

**Original article (Orijinal araştırma)**

**A checklist of the Erythraeoidea and Trombidoidea (Actinotrichida: Prostigmata) of Turkey**

Türkiye'nin Erythraeoidea ve Trombidoidea (Actinotrichida: Prostigmata) türlerinin listesi

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**Abstract**

The present checklist provides the results of a survey of collected and identified erythraeoid and trombidioid mites in Turkey including 66 species belonging to 29 genera, 14 subfamilies, 6 families and 2 superfamilies. 14 (61%) of 23 species of Erythraeoidea and 11 (26%) of 43 species of Trombidoidea have been recorded from Turkey only. This reflects the hitherto knowledge of terrestrial parasitengone biodiversity of Turkey. Also this is the most comprehensive study that combines published academic literature about these two groups from Turkey.

**Keywords:** Acari, distribution, family, Parasitengona, velvet mites

**Öz**

Mevcut kontrol listesi Türkiye'den toplanmış ve tanımlanmış erythraeoid ve trombidioid akarların iki üstfamilya, 6 familya, 14 altfamilya, 29 cinse ait 66 türünün araştırma sonuçlarını içermektedir. Erythraeoidea'nın 23 türünün 14'ü (% 61) ve Trombidoidea'nın 43 türünün 11'i (% 25) sadece Türkiye'den kaydedilmiştir. Bu, şimdiye kadar Türkiye'nin karasal parasitengonu biyoçeşitliliği bilgisini yansıtmaktadır. Ayrıca bu çalışma, Türkiye'den bu iki grup hakkında yayınlanmış akademik literatürü birleştiren en kapsamlı çalışmadır.

**Anahtar sözcükler:** Acari, dağılım, familya, Parasitengona, kadife akarları

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## Introduction

The Parasitengona (Acari: Prostigmata) constitute one of the most diverse taxa among the Acari with respect to species richness and inhabited biotopes as well as realised life styles (Wohltmann et al., 2006). Mąkol & Wohltmann, (2012) gave the first World Checklist of Terrestrial Parasitengona excluding Trombiculidae and Walchiidae. In the following year, these authors updated the number of specific level taxa with corrections and additions (Mąkol & Wohltmann, 2013). From a total of 1828 species, it was reported that 808 are known only from larvae, 889 from active postlarval forms and 131 from both. Since 2013, 35 species have been described, of which 29 are known only from larvae, 2 from active postlarval forms and 4 from both (Sevsay & Karakurt, 2013a, b; Adil & Sevsay, 2014a, b; Mahmoudi et al., 2014; Mąkol & Sevsay, 2014; Mąkol et al., 2014; Konikiewicz & Mąkol, 2014; Kamran & Alatawi, 2014, 2016; Adil et al., 2015 a, b, c, d; Karakurt & Sevsay, 2015; Sevsay & Adil, 2015; Karakurt et al., 2016; Mayoral & Seeman, 2015; Masoumi et al., 2016; Noei et al., 2014; Noei et al., 2015 a, b, c; Noei et al., 2017; Haitlinger et al., 2014; Haitlinger & Šundić, 2014; Haitlinger & Šundić, 2015 a, b, c, d; Šundić & Haitlinger, 2015 a, b; Haitlinger et al, 2016; Konikiewicz et al., 2016; Liu & Zhang, 2016; Yazdanpanah et al., 2016; Mayoral & Barranco, 2017; Saboori et al., 2017).

There are many checklist studies from Turkey but only Erman et al., (2007) mentioned about erythraeoid and trombidioid mites (18 species were given). Two species, *Charletonia krendowskyi* and *Balaustium madeirense*, could not be verified based on literature (Erman et al., 2007; Haitlinger, 2010) and are excluded from this study.

Due to the geographical location of Turkey, at the crossroads of two continents, there is a great variability in topography and climate, which provides a diverse range of ecosystems (Erman et al., 2007). The erythraeoid and trombidioid mites fauna of Turkey are still rather poorly known. Erythraeoidea comprises 69 genera but only 9 genera were reported from Turkey. Also, Trombidoidea comprises 225 genera but only 19 genera were reported from Turkey. Some research groups have been continuing to gather the knowledge about the diversity of these taxa in Turkey since 2000. It is hoped that this diversity will increase in Turkey with further studies.

The aim of this study is to provide data on erythraeoid and trombidioid fauna, habitat and their current geographic distribution in Turkey.

## Material and Methods

The present checklist is based on published literature records. The author checked all available papers including new taxa collected from Turkey. Only the distribution of species within Turkey is provided. The species are listed alphabetically within the superfamilies, families and genera. Coordinates and altitude, especially in erythraeoid, are not given because they were not presented in the majority of species reported in Turkey. Habitat is given according to the literature. The classification has been done as proposed by Mąkol (2007). Species referred to in postgraduate theses are not considered herein since they are informal publications. (P=Postlarval forms, L=Larva forms).

**Taxonomy**

Subclass : Acari  
 Superorder : Actinotrichida  
 Order : Trombidiformes  
 Suborder : Prostigmata  
 Chort : Parasitengona

**Superfamily : Erythraeoidea Robineau-Desvoidy, 1828**

**Family : Erythraeidae Robineau-Desvoidy, 1828**

Subfamily : Abrolophinae Witte, 1995

Abrolophiinae Witte, 1995: 138.

Genus *Abrolophus* Berlese, 1891

*Abrolophus* Berlese, 1891: fasc. 59, No. 1. *Type species. Trombidium quisquiliarum* Hermann, 1804

1. *Abrolophus rudaensis* (Haitlinger, 1986) [L]

*Hauptmannia rudaensis* Haitlinger, 1986: 182.

*Rudaemannia rudaensis*: Haitlinger 2000: 386.

Distribution. Marmaris-Muğla (not İzmir), Selçuk-İzmir

Habitat. Not given.

2. *Abrolophus amilberti* (Haitlinger, 1986) [L]

*Hauptmannia amilberti* Haitlinger, 2010: 55.

*Abrolophus silesiacus*: Haitlinger & Łupicki, 2015: 569.

Distribution. Kemer (1050 m a.s.l) and Beldibi- Antalya.

Habitat. From herbaceous plants

3. *Abrolophus viburnicolus* (Fain & Çobanoğlu, 1998) [L]

*Hauptmannia viburnicola* Fain & Çobanoğlu, 1998: 67.

Distribution. Karagöl-Ankara.

Habitat. Found on *Viburnum lantana*

4. *Abrolophus viticolus* (Fain & Çobanoğlu, 1998) [L]

*Hauptmannia viticola* Fain & Çobanoğlu, 1998: 64.

Distribution. Bozcaada-Çanakkale.

Habitat. Found on *Vitis* sp.

Genus *Grandjeanella* Southcott, 1961

*Grandjeanella* Southcott, 1961: 539. *Type species. Hauptmannia westraliensis* Womersley, 1934

5. *Grandjeanella emanueli* Haitlinger, 2010 [L]

*Grandjeanella emanueli* Haitlinger, 2010: 56.

Distribution. Elmalı-Antalya.

Habitat. From herbaceous plants.

Genus *Marantelophus* Haitlinger, 2011

*Marantelophus* Haitlinger, 2011: 50. Type species. *Marantelophus alaperi* Haitlinger, 2011

6. *Marantelophus multisetosus* (Zhang & Goldarazena, 1996) [L]

*Grandjeanella multisetosa* Zhang & Goldarazena, 1996: 133.

*Grandjeanella multisetosa*: Goldarazena *et. al.* 2000: 79.

Distribution. The National Park of Termessos-Antalya.

Habitat. From different thrips species.

Subfamily Balaustiinae Grandjean, 1947

Balaustiinae Grandjean, 1947: 12

Genus *Bursaustium* Haitlinger, 2000

*Bursaustium* Haitlinger, 2000: 390.

7. *Bursaustium gaspari* Haitlinger, 2000 [L]

*Bursaustium gaspari* Haitlinger, 2000: 390.

Distribution. Bursa

Habitat. Forest.

Subfamily Callidosomatinae Southcott, 1957

Callidosominae [sic] Southcott, 1957: 97.

Genus *Charletonia* Oudemans, 1910

*Charletonia* Oudemans, 1910: 73. Type species. *Erythraeus singularis* Oudemans, 1910

8. *Charletonia cardinalis* (C. L. Koch, 1837) [P, L]

*Rhyncholophus cardinalis* C. L. Koch, 1837: fasc. 16, t. 10.

*Charletonia cardinalis*: Haitlinger 2000: 386 [L]

Distribution. Avanos-Nevşehir.

Habitat. Not given.

9. *Charletonia cilissa* (Cooreman, 1955) [P]

*Cavannea cilissa* Cooreman, 1955: 128.

*Charletonia cilissa*: Beron 2008: 156.

Distribution. Amanos-Hatay.

Habitat. Not given.

Subfamily Erythraeinae Robineau-Desvoidy, 1828

Erythraeinae Robineau-Desvoidy, 1828: 144.

Genus *Curteria* Southcott, 1961

*Curteria* Southcott, 1961: 488. Type species. *Morieria curticristata* Willmann, 1951

10. *Curteria duzgunesae* (Saboori, Çobanoğlu & Bayram, 2007) [L]

*Zhangiella duzgunesae* Saboori, Çobanoğlu & Bayram, 2007: 361.

*Curteria duzgunesae*: Saboori et al., 2007: 361.

Distribution. Camlidere village- Ankara

Habitat. Under bark of *Pinus nigra*.

Genus *Eatoniana* Cambridge, 1898

*Eatonia* Cambridge, 1897: 939. Type species. *Eatonia scopulifera* Cambridge, 1897

11. *Eatoniana plumipes* (L. Koch, 1856) [P, L]

*Rhyncholophus plumipes* L. Koch, 1856.

*Eatoniana plumipes*: Mağol & Sevsay 2015: 92.

Distribution. Dumlu- Erzurum.

Habitat. Collected directly from crevices and surface of a concrete-stone wall (40°03' 59"N, 41°22'04"E, 1821 m)

Genus *Erythraeus* Latreille, 1806

*Erythraeus* Latreille, 1806: 146.

Subgenus *Erythraeus* Latreille, 1806. Type species. *Acarus phalangoides* de Geer, 1778

12. *Erythraeus (E.) adanaensis* Saboori & Çobanoğlu, 2010 [L]

*Erythraeus (E.) adanaensis* Saboori & Çobanoğlu, 2010: 250.

Distribution. Adana.

Habitat. Ectoparasitic on unknown host from citrus orchards.

13. *Erythraeus (E.) ankaraicus* Saboori, Çobanoğlu & Bayram, 2004 [L]

*Erythraeus (E.) ankaraicus* Saboori, Çobanoğlu & Bayram, 2004: 137.

*Erythraeus (E.) ankaraicus*: Bayram & Çobanoğlu 2005: 166.

Distribution. Ankara.

Habitat. Ectoparasitic on *Hyalopterus pruni* (Geoffroy)

14. *Erythraeus (E.) elmalicus* Haitlinger, 2010 [L]

*Erythraeus (E.) elmalicus* Haitlinger, 2010: 53.

Distribution. Elmali- Antalya.

Habitat. From herbaceous plants.

15. *Erythraeus (E.) hilariae* Haitlinger, 2010 [L]

*Erythraeus (E.) hilariae* Haitlinger, 2010: 50.

Distribution. Elmali-Antalya.

Habitat. From herbaceous plants.

16. *Erythraeus (E.) kresnensis* Beron, 1982 [L]  
*Erythraeus kresnensis* Beron, 1982: 47.  
*Erythraeus (E.) kresnensis*: Haitlinger, 2000: 384.  
Distribution. Çavuşin-Avanos-Nevşehir.  
Habitat. Not given.
17. *Erythraeus (E.) sifi* Haitlinger, 2000 [L]  
*Erythraeus (E.) sifi* Haitlinger, 2000: 382.  
Distribution. Çavuşin-Avanos-Nevşehir.  
Habitat. Not given.  
Subgenus *Zaracarus* Southcott, 1995. Type species. *Erythraeus (Z.) lancifer* Southcott, 1995
18. *Erythraeus (Z.) aydinicus* Saboori, Çakmak & Nouri-Gonbalani, 2004 [L].  
*Erythraeus (Z.) aydinicus* Saboori, Çakmak & Nouri-Gonbalani, 2004: 131.  
Distribution. Aydın.  
Habitat. Ectoparasitic on *Empoasca* sp. (Homoptera: Cicadellidae)
19. *Erythraeus (Z.) budapestensis* Fain & Ripka, 1998 [L]  
*Erythraeus (Z.) budapestensis* Fain and Ripka, 1998: 44.  
*Erythraeus (Z.) budapestensis*: Haitlinger, 2010: 50.  
Distribution. Beldibi-KemerAntalya.  
Habitat. From herbaceous plants in forest.
20. *Erythraeus (Z.) didonae* Haitlinger, 2000 [L]  
*Erythraeus (Z.) didonae* Haitlinger, 2000: 383.  
Distribution. Bursa  
Habitat. Not given.
21. *Erythraeus (Z.) passidonicus* Haitlinger, 2006 [L]  
*Erythraeus (Z.) passidonicus* Haitlinger, 2006: 114.  
*Erythraeus (Z.) passidonicus*: Haitlinger, 2010: 50.  
Distribution. Kemer-Antalya.  
Habitat. From herbaceous plants.  
Subfamily Leptinae Billberg, 1820  
Leptinae Billberg, 1820: 126.  
Genus *Leptus* Latreille, 1796  
*Leptus* Latreille, 1796: 177  
Subgenus *Leptus* Latreille, 1796. Type species. *Acarus phalangii* de Geer, 1778

22. *Leptus (L.) rosellae* Haitlinger, 1999 [L]*Leptus rosellae* Haitlinger, 1999: 63.

Distribution. Kuşadası, İzmir

Habitat. Undetermined Acridiidae (Orthoptera)

Subfamily Phanolophinae Southcott, 1946

Phanolophinae Southcott, 1946: 173.

Genus *Nagoricanella* Haitlinger, 2009*Nagoricanella* Haitlinger, 2009: 40. Type species. *Nagoricanella egoni* Haitlinger, 2009.23. *Nagoricanella bella* (Zhang, 1996) [L]*Grandjeanella bella* Zhang, 1996, in: Zhang , Goldarazena 1996: 138.*Grandjeanella bella* Saboori & Çobanoğlu, 2010: 249.

Distribution. Balıkesir.

Habitat. From olive tree orchards, as ectoparasite of *Parlatoria oleae* (Hemiptera: Diaspididae).**Superfamily Trombidoidea Leach, 1815****Family Johnstonianidae Thor, 1935**

Subfamily Johnstonianinae Thor, 1935

Johnstonianinae Thor, 1935: 387.

Genus *Johnstoniana* George, 1909*Johnstoniana* George, 190: 281. Type species. *Rhyncholophus errans* Johnston, 18521. *Johnstoniana eximia* (Berlese, 1910) [P, L]*Diplothrombium eximium* Berlese, 1910: 357.*Johnstoniana eximia*: Doğan et al., 2015: 576 [P]

Distribution. Ekşisu sazlığı-Erzincan (39°43'53.4"N, 39°37' 02.8"E, 1150 m).

Habitat. From meadow on lowland bog.

2. *Johnstoniana hakani* Sevsay & Özkan, 2005a [P]*Johnstoniana hakani*: Sevsay & Özkan, 2005a: 189.

Distribution. Oltu- Erzurum.

Habitat. From wet meadow.

3. *Johnstoniana parva* Wendt, Wohltmann, Eggers & Otto, 1994 [P, L]*Johnstoniana parva* Wendt, Wohltmann, Eggers & Otto, 1994: 49.*Johnstoniana parva*: Adil et al., 2017: 1 [P]

Distribution. Tirebolu- Giresun (40°56'35"N, 38°51'13"E, 100 m), Kürtün (Örümcek forests)-Gümüşhane (40°41'02"N, 39°03'15"E, 811 m).

Habitat. Moist and mossy soil, grassy moss.

4. *Johnstoniana rapax* Wendt & Eggers, 1994 [P, L]

*Johnstoniana rapax* Wendt & Eggers, 1994: 113.

*Johnstoniana rapax*: Adil et al., 2015a: 372 [P]

Distribution. Doğankent (40°43'28"N, 39°02'40"E, 730 m) and Tirebolu (40°56'35"N, 38°51'13"E, 100 m)- Giresun.

Habitat. The mossy soil and litter layer close to a stream.

**Family Microtrombidiidae Thor, 1935**

Subfamily Eutrombidiinae Thor, 1935

Eutrombidiinae Thor, 1935: 108.

Genus *Eutrombidium* Verdun, 1909

*Eutrombidium* Verdun, 1909: 245. Type species. *Trombidium trigonum* Hermann, 1804

5. *Eutrombidium locustarum* (Walsh, 1866) [P, L]

*Astoma locustarum* Walsh, 1866: 126.

*Eutrombidium locustarum*: Adil & Sevsay, 2013: 6 [P, L]

Distribution. Ergan mountain (39°36'22"N, 39°28'55"E, 2065 m)- Erzincan.

Habitat. Grassy moss at the edge of the creek and mossy soil.

6. *Eutrombidium robauxi* Southcott, 1993 [L]

*Eutrombidium robauxi* Southcott, 1993: 935.

Distribution. Karabağ- Ankara.

Habitat. Ectoparasitic on *Oedaleus decorus* (Acrididae).

7. *Eutrombidium trigonum* (Hermann, 1804) [P, L]

*Trombidium trigonum* Hermann, 1804: 26.

*Trombidium trigonum*: Sevsay & Karakurt, 2013a: 145 [P, L]

Distribution. Ahmetli (39°52'54"N, 39°20'31"E, 2048 m)-Erzincan.

Habitat. Water edge moss and grassy soil samples.

Subfamily Microtrombidiinae Thor, 1935

Microtrombidiinae Thor, 1935: 110.

Genus *Atractothrombium* Feider, 1952

*Atractothrombium* Feider, 1952: 609. Type species. *Microtrombidium (Enemothrombium) fusicomum* Berlese, 1910

8. *Atractothrombium brevisetosum* Karakurt & Sevsay, 2015 [P, L]

*Atractothrombium brevisetosum*: Karakurt & Sevsay, 2015: 650.

Distribution. Kop gateway (40°02'16"N, 40°30'48"E, 2417 m) - Bayburt.

Habitat. Humid meadow, close to a stream.



9. *Atractothrombium sylvaticum* (C. L. Koch, 1835) [P, L]

*Trombidium sylvaticum* C. L. Koch, 1835: 129.

*Atractothrombium sylvaticum*: Adil & Sevsay, 2014a: 666 [P, L]

*Atractothrombium sylvaticum*: Adil et al., 2015b: 37 [P]

Distribution. Ergan Mountain (39°36'42"N, 39°28'53"E, 2060 m) – Erzincan, Harşit valley (40°56'35" N, 38°51'13" E, 100 m) –Gümüşhane.

Habitat. Moist grassy-mossy soil and soil and litter under hazelnut tree.

Genus *Camerotrombidium* Thor, 1936

*Camerotrombidium* Thor, 1936: 31. Type species. *Trombidium pexatum* C. L. Koch, 1837

10. *Camerotrombidium rasum* Berlese, 1910 [P, L]

*Camerotrombidium rasum* Berlese, 1910: 360.

*Camerotrombidium rasum*: Karakurt & Sevsay, 2016a:112 [P, L]

Distribution. Bayburt (40°09'10"N, 39°52'04"E, 1676 m).

Habitat. The soil surface in humid meadow.

Genus *Dactylothrombium* Feider, 1952

*Dactylothrombium* Feider, 1952: 614. Type species. *Microtrombidium pulcherrimum* Haller, 1882

11. *Dactylothrombium pulcherrimum* (Haller, 1882) [P, L]

*Microtrombidium pulcherrimum* Haller, 1882: 322

*Dactylothrombium pulcherrimum*: Adil et al., 2016: 445 [P]

Distribution. Vauk gateway (40°43'12"N, 34°19'18"E, 1510 m)- Gümüşhane.

Habitat. Forest litter layer; under *Quercus* and *Fagus* trees.

Genus *Empitrombium* Southcott, 1994

*Empitrombium* Southcott, 1994: 16. Type species. *Atractothrombium dictyostracum* Vercammen-Grandjean and Cochrane, 1974

12. *Empitrombium makolae* Sevsay & Karakurt, 2013b [P, L]

*Empitrombium makolae*: Sevsay & Karakurt, 2013b: 255, Doğan et al., 2015: 573, Adil et al., 2015c: 61.

Distribution. Köse Mountain (40°14'92"N, 38°39'84"E, 1700 m)- Bayburt, Ekşisu Marshes (39°43'53"N, 39°37'02"E, 1150 m)- Erzincan, Harşit valley (40°56'35"N 38°51'13"E, 100 m) -Gümüşhane.

Habitat. On a humid meadow with copse close to a stream, grassy soil and litter under nuts.

Genus *Gonothrombium* Feider, 1950

*Microtrombidium* (*Gonothrombium*) Feider, 1950: 220. Type species. *Microtrombidium* (*Gonothrombium*) *bimaculatum* Feider, 1950

13. *Gonothrombium oudemansianum* (Feider, 1948) [P, L]

*Microtrombidium* (*Enemothrombium*) *oudemansianum* Feider, 1948: 133.

*Gonothrombium oudemansianum*: Karakurt et al., 2016: 58

Distribution. Kop gateway (40°06'58"N, 40°25'19"E, 1906 m)- Bayburt, Ahmetli (39°52'54"N, 39°20'19"E, 2012 m) and Ekşisu marsh (39°42'46"N, 39°37'08"E, 1158 m)- Erzincan.

Habitat. Litter with copse and moist moss near pond,

14. *Gonothrombium ozkani* Karakurt, Sevsay & Buga, 2016 [P, L]

*Gonothrombium ozkani*: Karakurt, Sevsay & Buga, 2016: 52

Distribution. Kop Gateway (40°15'34"N, 39°57'32"E, 1620 m) and Demirözü (40°02'16" N, 40°30'48" E, 2417 m)– Bayburt.

Habitat. Moist moss, near the stream.

Genus *Milandanielia* Gabryś, 1999

*Milandanielia* Gabryś, 1999: 70. Type species. *Microthrombidium geographicum* var. *intermedium* Feider, 1950

15. *Milandanielia harsitensis* Adil & Sevsay, 2015 [P, L]

*Milandanielia harsitensis* Adil *et al.*, 2015d: 647.

Distribution. Harşit valley (40°46'45"N, 38°59'36"E, 1100 m)- Giresun.

Habitat. Litter under *Carpinus* sp.

Genus *Mirabilithrombium* Gabryś, 1999

*Mirabilithrombium* Gabryś, 1999: 79. Type species. *Georgia mirabilis* Willmann, 1950

16. *Mirabilithrombium turcicum* Sevsay & Adil, 2015 [P, L]

*Mirabilithrombium turcicum*: Sevsay & Adil, 2015: 285.

Distribution. Ergan Mountain-Erzincan (39°38'16"N, 39°31'31"E, 1328 m).

Habitat. Humid meadow.

Genus *Sucidothrombium* Feider, 1973

*Sucidothrombium* Feider, 1973: 681. Type species. *Rhyncholophus succidus* Koch, 1879

17. *Sucidothrombium succidum* (Koch, 1879) [P, L]

*Rhyncholophus succidus* L. Koch, 1879: 124.

*Sucidothrombium succidum*: Karakurt & Sevsay, 2016b: 143 [P]

Distribution. Altintepe Plateau (40°29'40"N, 40°06'02"E 2518 m)- Bayburt.

Habitat. Mossy rash.

Genus *Trichotrombidium* Kobulej, 1951

*Trichotrombidium* Kobulej, 1951: 83. Type species. *Trombidium muscarum* Riley, 1878

18. *Trichotrombidium rafieiae* Saboori, 2002 [L]

*Trichotrombidium rafieiae* Saboori, 2002: 547.

*Trichotrombidium rafieiae*: Karakurt & Sevsay, 2013: 739 [L]

Distribution. Çağlayan- Erzincan.

Habitat. Ectoparasitic on *Musca domestica* (Diptera, Muscidae)

Subfamily Valgothrombiinae Gabryś, 1999

Valgothrombiinae Gabryś, 1999: 23.

Genus *Enemothrombium* Berlese, 1904

*Microtrombidium* (*Enemothrombium*) Berlese, 1910: 358. Type species. *Trombidium bifoliosum* Canestrini, 1884

19. *Enemothrombium bifoliosum* (Canestrini, 1884) [P, L]

*Trombidium bifoliosum* Canestrini, 1884: 693

*Enemothrombium bifoliosum*: Buğa et al., 2016: 184 [P, L]

Distribution. Ahmetli (39°52'54"N, 39°20'31"E, 2048 m)- Erzincan, Kürtün (40°48'40"N, 39°03'45"E, 1587 m)- Gümüşhane, Tirebolu (40°56'21"N, 38°51'18"E, 41 m)-Giresun, Yakub Abdal Forest (40°03'09"N 39°43'15"E, 1900 m)- Bayburt.

Habitat. Litter from under the oak tree and moss and grassy soil.

#### **Family Neothrombidiidae**

Genus *Neothrombium* Oudemans, 1909

*Neothrombium* Oudemans, 1909: 17. Type species. *Allotrombidium neglectum* Bruyant, 1909: 645

20. *Neothrombium neglectum* (Bruyant, 1909) [P, L]

*Allotrombidium* [sic] *neglectum* Bruyant, 1909: 645.

*Neothrombium neglectum*: Doğan et al., 2015: 576 [P]

Distribution. Ekşisu Marsh (39°43'07"N, 39°36'44"E, 1150 m)-Erzincan.

Habitat. From litter with diverse humidity and vegetation.

#### **Family Podothrombiidae Thor, 1935**

Genus *Podothrombium* Berlese, 1910

*Podothrombium* Berlese, 1910: 354. Type species. *Trombidium filipes* C. L. Koch, 1837.

21. *Podothrombium filipes* (C. L. Koch, 1837) [P, L]

*Trombidium filipes* C. L. Koch, 1837: fasc. 15, t. 17 [after Oudemans 1937].

*Podothrombium proti* Haitlinger, 1999: 67 [L]. Synonymized by Mağol 2005: 214.

*Podothrombium filipes*: Adil & Sevsay, 2014: 287 [P, L]

Distribution. Bursa, Ergan mountain (39°34'34"N 39°30'17"E, 3134 m)- Erzincan.

Habitat. Grassy soil from the valley of snow water.

22. *Podothrombium macrocarpum* Berlese, 1910 [P, L]

*Podothrombium macrocarpum* Berlese, 1910: 356.

*Podothrombium macrocarpum*: Doğan et al., 2015: 576 [P]

Distribution. Ekşisu Marsh (39°43'11"N, 39°36'23"E, 1170 m)- Erzincan.

Habitat. From moss and sod under rock.

**Family Trombidiidae** Leach, 1815

Subfamily Allothrombiinae Thor, 1935

Allothrombiinae Thor, 1935: 111.

Genus *Allothrombium* Berlese, 1903

*Allothrombium* Berlese, 1903: 251. Type species. *Trombidium fuliginosum* Hermann, 1804,

23. *Allothrombium arambourgi* André, 1936 [P]

*Allothrombium arambourgi* André, 1936: 425.

*Allothrombium arambourgi*: Sevsay & Özkan, 2005b: 213.

Distribution. Aşkale- Erzurum, Erzincan

Habitat. Litter under *Astragalus* sp.

24. *Allothrombium bali* Sevsay & Özkan, 2005b [P]

*Allothrombium bali* Sevsay & Özkan, 2005b: 211.

Distribution. Sansa mountain pass- Erzincan.

Habitat. Litter under *Quercus* sp.

25. *Allothrombium delicatulum* Womersley, 1934 [P]

*Allothrombium delicatulum* Womersley, 1934: 210.

*Allothrombium delicatulum*: Sevsay & Özkan, 2005b: 211 [P]

Distribution. Erzurum.

Habitat. Soil under *Astragalus* sp. and moss on tree.

26. *Allothrombium erzurumicum* Sevsay & Özkan, 2005b [P]

*Allothrombium erzurumica* [sic] Sevsay & Özkan, 2005b: 217.

Distribution. Çat-Erzurum.

Habitat. Grassy soil.

27. *Allothrombium fuliginosum* (Hermann, 1804) [P, L]

*Trombidium fuliginosum* Hermann, 1804: 23.

*Allothrombium fuliginosum*: Haitlinger, 2000: 394, 2010: 59 [L]

*Allothrombium fuliginosum*: Doğan et al., 2015: 573 [P]

Distribution. Tekirova-Antalya, Ekşisu Marshes (39°43'44"N, 39°37'28"E, 1150m)-Erzincan, İstanbul.

Habitat. Larvae collected from herbaceous plants. Adults from moss soil.

28. *Allothrombium meridionale* Berlese, 1910 [P, L]

*Allothrombium meridionale* Berlese, 1910: 367.

*Allothrombium meridionale*: Sevsay & Özkan, 2005b: 213 [P].

Syn. *Allothrombium triticium* Haitlinger 2000: 394, 2010: 59 [L] (Larvae of *A. meridionale* with larvae of *A. triticium* synonymized by Wohltmann & Mağol, 2009)

*Allothrombium triticium*: Bayram & Çobanoğlu, 2005: 166 [L]

*Allothrombium triticium*: Bayram et al., 2008: 6 [L]

Distribution. Narman- Erzurum. Ankara, Marmaris-Muğla (Not İzmir), Kemer-Antalya

Habitat. Adults, rassy soil from meadow. Larvae, ectoparasitic on the larvae of *Adalia bipunctata* and on *Crateagus monogyna*

29. *Allothrombium pulvinum* Ewing, 1917 [P, L]

*Allothrombium pulvinus* Ewing, 1917: 157.

*Allothrombium pulvinum*: Çobanoğlu et al., 2003: 7 [L]

Distribution. Ankara.

Habitat. Collected on ornamental tree and shrub species

30. *Allothrombium vicinum* Andre, 1936 [P]

*Allothrombium vicinum* Andre, 1936: 426.

*Allothrombium vicinum*: Sevsay & Özkan, 2005b: 214 [P]

Distribution. Aşkale- Erzurum.

Habitat. Mixed rash under the trees.

31. *Allothrombium wolffi* Krausse, 1925 [P]

*Allothrombium wolffi* Krausse, 1925: 92.

*Allothrombium wolffi*: Sevsay & Özkan, 2005b: 213 [P].

Distribution. Otlukbeli-Erzincan.

Habitat. Moist rash near to the lake.

Subfamily Dolichothrombiinae Robaux, 1969

Dolichothrombiinae Robaux, 1969: 89.

Genus *Dolichothrombium* Feider, 1945

*Dolichothrombium* Feider, 1945: 673. Type species. *Thrombidium* [sic] *insidiosum* André, 1926,

32. *Dolichothrombium anatoliae* Mağol & Sevsay, 2011 [P, L]

*Dolichothrombium anatoliae* Mağol & Sevsay, 2011: 3.

*Dolichothrombium anatoliae*: Doğan et al., 2015: 574 [P]

Distribution. Çağlayan (39°35'11.57"N, 39°41'51.03"E, 1266 m) and Ekşisu Marshes (39°43'53.4"N, 39°37'02.8"E, 1150 m) -Erzincan.

Habitat. Humid meadow with copses, close to a stream

33. *Dolichothrombium insidiosum* (André, 1926) [P]

*Thrombidium* [sic] *insidiosum* André, 1926: 135.

*Dolichothrombium insidiosum*: Sevsay et al., 2015: 2 [P]

Distribution. Milas (37°16'48"N 27°33'93"E, 1.15 m) - Muğla.

Habitat. From pitfull trap.

34. *Dolichothrombium telletxae* (Goldarazena, Zhang and Jordana, 2000) [L]

*Trombidium telletxae* Goldarazena, Zhang & Jordana, 2000: 76.

Distribution. Antalya.

Habitat. Ectoparasitic on *Odontothrips* sp.

Subfamily Paratrombiinae Feider, 1959

Paratrombiinae Feider, 1959: 545.

Genus *Paratrombium* Bruyant, 1910

*Paratrombium* Bruyant, 1910: 350. Type species. *Paratrombium egregium* Bruyant, 1910

35. *Paratrombium insulare* (Berlese, 1910) [P, L]

*Trombidium insulare* Berlese, 1910: 364.

*Paratrombium insulare*: Sevsay et al., 2017: 737 [P, L]

Distribution. Aydıntepe Plateau (40°27'20"N, 40°06'50"E, alt. 2455 m) and, Demirözü vicinity (40°09'10"N, 39°52'04"E, 1676 m)-Bayburt, Ahmetli (39°52'53"N, 39°20'31"E, 1978 m)- Erzincan; Kovancık village (40°52'32"N, 38°51'30"E, 94 m)- Giresun; Örumcek Forest (40°41'07"N, 39°03'08"E, 780 m) and Kadirga plateau (40°42'28"N, 39°11'59"E, 1245 m), Araköy plateau (40°38'41"N, 39°08'52"E, 714 m), Örumcek Forest (40°41'07"N, 39°03'28"E, 1110 m)- Gümüşhane.

Habitat. Mossy soil, close to the pond Ahmediye; litter from under tea plants, hazelnut tree, *Abiyas* sp. and *Astragalus* sp.

36. *Paratrombium megalochirum* (Berlese, 1910) [P, L]

*Trombidium megalochirum* Berlese, 1910: 364.

*Paratrombium megalochirum*: Sevsay et al., 2017: 741 [P, L]

Distribution. Ahmetli (39°52'56"N, 39°20'31"E, 2043 m)-Erzincan.

Habitat. Mossy soil, near Ahmediye pond.

Subfamily Trombidiinae Leach, 1815

Trombidiinae Leach, 1815: 395.

Genus *Emitrombidium* Lombardini, 1949

*Emitrombidium* Lombardini, 1949: 69. Type species. *Emitrombidium variepilosum* Lombardini, 1949

37. *Emitrombidium giocondi* Mağol & Sevsay, 2014 [P]

*Emitrombidium giocondi*: Mağol & Sevsay, 2014: 91

Distribution. Kıyıkışlacık village (37°16'38.80"N, 27°33'47.97"E, 1.15 m)- Muğla.

Habitat. Olive groves, close to the seaside.

Genus *Trombidium* Fabricius, 1775

*Trombidium* Fabricius, 1775. Type species. *Acarus holosericeus* Linnaeus, 1758

38. *Trombidium brevimanum* (Berlese, 1910) [P, L]

*Sericothrombium brevimanum* Berlese, 1910: 365.

*Trombidium brevimanum*: Sevsay et al., 2016: 151 [P]

Distribution. Koyunluhisar (40°23'59"N, 37°17'18"E, 550 m)- Sivas; Köse (40°16'97"N, 39°37'84"E, 1869 m) - Gümüşhane; Ahmetli (39°52'53"N, 39°20'31"E 1978 m)- Erzincan; Ergan Mountain (39°37'54"N, 39°29'58"E, 1744 m)- Erzincan.

Habitat. Litter from under *Salix* sp. and *Juniperus* sp. close to Ardıçlı Lake; juicy grass and mossy soil, close to the Ahmediye pond.

39. *Trombidium geniculatum* (Feider, 1955) [P, L]

*Teresothrombium geniculatum* Feider, 1955: 172.

*Trombidium geniculatum*: Sevsay et al., 2016: 152 [P, L]

Distribution. Zigana Mountain (40°40'16"N, 39°26'17"E, 2025 m)- Trabzon; Kitre village (40°16'14"N, 39°52'31"E, 1694 m)- Bayburt; Kop gateway (40°02'12"N, 40°28'50"E, 2160 m)- Bayburt; Ahmediye pond (39°52'54"N, 39°20'19"E, 2012 m)- Erzincan.

Habitat. Mossy soil and litter from under *Salix* sp- mossy soil, near the stream.

40. *Trombidium holosericeum* (Linnaeus, 1758) [P, L]

*Acarus holosericeus* Linnaeus, 1758.

*Trombidium holosericeum*: Sevsay et al., 2016: 153 [P, L]

Distribution. Otlukbeli Lake (40°01'15"N, 39°58'36"E, 1921 m)- Erzincan; Zigana Mountain (40°40'10"N, 39°26'14"E, 2030 m)- Trabzon; Ahmediye pond (39°52'48"N, 39°20'25"E, 1980 m)- Erzincan; Otlukbeli Lake (40°00'59"N, 39°58'48"E, 1900 m)- Erzincan; Kop gateway (40°02'12"N, 40°28'50"E, 2160 m)- Bayburt; Ahmediye pond (39°52'54"N, 39°20'19"E, 2012 m)- Erzincan.

Habitat. Moist soil at litter under *Juniperus* sp.; mossy soil, near the pond- mossy soil.

41. *Trombidium latum* C. L. Koch, 1837 [P, L]

*Trombidium latum* C. L. Koch, 1837.

*Trombidium latum*: Sevsay et al., 2016: 153 [P, L]

Distribution. Ergan Mountain, Caferli plateau (39°38'49"N, 39°28'19"E, 2127 m), Kasefe plateau (39°37'55"N, 39°33'22"E, 2052 m)- Erzincan, Kop gateway (40°02'12"N, 40°28'50"E, 2160 m)- Bayburt.

Habitat. Mossy soil and litter from under *Juniperus* sp.

42. *Trombidium mediterraneum* (Berlese, 1910) [P]

*Sericothrombium mediterraneum* Berlese, 1910: 365.

*Trombidium mediterraneum*: Sevsay et al., 2016: 154 [P, L]

Distribution. Kop gateway (40°02'16"N, 40°30'48"E, 2417 m)- Bayburt, Ergan Mountain (39°43'40"N, 39°29'23"E, 1175 m)- Erzincan.

Habitat. Litter from under *Populus* sp; grassy and mossy soil close to the stream.

43. *Trombidium rimosum* C. L. Koch, 1837 [P]

*Trombidium rimosum* C. L. Koch, 1837: fasc. 15

*Trombidium rimosum*: Sevsay & Ozkan, 2010: 155 [P]

Distribution. Serince plateau- Erzincan.

Habitat. Mossy and grassy soil.

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