

Ant fauna (Hymenoptera, Formicidae) of Strandzha (Istranca) Mountain and adjacent Black Sea coast

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Abstract. The ant fauna of Strandzha (Istranca) Mountain and its Black Sea coast was investigated in both Bulgaria and Turkey. A total of 90 ant species were determined. *Oxyopomyrmex krueperi* Forel, 1911, *Stenammina striatulum* (Emery, 1895), *Camponotus tergestinus* Müller, 1921 and *C. universitatis* Forel, 1890 were recorded for the first time in Bulgaria and 34 species are new for the Bulgarian part of Strandzha Mountain. Four ant species – *Temnothorax crassispinus* (Karavaiev, 1926), *T. interruptus* (Schenck, 1852), *Tetramorium hungaricum* (Röszler, 1935) and *Tapinoma madeirense* Forel, 1895 are new for Turkey. Ten species were recorded for the first time from the European part of Turkey and 38 – from the Turkish part of Strandzha Mountain. The zoogeographical composition and conservation status of threatened ant species are discussed.

Keywords: Ants, Formicidae, Strandzha, Istranca, Bulgaria, Turkey.

Introduction

Strandzha (Istranca) is a border mountain between Bulgaria and Turkey, located in the south-eastern part of the Balkan Peninsula. The biogeographic peculiarities of Strandzha and the adjacent Black Sea coast region determine the extreme faunal diversity of the mountain. Strandzha's geographic location, its proximity to large water basins, varied topography and microclimatic characteristics, combined with a mild and humid climate and the lack of glaciation during the Quaternary, created conditions for the formation of a flora, similar to the Pontic-Euxine one of the Caucasus and Asia Minor. This is one of the few areas in Europe where a refugium of relict species and communities from the Tertiary period is preserved.

Data on the myrmecofauna from the Bulgarian part of Strandzha Mountain and its Black Sea coast were reported mainly by Forel (1892), Atanassov (1934, 1936), Atanassov & Vasileva (1976), Atanassov & Dlussky (1992) and Lapeva-Gjonova et al. (2010). All data for the 56 ant species reported for the whole region are summarized by Lapeva-Gjonova et al. (2010) who listed a total of 163 ant species for Bulgaria. Most of these 56 species were recorded from single points and 16 of them were mentioned without particular localities.

Although many myrmecological studies have been carried out in the European part of Turkey (Forel 1895, Schkaff 1924, Donisthorpe 1950, Aktaç et al. 1994, Aktaç & Kiran 2006 etc.), only one

study (Çamlıtepe & Aktaç 1987) was conducted in the Turkish part of Strandzha Mountain and its Black Sea coast and three studies (Aktaç 1987, Aktaç et al. 1994, Elmes et al. 2002) mention some localities from the region. 135 ant species were recorded from the European part of Turkey and 48 species occur in the Turkish part of Strandzha Mountain.

In this study, the species and zoogeographical composition of the ant fauna from Strandzha Mountain and its Black Sea coast, located in the south-eastern part of Europe between Bulgaria and Turkey were investigated vertically from the sea level to 1035 m a.s.l.

Materials and methods

Ants from the Bulgarian part of the investigated region were collected in 2009-2011 and from the Turkish part between 1998 and 2010. A total of 73 localities were visited (Table 1, Fig. 1) where ants were sampled either by hand-searching or by using the following additional methods: sifting, sweeping with entomological nets and modified suction sampler.

Results are given as a list of ant species with corresponding localities arranged chronologically according to the main districts of both countries. The survey results from the mountain and the adjacent Black Sea coast could not be separated due to the difficulty to establish a real border between the two geographical regions. Localities are indicated by a number in square brackets referring to Table 1. If not stated otherwise, the specimens were collected by A. Lapeva-Gjonova. New records are noted. The

studied material is deposited in the authors' collections. Zoogeographical categorization is based on the current distribution of the ant species and the chorotypes pro-

posed by Vigna Taglianti et al. (1999) with minor changes.

Abbreviations: BG - Bulgaria; TR - Turkey, distr. - district; loc. - locality; vill. - village.



Figure 1. Map of Strandzha Mountain.

Table 1. Surveyed localities in Strandzha Mountain and the adjacent Black Sea coast.

Loc. №	Localities	Altitude	Coordinates	Habitat
<u>BULGARIAN PART</u>				
<u>Malko Tarnovo district</u>				
1	Malko Tarnovo	374 m	N41°58'28" E27°31'40"	grassy
2	near Malko Tarnovo, Propada loc.	385 m	N41°58'54" E27°29'32"	karst, <i>Caprinus betulus</i> L., <i>Quercus cerris</i> L.
3	Mishkova niva loc.	450 m	N41°57'28" E27°30'00"	<i>Quercus hartwissiana</i> Stev.
4	3-4 km E from Malko Tarnovo	467 m	N41°58'45" E27°33'45"	oak forest, grassy
5	Slivarovo vill.	340 m	N41°58'14" E27°39'31"	<i>Calluna vulgaris</i> (L.) community
6	near Slivarovo vill., Shafariitsa loc.	224 m	N41°57'38" E27°39'35"	<i>Alnus glutinosa</i> (L.) Gaertn., river bank
7	Indipasha loc.	102 m	N42°00'29" E 27°39'47"	oak forest
8	Mladezhko vill., Kaletto loc.	220 m	N42°09'06" E27°21'43"	karst, <i>Carpinus orientalis</i> Mill., <i>Quercus cerris</i> L.
9	Kalovo vill.	328 m	N42°08'11" E27°32'11"	grassy
10	4 km SW from Stoilovo vill.	291 m	N42°00'23" E27°30'13"	karst
11	4 km SW from Zvezdets vill., Moriyane loc.	290 m	N42°04'32" E27°24'36"	karst, <i>Carpinus orientalis</i> Mill., <i>Quercus cerris</i> L.
12	near Zvezdets vill., Petrova niva loc.	314 m	N42°05'29" E27°28'24"	grassy
13	along Veleka River, near Petrova niva loc.	170 m	N42°04'37" E27°29'27"	river bank
14	Zabernovo vill.	255 m	N42°06'11" E27°33'45"	oak forest
15	Bliznak vill.	305 m	N42°10'19" E27°18'34"	marsh, wet meadow
16	near Bliznak vill., Bataka loc.	335 m	N42°11'42" E27°19'50"	<i>Quercus hartwissiana</i> Stev., <i>Q. cerris</i> L., <i>Carpinus orientalis</i> Mill.
17	Evrenezovo	340 m	N42°07'46" E27°22'04"	<i>Quercus frainetto</i> Ten., <i>Q. cerris</i> L., grassy
<u>Sredets district</u>				
18	Belevren vill.	485 m	N42°06'34" E27°09'57"	oak forest
19	near Varovnik vill., along Fakiiska River	126 m	N42°13'21" E27°11'24"	grassy

Table 1. (continued)

Loc. №	Localities	Altitude	Coordinates	Habitat
<u>Tsarevo district</u>				
20	Kondolovo vill.	270 m	N42°06'02" E27°40'53"	open place, close to oak forest
21	near Kondolovo vill., Byalata prast loc.	270 m	N42°05'47" E27°39'55"	<i>Quercus polycarpa</i> Schur., <i>Fagus orientalis</i> Lipsky
22	Kosti vill.	110 m	N42°04'15" E27°45'44"	<i>Quercus polycarpa</i> Schur., <i>Fagus orientalis</i> Lipsky
23	Kosti vill., St Iliya loc.	35 m	N42°03'32" E27°45'51"	meadow, oak trees
24	Marina reka loc.	250 m	N42°06'58" E27°45'54"	<i>Fagus orientalis</i> Lipsky, <i>Rhododendron ponticum</i> L.
25	2 km W from Varvara vill.	60 m	N42°06'40" E27° 53'26"	oak forest
26	under Papia peak	255 m	N42°06'48" E27°50'10"	<i>Phyllyrea latifolia</i> L.
27	Maslen nos	18 m	N42°18'27" E27°47'26"	<i>Quercus frainetto</i> Ten., grassy
28	Primorsko, the beach Perla	8 m	N42°17'13" E27°45'12"	sandy beach
29	near Phasanovo vill., Popovi skali loc.	60 m	N42°09'45" E27°44'15"	river bank, beech forest
30	Silistar	5 m	N42°01'24" E28°00'30"	sandy beach
31	Silistar	15 m	N42°01'33" E28°00'48"	<i>Quercus frainetto</i> Ten., <i>Q. ceris</i> L. forest
32	Sinemorets vill., Butamyata loc.	10 m	N42°03'10" E27°59'13"	<i>Quercus frainetto</i> Ten., <i>Q. ceris</i> L. forest
33	the creek of Veleka River	5 m	N42°03'39" E27°57'55"	river bank
34	Rezovo vill.	9 m	N41°59'01" E28°01'41"	open place, close to oak forest
<u>TURKISH PART</u>				
<u>Demirköy district</u>				
35	Demirköy	310 m	N41°49'17" E27°45'30"	urban
36	Kadinkule	655 m	N41°47'43" E27°44'13"	<i>Fagus orientalis</i> Lipsky
37	S from Gökyaka vill.	340 m	N41°52'20" E27°37'06"	oak forest
38	around Dupnisa cave	360 m	N41°50'25" E27°33'21"	beech forest, grassy
39	above Dupnisa cave	430 m	N41°49'56" E27°33'24"	karst
40	İğneada	20 m	N41°51'51" E27°56'54"	longose forest
41	İğneada	20 m	N41°51'54" E27°56'44"	beech forest
42	İğneada, Mert marsh	5 m	N41°51'27" E27°57'32"	marshy
43	İğneada	11 m	N41°49'43" E27°57'31"	oak forest
44	Dökümhane	170 m	N41°49'03" E27°48'50"	beech forest
45	Avçılar vill.	185 m	N41°53'44" E27°51'55"	xerophytic meadow, oak forest
46	W from İğneada	15 m	N41°52'39" E27°56'29"	oak forest
47	near the bridge of Değirmen River	270 m	N41°49'17" E27°45'07"	<i>Alnus</i> forest
48	Beğendik vill.	145 m	N41°56'42" E27°59'26"	oak forest
49	Sislioba vill.	50 m	N41°57'44" E27°54'36"	beech forest
50	E from Demirköy	208 m	N41°51'45" E27°53'00"	mixed forest
51	Sivriler vill.	380 m	N41°47'30" E 27°50'00"	<i>Quercus hartwissiana</i> Stev.
52	Sivriler vill.	315 m	N41°46'37" E27°51'15"	beech forest
53	Balaban vill.	443 m	N41°49', E27°39'	mixed forest
<u>Vize district</u>				
54	N to Kıyıköy	22 m	N41°39'25" E28°05'08"	oak forest
55	Kızılağaç	200 m	N41°39'43" E27°55'25"	meadow
56	Vize	200 m	N41°34' E27°45'	urban
<u>Kırklareli district</u>				
57	Dereköy	500 m	N41°56' E27°21'	grassy place
58	Dereköy	500 m	N41°56' E27°22'	oak forest
59	Geçitağzı vill.	481 m	N41°56' E27°20'	river bank
		514 m	N41°56' E27°18'	oak forest
		522 m	N41°56' E27°18'	oak forest
60	Koruköy	468 m	N41°51' E27°19'	grassy place
61	Üsküp	240 m	N41°41'15" E27°21'48"	urban

Table 1. (continued)

Loc. No	Localities	Altitude	Coordinates	Habitat
<u>Pınarhisar district</u>				
62	Yenice vill.	660 m	N41°44' E27°38'	oak forest
63	Yenice vill.	660 m	N41°44' E27°37'	oak forest
64	Yenice vill.	727 m	N41°44' E27°40'	oak forest
65	Evciler vill.	900 m	N41°46' E27°37'	meadow, oak forest
66	Poyralı vill.	300 m	N41°39' E27°36'	oak forest
67	under Mahya peak	813 m	N41°46'15" E27°38'17"	beech forest
68	Mahya Hill	1035 m	N41°47' E27°37'	beech forest
<u>Kofcaz district</u>				
69	Kula vill.	453 m	N42°01' E27°17'	oak forest
70	Ahmetler vill.	662 m	N42°02' E27°12'	grassy
<u>Lalapasa district</u>				
71	Doğanköy	287 m	N41°55'05" E26°43'13"	river bank
72	Vaysal vill.	560 m	N41°55'23" E26°55'54"	oak forest
<u>İstanbul district</u>				
73	Binkılıç vill.	300 m	N41°25' E28°11'	oak forest

Results

Cryptopone ochracea (Mayr, 1855)

TR. Vize district: [56], 05.10.2001, lg. K. Kiran.

Note: First record for the Turkish part of Strandzha Mountain and second record for Turkey after Schkaff (1924), who first reported this species from the European part of İstanbul. Chorotype: European.

Hypoponera eduardi (Forel, 1894)

BG. Malko Tarnovo distr.: [2], 08.06.2009, lg. R. Bekchiev.

TR. Vize district: [56], 05.10.2001, lg. K. Kiran.

Note: First record both for the Bulgarian and Turkish part of Strandzha Mountain; second and easternmost locality for *H. eduardi* in Bulgaria. Chorotype: Mediterranean.

Ponera coarctata (Latreille, 1802)

BG. Malko Tarnovo distr.: [2], 17.04.2009; [16], 17.04.2009, 05.05.2009; [8], 07.05.2009; [5], 05.06.2009, lg. R. Bekchiev; Tsarevo distr.: [22], 19.04.2009; [26], 08.05.2009; [31], 09.05.2009, lg. R. Bekchiev; [25], [28], 10.05.2009; [23], 27.09.2009.

TR. Demirköy distr.: [37], 29.09.2009; [38], 01.10.2009; [40], [42], 02.10.2009; [51], 22.05.2010; Vize distr.: [54], 24.05.2010.

Chorotype: West Palearctic.

Ponera testacea Emery, 1895

BG. Malko Tarnovo distr.: [9], 06.05.2009; Tsarevo distr.: [26], 08.05.2009; [31], 09.05.2009, lg. R. Bekchiev; [25], 10.05.2009; [23], 27.09.2009.

Note: First records for the Bulgarian part of Strandzha Mountain. Due to recent revival from synonymy the distribution of *P. testacea* in Bul-

garia is largely unknown. There are only two occurrence localities for the species in south-western Bulgaria. Chorotype: European.

Myrmica cf. gallienii Bondroit, 1920

TR. Demirköy distr.: [43], 02.10.2009.

Note: First record for the Turkish part of Strandzha Mountain. Agosti & Collingwood (1987) reported this species from the European part of Turkey but without a specified locality. Therefore this record also provides the first exact locality for the species. Chorotype: Sibero-European.

Myrmica hellenica Finzi, 1926

TR. Demirköy distr.: [38], 01.10.2009.

Note: First record for the European part of Turkey. According to Seifert et al. (2009) *Myrmica hellenica* is a Ponto-Caucasian to East Mediterranean species, which dominates among the other *Myrmica* species at the Caucasian coast of the Black Sea below 600 m a.s.l. Chorotype: Ponto-Caucasian-East Mediterranean.

Myrmica lonae Finzi, 1926

BG. Malko Tarnovo distr.: [6], 19.04.2009; [16], 05.05.2009; [9], [13], 06.05.2009.

TR. Demirköy distr.: [46], 05.07.2009, lg. R. Kostova; [48], 28.09.2009; [38], 01.10.2009; [52], 22.05.2010; Pınarhisar distr.: [67], 30.09.2009.

Note: Seifert (2005) recorded this species for first time in Turkey without providing a certain locality. Therefore these are the second records for Turkey and for the Bulgarian part of Strandzha, which also specify exact localities. Chorotype: Sibero-European.

***Myrmica sabuleti* Meinert, 1861**

BG. Malko Tarnovo distr.: [6], 19.04.2009; Tsarevo distr.: [20], 05.06.2009.

TR. Demirköy distr.: [38], 01.10.2009; [40], [42], 02.10.2009.

Note: First records for the Turkish part of Strandzha Mountain and first precise localities for the Bulgarian part. **Chorotype:** Sibero-European.

***Myrmica scabrinodis* Nylander, 1846**

BG. Malko Tarnovo distr.: [15], 26.09.2009.

TR. Demirköy distr.: [43], 05.07.2009; [47], 06.07.2009, lg. R. Kostova.

Note: First record for the Bulgarian part of Strandzha Mountain. **Chorotype:** Sibero-European.

***Myrmica specioides* Bondroit, 1918**

BG. Malko Tarnovo distr.: [16], 17.04.2009, 04.06.2009; Tsarevo distr.: [23], 27.09.2009, lg. I. Gjonov.

TR. Demirköy distr.: [40], [38], 29.09.2009.

Note: Seifert (1988) recorded this species in Middle Anatolia (Ankara Işık Valley) as *Myrmica sancta* Karavaiev, 1926 which is a junior synonym of *M. specioides*. Agosti & Collingwood (1987) reported *M. specioides* from the European part of Turkey without an exact locality in their Balkan ant list. Our records provide exact localities for the European part of Turkey as well as the first reports for the Turkish part of Strandzha Mountain. **Chorotype:** European.

***Myrmica tulinae* Elmes, Radchenko and Aktaş, 2002**

TR. Pınarhisar distr.: [68], 07.06.2003, lg. K. Kiran.

Chorotype: Turkish endemic.

***Stenammina debile* (Förster, 1850)**

BG. Malko Tarnovo distr.: [3], 18.04.2010.

Note: First record for the Bulgarian part of Strandzha Mountain. **Chorotype:** West Palearctic.

***Stenammina striatulum* (Emery, 1895)**

BG. Tsarevo distr.: [26], 16.04.2009, lg. R. Bekchiev; Sredets distr.: [18], 05.05.2009.

TR. Demirköy distr.: [40], 02.10.2009; [49], 03.10.2009.

Note: New ant species for Bulgaria and European Turkey. The species is distributed in southern Europe and Asia Minor (Turkey, Trabzon) (Dubois 1998). **Chorotype:** Turano-European.

***Aphaenogaster epirotes* (Emery, 1895)**

BG. Malko Tarnovo distr.: [11], 17.04.2010; [2], 27.05.2010.

TR. Demirköy distr.: [39], 01.10.2009.

Note: New record for the European part of Turkey and for the Bulgarian part of Strandzha. The known localities of *A. epirotes* are from Balkan countries (Atanassov & Dlussky 1992). **Chorotype:** East Mediterranean.

***Aphaenogaster gibbosa* (Latreille, 1798)**

TR. Demirköy distr.: [39], 01.10.2009.

Note: New record for the Turkish part of Strandzha Mountain. **Chorotype:** Mediterranean.

***Aphaenogaster subterranea* (Latreille, 1798)**

BG. Malko Tarnovo distr.: [2], 17.04.2009; [7], 18.04.2009; [16], 05.05.2009; [8], [10], 07.05.2009; Tsarevo distr.: [26], 16.04.2009, 08.05.2009, lg. R. Bekchiev; [21], 18.04.2009; [22], 19.04.2009; [24], 08.05.2009, 05.06.2009; [31], 9.05.2009, lg. R. Bekchiev; [25], 10.05.2009; [32], [34], 06.06.2009; [29], 01.07.2009, lg. R. Bekchiev; [23], 27.09.2009, lg. I. Gjonov; Sredets district: [18], 05.05.2009; 09.06.2009, lg. R. Bekchiev.

TR. Demirköy distr.: [46], 05.07.2009, lg. R. Kostova; [40], 29.09.2009, 02.10.2009; [41], [43], 02.10.2009; [49], 03.10.2009; [37], 23.05.2010; Vize distr.: [56], 05.10.2001, lg. K. Kiran; [54], [55], 24.05.2010.

Chorotype: West Palearctic.

***Messor barbarus* (Linnaeus, 1767)**

BG. Tsarevo distr.: [34], 06.06.2009.

Chorotype: Mediterranean.

***Messor caducus* (Victor, 1839)**

BG. Malko Tarnovo distr.: [1], 05.06.2009; [17], 26.09.2009; [4], 27.09.2009; Tsarevo distr.: [20], 18.04.2009; [21], 27.09.2009.

TR. Demirköy distr.: [47], 06.07.2009; [39], [45], 01.10.2009; Vize distr.: [54], 30.09.2009.

Note: New records for the Turkish part of Strandzha Mountain. **Chorotype:** East Mediterranean.

***Messor concolor* Santschi, 1927**

BG. Malko Tarnovo distr.: [9], 06.05.2009; [2], 05.06.2009; [1], 01.08.2009; Tsarevo distr.: [25], 10.05.2009.

Note: First records for the Bulgarian part of Strandzha Mountain. **Chorotype:** East Mediterranean.

***Messor structor* (Latreille, 1798)**

BG. Malko Tarnovo distr.: [8], 07.05.2009; [4], 27.09.2009.

TR. Demirköy distr.: [46], 05.07.2009, lg. R. Kostova; Vize distr.: [56], 05.10.2001, lg. K. Kiran;

[55], 24.05.2010; Pınarhisar distr.: [62], 16.05.2001, lg. K. Kiran.

Note: New records for both parts of Strandzha Mountain. Chorotype: Centralasiatic-Europeo-Mediterranean.

***Pheidole pallidula* (Nylander, 1849)**

BG. Malko Tarnovo distr.: [8], [10], 07.05.2009; [1], 05.06.2009; Tsarevo distr.: [21], 18.04.2009; [25], 10.05.2009; [34], 06.06.2009; [28], 30.06.2009, lg. R. Bekchiev; [29], 01.07.2009, lg. R. Bekchiev.

TR. Demirköy distr.: [38], 08.07.2009, lg. R. Bekchiev; [39], 01.10.2009; Vize distr.: [54], 30.09.2009, 24.05.2010; Pınarhisar distr.: [67], 30.09.2009; Kırklareli distr.: [61], 11.05.2003, lg. K. Kiran.

Chorotype: Turano-Mediterranean.

***Oxyopomyrmex krueperi* Forel, 1911**

BG. Tsarevo distr.: [30], 28.04.2011.

Note: First record of the genus *Oxyopomyrmex* for the Bulgarian myrmecofauna. It was described from Greece and reported from Turkey (Çanak-kale-Eceabat and Edirne-Keşan) (Aktaç & Kiran 2004). Unidentified species of the genus is included in the list of ant species of Macedonia (Karaman 2009). Chorotype: Balkan endemic.

***Myrmecina graminicola* (Latreille, 1802)**

BG. Malko Tarnovo distr.: [9], 06.05.2009; Tsarevo distr.: [26], 16.04.2009, lg. R. Bekchiev; [24], 08.05.2009, 05.06.2009; [31]; 09.05.2009, lg. R. Bekchiev; [29], 01.07.2009, lg. R. Bekchiev; [23], 27.09.2009.

TR. Demirköy distr.: [46], 05.07.2009, lg. R. Kostova; [38], 01.10.2009, [43], [40], 02.10.2009; [49], 03.10.2009.

Chorotype: West Palearctic.

***Crematogaster schmidtii* (Mayr, 1853)**

BG. Malko Tarnovo distr.: [7], 18.04.2009; [16], 05.05.2009; [9], [12], 06.05.2009; Tsarevo distr.: [21], 18.04.2009; [26], 08.05.2009; [30], 09.05.2009; [25], [28], 10.05.2009; [34], [32], 06.06.2009.

TR. Demirköy distr.: [48], 28.09.2009; [43], [42], 02.10.2009; [50], 03.10.2009; Vize distr.: [54], [55], 24.05.2010.

Note: New records for the Turkish part of Strandzha Mountain. Chorotype: Turano-Europeo-Mediterranean.

***Crematogaster sordidula* (Nylander, 1849)**

BG. Malko Tarnovo distr.: [10], 07.05.2009; Sredets distr.: [18], 05.05.2009.

TR. Demirköy distr.: [38], 29.09.2009; [39],

01.10.2009; Vize distr.: [55], 24.05.2010.

Note: New records for both parts of Strandzha Mountain. Chorotype: Mediterranean.

***Solenopsis fugax* (Latreille, 1798)**

BG. Malko Tarnovo distr.: [6], 19.04.2009; [16], 05.05.2009; [10], 07.05.2009; [15], 04.06.2009; Tsarevo distr.: [22], 19.04.2009; [26], 08.05.2009.

TR. Demirköy distr.: [40], 02.10.2009; [38], 23.05.2010; Vize distr.: [56], 05.10.2001, lg. K. Kiran; [55], 24.05.2010.

Note: First records for the Bulgarian part of Strandzha Mountain. Chorotype: Centralasiatic-Europeo-Mediterranean.

***Leptothorax scammi* Ruzsky, 1905**

TR. Pınarhisar distr.: [66], 11.05.2003, lg. K. Kiran.

Note: New record from the European part of Turkey. The species is known from Caucasus, Transcaucasus and Asia Minor (Radchenko 1994). Chorotype: Anatolo-Caucasian.

***Leptothorax muscorum* (Nylander, 1846)**

TR. Vize distr.: [55], 24.05.2010.

Note: New record for the Turkish part of Strandzha Mountain. Chorotype: Palearctic.

***Temnothorax affinis* (Mayr, 1855)**

BG. Malko Tarnovo distr.: [2], 17.04.2009; [12], 06.05.2009; [4], 27.09.2009; Sredets distr.: [18], 05.05.2009; Tsarevo distr.: [31], 9.05.2009, lg. R. Bekchiev; [25], 10.05.2009.

TR. Vize distr.: [54], 30.09.2009.

Note: New records for the Bulgarian part of Strandzha and for the European part of Turkey. *T. affinis* is distributed in Central, Southern and Eastern Europe, Crimea, Caucasus and Transcaucasus (Radchenko 1994). Chorotype: Euro-Caucasian.

***Temnothorax crassispinus* (Karavaiev, 1926)**

BG. Malko Tarnovo distr.: [16], 17.04.2009, 26.09.2009; [7], 18.04.2009, Tsarevo distr.: [23], 27.09.2009.

TR. Demirköy distr.: [37], 29.09.2009, 23.05.2010; [38], 29.09.2009; [39], 01.10.2009; [40], 02.10.2009; [49], 03.10.2009; Pınarhisar distr.: [67], 30.09.2009.

Note: New records for Turkey and for the Bulgarian part of Strandzha. *Temnothorax crassispinus* was considered as a senior synonym of *T. slavonicus* and heterospecific from *T. nylanderi* by Radchenko (2000) with distribution mainly in Eastern Europe and Caucasus while *T. nylanderi* is one of the most common ant species of deciduous woodlands in Central and Western Europe.

Chorotype: Euro-Caucasian.

***Temnothorax interruptus* (Schenck, 1852)**

BG. Tsarevo distr.: [28], 10.05.2009.

TR. Demirköy distr.: [38], 29.09.2009; Vize distr.: [54], 24.05.2010.

Note: New records for Turkey and for the Bulgarian part of Strandzha. *T. interruptus* is a xerophilous species known from Europe and North Africa. Chorotype: West Palearctic.

***Temnothorax cf. nylanderi* (Förster, 1850)**

TR. Pınarhisar distr.: [62], 16.05.2001, lg. K. Kiran.

Chorotype: European.

***Temnothorax parvulus* (Schenck, 1852)**

BG. Sredets distr.: [18], 05.05.2009; Tsarevo distr.: [26], 08.05.2009; [25], 10.05.2009.

TR. Demirköy distr.: [38], 01.10.2009; [41], 02.10.2009; [50], 03.10.2009; [52], 22.05.2010.

Note: New records for both parts of Strandzha Mountain. Chorotype: Euro-Caucasian.

***Temnothorax recedens* (Nylander, 1856)**

TR. Pınarhisar distr.: [65], 11.05.2003, lg. K. Kiran.

Note: New record for the Turkish part of Strandzha Mountain. Chorotype: Mediterranean.

***Temnothorax saxonicus* (Seifert, 1995)**

BG. Tsarevo distr.: [24], 08.05.2009.

Note: First record for the Bulgarian part of Strandzha Mountain. Chorotype: Central European.

***Temnothorax semiruber* (André, 1881)**

BG. Sredets distr.: [18], 05.05.2009.

TR. Demirköy distr.: [39], 01.10.2009; Pınarhisar distr.: [66], 11.05.2003, lg. K. Kiran; [67], 30.09.2009.

Note: New records for both parts of Strandzha Mountain. Chorotype: East Mediterranean.

***Temnothorax tuberum* (Fabricius, 1775)**

TR. Pınarhisar distr.: [66], 11.05.2003, lg. K. Kiran.

Chorotype: Sibero-European.

***Temnothorax unifasciatus* (Latreille, 1798)**

BG. Malko Tarnovo distr.: [14], [9], 06.05.2009; [8], 07.05.2009; Tsarevo distr.: [26], [33], 16.04.2009, lg. R. Bekchiev; [24], 08.05.2009, [31], 09.05.2009.

TR. Demirköy distr.: [43], [48], 28.09.2009; [42], 02.10.2009.

Note: First exact localities for the Bulgarian part of Strandzha. Chorotype: Euro-Caucasian.

***Cardiocondyla bulgarica* Forel, 1892**

BG. Tsarevo distr.: [28], 10.05.2009.

Chorotype: Balkan endemic.

***Cardiocondyla stambuloffii* Forel, 1892**

BG. Tsarevo distr.: [28], 10.05.2009.

Chorotype: Ponto-Caucasian.

***Tetramorium cf. caespitum* (Linnaeus, 1758)**

BG. Malko Tarnovo distr.: [2], 17.04.2009, 05.06.2009, 26.09.2009; [6], 19.04.2009; [16], 05.05.2009; [13], [14], 06.05.2009; [1], 05.06.2009; Tsarevo distr.: [20], [21], 18.04.2009; [26], 08.05.2009; [30], 09.05.2009.

TR. Demirköy distr.: [46], 05.07.2009, lg. R. Kostova; [47], 06.07.2009, lg. R. Kostova; [44], 30.09.2009; [38], [45], 01.10.2009; [42], 02.10.2009; [49], [50], 03.10.2009; Vize distr.: [56], 05.10.2001, lg. K. Kiran; [65], 11.05.2003, lg. K. Kiran; [54], 30.09.2009.

Chorotype: Holarctic.

***Tetramorium chefketi* Forel, 1911**

BG. Malko Tarnovo distr.: [9], 06.05.2009; [10], 07.05.2009; [17], 26.09.2009; [4], 27.09.2009; Tsarevo distr.: [25], 10.05.2009.

TR. Demirköy distr.: [48], 28.09.2009; [45], 01.10.2009; [40], [42], 02.10.2009; Vize distr.: [63], [65], 11.05.2003, lg. K. Kiran; [54], 30.09.2009.

Note: New records for the Turkish part of Strandzha Mountain and first exact localities for the Bulgarian part. Chorotype: Centralasiatic-East European.

***Tetramorium ferox* Ruzsky, 1903**

BG. Tsarevo distr.: [30], 09.05.2009.

TR. Demirköy distr.: [50], 03.10.2009; [45], 23.05.2010.

Note: New records for both parts of Strandzha Mountain. Chorotype: West Palearctic.

***Tetramorium hungaricum* (Rösler, 1935)**

BG. Malko Tarnovo distr.: [8], 07.05.2009; [15], 04.06.2009; Tsarevo distr.: [34], 06.06.2009.

TR. Demirköy distr.: [39], [45], 01.10.2009; [40], 02.10.2009.

Note: New records for Turkey and for the Bulgarian part of Strandzha. *Tetramorium hungaricum* is a xerothermophilous species distributed in the Ponto-Caspian and Balkan regions (Csösz & Markó 2004). Chorotype: East European.

***Tetramorium lucidulum* Menozzi, 1933**

TR. Pınarhisar distr.: [63], 11.05.2003, lg. K. Kiran; Vize distr.: [55], 24.05.2010.

Note: New records for the Turkish part of Strandzha Mountain. Chorotype: East Mediterranean.

***Tetramorium moravicum* Kratochvil, 1941**

BG. Malko Tarnovo distr.: [2], 17.04.2009, 05.06.2009; [8], 07.05.2009; [15], 04.06.2009, 26.09.2009; [1], 01.08.2009; [17], 26.09.2009; Tsarevo distr.: [21], 18.04.2009; [28], 10.05.2009; [20], 05.06.2009; [23], 27.09.2009, lg. I. Gjonov.

TR. Demirköy distr.: [48], 28.09.2009; [45], 01.10.2009; [37], 23.05.2010; Vize distr.: [55], 24.05.2010.

Note: New records for the Turkish part of Strandzha Mountain. Chorotype: West Palearctic.

***Strongylognathus kratochvili* Silhavy, 1937**

BG. Tsarevo distr.: [30], 09.05.2009.

Note: This threatened species has only been known from three localities in Central Bulgaria. It is recorded for the first time in the investigated region in Bulgaria. Chorotype: Central European.

***Strongylognathus testaceus* (Schenck, 1852)**

BG. Malko Tarnovo distr.: [16], 05.05.2009.

Chorotype: Sibero-European.

***Dolichoderus quadripunctatus* (Linnaeus, 1771)**

BG. Malko Tarnovo distr.: [16], 17.04.2009; [7], 18.04.2009; [13], [14], 06.05.2009; [8], 07.05.2009; Tsarevo distr.: [22], 19.04.2009; [25], 10.05.2009; [20], 05.06.2009.

TR. Demirköy distr.: [48], 28.09.2009; [37], [38], 29.09.2009; Pınarhisar distr.: [67]; 30.09.2009.

Chorotype: Sibero-European.

***Liometopum microcephalum* (Panzer, 1798)**

BG. Malko Tarnovo distr.: [16], 17.04.2009, 04.06.2009; [8], 07.05.2009; [10], 26.05.2010; Sredets distr.: [18], 05.05.2009; Tsarevo distr.: [22], 19.04.2009; [27], 30.05.2010.

TR. Pınarhisar distr.: [62], 16.05.2001, lg. K. Kiran.

Note: First exact localities for the Bulgarian part of Strandzha. Chorotype: East Mediterranean.

***Tapinoma erraticum* (Latreille, 1798)**

BG. Malko Tarnovo distr.: [2], 17.04.2009, 05.06.2009, 26.09.2009; [14], [9], 06.05.2009; [10], 07.05.2009; [15], 04.06.2009; [4], 27.09.2009; Tsarevo distr.: [20], [21], 18.04.2009; [30], 09.05.2009; [28], 10.05.2009; [34], 06.06.2009.

TR. Demirköy distr.: [38], 29.09.2009; [44], 30.09.2009; [39], [45], 01.10.2009; [42], 02.10.2009; Pınarhisar distr.: [65], 11.05.2003, lg. K. Kiran; [68], 07.06.2003, lg. K. Kiran.

Chorotype: West Palearctic.

***Tapinoma madeirense* Forel, 1895**

TR. Demirköy distr.: [48], 28.09.2009.

Note: New record for Turkey. This species, previously described as a subspecies of *T. erraticum* Latreille, 1798 (*T. erraticum* var. *madeirense* Forel), was raised in rank by Wetterer et al. (2007) and *T. ambiguum* Emery, 1925 was designated as a junior synonym of *Tapinoma madeirense* Forel. Chorotype: European.

***Bothriomyrmex meridionalis* (Roger, 1863)**

BG. Malko Tarnovo distr.: [10], 07.05.2009.

TR. Demirköy distr.: [45], 01.10.2009; Pınarhisar distr.: [66], 11.05.2003, lg. K. Kiran.

Note: New records for both parts of Strandzha Mountain. Chorotype: Mediterranean.

***Plagiolepis pygmaea* (Latreille, 1798)**

BG. Malko Tarnovo distr.: [16], [2], 17.04.2009; [6], 19.04.2009; [9], 06.05.2009; [8], [10], 07.05.2009; [15], [17], 26.09.2009; Sredets distr.: [18], 05.05.2009; Tsarevo distr.: [26], 08.05.2009; [25], [28], 10.05.2009; [20], 05.06.2009; [32], 06.06.2009.

TR. Demirköy distr.: [38], 29.09.2009; [44], 30.09.2009; [39], 01.10.2009; [51], 22.05.2010; Vize distr.: [54], 30.09.2009; [55], 24.05.2010; Pınarhisar distr.: [67], 30.09.2009; Kırklareli distr.: [57], 23.07.2000, lg. K. Kiran; Lalapaşa distr.: [72], 02.03.2000, lg. K. Kiran.

Chorotype: European.

***Plagiolepis taurica* Santschi, 1920**

BG. Tsarevo distr.: [34], 06.06.2009.

TR. Demirköy distr.: [37], 23.05.2010; Pınarhisar distr.: [66], 11.05.2003, lg. K. Kiran.

Note: New records for both parts of Strandzha Mountain. Chorotype: Palearctic.

***Prenolepis nitens* (Mayr, 1853)**

BG. Tsarevo distr.: [24], 28.11.2009, lg. I. Gjonov.

TR. Demirköy distr.: [48], 28.09.2009; [40], 02.10.2009; [49], 03.10.2009; [44], 30.09.2009.

Chorotype: East Mediterranean.

***Lasius alienus* (Förster, 1850)**

BG. Malko Tarnovo distr.: [9], [12], 06.05.2009; [4], 27.09.2009; Tsarevo distr.: [26], 08.05.2009.

TR. Demirköy distr.: [37], 29.09.2009; Vize distr.: [56], 05.10.2001, 07.10.2001, lg. K. Kiran; Kırklareli distr.: [65], 11.05.2003, lg. K. Kiran; İstanbul distr.: [73], 21.08.1998, lg. B. Özkan.

Chorotype: Holarctic.

***Lasius brunneus* (Latreille, 1798)**

BG. Malko Tarnovo distr.: [16], 17.04.2009; [12], 06.05.2009; Tsarevo distr.: [20], 18.04.2009; [26], 08.05.2009; [25], 10.05.2009; [32], 06.06.2009.

TR. Demirköy distr.: [47], 06.07.2009, lg. R.

Kostova; [38], 29.09.2009; [41], 02.10.2009; Vize distr.: [54], 24.05.2010.

Chorotype: Euro-Caucasian.

***Lasius citrinus* Emery, 1922**

BG. Malko Tarnovo distr.: [2], 17.04.2009; Sredets distr.: [19], 09.06.2009, lg. R. Bekchiev.

Note: First records for the Bulgarian part of Strandzha. Chorotype: Euro-Caucasian.

***Lasius distinguendus* (Emery, 1916)**

BG. Malko Tarnovo distr.: [2], 17.04.2009; [1], 05.06.2009.

Note: First records for the Bulgarian part of Strandzha. Chorotype: Palearctic.

***Lasius emarginatus* (Olivier, 1792)**

BG. Tsarevo distr.: [26], 16.04.2009; [21], 18.04.2009.

TR. Vize distr.: [55], 24.05.2010; Pınarhisar distr.: [62], 16.05.2001, lg. K. Kiran; [65], 11.05.2003, lg. K. Kiran.

Note: First exact localities for the Bulgarian part of Strandzha. Chorotype: Turano-European.

***Lasius fuliginosus* (Latreille, 1798)**

BG. Malko Tarnovo distr.: [16], 17.04.2009, 04.06.2009, 26.09.2009; [2], 17.04.2009, 09.06.2009.

TR. Demirköy distr.: [38], 23.05.2010.

Note: First records for the Bulgarian part of Strandzha. Chorotype: Palearctic.

***Lasius niger* (Linnaeus, 1758)**

BG. Malko Tarnovo distr.: [16], 04.06.2009; Tsarevo distr.: [24], 08.05.2009.

Chorotype: Holarctic.

***Lasius paralienus* Seifert, 1992**

BG. Malko Tarnovo distr.: [16], 05.05.2009; [9], 06.05.2009; [1], 05.06.2009; Tsarevo distr.: [23], 27.09.2009.

TR. Demirköy distr.: [38], 29.09.2009; Vize distr.: [56], 05.10.2001, 07.10.2001, lg. K. Kiran.

Note: New records for the European part of Turkey and first exact localities for the Bulgarian part of Strandzha. *Lasius paralienus* and *L. psammophilus* were recently separated from "*L. alienus*" by Seifert (1992). Chorotype: European.

***Lasius platythorax* Seifert, 1991**

BG. Malko Tarnovo distr.: [13], 06.05.2009; Sredets distr.: [19], 09.06.2009, lg. R. Bekchiev; Tsarevo distr.: [33], 16.04.2009, lg. R. Bekchiev; [21], 18.04.2009.

TR. Demirköy distr.: [43], [40], 02.10.2009; [49], 03.10.2009; [51], 22.05.2010.

Note: New records for the European part of

Turkey and for the Bulgarian part of Strandzha. It is most likely that some of the previously reported data for *Lasius niger* from Bulgaria and Turkey refer to *L. platythorax*. Chorotype: Sibero-European.

***Lasius psammophilus* Seifert, 1992**

BG. Malko Tarnovo distr.: [2], 17.04.2009, 09.06.2009, lg. R. Bekchiev; [7], 18.04.2009; [9], 06.05.2009; [10], 07.05.2009; [15], 26.09.2009; Tsarevo distr.: [24], 08.05.2009; [26], 08.05.2009; [31], 9.05.2009, lg. R. Bekchiev; [25], 10.05.2009; [21], 27.09.2009.

TR. Demirköy distr.: [38], 29.09.2009, 01.10.2009; [39], 01.10.2009; [42], [43], 02.10.2009; [50], 03.10.2009; [51], 22.05.2010; [37], 23.05.2010; Pınarhisar distr.: [67], 30.09.2009.

Note: New records for the European part of Turkey and for the Bulgarian part of Strandzha. Chorotype: European.

***Lasius umbratus* (Nylander, 1846)**

BG. Malko Tarnovo distr.: [2], 17.04.2009; [10], 07.05.2009; Sredets distr.: [18], 05.05.2009.

Note: New records for the Bulgarian part of Strandzha. Chorotype: Palearctic.

***Camponotus aegaeus* Emery, 1915**

TR. Kırklareli distr.: [61], 11.05.2003, lg. K. Kiran.

Note: New record for the European part of Turkey. The species is known from Rhodes Island, Asia Minor and Bulgaria (Lapeva-Gjonova 2011). Chorotype: Balkan-Anatolian.

***Camponotus aethiops* (Latreille, 1798)**

BG. Malko Tarnovo distr.: [6], 19.04.2009; [9], 06.05.2009; [8], 07.05.2009; [10], 07.05.2009; [15], 04.06.2009, 26.09.2009; Tsarevo distr.: [20], 18.04.2009; [34], 06.06.2009.

TR. Demirköy distr.: [39], 01.10.2009; [45], 01.10.2009; Vize distr.: [55], 24.05.2010; [54], 30.09.2009; Pınarhisar distr.: [62], 16.05.2001, lg. K. Kiran.

Chorotype: Turano-Europeo-Mediterranean.

***Camponotus fallax* (Nylander, 1856)**

BG. Tsarevo distr.: [21], 18.04.2009; [32], 06.06.2009.

Note: First records for the Bulgarian part of Strandzha Mountain. Chorotype: West Palearctic.

***Camponotus gestroi* Emery, 1878**

BG. Malko Tarnovo distr.: [10], 26.05.2010.

Note: This is the first record for the Bulgarian part of Strandzha Mountain and the easternmost for Bulgaria. Chorotype: Turano-Europeo-Mediterranean.

***Camponotus lateralis* (Olivier, 1792)**

BG. Malko Tarnovo distr.: [10], 07.05.2009; Sredets distr.: [18], 05.05.2009; Tsarevo distr.: [20], 18.04.2009; 05.06.2009.

TR. Vize distr.: [54], 30.09.2009, 24.05.2010.

Note: First exact localities for the Bulgarian part of Strandzha. **Chorotype:** Turano-European-Mediterranean.

***Camponotus piceus* (Leach, 1825)**

BG. Tsarevo distr.: [21], 18.04.2009; [34], 06.06.2009.

TR. Demirköy distr.: [37], 29.09.2009; Vize distr.: [55], 24.05.2010; Pınarhisar distr.: [67], 30.09.2009.

Chorotype: Turano-European-Mediterranean.

***Camponotus samius* Forel, 1889**

BG. Malko Tarnovo distr.: [9], 06.05.2009; [15], 04.06.2009; [17], 26.09.2009; Sredets distr.: [18], 05.05.2009; Tsarevo distr.: [34], 06.06.2009.

TR. Demirköy distr.: [45], 01.10.2009; Kırklareli distr.: [61], 11.05.2003, lg. K. Kiran; Pınarhisar distr.: [65], 11.05.2003, lg. K. Kiran.

Note: First exact localities for the Bulgarian part of Strandzha. **Chorotype:** Balkan-Anatolian.

***Camponotus tergestinus* Müller, 1921**

BG. Tsarevo distr.: [32], 16.04.2009.

Note: First record of *Camponotus tergestinus* for Bulgaria. It is known from few localities from Italy, Slovenia, Hungary, Romania and the European part of Turkey (Ionescu-Hirsch et al. 2009, Markó et al. 2009). **Chorotype:** East Mediterranean.

***Camponotus truncatus* (Spinola, 1808)**

BG. Tsarevo distr.: [22], 19.04.2009.

TR. Demirköy distr.: [52], 22.05.2010

Note: New records for both parts of Strandzha Mountain. **Chorotype:** Turano-European-Mediterranean.

***Camponotus universitatis* Forel, 1890**

BG. Malko Tarnovo distr.: [2], 27.05.2010. Social parasite in a nest of *Camponotus aethiops*.

Note: First record for Bulgaria and second record for the Balkan Peninsula, after the first report from two localities in Albania (according to Tinaut et al. 1992). Threatened ant species (IUCN Red list status: VU D2). **Chorotype:** South-European.

***Camponotus vagus* (Scopoli, 1763)**

BG. Malko Tarnovo distr.: [12], 06.05.2009.

TR. Demirköy distr.: [36], 25.05.2010.

Chorotype: West Palearctic.

***Formica clara* Forel, 1886**

BG. Malko Tarnovo distr.: [1], 05.06.2009; Tsarevo distr.: [34], 06.06.2009.

TR. Demirköy distr.: [35], 22.05.2010.

Note: New records for both parts of Strandzha. **Chorotype:** Palearctic.

***Formica cunicularia* Latreille, 1798**

BG. Malko Tarnovo distr.: [2], 17.04.2009, 05.06.2009; [16], 17.04.2009, 05.05.2009, 04.06.2009; [9], 06.05.2009; Sredets distr.: [18], 05.05.2009; Tsarevo distr.: [21], 18.04.2009; [20], 05.06.2009; [34], 06.06.2009.

TR. Demirköy distr.: [47], 06.07.2009, lg. R. Kostova; [38], 01.10.2009; [42], 02.10.2009; [51], 22.05.2010; Kırklareli distr.: [58], 26.06.2001, lg. K. Kiran; Kofçaz distr.: [70], 21.05.2009, lg. K. Kiran.

Note: First exact localities for the Bulgarian part of Strandzha. **Chorotype:** West Palearctic.

***Formica fusca* Linnaeus, 1758**

BG. Malko Tarnovo distr.: [4], 27.09.2009.

TR. Demirköy distr.: [51], 22.05.2010; [36], 25.05.2010; Pınarhisar distr.: [68], 07.06.2003, lg. K. Kiran; [67], 30.09.2009.

Note: First record for the Bulgarian part of Strandzha. **Chorotype:** Palearctic.

***Formica gagates* Latreille, 1798**

BG. Malko Tarnovo distr.: [9], 06.05.2009; [16], 04.06.2009; Tsarevo distr.: [26], 16.04.2009; [22], 19.04.2009.

TR. Demirköy distr.: [48], 28.09.2009; [41], 02.10.2009; [51], 22.05.2010; Vize distr.: [55], 24.05.2010.

Note: First records for the Bulgarian part of Strandzha. **Chorotype:** Euro-Caucasian.

***Formica pratensis* Retzius, 1783**

BG. Malko Tarnovo distr.: [1], 05.06.2009; Tsarevo distr.: [34], 06.06.2009.

TR. Demirköy distr.: [53], 20.07.2006, lg. K. Kiran; Kırklareli distr.: [59], 20.07.2006, lg. K. Kiran; [60], 20.07.2006, lg. K. Kiran; Pınarhisar distr.: [64], 21.07.2006, lg. K. Kiran; Kofçaz distr.: [69], 20.07.2006, lg. K. Kiran; Lalapaşa distr.: [71], 21.07.2006, lg. K. Kiran.

Note: First exact localities for the Bulgarian part of Strandzha. **Chorotype:** Palearctic.

***Formica rufa* Linnaeus, 1758**

TR. Pınarhisar distr.: [65], 11.05.2003, lg. K. Kiran.

Note: New record for the Turkish part of Strandzha Mountain. **Chorotype:** Palearctic.

***Formica rufibarbis* Fabricius, 1793**

BG. Malko Tarnovo distr.: [4], 27.09.2009.

Chorotype: Sibero-European.

***Formica sanguinea* Latreille, 1798**

BG. Malko Tarnovo distr.: [2], 27.05.2010; Tsarevo distr.: [27], 30.05.2010.

TR. Demirköy distr.: [37], 23.05.2010.

Note: First exact localities for the Bulgarian part of Strandzha. Chorotype: Palearctic.

***Proformica kobachidzei* K. Arnoldi, 1968**

TR. Demirköy distr.: [39], 01.10.2009.

Note: New record for the European part of Turkey. This is a Caucasian species, also known from Bulgaria (Arnoldi 1968, Atanassov & Dlussky 1992). Chorotype: Balkan-Caucasian.

***Cataglyphis aenescens* (Nylander, 1849)**

TR. Pınarhisar distr.: [62], 16.05.2001, lg. K. Kiran.

Chorotype: Centralasiatic-European.

***Cataglyphis nodus* (Brullé, 1833)**

BG. Malko Tarnovo distr.: [9], 06.05.2009; [17], 26.09.2009; [4], 27.09.2009; Tsarevo distr.: [21], 18.04.2009; [34], 06.06.2009.

TR. Demirköy distr.: [45], 01.10.2009; Vize distr.: [54], 30.09.2009, 24.05.2010; [55], 24.05.2010.

Chorotype: Euro-Caucasian.

***Polyergus rufescens* (Latreille, 1798)**

BG. Malko Tarnovo distr.: [16], 05.05.2009, 04.06.2009.

Chorotype: Central-South European.

Discussion

The present study concerns the ant fauna of Strandzha Mountain, situated partly in south-eastern Bulgaria and partly in European Turkey between the Thracian lowland to the west and the Black Sea coast to the east. The investigated region is a biogeographical crossroad between Europe and Asia, which implies the presence of a rich fauna. This is the first presentation of ant data from both the Bulgarian and the Turkish part of this border mountain.

As a result, a total of 90 ant species from 4 sub-families of Formicidae were recorded in this research. Despite the fact that we could not verify the presence of 23 previously reported species from the mountain and its coast, the total number of ant species recorded so far in Strandzha Mountain and the adjacent Black Sea coast (Bulgarian and Turkish part) is 113.

In the Bulgarian part of Strandzha and its Black Sea coast, 74 species were identified, of which 34 have not been previously recorded in the area. Exact localities for 16 previously known species for the entire studied area were reported for the first time. Based on the new data as well as on the results of other authors (56 species), the number of species present in the Bulgarian part was increased to 90.

Four ant species - *Oxyopomyrmex krueperi* Forel, 1911, *Stenamamma striatulum* (Emery, 1895), *Camponotus tergestinus* Müller, 1921 and *C. universitatis* Forel, 1890 are new findings for the Bulgarian myrmecofauna which thus comprises 167 species. All four species are distributed in the Mediterranean region. *Oxyopomyrmex* is a new harvester ant genus for the country. Thus, there are already a total of 41 ant genera for the territory of Bulgaria. In Bulgaria, the genus *Stenamamma* was previously known by a single member - *S. debile*. According to Arnoldi (1975) *Stenamamma striatulum* is also distributed in the coastal zone of the entire Black Sea coast of the Caucasus. *Camponotus tergestinus* is a new representative of the subgenus *Myrmentoma* in Bulgaria and its first finding confirms its association with oak forests. The present sampling locality of *Camponotus universitatis* is the easternmost range for this rare species found in Spain, France, Italy, Switzerland and Albania. This social parasite was collected from the nest of its typical ant host - *Camponotus aethiops*, and only female and male individuals were gathered.

The present study contributed to a significant increase in the number of known ant species from the Turkish part of Strandzha Mountain and the adjacent Black Sea coast, from 48 to a total of 86. There are new data on 70 ant species, of which 38 are reported for the first time for the Turkish territory of the investigated area.

Four ant species are new for Turkey - *Temnothorax crassispinus* (Karavaiev, 1926), *T. interruptus* (Schenck, 1852), *Tetramorium hungaricum* (Röszler, 1935) and *Tapinoma madeirense* Forel, 1895 and 10 species are new for the European part of Turkey. *Temnothorax crassispinus* was a junior synonym of *T. nylanderi* for many years, but Radchenko (2000) stated that it is a separate species, distributed mainly in Eastern Europe. Therefore, although this record seems to be new for the Turkish ant fauna, old records referring to *T. nylanderi* may also be relevant to *T. crassispinus* and require further investigation. The rare ant species *Temnothorax interruptus* distributed in North Africa

and Europe reached its easternmost limit within its European distribution range with its present record. In Europe, *Tetramorium hungaricum* is known from Hungary, Austria, Romania and Bulgaria and is very abundant in Ukraine (Csósz & Markó 2004, Lapeva-Gjonova et al. 2010). By taking into consideration the distribution of the species, this record was to be expected for Turkey. *Tapinoma madeirense* (senior synonym of *T. ambiguum*) is distributed in Spain, Germany, England, Poland, Hungary, former Czechoslovakia, Romania, Ukraine and Bulgaria (Arnoldi & Dlussky 1978, Seifert 1984). Its closely related species *T. festae*, although described based on queen and male samples from Rhodes and separated from *T. ambiguum* only by the features of the male genitalia by Emery (1925), was recently reported by Lush (2009) in southern Turkey based on workers. Because Lush gives insufficient description of the workers, we could not compare *T. madeirense* with *T. festae*. On the other hand, male genitalia of *T. madeirense* from an Edirne population, a Turkish city close to the Bulgarian border and about 100 km far from our collecting site, completely matched with Emery's drawing (Kiran, unpublished).

The defined chorotypes of the newly and previously reported ant species from Strandzha Mountain indicate the presence of a wide variety of zoogeographical elements (Table 2). The geographical location between Europe and Asia, the proximity to the Black Sea, the Marmara Sea and the Aegean Sea, and the relatively low altitude of most of the territory are geographical features of the region which are related to this diversity. These local peculiarities and paleoecological history have a reflexion on the existence of species with a more or less restricted area of distribution which can be placed in the complex of endemic species, represented by 12 species (10%).

The largest number of species (65) belongs to the complex of species widely distributed in the Holarctic region. Palearctic (sensu lato), West Palearctic, Sibero-European, Euro-Caucasian and Turano-Europeo-Mediterranean species comprise the core of this complex. The remaining chorotypes of the Holarctic region are represented by one to three species. The Mediterranean climatic influence in the region favours the existence of a high number of species from the Mediterranean complex (nearly 17%, 19 species), which slightly exceeds even the number of species from the European complex (16 species). The ratio of Medi-

terranean species in Strandzha is significantly higher than the average one for Bulgaria as a whole (approximately 10-12%). Usually, species of this complex are found in lower parts of the mountain and the adjacent Black Sea coast.

Table 2. Number of ant species from different chorotypes occurring in Strandzha Mountain.

I. Cosmopolitan	1
II. Holarctic region	65
Holarctic	3
Palearctic (s.l.)	14
West Palearctic	14
Sibero-European	10
Centralasiatic-Europeo-Mediterranean	2
Centralasiatic-European	2
Turano-Europeo-Mediterranean	6
Turano-European	2
Turano-Mediterranean	1
Euro-Caucasian	10
Southwest Asiatic	1
III. European	16
European	8
Central European	2
South European	2
East European	2
Central-South European	2
IV. Mediterranean	19
Mediterranean	8
East Mediterranean	11
V. Endemics	12
Balkan	3
Balkan-Anatolian	3
Balkan-Caucasian	2
Anatolo-Caucasian	1
Ponto-Caucasian	1
Turkish	1
Bulgarian	1

The high conservation value of the region is defined by the existence of a significant number of rare ant species in both countries (*Cryptopone ochracea*, *Hypoponera eduardi*, *Myrmica hellenica*, *M. tulinae*, *Oxyopomyrmex krueperi*, *Leptothorax scamni*, *Tapinoma madeirense*, *Camponotus aegaeus*, *C. gestroi*, *C. tergestinus*, *Proformica kobachidzei*) and of 6 species from the IUCN Red List of the Threatened species (*Anergates atratulus*, *Strongylognathus kratichvili*, *Temnothorax recedens*, *Camponotus universitatis*, *Formica rufa*, *F. pratensis*) (IUCN 2011).

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