

CHECK-LIST OF THE TIGER BEETLES OF TURKEY WITH A REVIEW OF DISTRIBUTION AND BIOGEOGRAPHY (COLEOPTERA: CICINDELIDAE)

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ABSTRACT: The present list is the first attempt to register all modern taxa of tiger beetles distributed to the whole territory of Turkey. A complete list of known Turkish Cicindelidae is given. It includes 2 tribes, 8 genera, and 46 taxa (including subspecies). Nominative subgenera or subspecies are not mentioned, if they do not occur in Turkey. Each name of a genus, species or subspecies is accompanied by the author's name and the description's date. Each name of species and subspecies is accompanied by a number of abbreviations divided in two sections indicating the names of countries (or territories) and the names of the Turkish provinces inhabited by the taxon. Geographical notes are also given. The list of used literature includes mostly contemporary publications.

KEY WORDS: Coleoptera, Cicindelidae, tiger beetles, Türkiye, check-list, review, distribution, biogeography.

Both, the adult and larva of tiger beetles are predators. Larva and adult tiger beetles occupy very different ecological niches. Adult tiger beetles are active, diurnal, predatory insects. The larvae are sedentary predators which construct narrow, usually permanent burrows in the substrate at the site of oviposition (Thiele 1977; Lindroth 1992; Luff 1993; Hoback et al. 1998). At any state, tiger beetles are a uniform group, highly adapted to hunting (Hurka 1996). They are very important as biodiversity indicators and prove to be useful for helping to identify areas of maximum collective diversity (Cassola & Pearson 2000).

The most important role of the tiger beetles (Cicindelidae) has been determined as being an appropriate indicator taxon for determining regional patterns of biodiversity (Pearson & Cassola 1992), because their taxonomy is stabilized, biology and general life history are well understood, they are readily observed and manipulated in the field and the family occurs world wide inhabiting many different habitat types. Each species tends to be specialized within a narrow habitat and the family includes species of potential economic importance (Pearson & Cassola 1992). In addition, tiger beetles are often correlated with that of other groups (Pearson & Cassola 1992; Rodriguez et al. 1998) and there is much interest in these natural predators as controls of certain crop pests (Rodriguez et al. 1998).

They have a worldwide distribution (except Tasmania, Antarctica and some remote oceanic Islands) which covers a variety of habitats ranging from alpine meadows to desert grasslands and tropical rain forests (Pearson 1988; Rodriguez et al. 1998). They frequently inhabit flood prone habitats. More than 2000 species require habitats with access to bare ground, such as stream and pond edges, salt flats, dunes and open patches in grasslands (Pearson 1988; Hoback et al. 1998). Each species rarely occurs in more than one or a very few habitat types (Pearson 1984; Rodriguez et al. 1998). The total number of species presently known for the world tiger beetle fauna is 2328. There have been 26 records of these species until present day occurring in Turkey. 2 of these species (*Cephalota eiselti* (Mandl, 1967) and *Homodela ismenia* (Gory, 1833)) are endemic for Turkey (Cassola & Pearson 2000; Cassola 1999). Of the 38 taxa (species and subspecies) listed, 11 (28,9 %) are strictly Anatolian endemics, thus confirming Anatolia as an important center of endemic speciation (Cassola 1999).

The Anatolian tiger beetle fauna is poorly known. And there are only a few publications about them. In the first comprehensive publication 23 species of Anatolian tiger beetles were given (Korell 1984 and 1988). The latest comprehensive publication about the Anatolian tiger beetles has presented 26 species (Cassola 1999). Different studies were carried out, treating Anatolian tiger beetles, such as distribution and habitats of *Megacephala euphratica* in the Çukurova Delta, southern Turkey (Şekeroğlu & Aydın 2002), or the distribution of *Lophyridia aphrodisia* on the Turkish Mediterranean coast (Franzen 2001a).

The present list is the first attempt to register all modern taxa of tiger beetles in the whole territory of Turkey. In the text two abbreviations are used, DIT for distribution in Turkey and DIW for distribution in the world. Other abbreviations are as follows:

The abbreviations of the provinces of Turkey in the present text (in DIT):

Adana (AD)	Edirne (ED)	Kütahya (KU)
Adıyaman (ADY)	Elazığ (EL)	Malatya (MA)
Afyon (AF)	Erzincan (ER)	Manisa (MN)
Ağrı (AG)	Erzurum (EZ)	Mardin (MR)
Aksaray (AK)	Eskişehir (ES)	Muğla (MG)
Amasya (AM)	Gaziantep (GA)	Muş (MU)
Ankara (AN)	Giresun (GI)	Nevşehir (NE)
Antalya (ANT)	Gümüşhane (GU)	Niğde (NI)
Ardahan (AR)	Hakkari (HA)	Ordu (OR)
Artvin (ART)	Hatay (HT)	Osmaniye (OS)
Aydın (AY)	İğdır (IG)	Rize (RI)
Balıkesir (BL)	Isparta (IP)	Sakarya (SA)
Bartın (BR)	İçel (IC)	Samsun (SM)
Batman (BA)	İstanbul (IS)	Siirt (SI)

Bayburt (BY)	İzmir (IZ)	Sinop (SN)
Bilecik (BI)	Kahramanmaraş (KA)	Sivas (SV)
Bingöl (BN)	Karabük (KR)	Şanlıurfa (SU)
Bitlis (BT)	Karaman (KM)	Şırnak (SK)
Bolu (BO)	Kars (KAR)	Tekirdağ (TE)
Burdur (BU)	Kastamonu (KS)	Tokat (TO)
Bursa (BS)	Kayseri (KY)	Trabzon (TB)
Çanakkale (CA)	Kırıkkale (KI)	Tunceli (TU)
Çankırı (CN)	Kırklareli (KK)	Uşak (US)
Çorum (CO)	Kırşehir (KIR)	Van (VA)
Denizli (DE)	Kilis (KL)	Yalova (YA)
Diyarbakır (DI)	Kocaeli (KO)	Yozgat (YO)
Düzce (DU)	Konya (KN)	Zonguldak (ZO)

The abbreviations of countries and territories in the present text (in DIW):

Afghanistan (AFG)	Afrotropical Region (AFR)	Albania (AL)
Algeria (DZ)	Andorra (AND)	Arab Emirates (UAE)
Arabian Peninsula (ARP)	Armenia (ARM)	Asian Turkey =Asia Minor (ATR)
Austria (AUS)	Azerbaijan (AZ)	Baikal (BAI)
Bahrain (BRN)	Balearic Islands (BAI)	Belgium (BEL)
Byelorussia (BRY)	Bosnia and Herzegovina (BAH)	Bulgaria (BG)
Caspian Sea (CS)	Caucasus (CAU)	Central Asia (CAS)
Central Europe (CEU)	Cephalonia (CEP)	China (CH)
Crete (CRE)	Crimea (UKC)	Croatia (CRO)
Cyprus (CYP)	Czechia (CZ)	Denmark (DEN)
Egypt (ET)	Estonia (EST)	Ethiopian Region (ETHR)
European Turkey (ETR)	Finland (FIN)	France (FR)
Georgia (GE)	Germany (GER)	Great Britain (GB)
Greece (GR)	Hungary (HU)	India (IN)
Iran (IR)	Iraq (IRQ)	Ireland (IRE)
Israel (IL)	Italy (IT)	Jordan (JOR)
Kashmir (KAS)	Kazakhstan (KZ)	Kopetdagh (KOP)
Kuwait (KWT)	Kyrgyzstan (KYR)	Latvia (LAT)
Lebanon (RL)	Libya (LAR)	Liechtenstein (LIE)
Lithuania (LIT)	Luxembourg (LUX)	Macedonia (MK)
Malta (M)	Moldavia (MOL)	Mongolia (MNG)
Morocco (MAG)	Nepal (NEP)	Netherlands (NET)
Norway (NOR)	Oman (OM)	Oriental Region (ORR)
Pakistan (PK)	Poland (PO)	Portugal (POR)
Rhodos (RH)	Romania (RO)	Central European Russia (RSC)
North European Russia (RSN)	South European Russia (RSS)	Saudi Arabia (KSA)
Serbia and Montenegro (SAM)	Siberia (SIB)	Slovakia (SK)
Slovenia (SLO)	South Europe (SEU)	Southeast Europe (SEE)
Southern Russia (RS)	Spain (ESP)	Sweden (SWE)
Switzerland (SW)	Syria (SYR)	Tadzhikistan (TJ)
Talysh (TAL)	Taurus (TAU)	Tian-Shan (TIA)
Transbaikalia (TBA)	Tunisia (TUN)	Turan (TUR)
Turkey (TR)	Turkmenistan (TM)	Ukraine (UK)
Uzbekistan (UZ)	West Asia (WAS)	West Europe (WEU)
Yemen (YE)	Yugoslavia (YU)	

Family CICINDELIDAE Csiki, 1906
Tribe MEGACEPHALINI Csiki, 1906

***Megacephala* Latreille, 1802**

***euphratica* Dejean, 1822** #1
DIT: AD, HT, IC, IZ
DIW: CAU, CYP, DZ, ESP, ET, GR, IL, IR, IRQ, JOR, KOP, KSA, KWT, LAR, MAG, OM, RL, SYR, TR, TUN, TUR, UAE, YE

Tribe CICINDELINI Sloane, 1906

***Cicindela* Linnaeus, 1758**

***sylvatica* Linnaeus, 1758**
ssp. *fasciatopunctata* Germar, 1845 #2
DIT: BS, IS, SV
DIW: TR

***monticola* Ménétries, 1832**
ssp. *monticola* Ménétries, 1832 #3
DIT: ART, KAR
DIW: ARM, GE, RSS, TAL, TR

ssp. *rumelica* Apfelbeck, 1904 #4
DIT: IC [locality certainly erroneous!], IS
DIW: BG, RO, TR

ssp. *tokatensis* Chaudoir, 1863 #5
DIT: BI, BO, BS, BU, CN, DE, EZ, GI, GU, IZ, KR, KS, OR, SA, SN, SV, TB, TO
DIW: ARM, AZ, CAU, GE, RS, TR

***campestris* Linnaeus, 1758**
ssp. *campestris* Linnaeus, 1758 #6
DIT: TR [doubtful record]

DIW: AL, AND, AUS, BAH, BEL, BG, BRY, CRO, CZ, DEN, DZ, ESP, EST, FIN, FR, GB, GER, GR, HU, IR, IRE, IT, KYR, KZ, LAT, LIE, LIT, LUX, M, MAG, MK, MOL, NET, NOR, PO, POR, RO, RSC, RSN, SAM, SIB, SK, SLO, SW, SWE, TU, UZ

ssp. *palustris* Motschulsky, 1840 #6
DIT: CA, IS, IZ, KO
DIW: ATR, ETR, TR

ssp. *pontica* Fischer, 1828 #7
DIT: AM, AN, ANT, BI, BO, BS, BU, CO, ES, GU [doubtful record], IP, IZ, KN, KS, MG, MN, OR, TO, US, YO, ZO
DIW: ARM, ATR, AZ, BG, CAU, CEU, CYP, GE, KZ, RSS, SEU, SIB, TBA, TIA, TR, UK, UKC

- ssp. olivieria* Brulle, 1832** #7
DIT: ETR [doubtful record]
DIW: AL, GR, TR, YU
- herbacea* Klug, 1832** #8
DIT: AD, AM [doubtful record], ANT, AY, HT, IC, IP, KA, KM, OS
DIW: ARM, IL, RL, SYR, TR
- desertorum* Dejean, 1825** #9
DIT: AD [doubtful record], AR, ART, BY, EZ, GI, GU, KAR, MR
[doubtful record], OR, RI, SV, TB
DIW: ARM, AZ, CAU, GE, IR, RSS, TAL, TR
- turkestanicoides* W. Horn, 1938**
***ssp. turkestanicoides* W. Horn, 1938** #10
DIT: ATR [doubtful record]
DIW: IR
- ssp. perreai* Deuve, 1987** #10
DIT: BN, BT, ER, HA, KA, MA, MU, TB [record, possibly due to
mislabelling], TU, VA,
DIW: IR, TR
- asiatica* Audouin and Brullé, 1839** #11
DIT: AD, BN, HA, HT, KA, MU, OS, SU, TU, VA
DIW: ARM, AZ, IR, IRQ, KOP, SYR, TAL, TR
- Lophyridia* Jeannel, 1946**
- caucasica* (Adams, 1817)** #12
DIT: AD, AM, DI, EL, ER, GA, HA, IC, KAR, KM, KN, KY, MA, MR,
NE, SI, SU, TO, TU
DIW: ARM, AZ, GE, IR, IRQ, RSS, TAL, TR
- concolor* (Dejean, 1822)**
***ssp. concolor* (Dejean, 1822)** #13
DIT: AD, ANT, AY, GA, HT, IC, MG
DIW: CYP, GR, SYR, TR
- ssp. rouxii* Barthelemy, 1835** #13
DIT: ATR
DIW: SYR, TR
- fischeri* (Adams, 1817)** #14
DIT: AD, ADY, ANT, BN, BS, CN, CO, DE, EL, ER, EZ, GA, GU, HA, HT,
IC, IZ, KA, KAR, KU, KY, MA, MG, MR, NE, SI, SU, TO, TU
DIW: AFG, ARM, ATR, AZ, BG, CAU, CYP, GR, IL, IR, JOR, MK, PK,
RL, SEE, SYR, TAL, TM, TR

littoralis* (Fabricius, 1787)*ssp. *nemoralis* (Olivier, 1790) #15****DIT:** BS, ED, ETR, IS, SA, TAU [doubtful record], TE**DIW:** AL, AUS, BAH, BAI, BG, CAS, CEU, CRO, CS, CZ, ESP, FR, GR, HU, IT, MK, MOL, RO, RS, SAM, SEE, SEU, SK, WEU, TR, UK**ssp. *winkleri* (Mandl, 1934) #16****DIT:** AD, ANT, AY, DE, HT, IC, IZ, MG, OS**DIW:** AFG, ARM, AZ, CYP, GR, IL, IR, IRQ, JOR, RL, SYR, TM, TR, TUR**ssp. *mandli* Mandl, 1967 #17****DIT:** AN, BU, CN, EL, EZ, IP, KIR, KN, KY, MR, NE, NI, OR, SI, SM, SU, SV, TB, TO, VA**DIW:** IR, RL, SYR, TR**ssp. *aulicoides* Sahlberg, 1913 #18****DIT:** GA**DIW:** ARP, ET, IL, IR, IRQ, JOR, KSA, SYR, TR***aphrodisia* Baudi, 1864****ssp. *aphrodisia* Baudi, 1864 #19****DIT:** AD**DIW:** SYR, TR**ssp. *cypricola* Mandl, 1981 #20****DIT:** ANT**DIW:** CYP, RH, TR***Lophyra* Motschulsky, 1859*****hilariola* (Bates, 1874) #21****DIT:** GA, MR, SU**DIW:** IR, IRQ, SYR, TR***Cephalota* Dokhtoureff, 1883****Subgen.: *Cephalota* Dokhtoureff, 1883*****turcica* (Schaum, 1859) #22****DIT:** BL, BS, ED, IS**DIW:** ATR, BG, GR, MK, TR***chiloleuca* (Fischer, 1820) #23****DIT:** TR [doubtful record]**DIW:** BG, CH, CZ, HU, KZ, MNG, MOL, RO, RSC, RSS, SIB, TR**Subgen.: *Taenidia* Rivalier, 1950*****circumdata* (Dejean, 1822)****ssp. *circumdata* (Dejean, 1822) #24****DIT:** AF, AY, BL, CA, ED, IZ, MG

DIW: ATR, BG, ESP, FR, GR, IT, RS, TR, TUN
ssp. *cappadocica* Franzen, 1996 #25

DIT: AN, KIR, KY

DIW: TR

ssp. *hattusae* Franzen, 1996 #26

DIT: CO, YO

DIW: TR

***eiselti* (Mandl, 1967)**

ssp. *eiselti* (Mandl, 1967) #27

DIT: AK, AN, KY, SV

DIW: TR

ssp. *cankiriana* Korell and Kleinfeld, 1985 #28

DIT: CN, CO

DIW: TR

***deserticola* (Faldermann, 1836) #29**

DIT: KAR

DIW: AFG, ARM, AZ, CAU, CH, IR, KOP, KYR, KZ, MNG, RS, RSS, SYR, TJ, TM, TR, TUR, UK, UZ

***Homodela* Rivalier, 1950**

***ismenia* (Gory, 1833)**

ssp. *ismenia* (Gory, 1833) #30

DIT: AD, AM, AN, ANT, BI, CO, DE, IC, IP, IS, IZ, KIR, KN, KR, KS, KY, MG, OS, SM, TO, ZO

DIW: GR, SEU, SYR, TR

ssp. *kilikiensis* (Mandl, 1961) #31

DIT: AD, BN, GA, HT, IC, KA, NI, OS

DIW: TR

ssp. *walterheinzi* Franzen, 2003 #31

DIT: BN, MA, MU, VA

DIW: TR

***Cylindera* Westwood, 1831**

Subgen.: ***Cylindera* Westwood, 1831**

***germanica* (Linné, 1758) #32**

DIT: ART, BU, CN, EZ, IZ, RI, TB

DIW: AL, AND, ARM, ATR, AUS, AZ, BAH, BEL, BG, BRY, CAS, CH, CRO, CYP, CZ, DEN, ESP, EST, FIN, FR, GB, GER, GE, HU, IR, IRE, IT, KZ, LAT, LIE, LIT, LUX, MK, MNG, MOL, NET, PO, RO, RSC, RSN, RSS, SAM, SIB, SK, SLO, SW, SYR, TBA, TM, TR, UK, WAS

Subgen.: *Eugrapha* Rivalier, 1950***arenaria* Fuessly, 1775****spp. *viennensis* (Schrank, 1781) #33****DIT:** CN, CO, DE, EZ, GU, KU, NE, KY, OR, TB, TO**DIW:** AL, AUS, BAH, BAI, BG, BRY, CAU, CEU, CRO, CZ, FR, GER, GR, HU, KZ, LIT, MK, MOL, PO, RO, RS, RSC, RSS, SAM, SEU, SIB, SK, TR, UK**spp. *nudoscripta* (W.Horn, 1915) #33****DIT:** ATR**DIW::** ARM, AZ, GE, RSS, TR***tresignata* (Dejean, 1822)****spp. *tresignata* (Dejean, 1822) #34****DIT:** AD, ANT, MG**DIW::** AL, CAU, DZ, ESP, IT, MAG, POR, RS, TR, UKC**spp. *hellenica* Cassola, 1973 #35****DIT:** IS, OR, SM**DIW:** BG, GR, RO, RSS, TR, UK***contorta* (Fischer, 1828)****#23****DIT:** TR [doubtful record]**DIW:** AFG, AZ, CH, GE, IR, KZ, MNG, MOL, RO, RSS, SIB, TJ, TR, TUR, UK, UZ***pygmaea* (Dejean, 1825)****#36****DIT:** AD, BA, GA, IC, MR, SI, SU, TO**DIW:** IR, IRQ, SYR, TR***sublacerata* Solsky, 1874****spp. *levithoracica* (W. Horn, 1891) #37****DIT:** AG, KAR**DIW:** AFG, ARM, AZ, CAU, GE, IR, KAS, PK, RSS, TAL, TR, TUR***Myriochila* Motschulsky, 1858*****melancholica* (Fabricius, 1798)****#38****DIT:** AD, AN, ANT, AY, DE, GA, IC, IZ, MA, OS**DIW:** AFG, AFR, ARM, AZ, BRN, CAU, CEP, CH, CRE, CYP, DZ, ESP, ET, ETHR, FR, GE, GR, IL, IN, IR, IRQ, IT, JOR, KOP, KSA, KWT, KYR, KZ, LAR, M, MAG, NEP, OM, ORR, PK, POR, RH, RL, SYR, TJ, TM, TR, TUN, TUR, UAE, UZ, YE***orientalis* (Dejean, 1825)****#39****DIT:** SU**DIW:** ARM, AZ, CAU, CH, GE, IR, IRQ, KOP, KYR, KZ, RSS, SYR, TJ, TM, TR, TUR, UZ

REMARKS

The present zoogeographical characterization is based on the chorotype classification of the Anatolian fauna, recently proposed by Vigna Taglianti et al. (1999).

#1 The real status of distribution of this species in Turkey is not clear. According to known distribution of this species (especially the records from Iran and Caucasus) it could also occur at least in north-east Turkey. The exact distribution pattern of this species in Turkey still needs to be clarified. Known today are 2 distinct subspecies of *Megacephala euphratica* Dejean, 1822: *Megacephala euphratica* ssp. *euphratica* Dejean, 1822 occurring in TR (Cassola 1999; Löbl & Smetana 2003) and *Megacephala euphratica* ssp. *armenica* Laporte, 1834 occurring in AFG, ARM, AZ, CAU, EU, GE, IR, KZ, PK, TJ, TM, TUR, UZ (Kryzhanovskij et al. 1995; Cassola 1999; Löbl & Smetana 2003). According to Franzen (2001b), *Megacephala euphratica* has following distribution in Turkey: southwestern and southern coast (provinces Adana, Hatay, İçel, İzmir), locally common, but restricted to isolated, undisturbed coastal salt flats. **Chorotype:** Mediterraneo-Sindian.

#2 This subspecies is known only from north Turkey. 3 distinct subspecies of *Cicindela sylvatica* Linne, 1758 are known: *C. s.* ssp. *fasciatopunctata* Germar, 1845, occurring in TR (Cassola 1999; Löbl & Smetana 2003), *C. s.* ssp. *rubescens* Jeanne, 1967, occurring in ESP (Cassola 1999; Löbl & Smetana 2003) and *C. s.* ssp. *sylvatica* Linne, 1758, distributed from Europe to Japan (Kryzhanovskij et al. 1995; Hurka 1996; Cassola 1999; Löbl & Smetana 2003). **Chorotype:** Sibero-European for *Cicindela sylvatica* Linne, 1758.

#3 *Cicindela monticola* Ménétries, 1832 occurs mostly in north Turkey. In Turkey there are 3 distinct subspecies present: *C. m.* ssp. *monticola* Ménétries, 1832, occurring in north-east Turkey, *C. m.* ssp. *rumelica* Apfelbeck, 1904, occurring in north-west Turkey, and *C. m.* *tokatensis* Chaudoir, 1863, occurring in north Turkey, from Bolu to Erzurum and western Turkey, from Bolu to İzmir province (Cassola 1999). **Chorotype:** Turano-European for *Cicindela monticola* Ménétries, 1832.

#4 This subspecies occurs only in north-west Turkey.

#5 This subspecies is known in north Turkey, from Bolu to Erzurum and western Turkey, from Bolu to İzmir province.

#6 This subspecies is distributed in north-west Turkey, from European Turkey to İzmir province. In Turkey there are 2 distinct

subspecies of *Cicindela campestris* Linné, 1758: *C. c. palustris* Motschulsky, 1840, occurring in North-west Turkey and *C. c. pontica* Fischer, 1828, occurring in north Turkey, from Bolu to Ordu, in West Turkey, from Bilecik to İzmir, and in northern central Anatolia (Cassola 1999). All in all are 11 distinct subspecies of *Cicindela campestris* Linné, 1758 known. According to Cassola (1999), the last comprehensive taxonomic review of *Cicindela campestris* is that by Mandl (1944), who recognized 14 subspecies with a enormous geographical range. "Subsequently several populations were placed in this taxon that likely deserve a separate specific status. *C. campestris* populations from Anatolia appear to belong to two distinct and recognizable subspecies: *ssp. palustris* Motschulsky, 1840, apparently restricted to the Marmara Sea and Bosphorus area, and *ssp. pontica* Fischer, 1825, occurring from northern Pontus mountains eastwards to Armenia, Azerbaijan, and Caucasus (Mandl 1944; Wiesner 1992; Trautner & Geigenmüller 1987; Gueorguiev & Gueorgiev 1995; Kryzhanovskij et al. 1995). However, without precise detailed, labeled data, the subspecific identification of most specimens is difficult, sometimes even impossible". **Chorotype:** W-Palaeartic for *Cicindela campestris* Linné, 1758.

#7 This subspecies *pontica* Fischer, 1828 is distributed in north Turkey, from Bolu to Ordu; in West Turkey, from Bilecik to İzmir, in northern central Anatolia. According to Cassola (1999) "subspecies *olivieria* Brulle has been recorded from "Türkei" by Mandl (1944) and Wiesner (1992), but it is more properly considered a Greek and south Balkan endemic (Cassola 1973c)".

#8 This species is distributed in south Turkey. Therefore the record of north Turkey (Amasya province) is very doubtful. **Chorotype:** SW-Asiatic.

#9 The species is distributed in north-eastern Turkey. The records of south Turkey (Adana and Mardin provinces) are very doubtful. **Chorotype:** Turanian.

#10 This subspecies is distributed mostly in south-eastern Turkey, from Kahramanmaraş to Hakkari. 2 distinct subspecies of *Cicindela turkestanicoidea* Horn, 1938 are known: *C. t. ssp. perreaui* Deuve, 1987, occurring in Turkey (Cassola 1999, Löbl & Smetana 2003) and *C. t. ssp. turkestanicoidea* Horn, 1938, occurring in Iran (Cassola 1999, Löbl & Smetana 2003). **Chorotype:** SW-Asiatic for *Cicindela turkestanicoidea* Horn, 1938.

#11 This species is distributed mostly in south-eastern Turkey. There are 2 distinct subspecies of *Cicindela asiatica* Audouin and Brullé, 1839 known: *C. a. ssp. asiatica* Audouin and Brullé, 1839,

occurring in Turkey (Kryzhanovskij et al. 1995; Cassola 1999, Löbl & Smetana 2003) and *C. a. ssp. sumbarica* Putschkov, 1993, occurring in Asia: IR, TM, KOP (Kryzhanovskij et al. 1995; Löbl & Smetana 2003).
Chorotype: SW-Asiatic.

#12 This species, originally described from the Caucasus area, species occurs mostly in central and eastern Turkey. **Chorotype:** Turanian.

#13 This species is distributed mostly in southern Turkey, from Aydın to Gaziantep. 2 distinct subspecies of *Lophyridia concolor* (Dejean, 1822) are known: *L. c. ssp. concolor* Dejean, 1822, occurring in TR (Cassola 1999; Löbl & Smetana 2003) and *L. c. ssp. rouxii* Barthelemy, 1835, occurring in SYR, TR (Löbl & Smetana 2003). The "*Cicindela rouxii*", described by Barthelemy, 1835 from Syria, has been recently re-established as a valid subspecies by Franzen (1999).
Chorotype: E-Mediterranean.

#14 The Anatolian populations obviously belong to the nominate form (Cassola 1999). 2 distinct subspecies of *Lophyridia fischeri* (Adams, 1817) are known: *L. f. ssp. fischeri* (Adams, 1817), occurring in TR (Gueorguiev & Gueorguiev 1995; Kryzhanovskij et al. 1995; Cassola 1999; Löbl & Smetana 2003); and *L. f. ssp. elongatosignata* W. Horn, 1922, occurring in Asia: AFG, IR, IRQ, KOP, KYR, KZ, OM, PK, TIA, TJ, TM, TUR, UEA, UZ (Trautner & Geigenmüller 1987; Kryzhanovskij et al. 1995; Löbl & Smetana 2003). **Chorotype:** Primarily centralasiatic-European and SW-Asiatic.

#15 There are 12 distinct subspecies of *Lophyridia littoralis* (Fabricius, 1790) known. This species is represented in Turkey by the subspecies *L. l. ssp. aulicoides* Sahlberg, 1913, *L. l. ssp. mandli* Mandl, 1967, *L. l. ssp. nemoralis* (Olivier, 1790) and *L. l. ssp. winkleri* (Mandl, 1934) (Kryzhanovskij et al. 1995; Gueorguiev & Gueorguiev 1995; Cassola 1999; Löbl & Smetana 2003). *L. l. ssp. nemoralis* (Olivier, 1790) occurs only in north-west Turkey. **Chorotype:** Primarily Asiatic-European and Turano-Mediterranean for *Lophyridia littoralis* (Fabricius, 1790).

#16 This subspecies is distributed mostly in south-western Turkey from İzmir to Hatay.

#17 This subspecies is distributed mostly in central and East Turkey.

#18 This subspecies is distributed only in south Turkey.

#19 This subspecies is clearly a relict species. And this species

occurs in south Turkey. **Chorotype:** E-Mediterranean for *Lophyridia aphrodisia* Baudi, 1864.

#20 This subspecies is probably distributed in south-west Turkey.

#21 This species is distributed mostly in south-eastern Turkey. **Chorotype:** SW-Asiatic.

#22 This species is basically a peri-Aegean species. The species distributes mostly in north-west Turkey. **Chorotype:** E-Mediterranean.

#23 *Cephalota chiloleuca* and *Cylindera contorta*: two Russian entomologists, Putschkov and Matalin (2003), cite these species from Turkey (in Löbl & Smetana 2003: Catalogue of Palaearctic Coleoptera, Vol. 1). Unfortunately no localities are given, so these records are doubtful.

#24 This species is a typical Mediterranean species. 5 distinct subspecies of *Cephalota circumdata* (Dejean, 1822) are described: *C. c. ssp. circumdata* (Dejean, 1822), occurring mostly in West Turkey, *C. c. ssp. cappadocica* Franzen, 1996, occurring mostly in central Turkey, *C. c. ssp. hattusae* Franzen, 1996, occurring in Çorum and Yozgat provinces of Turkey (Cassola 1999; Löbl & Smetana 2003), *C. c. ssp. imperialis* Klug, 1834, occurring in AL, ESP, IT, TUN (Gueorguiev & Gueorgiev 1995; Cassola 1999; Löbl & Smetana 2003), and *C. c. ssp. leonschaeferi* Cassola, 1970, occurring in FR, IT (Cassola 1999; Löbl & Smetana 2003). **Chorotype:** Primarily Mediterranean for *Cephalota circumdata* (Dejean, 1822).

#25 This subspecies is endemic for Turkey.

#26 This subspecies is endemic for Turkey.

#27 *Cephalota eiselti* (Mandl, 1967) is endemic for Turkey. There are 2 distinct subspecies: *C. e. ssp. eiselti* (Mandl, 1967), occurring in central Turkey and *C. e. ssp. cankiriana* Korell and Kleinfeld, 1985, occurring in the north of central Turkey (Cassola 1999; Löbl & Smetana 2003). **Chorotype:** central Anatolian endemic.

#28 This subspecies is endemic for Turkey. **Chorotype:** central Anatolian endemic.

#29 This species is distributed only in north-eastern Turkey. **Chorotype:** Turanian.

#30 There are 3 distinct subspecies of *Homodela ismenia* (Gory,

1833) in Turkey: *H. i.* ssp. *ismenia* (Gory, 1833), occurring in West, north and south Turkey; *H. i.* ssp. *kilikiensis* (Mandl, 1961), occurring in south-eastern Turkey, from Gaziantep to Bingöl (Cassola 1999; Löbl & Smetana 2003), and *H. i.* ssp. *walterheinzi* Franzen, 2003, occurring in from Karahan-Pass (west of Malatya) to Lake Van. **Chorotype:** The species is a Turkey endemic. Moreover, old records from “Syria” clearly refer to present day Turkey (Hatay province) (Cassola, 1999).

#31 This subspecies are endemic to Turkey.

#32 This species is known to be widespread in the West-Palearctic. 4 distinct subspecies of *Cylindera germanica* (Linné, 1758) are known: *C. g.* ssp. *germanica* (Linné, 1758), occurring in Turkey (Cassola 1999; Löbl & Smetana 2003), *C. g.* ssp. *michaelensis* Vidaly Lopez, 1916, from France (Löbl & Smetana 2003), *C. g.* ssp. *muelleri* Magistretti, 1966, occurring in Europe: AL, BAH, CRO, GR, IT, MK, SLO, SAM (Löbl & Smetana 2003), and *C. g.* ssp. *sobrina* Gory, 1833, occurring in FR, ESP (Löbl & Smetana 2003). **Chorotype:** Primarily Sibero-European and Centralasiatic-European.

#33 3 distinct subspecies of *Cylindera arenaria* (Fuesslin, 1775) are known: *C. a.* ssp. *arenaria* (Fuesslin, 1775), occurring in AUS, BEL, CAU, FR, IT, LUX, RS, SIB, SW (Trautner & Geigenmüller 1987; Gueorguiev & Gueorgiev 1995; Kryzhanovskij et al. 1995; Trautner & Geigenmüller 1987; Cassola 1999; Löbl & Smetana 2003), *C. a.* ssp. *nudoscripta* W.Horn, 1915, occurring in ARM, AZ, GE, RSS, TR (Kryzhanovskij et al. 1995; Cassola 1999; Löbl & Smetana, 2003), *C. a.* ssp. *viennensis* Schrank, 1781, occurring in Turkey (Cassola 1999; Löbl & Smetana 2003). *Cylindera arenaria* ssp. *nudoscripta* in Turkey: Along the northeastern coast (Black Sea), according to Michael Franzen (pers. comm. Karl Werner). **Chorotype:** Sibero-European for *Cylindera arenaria* (Fuesslin, 1775).

#34 This species' distribution is known in West Mediterranean Region. 6 distinct subspecies of *Cylindera trisignata* (Dejean, 1822) are known. in Turkey this species is represented by the subspecies *C. t.* ssp. *hellenica* Cassola, 1973, and *C. t.* ssp. *trisignata* Dejean, 1822. *C. t.* ssp. *trisignata* Dejean, 1822 occurs in south Turkey. **Chorotype:** Mediterranean for *Cylindera* ssp. *trisignata* (Dejean, 1822).

#35 This subspecies is presented only in north Turkey.

#36 2 distinct subspecies of *Cylindera pygmaea* (Dejean, 1825) are known: *C. p.* ssp. *pygmaea* Dejean, 1825, occurring in Turkey (Cassola 1999; Löbl & Smetana 2003), and *C. p.* ssp. *laetula* Tschitscherine, 1903, occurring in Iran (Löbl & Smetana 2003). **Chorotype:** Centralasiatic-European.

#37 This is basically a Central Asian to Middle East species. 5 distinct subspecies of *Cylindera sublacerata* (Solsky, 1874) are described. This subspecies occurs only in north-east Turkey. **Chorotype:** Primarily Asiatic.

#38 This species is distributed mostly in central and southern Turkey. distinct subspecies of *Myriochila melancholica* (Fabricius, 1798) are known: *M. m. ssp. melancholica* (Fabricius, 1798) occurring in Turkey (Cassola 1999; Löbl & Smetana 2003) and widespread in Asia and Africa, *M. m. ssp. semicircumcincta* Mandl, 1959 occurring in Asia: Iran (Löbl & Smetana 2003), *M. m. ssp. trilunaris* (Klug, 1832), from Madagascar and Comores Islands, and *M. m. ssp. perplexa* (Dejean, 1825), occurring in the islands of Réunion, Seychelles, Comores, Mauritius, and Rodrigues. **Chorotype:** Centralasiatic-Mediterranean and Afrotropico Indo-Mediterranean for *Myriochile melancholica* (Fabricius, 1798).

#39 This species occurs probably in south-east and East Turkey. **Chorotype:** Primarily Turanian and Centralasiatic.

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