



## The Crane Flies (Tipulidae: Diptera) fauna of the Uludağ Mountain (Turkey)

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### Abstract

This study is recorded 20 Tipulidae species belonging to 3 different genera from Uludağ Mountain. *Tipula (Lunatipula) subacuminata* Mannheims, 1963, *Tipula (Savtshenkia) rufina* Meigen, 1818, *Tipula (Yamatotipula) caesia* Schummel, 1833 are recorded first time from research area. In the present study distributions in Turkey and World were also given for each species.

**Key words:** Tipulidae, Crane Flies, Uludağ, fauna

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## Uludağ'ın Çayır Sivrisinekleri (Tipulidae: Diptera)faunası

### Özet

Bu çalışma Uludağ'dan kaydedilmiş 3 farklı cinse ait 20 farklı Tipulidae türünü sunmaktadır. *Tipula (Lunatipula) subacuminata* Mannheims, 1963, *Tipula (Savtshenkia) rufina* Meigen, 1818, *Tipula (Yamatotipula) caesia* Schummel, 1833 türleri çalışma alanından ilk kez kaydedilmiştir. Türlerle ait Türkiye ve Dünya yayılışı bilgileri de bu çalışmada verilmektedir.

**Anahtar kelimeler:** Tipulidae, Çayır Sivrisinekleri, Uludağ, Fauna

### 1. Introduction

Diptera has a lot of families with enormous species numbers. One of the largest family is Tipulidae with nearly 4300 species on worldwide. This family represent 1335 taxa belonging to 17 genera and 33 subgenera are recognized in Palearctic and 161 species in Turkey. Tipulidae are medium to large-sized insects, they can easily be recognized by their large bodies, long legs and bulky flights. The most numerous species among the Tipulidae has the genus *Tipula* Linnaeus, 1758. *Tipula spp.* occur almost in all zoogeographical regions except Antarctica. Both larvae and adult forms of the Tipulid an important food group in other organisms, especially for birds. Typically found in damp and shady places such as meadows, shrubs and forests on riverside edges in hot spring and summer months [1].

There are many studies publisehed by differentauthors on Turkish Tipulidae fauna and the prominent ones for past 20 years can be listed as; [2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12].

So this paper can be considered as afaunistic report about crane flies occuring in Uludağ Mountain. However, further studies are needed about ecological and biological features and Turkey distributions of this family

### 2. Materials and methods

Uludag mountain, which is called Olympos Misios in antiquity, is the highest mountain of Western Anatolia with an altitude of 2543 meters. The mountain is located in Bursa provincein Marmara region. It was declared a National

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Park in 1961 with its natural structure, flora and fauna richness. The Mediterranean climate type can be seen at the bottom of the mountain and upper level shows a humid micro-thermal climate type, while its summit shows an icy climate.

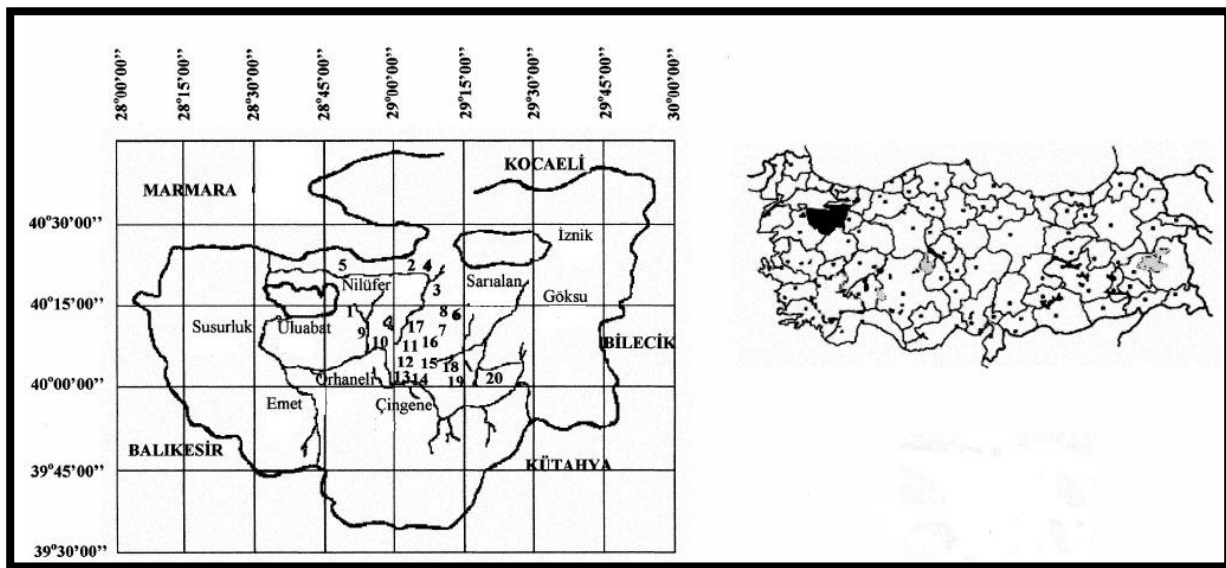


Figure 1. Study area

## 2.2. Collecting and Identifications

Sampling was made between 04 April 2006 and 28 June 2008. 27 collection sites was specified from 100 m to 2543 m. Adult Tipulidae samples were collected with hand net with sweeping method and by light trap, preserved in bottles contaminated with etil asetat. Preparations of samples were performed in the laboratory. Male terminalia were placed in small capsules filled with glycerin and attached to pinned the specimens. All specimens were deposited in Entomology Laboratory of the Department of Biology, Eskişehir Osmangazi University. Following literatures were used for species identification; [6, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25].

## 3. Results

### Species: *Dolichozepe (Dolichozepe) graeca* Mannheims, 1954

**Material Examined:** Mürseller, 1451 m., 21.06.2007, 1 ♂, 1 ♀, 27.06.2007, 1 ♂, 2 ♀♀; Sarı Alan Location, 1457 m., 22.06.2006, 1 ♂, 1 ♀, 21.06.2007, 1 ♂, 27.06.2007, 1 ♂, 2 ♀♀.

**Distribution in Turkey:** Muğla [10]; Bursa, Çanakkale, [12]; Artvin, Erzurum [23]; Bartın, Bolu, Kastamonu, Sinop, Zonguldak [26]

**Distribution in Palearctic:** Endemic to Turkey [1]

### Species: *Nephrotoma appendiculata appendiculata* (Pierre, 1919)

**Material Examined:** Çalı Village, 100 m., 23.04.2006, 4 ♂♂, 4 ♀♀, 04.04.2007, 8 ♂♂, 8 ♀♀, 07.04.2007, 10 ♂♂, 10 ♀♀; Nilüfer Stream-Abdal Bridge, 110 m., 05.04.2006, 4 ♂♂, 7 ♀♀; Hürriyet Barrak, 100 m. 12.04.2006, 2 ♂♂, 5 ♀♀; Abdal Bridge, 110 m., 7 ♂♂, 8 ♀♀; Gürsu, 114 m., 02.04.2006, 4 ♂♂, 6 ♀♀, 04.04.2006, 7 ♂♂, 5 ♀♀, 31.03.2007, 6 ♂♂, 6 ♀♀, 04.04.2007 8 ♂♂, 6 ♀♀; Kaplıkaya, 162 m., 19.04.2006, 4 ♂♂, 3 ♀♀.

**Distribution in Turkey:** Aydın, Burdur, Denizli, Isparta, [10]; Balıkesir, Bilecik, Bursa, Çanakkale, Kırklareli, Kocaeli, Sakarya, Yalova [12]; Afyon, Ankara, Bitlis, Kastamonu, Konya, Mus, Rize [13]; Ankara [14]; Denizli [27]; Eskişehir [28].

**Distribution in Palearctic:** Albania, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia-Herzegovina, Bulgaria, Croatia, Czech Rep., Denmark, Estonia, Finland, France, Georgia, Germany, Great Britain, Greece (incl. Dilos, Kerkyra [Corfu], Mykonos), Hungary, Ireland, Iran, Italy (Sardinia), Latvia, Lithuania, Luxembourg, Macedonia, Montenegro, Netherlands, Norway (south), Poland, Romania, Russia (USSR:NET (west), CET, SET), Serbia, Slovakia, Slovenia, Spain (Guipuzcoa), Sweden (southern half), Switzerland, Turkey, Ukraine [1].

**Species: *Nephrotoma croceiventris lindneri* (Mannheims, 1951)**

**Material Examined:** Airport Supply Facility, 106 m., 06.05.2007, 4 ♂♂, 2 ♀♀, 09.05.2007, 3 ♂♂, 2 ♀♀, 12.05.2007, 3 ♂♂, 2 ♀♀; Nilüfer Stream-Abdal Bridge, 110 m., 01.05.2006, ♂♂, 6 ♀♀, 09.05.2006, 3 ♂♂, 2 ♀♀, 12.05.2006, 4 ♂♂, 2 ♀♀, 06.05.2007, 3 ♂♂, 2 ♀♀, 09.05.2007, 4 ♂♂, 1 ♀, 12.05.2007, 3 ♂♂, 2 ♀♀; Hürriyet Barrak, 100 m., 01.05.2006, 1 ♂, 3 ♀♀, 06.05.2007, 3 ♂♂, 2 ♀♀, 09.05.2007, 3 ♂♂, 4 ♀♀, 12.05.2007, 3 ♂♂, 2 ♀♀; Ortatepe, 924 m., 09.05.2006, 3 ♂♂, 3 ♀♀, 12.05.2006, 5 ♂♂, 3 ♀♀, 06.05.2007, 4 ♂♂, 3 ♀♀, 09.05.2007, 1♂, 12.05.2007, 4 ♂♂, 4 ♀♀; Forest Hunting Production Site, 1047 m., 09.05.2006, 1 ♂, 2 ♀♀, 12.05.2006, 2 ♂♂, 2 ♀♀, 06.05.2007., 4 ♂♂, 1 ♀, 09.05.2007, 2 ♂♂, 3 ♀♀, 12.05.2007, 2 ♂♂, 4 ♀♀; Forest Hunting Production Site 3, 1720 m., 12.08.2006, 3 ♂♂,

**Distribution in Turkey:** Antalya, Aydın, Denizli, Isparta, Muğla [10]; Balıkesir, Bilecik, Bursa, Çanakkale, Edirne, Kırklareli, Kocaeli, Tekirdağ [12]; Akşehir [13]; Ağrı, Ankara, Bolu, Kars, Kayseri, Mus, Niğde, Bitlis, Hakkari, Rize, Sivas, Van [23]; Çankırı, Kastamonu, Bolu [26]; Denizli [27]; Eskişehir [28].

**Distribution in Palearctic:** Albania, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia-Herzegovina, Bulgaria, Croatia, Czech Rep., France, Georgia, Germany, Greece (incl. Evvoia [Evia], Kos), Hungary, Italy (north), Latvia, Luxembourg, Macedonia, Montenegro, Netherlands, Poland, Romania, Russia [USSR:NET (southwest), CET, SET (west)], Serbia, Slovakia, Slovenia, Sweden (Skane), Switzerland, Turkey, Ukraine, [1].

**Species: *Nephrotoma quadrifaria* (Meigen, 1804)**

**Material Examined:** Airport Supply Facility, 106 m., 18.04.2006, 8 ♂♂, 10 ♀♀, 07.04.2007, 6 ♂♂, 9 ♀♀, 11.04.2007, 8 ♂♂; 8 ♀♀; Nilüfer Stream-Abdal Bridge, 110 m., 12.04.2006, 4 ♂♂, 5 ♀♀, 18.04.2006, 3 ♂♂, 3 ♀♀, 07.04.2007, 6 ♂♂, 9 ♀♀, 11.04.2007, 3 ♂♂, 2 ♀♀; Hürriyet Barrak, 100 m., 07.04.2007, 5 ♂♂; 7 ♀♀, 11.04.2007, 2 ♂♂, 2 ♀♀; MissiKöyü, 170 m., 15.04.2007, 2 ♂♂, 6 ♀♀, 21.04.2007, 2 ♂♂, 2 ♀♀.

**Distribution in Turkey:** Denizli, Muğla, [10]; Bilecik, Bursa, Çanakkale, Kırklareli, Kocaeli, Sakarya, Yalova [12]; Trakya [23].

**Distribution in Palearctic:** Albania, Armenia, Austria, Azerbaijan, Belgium, Bosnia-Herzegovina, Bulgaria, Croatia, Czech Rep., Denmark, Estonia, France (incl. Corsica), Georgia, Germany, Great Britain, Greece, Hungary, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Macedonia, Netherlands, Norway (south), Poland, Romania, Russia [USSR: CET, SET (south)], Serbia, Slovakia, Slovenia, Spain (north), Sweden (southern half), Switzerland, Turkey (European part: widespread), Ukraine (south), [1].

**Species: *Tipula (Acutipula) fulvipennis* De Geer, 1776**

**Material Examined:** İnkaya 580 m., 1 ♀♀.

**Distribution in Turkey:** Afyon, Artvin, Bolu, Erzincan, Kastamonu, Kocaeli, Rize [1]; Balıkesir, Bilecik, Bursa, Çanakkale, Kırklareli, Kocaeli, Sakarya [12]; Artvin and Erzurum [23]; Ankara [29].

**Distribution in Palearctic:** Andorra, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia-Herzegovina, Bulgaria, Croatia, Czech Rep., Denmark (incl. Faroe Is), Finland, France (incl. Corsica), Georgia, Germany, Great Britain, Greece (incl. Kriti [Crete]), Hungary, Iran (northeast), Ireland, Italy (incl. Sardinia, Sicily), Kazakhstan, Latvia, Lithuania, Luxembourg, Macedonia, Mongolia, Montenegro, Netherlands, Norway (except north), Poland, Romania, Russia: (USSR: WS (south), ES (south), Novaya Zemlya, NET, CET, SET), Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey (European part), Ukraine [1].

**Species: *Tipula (Acutipula) latifurca* Vermoolen, 1983**

**Material Examined:** Kirazlı Town, 1338 m., 04.06.2006, 1 ♂, 2 ♀♀, 10.06.2007, 2 ♂♂, 2 ♀♀; Yigit Ali Reis Village, Güney exit, 1347 m., 04.06.2006, 1 ♂, 1 ♀, 10.06.2007, 2 ♂♂, 2 ♀♀.

**Distribution in Turkey:** Aydın, Isparta, Muğla [10]; Balıkesir, Bilecik, Bursa, Çanakkale, Kırklareli, Kocaeli, Sakarya [12]; Afyonkarahisar, Konya, Antalya, Adana, Muş, Bitlis, Van, Hakkâri, Trabzon, Rize [23]; Adana, Afyon, Antalya, Bitlis, Hakkâri, Konya, Mus, Rize, Trabzon, Van [25]; Denizli [27]; Eskişehir [28]; Burdur, Isparta, Isparta, Burdur, Kayseri, Ankara [29].

**Distribution in Palearctic:** Bosnia-Herzegovina, Bulgaria, Georgia, Greece (incl. Evvoia [Evia], Ikaria, Kos, Samos, Samothraki, Serifos, Skiathos, Thasos), Lebanon, Macedonia, Romania, Russia (North Caucasus), Turkey, [1].

**Species: *Tipula (Lunatipula) borysthenica* Savchenko, 1954**

**Material Examined:** Airport Supply Facility, 106 m., 12.09.2006, 12 ♂♂, 12 ♀♀, 17.09.2006, 9 ♂♂, 10 ♀♀, 10.09.2007, 6 ♂♂, 5 ♀♀, 10.10.2007, 11 ♂♂, 7 ♀♀; Nilüfer Stream-Abdal Bridge, 110 m., 12.09.2006, 9 ♂♂, 8 ♀♀, 17.09.2006, 9 ♂♂, 7 ♀♀, 10.09.2007, 7 ♂♂, 9 ♀♀, 10.10.2007, 11 ♂♂, 11 ♀♀; Hürriyet Barrak, 100 m., 12.09.2006, 8 ♂♂, 8 ♀♀, 17.09/2006, 4 ♂♂, 6 ♀♀, 10/09/2007, 7 ♂♂, 4 ♀♀, 10/10/2007, 6 ♂♂, 8 ♀♀; Missi Village, 170 m., 04/09/2006, 4 ♂♂, 4 ♀♀.

**Distribution in Turkey:** Afyonkarahisar, Aksaray [1]; Aydın, Burdur, Denizli, Isparta [10]; Balıkesir, Bilecik, Bursa, Çanakkale, Edirne, Kırklareli, Sakarya [12]; Konya Akşehir [13]; Konya [23]; Denizli [27]; Eskişehir [28]; Ankara, Burdur, Isparta [29].

**Distribution in Palaearctic:** Albania, Austria (Burgenland), Bulgaria, Greece (north), Macedonia, Slovakia, Turkey, Ukraine, Russia: [USSR: SET, North Caucasus (Dagestan)] [1].

**Species: *Tipula (Lunatipula) furcula* Mannheims, 1954**

**Material Examined:** İnkaya, 580 m., 22.06.2006, 4 ♂♂ 4 ♀♀, 21.06.2007, 4 ♂♂, 2 ♀♀, 27.06.2007, 3 ♂♂, 3 ♀♀; Karabelen Location, 1269 m 22.06.2006, 1 ♂, 3 ♀♀, 21.06.2007, 5 ♂♂, 2 ♀♀, 27.06.2007, 3 ♂♂, 2 ♀♀; Yiğit Ali Reis, Village Güney Exit, 1347 m., 22.06.2006, 1 ♂, 1 ♀, 21.06.2007, 3 ♂♂, 3 ♀♀, 27.06.2007, 2 ♂♂, 2 ♀♀.

**Distribution in Turkey:** Aydın, Isparta, Muğla [10]; Balıkesir, Bilecik, Bursa, Çanakkale, Edirne, İstanbul, Kırklareli, Kocaeli, Sakarya [12], Bursa [13]; Afyon, Aydın, Bursa, Çanakkale, İzmir, Konya, Muğla [23]; Antalya [26]; Denizli [27]; Eskişehir [28].

**Distribution in Palaearctic:** Bulgaria, Greece (North, Chios, Kos, Lesvos, Mykonos, Rodos [Rhodes]), Macedonia, Montenegro, Serbia, Turkey (European part: widespread), [1].

**Species: *Tipula (Lunatipula) helvola* Loew, 1873**

**Material Examined:** Hürriyet Barrack, 100 m., 01/05/2006, 3 ♂♂, 1 ♀, 06/05/2007, 2 ♂♂, 4 ♀♀, 09.05.2007, 1 ♂, 4 ♀♀, 12.05.2007, 2 ♂♂, 2 ♀♀; Karabelen Location, 1269 m., 29.04.2006, 2 ♂♂, 2 ♀♀, 01.05.2006, 2 ♂♂, 1 ♀, 16.04.2007, 3 ♂♂, 2 ♀♀, 22.04.2007, 3 ♂♂, 3 ♀♀, 30.04.2007, 2 ♂♂, 3 ♀♀, 06.05.2007, 4 ♂♂, 1 ♀, 09.05.2007, 1 ♂♂, 2 ♀♀, 12.05.2007, 3 ♂♂, 5 ♀♀, Kirazlı Town, 1338 m., 14.04.2006, 1 ♂, 1 ♀, 22.04.2006, 2 ♂♂, 4 ♀♀, 23.04.2006, 1 ♂♂, 3 ♀♀, 01.05.2006, 3 ♂♂, 3 ♀♀, 06.05.2007, 2 ♂♂, 3 ♀♀, 09.05.2007, 1 ♂, 3 ♀♀, 12.05.2007, 1 ♂, 1 ♀

**Distribution in Turkey:** Antalya, Aydın, Denizli, Isparta, Muğla [10]; Balıkesir, Bilecik, Bursa, Çanakkale, Edirne, İstanbul, Kırklareli, Kocaeli, Sakarya, Tekirdağ, Yalova [12]; Konya, Muğla, Trabzon [23]; Bursa, Denizli [27]; Eskişehir [28].

**Distribution in Palaearctic:** Albania, Austria, Belgium, Bosnia-Herzegovina, Bulgaria, Croatia, Czech Rep., Cyprus, France, Germany, Great Britain, Greece (incl. Evvoia [Evia], Ithaki, Kefalonia, Kerkyra [Corfu], Kriti [Crete], Lefkada, Lesvos, Samos, Samothraki, Zakynthos), Hungary, Israel, Italy, Luxembourg, Macedonia, Montenegro, Netherlands, Romania, Serbia, Slovakia, Slovenia, Spain (North, Cuenca), Switzerland, Turkey, Ukraine, Russia [USSR: CET (Voronezhskaya oblast)], North Caucasus, [1].

**Species: *Tipula (Lunatipula) istriana* Erhan and Theowald, 1961**

**Material Examined:** Görükle, 113 m., 11.06.2006, 6 ♂♂, 5 ♀♀, 14.06.2006, 8 ♂♂, 11 ♀♀; Gürsu, 114 m., 11.06.2006, 10 ♂♂, 10 ♀♀, 14.06.2006, 7 ♂♂ 6 ♀♀; İnkaya, 580m., 22.06.2006, 10 ♂♂, 10 ♀♀, 10.06.2007, 6 ♂♂, 6 ♀♀, 21.06.2007, 7 ♂♂, 6 ♀♀; Kavkapınar Stream, 750 m., 22.06.2006, 8 ♂♂, 8 ♀♀, 10.06.2007, 6 ♂♂, 5 ♀♀, 21.06.2007, 7 ♂♂, 5 ♀♀, Ortatepe, 924 m., 22.06.2006, 14 ♂♂, 15 ♀♀, 10.06.2007, 4 ♂♂, 6 ♀♀, 21.06.2007, 4 ♂♂, 7 ♀♀; Forest Hunting Production Site, 1047 m., 22.06.2006, 9 ♂♂, 12 ♀♀, 10.06.2007, 2 ♂♂, 2 ♀♀, 21.06.2006, 7 ♂♂, 7 ♀♀; Karabelen Location, 1269 m., 22.06.2006, 6 ♂♂, 13 ♀♀, 10.06.2007, 11 ♂♂, 9 ♀♀, 21.06.2006, 6 ♂♂, 8 ♀♀; Hunting Production Site 2, 1550 m., 21.06.2007, 6 ♂♂, 2 ♀♀,

**Distribution in Turkey:** Burdur, Denizli, Muğla [10]; Balıkesir, Bilecik, Bursa, Çanakkale, Kırklareli, Kocaeli, Sakarya, Yalova [12]; Bilecik, Burdur, Bursa [13]; Adapazarı, Afyon, Konya [23]; Denizli [27]; Eskişehir [28].

**Distribution in Palaearctic:** Bulgaria, Greece (Lesvos), Romania (Dobrogea), Turkey [1].

**Species: *Tipula (Lunatipula) mendli* Martinovsky, 1976**

**Material Examined:** Akpınarlar, 380 m., 14.04.2006, 2 ♂♂, 2 ♀♀, 23.04.2006, 3 ♂♂, 3 ♀♀, 06.05.2007, 2 ♂♂, 3 ♀♀, 09.05.2006, 2 ♂♂, 1 ♀, 12.05.2007, 2 ♂♂, 2 ♀♀; Kirazlı Town, 1338 m., 14.04.2006, 2 ♂♂, 2 ♀♀, 22.04.2006, 2 ♂♂, 23.04.2007, 2 ♂♂, 1 ♀, 01.05.2007, 2 ♂♂, 2 ♀♀, 06.05.2007, 1 ♂, 2 ♀♀, 05.05.2007, 1 ♂, 1 ♀, 12.05.2007, 1 ♂, 2 ♀♀; Yiğit Ali Reis Village Güney exit, 1347 m., 14.04.2006, 1 ♂, 22.04.2006, 2 ♂♂, 1 ♀, 23.04.2007, 1 ♂, 1 ♀, 01.05.2007, 2 ♂♂, 3 ♀♀, 06.05.2007, 1 ♂, 05.05.2007, 1 ♂, 12.05.2007, 3 ♂♂, 2 ♀♀.

**Distribution in Turkey:** Aydın, Burdur, Denizli, Muğla [10]; Balıkesir, Bilecik, Bursa, Çanakkale, Kocaeli, Sakarya, Yalova [12]; Burdur, Bursa, Denizli [23]; Denizli [27].

**Type-locality in Turkey** [3].

**Distribution in Palearctic:** Greece (Chios, Kos, Lesvos, Samos), Turkey (European part: Gokceada, Asiatic part) [1].

**Species: *Tipula (Lunatipula) peliostigma* Schummel, 1833**

**Material Examined:** Mürseller, 1451 m., 22.06.2006, 4 ♂♂, 2 ♀♀, 18. 07.2006, 2 ♂♂, 1 ♀, 21.06.2007, 3 ♂♂, 2 ♀♀; Sarı Alan location, 1457 m., 22.06.2006, 2 ♂♂, 2 ♀♀, 18. 07.2006, 1 ♂, 2 ♀♀, 21.06.2007, 3 ♂♂, 3 ♀♀.

**Distribution in Turkey:** Aydın, Muğla [10]; Balıkesir, Bilecik, Bursa, Çanakkale, Kırklareli, Kocaeli, Sakarya, Yalova [12]; Aydın, Burdur, Konya, Nevşehir [23]; Eskişehir [28].

**Distribution in Palearctic:** Albania, Andorra, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia-Herzegovina, Bulgaria, Croatia, Czech Rep., Denmark, Estonia, Finland, France, Georgia, Germany, Great Britain, Greece (incl. Evvoia [Evia], Kerkyra [Corfu], Naxos, Mykonos, Samos, Samothraki, Serifos, Skyros, Thasos), Hungary, Ireland, Israel, Italy, Kazakhstan, Lebanon, Lithuania, Luxembourg, Macedonia, Montenegro, Netherlands, Poland, Portugal (Algarve), Romania, Serbia, Slovakia, Spain, Sweden, Switzerland, Turkey, Turkmenistan, Ukraine, Russia:(USSR: NET, CET, SET) Morocco (Middle Atlas), [1].

**Species: *Tipula (Lunatipula) soosi* Mannheims, 1954**

**Material Examined:** Akpınarlar, 380 m., 21.06.2006, 6 ♂♂; İnkaya, 580 m., 18.07.2006, 3 ♂♂.

**Distribution in Turkey:** Isparta [10]; Balıkesir, Bilecik, Bursa, Çanakkale, Edirne, Kırklareli, Kocaeli, Sakarya [12]; Çanakkale, Bursa, Burdur, Isparta, Afyon, İzmir, Konya, Aydın, Muğla, Mersin, Adana, Kayseri, Niğde [23]; Eskişehir [28].

**Distribution in Palearctic:** Albania, Armenia, Azerbaijan, Austria, Bulgaria, Croatia, Czech Rep., Georgia, Greece (incl. Naxos, Rodos [Rhodes], Samos), Hungary, Macedonia, Montenegro, Romania, Serbia, Slovakia, Slovenia, Turkey, Ukraine, Russia: (USSR: SET); [1].

**Species: *Tipula (Lunatipula) subacuminata* Mannheims, 1963**

**Material Examined:** İnkaya, 580 m., 22.06.2006, 6 ♂♂, 8 ♀♀, 21.06.2007, 4 ♂♂, 6 ♀♀; Kavakpınar Stream, 750m., 22.06.2006, 3 ♂♂, 1 ♀, 21.06.2007, 7 ♂♂, 5 ♀♀; Ortatepe, 924 m. 22.06.2006, 3 ♂♂, 21.06.2007, 2 ♂♂, 1 ♀; Forest Hunting Production Site, 1047 m., 22.06.2006, 1 ♂, 1 ♀, 21.06.2007, 2 ♂♂; Hunting Production Site 4, 1810 m., 1 ♂, 3 ♀♀, 23.07.2006.

**Distribution in Turkey:** Antalya, Denizli [10]; İçel, Kahramanmaraş [21]; İçel, Adana, Bingöl, Bitlis [23]; Denizli [27]; Antalya [29].

Typ Localite: Gaziantep [3]

**Distribution in Palearctic:** Westpalearctic [1]

**First record in Bursa**

**Species: *Tipula (Lunatipula) turca* Mannheims, 1963**

**Material Examined:** Forest Hunting Production Site, 1047 m., 06.05.2007, 1 ♀.

**Distribution in Turkey:** Bilecik, Kocaeli [12]; Ankara, Bolu, Kastamonu, Sinop [26]; Uludağ (Bursa) [30]; Afyon, Artvin, Bolu, Erzurum, Eskişehir, Gümüşhane, Karabük, Kastamonu, Kütahya [31].

**Type-locality in Turkey** [3]

**Distribution in Palearctic:** Endemic to Turkey [1]

**Species: *Tipula (Pterelachisus) luteobasalis* Savchenko, 1964**

**Material Examined:** Ortatepe, 924 m., 23.05.2006, 4 ♂♂, 6 ♀♀, 22.06.2006, 4 ♂♂, 2 ♀♀, 25.05.2007, 2 ♂♂, 3 ♀♀, 21.06.2007, 3 ♂♂, 3 ♀♀, 27.06.2007, 4 ♂♂, 2 ♀♀; Karabelen Location, 1269 m., 22.06.2006, 2 ♂♂, 1 ♀, 21.06.2007, 2 ♂♂, 4 ♀♀, 27.06.2007, 1 ♂, 1 ♀; Kirazlı Town, 1338 m., 22.06.2006, 2 ♂♂ 2 ♀♀, 21.06.2007, 2 ♂♂, 3 ♀♀, 27.06.2007, 1 ♂, 2 ♀♀.

**Distribution in Turkey:** Giresun [1]; Bursa [12]; Artvin [13]; Bitlis [23]; Van Gölü [32].

**Distribution in Palearctic:** Armenia, Georgia, Iran (north), Russia: North Caucasus, Turkey (Asiatic part), [1].

**Species: *Tipula (Savtshenka) rufina* Meigen, 1818**

**Material Examined:** Karabelen Location, 1269 m., 19.08.2006, 2 ♂♂, 2 ♀♀, 08.09.2006, 2 ♂♂, 2 ♀♀, 10.09.2007, 2 ♂♂, 2 ♀♀; Sarı Alan Location, 1457 m., 19.08.2006, 1 ♂, 1 ♀, 08.09.2006, 3 ♂♂, 3 ♀♀, 10.09.2007, 2 ♂♂.

**Distribution in Turkey:** Gümüşhane [1]; Muğla [10]; Hakkari [23].

**Distribution in Palaearctic:** Algeria, Andorra, Armenia, Azerbaijan, Austria, Belgium, Bosnia-Herzegovina, Bulgaria, Croatia, Czech Rep., Cyprus, Denmark (incl. Faroe Is), France (incl. Corsica), Georgia, Germany, Great Britain, Greece (incl. Evvoia [Evia], Kefalonia, Kriti [Crete], Lefkada, Naxos), Iceland, Iran (northwest), Ireland, Israel, Italy (incl. Sardinia), Lebanon, Luxembourg, Macedonia, Morocco, Netherlands, Norway (except north), Poland, Portugal, Romania, Russia: (USSR: SET (south), Serbia, Slovakia, Slovenia, Spain (incl. Canary Is [Gran Canaria, La Palma, Tenerife]) Sweden (southern half), Switzerland, Tajikistan, Turkey (Asiatic part), Ukraine (South) [1].

**First record in Bursa**

**Species: *Tipula (Tipula) orientalis* Lackschewitz, 1930**

**Material Examined:** Çalı Village, 100 m., 06.04.2006, 3 ♂♂, 3 ♀♀, 23.04.2006, 6 ♂♂, 4 ♀♀, 01.05.2006, 3 ♂♂, 4 ♀♀, 12.05.2006, 3 ♂♂, 4 ♀♀, 01.06.2006, 3 ♂♂, 2 ♀♀, 04.04.2007, 2 ♂♂, 4 ♀♀, 07.04.2007, 5 ♂♂, 2 ♀♀, 09.05.2007, 4 ♂♂, 5 ♀♀, 06.06.2007, 2 ♂♂, 2 ♀♀, Airport Supply Facility, 106 m., 04.04.2006, 6 ♂♂, 4 ♀♀, 18.04.2006, 4 ♂♂, 7 ♀♀, 01.05.2006, 2 ♂♂, 2 ♀♀, 01.06.2006, 4 ♂♂, 2 ♀♀, 04.06.2006, 2 ♂♂, 1 ♀, 04.04.2007, 6 ♂♂, 6 ♀♀, 07.04.2007, 5 ♂♂, 2 ♀♀, 11.04.2007, 2 ♂♂, 1 ♀, 06.05.2007, 10 ♂♂, 8 ♀♀, 09.05.2007, 2 ♂♂, 5 ♀♀, 12.05.2007, 4 ♂♂, 6 ♀♀, Nilüfer Stream Abdal Bridge, 110 m., 01.04.2006, 7 ♂♂, 6 ♀♀, 05.04.2006, 3 ♂♂, 2 ♀♀, 12.04.2006, 5 ♂♂, 2 ♀♀, 18.04.2006, 3 ♂♂, 4 ♀♀, 01.05.2006, 6 ♂♂, 3 ♀♀, 09.05.2006, 3 ♂♂, 1 ♀, 12.05.2006, 4 ♂♂, 3 ♀♀, 01.06.2006, 2 ♂♂, 2 ♀♀, 04.06.2006, 5 ♂♂, 3 ♀♀, 06.06.2006, 2 ♂♂, 1 ♀, 04.04.2007, 5 ♂♂, 6 ♀♀, 07.04.2007, 4 ♂♂, 2 ♀♀, 11.04.2007, 2 ♂♂, 2 ♀♀, 06.05.2007, 1 ♂, 09.05.2007, 3 ♂♂, 3 ♀♀, 12.05.2007, 2 ♂♂, 1 ♀, Hürriyet Barrak, 100 m., 06.04.2006, 6 ♂♂, 2 ♀♀, 01.05.2006, 4 ♂♂, 4 ♀♀, 04.06.2006, 1 ♂, 2 ♀♀, 04.04.2007, 3 ♂♂, 3 ♀♀, 07.04.2007, 4 ♂♂, 2 ♀♀, 11.04.2007, 2 ♂♂, 1 ♀, 06.05.2007, 2 ♂♂, 2 ♀♀, 09.05.2007, 3 ♂♂, 4 ♀♀, 12.05.2007, 4 ♂♂, 3 ♀♀, Görükle, 06.04.2006, 5 ♂♂, 4 ♀♀, 08.04.2006, 7 ♂♂, 7 ♀♀, 12.04.2006, 5 ♂♂, 7 ♀♀, 04.04.2007, 4 ♂♂, 2 ♀♀, 07.04.2006, 4 ♂♂, 3 ♀♀, 09.05.2007, 2 ♂♂, 2 ♀♀, Akpınarlar, 380 m., 11.04.2007, 3 ♂♂, 2 ♀♀, 14.04.2006, 1 ♂, 2 ♀♀, 04.04.2007, 2 ♂♂, 2 ♀♀, 07.04.2007, 3 ♂♂, 2 ♀♀, 11.04.2007, 1 ♂, 1 ♀, 06.05.2007, 3 ♂♂, 3 ♀♀, 09.05.2007, 1 ♂♂, 1 ♀, 12.05.2007.

**Distribution in Turkey:** Aydın, Burdur, Denizli, Isparta, Muğla [10]; Balıkesir, Bilecik, Bursa, Çanakkale, Edirne, İstanbul, Kırklareli, Kocaeli, Sakarya, Tekirdağ [12]; Anatolia [22]; Adıyaman, Afyon, Artvin Aydın, Bitlis, Burdur, Çanakkale, Erzurum, Isparta, İçel, İzmir, Kayseri, Mugla, Ordu, Sinop, Sivas, Van [23]; Denizli [27]; Eskişehir [28]; Isparta, Burdur, Antalya, Kayseri; Ankara [29].

**Distribution in Palaearctic:** Afghanistan, Albania, Armenia, Austria, Azerbaijan, Bosnia-Herzegovina, Bulgaria, Croatia, Cyprus, Czech Rep., Egypt, France (south), Georgia, Greece (incl. Andros, Dilos, Evvoia [Evia], Kefalonia, Kerkyra [Corfu], Kythira, Kos, Lesvos, Lefkada, Mykonos, Naxos, Rodos [Rhodes], Samos, Serifos, Skyros, Zakynthos), Hungary, Iran, Israel, Italy (incl. Sicily), Jordan, Kazakhstan, Lebanon, Libya (Cyrenaica), Macedonia, Moldova, Montenegro, Romania, Russia: [USSR: SET (southeast), North Caucasus (Dagestan)], Serbia, Slovakia, Slovenia, Switzerland (south), Turkey, Turkmenistan, Ukraine, Saudi Arabia, Sudan, Syria, Yemen, [1].

**Species: *Tipula (Yamatotipula) caesia* Schummel, 1833**

**Material Examined:** Kavakpınar Stream, 750 m., 23.05.2006, 2 ♂♂, 4 ♀♀; 17.05.2007, 2 ♂♂, 2 ♀♀, 27.05.2007, 3 ♂♂, 4 ♀♀; Ortatepe, 924 m. 23.05.2006, 1 ♂, 4 ♀♀; 17.05.2007, 2 ♂♂, 3 ♀♀, 27.05.2007; Hunting Production Site 5, 1940 m., 21.06.2007, 4 ♂♂, 4 ♀♀.

**Distribution in Turkey:** Muğla [10]; Afyon, Ankara, Bitlis, Denizli, Erzurum, Mus [23]; Denizli [27]; Eskişehir [28]; Burdur [29]; Muğla [33].

**Distribution in Palaearctic:** Albania, Austria, Belarus, Belgium, Bosnia-Herzegovina, Bulgaria, Croatia, Czech Rep., France, Georgia, Germany, Greece (north), Hungary, Italy, Latvia, Lithuania, Luxembourg, Macedonia, Netherlands, Poland, Romania, Russia: (USSR: NET, CET (Moskovskaya oblast), SET), Serbia, Slovakia, Slovenia, Spain, Switzerland, Turkey, Ukraine; [1].

**First record in Bursa**

**Species: *Tipula (Yamatotipula) lateralis* Meigen, 1804**

**Material Examined:** Sarı Alan Location, 1457 m., 22.06.2006, 2 ♂♂, 2 ♀♀, 21.06.2007, 1 ♂, 2 ♀♀, 27.06.2007, 2 ♂♂, 2 ♀♀; Hunting Production Site 1, 1480 m., 2 ♂♂, 2 ♀♀, 06.06.2007.

**Distribution in Turkey:** Antalya, Aydın, Burdur, Denizli, Isparta, Muğla [10]; Balıkesir, Bilecik, Bursa, Çanakkale, Edirne, İstanbul, Kırklareli, Kocaeli, Sakarya, Tekirdağ, Yalova [12]; Denizli [27]; Eskişehir [28]; Isparta, Burdur, Antalya, Kayseri, Ankara [29].

**Distribution in Palaearctic:** Albania, Andorra, Armenia, Austria, Belarus, Belgium, Bosnia-Herzegovina, Bulgaria, Croatia, Czech Rep., Cyprus, Denmark (incl. Faroe Is), Estonia, Finland, France, Georgia, Germany, Great Britain, Greece (incl. Andros, Evvoia [Evia], Icaria, Karpathos, Kea, Kefalonia, Kerkyra [Corfu], Kriti [Crete], Kythira, Kos, Lefkada, Naxos, Rodos [Rhodes], Samos, Samothraki, Serifos, Skiathos, Skopelos, Skyros, Syria, Thasos, Tinos, Zakynthos), Hungary, Ireland, Israel, Italy (incl. Sicily), Kazakhstan (east), Latvia, Lebanon, Liechtenstein, Lithuania,

Luxembourg, Macedonia, Montenegro, Netherlands, Norway, Poland, Portugal (incl. Madeira), Romania, Russia: (USSR: NET, CET, SET), Serbia, Slovakia, Slovenia, Spain (north, central), Sweden, Switzerland, Turkmenistan, Turkey, Ukraine, [1].

#### 4. Conclusions and discussion

This study reported 20 Tipulidae species belonging to 3 different genera from Uludağ mountain. 3 taxa (*Tipula (Lunatipula) subacuminata*, *Tipula (Savtshenkia) rufina*, *Tipula (Yamatotipula) caesia*) were recorded for the first time from the research area.

Of the 20 species in this study, 13 were found in the whole Marmara region and 2 were in the south Marmara region. Two of the detected taxa are endemic (*Tipula (Lunatipula) subacuminata*, *Tipula (Lunatipula) turca*), 17 taxa were located in West palaeartic, and 1 taxa is located in both western and eastern palaeartic. As a result, in this study 3 new taxa is added to 66 already known taxa in the Marmara region, and the total number of Tipulidae species in the Marmara region increased to 69. [3, 8, 12, 13, 14, 21, 30, 34, 35, 36].

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**Abbreviations:** CET: USSR - Central European Territory; ES:USSR - East Siberia, NET: USSR - North European Territory; SET: USSR - South European territory; WS: USSR - West Siberia (Palaeartic)

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