

**UPDATED SPECIES GROUP TAXA OF *PHYTOECIA*
(*PHYTOECIA*) DEJEAN IN TURKEY WITH A NEW STATUS
(COLEOPTERA: CERAMBYCIDAE: LAMIINAE)**

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ABSTRACT: The subspecific status of *Phytoecia caerulea* (Scopoli, 1772) in Turkey is discussed and reviewed. In accordance with this, *Phytoecia baccueti* (Brullé, 1832) new status is upgraded from subspecies level to the species level. The presence of *Phytoecia caerulea bethseba* Reiche & Saulcy, 1858 in Turkey is proved. Thus, the list of Turkish *Phytoecia* (s.str.) Dejean, 1835 is updated with their type information, range and known provincial distribution in Turkey.

KEY WORDS: *P. baccueti*, *P. caerulea bethseba*, new status, Turkey

The genus *Phytoecia* Dejean includes many subgenera. Number of subgenera are changed according to different authors. Löbl & Smetana (2010) mentioned 9 subgenera for the genus in their catalogue. According to Danilevsky (2016), the genus includes 16 subgenera as *Barbarina* Sama, 2010; *Coptosia* Fairmaire, 1865; *Metallidia* Kasatkin, 2012; *Opsilia* Mulsant, 1863; *Pilemia* Fairmaire, 1864; *Pseudocoptosia* Pic, 1900; *Pseudomusaria* Pic, 1900 with stated 9 subgenera in Palaearctic catalogue of Löbl & Smetana (2010).

The subgenus *Phytoecia* Dejean included 45 species for Palaearctic Region in Löbl & Smetana (2010). Danilevsky (2016) stated 49 species with 4 newly described species as *P. bialookii* Danilevsky, 2010 from Turkey, *P. kartalensis* Danilevsky, 2010 from Turkey, *P. napolovi* Danilevsky, 2012 from Israel and *P. shokhini* Kasatkin, 2010 from Turkey for the subgenus.

Thus the subgenera is represented by 19 species in Turkey according to Özdikmen (2012) and Danilevsky (2016).

In addition, during the study of the collected Cerambycidae specimens in my collection, subspecific status and known distribution patterns of the species *Phytoecia caerulea* (Scopoli, 1772) in Turkey are discussed and reviewed in detail. As a result of this, *Phytoecia baccueti* (Brullé, 1832) is upgraded from subspecies level to the species level necessarily (stat. n.) and also the presence of *Phytoecia caerulea bethseba* Reiche & Saulcy, 1858 in Turkey is proved. So the number of representing species of the subgenus in Turkey raised up 19 to 21. In accordance with this, all members of Turkish *Phytoecia* (s.str.) are presented in the text.

MATERIAL AND METHODS

A total of 283 specimens were collected from various localities in 14 different provinces as Aksaray, Ankara, Antalya, Balıkesir, Çankırı, Çorum, Gaziantep, Hatay, Karaman, Kırıkkale, Konya, Nevşehir, Niğde and Osmaniye of Turkey in 1997-2014, were evaluated. All specimens were deposited at Gazi University of Ankara (Turkey).

Information in the present text is given in following order:

The subfamily and the tribe names are given simply. For the generic names, the type species and synonyms are provided under the taxon name. For each species, the whole subspecies are provided under the taxon names. For each species group taxa, reported from Turkey, are given alphabetically. The Turkish distribution patterns for each species group taxon are given only concerning provinces. Turkish endemic taxa are marked with the sign (*). The type information for each species group taxa are arranged under Tavakilian (2016). For distributional data of the taxa, Özdikmen (2007, 2008a, b, 2011, 2013) for Turkey and Löbl & Smetana (2010), Danilevsky (2016) for World are used in the text chiefly. Distributional abbreviations for the works are available to Löbl & Smetana (2010).

RESULTS

***Phytoecia* (s.str.) *baccueti* (Brullé, 1832) new status and the presence of *Phytoecia caerulea bethseba* in Turkey**

According to Löbl & Smetana (2010) and Danilevsky (2016), *Phytoecia caerulea* (Scopoli, 1772) includes three subspecies as *Phytoecia caerulea caerulea* (Scopoli, 1772) [in most of Europe (including European Turkey), Kazakhstan, Tajikistan, Turkmenistan, Uzbekistan, Caucasus, Transcaucasia, Iran, Turkey (Anatolia) and Syria], *Phytoecia caerulea baccueti* (Brullé, 1832) [only in Greece and Turkey] and *Phytoecia caerulea bethseba* Reiche & Sauley, 1858 [only in Middle East (Israel, Jordan, Lebanon and Syria) and Iran].

As seen above, the species has been represented with only two subspecies as the nominative subspecies and *Phytoecia caerulea baccueti* in Turkey. In real, however, the subspecies *Phytoecia caerulea bethseba* also occurs in Turkey. Because it was recorded by Demelt (1963) from Adana and Hatay provinces in South Turkey (Fig. 1). Unfortunately, the records of Demelt (1963) were overlooked in both catalogical works.

Saperda baccueti was described by Brullé (1832) from Greece (Peloponnes: Modon env.). It has been regarded as a subspecies of *Phytoecia caerulea* since a very long time.

A total of 283 specimens of *Phytoecia caerulea* that were collected from 14 different provinces from Turkey in 1997-2014, were evaluated in terms of subspecific status. 142 of them were determined as *Phytoecia caerulea caerulea* and 137 of them as *Phytoecia caerulea baccueti*.

As a result of this, *Phytoecia caerulea baccueti* should be accepted as a separate species because of its distribution patterns in Turkey are overlapped with that of *Phytoecia caerulea caerulea* at least for five provinces as Aksaray, Çankırı, Çorum, Kırıkkale and Konya. After old records from Turkey, overlapping area is wider than result of the present work. So the status is unavailable to the rule of allopatric distribution of subspecies. The status does not explain as hybridization area as seen in figures 2 and 3.

In the present work, a total of 142 collected specimens from 11 different provinces in Turkey as 48 from Osmaniye, 41 from Çankırı, 33 from Hatay, 6 from Niğde, 4 from Aksaray, 3 from Çorum, 2 from Gaziantep, 2 from Konya, 1 from İçel, 1 from Karaman and 1 from Kırıkkale provinces for *Phytoecia caerulea caerulea*, and a total of 141 collected specimens from 10 different provinces in Turkey as 46 from Çankırı, 45 from Kırıkkale, 32 from Ankara, 8 from Aksaray, 4 from Antalya, 2 from Çorum, 2 from Konya, 1 from Balıkesir and 1 from Nevşehir provinces for *Phytoecia baccueti* are examined.

Consequently, I propose *Phytoecia baccueti* (Brullé, 1832) should be regarded as a separate species.

For example, recently I collected 41 specimens of *Phytoecia caerulea caerulea* from 18 different localities (including Central, Eldivan, Kızılırmak, Kurşunlu and Orta counties) and 46 specimens of *Phytoecia baccueti* from 25 different localities (including Central, Kızılırmak, Korgun and Orta counties) of Çankırı provinces in the spring and summer of 2014. I see that *Phytoecia caerulea caerulea* and *Phytoecia baccueti* are collected with together in the same localities and populations (at least 12 different localities including Central, Kızılırmak and Orta counties of Çankırı province). Overlapping localities can see in Table 1.

It is clear that both taxa do not belong to the same species. Both taxa from the same locality are photographed in figure 4.

Phytoecia caerulea caerulea and *Phytoecia baccueti* have been recorded by various authors from Turkey (Figs. 2 and 3).

Old records of *Phytoecia baccueti* in Turkey can be presented as follows:

İstanbul prov., İzmir prov., Antalya prov., Isparta prov. (Demelt & Alkan, 1962); Kütahya prov. (Breuning et Villiers, 1967); Konya prov., İzmir prov., Denizli prov. (Tuatay et al., 1972); İzmir prov. (Gül-Zümreoğlu, 1972); Ankara prov., Isparta prov., Burdur prov., İzmir prov., Aydın prov., Denizli prov., Manisa prov. (Gül-Zümreoğlu, 1975); Bilecik prov., Burdur prov. (Adlbauer, 1988); Bilecik prov., Denizli prov., İzmir prov. (Tozlu et al., 2003); Yozgat prov. (Sama, Rapuzzi & Özdikmen, 2012).

Consequently, the known species group taxa of Turkish *Phytoecia* (s.str.) must be updated. In accordance with this, all members of Turkish *Phytoecia* with the new species, new subspecies and new status can be presented as follows:

List of the Turkish taxa of the nominal subgenus *Phytoecia* (*Phytoecia*), using Löbl and Smetana's catalogic country codes (2010).

Subfamily Lamiinae Latreille, 1825

Tribe Phytoeciini Mulsant, 1839

Genus *Phytoecia* Dejean, 1835: 351

Subgenus *Phytoecia* Dejean, 1835: 351

[Type species *Cerambyx cylindricus* Linnaeus, 1758]

Phytoecia (Hoploma) Pérez-Arcas, 1874: 151 [Type species *Phytoecia malachitica* P. H. Lucas, 1849]

****P. annulipes*** Mulsant & Rey, 1863: 165 (Holotype ♀, ex collection Louis Reiche > R. Oberthür, Muséum National d'Histoire Naturelle, Paris) [Type locality "Caramanie" (Turkey: İçel)] **A: TR**

Turkish distribution patterns: Afyon, Aksaray, Ankara, Bayburt, Bolu, Çorum, Erzurum, Hatay, İçel, Kahramanmaraş, Kars, Kastamonu, Kütahya, Muş, Osmaniye, Yozgat provinces.

P. asiatica Pic, 1891: 102

****P. asiatica asiatica*** Pic, 1891: 102 (Lectotype ♀, ex collection M. Pic, Muséum National d'Histoire Naturelle, Paris) [Type locality "Akbez" (Turkey: Hatay), not Syria] **A: TR**

achilleae Holzschuh, 1971: 68 [Turkey: Adana: Nurdağı pass]

Turkish distribution patterns: Adana, Hatay provinces.

Remarks: The subspecies was given by Löbl and Smetana (2010) and Danilevsky (2015) also from Syria on the base of type locality wrongly. Because Akbez is in Turkey, not Syria at the present day.

- P. asiatica sublineata** Holzschuh, 1984: 159 (*Phytoecia achilleae* ssp.) (Holotype ♂, collection Carolus Holzschuh, Villach) [Type locality “Chosrow” (Armenia)] **A:** AB AR TR
Turkish distribution patterns: Muş province.
- P. baccueti** Brullé, 1832: 262 (*Saperda*) **new status** (Syntypes, Muséum National d'Histoire Naturelle, Paris) [Type locality “Morea: Modon env.” (Greece)] **E:** GR **A:** TR
Turkish distribution patterns: Aksaray, Ankara, Antalya, Aydın, Balıkesir, Bilecik, Burdur, Çankırı, Çorum, Denizli, Eskişehir, Isparta, İstanbul, İzmir, Kayseri, Kırıkkale, Konya, Kütahya, Manisa, Nevşehir, Yozgat provinces.
- P. bangi** Pic, 1897: 189 (Syntypes ♂ & ♀, ex collection M. Pic, Muséum National d'Histoire Naturelle, Paris) [Type locality “Mardin” (Turkey)] **A:** IN TR
Turkish distribution patterns: İçel, Kayseri, Mardin, Niğde, Osmaniye provinces.
- *P. bialookii** Danilevsky, 2010: 22 (Holotype ♂, collection Mikhail Danilevsky, Moscow) [Type locality “Tatvan: Güroymak env.” (Turkey: Bitlis)] **A:** TR
Turkish distribution patterns: Bitlis, Muş provinces.
- P. bodemeyeri** Reitter, 1913: 665 (Syntypes ♂♂ & ♀♀, ex collection Edmund Reitter, Magyar Természettudományi Múzeum, Budapest) [Type locality “Luristan” (Iran)] **A:** IN TR
Turkish distribution patterns: Catalogic record only, another published data absent until now.
- P. caerulea** Scopoli, 1772: 102 (*Leptura*)
- P. caerulea bethseba** Reiche & Saulcy, 1858: 17 (*Phytoecia bethseba*) [Type locality “Palestina”] **A:** IN IS JO LE SY TR
Turkish distribution patterns: Adana, Hatay provinces.
Remarks: The subspecies was not given by Löbl and Smetana (2010) and Danilevsky (2015) from Turkey. Because both works were overlooked the Turkish records of Demelt (1963). So it occurs also in Turkey.
- P. caerulea caerulea** Scopoli, 1772: 102 (*Leptura*) [Type locality “Carniola” (Slovenia)] **E:** AL AU BH BU BY CR CT CZ GR HU IT MC MD PT RO SK SL SP ST SZ TR UK YU **A:** AB AR GG IN KZ SY TD TM TR UZ
viridis Gronovius, 1764: 163 [n. 546] (*Cerambyx*) [?]
rufimana Schrank, 1789: 77 (*Saperda*) [Austria]
flavimana Creutzer, 1796: 15 (*Saperda*) [Germany]
coelestis Townson, 1797: 469 (*Saperda*) [Hungary]
gilvimana Ménétrés, 1832: 227 (*Saperda*) [Azerbaijan: Saliane]
Turkish distribution patterns: Adana, Afyon, Aksaray, Ankara, Bolu, Burdur, Çankırı, Çorum, Düzce, Eskişehir, Erzurum, European Turkey (?Edirne), Isparta, İçel, Kahramanmaraş, Karabük, Karaman, Kastamonu, Kayseri, Kırıkkale, Kırşehir, Konya, Manisa, Muğla, Nevşehir, Niğde, Osmaniye, Samsun, Sivas, Yozgat provinces.
- P. croceipes** Reiche & Saulcy, 1858: 17 [RN] (Holotype, ex collection E. Mulsant, Muséum National d'Histoire Naturelle, Paris as *P. puncticollis*) [Type locality “Caramanie” (Turkey: İçel)] **A:** AB AR CY GG IQ IN IS LE SY TR
puncticollis Mulsant & Wachanru, 1852: 175 [HN] [Turkey: İçel]
macilenta Mulsant & Wachanru, 1863: 421 [RN] [Turkey: İçel]
longicollis A. Costa, 1878: 27 [Palestina: Jerusalem]
annulifera Pic, 1900: 67 (*Phytoecia croceipes* var.) [Palestina: Jericho]
Turkish distribution patterns: Adana, Diyarbakır, Hatay, İçel, İzmir, Konya, Mardin, Niğde, Osmaniye, Tunceli provinces.
- P. cylindrica** Linnaeus, 1758: 394 (*Cerambyx*) (Syntypes, ex collection C. Linnaeus, Zoologiska Institutionen, Uppsala) [Type locality “Suecia” (Sweden)] **E:** AU BE BH BU BY CR CT CZ DE EN FI FR GB GE GR HU IR IT LA LS LT LU MC MD NL NR NT PL PT

RO SK SL SP ST SV SZ TR UK YU A: AB AR ES FE GG IN KZ TR WS XIN

cinereus DeGeer, 1775: 75 (*Cerambyx*) [?]

verna O. F. Müller, 1776: 94 (*Leptura*) [Denmark]

silphoides Schrank, 1781: 145 (*Cerambyx*) [Austria: Vienna]

fuliginosa Scopoli, 1786: 49 (*Leptura*) [Italy: Insubria]

simplonica Stierlin, 1878: 438 [Switzerland: Alpes: Simplon]

grandis Pic, 1891: 2 [DA] (*Phytoecia cylindrica* var.) [Turkey: Hatay: Akbez]

kammereri Schatzmayr, 1928: 47 (*Phytoecia cylindrica* ssp.) [Italy: Basilicata: M. Vulture]

Turkish distribution patterns: Ankara, Düzce, Hatay, İstanbul, İzmir, Kahramanmaraş, Kars, Kastamonu, Kayseri, Kırıkkale, Niğde, Tunceli provinces.

P. *gamzeae Özdikmen, 2017a: 23 (Holotype ♂, collection H. Özdikmen, Zoological Museum of Gazi University, Ankara) [Type locality “Şabanözü, Büyükyakalı village” (Turkey: Çankırı)] A: TR

Turkish distribution patterns: Ankara, Çankırı, Çorum, Kırıkkale, Konya provinces.

P. *geniculata* Mulsant, 1863: 420

P. *geniculata geniculata* Mulsant, 1863: 420 (Syntypes, ex collection Perroud > Salesse, 1932 > Pic, 1958, Muséum National d’Histoire Naturelle, Paris) [Type locality “Turkey”] A: CY IN IQ IS JO LE PA TR

nazarena Reiche, 1877: cxxxvi [Israel: Nazareth]

ingeniculata T. Pic, 1900: 67 [Israel: Galilea: Akko]

palaestina Pic, 1930: 3 (*Phytoecia geniculata* var.) [Palestina: Jerusalem]

Turkish distribution patterns: Adana, Ankara, Antalya, Aydın, Bilecik, Burdur, Bursa, Çanakkale, Çorum, Denizli, Gaziantep, Hatay, İçel, İzmir, Kahramanmaraş, Kastamonu, Kırıkkale, Manisa, Osmaniye, Siirt provinces.

P. *geniculata orientalis* Kraatz, 1871: 272 [RN] (*Phytoecia orientalis*) (Syntypes, ex collection Louis Reiche > R. Oberthür, Muséum National d’Histoire Naturelle, Paris as *P. fuscicornis*) [Type locality “İstanbul env.” (Turkey)] E: BU GR TR

fuscicornis Mulsant & Rey, 1863: 168 [HN] [Turkey: İstanbul env.]

donatellae Rapuzzi & Sama, 2010: 187 (*Phytoecia icterica* ssp.) [Greece: Joannina]

Turkish distribution patterns: Edirne, İstanbul provinces.

P. *icterica* Schaller, 1783: 292 (*Cerambyx*) [Type locality “Halae Saxonum” (Germany)] E: AU BH BU CR CZ FR GE HU IT LU MC MD PL PT RO SK SL SP ST SZ TR UK YU A: KZ TR WS

ephippium Fabricius, 1793: 317 (*Saperda*) [Hungary]

ragusana Küster, 1844: 55 (*Oberea*) [DA] [Croatia: Ragusa (Dubrovnik)]

subannulipes Pic, 1915: 11 [Romania: Comana & Vlasca]

Turkish distribution patterns: Afyon, Ankara, Antalya, Bayburt, Bitlis, Bolu, Çorum, Düzce, Erzurum, European Turkey (?Edirne), Gaziantep, Hatay, İstanbul, Kahramanmaraş, Kars, Kastamonu, Kilis, Konya, Kütahya, Osmaniye, Yozgat provinces.

P. *kartalensis Danilevsky, 2010: 21 (Holotype ♂, collection Mikhail Danilevsky, Moscow) [Type locality “Mihalççık: Kartal pass” (Turkey: Eskişehir)] A: TR

Turkish distribution patterns: Eskişehir province.

P. *manicata* Reiche & Saulcy, 1858: 17 (Syntypes ♂ & ♀, ex collection Louis Reiche > R. Oberthür, Muséum National d’Histoire Naturelle, Paris) [Type locality “Syria”] A: IS JO LE PA SY TR

Turkish distribution patterns: Adana, Ankara, Diyarbakır, Hatay, Isparta, İzmir, Kahramanmaraş, Kırıkkale, Kocaeli, Konya, Osmaniye, Siirt provinces.

P. *nigricornis* Fabricius, 1782: 499 (*Saperda*) (Holotype, ex collection J. C. Fabricius, Zoologisk Museum, Copenhagen) [type locality “Leipzig” (Germany)] E: AL AU BE BH BU BY CR CT CZ EN FI FR GE GR HU IT LA LT LU MC MD NT PL RO SK SL SP ST SV SZ TR UK YU A: AB AR ES GG KZ TR WS

melanoceras Gmelin, 1790: 1838 (*Cerambyx*) [Germany: Leipzig]

canaliculata Frölich, 1793: 144 (*Saperda*) [Austria]

solidaginis Bach, 1856: 39 [Germany: Sachsen]

julii Mulsant, 1863: 429 [France: Seine: Asnière]

caroni Mulsant & Godart, 1876: 419 [France: Indre et Loire: Tours env.]

tristriga Reitter, 1913: 70 (*Phytoecia nigricornis* var.) [Russia: Orenburg (Ural): Guberlya]

Turkish distribution patterns: Adana, European Turkey (?Edirne or Kırklareli), Niğde provinces.

Remarks: The species was not given by Löbl and Smetana (2010) and Danilevsky (2015) from Anatolia (Asian Turkey). Because both works were overlooked the Turkish records of Bodemeyer (1900). So it occurs also in Anatolia for Turkey.

P. pubescens Pic, 1895: 64 (*Phytoecia manicata* var.) (Holotype ♂, ex collection M. Pic, Muséum National d'Histoire Naturelle, Paris) [Type locality "Baudu" (Syria)] **E:** BH BU CR GR MC ST **A:** AB AR GG IN IS JO LE SY TR

glaphyra K. Daniel, 1906: 177 [Turkey: Adana]

Turkish distribution patterns: Adana, Amasya, Ankara, Bolu, Çankırı, Çorum, Diyarbakır, Erzurum, Hatay, İçel, İstanbul, İzmir, Konya, Mardin provinces.

P. pustulata Schrank, 1776: 66 (*Cerambyx*)

***P. pustulata cihanæ** Özdikmen, 2017b: 54 (Holotype ♂, collection H. Özdikmen, Zoological Museum of Gazi University, Ankara) [Type locality "Gencek-Derebucak" (Turkey: Konya)] **A:** TR

Turkish distribution patterns: Konya province.

P. pustulata pilipennis Reitter, 1895: 161 (*Phytoecia pilipennis*) (Syntypes ♂♂, ex collection Edmund Reitter, Magyar Természettudományi Múzeum, Budapest) [Type locality "Nakhichevan: Ordubad, Araxesthal" (Armenia)] **A:** AB AR IN TR

vevans Reitter, 1895: 162 (*Phytoecia pustulata* var.) [Armenia: Nakhichevan: Araxesthal, Ordubad]

adnexa Pic, 1947: 1 (*Phytoecia pustulata* var.) [Iran: Astrabad]

Turkish distribution patterns: Kars province.

P. pustulata pustulata Schrank, 1776: 66 (*Cerambyx*) (Syntypes, ex collection F. P. Schrank, Naturhistorisches Museum Wien) [Type locality "Linz, Vienna" (Austria)] **E:** AL AU BH BU BY CR CT CZ FR GE GR HU IT LA MC MD PL PT RO SK SL SP SZ ST TR UK YU **A:** AB AR GG KI KZ TD TR UZ

lineola Fabricius, 1781: 235 (*Saperda*) [Italy]

posegana Piller & Mitterpacher, 1783: 67 (*Cerambyx*) [Hungary: Posaganam]

vulnerata Schaller, 1783: 293 (*Cerambyx*) [?]

murina Marseul, 1870: 384 [Russia: Volgograd: Sarepta]

obscuripes Pic, 1895: 65 (*Phytoecia pustulata* var.) [?]

macedonica Pic, 1929: 9 (*Phytoecia pustulata* var.) [Macedonia]

brevenotata Pic, 1936: 4 (*Phytoecia pustulata* var.)

Turkish distribution patterns: Adana, Amasya, Bilecik, Bolu, Düzce, Edirne, Kahramanmaraş, Kırkkale, Konya, Niğde, Osmaniye, Samsun, Sivas provinces.

Remarks: The subspecies was not given by Löbl and Smetana (2010) and Danilevsky (2015) from European Turkey. Because both works were overlooked the record of European Turkey of Althoff & Danilevsky (1997). Moreover, the subspecies was recorded by Şenyüz & Özdikmen (2013) from Edirne province in European Turkey. So it occurs also in European Turkey for Turkey.

Known other subspecies:

P. pustulata adulta Ganglbauer, 1884: 572 **A:** IN

P. pustulata pulla Ganglbauer, 1886: 130 **E:** ST **A:** KZ KI UZ

P. rufipes Olivier, 1795: 25 (*Saperda*)

P. rufipes latior Pic, 1895: 66 (*Phytoecia rufipes* var.) (Syntypes 2♀♀, ex collection M. Pic, Muséum National d'Histoire Naturelle, Paris) [Type locality "Akbez" (Turkey: Hatay)] **A:** SY TR

Turkish distribution patterns: Adana, Aksaray, Hatay, Niğde provinces.

P. rufipes rufipes Olivier, 1795: 25 (*Saperda*) (Syntypes, ex collection Guillaume-Antoine Olivier) [Type locality "Var" (France)] **E:** BH BU CR FR GR (Crete) IT PT SL SP ST SZ UK **A:** AR ES GG IN KI KZ TD TM TR UZ WS

umbellatarum Gistel, 1831: 303 (*Saperda*) [Spain]

sibirica Gebler, 1833: 304 (*Saperda*) [Russia: Altai: Loktewsk]

coeca Küster, 1848: 85 (*Oberea*) [Spain: Murcia: Cartagena]

ledereri Mulsant, 1851: 132 [Spain]

femorialis Mulsant, 1862: 416 ["Algeria", probably mislabeled]

ludovici Pic, 1891: 133 [1891m: cxxxv] [Russia: Volgograd: Sarepta]

Turkish distribution patterns: Adana, Adiyaman, Çankırı, İçel, Kahramanmaraş, Kırıkkale, Malatya provinces.

***P. shokhini** Kasatkin, 2010: 61 (Holotype ♂, ex collection D. G. Kasatkin, Rostov-na-Donu, Collection of Zoological Institute of the Russian Academy of Sciences, Saint-Petersbourg) [Type locality "Ovacık" (Turkey: Tunceli)] **A:** TR
Turkish distribution patterns: Tunceli province.

***P. subannularis** Pic, 1901: 14 (Holotype, ex collection M. Pic, Muséum National d'Histoire Naturelle, Paris) [Type locality "Syria" but may be mislabeled, could be Turkey: Hatay] **A:** TR
Turkish distribution patterns: Hatay province.

P. virgula Charpentier, 1825: 225 (*Saperda*) (Holotype, ex collection Toussaint de Charpentier, Museum für Naturkunde der Humboldt-Universität zu Berlin) [Type locality "Dalmatia" (Croatia)] **E:** AL AU BH BU BY CR CT CZ FR GE GR HU IT LT MC MD PL PT RO SK SL SP ST SZ TR UK YU **A:** AB AR CY GG IN IS JO KI KZ LE SY TD TM TR UZ XIN

punctum Ménétériés, 1832: 227 (*Saperda*) [Azerbaijan: Lenkoran]

cyclops Küster, 1848: 88 [Spain: Murcia: Cartagena]

grisea Pic, 1891: 139 (*Phytoecia virgula* var.) [Russia: Volgograd: Sarepta]

major Pic, 1901: 14 (*Phytoecia virgula* var.) [Syria]

bravardi Pic, 1947: 1 (*Phytoecia virgula* var.) [Macedonia]

Turkish distribution patterns: Adana, Adiyaman, Afyon, Aksaray, Ankara, Amasya, Bartın, Bayburt, Bilecik, Bingöl, Bolu, Burdur, Çankırı, Çorum, Denizli, Erzincan, Erzurum, Eskişehir, European Turkey (?Edirne), Gümüşhane, Hatay, Isparta, İstanbul, İzmir, Kahramanmaraş, Karabük, Kars, Kastamonu, Kırıkkale, Konya, Kütahya, Manisa, Nevşehir, Niğde, Osmaniye, Samsun, Tunceli, Van provinces.

CONCLUSION

Löbl & Smetana (2010) mentioned 19 species group taxa of 17 species for members of the subgenus *Phytoecia* (s.str.) in Turkey. Then, Özdikmen (2012) and Danilevsky (2016) gave 24 species group taxa of 19 species. According to result of the present work, Turkish *Phytoecia* (s.str.) consist of 27 species group taxa of 21 species with newly described species and subspecies (Appendix 1).

According to the present work, 6 of 21 species are endemics to Turkey. In the other word, 29% of the known species of Turkish *Phytoecia* (s.str.) are endemics. Among Palearctic species, however, 22 of 49 species are endemics for different countries according to Danilevsky (2016). In the other word, 44% of the known species of Palearctic *Phytoecia* (s.str.) are endemics. Accordingly, the endemism ratio of the known species of Turkish *Phytoecia* (s.str.) is highly lower than that of Palearctic species. From point of this view, Turkey can include still at least a few undescribed species.

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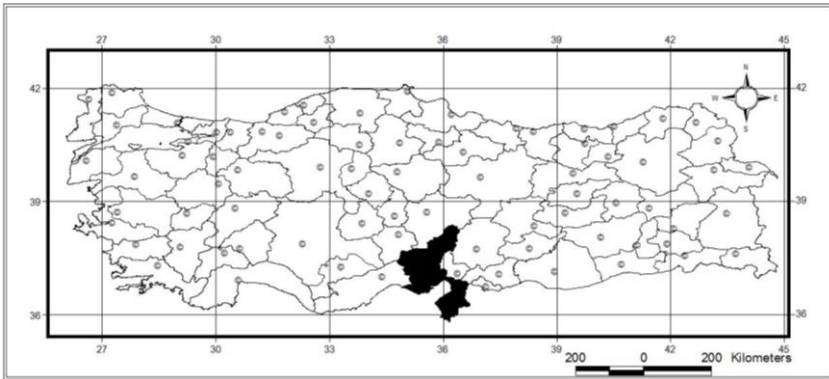


Figure 1. The distribution patterns of *Phytoecia caerulea bethseba* Reiche & Saulcy, 1858 in Turkey.

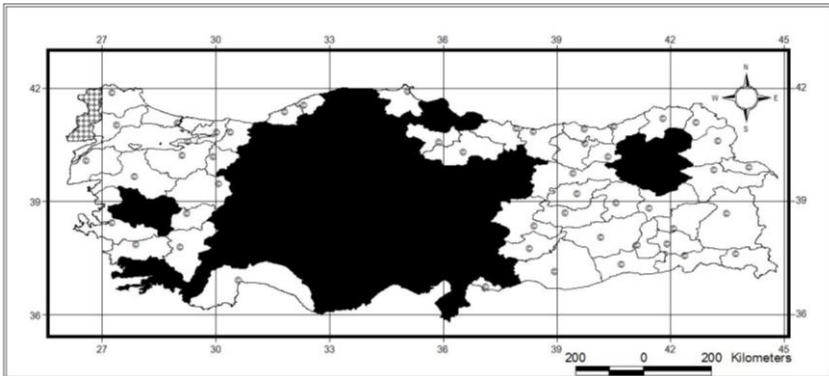


Figure 2. The distribution patterns of *Phytoecia caerulea caerulea* (Scopoli, 1772) in Turkey.

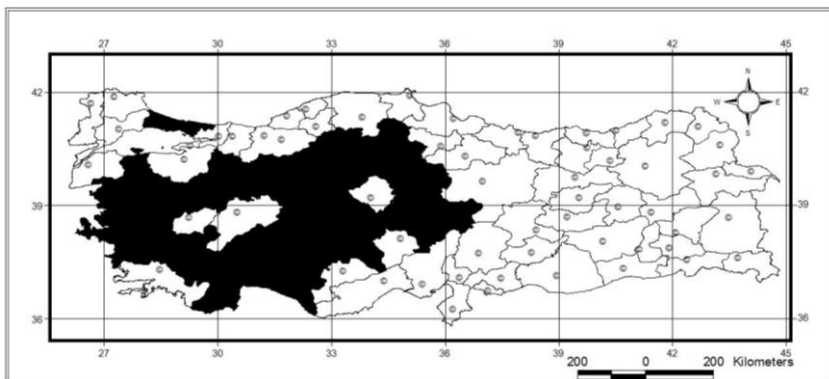


Figure 3. The distribution patterns of *Phytoecia baccueti* (Brullé, 1832) in Turkey.



Figure 4. *Phytoecia baccueti* (Brullé, 1832) (left) and *Phytoecia caerulea caerulea* (Scopoli, 1772) (right).

Table 1. Collected specimens of *Phytoecia baccueti* (Brullé, 1832) and *Phytoecia caerulea caerulea* (Scopoli, 1772) from Çankırı province.

<i>Phytoecia baccueti</i>		<i>Phytoecia caerulea caerulea</i>	
Locality name and no	Number of specimens	Locality name and no	Number of specimens
Kızılırmak-1	2		
Kızılırmak-2	6	Kızılırmak-2	4
Kızılırmak-3	1	Kızılırmak-3	1
Kızılırmak-4	1	Kızılırmak-4	-
Kızılırmak-5	-	Kızılırmak-5	3
Kızılırmak-6	2	Kızılırmak-6	3
Kızılırmak-7	3	Kızılırmak-7	-
Kızılırmak-8	1	Kızılırmak-8	1
Kızılırmak-9	3	Kızılırmak-9	6
Kızılırmak-10	2	Kızılırmak-10	-
Kızılırmak-11	2	Kızılırmak-11	1
Kızılırmak-12	4	Kızılırmak-12	7
Central-1	2	Central-1	2
Central-2	-	Central-2	1
Central-3	1	Central-3	1
Central-4	4	Central-4	1
Central-5	1	Central-5	1
Central-6	1	Central-6	-
Central-7	1	Central-7	-
Central-8	-	Central-8	2
Orta-1	1	Orta-1	-
Orta-2	1	Orta-2	3
Orta-3	2	Orta-3	-
Orta-4	-	Orta-4	1
Korgun-1	1	Korgun-1	-
Korgun-2	1	Korgun-2	-
Korgun-3	1	Korgun-3	-
Korgun-4	1	Korgun-4	-
Korgun-5	1	Korgun-5	-
Kurşunlu-1	-	Kurşunlu-1	2
Eldivan-1	-	Eldivan-1	1