

**CHOROTYPE IDENTIFICATION
FOR TURKISH CHRYSOMELOIDEA (COLEOPTERA)
PART IV – CHRYSOMELIDAE:
DONACIINAE AND CRIOCERINAE**

Hüseyin Özdikmen* and Hüseyin Özbek*

* Gazi Üniversitesi, Fen-Edebiyat Fakültesi, Biyoloji Bölümü, 06500 Ankara / TÜRKİYE. E-mail: ozdikmen@gazi.edu.tr

[**Özdikmen, H. & Özbek, H.** 2014. Chorotype identification for Turkish Chrysomeloidea (Coleoptera) Part IV – Chrysomelidae: Donaciinae and Criocerinae. *Munis Entomology & Zoology*, 9 (1): 161-169]

ABSTRACT: The paper gives chorotype identifications for Turkish Donaciinae and Criocerinae (Coleoptera: Chrysomelidae). In association with this, some zoogeographical remarks are also given in the text.

KEY WORDS: Donaciinae and Criocerinae, Chrysomelidae, Fauna, Zoogeography, Turkey.

Works on Turkish leaf beetles began in late 19th century. Especially since the last century, they were increased as chiefly faunistic and taxonomic works. Recently, they continue with an increased speed.

Clearly, there is no any work on zoogeographical regionalisation of Turkish Chrysomeloidea related the whole territories of Turkey or regions of Turkey (see Part I for regions in Turkey) at the present.

As known, a series work was planned that is aim to expose zoogeographical regionalisations of Turkish Chrysomeloidea fauna. Özdikmen & Kaya (2014), Özdikmen & Mercan (2014) and Özdikmen & Cihan (2014) are the previous works for this aim. The present study is attempted as the fourth step of this aim.

ARRANGEMENT OF INFORMATION

Information in the present text is given in the following order:

The subfamily, genus, species and subspecies names are given simply.

For each genus, species and subspecies are presented with the author name and date of description.

The data, **Range, Records in Turkey, Remarks** and **Chorotype** under the title for each taxon is given.

Range. In these parts, the whole distribution areas in world are provided for each taxon as in Löbl & Smetana (2010) (see the cited reference for the abbreviations).

Records in Turkey. In these parts, the whole distribution areas in Turkey are provided for each taxon as in Ekiz et al. (2013) (see the cited reference for the abbreviations).

Remarks. In these parts, regional and general distribution in Turkey are given chiefly.

Chorotype. The present zoogeographical characterization.

The present zoogeographical characterization is based on the chorotype classification of Anatolian fauna, recently proposed by Vigna Taglianti et al. (1999). In the text, as far as possible one chorotype description can be identified for each taxon. But this kind of description can not be possible for some taxa, so two or more chorotypes are used for them.

With this purpose, Löbl & Smetana (2010) for the range in the world, Ekiz et al. (2013) for the provincial distribution in Turkey and Özdikmen et al. (2014) for the fauna of Turkey are used chiefly.

According to Özdikmen et al. (2014), Turkish Donacinae comprises of 17 species of 3 genera and Turkish Criocerinae comprises of 13 species of 4 genera.

Subfamily DONACIINAE

Genus *Donacia* Fabricius, 1775

D. aquatica (Linnaeus, 1758)

Range: E: AU BE BH BY CT CZ DE EN FI FR GB GE GG HU IR IT LA LS LT LU NL NR NT PL RO SK SL SP SV SZ UK YU **A:** ES FE HEI JA TR WS **Records in Turkey:** TR-A **Remarks:** Provincial distribution of the species is unknown. **Chorotype:** Sibero-European

D. bicolora Zschach, 1788

Range: E: AB AR AU BE BU BY CR CT CZ DE EN FI FR GB GE GG HU IR IT LA LT LU MD NL NR NT PL PT RO SK SL SP ST SV SZ UK **A:** ES IN IS KZ TR UZ WS **Records in Turkey:** TR-A: ANK, BOL, DEN, DUZ, KAY, SAM, SIV (Ekiz et al., 2013; pers. comm., 2013) **Remarks:** The species has been recorded only from 3 Turkish regions as Aegean Region, Black Sea Region and Central Anatolian Region until now. **Chorotype:** Sibero-European

D. cinerea Herbst, 1784

Range: E: AB AU BE BH BU BY CR CT CZ DE EN FI FR GB GE GG GR HU IR IT LA LT LU MD NL NR NT PL RO SK SL SP ST SV SZ UK **A:** IN KZ TR UZ WS **Records in Turkey:** TR-A: GIR **Remarks:** The species has been recorded only from Black Sea Region in Turkey until now. **Chorotype:** Sibero-European

D. clavipes Fabricius, 1792

Range: E: AU BE BU BY CR CT CZ DE EN FI FR GB GE HU IR IT LA LS LT LU MD NL NR NT PL PT RO SK SL SP ST SV SZ UK **A:** KI KZ TR WS **Records in Turkey:** TR-A – TR-E **Remarks:** Provincial distribution of the species is unknown. **Chorotype:** Sibero-European

D. delagrangi Pic, 1896

Range: E: GG **A:** TR **Records in Turkey:** TR-A: HAT SIR **Remarks:** The species has been known only from Eastern Anatolian Region and Mediterranean Region until now. **Chorotype:** SW-Asiatic (Anatolo-Caucasian)

D. impressa (Paykull, 1799)

Range: E: AB AU BE BH BU BY CR CT CZ DE EN FI FR GB GE GG HU IR IT LA LT LU NL NR NT PL PT RO SK SL SP ST SV SZ UK YU **N:** AG MO **A:** ES KZ TR WS **Records in Turkey:** TR-A: ANK, BOL, KON, SIV **Remarks:** The species has been recorded only from 2 Turkish regions as Black Sea Region and Central Anatolian Region until now. **Chorotype:** Palearctic

D. kraatzi Weise, 1881

Range: E: AR **A:** TR **Records in Turkey:** TR-A: AMA, ERZ, KAH **Remarks:** The species has been recorded only from 3 Turkish regions as Black Sea Region, Eastern Anatolian Region and Mediterranean Region until now. **Chorotype:** SW-Asiatic (Anatolo-Caucasian)

D. marginata Hoppe, 1795

Range: E: AB AU BE BU BY CR CT CZ DE EN FI FR GB GE GG GR HU IR IT LA LT LU MC NL NR NT PL PT RO SK SL SP ST SV SZ TR UK **N:** MO **A:** IN IS KZ TD TR UZ WS **Records in Turkey:** TR-A: ANK, DEN, DUZ, ISP, IST, KAH, MUG, SAM, TOK – TR-E **Remarks:** The species is probably rather widely distributed in Turkey. It has been recorded only from 5 Turkish regions. But it has not been recorded only from Eastern Anatolian Region and South-Eastern Anatolian Region until now. **Chorotype:** Sibero-European

***D. microcephala* J. Daniel, 1904**

Range: A: IN IQ TR **Records in Turkey:** TR-A: KON **Remarks:** The species has been recorded only from Central Anatolian Region until now. **Chorotype:** SW-Asiatic (Irano-Anatolian)

***D. mistshenkoi* Jakobson, 1910**

Range: E: GG A: TR **Records in Turkey:** TR-A **Remarks:** Provincial distribution of the species is unknown. **Chorotype:** SW-Asiatic (Anatolo-Caucasian)

***D. simplex* Fabricius, 1775**

Range: E: AU BE BU BY CR CT CZ DE EN FI FR GB GE GG HU IR IT LA LS LT LU MD NL NR NT PL PT RO SK SL SP ST SV SZ TR UK N: AG MO A: ES MG NMO SHX TR WS **Records in Turkey:** TR-A: DEN, DUZ, ISP, IST, MUG, SAM, ZON – TR-E: IST **Remarks:** The species has been recorded only from 4 Turkish regions. But it has not been recorded from Central Anatolian Region, Eastern Anatolian Region and South-Eastern Anatolian Region until now. **Chorotype:** Sibero-European

***D. thalassina* Germar, 1811**

Range: E: AB AR AU BE BU BY CT CZ DE EN FI FR GB GE GG HU IR IT LA LT LU NL NR NT PL RO SK SL SP ST SV SZ TR UK YU A: ES KZ MG TR WS **Records in Turkey:** TR-A: IZM, SIV – TR-E **Remarks:** The species has been recorded only from 3 Turkish regions as Aegean Region, Central Anatolian Region and Marmara Region until now. **Chorotype:** Sibero-European

***D. tomentosa* Ahrens, 1810**

Range: E: AB BE BH BU BY CT CZ EN FI FR GE HU IT LA LT LU NL NT PL RO SK SL ST SV SZ UK A: KZ TM TR UZ WS **Records in Turkey:** TR-A: GIR **Remarks:** The species has been recorded only from Black Sea Region in Turkey until now. **Chorotype:** Sibero-European

***D. vulgaris* Zschach, 1775**

Range: E: AB AR AU BE BH BU BY CT CZ DE EN FI FR GB GE GG HU IR IT LA LS LT LU NL NR NT PL PT RO SK SL SP ST SV SZ UK YU A: BEI ES FE HEB HEI JA JIL KZ TR WS XIN **Records in Turkey:** TR-A: DEN, EZU, KAH, KRB, SIN **Remarks:** The species has been recorded only from 4 Turkish regions. But it has not been recorded from Central Anatolian Region, Marmara Region and South-Eastern Anatolian Region until now. **Chorotype:** Sibero-European

Genus *Macrolea* Samouelle, 1819***M. mutica* Fabricius, 1792**

Range: E: BE BY DE EN FI FR GB GE HU IT LA NL NR NT PL RO ST SV N: AG A: KI MG UZ **Records in Turkey:** TR-A: ELA **Remarks:** The species has been recorded only from Eastern Anatolian Region in Turkey until now. **Chorotype:** Palearctic

Genus *Plateumaris* Thomson, 1859**Subgenus *Euplateumaris* I.-Khnzorian, 1966*****P. sericea* (Linnaeus, 1760)**

Range: E: AB AR AU BE BU BY CT CZ DE EN FI FR GB GE GG HU IR IT LA LS LT LU NL NR NT PL RO SK SL SP ST SV SZ TR UK A: ES IN KZ WS **Records in Turkey:** TR-A: ANK, BOL, IST, RIZ – TR-E: IST **Remarks:** The species has been recorded only from 3 Turkish regions as Black Sea Region, Central Anatolian Region and Marmara Region until now. **Chorotype:** Sibero-European

Subgenus *Plateumaris* Thomson, 1859***P. consimilis* (Schränk, 1781)**

Range: E: AU BE BH BU BY CR CT CZ DE FR GE HU IT LT LU NL PL RO SK SL SP SV SZ UK A: WS **Records in Turkey:** TR-A: BOL **Remarks:** The species has been recorded

only from Black Sea Region in Turkey until now. **Chorotype:** Sibero-European

Subfamily CRIOCERINAE

Genus *Crioceris* Geoffroy, 1762

C. asparagi (Linnaeus, 1758)

Range: E: AB AL AR AU BE BU BY CR CT CZ DE FR GB GE GG GR IT LA LS LT NL PL PT RO SK SL SP ST SV SZ UK YU N: EG A: IN LE SY TD TR **NAR Records in Turkey:** TR-A: AKS, AMA, ANT, ISP, IZM, KAY, KRB, KRS, OSM **Remarks:** The species has been recorded only from 4 Turkish regions. But it has not been recorded from Eastern Anatolian Region, Marmara Region and South-Eastern Anatolian Region until now. **Chorotype:** Holarctic

C. bicrucata (Sahlberg, 1823)

Range: E: BU GR MC "Caucasus" A: JO KZ TD TR UZ **Records in Turkey:** TR-A: AYD, IGD, ISP, IZM, KRS, MAN **Remarks:** The species has been recorded only from 2 Turkish regions as Aegean Region and Eastern Anatolian Region until now. **Chorotype:** Turano-Mediterranean (Turano-Balkan) or Turano-Mediterranean (Turano-Balkan) + Centralasiatic

C. duodecimpunctata (Linnaeus, 1758)

Range: E: AB AL AR AU BE BH BU BY CR CT CZ DE EN FR GB GE GR HU IT LA LT MC MD NL NT PL PT SK SL SP ST SV SZ TR UK YU A: FE IN KZ MG SY TR WS "Korea" **Records in Turkey:** TR-A: AKS, AMA, ANK, EZU, IZM, KAY, KON, KRS, NIG, SAM – TR-E **Remarks:** The species is probably rather widely distributed in Turkey. It has been recorded from 5 Turkish regions. But it has not been recorded only from Mediterranean Region and South-Eastern Anatolian Region until now. **Chorotype:** Sibero-European

C. paracenthesis (Linnaeus, 1767)

Range: E: AL AN BH BU CR FR GR IT MA MC ME PT SL SP N: AG CI MO TU **Records in Turkey:** TR-A: ISP, KRS – TR-E: IST **Remarks:** The species has been recorded only from 3 Turkish regions as Eastern Anatolian Region, Marmara Region and Mediterranean Region until now. **Chorotype:** Mediterranean

C. quatuordecimpunctata (Scopoli, 1763)

Range: E: AL AU BE BH BU BY CR CT CZ FR GE HU MD PL RO SK SL ST UK A: BEI ES FE FUJ GUX HEB HEI JA JIA JIL KZ NMO SHN TAI WS YUN ZHE "Korea" **Records in Turkey:** TR-A: KRS **Remarks:** The species has been recorded only from Eastern Anatolian Region in Turkey until now. **Chorotype:** Asiatic-European

C. sokolowi Jakobson, 1894

Range: E: "Caucasus" **Records in Turkey:** TR-A: ANK, KON, NIG **Remarks:** The species has been recorded only from Central Anatolian Region in Turkey until now. **Chorotype:** SW-Asiatic (Anatolo-Caucasian)

Genus *Lema* Fabricius, 1798

Subgenus *Lema* Fabricius, 1798

L. cyanella (Linnaeus, 1758)

Range: E: AL AN AU BE BU BY CR CT CZ DE EN FI FR GB GE HU IR IT LA LT LU MC MD NL NR NT PL RO SK SL SP ST SV SZ UK YU A: ES FE JIL KZ LIA MG WS XIN "Korea" **NAR Records in Turkey:** TR-A: EZU **Remarks:** The species has been recorded only from Eastern Anatolian Region in Turkey until now. **Chorotype:** Holarctic

Genus *Lilioceris* Reitter, 1913

L. faldermanni (Guérin-Méneville, 1844)

Range: E: AB AR GG GR ST TR A: CY IQ IS JO SY **Records in Turkey:** TR-A: ANK, ANT, BAY, EZU, ISP, KAH – TR-E **Remarks:** The species is probably rather widely

distributed in Turkey. It has been recorded from 5 Turkish regions. But it has not been recorded only from Aegean Region and South-Eastern Anatolian Region until now. **Chorotype:** Turano-Mediterranean (Turano-Balkan)

***L. lilii* (Scopoli, 1763)**

Range: E: AB AL AR AU BE BH BU BY CR CT CZ DE EN FI FR GB GE GG HU IT LA LS LT LU MC MD NL NR NT PL PT RO SK SL SP ST SV SZ UK YU **N:** AG MO TU **A:** ES FE IN KZ MG WS **NAR Records in Turkey:** TR-A: IZM **Remarks:** The species has been recorded only from Aegean Region in Turkey until now. **Chorotype:** Holarctic

***L. merdigera* (Linnaeus, 1758)**

Range: E: AU BE BH BU BY CR CZ DE EN FI FR GE HU IT LA LS LT LU NL NR NT SK SL SV SZ UK **A:** BEI ES FE FUJ GUX HEB HEI HUB JA JIL KZ LIA MG NMO NP SHN SHX TAI WS ZHE “Korea” **Records in Turkey:** TR-A: IZM, KAH, KUT **Remarks:** The species has been recorded only from 2 Turkish regions as Aegean Region and Mediterranean Region until now. **Chorotype:** Asiatic-European

Genus *Oulema* Gozis, 1886

***O. duftschmidi* (Redtenbacher, 1874)**

Range: E: AL AN AU CT DE FR GE GR HU IT RO SK SP SV SZ **N:** MR **Records in Turkey:** TR-A: ADA, AKS, ANK, AFY, BOL, CNK, DUZ, ESK, KAR, KAY, KON, KSH, MER, SAM **Remarks:** The species has been recorded only from 3 Turkish regions as Black Sea Region, Central Anatolian Region and Mediterranean Region until now. **Chorotype:** Mediterranean

***O. gallaeciana* (Heyden, 1870)**

Range: E: AL AN AU BE BH BU BY CR CT CZ DE EN FI FR GB GE GR HU IR IT LA LT LU MC MD NL NR NT PL RO SK SL SP ST SV SZ UK YU **A:** FE KZ MG WS “Siberia” **Records in Turkey:** TR-A: BAY, BOL, EZU, KAY, KRB, KRS **Remarks:** The species has been recorded only from 3 Turkish regions as Black Sea Region, Central Anatolian Region and Eastern Anatolian Region until now. **Chorotype:** Sibero-European

***O. melanopus* (Linnaeus, 1758)**

Range: E: AB AL AN AR AU BE BH BU BY CR CT CZ DE EN FI FR GB GE GG GR HU IR IT LA LS LT LU MA MC MD NL NR NT PL PT RO SK SL SP ST SV SZ UK YU **N:** AG CI LB MO MR **A:** AF CH CY ES IN IQ IS JA KI KZ MG TD WS **NAR Records in Turkey:** TR-A: ADA, AFY, AKS, ANK, ANT, ARD, AYD, CAN, COR, DIY, ESK, ERZ, EZU, GAZ, HAT, IGD, IZM, KAH, KAR, KAS, KON, KRB, KRS, KUT, MAN, MUG, OSM, SAM, SII – TR-E: EDI, KRK, TEK (Ekiz et al., 2013; pers. comm., 2013) **Remarks:** The species is widely distributed in Turkey. It has been recorded from all Turkish regions. But it has not been recorded only from Catalca Part of European Turkey and Kocaeli Part of Asian Turkey in Marmara Region, Central Kızıllrmak Part in Central Anatolian Region, Eastern Black Sea Part in Black Sea Region, and Upper Murat-Van Part and Hakkari Part in Eastern Anatolian Region until now. **Chorotype:** Holarctic

ZOOGEOGRAPHICAL ANALYSIS

Turkish Donaciinae includes 17 species of 3 genera. 11 species, namely 64.71 % of the species have “Sibero-European” chorotype. 4 species, namely 23.53 % of the species have “SW-Asiatic” chorotype. And 2 species, namely 11.76 % of the species have “Palearctic” chorotype (Fig. 1). So the dominant chorotype for Turkish Donaciinae is “Sibero-European”. “SW-Asiatic” chorotype follows it. Also the members of “Palearctic” chorotype presents an important contribution for Turkish fauna.

For zoogeographical evaluation, the all known species of Turkish Donaciinae are presented as follows:

A total of 11 species have “Sibero-European” chorotype as *D. aquatica*, *D. bicolora*, *D. cinerea*, *D. clavipes*, *D. marginata*, *D. simplex*, *D. thalassina*, *D. tomentosa*, *D. vulgaris*, *P. sericea* and *P. consimilis*.

A total of 4 species have “SW-Asiatic” chorotype as *D. delagrangi*, *D. kraatzi*, *D. microcephala* and *D. mistshenkoi*.

A total of 2 species have “Palearctic” chorotype as *D. impressa* and *M. mutica*.

On the other side, Turkish Donaciinae includes a total of 17 species. However, provincial distributions of 3 species are unknown. So Turkish Donaciinae have 2 different evaluations necessarily. But, results of both assessments are the same except the occurrence ratio.

For the subfamily Donaciinae (according to all species):

- 4 species are represented in Marmara Region (24 %)
- 5 species are represented in Aegean Region (29 %)
- 5 species are represented in Mediterranean Region (29 %)
- 6 species are represented in Central Anatolian Region (35 %)
- 10 species are represented in Black Sea Region (59 %)
- 4 species are represented in Eastern Anatolian Region (24 %)
- 0 species are represented in South-Eastern Anatolian Region (0 %)

For the subfamily Donaciinae (according to known provincial distribution of 14 species):

- 4 species are represented in Marmara Region (29 %)
- 5 species are represented in Aegean Region (36 %)
- 5 species are represented in Mediterranean Region (36 %)
- 6 species are represented in Central Anatolian Region (43 %)
- 10 species are represented in Black Sea Region (71 %)
- 4 species are represented in Eastern Anatolian Region (29 %)
- 0 species are represented in South-Eastern Anatolian Region (0 %)

So Turkish Donaciinae that includes a total of 17 species or 14 species of which are known provincial distributions in Turkey, are rather widely distributed in all Turkish Regions except South-Eastern Anatolian Region. The most number of species is represented in Black Sea Region. Central Anatolian Region follows it. Aegean Region, Mediterranean Region, Marmara Region and Eastern Anatolian Region are represented with an important number of species. However, South-Eastern Anatolian Region has not been included any recorded species until now. Because, probably the region has been unworked for Donaciinae.

Turkish Criocerinae includes 13 species of 4 genera. 4 species, namely 30.77 % of the species have “Holarctic” chorotype. 2 species, namely 15.39 % of the species have “Asiatic-European” chorotype. 2 species, namely 15.39 % of the species have “Mediterranean” chorotype. 2 species, namely 15.39 % of the species have “Sibero-European” chorotype. 2 species, namely 15.39 % of the species have “Turano-Mediterranean” chorotype. 1 species, namely 7.67 % of the species have “SW-Asiatic” chorotype (Fig. 2). So the dominant chorotype for Turkish Criocerinae is “Holarctic”. “Asiatic-European”, “Mediterranean”, “Sibero-European” and “Turano-Mediterranean” chorotypes follow it. Also the member of “SW-Asiatic” chorotype presents a contribution for Turkish fauna.

For zoogeographical evaluation, the all known species of Turkish Donaciinae are presented as follows:

A total of 4 species have “Holartic” chorotype as *C. asparagi*, *L. cyanella*, *L. lili* and *O. melanopus*.

A total of 2 species have “Asiatic-European” chorotype as *C. quatuordecimpunctata* and *L. meridigera*.

A total of 2 species have “Mediterranean” chorotype as *C. paracenthesis* and *O. duftschmidi*.

A total of 2 species have “Sibero-European” chorotype as *C. duodecimpunctata* and *O. gallaeciana*.

A total of 2 species have “Turano-Mediterranean” chorotype as *C. bicrucata* and *L. faldermanni*.

One species as *C. sokolowi* has “SW-Asiatic” chorotype.

On the other side, Turkish Criocerinae includes a total of 13 species that are known provincial distributions of all species. So, the regional distributions of all known species of Criocerinae in Turkey are presented as follows (Table 2):

For the subfamily Criocerinae:

4 species are represented in Marmara Region (31 %)

6 species are represented in Aegean Region (46 %)

6 species are represented in Mediterranean Region (46 %)

7 species are represented in Central Anatolian Region (54 %)

6 species are represented in Black Sea Region (46 %)

8 species are represented in Eastern Anatolian Region (62 %)

1 species are represented in South-Eastern Anatolian Region (8 %)

So Turkish Criocerinae that includes a total of 13 species are rather widely distributed in all Turkish Regions. The most number of species is represented in Eastern Anatolian Region. Central Anatolian Region follows it. Aegean Region, Mediterranean Region and Black Sea Region, and also Marmara Region, are represented with an important number of species. However, South-Eastern Anatolian Region are represented with one species now. Because, last one has been inadequately worked until now.

LITERATURE CITED

Ekiz, A. N., Şen, İ., Aslan, E. G. & Gök, A. 2013. Checklist of leaf beetles (Coleoptera: Chrysomelidae) of Turkey, excluding Bruchinae. *Journal of Natural History*, 47 (33-34): 2213-2287.

Löbl I. & Smetana A. (ed.) 2010. *Catalogue of Palaearctic Coleoptera*, Vol. 6. Chrysomeloidea. Stenstrup: Apollo Books, 924 pp.

Özdikmen, H. & Kaya, G. 2014. Chorotype identification for Turkish Chrysomeloidea (Coleoptera) Part I – Chrysomelidae: Hispinae and Cassidinae. *Munis Entomology & Zoology*, 9 (1): 58-70.

Özdikmen, H. & Mercan, N. 2014. Chorotype identification for Turkish Chrysomeloidea (Coleoptera) Part II – Chrysomelidae: Clytrinae. *Munis Entomology & Zoology*, 9 (1): 89-102.

Özdikmen, H. & Cihan, N. 2014. Chorotype identification for Turkish Chrysomeloidea (Coleoptera) Part III – Chrysomelidae: Cryptocephalinae. *Munis Entomology & Zoology*, 9 (1): 125-142.

Özdikmen, H., Mercan, N., Cihan, N., Kaya, G., Topcu, N. N. & Kavak, M. 2014. The importance of superfamily Chrysomeloidea for Turkish biodiversity (Coleoptera). *Munis Entomology & Zoology*, 9 (1): 17-45.

Table 1. The regional distribution of all known species of Donaciinae in Turkey.

TAXON	R	E	G	I	O	N	S
	MAR	AER	MER	CAR	BSR	EAR	SEAR
Subfamily DONACIINAE							
<i>D. aquatica</i>	?	?	?	?	?	?	?
<i>D. bicolora</i>	-	+	-	+	+	-	-
<i>D. cinerea</i>	-	-	-	-	+	-	-
<i>D. clavipes</i>	?	?	?	?	?	?	?
<i>D. delagrangi</i>	-	-	+	-	-	+	-
<i>D. impressa</i>	-	-	-	+	+	-	-
<i>D. kraatzi</i>	-	-	+	-	+	+	-
<i>D. marginata</i>	+	+	+	+	+	-	-
<i>D. microcephala</i>	-	-	-	+	-	-	-
<i>D. mistshenkoi</i>	?	?	?	?	?	?	?
<i>D. simplex</i>	+	+	+	-	+	-	-
<i>D. thalassina</i>	+	+	-	+	-	-	-
<i>D. tomentosa</i>	-	-	-	-	+	-	-
<i>D. vulgaris</i>	-	+	+	-	+	+	-
<i>M. mutica</i>	-	-	-	-	-	+	-
<i>P. sericea</i>	+	-	-	+	+	-	-
<i>P. consimilis</i>	-	-	-	-	+	-	-

Abbreviations: MAR: Marmara Region, AER: Aegean Region, MER: Mediterranean Region, CAR: Central Anatolian Region, BSR: Black Sea Region, EAR: Eastern Anatolian Region, SEAR: South-Eastern Anatolian Region.

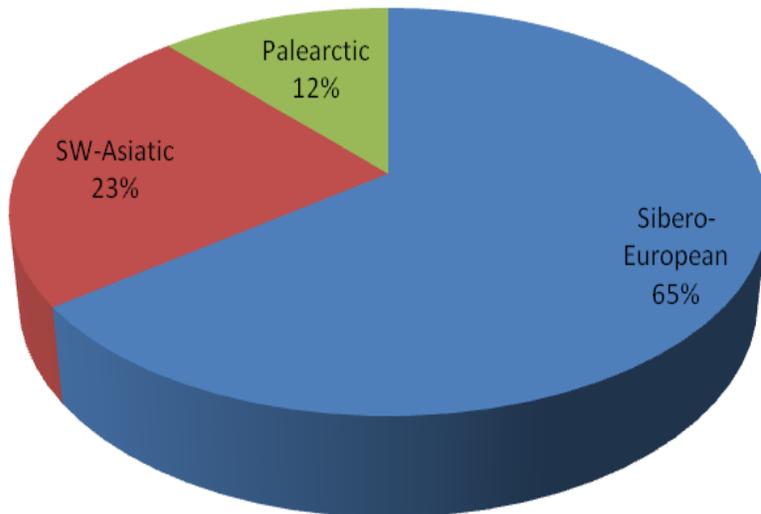


Figure 1. Chorotypical distribution of Turkish Donaciinae.

Table 2. The regional distribution of all known species of Criocerinae in Turkey.

TAXON	R	E	G	I	O	N	S
	MAR	AER	MER	CAR	BSR	EAR	SEAR
Subfamily CRIOCERINAE							
<i>C. asparagi</i>	-	+	+	+	+	-	-
<i>C. bieruciata</i>	-	+	-	-	-	+	-
<i>C. duodecimpunctata</i>	+	+	-	+	+	+	-
<i>C. paracenthesis</i>	+	-	+	-	-	+	-
<i>C. quatuordecimpunctata</i>	-	-	-	-	-	+	-
<i>C. sokolowi</i>	-	-	-	+	-	-	-
<i>L. cyanella</i>	-	-	-	-	-	+	-
<i>L. faldermanni</i>	+	-	+	+	+	+	-
<i>L. lili</i>	-	+	-	-	-	-	-
<i>L. merdigera</i>	-	+	+	-	-	-	-
<i>O. duftschmidi</i>	-	-	+	+	+	-	-
<i>O. gallaeciana</i>	-	-	-	+	+	+	-
<i>O. melanopus</i>	+	+	+	+	+	+	+

Abbreviations: MAR: Marmara Region, AER: Aegean Region, MER: Mediterranean Region, CAR: Central Anatolian Region, BSR: Black Sea Region, EAR: Eastern Anatolian Region, SEAR: South-Eastern Anatolian Region.

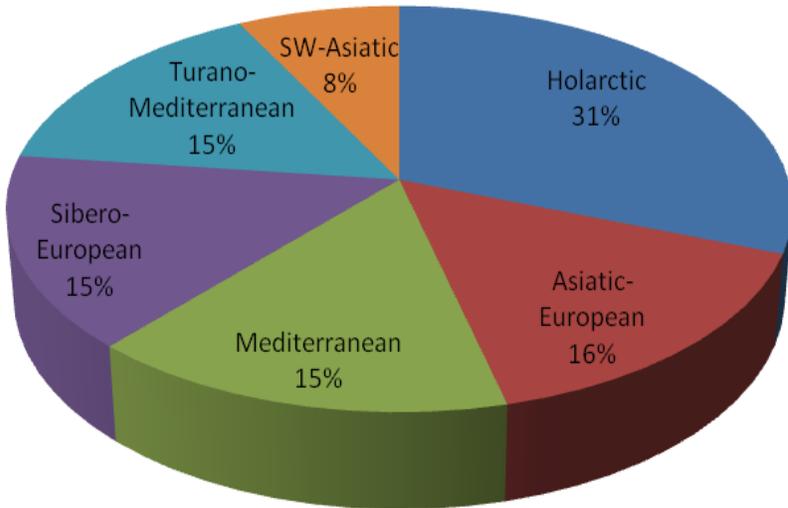


Figure 2. Chorotypical distribution of Turkish Criocerinae.