

*This contribution is published
to honor Prof. Vladimir Chikatunov,
a scientist, a colleague and a friend,
on the occasion of his 80th birthday.*

The Brentidae of Israel (Coleoptera: Curculionoidea)

EYLON ORBACH

49 Remez Street, Qiryat Tiv'on, 3604449 Israel.
E-mail: eylonorbach@gmail.com

ABSTRACT

The six species of Brentidae occurring in Israel are reviewed, and an identification key and distributional maps are provided. Three species—*Amorphocephala excantator* (Damoiseau, 1964), *Amorphocephala sulcata* (Calabresi, 1920) and *Eremoxenus chan* Semenow, 1892—are newly recorded from Israel. *Amorphocephala arabica* Damoiseau, 1964 is considered a junior synonym of *Amorphocephala sulcata* (Calabresi, 1920).

KEYWORDS: Biodiversity, Brentidae, beetles, straight-snouted weevils, Middle East, Palearctic, fauna, identification key, new records, synonymy.

INTRODUCTION

The Brentidae, or straight-snouted weevils, is a small family of Curculionoidea beetles containing about 1800 species (Sforzi & Bartolozzi 2004; Sforzi *et al.* 2014), predominantly occurring in tropical and subtropical regions. Brentids are characterized by a long narrow body, non-geniculated and usually 11-segmented antennae, and by the absence of the labrum and the maxillary and labial palps. The eyes are rounded, not granulate, but rather with a very smooth, crystalline-like coating. Members of some tribes exhibit a strong sexual dimorphism, mainly in the shape of the rostrum: males have a broad rostrum with large mandibles, whereas females have a long and slender rostrum with pincer-shaped mandibles, used for boring holes deep in the wood of dead or decaying trees for laying eggs. The length of most species ranges from 4–20 mm, with some Indo-Pacific brentids reaching 80 mm. Adults feed on fungi and sap exuding from trees, whereas species of the tribe Eremoxenini are myrmecophilous.

The phylogenetic status of the Brentidae within the Curculionoidea has always been highly debatable. Since the first ever checklist published on the Brentidae (Schoenfeldt 1908), attempts were made to widen the family concept and to consolidate Brentidae with their sister families Apionidae and Nanophyidae (e.g. Morimoto 1962; Kuschel 1995; Thompson 1992). In the last decades, the Brentidae are treated in the wide sense, including as subfamilies, besides the Brentinae s. str., several sister-groups of primitive weevils: those with a long trochanter, some of them originally treated as separate families (e.g. Apioninae, Nanophyinae), others

usually considered within the Brentidae s. str. (e.g. Cyladynae, Eurychinae), and those with a short trochanter (Ithycerinae) (Alonso-Zarazaga *et al.* 2017; Bouchard *et al.* 2011; Oberprieler *et al.* 2007; Oberprieler 2014). This view is also supported by the recent molecular data (e.g. Gunter *et al.* 2015; McKenna *et al.* 2009; Winter *et al.* 2017). However, the debates concern the taxonomic rank of the Brentidae s. str., and not their monophyly. Therefore, in this work, I prefer to follow the classification of the Brentidae s. str. proposed by Sforzi and Bartolozzi (2004), where a detailed historical overview of the classification of the family and morphological analysis can be found.

Although several researchers collected in the Middle East (including Palestine) in the 19th and early 20th centuries, very few records of Brentidae exist in publications dealing with the fauna of Israel. Bedel (1878) recorded *Eupsalis reichei* (Fairmaire, 1859) (later placed in the genus *Orfilaia* Haedo Rossi, 1955). Bodenheimer (1937) mentioned *Symmorphocerus piochardi* (Bedel, 1878) (placed now in the genus *Amorphocephala* Damoiseau, 1966) and *Eupsalis reichei*, most likely based on the collection of the Department of Agriculture in Jerusalem (the collection was later partly delivered to the Hebrew University of Jerusalem, and then to the Tel Aviv University, and partly to the Ministry of Agriculture, Bet Dagan; the appropriate specimens were probably lost). Bytinski-Salz and Sternlicht (1967) recorded *Amorphocephala coronata* (Germar, 1817) and *Eupsalis reichei* as associated with oak in Israel. Schedl (1970), in his papers on the West Palearctic region, first recorded only *Eupsalis reichei* from Israel, and later (Schedl 1975a) added a second species, *Amorphocephala coronata*. These two species were subsequently recorded from Israel by Sforzi and Bartolozzi (2004) and by Sforzi (2011). Most recently, updated records of Brentidae from Israel were provided by Alonso-Zarazaga *et al.* (2017), who notes three species, *Orfilaia reichei*, *Amorphocephala coronata* and *Amorphocephala piochardi*.

The objective of the present paper is to summarize information on all records of brentids collected in Israel and provide an identification key to facilitate future research.

MATERIALS AND METHODS

Most of the studied material is deposited in the National Collection of Insects, the Steinhardt Museum of Natural History, National Research Center, Tel Aviv University, Israel (SMNHTAU). Otherwise, the examined specimens are deposited in the following collections:

- BMZC – Beit Margolin Zoological Collection, Oranim Academic College, Israel;
- BOC – Benjamin Orbach collection, Haifa, Israel;
- EOC – Eylon Orbach collection, Qiryat Tiv'on, Israel;
- MZUF – Zoological Museum of the University of Florence, Italy;
- PPIS – Plant Protection and Inspection Services, Ministry of Agriculture, Bet Dagan, Israel.

Distribution maps are based on the *Fauna Palaestina Committee* map of the Israel and Sinai regions. Transliterated names of localities in Israel follow the *Israel Touring Map and List of settlements* published by the Survey of Israel (2009). Where names of localities have changed, the most recent transliterated Hebrew names are given followed by the old names in brackets, e.g. Sha'ar haGay [Bab elWad]. Erroneous or alternative spellings are also included in brackets following the correct spelling. Classification and nomenclature used in this paper follow Sforzi and Bartolozzi (2004) and Alonso-Zarazaga *et al.* (2017). Distribution of species follows Alonso-Zarazaga *et al.* (2017), with countries being listed in the alphabetical order. A full-annotated synonymy is given for each taxon.

TAXONOMY

Key to the Brentidae of Israel

- 1 Tarsomere 3 depressed, bilobed, distinctly wider than segment 2.....
.....*Orfilaia reichei* (Fairmaire)
- Tarsomere 3 more or less laterally compressed and not bilobed 2
- 2 Pronotum cordiform.....*Eremoxenus chan* Semenow
- Pronotum not cordiform..... 3
- 3 Mesorostral plate dorsally with narrow median vertical ridge, which extends over
and partially fused with metarostrum.....*Amorphocephala piocharidi* (Bedel)
- Mesorostral plate without such ridge, metarostrum deeply excavated 4
- 4 Pronotum with median basal groove, antennal articles 2–10 sharply truncate
distally*Amorphocephala sulcata* (Calabresi)
- Pronotum without median basal groove, antennal articles 2–10 not truncate
distally 5
- 5 Mandibles short, strongly curved with left one overlapping the right one in male,
mesorostral plate subsquare, antennomeres 4–8 moniliform
.....*Amorphocephala coronata* (Germar)
- Mandibles long in male, mesorostral plate wider than long, antennomeres 4–8
subsquare.....*Amorphocephala excantator* (Damoiseau)

Subfamily Brentinae Billberg, 1820

Tribe Arrhenodini Lacordaire, 1866

Genus *Orfilaia* Haedo Rossi, 1955

Orfilaia reichei (Fairmaire, 1859)

(Figs 1, 2, 15)

Arrhenodes reichei Fairmaire, 1859: 164.

Eupsalis reichei: Lacordaire 1866: 430; Bedel 1878: 185; Power 1879: 495; Schönfeldt 1910: 23 (catalog); Kleine 1917: 99 (redescription, key), 1938b: 94 (catalog); Bodenheimer 1937: 150; de Muizon 1960: 183; Bytinski-Salz & Sterlicht 1967: 135; Schedl 1970: 101 (drawings).

Orfilaia reichei: Haedo Rossi 1955: 63; Damoiseau 1967: 366 (redescription); Sforzi & Bartolozzi 2004: 233; Sforzi 2011: 143; Alonso-Zarazaga *et al.* 2017: 95.

Material examined: Israel: *Har Hermon*: 1♀ Mt. Hermon, 28.vii.1970, A. Freidberg. *Upper Galilee*: Elon, 1♀ 4.ix.1941, H. Bytinski-Salz; 1♂ iv.1944, H. Bytinski-Salz, ex *Camponotus fellah* nest. *Jordan Valley and Southern Golan*: 1♂ 'En Gev, v.1960 (BMZC). *Carmel Ridge*: Zikhron Ya'aqov, 1♂ 10.v.1953, J. Kugler; 1♀ 10.v.1956. *Yizre'el Valley*: 1♀ Bet haShitta, 13.vi.1954; *Samaria*: 1♀ Nahal Tirza (Wadi Faria), 6.iii.1974, D. Furth. *Central Coastal Plain*: Hadera, 1♀ 14.vii.1956, J. Wahrman; 1♀ 28.iv.1979, D. Furth; 2♂ 1♀ Mikhmoret, 6.vi.1981, Q. Argaman; 1♂ Kefar Vitkin, 15.vi.1954 (BMZC); Avihayil, 1♂ 1♀ 21.iii.1960, Tami; 1♀ 4.iv.1969; 1♀ 20.vi.1960 (PPIS); Netanya, 1♂ 6.x.1950, J. Wahrman;



Figs 1–4: (1) *Orfilaia reichii* male, habitus; (2) *Orfilaia reichii* female, head and pronotum; (3) *Amorphocephala coronata* male, head and pronotum, Syria; (4) *Amorphocephala coronata* female, head and pronotum, Turkey.

1♂ 17.v.1984, J. Halperin, *Delonix regia*; Herzliyya, Nof Yam, 1♂ 6.viii.1956; 1♀ 12.vii.1958; Herzliyya, 2♂ 15.viii.1978; 1♂ 17.viii.1978; 1♂ 1♀ 28.vi.1984, A. Freidberg; 2♀ Zofit, 19.viii.1980, Katznelson; Kefar Sava, 1♂ 30.v.1955, J. Halperin (EOC); 1♀ 6.vii.2001, Y. Malihi; 1♂ Tel Aviv, Ramat Aviv, 1.v.2001, V. Chikatunov, light trap; 2♀ Tel Aviv Univ., 10.vii.2001, Y. Malihi; Tel Aviv Univ., Botanical Garden, 1♂ 20.vii.2006, W. Kuslitzky; 1♂ 1.v.2007, W. Kuslitzky, light trap; 3♀ 20.iv.2007, W. Kuslitzky, light trap; 1♂ 19.vii.2007, W. Kuslitzky, light trap; Tel Aviv, 1♀ 7.viii.1940; 1♂ 4.vi.1946; 1♀ 5.vii.1946; 1♂ 11.viii.1948; 1♂ 4.viii.19[?], H. Bytynski-Salz; 1♀ 23.vi.1952, J. Krystal; 1♂ 5.iv.1958; 1♀ 1♀ 1958, J. Krystal; 1♂ 28.viii.1959, J. Kugler; 1♂ 5.vi.1961; 1♂ 7.vi.1961; 1♂ 2♀ 10.vi.1962, H. Bytynski-Salz; 1♂ 10.v.1967, J. Kugler; 1♂ 2-3.vii.1967, D. Eisikovitch, light trap; 2♀ 19.x.1969, D. Gerling; 1♂ 25.iii.1971, D. Gerling; 1♂ 2♀ 4.v.1971, D. Gerling, light trap; 1♀ 7.vi.1971, light trap, 1♀ 30.vi.1971, Adam; 1♂ 10.vi.1974, Z. Feler; 1♂ 2♀ 28.viii.1977; 1♂ 6.vii.1978, A. Freidberg; 1♂ 17.vi.1984, J. Halperin, *Delonix regia*; 1♂ 25.viii.1985; 1♀ 19.v.1987, A. Shlagman; 1♀ 7.v.1989, G. Tchetchik (EOC); 1♀ 3.vii.1991, D. Rauscher; 1♂ 6.vi.1995, A. Freidberg; 1♂ 10.vi.1995, V. Chikatunov; 2♀ 2.x.2002, V. Kravchenko, V. Chikatunov, light trap; 2♂ 3♀ 12.xi.2002, V. Kravchenko, V. Chikatunov; 1♂ Bene Beraq, 20.v.1975, M. Kaplan; 1♂ Giv'atayyim, 14.iv.1960, Z. Shoham; 1♂ 7.vi.1991, B. Orbach (BOC); 1♂ 1♀ Ramat Gan, 10.viii.1956, L. Fishelsohn; 1♀ 26.iv.1965, J. Kugler; 1♂ Petah Tiqwa, 15.v.1961, J. Halperin; 1♂ 3.vii.1968, Nitman; 2♂ Savyon, 2.viii.1982, Y. Zvik. *Southern Coastal Plain*: 1♂ Miqwé Yisra'él, 18.viii.1970, D. Gerling; Lod, 1♂ 2♀ 3.vi.1997, V. Chikatunov; 1♂ 20.vi.1997, V. Chikatunov; 1♀ Rishon leZiyyon, 17.vi.19[?], Y. Aronsohn; Rehovot, 1♂ vii.1940, Bytynski-Salz; 1♂ 10.v.1954, J. Halperin; 1♂ 20.v.1954, J. Halperin; 1♀ 30.v.1954, J. Halperin; 1♀ iv.1957; 1♀ ix.2016, W. Kuslitzky, ex *Ricinus communis*; 1♂ 10.xi.2016, W. Kuslitzky, ex *Ricinus communis* stem, 23.xi.2016; 1♀ 18.xii.2016; 1♀ Giv'at Brenner, 4.vii.1976, D. Furth; 3♂ 3♀ Yavne, 11.vii.1981, Q. Argaman; 1♀ Nizzanim, 28.v.1996, M. Varon; 1♀ 2.iv.2001, V. Chikatunov, light trap; 1♂ 4.vi.2002, L. Friedman; 3♂ 6♀ 30.viii.2002, V. Kravchenko, V. Chikatunov; 3♀ 4♀ 5.x.2002, V. Kravchenko, V. Chikatunov, light trap; 1♂ 8.vi.2004, I. Zonstein; 1♀ 6.vi.2006, I. Peled; 1♂ 20.vi.2019, UV light, E. Orbach (EOC). *Foothills of Judea*: Rosh ha'Ayin, Migdal Afeq [Migdal Zedek], 1♀ 5.viii.1985, I. Nussbaum; 1♂ 15.x.1994, V. Chikatunov; 1♂ Be'erot Yizhaq, 12.vi.1971, Z. Shoham; 1♀ Sha'ar haGay [Bab elWad], 12.ix.1946, Bytynski-Salz; 1♀ Horbat Bet Natif, 21.iv.1962, J. Wahrman. *Judean Hills*: 1♂ 1♀ Yerushalayim [Jerusalem], A. Boucard (MZUF); 1♂ Yerushalayim, 20.vi.1991, J. Halperin. *Dead Sea Area*: 'En Gedi, 1♂ 26.iii.1957, A. Shulov; 1♂ v.1960; 1♀ 21.v.1966, H. Bytynski-Salz; 1♀ 9.vii.1968; 1♂ 29.vii.1968; 1♀ 16.viii.1968, M. Samocha; 3♂ 4♀ 10.iv-9.ix.1977, J. Halperin, ex *Moringa peregrina* (EOC); 1♀ 14.v.1995, D. Furth, at light; 2♀ 1-20.v.2002, V. Kravchenko; 1♂ 23.vii.2002, V. Kravchenko, light trap; 4♂ 9♀ viii.2002, V. Kravchenko; 1♀ 30.viii.2002, Kravchenko, V. Chikatunov; 1♀ 25.ix.2002, M. Weinstein; 2♂ 5.x.2002, Kravchenko, V. Chikatunov; 7♂ 8♀ 15.x-15.xi.2002, V. Kravchenko, light trap; 1♀ 15.iv.2016, T. Eshkoly. *Northern Negev*: 1♀ Ruhama, 1.vi.1995, I. Kovatch (EOC); Negba, 1♂ 10.vii.1970; 1♀ 17.viii.1970, Z. Shoham. *Arava Valley*: 1♂ 1♀ 'En Yahav, 3.ix.1967, P. Amitai. *Unknown locality*: 1♂ Wadi Machrali, 23.i.1958, A. Shulov.

Distribution: Cyprus, Greece (Crete), Israel, Spain, Syria, Tunisia, Turkey.

Comments: About 60 adults emerged from *Moringa peregrina* cut between June 1976 and January 1977 in 'En Gedi (J. Halperin, pers. comm., 1981).

Tribe Eremoxenini Semenow, 1892
Genus *Amorphocephala* Damoiseau, 1966
Amorphocephala coronata (Germar, 1817)

(Figs 3, 4)

Brentus coronatus Germar, 1817: 247.

Brentus italicus Guérin-Ménéville, [1833]: pl. 36, [1844]: 139 (syn.).

Arrhenodes coronatus: Gyllenhal 1833: 330.

Amorphocephalus coronatus: Gyllenhal 1840: 487; Bytynski-Salz & Sterlicht 1967: 135.

Amorphocephala coronata: Damoiseau 1966: 307; Schedl 1975a: 31; Sforzi & Bartolozzi 2004: 288; Sforzi 2011: 143; Alonso-Zarazaga *et al.* 2017: 95.

Distribution: Albania, Algeria, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, France, Greece, Italy (incl. Sardinia and Sicily), Iran, Israel (?), Lebanon, Montenegro, Morocco, North Macedonia, Portugal, Spain, Syria, Turkey.

Biology: Myrmecophilous.

Comments: *Amorphocephala coronata* was recorded for the first time from Israel by Bytinski-Salz and Sternlicht (1967). Schedl (1975a) mentioned *A. coronata* as occurring in Israel, and all subsequent published records of this species in Israel were most likely based on the above citations.

I have found no representatives of this species collected in Israel in any collection in Israeli or European institutions, and it is possible that records of *A. coronata* from Israel were based on misidentifications.

However, we cannot exclude this species from the checklist, until more material collected in Israel in the past is recovered. Moreover, reporting of *A. coronata* in Lebanon for the first time recently (Bartolozzi *et al.* 2012) widens its distribution, and encounter of this species in Israel is possible in future.

Therefore, *Amorphocephala coronata* is kept—although with some doubts—in the list of Brentidae occurring in Israel for the time being.

Amorphocephala excantator (Damoiseau, 1964)

(Figs 5, 6, 15)

Amorphocephalus excantator Damoiseau, 1964: 425.

Amorphocephala excantator: Damoiseau 1979: 9 (key, catalog); Sforzi & Bartolozzi 2004: 290.

Material examined: Israel: *Har Hermon*: 1♂ Har Hermon, 1600 m, 14.v.1996, V. Chikatunov. *Golan Heights*: 2♂ Buq'ata, 1.viii.2002, V. Kravchenko, V. Chikatunov; 2♂ Ya'ar Odem, 400 m, 10–14.v.1996, G. Magnani (EOC); 1♂ Merom Golan, 15.ii.1987, G. Gisis; 1♀ Nahal Mezar Nature Reserve, 7.viii.2008, E. Orbach (EOC). *Lower Galilee*: 2♂ Allonim, 7.ix & 11.ix, H. Bytinski-Salz; 1♂ Qiryat Tiv'on (Ramat Hadassa), ix.1953; 2♀ Qiryat Tiv'on (Oranim), 9.vi.1960 & 6.v.1962, Ch. Sandler (BMZC); 5♂ 7♀ Qiryat Tiv'on, 18.v.1958, M. Sternlicht (1♂ 1♀, PPIS), 8.i.1962, J. Halperin (1♀, EOC), 1♂ 6.vi.1964, J. Halperin, 1♀ 30.viii.1985, 1♂ 6.viii.1986, 1♀ 4.ix.1988, 1♂ 24.iv.1989, 1♀ 5.v.1989, 1♀ 12.vi.1994, 1♀ 7.viii.1994, 1♂ 25.ix.1995, E. Orbach (EOC); 1♂ 1♀ Sha'ar ha'Amaqim, 9.viii.2000, B. Orbach (1♀, BOC), 9.viii.2000, E. Orbach (1♂, EOC); 4♂ 5♀ Allonim Hills, 19.vii.2000 (1♂), 10.vii.2001 (1♀), 23.vii.2001 (2♂), 8.viii.2001 (1♂), B. Orbach (BOC), 8.viii.2001, E. Orbach (4♀, EOC). *Carmel Ridge*: 2♀ Har haCarmel, 17.vi.1946, H. Bytinski-Salz.

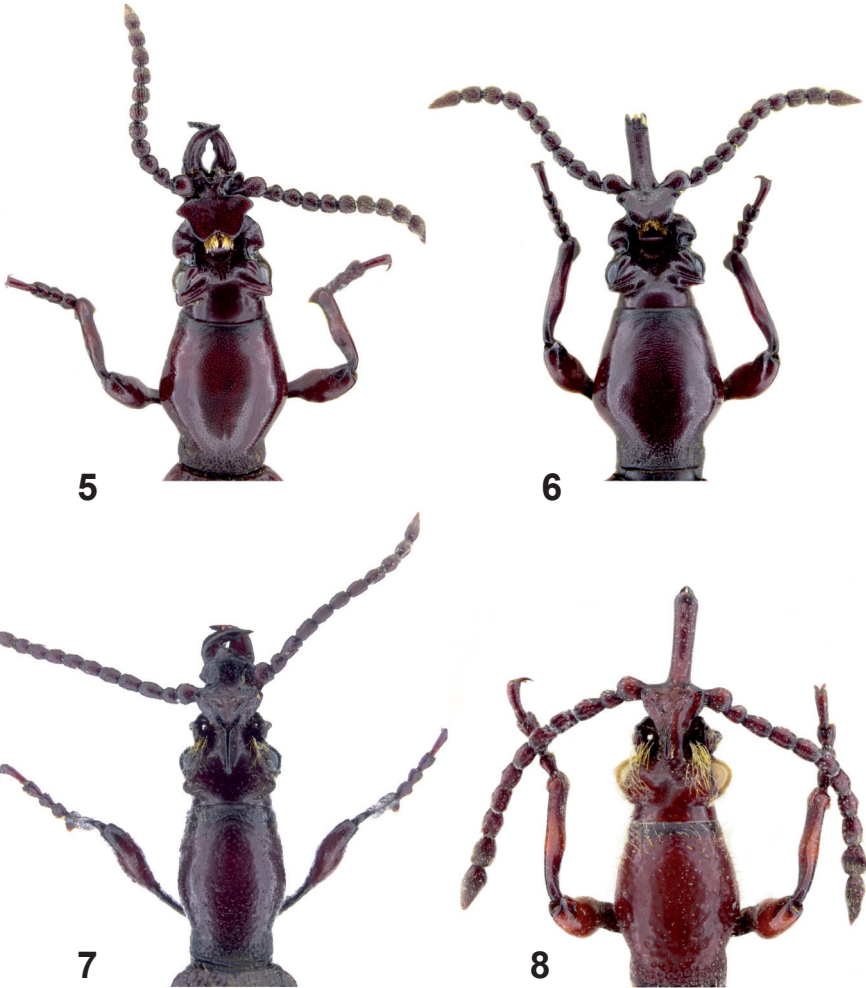
Distribution: Israel (new record), Jordan.

Biology: Myrmecophilous.

Comments: While comparing a series of *Amorphocephala coronata* recently collected in Syria, and additional specimens from Turkey, Iran, Italy and Greece with specimens from Israel, it became clear to me that those collected in Israel were actually a different species. I compared the female specimens from Israel with the paratype female of *Amorphocephala excantator*, deposited in the Hungarian Natural History Museum in Budapest, described and known so far only from Jordan, and I verified that the specimens were identical. Therefore, all the material from Israel checked by me and incorrectly attributed to as *A. coronata* is actually *A. excantator*.

Amorpocephala piochardi (Bedel, 1878)

(Figs 7, 8, 16)

Amorpocephalus piochardi Bedel, 1878: 184 (description of female); Mantilleri 2012: 402 (n. comb.); Alonso-Zarazaga *et al.* 2017: 95.*Symmorphocerus piochardi*: Power 1879: 488; Schönfeldt 1910: 19 (catalog); Bodenheimer 1937: 150; Kleine 1938b: 77 (catalog); Schedl 1970: 102; Damoiseau 1979: 4; Sforzi & Bartolozzi 2004: 320.*Amorpocephalus* (*Symmorphocerus*?) *piochardi*: Baudi 1894: 10 (description of male).*Amorpocephalus piliger* Desbrochers des Loges, 1895: 99; Pic 1905: 280 (syn.).*Symmorphocerus saalasi* Sahlberg, 1913a: 61; Schedl 1970: 102 (syn.).

Figs 5–8: Head and pronotum: (5, 6) *Amorpocephala excantator* male (5) and female (6); (7, 8) *Amorpocephala piochardi* male (7) and female (8).

Amorpocephalus unionis Sahlberg, 1913b: 201; Schedl 1970: 102 (syn.).

Amorpocephalus muchei Hertel, 1961: 117 (drawings), 1964: 167; Schedl 1970: 102 (syn.).

Amorpocephalus muchei cretensis Hertel, 1964: 167; Schedl 1970: 102 (syn.).

Material examined: **Israel:** *Har Hermon:* 2♂ Har Hermon, 1600 m, 14.v.1996, V. Chikatunov. *Golan Heights:* 1♂ Nahal Meshushim, 22.v.2000, E. Orbach (EOC); 1♂ Panyas [Banias], 30.vii.2002, V. Kravchenko, V. Chikatunov. *Lower Galilee:* 1♂ Qiryat Tiv'on (Oranim), 15.viii.1958, Ch. Sandler (BMZC); 4♂ 1♀ Qiryat Tiv'on, 30.viii.1985 (1♀), 5.vi.1986 (1♂), 13.iv.1989 (1♂), 4.viii.1994 (1♂), 30.viii.2019 (1♂), E. Orbach (EOC); 2♂ 1♀ Allonim Hills, 19.vii.2000, B. Orbach (1♂ 1♀, BOC), 10.vii.2001, E. Orbach (1♂, EOC).

Distribution: Cyprus, Greece (Crete), Israel, Jordan, Lebanon, Sudan (?), Syria, Turkey.

Biology: Myrmecophilous.

Amorpocephala sulcata (Calabresi, 1920)

(Figs 9, 10, 16)

Amorpocephalus sulcatus Calabresi, 1920: 64; Kleine 1938a: 16 (key), 1938b: 86 (catalog); Gridelli 1939: 454; de Muizon 1950: 212, 1960: 165; Schedl 1970: 97.

Amorpocephala sulcata: Damoiseau 1967: 427, 1979: 9 (key, catalog); Schedl 1975a: 33 (drawings); Sforzi & Bartolozzi 2004: 292.

Amorpocephalus arabicus Damoiseau, 1964: 428.

Amorpocephala arabica: Damoiseau 1979: 9 (key, catalog); Sforzi & Bartolozzi 2004: 287. **n. syn.**

Material examined: **Israel:** *'Arava Valley:* 'Iddan, 4♂ 6♀ 18.iv.1999; 1♀ 17.v.1999; 1♀ 12.viii.1999; 1♂ 4.vi.2000, I. Yarom, V. Kravchenko; 1♂ 2♀ 16.v.2000, V. Kravchenko; Nahal Shezaf Natural Reserve, 1♂ 1♀ 18.v.1999; 1♀ 8.vi.1999; 1♀ 10.viii.1999; 1♂ 4♀ 12.ix.1999, I. Yarom, V. Kravchenko; 1♂ 9.v.2000, V. Kravchenko; Hazeva, 2♀ 2.ix.1976, D. Simon; 1♂ 18.x.1981, B. Shalmon; 1♀ 12.iv.1999; 1♂ 21.v.1999; 2♂ 6.vi.2000; 1♂ 1♀ 3.ix.2000; 1♀ 19.x.2000; 1♂ 1♀ 20.x.2000; 2♀ 20.iv.2001; 5♂ 7♀ 2.vi.2001; 3♂ 1♀ 10.vi.2001, I. Yarom, V. Kravchenko; Hazeva Field School, 30°46.70' N 35°14.25' E, 2♂ 1♀ 16.vii.1999; 2♀ 19.vii.1999; 1♂ 14.viii.1999; 2♀ 17.x.1999, I. Yarom, V. Kravchenko; Nahal Neqarot, 2♂ 5♀ 20.v.1999; 1♂ 10.ix.1999, I. Yarom, V. Kravchenko; 1♂ Nahal haShitta, Hwy 90, km 82, 18.vi.1999, I. Yarom, V. Kravchenko; 1♀ Gerofit, 5.xi.2002, V. Kravchenko, V. Chikatunov; Yotvata, 1♂ 1♀ 9.vi.1984, A. Venezian; 3♂ 2♀ 16.viii.1999, I. Yarom, V. Kravchenko; 1♂ Samar, 3.vi.2007, N. Ketner, light trap; 3♂ 3♀ Timna', 2.vii.2002 (1♂ 1♀), 10.viii.2002 (1♂ 1♀), 15.xi.2002 (1♂ 1♀), V. Kravchenko, V. Chikatunov. **Egypt:** *Central Sinai Foothills:* 1♂ W'E'Tamaoui, 29.x.1969, G. Tsabar; 1♂ Mitmatni, 25.vi.1981, D. Simon.

Distribution: Egypt (Sinai), Eritrea, Ethiopia, Israel (new record), Libya, Niger (Aïr), Saudi-Arabia, Sudan.

Biology: Myrmecophilous.

Comments: Damoiseau (1964) described *Amorpocephala arabica* based on a single male specimen from Saudi Arabia. Calabresi (1920) described *Amorpocephala sulcata*, based on two specimens: a male from Eritrea and a female from Sudan. Sforzi and Bartolozzi (2004) selected the male as the lectotype and the female as paralectotype.

Schedl (1975a) synonymized *A. arabica* with *A. sulcata*. However, Damoiseau (1979: 10, footnote) stated that the synonymy was possible, but not certain, thus giving again a species status to *A. arabica*. Sforzi and Bartolozzi (2004: 287, 292) followed Damoiseau's opinion and left the two species as separate in their monograph of the Brentidae of the world.



Figs 9, 10: *Amorphocephala sulcata*, head and pronotum, male (9) and female (10).

During a survey of insects of the 'Arava Valley in 1999–2001, series of *Amorphocephala* were collected. While determining the material, I compared two males with the male holotype of *Amorphocephala arabica* deposited in the Hungarian Natural History Museum in Budapest, and found out that external details and the male genitalia were identical. I also compared females from the 'Arava Valley with the paralectotype female deposited in the Zoological Museum of the University of Florence, and they proved to be identical as well. During a visit at the Natural History Museum in Genoa (Italy), Luca Bartolozzi kindly compared for me the lectotype male of *Amorphocephala sulcata* with a male specimen of *Amorphocephala* from the 'Arava Valley identified by me as *A. arabica*, and confirmed their identity (L. Bartolozzi, pers. comm., 2005).

Therefore, *Amorphocephala arabica* (Damoiseau, 1964) is hereby considered as a junior synonym of *Amorphocephala sulcata* (Calabresi, 1920).

Genus *Eremoxenus* Semenow, 1892

Eremoxenus chan Semenow, 1892

(Figs 11–14, 16)

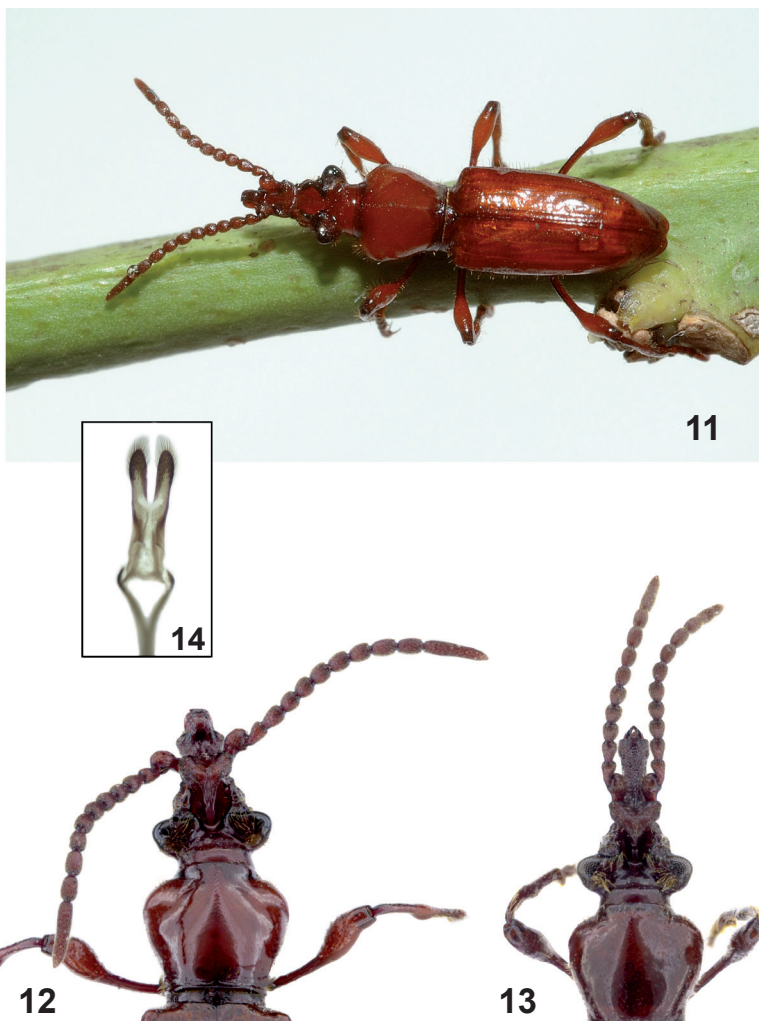
Eremoxenus chan Semenow, 1892: 440; Schedl 1975b: 84, 85 (redescription, drawings); Sforzi & Bartolozzi 2004: 300.

Material examined: **Israel:** *Southern Coastal Plain:* 1 ♂ Holot Nizzanim Nature Reserve, 19.vi.2008, E. Orbach, MV light trap (EOC).

Distribution: Iran, Israel (new record), Kazakhstan, Turkmenistan, Uzbekistan.

Biology: Myrmecophilous.

Comments: Schedl (1975b: 83, 87) regarded this species “as a Caspian faunal element sensu de Lattin (1967)”, and according to the habitat collecting data as



Figs 11–14: (11) *Eremoxenus chan* male, photo Oz Rittner; (12) *Eremoxenus chan* male, head and pronotum; (13) *Eremoxenus chan* female, head and pronotum, Uzbekistan; (14) *Eremoxenus chan* male tegmen, photo Oz Rittner.

“distributed in low steppe habitats”. However, the single specimen from Israel was collected in the area of sand dunes at an elevation of about 20 m.

Its occurrence in Israel is rather surprising, given a substantial distance from its known distribution. Further collecting in northwestward adjacent countries might fill the distributional gap for this species.

While studying the holotype of *Eremoxenus algirus* (Bartolozzi, 1988) described from Algeria (Natural History Museum of Denmark, University of Copenhagen),

a paratype of *Eremoxenus maroccanus* Mantilleri, 2012 described from Morocco (MZUF), a syntype of *E. chan* Semenow, 1892 described from “Transcaspian Prov.” (Zoological Institute, St. Petersburg) and the specimen collected in Israel, I found some very slight morphological differences between the last one and the typical *E. chan*, differences that nevertheless appear not of specific rank.

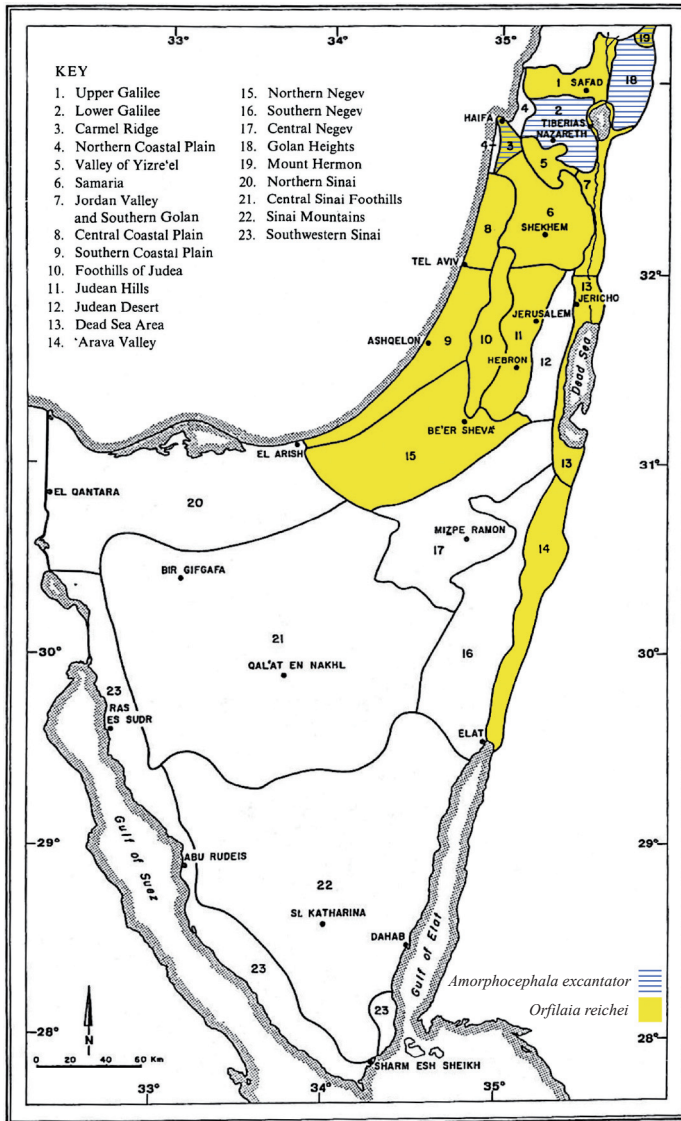


Fig. 15: Distribution map of *Orfilaila reichei* and *Amorphocephala excantator* in Israel.

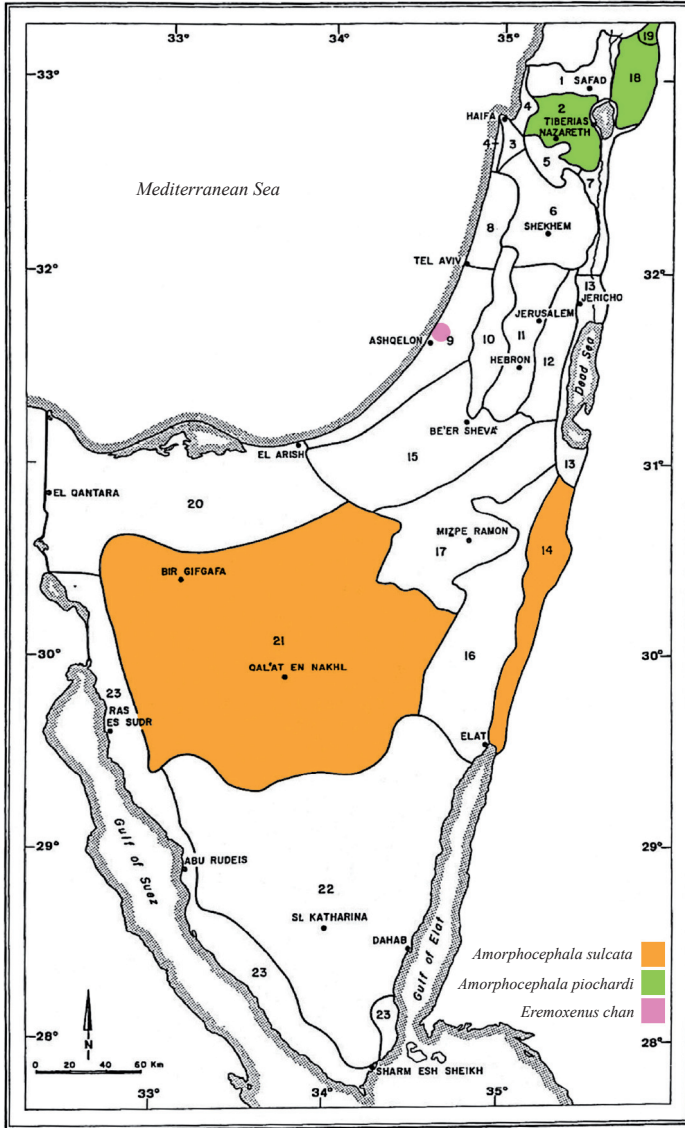


Fig. 16: Distribution map of *Amorphocephala piochardi*, *Amorphocephala sulcata* and *Eremoxenus chan* in Israel.

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