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# Updated List of *Chlorophorus* Chevrolat, 1863 (Coleoptera: Cerambycidae: Cerambycinae) Species from Turkey, With Two New Restorations

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**Authors' Contributions**
**HÖ conceived and executed the project with the help of NC. HÖ analyzed the data and wrote the article.**

**Key words**
***Chlorophorus varius, Chlorophorus damascenus, C. gratiosus, C. sparsus,* new restoration.**

**ABSTRACT**

The subspecific status of *Chlorophorus* (s. str.) *varius* (O. F. Müller, 1766) and *Chlorophorus* (*Perderomaculatus*) *gratiosus* (Marseul, 1868) in Turkey are discussed and investigated in detail. Accordingly, *Chlorophorus damascenus* (Chevrolat, 1854) rest. status and *Chlorophorus sparsus* (Reitter, 1886) rest. status are upgraded from subspecies level to species level. The presence of *Chlorophorus gratiosus* (Marseul, 1868) in Turkey is proved. Moreover, all Turkish members of *Chlorophorus* Chevrolat, 1853 are updated with known distribution data in Turkey.

## INTRODUCTION

The genus *Chlorophorus* was erected by Chevrolat (1853) with the type species *Callidium annulare* Fabricius, 1787 [=*Clytus annularis* (Fabricius, 1787)]. This genus is characterized by body length approximately 10-15 mm. Head very feebly elevated between antennal insertion; antennal insertion close approximate, distinctively narrower in width than lower eye lobe; frons comparatively broad, flat, without carinae, with longitudinal smooth line or groove in middle part of posterior half, and produced tubercle near antennal base. Antennae shorter than body; not extended beyond half of elytra (in both sexes), slightly thickened toward apex; space between antennae shorter than distance between upper lobes of eyes. Pronotum rounded laterally, barely oblong or even transverse, disk uniformly convex, with dense punctuation, and dense adherent and setaceous erect hairs. Elytra truncate at apex or with truncate sharp outer angle, as an exception rarely rounded, with dark brown and light-colored adherent hairy coat forming characteristic pattern for each species, consisting of spots and transverse bands. Femur gradually thickened towards apex; middle femur carinate and sometimes also in hind femur (Cherepanov, 1990).

Larval and pupal developments are in broadleaf trees (*e.g.* in Europe, *Prunus, Crateagus, Quercus, Ficus, Morus, Alnus, Fraxinus, Pistacia, Juglans, Ceratonia, Platanus, Fagus, Castanea, Tilia, Ulmus, Salix, Populus, Pistacia, Robinia, Malus, Pyrus, Vitis, Acer, Betula, Carpinus, Acacia, Eleagnus, Paliurus* etc. and *e.g.* in Turkey, *Ostrya, Carpinus, Crateagus, Quercus, Fagus, Castanea, Tilia, Ulmus, Pistacia, Pyrus* etc.), in herbaceous plants (*Salicornia, Achillea, Spartium*) and in woody legumes (*Ononis, Dorycnium*). Pupation is generally in wood. Life cycle is about 2-3 years (Bense, 1995; Vives, 2000; Sama, 2002; Hoskovec and Rejzek, 2015).

*Chlorophorus* is subcosmopolitan or cosmopolitan genus. This genus has a Palaearctic, Ethiopic and Oriental region distribution, however, is not wide spread in the world generally. Monné and Bezark (2013) stated the species *C. annularis* was introduced in USA (Holartic region) and SE Brazil.

Since the establishment of the genus *Chlorophorus*, more than two hundred species of 4 subgenera have been described worldwide (Özdikmen, 2011a). Number of subgenera should certainly be more than those that are known (Özdikmen, 2011a). According to Danilevsky (2015), the genus is represented by 132 species in Palaearctic region, of which 15 species are present in Europe.

Recently, some studies were carried out about *Chlorophorus* Turkish species. Özdikmen and Turgut (2009) recorded 16 species from Turkey. Later, Löbl and Smetana (2010) erroneously mentioned 15 species for Turkey excluding *C. figuratus* (Scopoli, 1793). According to Danilevsky (2015), the genus includes 18 species in Turkey with the newly described species *C. grosseri* Sama and Rapuzzi, 2011 and *C. oezdikmeni* Sama and Rapuzzi, 2011.

Subspecific status and known distribution patterns of the species *C.* (s.str.) *varius* (O. F. Müller, 1766) and *C.* (*Perderomaculatus*) *gratiosus* (Marseul, 1868) in Turkey were discussed and investigated in detail. Both species includes two subspecies each one.

The present work upgrades the list of *Chlorophorus* species from Turkey with two new records: *C. varius damascenus* (Chevrolat, 1854) and *C.*

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*gratiosus sparsus* (Reitter, 1886). Also, *C. gratiosus* (Marseul, 1868) is proved.

## MATERIALS AND METHODS

Samples were carried out among 1997–2014 in 20 different provinces of Turkey: Ankara, Antalya, Adana, Bartın, Bolu, Bursa, Çankırı, Çorum, Düzce, Hakkari, Hatay, İçel, Kahramanmaraş, Karabük, Kastamonu, Kırıkkale, Konya, Nevşehir, Niğde and Osmaniye.

Information in the present text is given in following order:

Species reported from Turkey are given alphabetically within the subgenera. The Turkish distribution patterns for each species are given only concerning provinces. Turkish endemic taxa are marked with the sign (*). For each species, a map showing distribution patterns in Turkey is added.

The type information for each species is arranged according to Tavakilian (2015). For distributional data of the species, Özdikmen (2007, 2008a, b, 2011b, 2013) and Özdikmen and Turgut (2009) for Turkey, and Löbl and Smetana (2010) and Danilevsky (2015) for Palaearctic are chiefly used in the text. Distributional abbreviations for the work are available in Löbl and Smetana (2010). All specimens are deposited at Gazi University of Ankara (Turkey).

## RESULTS

The update list of *Chlorophorus* species from Turkey is provided below. Also, information of type material, range, Turkish distribution and a map with the species distribution are given. Turkish endemic taxa are marked with the sign (*).

Subfamily Cerambycinae Latreille, 1802
Tribe Clytini Mulsant, 1839
Genus *CHLOROPHORUS* Chevrolat, 1863
Subgenus *Chlorophorus* Chevrolat, 1863

*Chlorophorus damascenus* (Chevrolat, 1854) rest. status

*Type material information*

Holotype, ex collection C. Bowring-Chevrolat, The Natural History Museum, London as *Clytus damascenus* [Type locality “Damascus env.” (Syria)]

*Range: E*

GR (Rhodes) **N**: EG **A**: CY IN IS IQ JO LE SY TR.

*Turkish distribution*

Adana, Ankara, Antalya, Bartın, Bolu, Bursa, Çankırı, Çorum, Düzce, Hakkari, Hatay, İçel, İzmir, Kahramanmaraş, Karabük, Kastamonu, Kırıkkale, Konya, Muş, Nevşehir, Niğde, Osmaniye and Tunceli provinces.

*Remarks*

According to Löbl and Smetana (2010) and Danilevsky (2015), *Chlorophorus varius* (O. F. Müller, 1766) includes 2 subspecies: the nominotypical one and *Chlorophorus varius damascenus*. *Chlorophorus varius varius* is distributed in most of Europe (including European Turkey), Kazakhstan, western Siberia, Caucasus, Transcaucasia, Iran and Turkey (Anatolia). *Chlorophorus varius damascenus* is distributed in Greece (Rhodes), Turkey (Anatolia), Cyprus, Middle East (Israel, Jordan, Lebanon, Iraq and Syria), Iran and North Africa (Egypt).

As seen above, both subspecies are present in Turkey.

*Clytus damascenus* was described by Chevrolat (1854) from Syria (Damascus). It has been regarded as a subspecies of *Chlorophorus varius* since a very long time.

A total of 257 specimens of *Chlorophorus varius* collected in 20 different provinces of Turkey in 1997-2014, and were evaluated.

Also, we examined a total of 148 specimens of this species from 12 different provinces (Ankara, Bartın, Bolu, Bursa, Çankırı, Çorum, Düzce, İçel, Karabük, Kastamonu, Kırıkkale and Niğde).

A total of 109 specimens of *Chlorophorus damascenus* were examined from 20 provinces: Ankara, Antalya, Adana, Bartın, Bolu, Bursa, Çankırı, Çorum, Düzce, Hakkari, Hatay, İçel, Kahramanmaraş, Karabük, Kastamonu, Kırıkkale, Konya, Nevşehir, Niğde and Osmaniye.

According to the present investigation, the known distribution patterns of both taxa are overlapping at least in 12 provinces (Ankara, Bartın, Bolu, Bursa, Çankırı, Çorum, Düzce, İçel, Karabük, Kastamonu, Kırıkkale and Niğde) (Figs. 1-2).

According to the old records, the overlapping area is wider than it results in the present work.

Old records of *C. damascenus* can be presented as follows: İzmir prov.: Bornova, Antalya prov.: Alanya (Demelt and Alkan, 1962; Demelt, 1963); Hatay prov.: Yukarı Ekinci village, Kahramanmaraş prov.: Pazarcık, Osmaniye prov.: Ürün plateau, Karacalar village, Kazmaca village, Çona village, Böcekli village, Toprakkale (Ozdikmen *et al*., 2010); Antalya prov.: Akseki-Manavgat road, Konya prov.: Taşkent-Alanya road, between Hadim-Bozkır, Taşkent: Ilıcapınar, Hadim-Alanya road, Sarımut-Karapınar, Bozkır (Turgut and

Ozdikmen, 2010); Hakkari prov.: Kolbaşı, Muş prov.: Buğlan pass, Tunceli prov.: 16 km S of Pülümür (Sama *et al*., 2012); Karabük prov.: Eskipazar (Yardibi and Tozlu, 2013).

Accordingly, *C. damascenus* was recorded from Antalya, Hakkari, Hatay, İzmir, Kahramanmaraş, Karabük, Konya, Osmaniye, Muş and Tunceli. Seven provinces (Antalya, Hakkari Hatay, Kahramanmaraş, Karabük, Konya and Osmaniye), with the exception of İzmir, Muş and Tunceli, were evaluated in the present work as well.

Moreover, some old records of *C. varius* should also belong to *C. damascenus*. So, this taxon is very likely distributed at least in Adıyaman, Aydın, Burdur, Denizli, Gaziantep, Isparta, Karaman, Manisa, Mardin, Muğla, Şanlıurfa and Uşak as well (Fig. 3, Fig. 4A).


Fig. 1. A, *Chlorophorus varius* ♀ (left) and *Chlorophorus damascenus* ♀ (right) from Düzce province in NW Anatolia. B, The distribution patterns of *Chlorophorus varius* in Turkey.

As result of the present work, all provinces recording *C. varius* are overlapped with provinces recording *C. damascenus*. This status contradicts the rule of the allopatric distribution of the subspecies and does not explain as hybridization area as seen in Figures 1-2. So it is clear that both taxa do not belong to the same species. Both taxa from the same province are photographed in Figure 1.

Consequently, we propose that *Chlorophorus damascenus* should be regarded as a separate species, as in the original combination (rest. status).

*Chlorophorus damascenus* is easily distinguished from *C. varius* in at least partly reddish legs and antennae. Another specimen of *C. damascenus* from Antalya province is presented in Figure 2 to show the color variability. Size and degree of reddish coloration of legs and antennae are variable in *Chlorophorus damascenus*, but more or less always present (Figs. 2, 3).

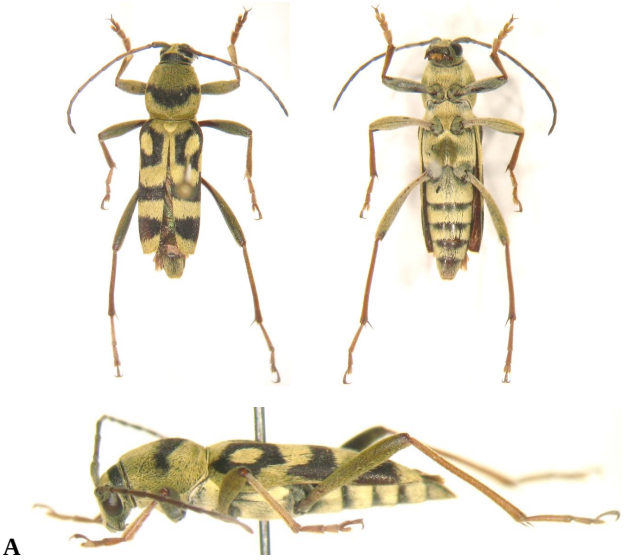


Fig. 2. A, *Chlorophorus damascenus* ♀ from Antalya province in S Anatolia. B, The known distribution patterns of *Chlorophorus damascenus* in Turkey.

*Chlorophorus herbstii* (Brahm, 1790)

*Type material information*

Holotype, ex collection J. F. W. Herbst, Museum für Naturkunde der Humboldt-Universität zu Berlin as *Leptura herbstii* [Type locality "Mainz" (Germany)]

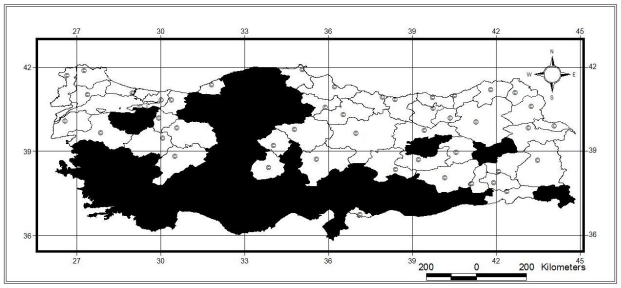


Fig. 3. The possible distribution patterns of *Chlorophorus damascenus* in Turkey.

*Range: E*

AU BH BU BY CR CT CZ EN FI FR GE HU KZ LA LS LT MD NR NT PL RO SK SP ST SV SZ TR UK YU **A**: ES KZ TR WS

*Turkish distribution*

Balıkesir, Bolu, Çanakkale and İstanbul provinces (Fig. 4B).

*Chlorophorus varius* (O. F. Müller, 1766)

*Type material information*

Syntypes, ex collection C. Allioni, Museo Regionale di Scienze Naturali di Torino as *Leptura varia* [Type locality "Torino" (Italy)]

*Range: E*

AL AU BH BU BY CR CT CZ FR GBi GE GR HU IT LS LT MA MC MD NL PL RO SK SL SP ST SZ TR UK YU **A**: AB AR GG KZ TR WS

*Turkish distribution*

Adana, Adıyaman, Aksaray, Amasya, Ankara, Antalya, Artvin, Aydın, Balıkesir, Bartın, Bilecik, Bolu, Burdur, Bursa, Çanakkale, Çankırı, Çorum, Denizli, Düzce, Erzincan, Erzurum, Eskişehir, Gaziantep, Hakkari, Hatay, Iğdır, Isparta, İçel, İstanbul, İzmir, Kahramanmaraş, Karabük, Karaman, Kastamonu, Kayseri, Kırıkkale, Kırklareli, Kırşehir, Kocaeli, Konya, Malatya, Manisa, Mardin, Muğla, Muş, Nevşehir, Niğde, Osmaniye, Şanlıurfa, Tokat, Trabzon, Uşak, Van and Zonguldak provinces (Fig. 4C).

Subgenus *Crassofasciatus* Özdikmen, 2011

*Chlorophorus aegyptiacus* (Fabricius, 1775)

*Type material information*

Holotype, Zoologisk Museum, Copenhague as *Callidium aegyptiacum* [Type locality "Oriente"]

*Range: E*

BU GR MC **A**: TR

*Turkish distribution*

Amasya, Ankara, Balıkesir, Bolu, Bursa, Çanakkale, Çankırı, Çorum, Denizli, Hatay, İstanbul, İzmir, Manisa, Muğla and Tokat provinces (Fig. 4D).

*Chlorophorus convexifrons* Holzschuh, 1981

*Type material information*

Holotype ♂, collection C. Holzschuh, Villach [Type locality "Samsun" (Turkey)]

*Range: E*

GR (Samos) **A**: TR

*Turkish distribution*

İzmir, Manisa, Osmaniye and Samsun provinces (Fig. 4E).

**Chlorophorus cursor* Rapuzzi and Sama, 1999

*Type material information*

Holotype ♂, collection P. Rapuzzi, Prepotto [Type locality "Abant" (Turkey: Bolu)]

*Range*

**A**: TR

*Turkish distribution*

Ankara and Bolu provinces (Fig. 4F).

*Chlorophorus hungaricus* Seidlitz, 1891

*Type material information*

[Type locality "Ungarn" (Hungary)]

*Range: E*

AL AU BH BU CR CZ GR HU MC MD RO SK YU **A**: TR

*Turkish distribution*

Adana, Ankara, Bartın, Bolu, Bursa, Gaziantep, İçel, Kahramanmaraş, Karabük, Kastamonu, Kırıkkale, Kocaeli, Konya, Niğde, Osmaniye, Sivas and Yozgat provinces (Fig. 4G).

**Chlorophorus niehuisi* Adlbauer, 1992

*Type material information*

Holotype ♂, collection K. Adlbauer, Graz [Type locality "Buğlan pass" (Turkey: Muş)].

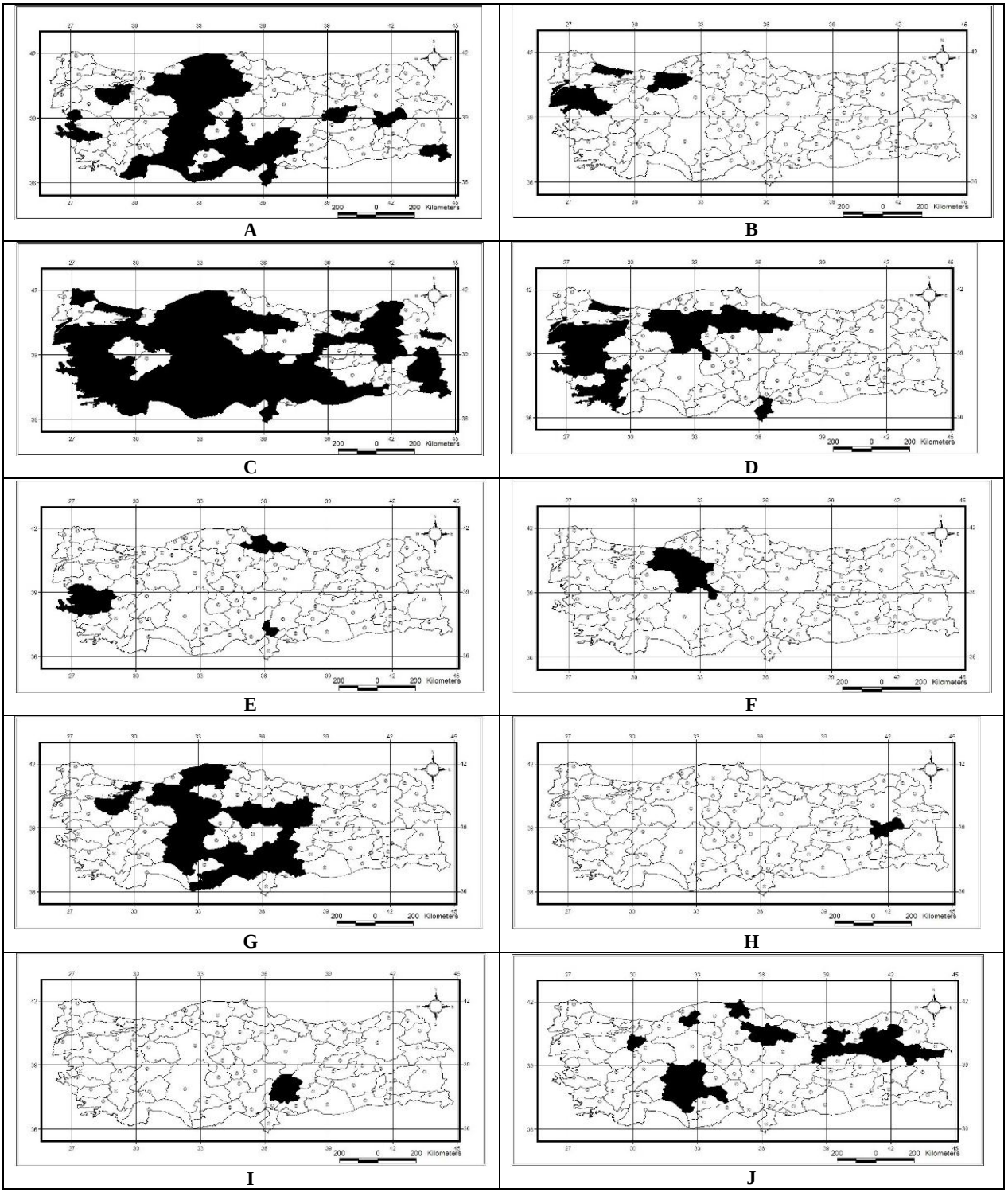


Fig. 4. Maps of Turkish distribution patterns in Turkey of A, *Chlorophorus damascenus*; B, *C. herbstii*; C, *C. varius*; D, *C. aegyptiacus*; E, *C. convexifrons;* F, *C. cursor;* G, *C. hungaricus*; H, *C. niehuisi*; I, *C. oezdikmeni*; J**,** *C. robustior*.

*Range: A*
TR

*Turkish distribution*
Muş province (Fig. 4H).

**Chlorophorus oezdikmeni* Sama and Rapuzzi, 2011

*Type material information*
Holotype ♂, collection P. Rapuzzi, Prepotto [Type locality "Andırın" (Turkey: Kahramanmaraş)]

*Range: A*
TR

*Turkish distribution*
Kahramanmaraş province (Fig. 4I).

* *Chlorophorus robustior* (Pic, 1900)

*Type material information*
Syntypes, ex collection M. Pic, Muséum National d'Histoire Naturelle, Paris as *Clytanthus trifasciatus* var. *robustior* [Type locality "Asie mineure" (Turkey)]

*Range: A*
TR

*Turkish distribution*
Ağrı, Amasya, Bilecik, Erzincan, Erzurum, Gümüşhane, Karabük, Konya, Sinop and Tokat provinces (Fig. 4J).

*Chlorophorus trifasciatus* (Fabricius, 1781)

*Type material information*
Syntypes 2, ex collection J. C. Fabricius, Zoologisk Museum, Copenhague as *Callidium trifasciatum* [Type locality "Lusitania" (Portugal)]

*Range: E*
BH BU CR FR GR HU IT PT RO SL SP SZ **N**: AG MO TU **A**: IS SY TR

*Turkish distribution*
Adana, Ankara, Antalya, Bilecik, Çorum, Hatay, İçel, İstanbul, Kahramanmaraş, Kastamonu, Kocaeli, Konya, Kütahya, Niğde and Osmaniye provinces (Fig.5A).

Subgenus *Perderomaculatus* Özdikmen, 2011

*Chlorophorus gratiosus* (Marseul, 1868)

*Type material information*
As *Clytus gratiosus* [Type locality "Beyrouth" (Lebanon)]

*Range: A*
IS LE SY TR

*Turkish distribution*
Antalya, İçel and Konya provinces (Fig. 5B).

*Remarks*
*Chlorophorus gratiosus*, originally described from Lebanon (Beyrouth) as *Clytus gratiosus* (Marseul, 1868), is known only from Israel and Lebanon (Löbl and Smetana, 2010; Danilevsky, 2015). In reality, the typical subspecies occurs in Turkey too since it was recorded at least from the provinces Konya (Tauzin, 2000), Antalya (Ovacık village) (Flickr, 2015) and İçel (Hoskovec and Rejzek, 2015). Hoskovec and Rejzek (2015) recorded it for Syria as well. So, this species is distributed in Israel, Lebanon, Syria and Turkey.

* *Chlorophorus grosseri* Sama and Rapuzzi, 2011

*Type material information*
Holotype ♀, collection P. Rapuzzi, Prepotto [Type locality "Meşindağı pass" (Turkey: Şırnak)]

*Range: A*
TR

*Turkish distribution*
Hakkari and Şırnak provinces (Fig. 5C).

*Chlorophorus sartor* (O. F. Müller, 1766)

*Type material information*
Syntypes, ex collection C. Allioni, Museo Regionale di Scienze Naturali di Torino as *Cerambyx sartor* [Type locality "Torino" (Italy)]

*Range: E*
AL AU BH BU BY CR CT CZ FR GE GR HU IT KZ LA LU MD PL PT RO SK SL SP ST SZ TR UK YU A: AB AR CY ?ES GG IN IS JO KZ LE SY TM TR WS

*Turkish distribution*
Adana, Amasya, Ankara, Antalya, Artvin, Aydın, Balıkesir, Bartın, Bilecik, Bolu, Burdur, Bursa, Çanakkale, Çankırı, Denizli, Düzce, Elazığ, Erzurum, Eskişehir, Gaziantep, Gümüşhane, Hatay, Isparta, İçel, İstanbul, İzmir, Kahramanmaraş, Karabük, Kastamonu, Kayseri, Kırıkkale, Kırklareli, Konya, Kütahya, Manisa, Muğla, Osmaniye, Rize, Samsun, Sinop, Tekirdağ and Tokat provinces (Fig.5D).

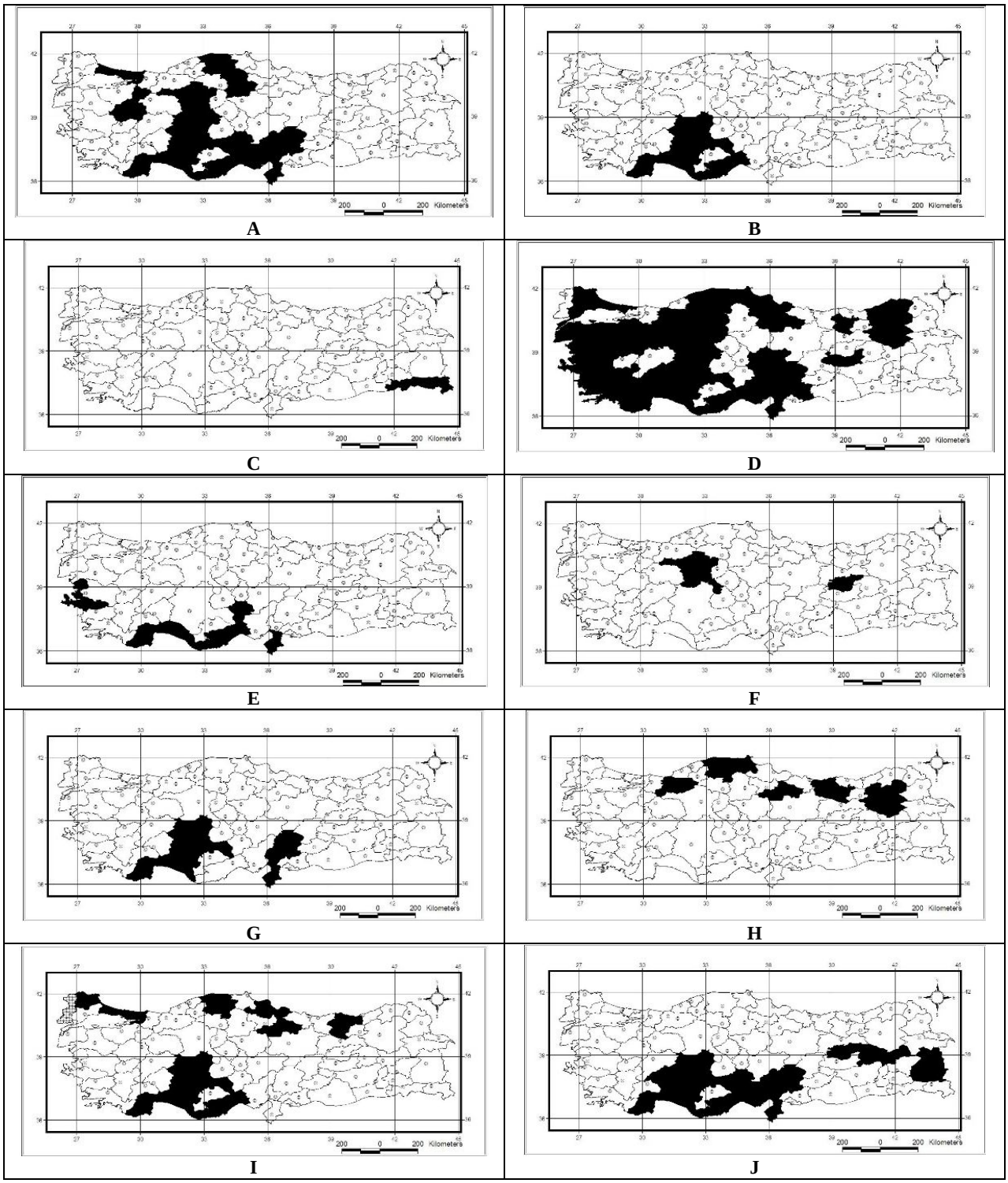


Fig. 5. Maps of Turkish distribution patterns in Turkey of A, *Chlorophorus trifasciatus;* B, *C. gratiosus*; C, *C. grosseri*; D, *C. sartor*; E, *C. sparsus*; F, *C. wewalkai*; G, *C. dinae*; H, *C. dominici*; I, *C. figuratus*; J,. *C. nivipictus.*

*Chlorophorus sparsus* (Reitter, 1886) rest. status

*Type material information*

Syntypes, ex collection E. Reitter, Magyar Természettudományi Mûzeum, Budapest as *Clytus* (*Clythantus*) *sparsus* [Type locality "Lycian Taurus: Adalia" (Turkey: Antalya)]

*Range: E*

GR A: SY TR

*Turkish distribution*

Antalya, Hatay, İçel, İzmir and Niğde provinces (Fig. 5E).

*Remarks*

According to Löbl and Smetana (2010) and Danilevsky (2015), *Chlorophorus gratiosus* (Marseul, 1868) includes two subspecies: the nominotypical subspecies and *Chlorophorus gratiosus sparsus*.

*Chlorophorus gratiosus*, originally described from Lebanon (Beyrouth) as *Clytus gratiosus* (Marseul, 1868), is distributed in Israel, Lebanon, Syria and Turkey.

*Chlorophorus gratiosus sparsus*, which was originally described from Turkey (Antalya: Lycian Taurus, Adalia) as *Clytus sparsus* (Reitter, 1886), is distributed only in Greece (Rhodes), Turkey (Anatolia) and Syria.

As seen above, the species is represented in Turkey not only by *C. gratiosus sparsus* but also by *C. gratiosus gratiosus*.

*Chlorophorus gratiosus sparsus* was examined on the base of one specimen from İçel province (Mezitli) and twenty-one specimens from Antalya (Akseki), *Chlorophorus gratiosus gratiosus* on the base of eight specimens from Antalya (İbradı) and one specimen from Antalya (Gündoğmuş), which were collected in 2007 and 2008.

According to the present investigation, the known distribution patterns of both taxa are overlapping at least in Antalya and İçel provinces. According to the old records, the overlapping area can be wider than it results in the present work.

Old records of *C. gratiosus* in Turkey are: İçel prov.: Silifke (Demelt, 1967); Antalya prov.: Ovacık, Manavgat, Termessos, Alanya, Dim stream, Gazipaşa, Akseki, Kemer, Güzelbağ, İçel prov.: Anamur, Silifke, Gülnar, Erdemli, Kuzucubelen, Kızkalesi, Niğde prov.: Çiftehan (Adlbauer, 1988); Konya (Tauzin, 2000); İzmir (Tezcan and Rejzek, 2002); Hatay prov.: Yayladağı, İçel prov.: Güzeloluk, Ortagoren to Mut (Malmusi and Saltini, 2005).

Old records of *Chlorophorus sparsus* in Turkey are: from Antalya prov.: Akseki, İbradı, Gündoğmuş (Turgut and Özdikmen, 2010).

As seen above, most of the known old records were given as *C. gratiosus*. But most of them, with the exception of Antalya, İçel and Konya provinces, should belong very likely to *C. sparsus*. Therefore, we regarded the known old distribution patterns of *C. gratiosus* as related to *C. sparsus*, except for Antalya, İçel and Konya provinces (Figs. 6, 7).

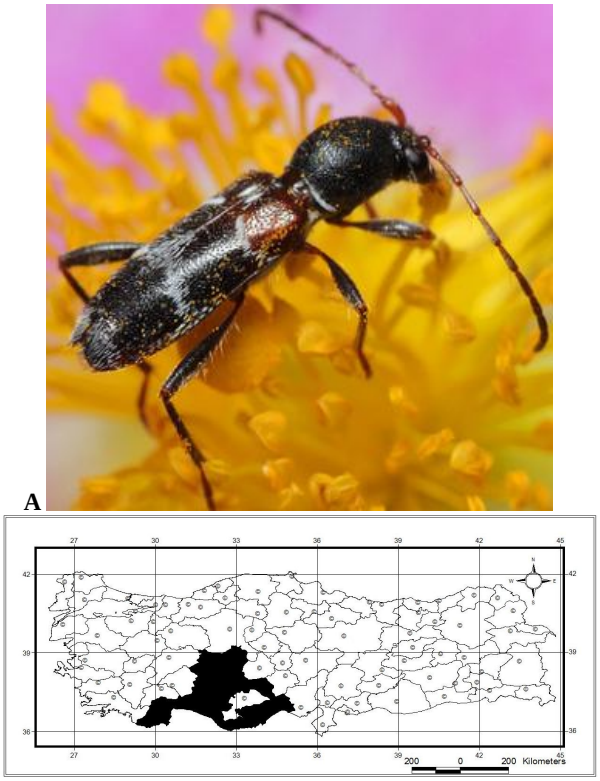


Fig. 6. A, *Chlorophorus gratiosus* from Antalya province (Kemer: Ovacık village) in Turkey (Available from: https://www.flickr.com/photos/tristanba/7296144078/in/photostream/). B, The known distribution patterns of *Chlorophorus gratiosus* (Marseul, 1868) in Turkey.

So, the status contradicts the rule of allopatric distribution of subspecies and does not explain as hybridization area (Figs. 6, 7). Consequently, it is clear that both taxa do not belong to the same species. Thus, we propose that *Chlorophorus sparsus* should be regarded as a separate species as in the original combination (rest. status).

Beside the known morphological differences, another evidence of this status is that Sama *et al.* (2010a, b) stated *Quercus cerris* for *C. gratiosus* from Lebanon

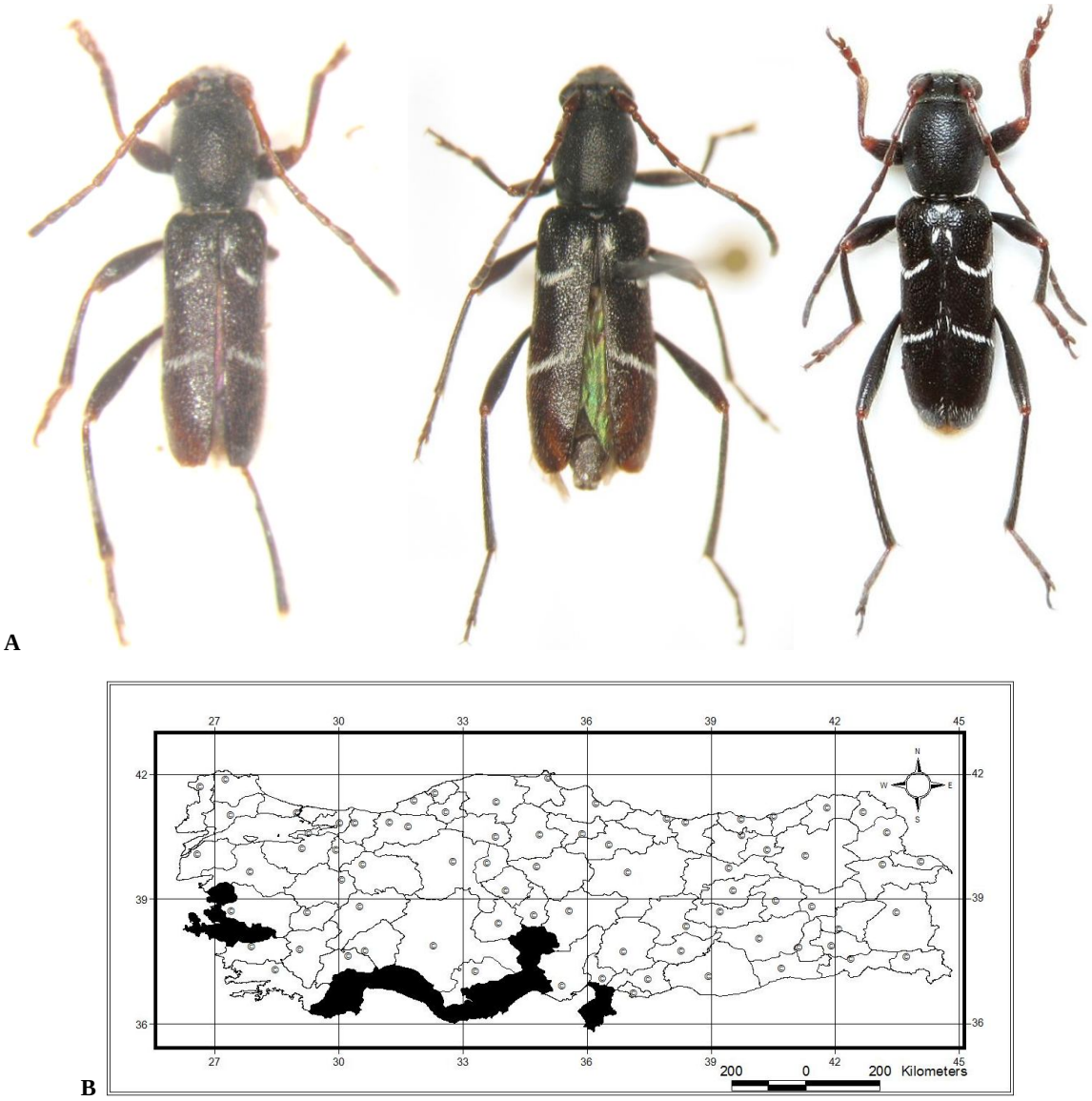


Fig. 7. A, Known color variations of *Chlorophorus sparsus* (Reitter, 1886) from İçel: Mezitli ♂ (left), Antalya: İbradı ♀ (center) and Antalya: Manavgat ♂ (right) (from Zdeněk Chalupa, http://www.biolib.cz/cz/image/ id114131/). B, The known distribution patterns of *Chlorophorus sparsus* (Reitter, 1886) in Turkey.

and *Paliurus* sp. for *C. sparsus* from Turkey as known host plants.

*Chlorophorus gratiosus* is given with a photo taken from Flickr (2015) from Antalya province (Kemer: Ovacık village) (Fig. 6).

*Chlorophorus sparsus* is photographed from İçel province (Mezitli) and Antalya province (İbradı) and given with a photo taken from Chalupa (2015) from Antalya province (Manavgat) (Fig. 7).

* *Chlorophorus wewalkai* Holzschuh, 1969

*Type material information*

Holotype ♂, collection C. Holzschuh, Villach [Type locality "Kızılcahamam" (Turkey: Ankara)]

*Range: A*

TR

*Turkish distribution*
Ankara and Tunceli provinces (Fig. 5F).

Subgenus *Humeromaculatus* Özdikmen, 2011

*Chlorophorus dinae* Rapuzzi and Sama, 1999

*Type material information*
Holotype ♂, collection P. Rapuzzi, Prepotto [Type locality "Antakya: Şenköy" (Turkey: Hatay)]

*Range: A*
SY TR
*Turkish distribution*
Antalya, Hatay, Kahramanmaraş, Konya and Osmaniye provinces (Fig. 5G).

* *Chlorophorus dominici* Sama, 1996

*Type material information*
Holotype ♂, collection G. Sama, Cesena [Type locality "Devrekani" (Turkey: Kastamonu)]

*Range*
A: TR

*Turkish distribution*
Bolu, Erzurum, Giresun, Gümüşhane, Kastamonu, Sinop and Tokat provinces (Fig. 5H).

*Chlorophorus figuratus* (Scopoli, 1763)

*Type material information*
As *Cerambyx figuratus* [Type locality "Carniola" (Slovenia)]

*Range: E*
AL AU BH BU BY CD CR CT CZ EN FR GE GR HU IT LA LS LT LU MC MD NT PL PT RO SK SL SP ST SZ TR UK YU A: AB AR ES GG IN KZ TR WS

*Turkish distribution*
Antalya, Gümüşhane, İçel, İstanbul, Kastamonu, Kırklareli, Kocaeli, Konya, Samsun, Tokat and Trabzon provinces (Fig. 5I).

*Chlorophorus nivipictus* (Kraatz, 1879)

*Type material information*
Lectotype ♀, ex collection G. Kraatz, Deutsches Entomologisches Institut, Eberswalde as *Clytus nivipictus* [Type locality "Gülek" (Turkey: İçel)]

*Range: E*
GR (Samos) A: IN SY TR

*Turkish distribution*
Adana, Antalya, Bingöl, Hatay, Isparta, İçel, Kahramanmaraş, Konya, Muş, Niğde, Osmaniye, Tunceli and Van provinces (Fig. 5J).

## DISCUSSION

According to the present work 20 Turkish species of *Chlorophorus* have been recorded, without including any subspecies, increasing the number of known species in two. These species belong to four subgenera: *Chlorophorus* (3 species after a restoration), *Crassofasciatus* (8 species), *Perderomaculatus* (5 species after a restoration) and *Humeromaculatus* (4 species); of which 7 species are endemic from Turkey, meaning that 35% of the known *Chlorophorus* species are endemics. Checking this ratio with Palaearctic species (Danilevsky, 2015), the ratio got is very similar as Turkish with 45% species endemics for different countries.

Before the present work, only four species among the a hundred and thirty-two Palaearctic species of *Chlorophorus* have been included subspecies according to Danilevsky (2015). These species are: *C. diadema* (Motschulsky, 1854) [in Far East Russia, China, Mongolia, Korea and Japan], *C. minamiiwo* Satô and N. Ohbayashi, 1982 [only in Japan (Ogasawara)], *C. varius* (O. F. Müller, 1766) [in Europe, Caucasus, Kazakhstan, W Siberia, Turkey, Middle East and North Africa] and *C. gratiosus* (Marseul, 1868) [in Greece, Turkey, Syria, Israel and Lebanon].

From this point of view, subspeciation in *Chlorophorus* species is very rare or may be absent. After the present work, *C. varius* (O. F. Müller, 1766) and *C. gratiosus* (Marseul, 1868) do not include any subspecies. So subspecific status of *C. diadema* (Motschulsky, 1854) and especially *C. minamiiwo* Satô and N. Ohbayashi, 1982 need to be clarified.

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