

**CHOROTYPE IDENTIFICATION
FOR TURKISH CHRYSOMELOIDEA (COLEOPTERA)
PART VI – CHRYSOMELIDAE: GALERUCINAE**

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

KEY WORDS: Galerucinae, 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), Özdikmen & Cihan (2014), Özdikmen & Özbek (2014) and Özdikmen & Kavak (2014) are the previous works for this aim. The present study is attempted as the sixth 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 Galerucinae comprises of 67 species group taxa (55 species + 12 subspecies) of 15 genera.

Subfamily GALERUCINAE

Genus *Agelastica* Chevrolat, 1836

A. alni (Linnaeus, 1758)

A. a. alni (Linnaeus, 1758)

Range: E: AB AL AU BE BH BU BY CZ DE EN FI FR GB GE GR HU IT LA LS LT LU MC NL NR PL RO SK SP SV SZ UK YU **A:** IN TR **Records in Turkey:** TR-A: ADA, ANT, ART, BAL, BRS, ESK, EZU, DUZ, GIR, ISP, IST, IZM, KAH, KOC, MER, OSM, RIZ, SAK, TRA – TR-E: IST, KRK **Remarks:** The subspecies is rather widely distributed in Turkey. It has been recorded from 6 Turkish regions. But it has not been recorded only from South-Eastern Anatolian Region until now. **Chorotype:** European

Genus *Aulacophora* Chevrolat, 1836

A. foveicollis (Lucas, 1849)

Range: E: FR GR IT PT SP N: EG **A:** AF CY IN IS OM PA SA ST SY TR YE **AFR ORR** **Records in Turkey:** TR-A: ADA, AYD, DEN, ESK, EZU, IZM, MAN, MUG **Remarks:** The species has been recorded only from 4 Turkish regions. But it has not been recorded from Black Sea Region, Marmara Region and South-Eastern Anatolian Region until now. **Chorotype:** Afrotropico-Indo-Mediterranean + Oriental

Genus *Calomicrus* Dillwyn, 1829

C. angorensis (Pic, 1912)

Range: A: TR **Records in Turkey:** TR-A: ANK, COR, EZU, MUS, YOZ (Ekiz et al., 2013; pers. comm., 2013) **Remarks:** The endemic species has been recorded only from 3 Turkish regions as Black Sea Region, Central Anatolian Region and Eastern Anatolian Region until now. **Chorotype:** Anatolian

C. apicalis Demaison, 1891

Range: A: SY TR **Records in Turkey:** TR-A: ADA, ANT, BOL, EZU, HAT, ISP, KAR, KAS, MER, SIV **Remarks:** The species has been recorded only from 4 Turkish regions. But it has not been recorded from Aegean Region, Marmara Region and South-Eastern Anatolian Region until now. **Chorotype:** SW-Asiatic (Syro-Anatolian)

C. azureus (Fairmaire, 1884)

Range: A: LE SY TR **Records in Turkey:** TR-A: HAT **Remarks:** The species has been recorded only from Mediterranean Region in Turkey until now. **Chorotype:** E-Mediterranean (Palaestino-Taurian)

C. circumfusus (Marshall, 1802)

Range: E: AU BE BH BU BY CZ FR GB GE HU IT LU MC MD NL PL SK SP SZ UK YU **N: TU** **Records in Turkey:** TR-A: ISP **Remarks:** The species has been recorded only from Mediterranean Region in Turkey until now. **Chorotype:** Mediterranean

C. lividus (Joannis, 1866)

Range: A: IS JO LE SY TR **Records in Turkey:** TR-A: ADA, AGR, ANT, DIY, ERZ, ESK, EZU, HAT, ISP, IZM, KON, KRS, MER, OSM **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 Black Sea Region and Marmara Region until now. **Chorotype:** E-Mediterranean (Palaestino-Taurian)

C. malkini Warchałowski, 1991

Range: A: TR **Records in Turkey:** TR-A: ISP **Remarks:** The endemic species has been recorded only from Mediterranean Region in Turkey until now. **Chorotype:** Anatolian

***C. pinicola* (Duftschmid, 1825)**

Range: E: AL AU BE BU BY CZ EN FI FR GE HU IT LA LS LT LU NL PL RO SK SP SV SZ UK A: TR **Records in Turkey:** TR-A: EZU **Remarks:** The species has been recorded only from Eastern Anatolian Region in Turkey until now. **Chorotype:** C and E-European

***C. syriacus* (Weise, 1898)**

Range: A: IS SY TR **Records in Turkey:** TR-A: ANT, HAT, ISP, MER **Remarks:** The species has been recorded only from Mediterranean Region in Turkey until now. **Chorotype:** E-Mediterranean (Palaestino-Taurian)

***C. turcicus* Medvedev, 1975**

Range: A: TR **Records in Turkey:** TR-A: AGR, EZU, KRS **Remarks:** The endemic species has been recorded only from Eastern Anatolian Region in Turkey until now. **Chorotype:** Anatolian

Genus *Diorhabda* Weise, 1983***D. carinata* Faldermann, 1837**

Range: E: AB AR GG UK A: AF IN KI KZ PA SY TD TM TR UZ XIN **NAR Records in Turkey:** TR-A: AGR, ART, EZU, SII **Remarks:** The species has been recorded only from 3 Turkish regions as Black Sea Region, Eastern Anatolian Region and South-Eastern Anatolian Region until now. **Chorotype:** Centralasiatic + SW-Asiatic + Nearctic or Holarctic

***D. elongata* (Brullé, 1832)**

Range: E: AL BH BU CR GR MC PT SP ST YU N: AG EG A: CY LE SY TR **NAR Records in Turkey:** TR-A: ADA, ANK, ANT, ART, AYD, CNK, DIY, ESK, EZU, ISP, IZM, KAY, MAL, MAN, MER, SAM, USA, YOZ, ZON – TRE: EDI **Remarks:** The species is widely distributed in Turkey. It has been recorded from all Turkish regions. But it has not been recorded only the most parts of Marmara Region, Central-West Anatolia Part in Aegean Region, Konya Part in Central Anatolian Region, Upper Murat-Van Part and Hakkari Part in Eastern Anatolian Region and Central Fırat Part in South-Eastern Anatolian Region until now. **Chorotype:** Mediterranean + Nearctic

Genus *Euluperus* Weise, 1886***E. major* Weise, 1886**

Range: E: BU HU RO A: TR **Records in Turkey:** TR-A: ANK, KIR, SIV, YOZ (pers. comm., 2013) **Remarks:** The species has been recorded only from Central Anatolian Region in Turkey until now. **Chorotype:** Turano-Mediterranean (Balkano-Anatolian)

Genus *Exosoma* Jacoby, 1903***E. flavipes* (Heyden, 1878)**

Range: E: AB AR A: TR **Records in Turkey:** TR-A: AMA, ANK, ARD, ART, BAY, BOL, COR, ERZ, EZU, GIR, GUM, KRS, SIV, YOZ (Ekiz et al., 2013; pers. comm., 2013) **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:** SW-Asiatic (Anatolo-Caucasian)

***E. gaudionis* (Reiche, 1862)**

Range: E: AL BU GR MC **Records in Turkey:** TR-A: ISP **Remarks:** The species has been recorded only from Mediterranean Region in Turkey until now. **Chorotype:** Turano-Mediterranean (Balkano-Anatolian)

***E. neglectum* Mohr, 1968**

Range: A: SY TR **Records in Turkey:** TR-A: ADA, AMA, ANK, ANT, BUR, DIY, ERZ, ESK, ISP, KON, MER, OSM **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 Marmara Region until now. **Chorotype:** SW-Asiatic (Syro-Anatolian)

***E. thoracicum* (Redtenbacher, 1843)**

Range: E: AL GR A: IS SY TR **Records in Turkey:** TR-A: ADA, DIY, MAR, URF
Remarks: The species has been recorded only from 2 Turkish regions as Mediterranean Region and South-Eastern Anatolian Region until now. **Chorotype:** E-Mediterranean (NE-Mediterranean)

Genus *Galeruca* Geoffroy, 1762**Subgenus *Galeruca* Geoffroy, 1762*****G. armeniaca* Weise, 1866**

Range: E: ST A: IN KI KZ TD TM TR UZ **Records in Turkey:** TR-A: AFY, ERZ, EZU, IGD, ISP, KRS (Ekiz et al., 2013; pers. comm., 2013) **Remarks:** The species has been recorded only from 3 Turkish regions as Aegean Region, Eastern Anatolian Region and Mediterranean Region until now. **Chorotype:** Centralasiatic + SW-Asiatic

***G. circassica* Reitter, 1899**

Range: E: AR GG A: TR **Records in Turkey:** TR-A: ANK, ANT, ARD, BAY, CAN, EZU, HAK, TOK, SIV, KAS **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:** SW-Asiatic (Anatolo-Caucasian)

G. dahlia* (Joannis, 1865)**G. d. dahlia* (Joannis, 1865)**

Range: E: AU FR GE HU IT PL SK UK **Records in Turkey:** TR-A: EZU **Remarks:** The subspecies has been recorded only from Eastern Anatolian Region in Turkey until now. **Chorotype:** C and E-European

***G. impressicollis* Pic, 1934**

Range: A: TR **Records in Turkey:** TR-A **Remarks:** Provincial distribution of the endemic species is unknown. **Chorotype:** Anatolian

***G. interrupta* (Illiger, 1802)**

Range: E: BE BY FR IT SK SP SV N: MO A: SY TR **Records in Turkey:** TR-A: AMA, ANK, ANT, COR, DIY, ESK, EZU, ISP, KON, MER, SIV **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:** Mediterranean

***G. jucunda* Faldermann, 1837**

Range: E: AB AU BH BU CR CZ DE FR GE GR HU LT PL RO SK SV SZ UK YU A: AF ES MG NMO SY TR WS XIZ "Caucasus" **Records in Turkey:** TR-A: ANK **Remarks:** The species has been recorded only from Central Anatolian Region in Turkey until now. **Chorotype:** Sibero-European

***G. littoralis* Fabricius, 1787**

Range: E: BH BU CR FR GR IT MC YU **Records in Turkey:** TR-A **Remarks:** Provincial distribution of the species is unknown. **Chorotype:** S-European

G. pomonae* (Scopoli, 1763)**G. p. pomonae* (Scopoli, 1763)**

Range: E: AB AL AU BE BU BY CZ DE EN FI FR GE GR HU IT LA LS LT LU NL NR PL RO RU SK SV SZ UK YU N: MO A: KZ MG SHX TD TR WS **Records in Turkey:** TR-A: AFY, AKS, ANK, ANT, ART, BOL, CAN, CNK, COR, EZU, GIR, ISP, IZM, KAH, KAS, KAY, KON, NEV, NIG, OSM, RIZ, ZON **Remarks:** The subspecies is rather widely distributed in Turkey. It has been recorded from 6 Turkish regions. But it has not been recorded only from South-Eastern Anatolian Region until now. **Chorotype:** Sibero-European

G. spectabilis* (Faldermann, 1837)**G. s. orientalis* (Osculati, 1844)**

Range: A: IN SY TR **Records in Turkey:** TR-A: AKS, ANK, ANT, ARD, ART, BAY, EZU, KAS, KAY, KIR, KON, KRS, MER, NEV, NIG, SIN, TRA **Remarks:** The subspecies has been recorded only from 4 Turkish regions. But it has not been recorded from Aegean Region, Marmara Region and South-Eastern Anatolian Region until now. **Chorotype:** SW-Asiatic (Irano-Anatolian + Syro-Anatolian)

G. tanacetii* (Linnaeus, 1758)**G. t. tanacetii* (Linnaeus, 1758)**

Range: E: AB AL AR AU BE BH BU BY CZ DE EN FI FR GB GE GR HU IT KZ LA LS LT LU MC NL NR PL RO RU SK SP SV SZ UK YU **N:** AG MO TU **A:** JA KI KZ SY TR WS **Records in Turkey:** TR-A: ANK, COR, ESK, EZU, ISP, KAS, KRS, ORD, SIN **Remarks:** The subspecies has been recorded only from 4 Turkish regions. But it has not been recorded from Aegean Region, Marmara Region and South-Eastern Anatolian Region until now. **Chorotype:** Palearctic

Subgenus *Emarhopa* Weise, 1886***G. rufa* Germar, 1824**

Range: E: AB AL AU BH BU CZ FR GR HU IT MC RO SK SP UK YU **A:** TR **Records in Turkey:** TR-A: MAR **Remarks:** The species has been recorded only from South-Eastern Anatolian Region in Turkey until now. **Chorotype:** C and E-European

Subgenus *Haptoscelis* Weise, 1886***G. melanocephala* (Ponza, 1805)**

Range: E: AU BY CZ DE FI FR GE HU IT RU SK ST SV UK **A:** TR WS **Records in Turkey:** TR-A – TR-E **Remarks:** Provincial distribution of the species is unknown. **Chorotype:** Sibero-European

Genus *Galerucella* Crotch, 1873**Subgenus *Galerucella* Crotch, 1873*****G. griseescens* (Joannis, 1866)**

Range: E: AU BE BY CZ EN FI FR GB GE HU IT LA LT NL PL RU SZ UK **A:** ANH FE FO FUJ GUA GUI GUX HAI HEB HEI HEN HUB HUN JA JIA JIL JIX LIA MG NMO SC SCH SHA SHN SHX TAI XIZ YUN ZHE “Siberia” **ORR Records in Turkey:** TR-A: ISP **Remarks:** The species has been recorded only from Mediterranean Region in Turkey until now. **Chorotype:** Palearctic + Oriental

***G. nymphaeae* (Linnaeus, 1758)**

Range: E: AB AL AU BE BH BU BY CZ DE EN FI FR GB GE GR HU IT LA LT MC NL NR PL RO RU SK ST SV SZ UK YU **A:** FE IS KZ MG TR **Records in Turkey:** TR-A: AFY **Remarks:** The species has been recorded only from Aegean Region in Turkey until now. **Chorotype:** Sibero-European

Subgenus *Neogalerucella* Chujo, 1962***G. calmariensis* (Linnaeus, 1767)**

Range: E: AB AL AU BE BH BU BY CZ DE EN FI FR GB GE GR HU IT LA LS LT LU MC NL NR PL RU SK SP ST SV SZ UK YU **N:** AG MO **A:** FE JA JIL KI KZ MG TM TR “Siberia” **Records in Turkey:** TR-A: AFY, ART, BOL, DEN, EZU, ISP, IST, IZM, MUG, SAM, SIN, TOK – TR-E: IST **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 Central Anatolian Region and South-Eastern Anatolian Region until now. **Chorotype:** Palearctic

G. lineola* (Fabricius, 1781)**G. l. lineola* (Fabricius, 1781)**

Range: E: AB AL AU BE BH BU BY CZ DE EN FI FR GB GE GR HU IT LA LS LT LU MC NL NR PL RU SK SP ST SV SZ UK YU **N:** AG MO **A:** FE IN JA JIL KZ MG TD TR “Siberia”

“Korea” **Records in Turkey:** TR-A: ANK, ART, EZU, IST, KOC, RIZ, SIV, TRA, ZON – TR-E: IST (Ekiz et al., 2013; pers. comm., 2013) **Remarks:** The subspecies has been recorded only from 4 Turkish regions. But it has not been recorded from Aegean Region, Mediterranean Region and South-Eastern Anatolian Region until now. **Chorotype:** Palearctic

***G. pusilla* Duftschmid, 1825**

Range: E: AB AL AU BE BH BU BY CZ DE EN FI FR GB GE GR HU IT LA LS LT MC NL NR PL RU SK SP ST SV SZ UK YU A: HKG IN JIL KI KZ LIA MG SHN SHX TR **Records in Turkey:** TR-A: BIL, CAN, EZU, KOC, SAM, YOZ **Remarks:** The species has been recorded only from 4 Turkish regions. But it has not been recorded from Aegean Region, Mediterranean Region and South-Eastern Anatolian Region until now. **Chorotype:** Asiatic-European

***G. tenella* (Linnaeus, 1760)**

Range: E: AB AU BE BH BU BY CZ DE EN FI FR GB GE GR HU IT LA LS LT LU NL NR PL RU SK SP ST SV SZ UK YU A: FE GAN KI KZ MG NMO QIN TR **Records in Turkey:** TR-A: ART, AYD, BOL, KRS **Remarks:** The species has been recorded only from 2 Turkish regions as Black Sea Region and Aegean Region until now. **Chorotype:** Sibero-European

Genus *Lochmaea* Weise, 1883

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

Range: E: AB AL AU BE BH BU BY CR CZ DE EN FI FR GB GE HU IT LA LS LT LU NL NR PL RU SK SP SV SZ UK YU A: FE HEI JA JIL LIA MG NMO SC SHX TR WS **Records in Turkey:** TR-A: ANK, CAN, ESK, EZU, ISP, IST, MAN, TOK, TRA – TR-E: IST **Remarks:** The species is rather widely distributed in Turkey. It has been recorded from 6 Turkish regions. But it has not been recorded only from South-Eastern Anatolian Region until now. **Chorotype:** Sibero-European

***L. crataegi* (Forster, 1771)**

Range: E: AB AL AU BE BH BU BY CZ DE FR GB GE GR HU IT LA LT LU MC NL PL SK SP SV SZ UK YU N: AG TU A: MG SHX **Records in Turkey:** TR-A: BOL, ESK, EZU, ISP **Remarks:** The species has been recorded only from 4 Turkish regions. But it has not been recorded from Aegean Region, Marmara Region and South-Eastern Anatolian Region until now. **Chorotype:** Palearctic

***L. limbata* Pic, 1898**

Range: A: IN IS JO SY TR **Records in Turkey:** TR-A: ANT, BIN, ISP, KAR, URF **Remarks:** The species has been recorded only from 4 Turkish regions. But it has not been recorded from Aegean Region, Black Sea Region and Marmara Region until now. **Chorotype:** SW-Asiatic (Irano-Anatolian + Irano-Palaestinian)

***L. machulkai* Roubal, 1926**

Range: E: AB AR GG ST A: IN TR **Records in Turkey:** TR-A: ERZ **Remarks:** The species has been recorded only from Eastern Anatolian Region in Turkey until now. **Chorotype:** SW-Asiatic (Anatolo-Caucasian + Irano-Caucasian + Irano-Anatolian)

Genus *Luperus* Geoffroy, 1762

***L. armeniacus* Kiesenwetter, 1878**

Range: E: AB UK “Transcaucasus” A: TR **Records in Turkey:** TR-A: EZU **Remarks:** The species has been recorded only from Eastern Anatolian Region in Turkey until now. **Chorotype:** SW-Asiatic (Anatolo-Caucasian)

***L. discolor* Faldermann, 1837**

Range: E: AB A: TR **Records in Turkey:** TR-A: AMA, ANT, GUM, MAL, SAM **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)

L. flavipennis* Lucas, 1849**L. f. flavipennis* Lucas, 1849**

Range: N: AG MO **Records in Turkey:** TR-A: EZU **Remarks:** The subspecies has been recorded only from Eastern Anatolian Region in Turkey until now. **Chorotype:** Mediterranean

L. flavipes* (Linnaeus, 1767)**L. f. flavipes* (Linnaeus, 1767)**

Range: E: AB A L AU BE BH BU BY CR CZ DE EN FI FR GB GE GR HU IT LA LS LT LU MC NL PL RU SK SP ST SV SZ UK YU **A:** KZ MG TR **Records in Turkey:** TR-A: ANK, ART, CNK, EZU, ISP **Remarks:** The subspecies has been recorded only from 4 Turkish regions. But it has not been recorded from Aegean Region, Marmara Region and South-Eastern Anatolian Region until now. **Chorotype:** Centralasiatic-European

***L. floralis* Faldermann, 1837**

Range: E: AB TR **Records in Turkey:** TR-A: BAY, EZU, RIZ **Remarks:** The species has been recorded only from 2 Turkish regions as Black Sea Region and Eastern Anatolian Region until now. **Chorotype:** SW-Asiatic (Anatolo-Caucasian)

***L. graecus* Weise, 1886**

Range: E: AL BU GR MC TR YU **Records in Turkey:** TR-A: EZU **Remarks:** The species has been recorded only from Eastern Anatolian Region in Turkey until now. **Chorotype:** Turano-Mediterranean (Balkano-Anatolian)

***L. longicornis* (Fabricius, 1781)**

Range: E: AB AL AU BE BH BU BY CZ DE EN FI FR GB GE GR HU IT LA LS LT LU MC NL PL RU SK SP SV SZ UK YU **A:** FE MG **Records in Turkey:** TR-A: AMA, ANK **Remarks:** The species has been recorded only from 2 Turkish regions as Black Sea Region and Central Anatolian Region until now. **Chorotype:** Sibero-European

***L. perlucidus* Iablokoff-Khnzorian, 1956**

Range: E: AR **A:** TR **Records in Turkey:** TR-A: GUM **Remarks:** The species has been recorded only from Black Sea Region in Turkey until now. **Chorotype:** SW-Asiatic (Anatolo-Caucasian)

***L. rectangulus* Weise, 1898**

Range: A: TR **Records in Turkey:** TR-A: ADI, AMA, ANK, ERZ, EZU, GUM, HAT, KAY **Remarks:** The endemic 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 Marmara Region until now. **Chorotype:** Anatolian

***L. viridipennis* (Germar, 1824)**

Range: E: AB AU BU CZ FR GE HU IT PL SK SZ UK YU **Records in Turkey:** TR-A: KAH **Remarks:** The species has been recorded only from Mediterranean Region in Turkey until now. **Chorotype:** C and E-European

***L. xanthopoda* (Schrank, 1781)**

Range: E: AB AL AU BH BU BY CZ FR GE HU IT KZ MC PL SK ST SZ UK YU **A:** KI TR **Records in Turkey:** TR-A: AKS, AMA, ANK, ANT, CNK, ESK, EZU, GUM, ISP, KON, KRS, NEV, NIG **Remarks:** The species is widely distributed in Turkey. It has been recorded from all Turkish regions. But it has not been recorded only from Ergene Part and Istanca Part for European Turkey in Marmara Region, Adana Part for Mediterranean Region and Upper Murat-Van Part for Eastern Anatolian Region until now. **Chorotype:** Centralasiatic-European

Genus *Nymphius* Weise, 1900***N. ensifer* (Guillebeau, 1891)**

Range: A: IS SY **TR Records in Turkey:** TR-A: ANT **Remarks:** The species has been recorded only from Mediterranean Region in Turkey until now. **Chorotype:** E-Mediterranean (Palaestino-Taurian)

***N. forcipifer* (Weise, 1900)**

Range: A: TR **Records in Turkey:** TR-A: AFY, ANK, ESK, ISP, KON **Remarks:** The endemic species has been recorded only from 3 Turkish regions as Aegean Region, Central Anatolian Region and Mediterranean Region until now. **Chorotype:** Anatolian

***N. lydius* (Weise, 1886)**

Range: E: AR BU **A:** IN TR **Records in Turkey:** TR-A: ADI, AFY, AMA, ANK, ANT, BAR, CNK, ESK, EZU, ISP, IZM, KON, KAS, KRB, KRS, MAN, MER, SAM **Remarks:** The species is rather widely distributed in Turkey. It has been recorded from 6 Turkish regions. But it has not been recorded only from Marmara Region until now. **Chorotype:** Turano-Mediterranean (Turano-Balkan)

N. stylifer* (Weise, 1899)**N. s. stylifer* (Weise, 1899)**

Range: E: AB AR GG ST "Eastern Carpathians" **A:** TR **Records in Turkey:** TR-A: EZU, KRS, VAN **Remarks:** The subspecies has been recorded only from Eastern Anatolian Region in Turkey until now. **Chorotype:** Turano-Mediterranean (Turano-Balkan) or SW-Asiatic (Anatolo-Caucasian)

***N. s. kadleci* (Bezdek, 2008)**

Range: A: TR **Records in Turkey:** TR-A: MUS **Remarks:** The endemic subspecies has been recorded only from Eastern Anatolian Region in Turkey until now. **Chorotype:** Anatolian

***N. s. ogloblini* (Bogatchev, 1947)**

Range: E: AR **A:** IN TR **Records in Turkey:** TR-A: HAK **Remarks:** The subspecies has been recorded only from Eastern Anatolian Region in Turkey until now. **Chorotype:** SW-Asiatic (Anatolo-Caucasian + Irano-Caucasian + Irano-Anatolian)

Genus *Phyllobrotica* Chevrolat, 1836***P. adusta* (Creutzer, 1799)*****P. a. adusta* (Creutzer, 1799)**

Range: E: AL AU BH BU CZ GR HU MC RO SK UK YU **A:** TR **Records in Turkey:** TR-A: ART, EZU – TR-E: EDI, KRK, TEK **Remarks:** The subspecies has been recorded only from 3 Turkish regions as Black Sea Region, Eastern Anatolian Region and Marmara Region until now. **Chorotype:** C and E-European

***P. binotata* Ogloblin, 1936**

Range: E: AR **A:** TR **Records in Turkey:** TR-A: ART, EZU, VAN **Remarks:** The species has been recorded only from 2 Turkish regions as Black Sea Region and Eastern Anatolian Region until now. **Chorotype:** SW-Asiatic (Anatolo-Caucasian)

***P. elegans* Kraatz, 1866**

Range: E: AB BU UK **A:** ST TR **Records in Turkey:** TR-A: ANK, ART, BOL, BRS, ESK, EZU, ISP, IST, KAY, KON, MER, OSM – TR-E: IST **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)

***P. frontalis* Weise, 1886**

Range: A: IN SY **TR Records in Turkey:** TR-A: ADA, ADI, AMA, BIL, BOL, COR, ESK,

ISP, KAS, KAY, KON, MER, SIV **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 Eastern Anatolian Region until now. **Chorotype:** SW-Asiatic (Irano-Anatolian + Syro-Anatolian)

***P. malinka* Bezdek, 2010**

Range: A: IN TR **Records in Turkey:** TR-A: KAH, MAR **Remarks:** The species has been recorded only from 2 Turkish regions as Mediterranean Region and South-Eastern Anatolian Region until now. **Chorotype:** SW-Asiatic (Irano-Anatolian)

Genus *Radymna* Reitter, 1913

***R. fischeri* (Faldermann, 1837)**

Range: E: AB ST A: IN TM TR **Records in Turkey:** TR-A: ANK, EZU, GAZ, IGD, ISP, KAY, KRS, NIG **Remarks:** The species has been recorded only from 4 Turkish regions. But it has not been recorded from Aegean Region, Central Anatolian Region and Marmara Region until now. **Chorotype:** Turano-Mediterranean (Turano-Anatolian)

***R. nigrifrons* (Laboissière, 1914)**

Range: E: AR A: TR **Records in Turkey:** TR-A: IGD, KRS **Remarks:** The species has been recorded only from Eastern Anatolian Region in Turkey until now. **Chorotype:** SW-Asiatic (Anatolo-Caucasian)

***R. persica* (Faldermann, 1837)**

Range: E: AB GR A: AF IN IS KZ PA SY TR XIN **Records in Turkey:** TR-A: AKS, ANK, KAY, KON, KRS **Remarks:** The species has been recorded only from 2 Turkish regions as Central Anatolian Region and Eastern Anatolian Region until now. **Chorotype:** Centralasiatic-Mediterranean

Genus *Sermylassa* Reitter, 1913

***S. halensis* (Linnaeus, 1767)**

Range: E: AB AU BE BH BU BY CZ DE FR GB GE HU IT LS LT LU NL PL SK SP ST SV SZ UK YU A: KZ TR WS **Records in Turkey:** TR-A: EZU, ISP, SAM **Remarks:** The species has been recorded only from 3 Turkish regions as Black Sea Region, Eastern Anatolian Region and Mediterranean Region until now. **Chorotype:** Sibero-European

Genus *Xanthogaleruca* Laboissiere, 1934

***X. luteola* (Müller, 1766)**

Range: E: AB AL AU BE BH BU CR CZ DE FR GE GR HU IT LA LT LU MC NL PL RO SK SP ST SV SZ UK YU N: AG MO A: AF IN KA KZ NMO TM TR **Records in Turkey:** TR-A: ANK, ANT, AYD, BAL, BIL, BOL, ESK, EZU, IGD, ISP, IST, IZM, KRB, MUG, SAM, SIN, TRA, ZON – TR-E: IST, TEK **Remarks:** The species is rather widely distributed in Turkey. It has been recorded from 6 Turkish regions. But it has not been recorded only from South-Eastern Anatolian Region until now. **Chorotype:** Centralasiatic-Europeo-Mediterranean

***X. subcoerulescens* (Weise, 1884)**

Range: A: TR **Records in Turkey:** TR-A: ADA, AMA, ANT, KON, MER **Remarks:** The endemic species has been recorded only from 3 Turkish regions as Black Sea Region, Central Anatolian Region and Mediterranean Region until now. **Chorotype:** Anatolian

ZOOGEOGRAPHICAL ANALYSIS

Turkish Galerucinae includes 68 species group taxa (56 species and 12 subspecies) of 15 genera. 16 species, namely 23.88 % of the species have “SW-Asiatic” chorotype. 8 species, namely 11.94 % of the species have “Anatolian” chorotype. 8 species, namely 11.94 % of the species have “Sibero-European” chorotype. 7 species, namely 10.45 % of the species have “Turano-Mediterranean” chorotype. 5 species, namely 7.46 % of the species have “C and E-European”

chorotype. 5 species, namely 7.46 % of the species have “E-Mediterranean” chorotype. 4 species, namely 5.97 % of the species have “Palearctic” chorotype. 3 species, namely 4.48 % of the species have “Mediterranean” chorotype. 2 species, namely 2.99 % of the species have “Centralasiatic-European” chorotype. And each of the remaining 10 species group taxa has a different chorotype. One species, namely about 1.34 % of the taxa has “Afrotropico-Indo-Mediterranean + Oriental” chorotype. One species, namely about 1.34 % of the taxa has “Asiatic-European” chorotype. One species, namely about 1.34 % of the taxa has “Centralasiatic-European-Mediterranean” chorotype. One species, namely about 1.34 % of the taxa has “Centralasiatic + Mediterranean” chorotype. One species, namely about 1.34 % of the taxa has “Centralasiatic + SW-Asiatic” chorotype. One species, namely about 1.34 % of the taxa has “Centralasiatic + SW-Asiatic + Nearctic or Holarctic” chorotype. One species, namely about 1.34 % of the taxa has “European” chorotype. One species, namely about 1.34 % of the taxa has “Mediterranean + Nearctic” chorotype. One species, namely about 1.34 % of the taxa has “Palearctic + Oriental” chorotype. And one species, namely about 1.34 % of the taxa has “S-European” chorotype (Fig. 1). So the dominant chorotype for Turkish Galerucinae is “SW-Asiatic”. “Anatolian” and “Sibero-European” and also “Turano-Mediterranean” chorotypes follow it. Also the members of “C and E-European”, “E-Mediterranean” and also “Palearctic” chorotypes present important contributions for Turkish fauna.

For zoogeographical evaluation, the all known species group taxa of Turkish Galerucinae are presented as follows:

A total of 16 species have “SW-Asiatic” chorotype as *C. apicalis*, *E. flavipes*, *E. neglectum*, *G. circassica*, *G. s. orientalis*, *L. limbata*, *L. machulkai*, *L. armeniacus*, *L. discolor*, *L. floralis*, *L. perlucidus*, *N. s. ogloblini*, *P. binotata*, *frontalis*, *P. malinka* and *R. nigrifrons*.

A total of 8 species have “Anatolian” chorotype as *C. angorensis*, *C. malkini*, *C. turcicus*, *G. impressicollis*, *L. rectangulus*, *N. forcipifer*, *N. s. kadleci* and *X. subcoeruleus*.

A total of 8 species have “Sibero-European” chorotype as *G. jucunda*, *G. p. pomonae*, *G. melanocephala*, *G. nymphaeae*, *G. tenella*, *L. caprea*, *L. longicornis* and *S. halensis*.

A total of 7 species have “Turano-Mediterranean” chorotype as *E. major*, *E. gaudionis*, *L. graecus*, *N. lydius*, *N. s. stylifer*, *P. elegans* and *R. fischeri*.

A total of 5 species have “C and E-European” chorotype as *C. pinicola*, *G. d. dahlii*, *G. rufa*, *L. viridipennis* and *P. a. adusta*.

A total of 5 species have “E-Mediterranean” chorotype as *C. azureus*, *C. lividus*, *C. syriacus*, *E. thoracicum* and *N. ensifer*.

A total of 4 species have “Palearctic” chorotype as *G. t. tanaceti*, *G. calmariensis*, *G. l. lineola* and *L. crataegi*.

A total of 3 species have “Mediterranean” chorotype as *C. circumfusus*, *G. interrupta* and *L. f. flavipennis*.

A total of 2 species have “Centralasiatic-European” chorotype as *L. f. flavipes* and *L. xanthopoda*.

One species as *A. foveicollis* has “Afrotropico-Indo-Mediterranean + Oriental” chorotype.

One species as *G. pusilla* has “Asiatic-European” chorotype.

One species as *X. luteola* has “Centralasiatic-European-Mediterranean” chorotype.

One species as *R. persica* has “Centralasiatic + Mediterranean” chorotype.

One species as *G. armeniaca* has “Centralasiatic + SW-Asiatic” chorotype.

One species as *D. carinata* has “Centralasiatic + SW-Asiatic + Nearctic or Holarctic” chorotype.

One species as *A. a. alni* has “European” chorotype.

One species as *D. elongata* has “Mediterranean + Nearctic” chorotype.

One species as *G. grisescens* has “Palearctic + Oriental” chorotype.

One species as *G. littoralis* has “S-European” chorotype.

On the other side, Turkish Galerucinae includes a total of 68 species group taxa. However, provincial distributions of 3 species group taxa are unknown. So Turkish Galerucinae have 2 different evaluations necessarily. But, results of both assessments are the same except the occurrence ratio (Table 1).

For the subfamily Galerucinae (according to all species group taxa):

14 species are represented in Marmara Region (21 %)

15 species are represented in Aegean Region (22 %)

39 species are represented in Mediterranean Region (57 %)

32 species are represented in Central Anatolian Region (47 %)

33 species are represented in Black Sea Region (49 %)

44 species are represented in Eastern Anatolian Region (65 %)

12 species are represented in South-Eastern Anatolian Region (18 %)

For the subfamily Galerucinae (according to known provincial distribution of 65 species group taxa):

14 species are represented in Marmara Region (22 %)

15 species are represented in Aegean Region (23 %)

39 species are represented in Mediterranean Region (60 %)

32 species are represented in Central Anatolian Region (49 %)

33 species are represented in Black Sea Region (51 %)

44 species are represented in Eastern Anatolian Region (68 %)

12 species are represented in South-Eastern Anatolian Region (19 %)

So Turkish Galerucinae that includes a total of 68 species group taxa or 65 species group taxa of which are known provincial distributions in Turkey, are rather widely distributed in all Turkish Regions. The most number of species is represented in Eastern Anatolian Region. Mediterranean Region follows it. Black Sea Region and Central Anatolian Region are represented with an important number of species. However, Aegean Region, Marmara Region and South-Eastern Anatolian Region are represented with a rather little number of species now.

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

TAXON	R	E	G	I	O	N	S
	MAR	AER	MER	CAR	BSR	EAR	SEAR
Subfamily GALERUCINAE							
<i>A. a. alni</i>	+	+	+	+	+	+	-
<i>A. foveicollis</i>	-	+	+	+	-	+	-
<i>C. angorensis</i>	-	-	-	+	+	+	-
<i>C. apicalis</i>	-	-	+	+	+	+	-
<i>C. azureus</i>	-	-	+	-	-	-	-
<i>C. circumfusus</i>	-	-	+	-	-	-	-
<i>C. lividus</i>	-	+	+	+	-	+	+
<i>C. malkini</i>	-	-	+	-	-	-	-
<i>C. pinicola</i>	-	-	-	-	-	+	-
<i>C. syriacus</i>	-	-	+	-	-	-	-
<i>C. turcicus</i>	-	-	-	-	-	+	-
<i>D. carinata</i>	+	+	+	+	-	-	-
<i>D. elongata</i>	+	+	+	+	+	+	+
<i>E. major</i>	-	-	-	+	-	-	-
<i>E. flavipes</i>	-	-	-	+	+	+	-
<i>E. gaudionis</i>	-	-	+	-	-	-	-
<i>E. neglectum</i>	-	-	+	+	+	+	+
<i>E. thoracicum</i>	-	-	+	-	-	-	+
<i>G. armeniaca</i>	-	+	+	-	-	+	-
<i>G. circassica</i>	+	-	+	+	+	+	-
<i>G. d. dahlii</i>	-	-	-	-	-	+	-
<i>G. impressicollis</i>	?	?	?	?	?	?	?
<i>G. interrupta</i>	+	-	+	+	+	+	-
<i>G. jucunda</i>	-	-	-	+	-	-	-
<i>G. littoralis</i>	?	?	?	?	?	?	?
<i>G. p. pomonae</i>	+	+	+	+	+	+	-
<i>G. s. orientalis</i>	-	-	+	+	+	+	-
<i>G. t. tanacetii</i>	-	-	+	+	+	+	-
<i>G. rufa</i>	-	-	-	-	-	-	+
<i>G. melanocephala</i>	?	?	?	?	?	?	?
<i>G. grisescens</i>	-	-	+	-	-	-	-
<i>G. nymphaeae</i>	-	+	-	-	-	-	-
<i>G. calmariensis</i>	+	+	+	-	+	+	-
<i>G. l. lineola</i>	+	-	-	+	+	+	-
<i>G. pusilla</i>	+	-	-	+	+	+	-
<i>G. tenella</i>	-	+	-	-	+	-	-
<i>L. caprea</i>	+	+	+	+	+	+	-
<i>L. crataegi</i>	-	-	+	+	+	+	-
<i>L. limbata</i>	-	-	+	+	-	+	+
<i>L. machulkai</i>	-	-	-	-	-	+	-

<i>L. armeniacus</i>	-	-	-	-	-	+	-
<i>L. discolor</i>	-	-	+	-	+	+	-
<i>L. f. flavipennis</i>	-	-	-	-	-	+	-
<i>L. f. flavipes</i>	-	-	+	+	+	+	-
<i>L. floralis</i>	-	-	-	-	+	+	-
<i>L. graecus</i>	-	-	-	-	-	+	-
<i>L. longicornis</i>	-	-	-	+	+	-	-
<i>L. perlucidus</i>	-	-	-	-	+	-	-
<i>L. rectangulus</i>	-	-	+	+	+	+	+
<i>L. viridipennis</i>	-	-	+	-	-	-	-
<i>L. xanthopoda</i>	+	+	+	+	+	+	+
<i>N. ensifer</i>	-	-	+	-	-	-	-
<i>N. forcipifer</i>	-	+	+	+	-	-	-
<i>N. lydius</i>	-	+	+	+	+	+	+
<i>N. s. stylifer</i>	-	-	-	-	-	+	-
<i>N. s. kadleci</i>	-	-	-	-	-	+	-
<i>N. s. ogloblini</i>	-	-	-	-	-	+	-
<i>P. a. adusta</i>	+	-	-	-	+	+	-
<i>P. binotata</i>	-	-	-	-	+	+	-
<i>P. elegans</i>	+	-	+	+	+	+	-
<i>P. frontalis</i>	+	-	+	+	+	-	+
<i>P. malinka</i>	-	-	+	-	-	-	+
<i>R. fischeri</i>	-	-	+	-	+	+	+
<i>R. nigrifrons</i>	-	-	-	-	-	+	-
<i>R. persica</i>	-	-	-	+	-	+	-
<i>S. halensis</i>	-	-	+	-	+	+	-
<i>X. luteola</i>	+	+	+	+	+	+	-
<i>X. subcoeruleus</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.

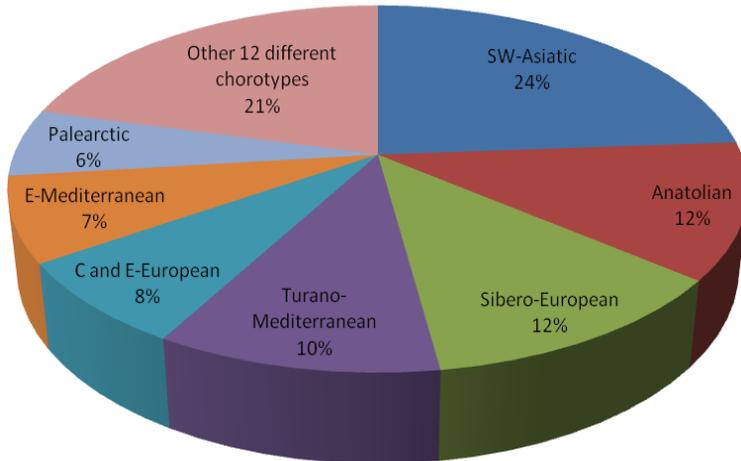


Figure 1. Chorotypical distribution of Turkish Galerucinae.