netelia (Netelia) silantjewi* (Kokoujev)
- 3(2). Nervulus separated from basal section by less than half of its length; mesonotum opaque or bright.
- 4(5). Apex of abdomen black or brown; mesonotum opaque or less shiny; nervulus separated from the basal section approximately 0.4 of its length (Fig. 5).  
*N. (N.) testacea* (Gravenhorst)
- 5(4). Apex of abdomen reddish yellow or reddish; mesonotum shiny; nervulus separated from the basal section by 0.4 of its length.  
*N. (N.) ocellaris* (Thomson)
- 6(1). Ocellar area light or brown.
- 7(8). Head rounded at posterior, ocelli either separated from or touching eyes; nervulus is separated from the basal section by 0.4-0.7 of its length.  
*N. (N.) fuscicornis* (Holmgren)
- 8(7). Head is very concave at posterior, ocelli touching eyes; nervulus is separated from the basal section by 0.4 or less of its length.
- 9(10). Flagellum 46-50 segments; second flagellar segment about 3 times as long as its width (Fig. 6); nervulus separated from the basal section by 0.4 of its length.  
*N. (N.) valvator* Aubert
- 10(9). Flagellum 47 segments; second flagellar segment about 4.5 times as long as its width (Fig. 7); nervulus separated from the basal section by 0.3 of its length.  
*N. (N.) rufescens* (Tosquinet)

*Netelia (Netelia) fuscicornis* (Holmgren, 1858)

*Paniscus fuscicornis* Holmgren, 1858. Svenska Vetensk. Akad. Handl. (n.f.) 2 (8): 32

*Netelia (Netelia) fuscicornis*: Townes et al., 1965. Mem Amer. Inst. Ann. 5.

Syn.: *Paniscus gracilipes* Thomson, 1888

Figure 4. *Netelia (Netelia) silantjewi* (Kokoujev): Nervulus.

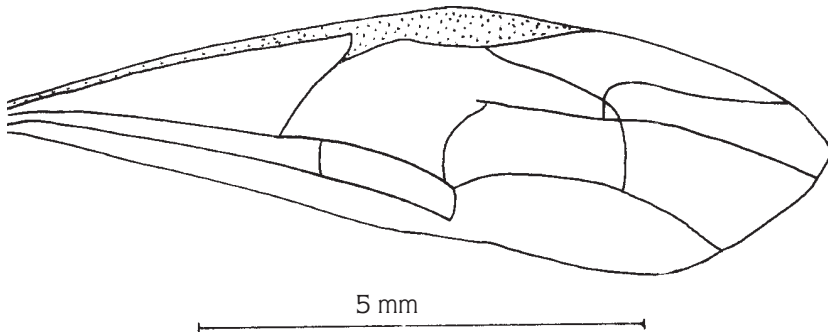


Figure 5. *Netelia (Netelia) testacea* (Gravenhorst): Nervulus.

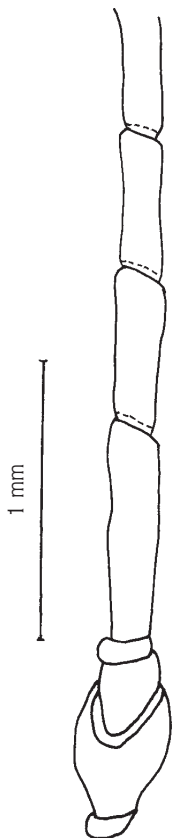
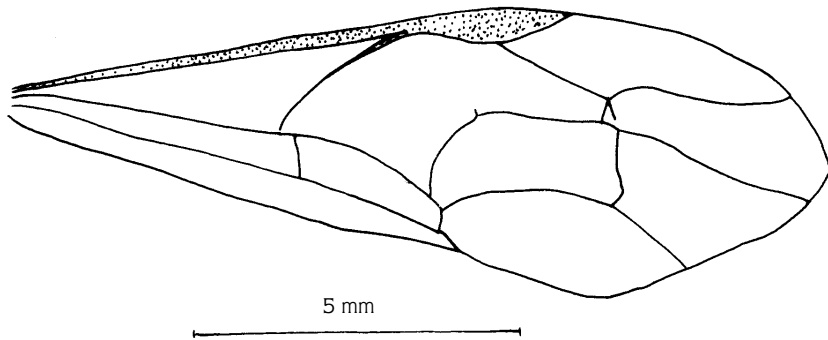


Figure 6. *Netelia (Netelia) valvator* Aubert: Flagellum.

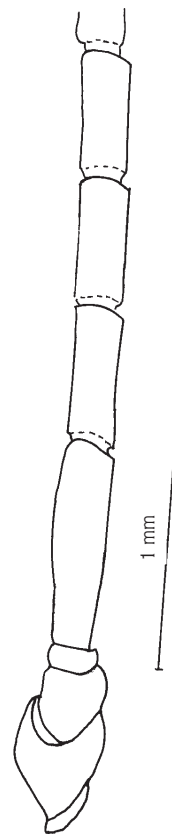


Figure 7. *Netelia (Netelia) rufescens* (Tosquinet): Flagellum.

Material examined: 14 ♀♀, 13 ♂♂

Edirne-Büyükismailçe (26.07.1992, 150 m, 1 ♀, 2 ♂♂, pasture); -Karaağaç (09.10.1992, 40 m, 1 ♀, clover field); -İpsala (05.08.1993, 25 m, 1 ♂, poplar woodland and clover field); -Keşan-Karahisar (06.08.1993, 180 m, 1 ♀, pasture); -Meriç-Hasırcıarnavut (13.05.1994, 105 m, 1 ♂, pasture); Kırklareli-Lüleburgaz-Celaliye (22.06.1993, 1 ♀, 1 ♂, 50 m, clover field and pasture); -Evrensekiz (25.08.1992, 60 m, 2 ♀♀, willow and pasture); -Türkgeldi (13.08.1992, 60 m, 1 ♀, 1 ♂, pasture); -Vize (25.08.1992, 150 m, 3 ♀♀, clover field and orchard); Tekirdağ (24.06.1993, 10 m, 1 ♀, orchard); -Çorlu-Seymen (12.08.1993, 100 m, 1 ♂, pasture); -Hayrabolu (26.08.1992, 50 m, 1 ♀, willow and pasture); -Soylu (26.08.1992, 50 m, 1 ♂, pasture); -Malkara-Çınarlıdere (25.06.1993, 210 m, 1 ♂, poplar woodland and pasture); -Karamurat (26.06.1993, 300 m, 1 ♂, poplar woodland and pasture); -Tekkeköy (05.08.1993, 200 m, 2 ♂♂, poplar woodland and clover field); -Muratlı-Hanoğlu (26.08.1992, 60 m, 1 ♀, 1 ♂, meadow); -Şarköy-Güzelköy (26.06.1993, 160 m, 1 ♀, poplar woodland and pasture).

General distribution: Afghanistan, Belgium (15), Bulgaria (7), China, England, Finland, France, Greece, Italy, Macedonia, Netherlands, Russia (15), Spain (19), Sweden (15), Turkey (2).

Distribution in Turkey: Adana-Kozan, Ankara (11), Balıkesir-Ovaköy (10), Bayburt (11), Bursa-İncirli (10), Edirne-Merkez, Elazığ-Baskil-Hacımustafa (9), Erzurum-İspir-Madenköprübaşı, Oltu-Karakaban (11), Hatay (7), Kahramanmaraş-Afşin (9), Kayseri-Erciyes Mountains (2), Kırklareli-Merkez, Pınarhisar-Kaynarca, Pabuçdere (9), Konya-Meram (15), Nevşehir-Ürgüp-Göreme-Karain (8), Tekirdağ-Şarköy (9), Van (15).

*Netelia (Netelia) ocellaris* (Thomson, 1888)

*Paniscus ocellaris* Thomson, 1888. Opusc. Ent. 12:1199.

*Netelia (Netelia) ocellaris*: Townes et al., 1965. Mem Amer. Inst. Ann. 5.

Material examined: 1 ♀, 2 ♂♂

Edirne-Büyükismailçe (26.07.1992, 150 m, 2 ♂♂, pasture); Tekirdağ-Hayrabolu-Kandamış (26.08.1992, 70 m, 1 ♀, poplar woodland and pasture).

General distribution: China, Egypt, Finland, France, Germany, India, Japan, Korea, Norway, Russia, Sweden, Switzerland (15).

New record for the fauna of Turkey.

*Netelia (Netelia) rufescens* (Tosquinet, 1896)

*Paniscus rufescens* Tosquinet, 1896. Ichneum. d'Afrique: 409.

*Netelia (Netelia) rufescens*: Townes and Townes, 1973, Mem Amer. Inst. Ann. 19: 416

Material examined: 1 ♀, 1 ♂

Edirne-Meriç-Hasırcıarnavut (21.06.1993, 105 m, 1 ♂, pasture), Kırklareli-Lüleburgaz-Evrensekiz (25.08.1992, 60 m, 1 ♀, willow and pasture).

General distribution: Morocco (15).

New record for the fauna of Turkey.

*Netelia (Netelia) silantjewi* (Kokoujev, 1899)

*Paniscus silantjewi* Kokoujev, 1899. Horae Soc. Ent. Rossicae 34:133-138

*Netelia (Netelia) silantjewi*: Townes et al., 1965. Mem Amer. Inst. Ann. 5.

Syn.: *P. rossicus* Kokoujev, 1899.

*P. minor* Szépligeti, 1899.

Material examined: 1 ♀

Kırklareli-Lüleburgaz-Evrensekiz (25.08.1992, 60 m, 1 ♀, willow and pasture).

General distribution: France, Hungary, Italy (15), Poland (20), Russia, Switzerland (15), Ukraine (20).

Distribution in Turkey: Balıkesir-İvrindi-Güngörmez, Bursa-Yenişehir (10).

New record for the fauna of Thrace.

*Netelia (Netelia) testacea* (Gravenhorst, 1829)

*Paniscus testaceus* Gravenhorst, 1829. Ich. Eur., 3: 626.

*Netelia (Netelia) testacea*: Townes et al., 1965. Mem Amer. Inst. Ann. 5: 94.

Syn.: *Netelia (Netelia) opaculus* (Thomson, 1888).

Material examined: 5 ♂

Edirne-Uzunköprü-Çakmak (13.05.1994, 100 m, 1 ♂, pasture); Kırklareli-Demirköy-Sarpdere (02.06.1993, 500 m, 3 ♂, oak and beech forest); -Kofçaz-Ahlatlı (05.06.1993, 570 m, 1 ♂, oak forest).

General distribution: Afghanistan, Austria, China, Finland, France, Germany, India, Italy, Japan, Korea, Rumania, Russia (15), Spain (19), Sweden, Switzerland (15), Turkey (21).

Distribution in Turkey: Adana (22), Bursa-Uludağ (23), Edirne-Hadımağa (9), İstanbul-Polenez farm (21), Polenezköy, (23), İzmir-Bergama (24), Kırklareli-Pabuçdere, Yoğuntaş (9), Muğla-Dalaman (25).

*Netelia (Netelia) valvator* Aubert, 1968

*Netelia valvator* Aubert, 1968. Bull. Soc. Ent. Mulhouse nov.-dec. 1968: 100-101.

*Netelia (Netelia) valvator*: Delrio, 1975. Annali Della Facolta di Agraria dell'Universita di Sassari 23: 1-125

Material examined: 4 ♀♀, 1 ♂

Edirne-Büyükismailçe (26.07.1992, 150 m, 2 ♀♀, pasture); -Havsa-Necatiye (30.08.1992, 60 m, 1 ♂, pasture); Tekirdağ-Hayrabolu (26.08.1992, 50 m, 2 ♀♀, willow and pasture).

General distribution: Algeria, France, Israel, Italy, Libya, Morocco (15), Spain (19), Switzerland, Tunisia (15), Turkey (8).

Distribution in Turkey: Erzurum-University field (11), İzmir-Bergama (8), Trabzon (11).

New record for the fauna of Thrace.

### Tribe: TRYPHONINI

#### Key to the genera of Tryphonini

1(2). Ventral part of clypeus with two notches at the middle (Fig. 8), postocciptus notched.

*Neleges* Foerster

2(1). Ventral part of clypeus notchless at the middle (Fig. 9), postocciptus notchless.

3(4). Second recurrent vein with a strong zigzag (Fig. 10); tarsal claws apparently simple; areolet present; ovipositor not longer than apical depth of abdomen.

*Tryphon* Fallén

4(3). Second recurrent vein usually without a strong zigzag (Fig. 11), when with a strong zigzag then either the tarsal claws distinctly pectinate and/or the areolet absent; ovipositor sometimes longer than apical depth of abdomen.

5(6). Areolet rhombic, wider than height, intercubiti nearly equal length and at same distance from second recurrent vein; back of head, as seen from above often with a median notch (Fig. 12); tarsal claws simple.

*Dyspetes* Foerster

6(5). Areolet present or absent, when present oblique and subtriangular, the second intercubitus longer than the first and closer to the second recurrent vein; back of head, notchless (Fig. 13); tarsal claws usually pectinate.

7(8). Lower condyles of two mandibles not farther apart than the inner margins of eyes at the level of clypeal foveae; outer face of mandible at its basal 0.2 and strongly convex in cross section, with only small inconspicuous punctures; ovipositor decurved, its sheath broad.

*Ctenochira* Förster

8(7). Lower condyles of the two mandibles farther apart than the inner margins of eyes at the level of clypeal foveae; outer face of mandible at its basal 0.2 and weakly convex or concave, with rather large punctures; ovipositor straight, its sheath narrow.

9(10). Tarsal claws pectinate on at most their basal 0.7; second tergite with a postmedian transverse shallow impression; ovipositor carrying only one egg at a time, usually without an egg (Fig. 14).

*Monoblastus* Hartig

10(9). Tarsal claws nearly pectinate; second tergite without a postmedian transverse shallow impression; ovipositor usually carrying a number of eggs (Fig. 15).

*Polyblastus* Hartig

Genus: *Neleges* Foerster, 1868

*Neleges proditor* (Gravenhorst, 1829)

*Tryphon proditor* Gravenhorst, 1829. Ichneum. Europ., Vratislaviae, 2: 298.

*Neleges proditor*: Pfankuch, 1907. Hym. Dipt. 7: 147.

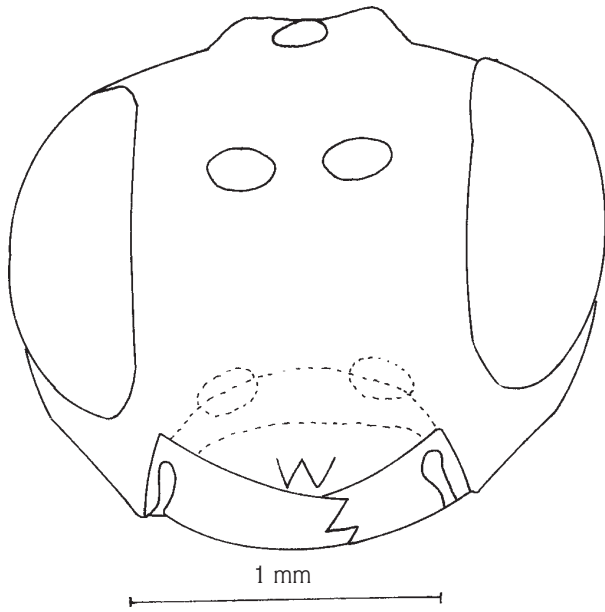


Figure 8. *Neleges proditor* (Gravenhorst): Clypeus.

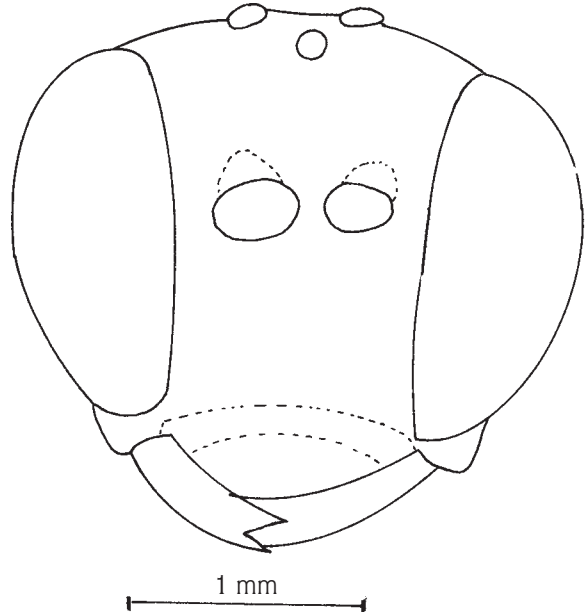


Figure 9. *Tryphon (Tryphon) rutilator* (Linnaeus): Clypeus.

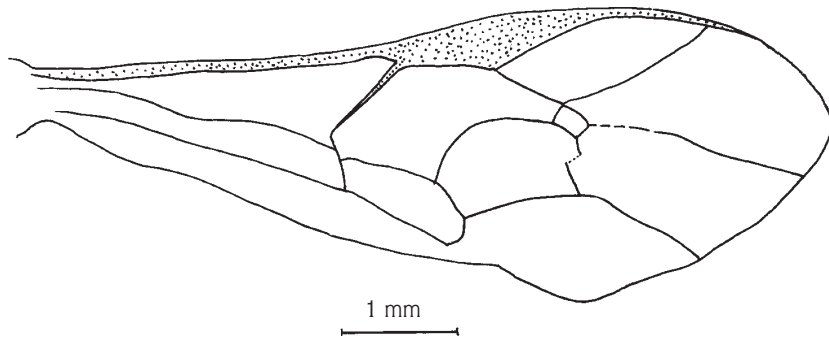


Figure 10. *Tryphon (Tryphon) signator* Gravenhorst: Second recurrent vein.

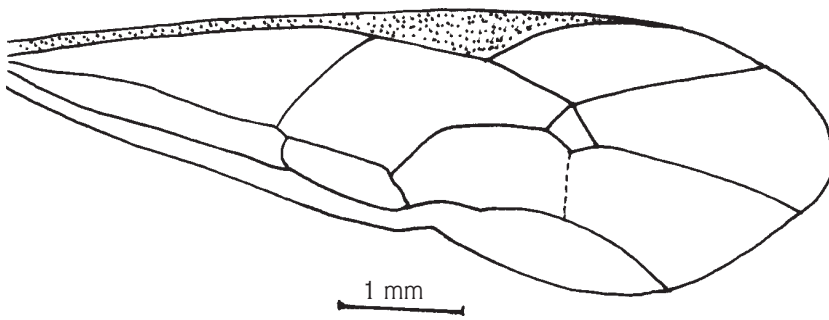
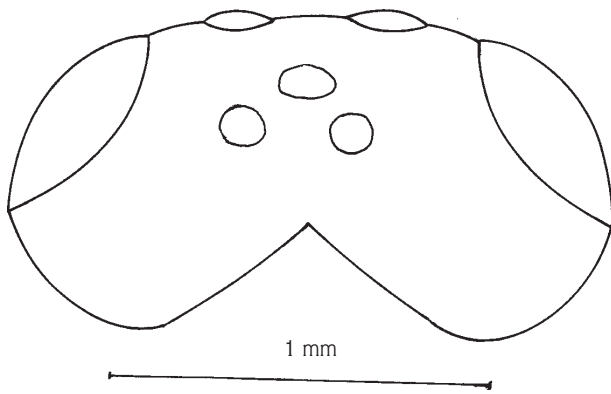
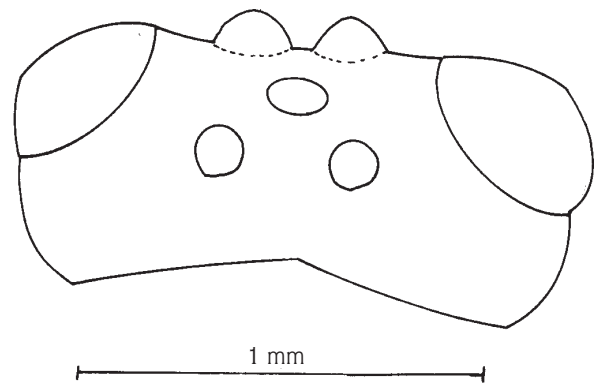
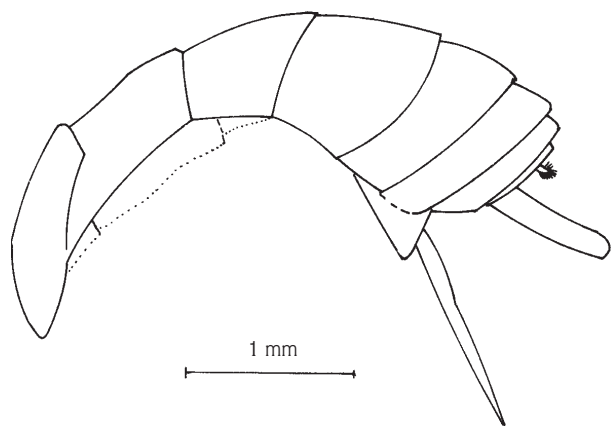
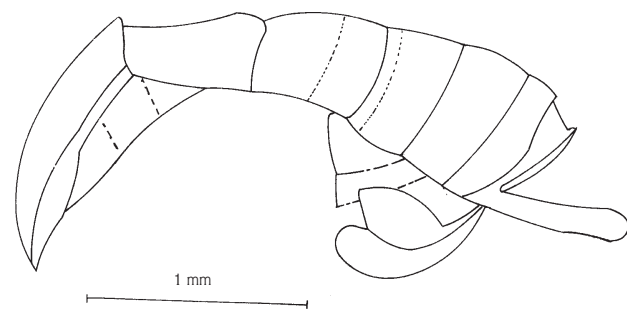


Figure 11. *Dyspetes arrogator* Heinrich: Second recurrent vein.



Figure 12. *Dyspetes arrogator* Heinrich: Head (Dorsal view).Figure 13. *Monoblastus luteomarginatus* (Gravenhorst): Head (Dorsal view).Figure 14. *Monoblastus marginellus* (Gravenhorst): Ovipositor.Figure 15. *Polyblastus (Labroctonus) alternans* Schiodte: Ovipositor.

Material examined: 1 ♀, 1 ♂

Edirne-Meriç-Küplü (21.06.1993, 40 m, 1 ♂, pasture); Belgrad Forest of İstanbul- Bilezikçi Farm (24.06.1993, 25 m, 1 ♀, mixed forest).

General distribution: Azerbaijan (14), Bulgaria, Europe (26), Germany (14), Mediterranean Region (26), Russia, Ukraine (14).

New record for the fauna of Turkey.

Genus: *Tryphon* Fallén, 1813

Key to species of *Tryphon* Fallén, 1813.

1(2). Occipital carina divided at the base of mandible and demarcating a conspicuously depressed, sinuate, closed area (Fig. 16); second segment of hind tarsus distinctly larger than fifth (Fig. 17);

ovipositor straight, hardly thickened towards the base.

*Tryphon (Tryphon) zavreli* Gregor

2(1). Occipital carina not divided, and if the depressed area is present it is not closed (Fig. 18); second segment of hind tarsus generally shorter than fifth (Fig. 19); ovipositor, if straight, always strongly thickened towards the base.

3(4). Propodeum shiny, lateral carina absent, median longitudinal carina weak at the base, with a marked transverse carina, beyond which it sharply declivous (Fig. 20); second segment of hind tarsus shorter than fifth; aedeagus with an elongated apex (Fig. 21). *T. (T.) atriceps* Stephens

4(3). Propodeum not very shiny, areolated and its median longitudinal carina distinct and not sharply

declivous (Fig. 22); second segment of hind tarsus equal or shorter than fifth, if longer, auriculi absent; aedeagus without an elongated apex (Fig. 23).

- 5(6). Face, clypeus and all trochanters completely yellow; apex of aedeagus almost triangular.  
*T. (T.) trochanteratus* Holmgren
- 6(5). Face black or with yellow spots, if completely yellow, trochanters with black spots; apex of aedeagus not triangular.
- 7(12). Females
- 8(9). Ovipositor straight, lower margin of sheath bevelled upward at the apex (Fig. 24).  
*T. (T.) thomsoni* Roman
- 9(8). Ovipositor conspicuously curved, downward sheath not like this (Fig. 25).
- 10(11). Width of sheath not less than 0.6 that of the hind femur; auriculae closely appressed to the

margins of the antennal sockets; face usually with two small yellow spots medially; occipital carina without concave carina at the base of mandible (Fig. 26). *T. (T.) signator* Gravenhorst

- 11(10). Ovipositor sheath not more than half as wide as the hind femur; auriculae not closely appressed to the margins of the antennal sockets; face yellow or with yellow spots; occipital carina with concave carina at the base of mandible and its apex open (Fig. 18). *T. (T.) rutilator* (Linnaeus)
- 12(7). Males
- 13(14). Occipital carina with concave carina at the base of mandible and its apex open; auriculae longer than antennal sockets.  
*T. (T.) rutilator* (Linnaeus)
- 14(13). Occipital carina very short concave carina at the base of mandible; auriculae closely appressed to the margins of the antennal sockets.  
*T. (T.) signator* Gravenhorst

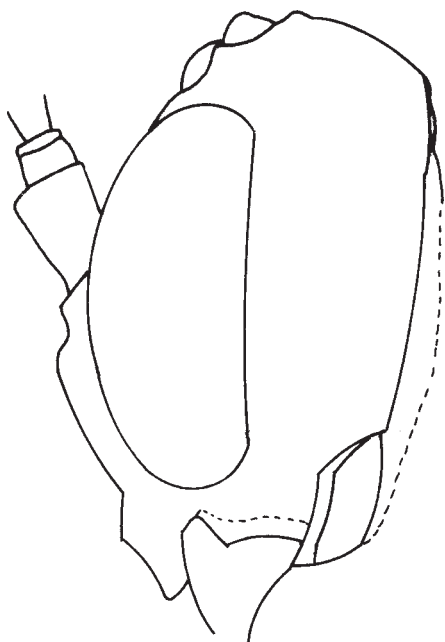


Figure 16. *Tryphon (Tryphon) zavreli* Gregor: Occipital carina.

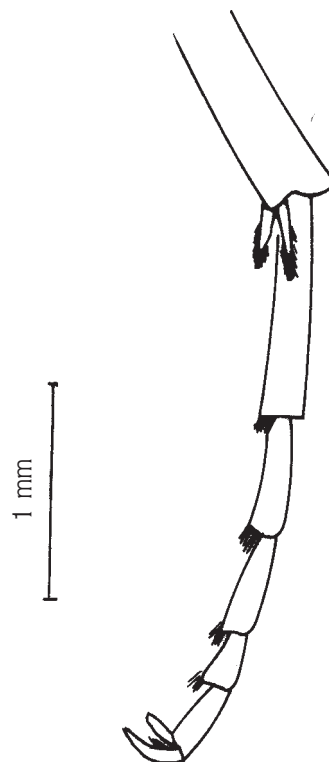


Figure 17. *Tryphon (Tryphon) zavreli* Gregor: Hind tarsus.

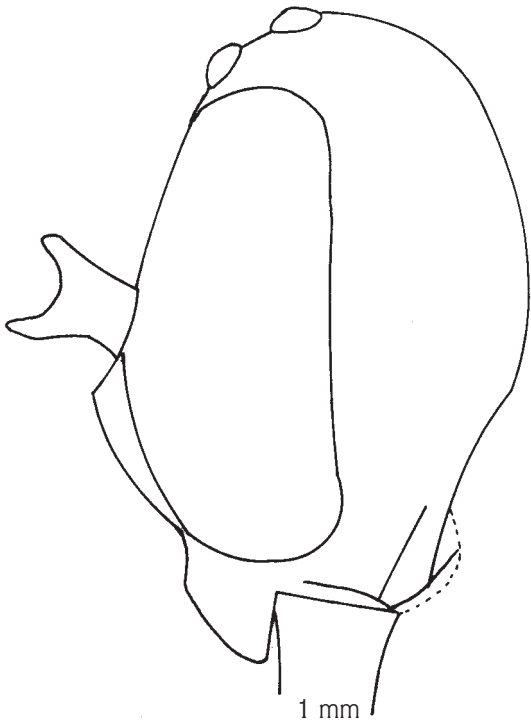


Figure 18. *Tryphon (Tryphon) rutilator* (Linnaeus): Occipital carina.

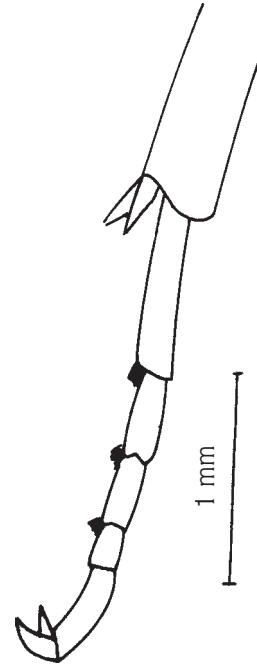


Figure 19. *Tryphon (Tryphon) atriceps* Stephens: Hind tarsus.

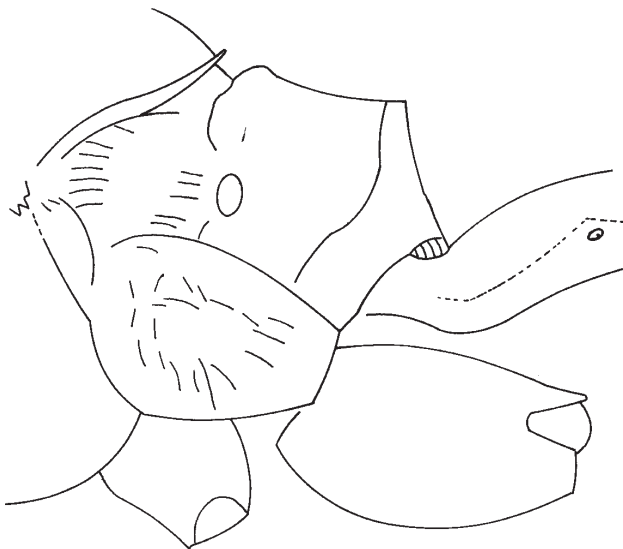


Figure 20. *Tryphon (Tryphon) atriceps* Stephens: Propodeum.

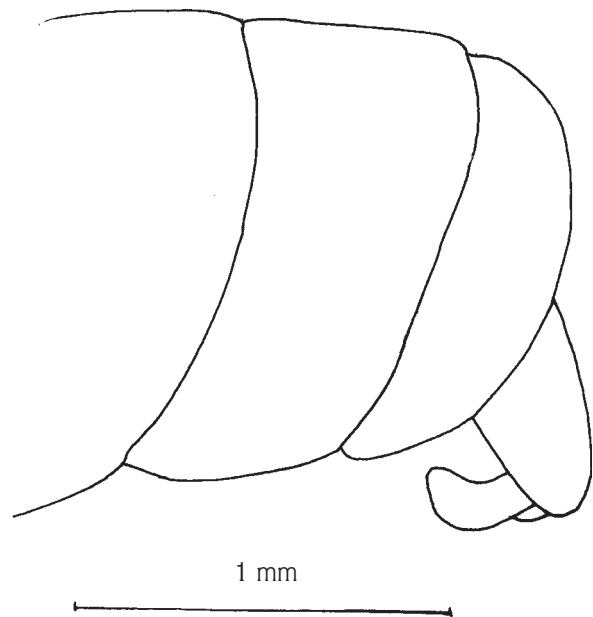


Figure 21. *Tryphon (Tryphon) atriceps* Stephens: Aedeagus.

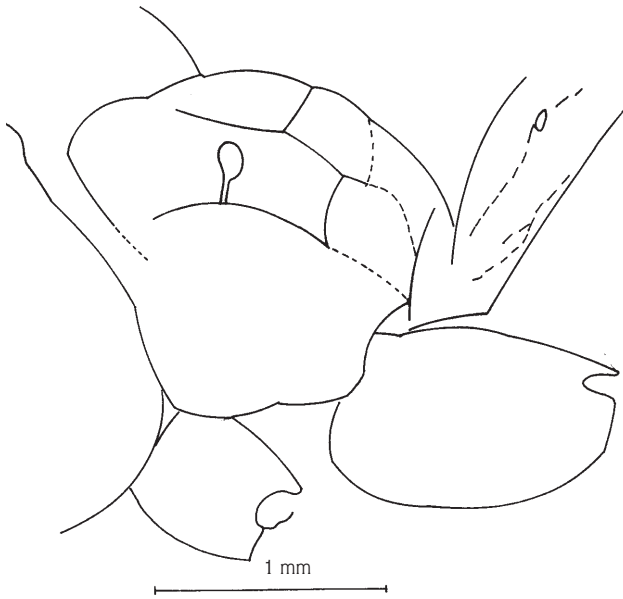


Figure 22. *Tryphon (Tryphon) trochanteratus* Holmgren: Propodeum.

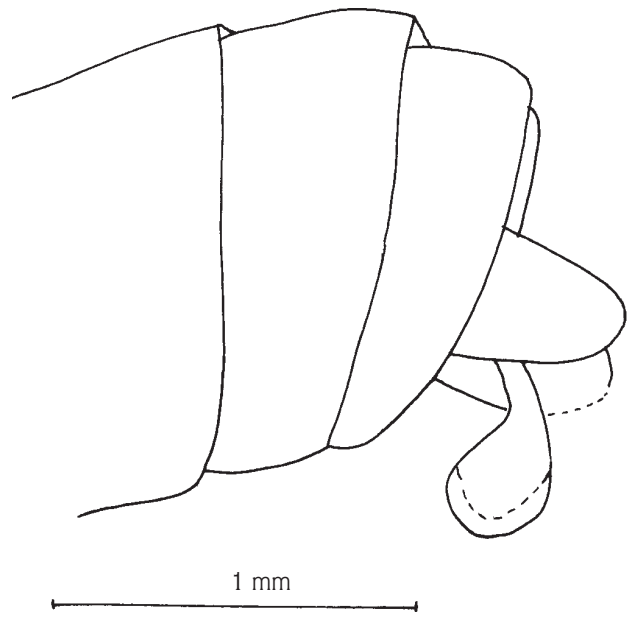


Figure 23. *Tryphon (Tryphon) signator* Gravenhorst: Aedeagus.

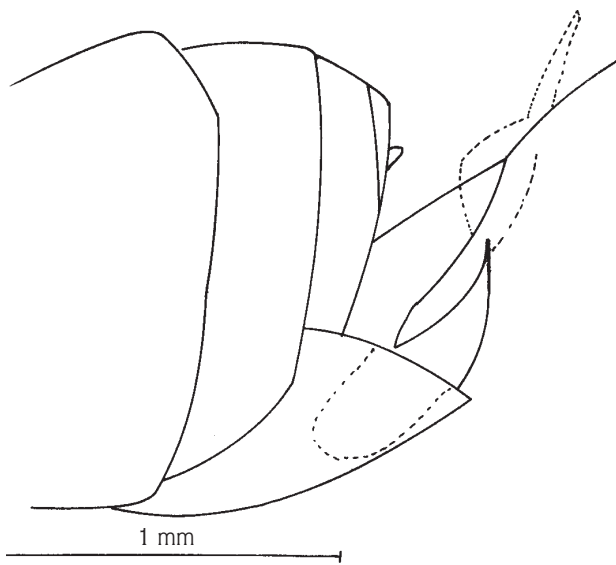


Figure 24. *Tryphon (Tryphon) thomsoni* Roman: Ovipositor and sheath.

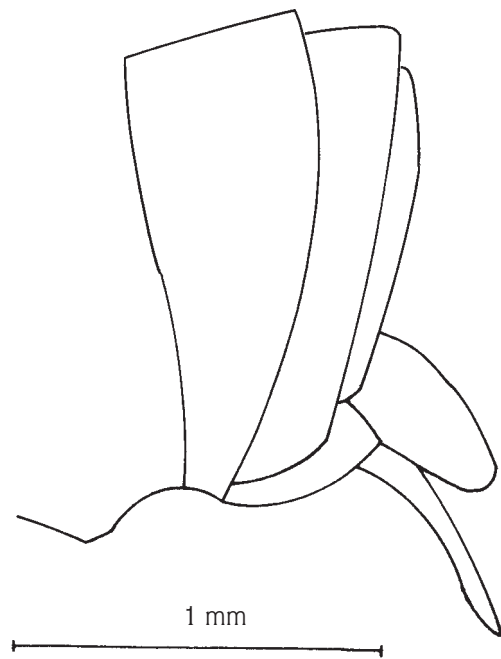


Figure 25. *Tryphon (Tryphon) signator* Gravenhorst: Ovipositor and sheath.

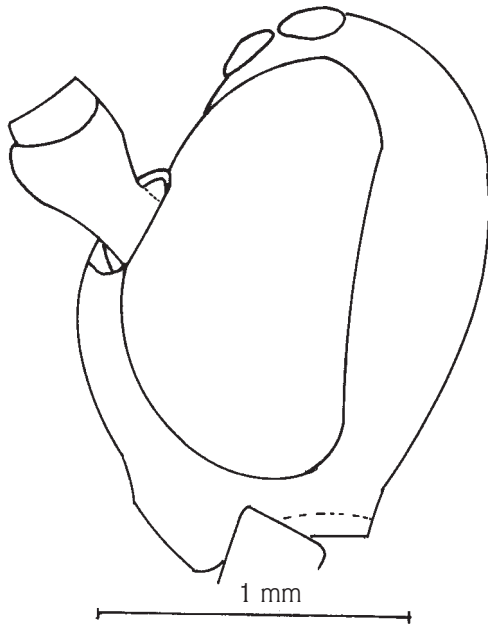


Figure 26. *Tryphon (Tryphon) signator* Gravenhorst: Occipital carina.

*Tryphon (Tryphon) atriceps* Stephens, 1835

*Tryphon atriceps* Stephens, 1835. Ill. Of Brit. Ent., Mandibulata, 7: 262.

*Tryphon (Tryphon) atriceps*: Kasparyan, 1981. Opredeliteli Faune SSSR, 129:166-175

Material examined: 2 ♂♂

Kırklareli-İnce (01.06.1993, 150 m, 2 ♂♂, pasture and pine forest)

General distribution: England (27), Iran, Italy (28), Russia (12), Sweden, (28), middle and south of West Europe (12).

Distribution in Turkey: Erzurum-University field (11)

New record for the fauna of Thrace.

*Tryphon (Tryphon) rutilator* (Linnaeus, 1761)

*Ichneumon rutilator* Linnaeus, 1761. Fauna Suec. Ed. 2a: 403.

*Tryphon rutilator* Gravenhorst, 1829. Ichneumon. Europ., 1: 692.

*Tryphon (Tryphon) rutilator*: Townes et al., 1949. Ann. Ent. Soc. Amer., 42: 433.

Material examined: 2 ♀♀, 1 ♂

Edirne-Havsa-Söğütlüdere (30.05.1993, 100 m, 1 ♀, pasture); Kırklareli-Dereköy-Çağalayık (05.06.1993, 620 m, 1 ♂, oak forest and meadow); -Vize (22.06.1993, 150 m, 1 ♀, poplar woodland and pasture).

General distribution: Azerbaijan, Armenia (14), Bulgaria (7), Caucasus (14), England (27), Estonia, Finland, Georgia (14), Greece (7), North Iran (14), Italy (28), Latvia, Lithuania, Middle Europe, Moldavia, Russia (14), Sweden (27), Turkey (4), Ukraine, Yugoslavia (14).

Distribution in Turkey: Balıkesir-Manyas-Kuş Cenneti, Edirne-Hadımağa (9), Erzurum-Çat-Çimiş, Ilıca-Atlıkonak, Köşk, Palandöken, Şenkaya-Turnalı, Tortum-Şenyurt, University field (11), İstanbul-Polenez farm (4).

*Tryphon (Tryphon) signator* Gravenhorst, 1829

*Tryphon signator* Gravenhorst, 1829, Ichneum. Europ., 2: 301.

*Tryphon (Tryphon) signator*: Townes et al., 1949. Ann. Ent. Soc. Amer., 42: 433.

Material examined: 1 ♀, 6 ♂♂

Edirne-Havsa-Çukurköy (16.04.1994, 65 m, 3 ♂♂, poplar woodland and pasture); -Meriç-Hasirciarnavut (13.05.1994, 105 m, 1 ♀, pasture); Kırklareli-Babaeski-Alpullu (19.04.1994, 40 m, 2 ♂♂, meadow); -İnce (19.04.1994, 150 m, 1 ♂, pasture and pine forest).

General distribution: Belarus, Caucasus (14), England (27), Italy (28), Lithuania, Middle Europe, Moldavia, North Europe, Russia, Spain (14), Turkey (7), Ukraine (14), West Europe (12).

Distribution in Turkey: Edirne-Hadımağa, İçel-Namrun (9), Erzurum-Şenkaya-Turnalı (11), İstanbul (7).

*Tryphon (Tryphon) thomsoni* Roman, 1939

*Tryphon thomsoni* Roman, 1939. Ent. Tidskr., 60: 203.

*Tryphon (Tryphon) thomsoni*: Kasparyan, 1969, Ent. Rev. 48(3): 407-419.

Syn.: *Tryphon (Otitachilus) vulgaris* Woldstedt, 1877.

Material examined: 1 ♀

Kırklareli-Kofçaz-Aşağıkanarya (05.06.1993, 450 m, 1 ♀, oak forest and meadow).

General distribution: Bulgaria, Caucasus (7), England (27), Italy, Middle Asia, Middle and North Europe (28), Russia (12), Spain (28), Tadzhikistan (7), Turkey (9), West Europe (12).

Distribution in Turkey: Erzurum-Oltu-Çamlıbel, Şenkaya-Turnalı, Uzundere-Şelale (11), Kahramanmaraş-Ahırdağı, Kırklareli-Kastro (9).

*Tryphon (Tryphon) trochanteratus* Holmgren, 1855

*Tryphon trochanteratus* Holmgren, 1855. Svensk. Vet. Akad. Handl., N.F., 1: 187.

*Tryphon (Tryphon) trochanteratus*: Townes et al., 1949. Ann. Ent. Soc. Amer., 45: 433.

Material examined: 1 ♂

Edirne-Meriç-Hasırcıarnavut (13.05.1994, 105 m, 1 ♂, pasture).

General distribution: Belarus (14), England (27), Georgia (14), Grozia (7), Kazakhstan, Latvia, Lithuania, Middle Europe, North Europe, Russia (14), Turkey (4), Ukraine (14).

Distribution in Turkey: İstanbul (7), -Polenez farm (4).

*Tryphon (Tryphon) zavreli* Gregor, 1939

*Tryphon zavreli*, Gregor, 1939. Fol. Ent. 2: 21-23.

*Tryphon (Tryphon) zavreli*: Kasparyan, 1973, Amer. Publishing Co Ltd., 441.

Syn.: *Tryphon spatiator*, Kasparyan, 1969.

Material examined: 2 ♂♂

Edirne-Hadımağa (03.06.1992, 50 m, 1 ♂, orchard); -Uzunköprü-Çöpköy (15.05.1994, 60 m, 1 ♂, pasture and poplar woodland).

General distribution: Armenia, Azerbaijan, Caucasus, Czechoslovakia, (14), Hungary (12), Kazakhstan (7), Moldavia (14), Russia (12), Slovakia (14), Turkey (7), Ukraine (14).

Distribution in Turkey: Ankara (7), Edirne-Hadımağa, Hacıumur (9).

Genus: *Dyspetes* Foerster, 1868

*Dyspetes arrogator* Heinrich, 1949

*Dyspetes arrogator* Heinrich, 1949. Mitt. Münch. Ent. Ges., 35-39:107.

Syn.: *Tryphon praerogator* Gravenhorst, 1829.

Material examined: 1 ♀

Kırklareli-Demirköy-İğneada (04.06.1993, 90 m, 1 ♀, Longoz forest).

General distribution: Armenia, Belarus, China (14), Denmark, Finland (29), Italy (28), Russia, Spain, Sweden (14), West Europe (12).

New record for the fauna of Turkey.

Genus: *Ctenochira* Förster, 1885

*Ctenochira angulata* (Thomson, 1883)

*Polyblastus (Scopiorus) angulatus* Thomson, 1883. Opusc. Entomol. 32 (9):873-936.

*Ctenochira angulata*: Jussila, 1962: Kevo notes 7:83-99.

Material examined: 1 ♀

Belgrad Forest of İstanbul- Bilezikçi Farm (24.06.1993, 25 m, 1 ♀, mixed forest).

General distribution: Bulgaria, Europe (26), Italy (28), Siberia (26)

New record for the fauna of Turkey.

Genus: *Monoblastus* Hartig, 1837

Key to species of *Monoblastus* Hartig, 1837

1(2). Frons with horn (Fig. 27); propodeum without median longitudinal carina and without costula, with strong transversal carine; propodeum sharply declivous after transversal carina; clypeal fovea with abundant and large chaetae; tergites red.

*Monoblastus brachyacanthus* (Gmelin)

2(1). Frons without horn (Fig. 28); propodeum without median longitudinal carina and costula; propodeum not declivous at posterior; clypeal fovea without abundant chaetae; tergites dark.

3(4). Face and clypeus yellow; first abdominal tergite short and with distinct anterolateral projections (Fig. 29). *M. luteomarginatus* (Gravenhorst)

4(3). Face and base of clypeus black; first abdominal tergite long and without anterolateral projections (Fig. 30). *M. marginellus* (Gravenhorst)

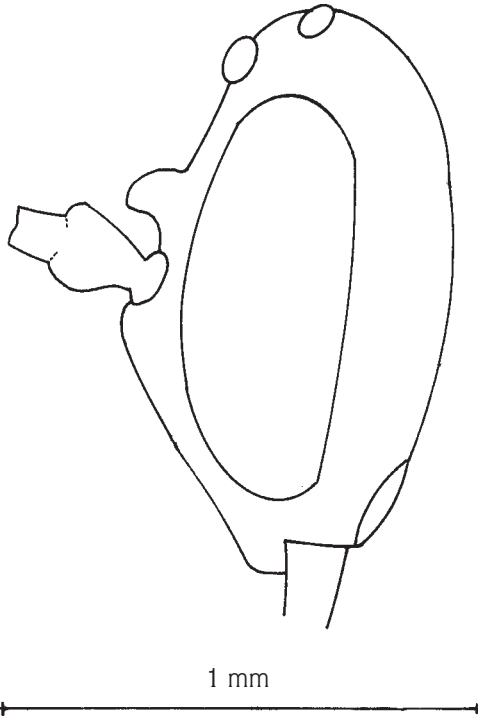


Figure 27. *Monoblastus brachyacanthus* (Gmelin): Frons.

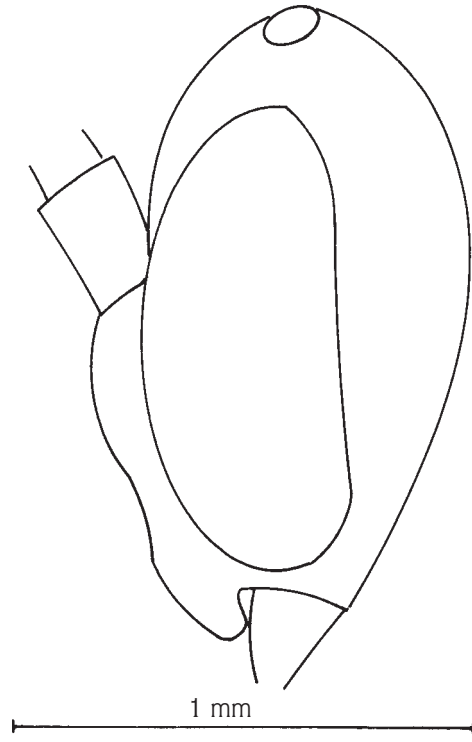


Figure 28. *Monoblastus luteomarginatus* (Gravenhorst): Frons.

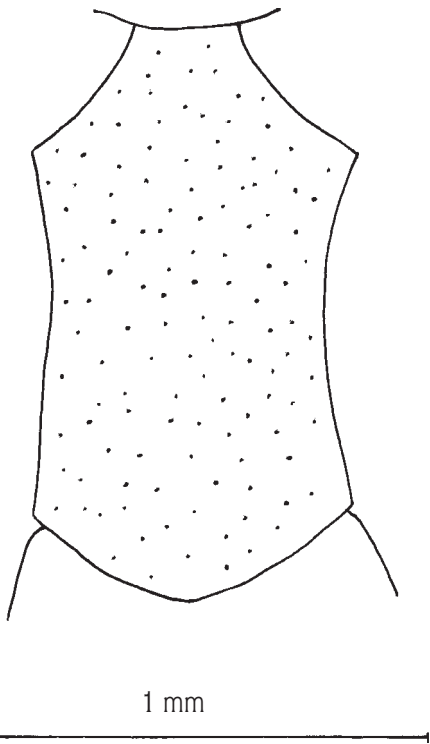


Figure 29. *Monoblastus luteomarginatus* (Gravenhorst): First tergite.

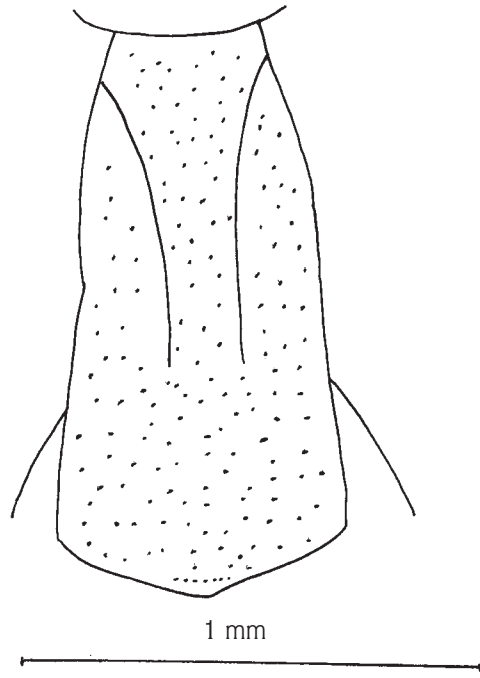


Figure 30. *Monoblastus marginellus* (Gravenhorst): First tergite.

*Monoblastus brachyacanthus* (Gmelin, 1790)

*Ichneumon brachyacanthus* Gmelin, 1790. Caroli a Linne Systema Nature (ed. XIII) Lipsiae, 1, Pars V: 2705.

*Monoblastus brachyacanthus*: Townes et al., 1949. Ann. Ent. Soc. Amer., 42: 397.

Material examined: 3 ♀♀, 3 ♂♂

Edirne-Lalapaşa-Hamzabeyli (26.05.1993, 400 m, 2 ♂♂, oak forest and meadow), Kırklareli-Babaeski-Alpullu (19.04.1994, 40 m, 1 ♂, meadow); -Dereköy-Çağalayık (05.06.1993, 620 m, 1 ♀, oak forest and meadow); -Kofçaz-Aşağıkanarya (05.06.1993, 450 m, 2 ♀♀, oak forest and meadow).

General distribution: Caucasus, China, East Kazakhstan (14), Italy (28), Middle Europe (14), North Africa (12), Russia, South Europe (14), Turkey (9), West Europe (12).

Distribution in Turkey: Erzurum-Abdurrahmangazi, Tekirdağ-Malkara (9).

*Monoblastus luteomarginatus* (Gravenhorst, 1829)

*Tryphon luteomarginatus* Gravenhorst, 1829. Ichneum. Europ., Vratislaviae 2: 146.

*Monoblastus luteomarginatus*: Townes et al., 1949. Ann. Ent. Soc. Amer., 42: 397.

Material examined: 1 ♀, 1 ♂

Kırklareli-Demirköy-İğneada-Sislioba (03.06.1993, 50 m, 1 ♂, mixed forest); -Dereköy-Çağalayık (05.06.1993, 620 m, 1 ♀, oak forest).

General distribution: Caucasus (14), Japan (12), Middle Europe, Russia, South Europe (14), Turkey (9).

Distribution in Turkey: Balıkesir-Manyas-Kuş Cenneti (9).

New record for the fauna of Thrace.

*Monoblastus marginellus* (Gravenhorst, 1829)

*Lissonata marginella* Gravenhorst, 1829. Ichneum. Europ., Vratislaviae, 3: 41.

*Monoblastus marginellus*: Townes et al., 1965. Polskie Pismo Ent. 35: 411.

Material examined: 1 ♀

Kırklareli-Demirköy-Karacadağ (03.06.1993, 330 m, 1 ♀, oak forest).

General distribution: Finland, Middle Europe, Russia, South Europe (12), Turkey (9).

Distribution in Turkey: Kırklareli-Bedre (9).

Genus: *Polyblastus* Hartig, 1837

*Polyblastus (Labroctonus) alternans* Schiodte, 1838

*Polyblastus alternans* Schiodte, 1839. Rev. Zool. Soc. Cuvierienne, 1: 140.

*Polyblastus (Labroctonus) alternans*: Kasparyan, 1970, Ent. Rev. 519-528.

Syn.: *Polyblastus (Nemioblastus) albicoxa* Roman, 1939. Ent. Tidskr., 60: 198.

Material examined: 2 ♀♀

Kırklareli-Demirköy-Karacadağ (03.06.1993, 330 m, 1 ♀, oak forest); -Pınarhisar-Yenice (02.06.1993, 750 m, 1 ♀, oak forest).

General distribution: Armenia, Middle Europe, Russia, South Europe (14), West Europe (30).

Distribution in Turkey: Çanakkale-Kazdağı (10).

New record for the fauna of Thrace.

#### Tribe: EXENTERINI

##### Key to genera of Exenterini Tribe

1(2). Subtegular ridge specialized, with a longitudinal slot projects toward lower edge of tegula; first tergite with a basolateral angulation.

*Exyston* Schiodte

2(1). Subtegular ridge not specialized, without a longitudinal slot; first tergite with or without a basolateral angulation.

3(4). Apex of hind tibia, as seen from the hind side, approximately truncate that is lower corner is approximately a right angle. *Kristotomus* Mason

4(3). Apex of hind tibia, as seen from the hind side, rounded ventrally that is lower corner is not angulate. *Acrotomus* Holmgren



Genus: *Exyston* Schiodte, 1839

*Exyston sponsorius* (Fabricius, 1781)

*Ichneumon sponsorius* Fabricius, 1781. Hamburgi et Kilonii, 1781. 1: 1- 552.

*Exyston sponsorius*: Woldstedt, 1881. Horae Soc. Entomol. Ross. 1881. 16: 58- 64.

Material examined: 1 ♀, 5 ♂♂

Edirne-Budakdoğanca (15.04.1994, 130 m, 4 ♂♂, oak forest and pasture); -Büyükismailçe (15.04.1994, 150 m, 1 ♂, oak forest and pasture); -Sarayıçı-Tavuk Ormanı (22.05.1993, 40 m, 1 ♀, mixed forest).

General distribution: Armenia, Azerbaijan, Georgia (16), Italy (28), Kazakhstan, Kirghizia, Moldavia (16), Mongolia, Russia, West Europe (12).

New record for the fauna of Turkey.

Genus: *Acrotomus* Holmgren, 1855

Key to species of *Acrotomus* Holmgren, 1855

1(2). Scape short, about 1.4 times longer than its width from lateral view; first tergite with distinct basolateral projections (Fig. 31); tergites brownish red. *Acrotomus lucidulus* (Gravenhorst)

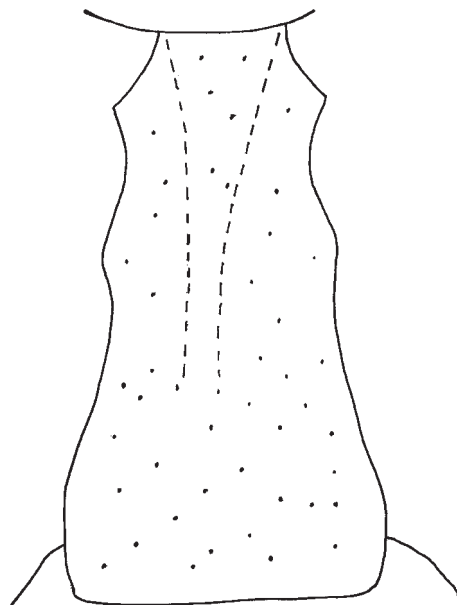


Figure 31. *Acrotomus lucidulus* (Gravenhorst): First tergite.

2(1). Scape longer, about 1.8 times longer than its width from lateral view; first tergite without distinct basolateral projections (Fig. 32); tergites black. *A. succinctus* (Gravenhorst)

*Acrotomus lucidulus* (Gravenhorst, 1829)

*Tryphon lucidulus* Gravenhorst, 1829. Ichneum. Europ. Vratislaviae., 2: 162.

*Acrotomus lucidulus*: Holmgren, 1855. Svensk. Vet. Akad. Handl., N.F. Bd. t., 1:222.

Material examined: 1 ♀

Edirne-Lalapaşa-Doğanköy (04.06.1992, 370 m, 1 ♀, oak forest and pasture).

General distribution: Armenia, Azerbaijan (16), Belgium (5), Caucasus (7), Czechoslovakia, England, Finland, France (5), Georgia (16), Germany (5), Greece (7), Japan (31), Italy, Kazakhstan, Kirghizia, Moldavia (16), Mongolia (12), Netherlands, Norway (5), Russia (12), Sweden, Switzerland, Spain (5), Uzbekistan (7), West Europe (12).

New record for the fauna of Turkey.

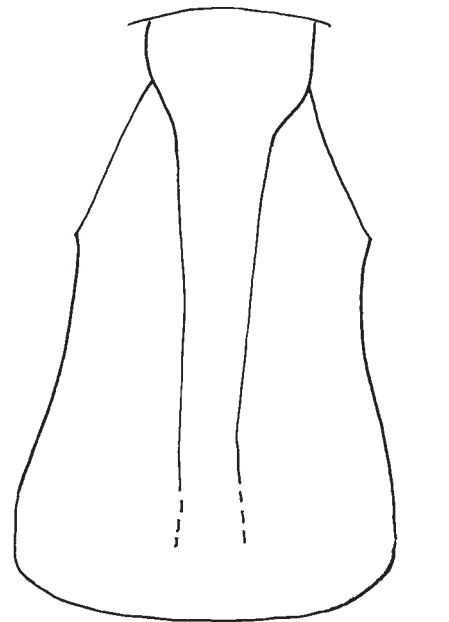


Figure 32. *Acrotomus succinctus* (Gravenhorst): First tergite.

*Acrotomus succinctus* (Gravenhorst, 1829)

*Tryphon succinctus* Gravenhorst, 1829. Ichneum. Europ. Vratislaviae, 2: 166.

*Acrotomus succinctus*: Pfankuch, 1906. Ztschr. Syst. Hymen. Dipt. Jg. 6. 2: 94.

Material examined: 3 ♂

Edirne-Sarayıcı-Tavuk Ormanı (18.07.1994, 40 m, 1 ♂, mixed forest); İstanbul-Silivri-Küçüksinekli (03.10.1992, 170 m, 1 ♂, pasture); Tekirdağ-Muratlı-Müsellim (24.06.1993, 120 m, 1 ♂, oak forest and pasture).

General distribution: Azerbaijan, Georgia (16), India: Kashmir, Jordan (31), Italy, Kazakhstan, Moldavia (16), Mongolia (12), North America (31), North and Middle Europe (28), Russia (12), Tadzhikistan (16), Turkey (9), Ukraine (16), West Europe (12).

Distribution in Turkey: Bilecik-Küplü, Çanakkale-Kazdağı (10), Edirne-Lalapaşa (9), Erzurum-Oltu-Başaklı (11), Tekirdağ-Işıklar (9).

Genus: *Kristotomus* Mason (1962)

*Kristotomus laetus* (Gravenhorst, 1829)

*Mesolephus laetus* Gravenhorst, 1829. Ichneumonologia Europae, 2:50.

*Kristotomus laetus*: Mason, 1962. Canadian Ent., 94: 1274.

Syn.: *Tryphon cephalotes* Gravenhorst, 1829.

Material examined: 2 ♀♀

Edirne-Budakdoğanca (30.05.1993, 130 m, 1 ♀, oak forest and pasture); Kırklareli-Üsküp-Çukurpınar (04.06.1993, 500 m, 1 ♀, oak forest and meadow).

General distribution: Armenia (16), Bulgaria (7), Caucasus (16), Denmark, France, Germany (17), Georgia (16), Greece (7), Italy (28), Lithuania (16), Mongolia (12), North and Middle Europe (28), Russia (12), Sweden (16), Turkey (9), West Europe (12).

Distribution in Turkey: Adana-Osmaniye-Zorkun Yaylası (9), Bayburt (11).

New record for the fauna of Thrace.

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