

Annotations to a check-list of the Heteroptera (Insecta) of Austria

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Abstract

Attempting to provide a current, up-to-date checklist of the Heteroptera of Austria made it necessary to critically revise, and verify as many of the dubious, literature records of true bugs in Austria. Therefore, original references and original voucher specimens were re-examined and analyzed. The present paper annotates 141 Heteroptera species. The presence of most of these species in Austria remains doubtful or unconfirmed. In some historical cases, the collecting locality was outside present borders, in other cases the verification of the voucher specimens revealed misidentification due to taxonomic changes or confusion with other species. Whereas some of these cases have been known for a long time, others keep being repeated in recent catalogues. In some cases, however, the occurrence of the species in Austria was confirmed by this review. Further, species overlooked for Austria in recent catalogues are now confirmed and substantiated with literature sources. The records of *Sigara hellensi* (C.R. SAHLBERG, 1819) (Corixidae), *Cyrtopeltis geniculata* FIEBER, 1861, *Dichrooscytus gustavi* JOSIFOV, 1981, *Psallus lapponicus* REUTER, 1874 (Miridae), *Cimex columbarius* JENYNS, 1839 (Cimicidae), *Rhynocoris rubricus* (GERMAR, 1814) (Reduviidae) and *Eysarcoris ventralis* (WESTWOOD, 1837) (Pentatomidae) are confirmed for Austria. *Anthocoris sarothamni* DOUGLAS & SCOTT, 1865 (Anthocoridae) is recorded for Austria for the first time. *Orthotylus pallidulus* REUTER, 1904 (Miridae) is put into synonymy with *Orthotylus schoberiae* REUTER, 1876 (new synonymy). It has to be stated explicitly that some of the doubtful or erroneously mentioned species are likely to occur in Austria, however, their presence remains to be confirmed.

Key words: Heteroptera, Austria, check-list, new synonymy, *Orthotylus pallidulus*, biogeography, faunistics

Zusammenfassung

Anlässlich der Erstellung einer kritischen Checkliste der Wanzen Österreichs wurden unsichere oder zweifelhafte Literaturangaben von Wanzen aus Österreich überprüft. Dazu wurde die Originalliteratur eingesehen und versucht die Originalbelege in den verschiedenen Sammlungen zu verifizieren. Es werden 141 Arten genannt, von denen die meisten nach vorliegenden Kenntnissen nicht mit Sicherheit in Österreich vorkommen. Für einige Arten liegen die Fundorte aufgrund geopolitischer Änderungen außerhalb heutiger Landesgrenzen. In manchen Fällen ergab die Überprüfung der Originalbelege eine Verwechslung mit anderen Arten. Für zahlreiche dieser Arten ist schon lange bekannt, dass sie nicht in Österreich vorkommen, es fehlte bislang aber eine umfassende Dokumentation dieser Fälle. Die Vorkommen von *Sigara hellensi* (C.R. SAHLBERG, 1819) (Corixidae), *Cyrtopeltis geniculata* FIEBER, 1861, *Dichrooscytus gustavi* JOSIFOV, 1981, *Psallus lapponicus* REUTER, 1874 (Miridae), *Cimex columbarius* JENYNS, 1839 (Cimicidae), *Rhynocoris rubricus* (GERMAR, 1814) (Reduviidae) und *Eysarcoris ventralis* (WESTWOOD, 1837) (Pentatomidae) für Österreich werden bestätigt. *Anthocoris sarothamni* DOUGLAS & SCOTT, 1865 (Anthocoridae) wird erstmals für Österreich gemeldet. *Orthotylus pallidulus* REUTER, 1904 (Miridae) wird mit *Orthotylus schoberiae* REUTER, 1876 synonymisiert (syn.n.). Ausdrücklich betont wird die Tatsache, dass einige der bisher irrtümlich genannten Arten trotzdem in Österreich vorkommen können, allerdings fehlen bislang sichere Nachweise.

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Introduction

*Endlich mag die Verbürgung einer zuverlässigen
Determinirung bei Wanzen nicht überflüssig sein
(Pater Vincenz Maria Gredler, 1870)*

Erroneous records of species can render interpretations of distribution patterns difficult at the local (faunistic) and regional (biogeographic) scale. Such unfortunate errors are often perpetually repeated in lists and catalogues, resulting in erroneous citations in secondary literature. Often such records originate from only a single or a few individuals. If the repository of voucher specimens is traceable, the determination can be checked and verified. The eminent scientific value of preserving reference collections as a document of past and present biodiversity as well as for taxonomic and biogeographic analyses should be appreciated not only by curators and conservation biologists but also by governmental authorities and science funding programs.

One source of confusion arises from errors in determination. Of course, even well-known experts sometimes produce erroneous identifications. Whereas a rarity commission has to decide about critical records in ornithology, the feasibility of a similar approach in entomology remains to be examined across the taxonomic groups. The Society of Applied Carabidologists (GAC) recently installed such a commission with the aim of verifying selected critical taxa by regional experts (BRÄUNICKE & al. 2000). This admirable enterprise is highly appreciated and may encourage other entomologists to develop similar initiatives, although the practical realization obviously has to overcome several difficulties. So, for example, "critical" taxa have to be selected, but errors may also arise in the determination of apparently easy taxa.

Based on the original literature, consideration of geopolitical changes of Austrian borders during the last 200 years and revision of original voucher specimens in several collections, I tried to verify the occurrence of dubious records for Heteroptera species in Austria. Some of the herementioned species were already recognized as not being part of the Austrian fauna in recent catalogues (e.g. AUKEEMA & RIEGER 1995-2001, GÜNTHER & SCHUSTER 2000a). However, they were included and discussed in this paper to document the reasons for raising doubt about their occurrence in Austria and for presenting a comprehensive review of such cases in attempting to provide a critical checklist of Austrian Heteroptera (Rabitsch, in prep.).

It also has to be stated explicitly that some of the erroneously mentioned species are nevertheless highly likely to occur in Austria. However, their presence has yet to be confirmed as no verified or doubtless records are at current knowledge. Hopefully, the ongoing research on the diversity of true bugs in Austria will close some of these gaps and uncover new results in the future.

Material and Methods

Original literature was checked and voucher specimens were verified at several collections (coll. E. Heiss (EH), Innsbruck; HNHM - Hungarian Natural History Museum, Budapest; KLM - Kärntner Landesmuseum, Klagenfurt; coll. A. Kofler, Lienz; MHNG -

Muséum d'Histoire Naturelle, Geneva; NHMW - Natural History Museum Vienna, Wien; NÖLM - Niederösterreichisches Landesmuseum, St. Pölten; OLML - Oberösterreichisches Landesmuseum/Biologiezentrum, Linz; ZMUH - Zoologisches Museum, Universität Hamburg, including coll. E. Wagner (EW); ZSMC - Zoologische Staatsammlung München). Original quotes appear in quotation marks.

Results

1. Species occurring in Austria (AU), but not mentioned by AUKEMA & RIEGER (1995-2001) and/or GÜNTHER & SCHUSTER (2000a), with selected references

Micronecta (Dichaetonecta) scholtzi (FIEBER, 1860): MELBER & al. (1991), RABITSCH & ZETTEL (2000).

Arctocoris germari (FIEBER, 1848): RABITSCH & ZETTEL (2000).

Notonecta lutea MÜLLER, 1776: FIEBER (1851b, 1860), BREHM (1942), FRANZ & WAGNER (1961), RESSL (1969), HEISS (1969, 1970), HEISS & JOSIFOV (1990), RABITSCH & ZETTEL (2000), FRIESS (2001b).

Notonecta maculata FABRICIUS, 1794: MÜLLER (1926), RESSL (1995), RABITSCH & ZETTEL (2000).

Notonecta meridionalis POISSON, 1926: RABITSCH & ZETTEL (2000).

Microvelia buenoi DRAKE, 1920: RABITSCH & ZETTEL (2000).

Campylosteira bosnica HORVÁTH, 1892: RABITSCH (1999b).

Dicyphus (Idolocoris) pallicornis (FIEBER, 1861): REUTER (1883), RESSL (1995).

Deraeocoris flavilinea (A. COSTA, 1862): RABITSCH (2002c).

Capsus wagneri (REMANE, 1950): RABITSCH (2001b).

Lygocoris zebrae GÜNTHER, 1997: RABITSCH (2001b).

Strongylocoris luridus (FALLÉN, 1807): OSHANIN (1910), STICHEL (1937), FRANZ & WAGNER (1961), LUGHOFER (1971), RABITSCH (2001b).

Hypseloecus visci (PUTON, 1888): RESSL (1995), RABITSCH (2002b).

Amblytylus macedonicus WAGNER, 1956: RABITSCH (2001b, 2002b).

Conostethus roseus (FALLÉN, 1807): RABITSCH (1999b).

Criocoris nigricornis REUTER, 1894: RABITSCH (1999b).

Tuponia (Tuponia) elegans (JAKOVLEV, 1867): RABITSCH (2002a).

Temnostethus (Montandoniella) dacicus (PUTON, 1888): MELBER & al. (1991).

Orius (Orius) pallidicornis (REUTER, 1884): RABITSCH (2001b).

Amphiareus obscuriceps (POPIUS, 1909): FRIESS (2000).

Cimex dissimilis (HORVÁTH, 1910): RABITSCH (1999b).

Cimex pipistrelli JENYNS, 1839: KOFLER (1990).

- Coranus (Coranus) woodroffei* P.V.PUTSHKOV, 1982:** SCHUSTER (1990), FRIESS (1999b).
- Oxycarenus (Oxycarenus) lavaterae* (FABRICIUS, 1787):** RABITSCH & ADLBAUER (2001).
- Haploprocta sulcicornis* (FABRICIUS, 1794):** MOULET (1995).
- Chorosoma gracile* JOSIFOV, 1968:** MOULET (1995).
- Geotomus brunnipennis* WAGNER, 1953:** RABITSCH (2001a).
- Tritomegas rotundipennis* (DOHRN, 1862):** RABITSCH (2001a).
- Thyreocoris fulvipennis* (DALLAS, 1851):** RABITSCH (2001b).
- Picromerus conformis* (HERRICH-SCHÄFFER, 1841):** RABITSCH (2001b).
- Dybowskyia reticulata* (DALLAS, 1851):** RABITSCH (2000).

2. Annotated list of dubious species

Fam. Ceratocombidae

***Ceratocombus (Xylonannus) corticalis* REUTER, 1889**

RESSL (1995) argued that he is probably dealing with *C. corticalis*, although the determination of the voucher specimen from Scheibbs in Lower Austria was unreliable because of its poor condition. *Ceratocombus corticalis* is only known from Finland, Poland, and Russia (KERZHNER 1995).

Fam. Dipsocoridae

***Cryptostemma (Harpago) medium* REY, 1888**

This species was mentioned by RESSL (1962, 1983, 1995, in part det. EW) from the Feichsenbach bei Purgstall in Lower Austria ("alljährlich im Sommer auf Sandbänken, in Massen"). The verification of some specimens (coll. EW in ZMUH, vid. Péricart) revealed that these records concern *Cryptostemma alienum* HERRICH-SCHÄFFER, 1835. According to PÉRICART (2002a, in litt.), *C. medium* is known from Turkey, the Balkan Peninsula and southern France.

Fam. Corixidae

***Micronecta (Micronecta) minutissima* (LINNAEUS, 1758)**

Old literature records from AU (e.g. STROBL 1900, MADER 1922, PUSCHNIG 1925, STICHEL 1937, 1957-62, BREHM 1942, RESSL 1969) pertain to other *Micronecta* species, most probably to *M. poweri* (DOUGLAS & SCOTT, 1869). The "true" *M. minutissima* is a northern European species, with its southernmost Central European records known so far from the Czech Republic and Slovakia (JANSSON 1995). However, since some of these records are close to the borders of AU, this minute water bug may well occur in AU also.

***Glaenocorisa cavifrons* (THOMSON, 1869)**

Mentioned by OSHANIN (1910a) from "Austria et Hungariae montes" and by MÜLLER (1926) from Vorarlberg ("Canisfluh" = Kanisfluh, 2044m) in the Bregenzer Wald. Most probably these have been confused with *Glaenocorisa propinqua* (FIEBER, 1860). The same is true for the record of STICHEL (1937), which was not repeated later (STICHEL 1957-62). *Glaenocorisa cavifrons*, recently elevated from subspecific rank by JANSSON (2000), is a holarctic species known from northern Europe (Great Britain, Scandinavia), eastern Russia and northern America (Alaska, Canada), with an isolated record from Spain (JANSSON 1995).

***Sigara (Halicorixa) mayri* (FIEBER, 1860)**

The only record of this pontomediterranean species in AU dates back to STICHEL (1957-62). No other records are known and the species was not mentioned by JANSSON (1986, 1995).

***Sigara (Halicorixa) selecta* (FIEBER, 1848)**

Described by FIEBER (1848, as *Corisa selecta* FIEBER) on material from AU and Portugal (Lusitania), repeated by FIEBER (1851a, 1860), BAERENSPRUNG (1860), WALKER (1873c) and LINDBERG (1948). This is an Atlanto-Mediterranean species, whose occurrence in AU is highly improbable (JANSSON 1986, 1995). The type material is lost, so we can only speculate that either an erroneous labelling or a misidentification may be responsible for this record.

***Sigara (Halicorixa) stagnalis stagnalis* (LEACH, 1817)**

The single record of this species for AU dates back to FIEBER (1851a), who mentioned his *Corisa lugubris* (FIEBER, 1848), described from southern Germany, also from "Austria", which was repeated by BAERENSPRUNG (1860). WALTON (1943) synonymized both taxa, however, because no exact locality is available and due to the difficult taxonomy we have to withdraw this record. The species lives in coastal habitats at the Atlanto-Mediterranean coast and occasionally occurs in inland areas. Historic records from the Czech Republic were recently argued as incorrectly labelled specimens or accidental findings (KMENT & SMÉKAL 2002), but JANSSON (1986) mentioned a record from Hungary (Hanság). *Sigara stagnalis* tolerates high saline concentrations and the occurrence in the saline lakes of the Seewinkel may be possible.

***Sigara (Microsigara) hellensii* (C.R. SAHLBERG, 1819)**

Mentioned for AU by OSHANIN (1910a), not confirmed by JANSSON (1995) (AU?) and excluded by GÜNTHER & SCHUSTER (2000a). However, a verified record from Vienna (Wienerberg, NHMW) was published in the distribution map by JANSSON (1986) (Jansson, in litt.). Further records are available from Lower and Upper Austria (NHMW, coll. EH). The occurrence of this species is therefore confirmed for AU.

***Sigara (Sigara) assimilis* (FIEBER, 1848)**

The only record "aus Oesterreich (leg. Heeger)" dates back to the original description of FIEBER (1848), who later casts doubt on his record ("aus Oesterreich?", FIEBER 1860).

However, the occurrence of this species in AU has been cited in the literature by BAERENSPRUNG (1860), OSHANIN (1910a), STICHEL (1937, 1957-62) and WAGNER (1961). *Sigara assimilis* occurs from Croatia and Slovenia to Mongolia and northern China (JANSSON 1986, 1995). No verified records are yet available for AU.

Sigara (Sigara) dorsalis (LEACH, 1817)

Mentioned for AU by HÖLZEL (1969) from Carinthia (Viktring) (det. EW). The voucher specimen (KLM) was checked and revealed as a confusion with *Sigara striata* (LINNAEUS, 1758) (FRIESS & al. 1999, RABITSCH 2003). *Sigara dorsalis* occurs at the Atlantic (Sweden, Norway, Great Britain, Belgium, France) and Mediterranean (Italy, Greece) coast (JANSSON 1986).

Sigara (Subsigara) scotti (DOUGLAS & SCOTT, 1868)

Only mentioned for AU by FRANZ & WAGNER (1961, "Legealrm bei Kremsmauer"), but no specimen was found in both collections (Franz, Wagner). Mentioned with doubts (AU?) by JANSSON (1995) and the occurrence of this western and northern European species in AU is still unconfirmed.

Fam. Notonectidae

Notonecta (Notonecta) reuteri ribauti POISSON, 1935

Mentioned for AU by DETHIER (1975, Wildmoosersee in Tirol, leg. Kappeller), although HEISS (1969, 1970) previously placed identical specimens to *Notonecta reuteri reuteri* HUNGERFORD, 1928. The subspecies has also been cited for AU by GÜNTHER & SCHUSTER (1990, 2000a) and POLHEMUS (1995). According to Nieser (in POLHEMUS 1995) this subspecies is restricted to France (Massif Central).

Fam. Hebridae

Hebrus (Hebrus) montanus KOLENATI, 1857

Mentioned for AU (Carinthia) by SIENKIEWICZ (1964) from the coll. Montandon. This holomediterranean species reaches its northern distribution limit in Albania and Macedonia, an occurrence in AU is rather improbable and a misidentification or mislabelling is assumed (FRIESS & al. 1999).

Fam. Veliidae

Velia currens (FABRICIUS, 1794)

Old literature records (e.g. SCHLEICHER 1861, FRITSCH 1880, LÖW 1886, PFEIFFER 1892, STROBL 1900, MADER 1922, PUSCHNIG 1925, WERNER 1927, KÜHN 1940, BREHM 1942, MAYER 1953, RESSL 1969) very probably pertain to *Velia caprai* TAMANINI, 1947 or

Velia saulii TAMANINI, 1947. However, only recently the occurrence of the "true" *V. currens* in AU (Carinthia) has been confirmed (FRIESS 2001a, RABITSCH 2003).

***Velia rivulorum* FABRICIUS, 1775**

As above, old literature records (e.g. SCHULTES 1802, STICHEL 1937, BREHM 1942) before the revision of TAMANINI (1947) may belong to other *Velia* species.

Fam. Saldidae

***Salda adriatica* HORVÁTH, 1887**

Only mentioned for AU by STICHEL (1937) without details. Very probably a historic record outside present borders. The species is known from Croatia, Italy, Greece and Bulgaria, but some authors doubt its status and suspect a synonymy with *Salda littoralis* (LINNAEUS, 1758) (LINDSKOG 1995).

***Salda sahlbergi* REUTER, 1875**

The records from Tyrol (STICHEL 1957-62, HEISS 1972, DETHIER 1975) were caused by misidentifications with *Salda henschii* (REUTER, 1891) (Heiss, in litt.). *Salda sahlbergi* is a holarctic species occurring in Scandinavia, Russia, Mongolia, China, Korea and Canada (LINDSKOG 1995).

***Halosalda lateralis* (FALLÉN, 1807)**

Only mentioned for AU by STICHEL (1924, "Donau Au") and subsequently frequently cited in the literature (e.g. STICHEL 1937, 1957-62, PÉRICART 1990, GÜNTHER & SCHUSTER 1990, 2000a, LINDSKOG 1995). Although no confirmed specimens are available so far, this halophilous species may occur at inland saline lakes (e.g. Neusiedler See).

Fam. Tingidae

***Campylosteira ciliata* FIEBER, 1844**

Described by FIEBER (1844) from the surroundings of Prag (Czech Republic). The reference of SCHLEICHER (1861) from Lower Austria as *Monanthisa ciliata* concerns *Tingis reticulata* HERRICH-SCHÄFFER, 1835, so the secondary citations of FRANZ & WAGNER (1961) and PÉRICART (1983) have to be deleted. Very probably the same is true for WAGNER (1961, 1967). In both collections (Franz, Wagner) no specimens were found. So, it seems that this species has so far not been found in AU, however, its occurrence is not improbable. Its occurrence in AU has been questioned by GÜNTHER & SCHUSTER (1990) and PÉRICART & GOLUB (1996) and excluded by GÜNTHER & SCHUSTER (2000a).

***Acalypta brunnea* (GERMAR, 1837)**

Described by GERMAR (1837) on material from "Austria", corresponding syntypes are stored at the Museum of Zoology in Lviv (PÉRICART & GOLUB 1996). All records for AU by OSHANIN (1908), GULDE (1938), STICHEL (1938a, 1957-62), PÉRICART (1983) and

PÉRICART & GOLUB (1996) probably date back on the original description. HÖLZEL (1959) mentioned *A. brunnea* from Carinthia ("im Lavanttale"), which was repeated by FRIESS & al. (1999). A voucher specimen (1♂, 12.V.1954, *Ostrya*, det. EW) was checked at the KLM and revealed a confusion with *A. carinata* (PANZER, 1806) (vid. WR, EH) (RABITSCH 2003). The scattered distribution of this European species is unclear due to confusion with other species. However, no confirmed specimens are yet available for AU within its present borders.

***Dictyonota albipennis* BAERENSPRUNG, 1858**

Only known from France and Italy (PÉRICART & GOLUB 1996). The record of STROBL (1900) for Styria (Graz) is regarded as a misidentification.

***Dictyonota marmorea* BAERENSPRUNG, 1858**

Mentioned by WAGNER (1961, 1967, as *D. pulchella* A. COSTA, 1862) for Styria. He probably confused this record with the citation of *D. albipennis* BAERENSPRUNG, 1858 by STROBL (1900). *Dictyonota marmorea* is a Mediterranean species, living in coastal habitats and neither species occurs in AU.

***Galeatus sinuatus* (HERRICH-SCHÄFFER, 1838)**

All citations of this species by HORVÁTH (1906), OSHANIN (1908), STICHEL (1938a, 1957-62), GULDE (1938), FRANZ & WAGNER (1961) and GÜNTHER & SCHUSTER (2000a) date back to REUTER (1875). The same is true for PÉRICART (1983: "Découvert jadis au Mt Kahlenberg, près de Vienne, Reuter sec Horváth 1906"). REUTER (1875), however, mentioned from the "Kahlenberg" in Vienna *Tingis sinuata* FIEBER, 1844, which is a synonym of *Tingis auriculata* (A. COSTA, 1847) and not of *Galeatus sinuatus* (H.-S., 1838). The only record for AU was provided by MAYR (1858) for "Niederösterreich", but no voucher specimens were found at the NHMW. The occurrence of *Galeatus sinuatus* in AU therefore remains unconfirmed.

***Stephanitis rhododendri* HORVÁTH, 1905**

According to PÉRICART (1983) the record for AU by JOHNSON (1936) was erroneous. This North American species was introduced to Europe (Netherlands) around 1900 and lives on *Rhododendron* sp. (Ericaceae). It was also introduced to New Zealand and South Africa. The closest known record is Malesov (near Prag, Czech Republic, STEHLÍK 1995). Today, *Stephanitis rhododendri* occurs in western and northern Europe, but its records are decreasing.

***Tingis (Tingis) angustata* (HERRICH-SCHÄFFER, 1838)**

Mentioned for "Östreich" by FIEBER (1844, 1861), repeated by OSHANIN (1908), STICHEL (1938a, 1957-62), PÉRICART (1983), PÉRICART & GOLUB (1996), GÜNTHER & SCHUSTER (2000a), but no recent findings were since made. Two specimens with illegible locality label were found in the NHMW, collected 1931 by Minarz. Since all other specimens of Minarz were collected in Lower Austria it seems highly probable that these specimens were also collected there. However, no doubtless voucher specimens are yet available for this mediterranean species in AU.

***Tingis (Neolasiotropis) marrubii* VALLOT, 1829**

PÉRICART (1983) mentioned this holomediterranean species from "Basse-Autriche: Feldsberg" (leg. Eger, in BMNH), which very probably concerns todays Valtice in the Czech Republic, which belonged to AU until 1914. PÉRICART & GOLUB (1996) and GÜNTHER & SCHUSTER (2000a) include this species for AU, but no other specimen was found so far. *Tingis marrubii* lives on the endangered *Marrubium vulgare* (Lamiaceae).

***Dictyla platyoma* (FIEBER, 1861)**

The single record of *Dictyla platyoma* for AU dates back to FIEBER (1861: 125) who described this species based on material from "Bohemia and Austria". Its occurrence has been repeated many times (e.g. WALKER 1873a, OSHANIN 1908, GULDE 1938, STICHEL 1938a, 1957-62, WAGNER 1967, PÉRICART 1983, PÉRICART & GOLUB 1996, GÜNTHER & SCHUSTER 2000a), however, not a single specimen was again found in AU. It has also not been recorded from the Czech Republic, but specimens are known from steppe habitats in Slovakia where it lives on Boraginaceae (STEHLÍK 2002).

Fam. Microphysidae***Myrmecobia coleoptrata* (FALLÉN, 1807)**

According to PÉRICART (1972, "d'après la littérature") in AU, although he states not having seen voucher specimens and later doubts the occurrence (PÉRICART 1996a). Mentioned by RESSL (1995, "Erlafschlucht bei Purgstall, im Detritus", det. EW), but no specimens were found so far. According to PÉRICART (1972), *M. coleoptrata* is a western European species, being rare in central Europe.

***Myrmecobia inconspicua* (DOUGLAS & SCOTT, 1871)**

One specimen in the coll. EH was determined with doubts by Péricart ("verisimile") and published by HEISS (1977a). Although no further specimens were found this probably boreomontane species was mentioned for AU by HEISS & JOSIFOV (1990), GÜNTHER & SCHUSTER (1990, 2000a) and PÉRICART (1996a). Since no verified specimens are available at this time, the species has to be confirmed yet for AU.

Fam. Miridae***Cyrtopeltis (Cyrtopeltis) geniculata* FIEBER, 1861**

A western Mediterranean species, mentioned several times for Tyrol and AU (e.g. ATKINSON 1890, STICHEL 1937, 1957-62, LINDBERG 1948, WAGNER 1952, 1961, WAGNER & WEBER 1964). All these citations are secondary references and their source of information is not clear. KERZHNER & JOSIFOV (1999) list the species with doubts (AU?). However, in the coll. Kofler (Lienz) a specimen was found from Osttirol (Lienz Umg., Amlach, 16.VII.1994, 1050m, leg. Kofler, vid. EH) so that the occurrence of *Cyrtopeltis geniculata* in western AU can be confirmed.

Dicyphus (Brachyceroea) geniculatus (FIEBER, 1858)

The specimens published by KOFLER (1976) as *D. geniculatus* f. *typica*, var. *disjuncta* REUTER, 1904 and var. *obscurata* REUTER, 1913 (leg. Kofler, det. Tamanini) were checked and determined as *Dicyphus globulifer* (FALLÉN, 1829) (coll. Kofler, det. EH).

Deraeocoris (Deraeocoris) cardinalis (FIEBER, 1858)

A dubious species, described by FIEBER (1858) from Prag (Czech Republic) and mentioned for AU by ATKINSON (1890) and OSHANIN (1910a), but no further records were since made. KERZHNER & JOSIFOV (1999) suppose that the description was based on ten-
eral individuals of a different species.

Deraeocoris (Deraeocoris) cordiger (HAHN, 1834)

A western Mediterranean species mentioned for AU by FRITSCH (1865, 1880) from Vienna and Salzburg and by PROHASKA (1923, 1932) and HÖLZEL (1958) from Carinthia (repeated by FRIESS & al. 1999). One Carinthian specimen found in the KLM (det. EW as *D. cordiger* var. *beieri*) was checked and identified as *D. annulipes* (HERRICH-SCHÄFFER, 1842) (vid. Rieger). *Deraeocoris cordiger* is not regarded to occur in AU.

Deraeocoris (Deraeocoris) schach (FABRICIUS, 1781)

The record by GÜNTHER & SCHUSTER (1990) probably pertains to WAGNER (1961, "Wiener Becken"), but no confirmed specimen was yet found in any collection for AU.

Deraeocoris (Deraeocoris) scutellaris (FABRICIUS, 1794)

Mentioned for AU by OSHANIN (1910a) and STICHEL (1937), but older records probably concern *D. morio* (BOHEMAN, 1852). *Deraeocoris scutellaris* is a northern species distributed from Ireland and Scandinavia to China and probably does not occur in AU. According to RIEGER (1996b) both taxa may be synonyms.

Deraeocoris (Deraeocoris) ventralis ventralis REUTER, 1904

Mentioned for AU by WAGNER (1961) without further details or localities. Divergent distribution patterns for central Europe are given by KERZHNER & JOSIFOV (1999) and GÜNTHER & SCHUSTER (2000a).

Phytocoris (Phytocoris) hirsutulus FLOR, 1861

The only records for AU date back to WAGNER (1945, "Wienerwald") and FRANZ & WAGNER (1961, "Grafenwörth"). In both cases, Wagner investigated single females, both of which were checked and determined as *P. longipennis* FLOR, 1861 (det. Rieger). Therefore, *Phytocoris hirsutulus* is not yet confirmed for AU. However, this species, living on *Picea abies*, is expected to occur in AU.

Phytocoris (Ktenocoris) italicus E. WAGNER, 1954

A female of the type series by WAGNER (1954) from Meran in Italy was erroneously cited as "Austria: Südtirol, Meran" by RIBES & GOULA (1986). Repeated for AU by

KERZHNER & JOSIFOV (1999) and GÜNTHER & SCHUSTER (2000a). No confirmed records of this species are yet known for AU.

***Closterotomus cinctipes* (A. COSTA, 1853)**

Closterotomus cinctipes is known from Italy and the Balkan (Croatia to Greece) (KERZHNER & JOSIFOV 1999). The only record for AU by STICHEL (1937), without providing details, remains unclear and unconfirmed.

***Closterotomus ventralis* (REUTER, 1879)**

Mentioned for AU by DOBŠIK (1970) from Styria (St. Marein bei Kapfenberg). *Closterotomus ventralis* is a Mediterranean species, reaching its northern distribution limit in Slovenia (GOGALA 1996); it was not mentioned for AU by KERZHNER & JOSIFOV (1999) and GÜNTHER & SCHUSTER (2000a). In the coll. Dobšik no Austrian specimens were found so far, so it most probably is a case of misidentification (Stehlík, in litt.).

***Closterotomus vicinus* (HORVÁTH, 1876)**

Closterotomus vicinus was mentioned for AU by STICHEL (1957-62), but its occurrence was doubted by WAGNER (1961) and GÜNTHER & SCHUSTER (1990) and excluded by GÜNTHER & SCHUSTER (2000a). KERZHNER & JOSIFOV (1999) also do not list this species for AU. According to Kerzhner (in litt.) records for Italy and AU are confusions with other species.

***Calocoris nemoralis* (FABRICIUS, 1787)**

Mentioned for AU by STROBL (1900) from Styria (Graz, leg. Gatterer, as *Calocoris sex-punctatus* F. var. A β Fieber and var. B γ Fieber). Considering its recent distribution (KERZHNER & JOSIFOV 1999), one cannot exclude the occurrence of this yet unconfirmed southern European species in AU.

***Calocoris roseomaculatus decolor* REUTER, 1902**

This taxon was mentioned for AU by RESSL (1995) from Lower Austria (leg. Seidl, det. Madera). Originally it was described by REUTER (1902a) as var. *decolor*, and later elevated by ROSENZWEIG (1997) to a subspecies only occurring in northwest Africa (Algeria, Libya, Morocco) (KERZHNER & JOSIFOV 1999).

***Dichrooscytus gustavi* JOSIFOV, 1981**

= *D. valesianus* auct. non FIEBER, 1861

Records for Carinthia (PROHASKA 1932, repeated by FRIESS & al. 1999) and Vorarlberg (MÜLLER 1926) as "*D. valesianus* Meyer-Dür" (nomen nudum) may belong to this species, but no confirmed specimens for both provinces were seen so far and the species was not mentioned for AU by KERZHNER & JOSIFOV (1999) and GÜNTHER & SCHUSTER (2000a). The taxonomic status was cleared by JOSIFOV (1981) and discussed by GÖLLNER-SCHEIDING (1989). The species lives on *Juniperus communis* at higher altitudes and on ornamental Cupressaceae in urban areas and was recently collected in the Botanical Garden Vienna (leg. Rabitsch) so that the occurrence of *D. gustavi* in AU can be confirmed.

***Alloeonotus fulvipes* (SCOPOLI, 1763)**

Alloeonotus fulvipes was mentioned by OSHANIN (1910a) from "Austria meridionalis", the former coastal lands Krain and Dalmatia, now belonging to Slovenia and Croatia. As well, the record of STICHEL (1924) from Styria (Wippach) concerns the present Vipava in Slovenia and probably the same is true for the secondary citation of WAGNER (1943). The only record within AU was mentioned by SABRANSKY (1912) from Söchau in Styria, but no confirmed specimens or recent findings are available.

***Aphanosoma italicum* A. COSTA, 1842**

Mentioned for AU by STICHEL (1937, 1957-62) and GÜNTHER & SCHUSTER (1990) without details. No confirmed specimens of this eastern European-central Asiatic species were seen so far.

***Cyphodema mendosa* MONTANDON, 1887**

Mentioned for AU without details by STICHEL (1937) and very probably misidentified. This species is known from Bosnia Hercegovina, Albania, and Ukraine (KERZHNER & JOSIFOV 1999).

***Taylorilygus apicalis* (FIEBER, 1861)**

The secondary citation for "S. Österreich" by LINDBERG (1948) is unclear but could pertain to Slovenia or Croatia. The species was mentioned by HÖLZEL (1954, 1969) for Carinthia and doubted by FRIESS & al. (1999). Voucher specimens in the KLM were checked and determined as *Lygocoris pabulinus* (L.) (RABITSCH 2003).

***Acetropis (Acetropis) gimmerthalii* (FLOR, 1860)**

Mentioned erroneously for AU by GÜNTHER & SCHUSTER (2000a). Distributed in central and southern Europe (KERZHNER & JOSIFOV 1999) and expected to occur in AU, but no specimens were found so far.

***Strongylocoris atrocoeruleus* (FIEBER, 1864)**

Strongylocoris atrocoeruleus was regarded as a synonym with *Strongylocoris niger* (HERRICH-SCHÄFFER, 1835) until WAGNER (1951) separated both species. KERZHNER & JOSIFOV (1999) mention *S. atrocoeruleus* for AU, based on STICHEL (1957-62) (Kerzhner, in litt.), whose source of information is unclear. Probably he refers to WAGNER (1951) and confused the locality (Admont, Steiermark) for *S. niger*. No confirmed specimen of *S. atrocoeruleus* for AU is available so far. However, this species can be expected to occur in AU and a search on its food plant (*Peucedanum* sp., RIEGER 1996a) would seem rewarding.

***Plagiostylus maculatus* SCOTT, 1874**

Mentioned by WAGNER (1956) from "Südösterreich" (repeated by STICHEL 1957-62). According to FARACI & RIZZOTTI VLACH (1995) and KERZHNER & JOSIFOV (1999), all records from AU and Italy are misidentifications, and *P. maculatus* only occurs in France and Spain.

***Pachytomella passerinii* (A. COSTA, 1842)**

Mentioned for AU by STROBL (1900, as *Orthocephalus minor* A. COSTA, 1842) from Styria (Graz, leg. Gatterer; Scheibleggerhochalpe). The latter repeated by WAGNER (1956) and by FRANZ & WAGNER (1961, as *P. parallela* (MEYER-DÜR, 1843)). From the wording of the text it can be deduced that the specimens were not actually seen. *Pachytomella passerinii* is a Mediterranean species whose occurrence in AU remains unconfirmed.

***Orthocephalus proserpinae* (MULSANT & REY, 1852)**

The only record of this Mediterranean species for AU by KOFLER (1976, Nörsach b. Nikolsdorf, 6.VI.1961, det. Tamanini) very probably was a misidentification. In the coll. Kofler a further specimen was found (Osttirol, Weiherburg, 20.VII.1982, 1♀, leg. Kofler, det. EH with ?), and was determined as *O. saltator* (det. EH). The corrigenda of GÜNTHER & SCHUSTER (2000b) and AUKEEMA & RIEGER (2001:345) should be deleted.

***Dasysscytus sordidus* FIEBER, 1864**

Described by FIEBER (1864) from Spain and listed for AU without details by OSHANIN (1910a) and STICHEL (1937, 1957-62) under the synonym *Pachytomella frontosa* (HORVÁTH, 1898) and doubted by KERZHNER & JOSIFOV (1999). Confirmed records are available for Portugal, Spain, Italy or Slovenia, Romania, Kazakhstan, western North Africa and the middle East, but not for AU.

***Heterocordylus (Heterocordylus) farinosus* HORVÁTH, 1887**

Mentioned for AU by GÜNTHER & SCHUSTER (1990, 2000a, corrected 2000b) and KERZHNER & JOSIFOV (1999), probably based on WAGNER (1952, "Ostalpen"). However, no confirmed records of this pontomediterranean species are known for AU.

***Orthotylus (Orthotylus) pallidulus* REUTER, 1904**

Orthotylus pallidulus was described by REUTER (1904) on a single female, collected by Horváth on 24.V.1899 in the Vienna Prater. Since then, no further specimen was found and WAGNER (1961) argued that it could be a synonym of another species. Through the kindness of Dr. T. Vásárhelyi it was possible to check the holotype deposited in the HNHM. The holotype is glued on a card with the labels (handwritten text in italics):

[Austria / Wien / <reverse side: Prater / 24.5.99>] [pallidulus Rt. / Coll. Horváth] [*Orthotylus / pallidulus Reut.* / det. Horváth] [*Orthotylus / pallidulus Reut.*] [Coll. Horváth] <red> [Lectotypus *Orthotylus / pallidulus Reut.* / design. Kerzhner 96]

The revision revealed its conspecificity with *Orthotylus schoberiae* REUTER and *O. pallidulus* is herewith put into synonymy:

Orthotylus schoberiae REUTER, 1876 = *Orthotylus pallidulus* REUTER, 1904, **syn.n.**

Orthotylus schoberiae lives on *Suaeda* species (Chenopodiaceae). The host plants were present on several localities in the Vienna city at the turn of the 20th century (NEILREICH 1846, REUTER 1883, FREITAG & al. 1996, ADLER & MRKVICKA 2003), although nowa-

days they are restricted to salt marshes at the Neusiedler See (e.g. WAGNER 1965, ADLBAUER & HEISS 1980, MELBER & al. 1991).

***Orthotylus (Pachylops) beieri* E. WAGNER, 1942**

Orthotylus beieri was described by WAGNER (1942), based on material from "Raibl in Süd-Kärnten (leg. Handlirsch)". This record was repeated for AU by WAGNER (1956, 1961: "Steiermark", 1974) and STICHEL (1957-62), later also by RIBES & GOULA (1986), GÜNTHER & SCHUSTER (1990, 2000a) and KERZHNER & JOSIFOV (1999; corrected by AUKEEMA & RIEGER 2001:345, based on the following information). However, today Raibl (= Cave del Predil) is located in Italy (Friuli-Veneto). *Orthotylus beieri* was also collected in Slovenia (GOGALA 1991) and its occurrence in alpine habitats in southern AU (Carinthia, Styria) is to be expected.

***Orthotylus (Pachylops) concolor* (KIRSCHBAUM, 1856)**

Mentioned by REUTER (1883) for AU, probably based on his former paper (REUTER 1875), in which *O. concolor* is mentioned from Terglou (= Triglav, Slovenia). Repeated for AU by OSHANIN (1910a) and STICHEL (1937, 1957-62). According to GOGALA (1991) the record from Slovenia was a misidentification with *O. virescens* (DOUGLAS & SCOTT, 1865), so that it is not clear, what species were actually involved.

***Orthotylus (Pachylops) virescens* (DOUGLAS & SCOTT, 1865)**

Mentioned for AU by OSHANIN (1910a), STICHEL (1937, 1957-62), KERZHNER & JOSIFOV (1999) and GÜNTHER & SCHUSTER (2000a), all probably dating back to the record for "Austria" by REUTER (1883). However, no further record is known and REUTER (1883) very probably dealt with a location outside present borders. So, in the Heteroptera collection at the NHMW, there is a long series (91 Ex., leg. Handlirsch) of this species from "Raibl" (= Cave del Predil, south of Tarvis, Italy), which was seen by Reuter (det. Reuter), belonging to AU at his times. Searching for this species on its food plant (*Cytisus scoparius*, Fabaceae) in southern AU may be rewarding.

***Platycranus (Genistocapsus) metriorrhynchus* REUTER, 1883**

The record for AU by KERZHNER & JOSIFOV (1999) and GÜNTHER & SCHUSTER (2000a) probably dates back to REUTER (1902b), who described the – at the time – unknown male (leg. Handlirsch) based on specimens from "Raibl" (= Cave del Predil, south of Tarvis, Italy). As well, records of OSHANIN (1910a: "Carinthia"), WAGNER (1952: "in den Ostalpen", 1956: "Kärnten Raibl"), STICHEL (1957-62: "Österreich") and TAMANINI (1961: "Austria") very probably all pertain to these specimens. So far, no confirmed specimens from AU are known.

***Platycranus (Platycranus) erberi* FIEBER, 1870**

Mentioned by GREDLER (1874, "am Südwestabhang des Mont Roën") from South Tyrol and repeated by REUTER (1883), ATKINSON (1890) and OSHANIN (1910a), but later taken erroneously for AU by WAGNER (1956).

***Excentricus planicornis* (HERRICH-SCHÄFFER, 1836)**

Mentioned for AU by ATKINSON (1890, as *Platytomatocoris planicornis*), but no findings were since made. Described from Bavaria, but considered extinct in Germany (GÜNTHER & al. 1998). Distributed from Europe to Asia (China) living at higher altitudes.

***Macrotylus (Alloeonycha) mayri* (REUTER, 1904)**

This species was mentioned for AU by FRANZ & WAGNER (1961, Wien Döbling, leg. Mader) and WAGNER (1961, Niederösterreich), but excluded by KERZHNER & JOSIFOV (1999) and GÜNTHER & SCHUSTER (2000a). No specimens were found in the coll. Mader (NÖLM). In the NHMW, there are labelled specimens from Lower Austria (Mödling, leg. Handlirsch, det. EW), but they belong to *Macrotylus solitarius* (MEYER-DÜR, 1843) (det. Kerzhner). In the NÖLM there is a "Autotypoid" (♂) of *Macrotylus singeri* WAGNER, 1947 from Burgenland (Podersdorf), later synonymized with *Macrotylus mayri* REUTER by WAGNER (1952). A re-examination revealed that this male belongs to *Macrotylus solitarius*. Previously, RIEGER (1996b) argued that *M. mayri* is an "ecomorph" of *M. solitarius*, adapted to dry conditions, but without differences in genitalia structures. The type material of *M. mayri* should be checked to verify this suspected synonymy.

***Atractotomus morio* J. SAHLBERG, 1883**

Mentioned for Carinthia by PROHASKA (1923, 1932) and repeated for AU by STICHEL (1938a). This northern species lives on *Picea* (Pinaceae) and its distribution ranges from Scandinavia and Russia to Korea. No voucher specimens were found at the KLM, however, very probably this is a case of misidentification (FRIESS & al. 1999).

***Lepidargyrus ancorifer* (FIEBER, 1858)**

= *Psallus (Apocremnus) ancorifer* FIEBER, 1858

Mentioned for AU by KOFLER (1976, Villgraten in 1500m, det. Tamanini with ?) and RESSL (1995, "Ötscher in der Krummholzstufe, von Latsche geklopft", "in Zehnbach von *Salix* gestreift", det. EW) and repeated by KERZHNER & JOSIFOV (1999) and GÜNTHER & SCHUSTER (2000a). The occurrence of this southern European species in alpine habitats on *Pinus mugo* or *Salix* seems highly improbable. According to WAGNER & WEBER (1964) and DRAPOLYUK (1993) this species lives on herbs (*Trifolium*, *Echium*). Also mentioned for AU by STICHEL (1938a) without any details.

***Psallus (Apocremnus) betuleti montanus* JOSIFOV, 1973**

JOSIFOV (1973) separated this subspecies based on material from Bulgaria. BACCHI & RIZZOTTI VLACH (1994) reported its occurrence for Italy and AU (Tyrol, coll. EH), which was repeated by KERZHNER & JOSIFOV (1999) and GÜNTHER & SCHUSTER (2000a). The revision of material from AU (Vorarlberg, Styria, Carinthia, Upper Austria) and Germany (Bavaria) revealed that all specimens belong to *P. betuleti montanus*. Since *Psallus betuleti* is a holarctic taxon widespread in the palaeartic region, the detailed distribution of *P. betuleti montanus* should be thoroughly revised. The invariable and

unequivocal structure of the male vesica may warrant to raise *P. b. montanus* to species status. However, more material should be checked before formally upgrading this taxon.

***Psallus (Hylopsallus) callunae* REUTER, 1878**

Mentioned for AU by WAGNER (1961) and for Tyrol by WAGNER (1967), although the record pertains to Enneberg, located in South Tyrol (Italy). However, the species is neither listed by FARACI & RIZZOTTI VLACH (1995) and KERZHNER & JOSIFOV (1999) for Italy, nor by HEISS & HELLRIGL (1996) for South Tyrol. *Psallus callunae* is distributed in the west-mediterranean area (Portugal, Spain, France, KERZHNER & JOSIFOV 1999) and the above record remains unconfirmed.

***Psallus (Psallus) punctulatus* PUTON, 1874**

= *Psallus weberi* RIEGER, 1977

The record for AU by REUTER (1883, as "*Psallus punctulatus* (FIEBER)", erroneously repeated by FRANZ & WAGNER (1961) as *Psallus punctulatus* PUTON) pertains to *P. pardalis* SEIDENSTÜCKER, 1966. The "real" *P. punctulatus* is distributed in western Europe (KERZHNER & JOSIFOV 1999) and was found in Germany (Baden-Württemberg) on *Quercus robur* by RIEGER (1977).

***Psallus (Pityopsallus) lapponicus* REUTER, 1874**

The Tyrolian record of REUTER (1878: "Tyrolia verisimiliter in Larice, Steinwand <sic>, 5000' Gredler") dates back to GREDLER (1874, as *Apocremnus quercus* KIRSCHBAUM) and pertains to Steinwend in Schalders in South Tyrol (Italy). Repeated by ATKINSON (1890, "Tyrol") and OSHANIN (1910a, "Tirolis"), but excluded for AU by KERZHNER & JOSIFOV (1999). Also excluded for Italy by FARACI & RIZZOTTI VLACH (1995), but considered at least possible for South Tyrol by HEISS & HELLRIGL (1996). However, in the collection of the ZMUH, a male of this species from AU was found (Stanz bei Landeck, leg. Pinker 1957, det. Rieger).

***Phylus (Phylus) palliceps* (FIEBER, 1861)**

Phylus palliceps was described by FIEBER (1861) based on material from Spain. ATKINSON (1890), KERZHNER & JOSIFOV (1999) and GÜNTHER & SCHUSTER (2000a, corrected 2000b) mentioned this species for AU, but no records or specimens were found so far. EHANNO (1983) and RIBES (1990) believe that it could be a synonym of *P. melanoccephalus* (LINNAEUS, 1767).

***Amblytylus brevicollis* FIEBER, 1858**

Mentioned for Vienna and Lower Austria by FRANZ & WAGNER (1961) and RESSL (1995). Voucher specimens in the NHMW revealed a misidentification with *A. concolor* JAKOVLEV, 1877 (det. Kerzhner). No verified specimens exist for Austria.

***Amblytylus delicatus* (PERRIS, 1857)**

Mentioned by KOFLER (1976, as *Amblytylus* sp. aff. *delicatus* det. ? Tamanini) from Lienz. *Amblytylus delicatus* is known from Portugal, France, Great Britain, Germany and Greece (KERZHNER & JOSIFOV 1999) and its occurrence in AU is not confirmed.

***Megalocoleus hungaricus* E. WAGNER, 1944**

Described by WAGNER (1944) based on material from Hungary. FRANZ & WAGNER (1961) mention two females of the type series (leg. Handlirsch), deposited in the NHMW. Both specimens bear the label "Marchfeld, Ung. <= Ungarn>", which actually is located in Slovakia. In his original description, WAGNER (1944) correctly placed this record into former Hungary, but later translocated the record to AU (WAGNER 1952, repeated by KERZHNER & JOSIFOV (1999) and GÜNTHER & SCHUSTER (2000a)).

***Megalocoleus mellae* (REUTER, 1876)**

Mentioned first by WAGNER (1952, "Niederösterreich"; 1961, "Österreich"; but not repeated subsequently by WAGNER 1967) and by FRANZ & WAGNER (1961, "Bad Dt. Altenburg, leg. Zimmermann") from Lower Austria. The verification of a single voucher female in the coll. Zimmermann (NÖLM), determined by EW as *M. mellae*, revealed a confusion with *M. molliculus* (det. Matocq). No further specimens are available in the investigated collections and the occurrence of this species in AU is unconfirmed.

***Psallodema fieberi* (FIEBER, 1864)**

This species, being more common in western Europe and southern Scandinavia, it is rare in central Europe. Mentioned for AU by OSHANIN (1910a) without details, repeated by STICHEL (1938a, 1957-62), WAGNER (1952) and WAGNER & WEBER (1964). In the NHMW there is a confirmed, but historical male from Lower Austria (leg. Handlirsch).

Fam. Nabidae***Nabis (Tropiconabis) capsiformis* GERMAR, 1838**

Only one old literature record for AU by GREDLER (1870, Telfs in Tirol), repeated many times (OSHANIN 1908, STICHEL 1937, 1957-62, LINDBERG 1948, PÉRICART 1987). According to PÉRICART (1987: "accidentellement en Autriche") and Heiss (in litt.) the record of this cosmopolitan species is regarded as an accidental introduction or misidentification.

Fam. Anthocoridae***Anthocoris sarothonni* DOUGLAS & SCOTT, 1865**

A western European species, also recorded from the Balkan (PÉRICART 1972, 1996b). In the NHMW two historic specimens from Lower Austria (Gars, 30.VII.1921 and 17.V.1922, leg. Minarz) were discovered (vid. Péricart). *Anthocoris sarothonni* lives on *Sarrothamnus scoparius* and preys on psyllids and aphids. It is herewith recorded for Austria for the first time.

***Xylocoris (Xylocoris) obliquus* A. COSTA, 1853**

Mentioned for AU by RESSL (1962, Purgstall, det. EW). PÉRICART (1972) stated that the

specimen should be verified, however, later it was listed for AU (PÉRICART 1996b, GÜNTHER & SCHUSTER 2000a). No voucher specimen was found in any collection and this species is not confirmed for AU.

Orius (Orius) laevigatus laevigatus (FIEBER, 1860)

Mentioned for AU by KOFLER (1976, Thurn bei Lienz, det. Tamanini). The voucher specimen in the coll. Kofler was checked and determined as a female of the subgenus *Heterorius* (det. EH).

Brachysteles parvicornis (A. COSTA, 1847)

Mentioned for AU by TAMANINI (1961) without details. This species is distributed in Europe and northern Africa. No confirmed records are available for AU.

Fam. Cimicidae

***Cimex columbarius* JENYNS, 1839**

Mentioned for AU by MADER (1922), FRANZ (1965, Zurndorf, verified specimens in NHMW) and FRANZ & WAGNER 1961 (Wien, verified specimens in NHMW). Also, the record of SIXL (1975, as *C. pipistrelli*) on *Columba livia* f. *domestica* very probably pertains to this species. The taxonomic status is not yet clarified, some authors suggest a synonymy with the common bed bug *C. lectularius*. Austrian records were not mentioned by PÉRICART (1996c) and GÜNTHER & SCHUSTER (2000a), this taxon is herewith confirmed for AU.

Fam. Reduviidae

***Ploiaria domestica* SCOPOLI, 1786**

This Mediterranean-Turanian species was doubted for AU by PUTSHKOV & PUTSHKOV (1996). However, at the OLML there is a male collected at the Troppberg (west of Vienna). The label is without date or collector, but size and type of the label indicate that the specimen belonged to the collection of Redtenbacher and was collected at the end of the 19th century. It could be a case of mislabelling or a unique finding of this flightless species in AU.

***Peirates stridulus* (FABRICIUS, 1787)**

Old literature records by SCHLEICHER (1861) and GREDLER (1870, 1874) belong to *P. hybridus* (SCOPOLI, 1763). The "true" *P. stridulus* is a western Mediterranean species (France, Italy, Spain, Algeria, Morocco, Tunisia) and does not occur in AU.

***Phymata monstrosa* (FABRICIUS, 1794)**

PROHASKA (1923) mentioned this species from Carinthia, which was repeated by

STICHEL (1937, 1957-62) and WAGNER (1967), but was doubted by FRIESS & al. (1999). *Phymata monstrosa* occurs in western Europe (Portugal, Spain, France) and northwest-ern Africa (Algeria, Morocco, Tunisia) (PUTSHKOV & PUTSHKOV 1996). Also, southern European records (Italy, e.g. GREDLER 1870) are considered as confusions with *P. cras-sipes* (FABRICIUS, 1775) (FARACI & RIZZOTTI VLACH 1995).

***Coranus (Coranus) griseus* (ROSSI, 1790)**

There is only one old record of this Mediterranean species for AU by FRITSCH (1880, on the Lindkogel near Baden, as *Colliocoris griseus*). According to PUTSHKOV & PUTSHKOV (1996) old European records of *C. aegyptius* (FABRICIUS, 1775) also belong to *C. griseus*. However, no verified specimens are yet available for AU.

***Coranus (Coranus) tuberculifer* REUTER, 1881**

According to PUTSHKOV & PUTSHKOV (1996) central European records are misidentifi-cations of other *Coranus* species. This is also true for records from AU (e.g. OSHANIN 1908, STICHEL 1937, 1957-62), as well as for specimens under this name in several col-lections (e.g. coll. Franz).

***Rhynocoris (Rhynocoris) cuspidatus* RIBAUT, 1921**

This species is distributed in western Europe (Portugal, Spain, France) and does not occur in AU. The record by SCHREMMER (1960) for the "Hainburger Berge" is a misiden-tification as are other central- and eastern European records (PUTSHKOV & PUTSHKOV 1996). PRIESNER (1928) mentioned a female from Upper Austria (Linz), but conceded that it could also be a somewhat different form of *R. iracundus* (PODA, 1761). In the coll. Priesner at the OLML no specimens were found.

***Rhynocoris (Rhynocoris) niger* (HERRICH-SCHÄFFER, 1842)**

Mentioned for AU by REUTER (1913), but no specimen was seen in any collections. PUTSHKOV & PUTSHKOV (1996) doubted the occurrence ("the records need confirmation"), but the species was included by GÜNTHER & SCHUSTER (2000a). Records are known from southern Slovakia (Stúrovo, STEHLÍK & VAVRÍNOVÁ 1998), so the occurrence in eastern AU is not impossible.

***Rhynocoris (Rhynocoris) rubricus* (GERMAR, 1814)**

Raised from a colour variation of *R. iracundus* to species rank by RIEGER (1972). How-ever, colouration is not of discriminatory value and records of *R. rubricus* for AU (e.g. GREDLER 1870, STROBL 1900, PRIESNER 1928, FRANZ & WAGNER 1961, LUGHOFER 1971, HOLZINGER 1995) have to be checked for the structure of the male vesica. Voucher specimens of PROHASKA (1923) were verified and exclusively belonged to *R. iracun-dus* (RABITSCH 2003). Also, specimens mentioned for Tyrol and Carinthia by RABITSCH (1999a) were re-examined and belonged to *R. iracundus*. However, *R. rubricus* occurs in AU, confirmed by a historical male from Lower Austria (NHMW, Baden, leg. Löw, vid. Moulet).

Fam. Aradidae

Aradus frigidus KIRITSHENKO, 1913

The records published by HEISS (1972) from Tyrol (Reutte) were subsequently placed to *A. pallescens* (HEISS 1984, SCHUSTER 1990). A verified specimen of *A. frigidus* collected at the Großglockner (without closer details) allowed HEISS (2001) to include this species for AU (coll. EH). *Aradus frigidus* has an arcto-alpine distribution pattern and lives on the roots of *Helianthemum* species on calcareous substrate.

Aradus pictus BAERENSPRUNG, 1859

Records before the revision of VÁSÁRHELYI (1988) need verification (e.g. FRANZ & WAGNER 1961, RESSL 1962, 1983) since most records belong to *A. obtectus* (VÁSÁRHELYI, 1988). *Aradus pictus* is a Mediterranean species, known for AU by a confirmed record from Tyrol (HEISS 2001, in litt.).

Fam. Lygaeidae s.l.

Orsillus maculatus (FIEBER, 1861)

SLATER (1964) mentioned this northern and eastern Mediterranean species for AU citing GREDLER (1870), who gave no locality data ("ohne nähere Angabe eines Fundortes in meiner Sammlung"), but very probably this record concerned South Tyrol (Italy). Also interpreted by REUTER (1908, "mediterranische Art, die bis nach Tirol hinaufsteigt").

Kleidocerys truncatulus (WALKER, 1872)

Mentioned for AU by STICHEL (1957-62) and for Burgenland by ADLBAUER & HEISS (1980). According to CARAYON (1989), this taxon is an endemic species of Madeira (Portugal). Austrian records refer to *K. resedae* (PANZER, 1797) or *K. privignus* (HORVÁTH, 1894).

Ischnodemus genei (SPINOLA, 1837)

Mentioned for AU by REUTER (1885), OSHANIN (1906), STICHEL (1938a, 1957-62), SLATER (1964) and GÜNTHER & SCHUSTER (1990), but no specimen was seen in any collection. Accordingly, this Mediterranean species was not included for AU by PÉRICART (1999, 2001) and GÜNTHER & SCHUSTER (2000a).

Henestaris laticeps (CURTIS, 1836)

The record of BAERENSPRUNG (1860) for AU was repeated by SLATER (1964), but pertains to *H. halophilus* (BURMEISTER, 1835). *Henestaris laticeps* occurs in the Mediterranean region and on the Atlantic coast of Europe (PÉRICART 1999).

Geocoris (Geocoris) megacephalus (ROSSI, 1790)

This species was mentioned by HORVÁTH (1898, as *Geocoris siculus* FIEBER, 1844) from the Neusiedler See, which was repeated for AU by PÉRICART (1999, 2001) and GÜNTHER

& SCHUSTER (2000a). However, Horváth himself corrected his record in a later paper on the true bug fauna of the Neusiedler See (HORVÁTH 1923): "The South-European G. s. is erroneously mentioned from Nezsider in the Hungarian fauna-catalogue. Dr. Andor Hensch, from whom I received the data, recently informed me that the specimens, which were also examined by myself, were collected not in Nezsider, but somewhere else, may be in Dalmatia." (footnote on p. 188) [translation from the Hungarian text by Dr. Vásárhelyi]. *Geocoris megacephalus siculus* was also mentioned for AU by SLATER (1964), referring to GREDLER (1874), who only mentioned records from South Tyrol.

***Geocoris (Geocoris) pallidipennis* (A. COSTA, 1843)**

Mentioned for AU by SLATER (1964) citing LUCANTE (1876), but the locality very probably was outside present borders. *Geocoris pallidipennis* is distributed from the Mediterranean region to China and India.

***Macropternella inermis* (FIEBER, 1851)**

According to PÉRICART (1999), only historical, unconfirmed records of this Mediterranean species are available for AU ("ancienne indication, aucune confirmation"), probably going back to PUTON (1869, 1875), whose record was repeated also by SLATER (1964).

***Metopoplax fuscinervis* STÅL, 1872**

Probably first mentioned for AU by SLATER (1964), who erroneously cited LINDBERG (1948) in whose paper AU is not mentioned for this species. Also repeated by STEHLÍK (1973), who later places his records from the Czech Republic and Slovakia to *M. origani* (KOLENATI, 1845) (STEHLIK & VAVRÍNOVÁ 1997). Recorded by ADLBAUER & HEISS (1980) from Burgenland (leg. Hernegger) and repeated by PÉRICART (1999, "non vu"), who stresses the possible confusion with *M. origani* f. *cingulata*, but later nevertheless included the species for AU (PÉRICART 2001). The voucher specimen was checked and indeed determined as *M. origani* f. *cingulata* (vid. Péricart). The taxonomic position of *M. fuscinervis* is still unclear. According to HOPP (1989) specimens with a light posterior pronotum belong either to *M. ditomoides* (f. *fuscinervis* STÅL) in the west-mediterranean or *M. origani* (f. *cingulata* HORVÁTH) in the east-mediterranean region.

***Oxycarenus (Oxycarenus) hyalinipennis* (A. COSTA, 1847)**

Only occasional captures of this Mediterranean species are available in central Europe. In AU found in Tyrol (leg. Gruber, GREDLER 1870, repeated by SLATER 1964) and in Vorarlberg (coll. EH, PÉRICART 1999). These captures are regarded as accidental introductions (PÉRICART 1999).

***Drymus (Drymus) pilipes* FIEBER, 1861**

Described by FIEBER (1861) on material from AU ("Aus der Steiermark und Unterösterreich"), repeated by SCHLEICHER (1861), STROBL (1900), OSHANIN (1906), STICHEL (1938a, 1957-62), FRANZ & WAGNER (1961: "Keine neueren Funde"), RESSL (1995), PÉRICART (1999, 2001) and GÜNTHER & SCHUSTER (2000a), but not a single specimen was again found in AU. According to PÉRICART (1999, 2001) this is a western Palaearctic species, being rare in central Europe, which lives at dry, nutrient-poor sites.

***Notochilus limbatus* FIEBER, 1870**

Described from a male by FIEBER (1870) from France (Lille, leg. Puton). The citation of WALKER (1872, "Austria sec. Fieber") remains unclear. FRANZ & WAGNER (1961) mentioned this species from Lower Austria (Vöslau, leg. Paganetti), but no specimens were found in the collections of Paganetti, Franz, or Wagner. According to PÉRICART (1999, 2001), this is a western European species and its occurrence in AU is not confirmed.

***Pionosomus varius* (WOLFF, 1804)**

Mentioned for AU by STICHEL (1957-62), but no specimens were as yet found in collections. It was previously often confused with *P. opacellus* HORVÁTH, 1895. *P. varius* is a psammophilous species, distributed throughout Europe and may also occur in AU.

***Lethaeus cibratissimus* (STÅL, 1858)**

Mentioned for AU by OSHANIN (1912), repeated by SLATER (1964) and GÜNTHER & SCHUSTER (1990). Although once captured in the Czech Republic (STEHLÍK 1962), this eastern Mediterranean species is not considered to occur in central Europe.

***Megalonotus mixtus* (HORVÁTH, 1887)**

This species was recorded for AU by LUGHOFER (1964, 1972) from Upper Austria and repeated by PÉRICART (1999) and GÜNTHER & SCHUSTER (2000a). Specimens in the coll. Lughofer (OLML, ZSMC) were checked and revealed as a confusion with *M. chiragra* (FABRICIUS, 1794). According to PÉRICART (2001), *M. mixtus* is a western Mediterranean species occurring from the Canary Islands, Morocco, Portugal, Spain, and southwestern France to Switzerland. According to RIEGER (1996b) records from Germany need to be confirmed as well.

***Plinthisus (Isioscytus) minutissimus* FIEBER, 1864**

The only record was published by PÉRICART (1999, 2001, in litt: "old capture in Austria, one specimen at MNHN, Paris, no exact locality"), repeated by GÜNTHER & SCHUSTER (2000a), but probably the specimen was collected outside present borders.

***Eremocoris podagricus alpinus* (GARBIGLIETTI, 1869)**

This subspecies was mentioned for AU by REUTER (1881, as *Eremocoris alpinus* GARBIGLIETTI var. *icaunensis* POPULUS, 1874), for Tyrol by HEISS & JOSIFOV (1990) and for Styria by ADLBAUER (1997). However, the subspecies was synonymized by TAMANINI (1974), which was followed by GÜNTHER & SCHUSTER (2000a) and PÉRICART (1999, 2001).

***Ischnocoris angustulus* (BOHEMAN, 1852)**

Mentioned by PRIESEN (1927) for Upper Austria, but the habitat description ("unter *Echium* Rosetten,, an trockenen, sandigen Stellen") points at a confusion with *I. hemipterus* (SCHILLING, 1829). FRANZ & WAGNER (1961) also indicate that this record should be re-examined. In the coll. Priesner at the OLML, no specimens of *I. angustulus*

were found. RESSL (1995) mentioned *I. angustulus* from Lower Austria (det. Madera), but no voucher specimen exists in the coll. Madera (NÖLM). Although the occurrence of *I. angustulus* in AU is possible, no confirmed specimens were seen so far.

***Rhyparochromus sanguineus* (DOUGLAS & SCOTT, 1868)**

This taxon was treated as a colour morph of *R. phoeniceus* (ROSSI, 1794) since RIEGER (1993) clarified its status as a proper species. PÉRICART (1999) mentioned *R. sanguineus* for AU on material from the coll. EH (also cited by GÜNTHER & SCHUSTER 2000a). The re-examination revealed that both specimens belong to *R. phoeniceus* (vid. Rieger) and that *R. sanguineus* is not occurring in AU. According to KERZHNER (1994), *R. sanguineus* occurs from the Mediterranean to the Caucasus region. The northernmost records are in Croatia and northern Italy (Triest) (RIEGER 1993, KERZHNER 1994).

***Stygnocoris pygmaeus* (R.F. SAHLBERG, 1848)**

Most verified records of *S. pygmaeus* from AU actually refer to *S. cimbricus* (GREDLER, 1870) (MELBER & al. 1991, HEISS 1997, RABITSCH 2003). The taxonomic status of *S. pygmaeus* is currently revised and a synonymy with another *Stygnocoris* species suggested (Kerzhner, in litt.).

***Stygnocoris faustus* (HORVÁTH, 1888)**

This species is distributed in the Mediterranean region and was mentioned for AU by HÖLZEL (1953, 1954) from Carinthia (Karawanken, Hudajama, det. EW), repeated by STICHEL (1957-62) and GÜNTHER & SCHUSTER (2000a), doubted by FRIESS & al. (1999) and PÉRICART (2001) indicated this uncertainty (AU?). The voucher specimen (1 ♀) is deposited at the KLM and belongs to *S. sabulosus* (SCHILLING) (RABITSCH 2003).

Fam. Coreidae

***Centrocoris spiniger* (FABRICIUS, 1781)**

Mentioned for AU by STICHEL (1938b, 1957-62) without details, and repeated by OSELLA (1970). In the NÖLM, there is a male of this species with the label "Rohrbach, A.s. (= Austria superior), Mader". This may be a labelling error or an accidental port-of-entry record, however, this Mediterranean species is not regarded as an indigenous species in AU.

***Haploprocta sulcicornis* (FABRICIUS, 1794)**

Mentioned from AU (Krems, Wachau) by MOULET (1995) among the records from Germany. The voucher specimens in the coll. Eckerlein (MHNG) were verified and the presence of this species in AU is herewith confirmed.

***Anoplocerus elevatus* (FIEBER, 1861)**

Mentioned for AU by OSANIN (1906) and STICHEL (1938b, 1957-62). Also, FRANZ (1931) recorded this Mediterranean species (as *Bothrostethus elevatus*) from the

"Hutweide bei Zurndorf", but no voucher material could be detected so far; very probably this is a case of misidentification (see also MELBER & al. 1991).

***Arenocoris waltlii* (HERRICH-SCHÄFFER, 1834)**

A palaearctic species mentioned for AU by LINDBERG (1948, as *Pseudophloeus waltlii*) and GÜNTHER & SCHUSTER (2000a). The distribution map of MOULET (1995) also includes AU, however, no specimen from AU was seen in any collection so far.

***Loxocnemis dentator* (FABRICIUS, 1794)**

This Mediterranean species was mentioned by FRITSCH (1880) from Vienna and Salzburg, very probably based on a misidentification.

***Ceraleptus obtusus* (BRULLÉ, 1839)**

Mentioned for AU by WERNER (1927, as *Ceraleptus squalidus* COSTA, 1847), FRANZ (1931) and WAGNER (1961, 1966). The voucher specimen of WERNER (1927) was verified at the NHMW and revealed as a confusion with *C. lividus* STEIN, 1858. An additional "obtusus" male in the NHMW (Leithagebirge, leg. Handlirsch) may be the origin for the record of WAGNER (1961, "Wiener Becken"), but belongs also to *C. lividus*. There is no confirmed evidence for the occurrence of *C. obtusus* in AU so far.

***Coriomeris affinis* (HERRICH-SCHÄFFER, 1839)**

This Mediterranean species was mentioned by FRITSCH (1865, as *Coreus spinolae* COSTA, 1838) from the surroundings of Vienna ("Wien Umg."). MOULET (1995) mentioned a record from Burgenland (Neusiedler See, coll. Seidenstücker), but in the ZSMC, those specimens were not found. No confirmed specimens for AU are available and the occurrence remains questionable.

Fam. Rhopalidae

***Rhopalus (Rhopalus) lepidus* (FIEBER, 1861)**

Mentioned by PRIESNER (1926) from Upper Austria (Aisttal). A male voucher specimen was discovered in the NÖLM and revealed a confusion with *R. rufus* SCHILLING, 1829. The record of PROHASKA (1932, as *Corizus parumpunctatus* var. *leptida*) for Carinthia was already doubted by FRIESS & al. (1999). However, a verified specimen from Tyrol is deposited in the coll. EH (Achental, 3.IX.1965, leg. EH, det. Göllner) (GÖLLNER-SCHEIDING 1978).

***Stictopleurus pictus* (FIEBER, 1861)**

Published by STROBL (1900, as *Corizus (Rhopalus) crassicornis* L. γ *abutilon* ROSSI f. *pictus*) for Styria (Graz). Recorded for Burgenland by MELBER & al. (1991) and for Carinthia by FRIESS (2001b). Whereas a re-examination of a male from the former

series confirmed its occurrence (vid. Melber), a female of the latter series revealed a confusion with *S. abutilon* (ROSSI, 1790).

Fam. Stenocephalidae

Dicranocephalus marginicollis (PUTON, 1881)

The record of *Dicranocephalus pruinosus* (HORVÁTH, 1887) for AU by STICHEL (1957-62, "Oesterreich Kärnten") and GÜNTHER & SCHUSTER (1990) dates back to the original description of HORVÁTH (1887), based on material from "Prewald in Carniola", todays Prevalje in Slovenia. *Dicranocephalus pruinosus* was synonymized with *D. marginicollis* by MOULET (1994).

Fam. Cydnidae

Byrsinus flavigornis (FABRICIUS, 1794)

This species has a dispersed distribution in Europe and is mentioned erroneously for AU by GÜNTHER & SCHUSTER (2000a). *Byrsinus flavigornis* lives in sandy habitats with a preference for *Corynephorus canescens* (Poaceae). The search for this burrowing bug at sand dune sites in AU was unsuccessful so far. The closest known records are located in the northern Czech Republic (Tuhan, DAVIDOVA-VILIMOVA 1993).

Geotomus elongatus (HERRICH-SCHÄFFER, 1839)

The distribution of this species extends from the Mediterranean to the central Asiatic region. According to Lis (in litt.), species of the genus *Geotomus* were often confused and literature records have to be verified. The record of *G. elongatus* for AU by GÜNTHER & SCHUSTER (2000a) is unconfirmed, within the genus only *G. brunnipennis* WAGNER, 1953 is known for AU so far (RABITSCH 2001a).

Legnotus fumigatus (A. COSTA, 1853)

The revision of both voucher specimens of this Mediterranean species mentioned for AU by FRANZ & WAGNER (1961) and ADLBAUER & HEISS (1980), repeated by LIS (1999), revealed a confusion with *L. picipes* (FALLÉN, 1807) (RABITSCH 2001a).

Fam. Scutelleridae

Phimodera flori FIEBER, 1863

The records of OSHANIN (1910b), GULDE (1933) and WAGNER (1966) for Tyrol very probably date back to REUTER (1905) who mentioned this species from "Tirol, coll. Puton". This likely concerns a record from South Tyrol (Italy) where recent findings of the species are known (TAMANINI 1982).

Fam. Pentatomidae

Sternodontus obtusus MULSANT & REY, 1856

Mentioned by OSHANIN (1912) from "Austria meridionale", the former coastal lands Krain and Dalmatia, now belonging to Slovenia and Croatia. Also mentioned by HALÁSZFY (1956) for Tyrol, probably dealing with South Tyrol.

Acyrosoma leucogrammes (GMELIN, 1790)

According to PANZER (1799: "Habitat Viennae Austr."), the northern border of the area of this Mediterranean species may have reached Austria in the past. STROBL (1900) mentioned a single individual collected near Graz (leg. Gatterer, as *A. albolineatum* F.), which was repeatedly cited in the literature (GULDE 1934, LINDBERG 1948, STICHEL 1957-62, FRANZ & WAGNER 1961, WAGNER 1961, 1966), but there have been no further record of this species in AU for more than 100 years. The northernmost recent records come from Stúrovo in southern Slovakia (STEHLÍK & VAVRÍNOVÁ 1993) and from Slovenia (GOGALA 1991).

Graphosoma semipunctatum (FABRICIUS, 1775)

This Mediterranean species was mentioned by HÖLZEL (1954: "ein Stück aus der alten Kärntner Sammlung trägt die allgemeine Patriabezeichnung Kärnten"), very probably pertaining to a location in Slovenia or Croatia. However, STICHEL (1957-62) probably adopted this citation for AU. Historic records also exist for Görz (Goricia in Italy) by REUTER (1875), Moravia and Bavaria (OSHANIN 1906), and Switzerland (WALKER 1867a), so that the northern border of this species apparently reached central Europe in the past. OSELLA (1970) erroneously mentioned a record adjacent to Vienna (Josifov, in litt.).

Aelia sibirica REUTER, 1884

Mentioned by RIDER & al. (2002) for AU, very probably based on the original description of the later synonymized *Aelia henschi* MONTANDON, 1886 from Goricia and Monfalcone (Italy).

Neottiglossa lineolata (MULSANT & REY, 1852)

Mentioned by PRIESNER (1926, as *N. pusilla* f. *lineolata*) from Upper Austria (Linz), repeated by FRANZ & WAGNER (1961) and GÜNTHER & SCHUSTER (2000a). The voucher specimens in the coll. Priesner (OLML) were verified and revealed a confusion with *N. pusilla* (GMELIN, 1789). No data are available for the records by WAGNER (1961, 1966) from "Niederösterreich" and "Wiener Becken", respectively. Recent mentions come from Carinthia by FRIESS (1999a) and FRIESS & al. (1999). Reviewing the specimen also revealed a confusion with *N. pusilla*. Therefore, there is no confirmed evidence that *N. lineolata* occurs in AU.

Brachynema triguttatum FIEBER, 1870

This species is distributed in the Atlantic-Mediterranean area. Accordingly, the records

from Dalmatia (PUTON 1886, OSHANIN 1906) and from AU (STICHEL 1938b) were treated as errors by RIBES & SCHMITZ (1992).

***Carpocoris mediterraneus* TAMANINI, 1958**

DETHIER (1989) mentioned this species from Carinthia (leg. Kapeller). A female with the label [Carinth.Karawank./lg. Demelt<sic!>, VIII.1962], deposited in the coll. Kapeller at the MHNG, turned out to be *Carpocoris pudicus* (PODA, 1761). As well, the citation of *C. mediterraneus* for Slovenia concerns *C. pudicus* (GOGALA & GOGALA 1989, GOGALA 1991). The reason for the statement "Wiener Becken" by WAGNER (1966) is unclear.

***Codophila varia* (FABRICIUS, 1787)**

Mentioned by STICHEL (1957-62) and OSELLA (1970) from AU and by WAGNER (1966) for the "Wiener Becken". No further references or any voucher specimens of this Mediterranean species are available for AU, which is here regarded as a case of misidentification.

***Holcostethus albipes* (FABRICIUS, 1781)**

This Mediterranean species was mentioned from AU by DETHIER (1989). The respective female in the coll. Kapeller at the MHNG was verified and belonged to *Dolycoris baccarum* (LINNAEUS, 1758). A historical specimen from "Oesterreich" was found in the coll. Simony (NHMW), but it very probably was collected outside present borders.

***Eysarcoris ventralis* (WESTWOOD, 1837)**

= *E. inconspicuus* HERRICH-SCHÄFFER, 1844

WERNER (1934) and KOFLER (1976) mentioned this species from the Tristachersee in Osttirol. The voucher specimen was found at the NHMW and belonged to *E. venustissimus* (SCHRANK, 1776) (= *E. fabricii* KIRKALDY, 1904). A further (unpublished) specimen from Hermagor in Carinthia, determined as *E. inconspicuus* by Werner, belonged to *E. aeneus* (SCOPOLI, 1763). FRANZ & WAGNER (1961) mentioned *E. ventralis* (as *Stollia inconspicua*) from Vöslau (leg. Paganetti), but no specimen was found in the coll. Paganetti at the NHMW. It was mentioned for Tyrol by HEISS (1977b), but not recorded by GÜNTHER & SCHUSTER (2000a). Recent findings were also made in Lower Austria and Burgenland (leg. Rabitsch), confirming the occurrence of this species in AU.

***Stagonomus (Stagonomus) amoenus* (BRULLÉ, 1832)**

Only one published record for AU by STROBL (1900), who mentioned a female from Luttenberg (= Ljutomer in Croatia).

***Sciocoris (Neosciocoris) maculatus* FIEBER, 1851**

Mentioned by STICHEL (1957-62) from AU, apparently based on the records of FIEBER (1851b: "Kärnthen"; but 1861: "Krain") or GREDLER (1870: "Bozen, Brixen, Altrei"). Both records deal with locations not within present borders.

***Sciocoris (Sciocoris) galiberti* RIBAUT, 1926**

Mentioned by HÖLZEL (1954) from Carinthia ("auf den nassen Seewiesen des Keutschacher Sees", det. EW), repeated by STICHEL (1957-62) and HÖLZEL (1971) and doubted by FRIESS & al. (1999). The verification of a specimen from the voucher series at the KLM revealed a confusion with *Sciocoris cursitans* (FABRICIUS, 1794) (RABITSCH 2003).

***Sciocoris (Sciocoris) atticus* HORVÁTH, 1907**

Mentioned from Burgenland by FRANZ (1965), doubted by MELBER & al. (1991). One specimen in the coll. Franz (NHMW) from the Neusiedler See (leg. Franz) and one specimen in the coll. Mader (NÖLM) from Oberweiden (leg. Hicker), both determined and labelled as *Sciocoris atticus* by EW, were misidentified *Sciocoris distinctus* FIEBER, 1851. Recently, *S. atticus* was synonymized with *S. sulcatus* FIEBER, 1851 by PÉRICART (2002b).

***Holcogaster fibulata* (GERMAR, 1831)**

The record of this Mediterranean species by GREDLER (1870, "nur ein einzelnes Tiroler Exemplar") may pertain to Italy. MÜLLER (1926, "auf Föhren, selten, von Feldkirch nach einem Verzeichnis der Vorarlberger Wanzen von Fonlupt") and GULDE (1934, "leg. Klene") mention this species from Vorarlberg, repeated by GÜNTHER & SCHUSTER (2000a). Although the occurrence in AU may be possible, not a single specimen was found in any collection so far and the presence of this species in AU is unconfirmed.

***Picromerus nigridens* (FABRICIUS, 1803)**

A mediterranean species mentioned for AU by THOMAS (1994) without reference. Eventually he considered the record of GREDLER (1874) from South Tyrol ("Roveredo" = Rovereto, Italy) for AU.

Discussion

Of the 141 species mentioned in this paper, approximately 40% were misidentified and a further 20% were collected outside present borders, so that those species will be excluded from a check-list of the Heteroptera of Austria. In some cases, taxonomy has changed and some species were confirmed to occur in Austria (less than 10% in each case). The reasons for doubting the presence of the remaining quarter of the species in Austria are drawn from their known distribution or because no confirmed specimens are available in any collection. The present paper clearly shows how biogeography depends on taxonomy. It is well known that the range of a species is subject to dynamic processes and especially the area boundaries fluctuate in time. However, biogeographical interpretations should be aware of the possibility that erroneous records may mask any observed pattern.

Since some of the erroneously mentioned species will undoubtedly occur in Austria, the further continuation of inventoring the Heteroptera fauna of Austria is necessary and should be encouraged. It is also hoped that the present paper stimulates the specific search for some of the herementioned species.

As a result of this work the following recommendations are suggested:

- * Keep voucher material of your samples, label and store them properly. It should be mandatory for all published results that voucher specimens remain available for later comparison. Labels should bear the sampling locality clearly and unambiguously.
- * Verify your determination by experts and get a second opinion for "critical" taxa (e.g. species with difficult taxonomy or first records for a country or province).
- * If you are an expert, remain self-critical towards your own determinations.

The check-list of the Heteroptera of Austria currently includes approximately 900 species with confirmed past or present occurrence within present borders (Rabitsch, in prep.). It is expected that the species number will further increase in the near future, due to the intensified field work and sampling efforts. Additionally, the increase of average temperatures offers opportunities for Mediterranean species to extend their range northwards, as has been documented in the past (e.g. *Ancyrosoma leucogrammes*, *Graphosoma semipunctatum*) and recently observed (e.g. *Deraeocoris flavilinea*, *Oxyacanthus lavaterae*, *Arocatus longiceps*).

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References

- ADLBAUER K., 1997: Neue Wanzen für die Steiermark, das Burgenland und Österreich (Heteroptera). – Mitteilungen des naturwissenschaftlichen Verein Steiermark 127: 157-162.
- ADLBAUER K. & HEISS E., 1980: Zur Wanzenfauna des Burgenlandes (Ins., Heteroptera). – Natur und Umwelt Burgenland, Sonderheft 3: 1-29.
- ADLER W. & MRKVICKA, A., 2003: Die Flora Wiens, gestern und heute. – Verlag des Naturhistorischen Museums, Wien, 831 pp.
- ATKINSON E.T., 1890: Catalogue of the Insecta. No. 2. Order Rhynchota. Suborder Hemiptera-Heteroptera. Family Capsidae. – Journal of the Asiatic Society of Bengal 58(2): 25-200.
- AUKEMA B. & RIEGER C., 1995-2001: Catalogue of the Heteroptera of the Palaearctic Region. Vol. 1 (1995), 222 pp., Vol. 2 (1996), 361 pp., Vol. 3 (1999), 577 pp., Vol. 4 (2001), 346 pp. – Netherlands Entomological Society, Amsterdam.
- BACCHI I. & RIZZOTTI VLACH M., 1994: Quattro specie del genere *Psallus* FIEBER, 1858 nuove per la fauna italiana (Heteroptera: Miridae). – Atti XVII Congresso Nazionale Italiano di Entomologia, Udine, 191-194.

- BAERENSPRUNG F. VON, 1860: Catalogus Hemipterorum Europae. Hemiptera Heteroptera Europa systematice disposita. – Berliner Entomologische Zeitschrift, Appendix, 4: 1-25.
- BRÄUNICKE M., HANDKE K., PAILL W., PERSOHN M. & TRAUTNER J., 2000: Aktueller Arbeitsstand zur Einrichtung eines "Seltenheiten-Ausschusses" der GAC. – Angewandte Carabidologie 2/3: 103-108.
- BREHM V., 1942: Nochmals die Biozönosen der Lunzer Gewässer. – Internationale Revue der Gesamten Hydrobiologie Hydrographie 42: 289-316.
- CARAYON J., 1989: Systématique et biologie des *Kleidocerys* d'Europe (Hem. Lygaeidae). – Bulletin de la Société Entomologique de France 94(5-6): 149-164.
- DAVIDOVÁ-VILÍMOVÁ J., 1993: Occurrence of *Aethus flavigornis* (Heteroptera: Cydnidae) in former Czechoslovakia. – Acta Societatis Zoologicae Bohemicae 57: 77-80.
- DETHIER M., 1975: Hétéroptères aquatiques et Saloidea de la collection Kappeler. – Revue Suisse de Zoologie 82(2): 297-320.
- DETHIER M., 1989: Les Pentatomoidae de la collection Kapeller. – Archives des Sciences Genève 42: 553-568.
- DOBŠÍK B., 1970: Zur Wanzenfauna in der Umgebung von Kapfenberg (Steiermark) (Heteroptera, Cimicomorpha). – Mitteilungen der Abteilung Zoologie und Botanik, Landesmuseum Joanneum, Graz, 35: 47-53.
- DRAPOLYUK I.S., 1993: Review of the capsid bugs of the genus *Lepidargyrus* (Heteroptera: Miridae). – Zoosystematica Rossica 2: 107-119.
- EHANNO B., 1983: Les Hétéroptères Mirides de France. Tome 1. – Inventaires de Faune et de Flore 25: 1-603.
- FARACI F. & RIZZOTTI VLACH M., 1995: Heteroptera. In: MINELLI A., RUFFO S. & LA POSTA S. (eds): Checklist della specie della fauna italiana, vol. 41 – Calderini, Bologna, pp. 1-56.
- FIEBER F.X., 1844: Entomologische Monographien. – Barth, Prag, 138 pp.
- FIEBER F.X., 1848: Synopsis aller bisher in Europa entdeckten Arten der Gattung *Corisa*. – Bulletin de la Société Impériale des Naturalistes de Moscou 21: 505-593.
- FIEBER F.X., 1851a: Species generis *Corisa* monographice dispositae. – Abhandlungen der Böhmisichen Gesellschaft der Wissenschaften 7: 213-260.
- FIEBER F.X., 1851b: Rhynchotographieen. Drei monographische Abhandlungen. – G. Haase Söhne, Prag, 64 pp.
- FIEBER F.X., 1858: Criterien zur generischen Teilung der Phytocoriden (Capsini aut.). – Wiener Entomologische Monatsschrift 2: 289-327, 329-347, 388.
- FIEBER F.X., 1860: Die europäischen Hemipteren. Halbflügler (Rhynchota Heteroptera). – Gerold's Sohn, Wien, 1-112.
- FIEBER F.X., 1861: Die europäischen Hemipteren. Halbflügler (Rhynchota Heteroptera). – Gerold's Sohn, Wien, 113-444.
- FIEBER F.X., 1864: Neuere Entdeckungen in europäischen Hemipteren. B. Neue Arten. – Wiener Entomologische Monatschrift 8: 205-234, 321-335.
- FIEBER F.X., 1870: Dodecas neuer Gattungen und neuer Arten europäischer Hemiptera. – Verhandlungen der Zoologisch-Botanischen Gesellschaft Wien 20: 243-264.
- FRANZ H., 1931: Über die Bedeutung des Mikroklimas für die Faunenzusammensetzung auf kleinem Raum. (Ökologische Beobachtungen aus der Umgebung von Zurndorf im nördlichen Burgenland). – Zeitschrift für Morphologie und Ökologie der Tiere 22: 587-628.

- FRANZ H., 1965: Beitrag zur Kenntnis der Wanzenfauna (Hem., Het.) des Burgenlandes. – Wissenschaftliche Arbeiten Burgenland 34: 212-240.
- FRANZ H. & WAGNER E., 1961: Hemiptera Heteroptera. In: FRANZ H. (Hrsg.): Die Nordost-Alpen im Spiegel ihrer Landtierwelt. II. – Universitätsverlag Wagner, Innsbruck, pp. 271-401.
- FREITAG H., WALTER J. & WUCHERER W., 1996: Die Gattung *Suaeda* (Chenopodiaceae) in Österreich, mit einem Ausblick auf die pannonischen Nachbarländer. – Annalen des Naturhistorischen Museum Wien 98B, Suppl., 343-367.
- FRIESS T., 1999a: Die Wanzenfauna (Heteroptera) mehrjähriger Ackerbrachen mit Saumbiotopen im Glanfeld (Kärnten). – Carinthia II 189./109.: 335-352.
- FRIESS T., 1999b: Landeskundlich bemerkenswerte Wanzenfunde (Insecta: Heteroptera) aus den Bundesländern Steiermark, Kärnten und Burgenland (Österreich). – Mitteilungen des naturwissenschaftlichen Verein Steiermark 129: 287-298.
- FRIESS T., 2000: Libellen (Odonata) und Wanzen (Heteroptera) aus dem Naturschutzgebiet "Gut Walterskirchen" am Wörthersee. – Carinthia II 190./110.: 517-530.
- FRIESS T., 2001a: Wanzen (Heteroptera) aus dem Naturschutzgebiet "Trögerner Klamm" in Südkärnten. – Linzer biologische Beiträge 33/1: 275-293.
- FRIESS T., 2001b: Die Wanzenfauna (Heteroptera) des Bergsturzgebietes Schütt/Dobratsch und seiner näheren Umgebung (Kärnten, Österreich): Faunistik, Zönotik und Naturschutz. – Carinthia II 191./111.: 357-388.
- FRIESS T., HEISS E. & RABITSCH W., 1999: Verzeichnis der Wanzen Kärtents (Insecta: Heteroptera). In: ROTTENBURG T., WIESER C., MILDNER P. & HOLZINGER W.E. (Ed.): Rote Listen gefährdeter Tiere Kärtents. – Naturschutz in Kärnten 15: 451-472.
- FRITSCH K., 1865: Ergebnisse mehrjähriger Beobachtungen über die periodischen Erscheinungen in der Flora und Fauna Wiens. – Denkschriften der mathematisch-naturwissenschaftlichen Klasse der Akademie der Wissenschaften 24: 13-101.
- FRITSCH K., 1880: Jährliche Periode der Insectenfauna von Österreich-Ungarn. V. Die Schnabelkerfe (Rhynchota). – Denkschriften der mathematisch-naturwissenschaftlichen Klasse der Akademie der Wissenschaften 42: 217-255.
- GERMAR E.F., 1837: Fauna Insectorum Europae 18. – Kummel, Halae, pls. 1-25.
- GOGALA A., 1991: New records for the Heteroptera Fauna of Slovenia (Yugoslavia). – Bioloski Vestnik 39: 149-156.
- GOGALA A., 1996: New records for the Heteropteran Fauna of Slovenia II. – Acta Entomologica Slovenica 4: 31-36.
- GOGALA A. & GOGALA M., 1989: True bugs of Slovenia (Insecta: Heteroptera). – Bioloski Vestnik 37: 11-44.
- GÖLLNER-SCHEIDING U., 1978: Bemerkungen zu der Gattung *Rhopalus* SCHILLING einschliesslich *Brachycarenus* FIEBER (Heteroptera, Rhopalidae). – Mitteilungen aus dem Zoologischen Museum Berlin 54: 313-331.
- GÖLLNER-SCHEIDING U., 1989: Die europäischen Vertreter der Gattung *Dichrooscytus* FIEB., unter besonderer Berücksichtigung der mitteleuropäischen Arten (Insecta, Heteroptera: Miridae). – Faunistische Abhandlungen des Staatlichen Museum für Tierkunde Dresden 17(3): 25-26.
- GREDLER V., 1870: Rhynchota Tirolensis. I. Hemiptera heteroptera (Wanzen). – Verhandlungen der Zoologisch-Botanischen Gesellschaft Wien 20: 69-108.
- GREDLER V., 1874: Nachlese zu den Wanzen Tirols. – Verhandlungen der Zoologisch-Botanischen Gesellschaft Wien 24: 553-558.

- GULDE J., 1933: Die Wanzen Mitteleuropas. Hemiptera Heteroptera Mitteleuropas 2. – Frankfurt am Main, 76 pp.
- GULDE J., 1934: Die Wanzen Mitteleuropas. Hemiptera Heteroptera Mitteleuropas 3. – Frankfurt am Main, 194 pp.
- GULDE J., 1938: Die Wanzen Mitteleuropas. Hemiptera Heteroptera Mitteleuropas 6. – Frankfurt am Main, 377 pp.
- GÜNTHER H. & SCHUSTER G., 1990: Verzeichnis der Wanzen Mitteleuropas (Heteroptera). – Deutsche Entomologische Zeitschrift, N.F., 37: 361-396.
- GÜNTHER H. & SCHUSTER G., 2000a: Verzeichnis der Wanzen Mitteleuropas (Insecta: Heteroptera) (2. überarbeitete Fassung). – Mitteilungen des internationalen entomologischen Verein, Frankfurt a.M., Supplement VII: 1-69.
- GÜNTHER H. & SCHUSTER G. 2000b: Verzeichnis der Wanzen Mitteleuropas (Insecta: Heteroptera) (2. überarbeitete Fassung). Berichtigungen und Ergänzungen. – unpublished typescript, 2 pp.
- GÜNTHER H., HOFFMANN H.J., MELBER A., REMANE R., SIMON H. & WINKELMANN H., 1998: Rote Liste der Wanzen (Heteroptera). – In: Bundesamt für Naturschutz: Rote Liste gefährdeter Tiere Deutschlands. – Schriftenreihe für Landschaftspflege und Naturschutz 55: 235-242.
- HALÁSZFY É., 1956: Clef analytique des espèces paléarctiques du genre *Sternodontus* et la description de l'espèce *Sternodontus hungaricus* spec. nova. – Acta zoologica hungarica 2: 181-185.
- HEISS E., 1969: Zur Heteropterenfauna Nordtirols I: Wasserwanzen (Corixidae-Hydrometridae). – Veröffentlichungen der Universität Innsbruck 54: 1-28.
- HEISS E., 1970: *Notonecta reuteri* Hungerford 1928, neu für den Alpenraum (Heteroptera, Notonectidae). – Nachrichtenblatt bayerischer Entomologen 18: 68-77.
- HEISS E., 1972: Zur Heteropterenfauna Nordtirols II: Aradoidea und Saldoidea. – Berichte des naturwissenschaftlich-medizinischen Verein Innsbruck 59: 73-92.
- HEISS E., 1977a: Zur Heteropterenfauna Nordtirols V: Ceratocombidae, Nabidae, Anthocoridae, Cimicidae, Microphysidae. – Veröffentlichungen des Museums Ferdinandeum Innsbruck 57: 35-51.
- HEISS E., 1977b: Zur Heteropterenfauna Nordtirols VI: Pentatomoidea. – Veröffentlichungen des Museums Ferdinandeum Innsbruck 57: 53-77.
- HEISS E., 1997: Das Typenmaterial der von V.M.Gredler beschriebenen Miridae und Lygaeidae (Heteroptera). Veröffentlichungen des Tiroler Landesmuseum Ferdinandeum 77: 287-292.
- HEISS E., 2001: Family Aradidae BRULLÉ, 1836 - Flat Bugs. In: AUKEEMA B. & RIEGER C. (eds): Catalogue of the Heteroptera of the Palaearctic Region, vol. 4 – Netherlands Entomological Society, Amsterdam, pp. 3-34.
- HEISS E. & HELLRIGL K., 1996: Ordnung Wanzen - Heteroptera (= Hemiptera s. str.). In: HELLRIGL K. (Hrsg.): Die Tierwelt Südtirols. – Veröffentlichungen des Naturkundemuseums Südtirol, Bozen, pp. 345-363.
- HEISS E. & JOSIFOV M., 1990: Vergleichende Untersuchung über Artenspektrum, Zoogeographie und Ökologie der Heteropteren-Fauna in Hochgebirgen Österreichs und Bulgariens. – Berichte des naturwissenschaftlich-medizinischen Verein Innsbruck 77: 123-161.
- HÖLZEL E., 1953: Faunistische Mitteilungen. – Nachrichtenblatt der Fachgruppe Entomologie des Naturwissenschaftlichen Vereins Kärnten 10: 196-198.
- HÖLZEL E., 1954: Neues über Heteroptera (Ungleichflügler oder Wanzen) aus Kärnten. – Carinthia II 144./64.: 70-83.

- HÖLZEL E., 1958: Neue Heteropteren für Kärnten an künstlichem Licht gefangen. – Nachrichtenblatt der Fachgruppe Entomologie des Naturwissenschaftlichen Vereins Kärnten 12: 220-221.
- HÖLZEL E., 1959: Die Insektenfauna der näheren und weiteren Umgebung von St. Paul im Lavanttale. – Carinthia I 149: 652-668.
- HÖLZEL E., 1969: Neues über Heteroptera (Ungleichflügler oder Wanzen) aus Kärnten. – Carinthia II 159./79.: 132-138.
- HÖLZEL E., 1971: Die petrophile Arthropodenfauna der Bergwälder des Sattnitzzuges in Kärnten. Carinthia II, Sonderheft 28: 371-394.
- HOLZINGER W.E., 1995: Wanzen (Heteroptera). In: WIESER C., KOFLER A. & MILDNER P. (Hrsg.): Naturführer Sablatnigmoor. – Verlag des Naturwissenschaftlichen Vereines Kärnten, Klagenfurt, pp. 113-120.
- HOPP I., 1989: Zu einigen systematischen Problemen innerhalb der Lygaeidae (Heteroptera, Insecta). – Verhandlungen Westdeutscher Entomologen Tag 1988: 243-252.
- HORVÁTH G., 1887: Note emitterologiche. Tavole analitica delle specie paleartiche del genere *Stenocephalus*. – Bollettino della Società Entomologica Italiana 19: 278-281.
- HORVÁTH G., 1898: Ordo Hemiptera. – Fauna Regni Hungariae, Budapest, 64 pp.
- HORVÁTH G., 1906: Synopsis Tingitidarum regionis palaearcticae. – Annales Historico-Naturales Musei Nationalis Hungarici 4: 1-117.
- HORVÁTH G., 1923: Faunula hemipterorum lacus Fertő in Hungaria occidentali regionisque adjacentis. – Annales Historico-Naturales Musei Nationalis Hungarici 20: 182-199.
- JANSSON A., 1986: The Corixidae (Heteroptera) of Europe and some adjacent regions. – Acta Entomologica Fennica 47: 1-94.
- JANSSON A., 1995: Family Corixidae LEACH, 1815 - water boatmen. In: AUKEEMA B. & RIEGER C. (eds): Catalogue of the Heteroptera of the Palaearctic Region, vol. 1 – Netherlands Entomological Society, Amsterdam, pp. 26-56.
- JANSSON A., 2000: Interesting collection of Corixidae (Heteroptera) from a fish pond. – Entomologica Fennica 11: 183-184.
- JOHNSON C.G., 1936: The biology of *Leptobyrsa rhododendri* HORVÁTH (Hemiptera, Tingitidae), the Rhododendron lacebug. I. Introduction, bionomics and life history. – Annals of Applied Biology 23: 342-370.
- JOSIFOV M., 1973: Beitrag zur Taxonomie der Gattung *Psallus* FIEB., 1858 (Hemiptera, Heteroptera, Miridae). – Reichenbachia 14(31): 245-248.
- JOSIFOV M., 1981: Die verkannte *Dichrooscytus valesianus* FIEBER, 1861 und der übersehene *Dichrooscytus gustavi* sp. n. aus Mitteleuropa (Heteroptera, Miridae). – Reichenbachia 19(7): 43-45.
- KERZHNER I.M., 1994: On the distribution of *Rhyparochromus phoeniceus* ROSSI and *Rh. sanguineus* DOUGLAS & SCOTT (Heteroptera: Lygaeidae). – Zoosystematica Rossica 3(1): 22.
- KERZHNER I.M., 1995: Infraorder Dipsocoromorpha. In: AUKEEMA B. & RIEGER C. (eds): Catalogue of the Heteroptera of the Palaearctic Region, vol. 1 – Netherlands Entomological Society, Amsterdam, pp. 6-12.
- KERZHNER I.M. & JOSIFOV M., 1999: Cimicomorpha II, Miridae. In: AUKEEMA B. & RIEGER C. (eds): Catalogue of the Heteroptera of the Palaearctic Region, vol. 3 – Netherlands Entomological Society, Amsterdam, pp. 1-576.
- KMENT P. & SMÉKAL A., 2002: Contribution to the faunistics of some rare water bugs (Heteroptera: Nepomorpha, Gerromorpha) in the Czech Republic. – Sborník Prirodovedného klubu v Uh. Hradistí 7: 155-181.

- KOFLER A., 1976: Faunistik der Wanzen Osttirols (Insecta: Heteroptera). – *Carinthia* II 166./86.: 397-440.
- KÜHN G., 1940: Zur Ökologie und Biologie der Gewässer (Quellen und Abflüsse) des Wassergsprengs bei Wien. – *Archiv für Hydrobiologie* 36: 157-262.
- LINDBERG H., 1948: On the insect fauna of Cyprus. – *Commentationes Biologicae* 10(7): 1-175.
- LINDSKOG P., 1995: Infraorder Leptopodomorpha. In: AUKEEMA B. & RIEGER C. (eds): Catalogue of the Heteroptera of the Palaearctic Region, vol. 1 – Netherlands Entomological Society, Amsterdam, pp. 115-141.
- LIS J.A., 1999: Burrower bugs of the Old World - a catalogue (Hemiptera: Heteroptera: Cydnidae). – *Genus* 10(2): 165-249.
- LÖW P., 1886: Rhynchota, Schnabelkerfe. In: BECK G. (Hrsg.): *Fauna von Hernstein in Niederösterreich und der weiteren Umgebung*. – A. Holzhausen, Wien, pp. 28-42.
- LUCANTE M., 1876: Not titled. – *Petites Nouvelles Entomologiques* 2(8): 15.
- LUGHOFER F., 1964: Heteroptera (Wanzen) aus dem Gebiet von Pernau (Ober- und Unterhart), Bezirk Wels, Oberösterreich. – *Naturkundliches Jahrbuch der Stadt Linz* 1964: 115-126.
- LUGHOFER F., 1971: Wanzen aus Oberösterreich (Hemiptera, Heteroptera). Teil I. – *Naturkundliches Jahrbuch der Stadt Linz* 17: 21-61.
- LUGHOFER F., 1972: Wanzen aus Oberösterreich (Hemiptera, Heteroptera). Teil II. – *Naturkundliches Jahrbuch der Stadt Linz* 18: 83-125.
- MADER L., 1922: Das Insektenleben Österreichs. – Hölder-Pichler-Tempsky, Wien, 216 pp.
- MAYR G.L., 1858: Beitrag zur geographischen Verbreitung der Tingideen. – *Verhandlungen der Zoologisch-Botanischen Gesellschaft Wien* 8: 567-572.
- MAYER H., 1953: Bericht über das vorwiegend 1951 an den Ufern des Mauerbaches, Wien NÖ, gesammelte Insektenmaterial, unter besonderer Berücksichtigung der Dipteren. In: PLESKOT G. (Hrsg.): Beiträge zur Limnologie der Wienerwaldbäche. – Wetter und Leben, Sonderheft II, pp. 156-162.
- MELBER A., GÜNTHER H. & RIEGER C., 1991: Die Wanzenfauna des österreichischen Neusiedlerseegebietes (Insecta, Heteroptera). – *Wissenschaftliche Arbeiten Burgenland* 89: 63-192.
- MOULET P., 1994: Synonymies nouvelles dans la famille des Stenocephalidae LATREILLE, 1825 (Heteroptera, Stenocephalidae). – *Nouvelle Revue d'Entomologie* (N.S.) 11(4): 353-364.
- MOULET P., 1995: Hémiptères Coreoidea, Pyrrhocoridae, et Stenocephalidae euro-méditerranéens. – *Faune de France* 81, Paris, 336 pp.
- MÜLLER A.J., 1926: Systematisches Verzeichnis der bisher in Vorarlberg aufgefundenen Wanzen (Hemiptera - Heteroptera LATR.). – *Archiv für Insektenkunde des Oberrheingebietes und der angrenzenden Länder* II(1): 1-39.
- NEILREICH A., 1846: Flora von Wien. – F. Beck's Universitäts-Buchhandlung, Wien, 706 pp.
- OSELLA G., 1970: Contributi alla conoscenza della fauna delle oasi xerotermiche prealpine: i Rinocoti Eterotteri. – *Memoire del Museo Civico di Storia Naturale di Verona* 17: 247-329.
- OSHANIN B., 1906-1910: Verzeichnis der palaearktischen Hemipteren. I. Band. Heteroptera. – St. Petersburg. 1.Lieferung (1906) 1-393, 2.Lieferung (1908) 394-586, 3.Lieferung (1910a) 587-1087.
- OSHANIN B., 1910b: Verzeichnis der palaearktischen Hemipteren. III. Band. Nachträge und Verbesserungen zum I. und II. Bande. – St. Petersburg, 1-217.
- OSHANIN B., 1912: Katalog der paläarktischen Hemipteren (Heteroptera, Homoptera-Auchenorrhyncha und Psylloidea). – Friedländer & Sohn, Berlin, 1-187.

- PANZER G.W.F., 1799: Faunae Insectorum Germaniae initia oder Deutschlands Insecten 72: 1-24.
- PÉRICART J., 1972: Hémiptères Anthocoridae, Cimicidae et Microphysidae de l'Ouest-paléarctique. – Faune de l'Europe et du Bassin méditerranéen 7, Masson & Cie, Paris, 402 pp.
- PÉRICART J., 1983: Hémiptères Tingidae euro-méditerranéens. – Faune de France 69, Paris, 620 pp.
- PÉRICART J., 1987: Hémiptères Nabidae d'Europe occidentale et du Maghreb. – Faune de France 71, Paris, 185 pp.
- PÉRICART J., 1990: Hémiptères Saldidae et Leptopodidae d'Europe occidentale et du Maghreb. – Faune de France 77, Paris, 238 pp.
- PÉRICART J., 1996a: Family Microphysidae DOHRN, 1859 - little pirate bugs, minute bugs. In: AUKEMA B. & RIEGER C. (eds): Catalogue of the Heteroptera of the Palaearctic Region, vol. 2 – Netherlands Entomological Society, Amsterdam, pp. 79-83.
- PÉRICART J., 1996b: Family Anthocoridae FIEBER, 1836 - flower bugs, minute pirate bugs. In: AUKEMA B. & RIEGER C. (eds): Catalogue of the Heteroptera of the Palaearctic Region, vol. 2 – Netherlands Entomological Society, Amsterdam, pp. 108-140.
- PÉRICART J., 1996c: Family Cimicidae LATREILLE, 1802 - bed-bugs. In: AUKEMA B. & RIEGER C. (eds): Catalogue of the Heteroptera of the Palaearctic Region, vol. 2 – Netherlands Entomological Society, Amsterdam, pp. 141-144.
- PÉRICART J., 1999: Hémiptères Lygaeidae euro-méditerranéens. – Faune de France 84A, 468pp., 84B, 453 pp., 84C, 487 pp., Paris.
- PÉRICART J., 2001: Family Lygaeidae SCHILLING, 1829 - Seed-bugs. In: AUKEMA B. & RIEGER C. (eds): Catalogue of the Heteroptera of the Palaearctic Region, vol. 4 – Netherlands Entomological Society, Amsterdam, pp. 35-220.
- PÉRICART J., 2002a: Position systématique de *Cryptostemma medium* REY, 1888 (Het., Cryptostemmatidae). – Bulletin de la Société entomologique de France 107(3): 252.
- PÉRICART J., 2002b: Note sur le genre *Sciocoris* FALLÉN, 1829, et ses représentants euro-méditerranéens (Heteroptera, Pentatomidae). – Bulletin de la Société entomologique de France 107(4): 435-448.
- PÉRICART J. & GOLUB V.B., 1996: Superfamily Tingoidea LAPORTE, 1832. In: AUKEMA B. & RIEGER C. (eds): Catalogue of the Heteroptera of the Palaearctic Region, vol. 2 – Netherlands Entomological Society, Amsterdam, pp. 3-78.
- PFEIFFER A., 1892: Drittes Verzeichnis aus der Schmetterlingsfauna von Kremsmünster. Im Anhang einige Kremsmünsterer Rhynchoten. – Jahresbericht des Vereins für Naturkunde in Österreich ob der Enns zu Linz 21: 1-20.
- POLHEMUS J.T., 1995: Family Notonectidae LATREILLE, 1802 - backswimmers. In: AUKEMA B. & RIEGER C. (eds): Catalogue of the Heteroptera of the Palaearctic Region, vol. 1 – Netherlands Entomological Society, Amsterdam, pp. 63-73.
- PRIESNER H., 1926-1928: Prodromus zur Hemipterenfauna von Oberösterreich. – Zeitschrift für wissenschaftliche Insektenbiologie 21 (1926): 159-173, 22 (1927): 55-65, 23 (1928): 113-120.
- PROHASKA K., 1923: Beitrag zur Kenntnis der Hemipteren Kärntens. – Carinthia II 113./33.: 32-101.
- PROHASKA K., 1932: Zweiter Beitrag zur Kenntnis der Hemipteren Kärntens. – Carinthia II 122./42.: 21-41.
- PUSCHNIG R., 1925: Beitrag zur Kenntnis der Wasserwanzen Kärntens. – Carinthia II 115./35.: 85-109.

- PUTON A., 1869: Catalogue des Hémiptères Hétéroptères d'Europe. – Paris, 1-40.
- PUTON A., 1875: Catalogue des Hémiptères (Hétéroptères, Cicadines et Psyllides) d'Europe et du bassin de la Méditerranée. 2me edn. – Paris, 1-87.
- PUTON A., 1886: Catalogue des Hémiptères (Hétéroptères, Cicadines et Psyllides) de la faune paléarctique, 3me edn. – Caen., 1-100.
- PUTSHKOV P.V. & PUTSHKOV V.G., 1996: Family Reduviidae LATREILLE, 1807 - assassin bugs. In: AUKEEMA B. & RIEGER C. (eds): Catalogue of the Heteroptera of the Palaearctic Region, vol. 2 – Netherlands Entomological Society, Amsterdam, pp. 148-265.
- RABITSCH W., 1999a: Die Wanzen Sammlung (Insecta: Heteroptera) von Johann Moosbrugger (1878-1953) am Naturhistorischen Museum Wien. – Annalen des Naturhistorischen Museum Wien 101B: 163-199.
- RABITSCH W., 1999b: Neue und seltene Wanzen (Insecta, Heteroptera) aus Niederösterreich und Wien. – Linzer Biologische Beiträge 31/2: 993-1008.
- RABITSCH W., 2000: *Dybowskyia reticulata* (DALLAS, 1851), eine neue Baumwanze für Österreich (Heteroptera, Pentatomidae). – Beiträge zur Entomofaunistik 1: 79-80.
- RABITSCH W., 2001a: Notizen zur Wanzenfauna Österreichs (Insecta, Heteroptera). – Linzer Biologische Beiträge 33/1: 83-86.
- RABITSCH W., 2001b: Neue und seltene Wanzen (Insecta, Heteroptera) aus Niederösterreich und Wien. Teil 2. – Linzer Biologische Beiträge 33/2: 1057-1075.
- RABITSCH W., 2002a: Die Arten der Gattung *Tuponia* (Heteroptera: Miridae) im östlichen Österreich. – Beiträge zur Entomofaunistik 3: 97-102.
- RABITSCH W., 2002b: Die Wanzenfauna (Heteroptera) der Sandberge bei Oberweiden im Marchfeld (Niederösterreich). – Beiträge zur Entomofaunistik 3: 141-174.
- RABITSCH W., 2002c: *Deraeocoris flavilinea* (A. COSTA, 1862) erstmals in Österreich festgestellt (Heteroptera, Miridae). – Beiträge zur Entomofaunistik 3: 181-183.
- RABITSCH W., 2003: Die Wanzen Sammlung am Landesmuseum Kärnten. – Rudolfinum, Jahrbuch des Landesmuseum Kärnten 2002: 451-480.
- RABITSCH W. & ADLBAUER K., 2001: Erstnachweis und bekannte Verbreitung von *Oxycarenus lavaterae* (FABRICIUS, 1787) in Österreich (Heteroptera: Lygaeidae). – Beiträge zur Entomofaunistik 2: 49-54.
- RABITSCH W. & ZETTEL H., 2000: Zur Wasserwanzenfauna (Heteroptera: Gerromorpha und Nepomorpha) des nördlichen Österreich. – Linzer Biologische Beiträge 32/2: 1257-1268.
- RESSL F., 1962: Die Cimicina (Heteroptera) eine lokalfaunistische Studie aus dem Verwaltungsbezirk Scheibbs (NÖ). – Zeitschrift der Arbeitsgemeinschaft österreichischer Entomologen 14: 87-94.
- RESSL F., 1969: Zur Wasserwanzenfauna des Bezirkes Scheibbs. – Zeitschrift der Arbeitsgemeinschaft österreichischer Entomologen 21: 69-73.
- RESSL F., 1983: Naturkunde des Bezirkes Scheibbs, Tierwelt (2). – Radinger, Scheibbs, 584 pp.
- RESSL F., 1995: Naturkunde des Bezirkes Scheibbs, Tierwelt (3). – Botanische Arbeitsgemeinschaft am Biologiezentrum / OÖ Landesmuseum Linz, 443 pp.
- REUTER O.M., 1875: Hemiptera Heteroptera Austriaca, mm. Maji-Augusti 1870 a J.A.Palmén collecta. – Verhandlungen der Zoologisch-Botanischen Gesellschaft Wien 25: 83-88.
- REUTER O.M., 1878: Hemiptera Gymnocerata Europae. I. – Helsingfors, 1-187.
- REUTER O.M., 1881: Analecta hemipterologica. Zur Artenkenntniss, Synonymie und geographischen Verbreitung palaearktischer Heteropteren. – Berliner Entomologische Zeitschrift 25: 155-196.

- REUTER O.M., 1883: Hemiptera Gymnocerata Europae. III. – Helsingfors, 313-496.
- REUTER O.M., 1885: Synonymische Bemerkungen über Hemipteren. – Berliner Entomologische Zeitschrift 29: 39-47.
- REUTER O.M., 1902a: Capsidae novae mediterraneae descriptae. IV. – Öfversigt af Finska Vetenskapssocietetens Förhandlingar 44: 51-70.
- REUTER O.M., 1902b: Miscellanea Hemipterologica. – Öfversigt af Finska Vetenskapssocietetens Förhandlingar 44: 141-188.
- REUTER O.M., 1904: Capsidae palaearcticae novae et minus cognitae descriptae. – Öfversigt af Finska Vetenskapssocietetens Förhandlingar 46: 1-18.
- REUTER O.M., 1905: Monographia generis Heteropterorum *Phimodera* GERM. – Acta Societatis Scientiarum Fennicae 33(8): 1-51.
- REUTER O.M., 1908: Charakteristik und Entwicklungsgeschichte der Hemipteren-Fauna (Heteroptera, Auchenorrhyncha und Psyllidae) der palaearktischen Coniferen. – Helsingfors, 129 pp.
- REUTER O.M., 1913: Ausführliche Beschreibungen einiger paläarktischen Hemipteren. – Öfversigt af Finska Vetenskapssocietetens Förhandlingar 55: 1-111.
- RIBES J., 1990: *Miscellània hemipterològica ibèrica* (Heteroptera). – Sessio d'Entomologia de la Institució Catalana d'Història Natural i la Societat Catalana de Lepidopterologia 6: 19-35.
- RIBES J. & GOULA M., 1986: Dr. E. Wagner's entomological collection: Miridae (Insecta, Heteroptera) preserved in the Zoological Museum Hamburg (FRG). – Mitteilungen aus dem Hamburger Zoologischen Museum und Institut 8: 243-335.
- RIBES J. & SCHMITZ G., 1992: Révision du genre *Brachynema* MULSANT & REY, 1852 (Heteroptera, Pentatomidae, Pentatominae). – Bulletin et Annales de la Société (Royale) Entomologique de Belgique 128: 105-166.
- RIDER D.A., ZHENG L.Y. & KERZHNER I.M., 2002: Checklist and nomenclatural notes on the Chinese Pentatomidae (Heteroptera). II. Pentatominae. – Zoosystematica Rossica 11: 135-153.
- RIEGER C., 1972: Zu *Rhynocoris* HAHN, 1833. – Deutsche Entomologische Zeitschrift, N.F. 19: 15-20.
- RIEGER C., 1977: *Psallus weberi* n. sp. aus Südwestdeutschland (Het. Miridae). – Nachrichtenblatt bayerischer Entomologen 26: 4-6.
- RIEGER C., 1993: *Rhyparochromus sanguineus* DOUGLAS & SCOTT, eine verkannte Lygaeiden-Art (Heteroptera). – Entomologische Zeitschrift 103: 153-157.
- RIEGER C., 1996a: *Strongylocoris niger* HERRICH-SCHÄFFER - ein Beitrag zur Verbreitung und Wirtspflanzenbindung (Heteroptera: Miridae). – Entomologische Zeitschrift 106: 336-340.
- RIEGER C., 1996b: Verzeichnis der bisher in Baden-Württemberg (Bundesrepublik Deutschland) aufgefundenen Wanzen (Insecta: Heteroptera) 1. Fassung. – Jahreshefte der Gesellschaft für Naturkunde in Württemberg 152: 231-265.
- ROSENZWEIG V. YE, 1997: Revised classification of the *Calocoris* complex and related genera (Heteroptera: Miridae). – Zoosystematica Rossica 6: 139-169.
- ROUBAL J., 1965: Vierter Beitrag zum Verzeichnis der slowakischen Heteropteren. – Sb. prir. vedy slovensk. nar. Muz. 11: 84-87.
- SABRANSKY H., 1912: Beiträge zur Kenntnis der Hemipterfauna Steiermarks. – Mitteilungen des naturwissenschaftlichen Verein Steiermark 48: 308-318.
- SCHLEICHER W., 1861: Die Rhynchoten der Gegend von Gresten. – Verhandlungen der Zoolo-gisch-Botanischen Gesellschaft Wien 11: 315-322.

- SCHREMMER F., 1960: Die Umgebung von Hainburg. – Exkursionsführer zum XI. Internationalen Entomologenkongreß Wien, pp. 35-42.
- SCHULTES J.A., 1802: Kleine Fauna und Flora von der südwestlichen Gegend um Wien bis auf den Gipfel des Schneeberges. – J.V.Degen, Wien, 127 pp.
- SCHUSTER G., 1990: Beitrag zur Wanzenfauna Schwabens (Insecta, Heteroptera). – 50. Bericht der naturforschenden Gesellschaft Augsburg 192: 1-35.
- SCHUSTER G., 1995: Die Wanzenfauna des Naturschutzgebietes "Hundsmoor" bei Westerheim im Allgäu (Insecta, Heteroptera). – 55. Bericht der naturforschenden Gesellschaft Augsburg 204: 3-25.
- SIENKIEWICZ I., 1964: The Catalogue of the "A.L. Montandon collection" of palaearctic Heteroptera preserved in the "Grigore Antipa" Museum of Natural History, Bucharest. – Bucharest, 146 pp.
- SIXL W., 1975: Zum Problem der verwilderten Stadttauben (Aves, Columbiformes, Columidae). – Mitteilungen der Abteilung Zoologie am Landesmuseum Joanneum 4(1): 87-97.
- SLATER J.A., 1964: A catalogue of the Lygaeidae of the world. I & II. – Waverly Press, Baltimore, 1668 pp.
- STEHLIK J.L., 1962: Interesting finds of Heteroptera in Moravia and Slovakia IV. – Acta Musei Moraviae, Scientiae Naturales 47: 125-134.
- STEHLIK J.L., 1973: New records of the Heteroptera from Moravia and Slovakia. – Acta Musei Moraviae, Scientiae Naturales 56-57: 171-182.
- STEHLIK J.L., 1995: New records of Heteroptera from the Czech Republic. – Acta Musei Moraviae, Scientiae Naturales 79: 197-198.
- STEHLIK J.L., 2002: Results of the investigations of Heteroptera in Slovakia made by the Moravian Museum (Tingidae). – Acta Musei Moraviae, Scientiae Biologicae 87: 151-200.
- STEHLIK J.L. & VAVRINOVÁ I., 1993: Results of the investigations on Heteroptera in Slovakia made by the Moravian Museum (Pentatomoidae II). – Acta Musei Moraviae, Scientiae Naturales 77(1992): 157-208.
- STEHLIK J.L. & VAVRINOVÁ I., 1997: Results of the investigations on Heteroptera in Moravia made by the Moravian Museum (Lygaeidae I). – Acta Musei Moraviae, Scientiae Naturales 81(1996): 231-298.
- STEHLIK J.L. & VAVRINOVÁ I., 1998: Results of the investigations on Heteroptera in Slovakia made by the Moravian Museum (Reduviidae, Phymatidae, Nabidae: Prostemmatinae). – Acta Musei Moraviae, Scientiae Biologicae 82(1997): 109-126.
- STICHEL W., 1924: Die Hemipterensammlung des Zoologischen Institutes in Berlin. – Internationale Entomologische Zeitschrift 17(20): 155-157, 17(21): 165-166, 17(22): 175-176, 17(23): 186-187, 17(24): 195-197.
- STICHEL W., 1937: Illustrierte Bestimmungstabellen der deutschen Wanzen. Lieferung 13. – Stichel, Berlin-Hermsdorf, 363-394.
- STICHEL W., 1938a: Illustrierte Bestimmungstabellen der deutschen Wanzen. Lieferung 14. – Stichel, Berlin-Hermsdorf, 395-426.
- STICHEL W., 1938b: Illustrierte Bestimmungstabellen der deutschen Wanzen. Lieferung 15. – Stichel, Berlin-Hermsdorf, 427-458.
- STICHEL W., 1957-62: Illustrierte Bestimmungstabellen der Wanzen. II. Europa. (Hemiptera Heteroptera Europae). 4 Bände, (1957): 1-96, (1958): 97-224, (1959): 225-384, (1960): 385-544, (1961): 545-768, (1962): 769-838 – Stichel, Berlin-Hermsdorf.
- STROBL G., 1900: Steirische Hemipteren. – Mitteilungen des Naturwissenschaftlichen Verein für die Steiermark 36(1899): 170-224.

- TAMANINI L., 1947: Contributo ad una revisione del genere *Velia* LATR. e descrizione di alcune specie nuove (Hemiptera Heteroptera: Veliidae). – Memorie della Società Entomologica Italiana 26: 17-74.
- TAMANINI L., 1961: Ricerche zoologiche sul Massiccio del Pollino (Lucania-Calabria). XXX. Emitteri Eterotteri (Hemiptera Heteroptera). – Annuario dell’Instituto e Museo di Zoologia dell’Università di Napoli 13: 1-128.
- TAMANINI L., 1974: Corologia e caratteri di *Eremocoris* Italiani e mediterranei (Hemiptera, Heteroptera, Lygaeidae). – Bollettino della Società Entomologica Italiana 106: 155-165.
- TAMANINI L., 1982: Gli Eterotteri dell’Alto Adige (Insecta: Heteroptera). – Studi Trentini di Scienze Naturali 59: 65-194.
- THOMAS D.B., 1994: Taxonomic synopsis of the Old World Asopine genera (Heteroptera: Pentatomidae). – Insecta Mundi 8: 145-212.
- VÁSÁRHELYI T., 1988: New palaearctic *Aradus* species in the *betulae*-group (Heteroptera, Aradidae). – Annales Historico-Naturales Musei Nationalis Hungarici 80: 57-63.
- WAGNER E., 1942: *Orthotylus beieri* n. sp., eine neue deutsche Miridenart (Hemipt. Heteropt.). – Mitteilungen der Deutschen Entomologischen Gesellschaft 11: 75-77.
- WAGNER E., 1943: 21. Familie Miridae DOHRN, 1859. In: GULDE J. (Hrsg.): Die Wanzen Mitteleuropas 9 – Frankfurt a.M., pp. 1-160.
- WAGNER E., 1944: *Megalocoleus hungaricus* n. sp., eine neue Miridenart aus Ungarn (Het.). – Sborník Entomologického Oddelení Zemského Muzea v Praze 21/22: 151-152.
- WAGNER E., 1945: 21. Familie Miridae DOHRN, 1859. In: GULDE J. (Hrsg.): Die Wanzen Mitteleuropas 10 – Frankfurt a.M., pp. 161-320.
- WAGNER E., 1951: *Strongylocoris atrocoeruleus* FIEB. - eine bisher übersehene deutsche Miridenart (Hem. Heteropt.). – Mitteilungen der Münchner Entomologischen Gesellschaft 41: 241-244.
- WAGNER E., 1952: Blindwanzen oder Miriden. Die Tierwelt Deutschlands, 41. Teil. – Gustav Fischer, Jena, 218 pp.
- WAGNER E., 1954: Ein Beitrag zur Systematik der Gattung *Phytocoris* FALL. (Hem. Heteropt. Miridae). – Nachrichtenblatt des Naturwissenschaftlichen Museums Aschaffenburg 42: 1-44.
- WAGNER E., 1956: 21. Familie: Miridae (Capsidae auct.), Fortsetzung. In: GULDE J. (Hrsg.): Die Wanzen Mitteleuropas 11 – Frankfurt a.M., pp. 321-480.
- WAGNER E., 1961: Heteroptera - Hemiptera. In: BROHMER P., EHRMANN P. & ULMER G. (Hrsg.): Die Tierwelt Mitteleuropas. – Leipzig, 173 pp.
- WAGNER E., 1965: Über einige bemerkenswerte Heteropteren aus dem Gebiet des Neusiedlersees. – Wissenschaftliche Arbeiten Burgenland 32: 116-124.
- WAGNER E., 1966: Wanzen oder Heteropteren. I. Pentatomorpha. Die Tierwelt Deutschlands, 54. Teil. – Gustav Fischer, Jena, 235 pp.
- WAGNER E., 1967: Wanzen oder Heteropteren. II. Cimicomorpha. Die Tierwelt Deutschlands, 55. Teil. – Gustav Fischer, Jena, 179 pp.
- WAGNER E., 1974: Die Miridae HAHN, 1831 des Mittelmeerraumes und der Makaronesischen Inseln (Hemiptera, Heteroptera), Teil 2. – Entomologische Abhandlungen des Staatlichen Museums für Tierkunde Dresden 39: 1-421.
- WAGNER E. & WEBER H.H., 1964: Hétéroptères Miridae. – Faune de France 67, Paris, 589 pp.

- WALKER F., 1867-1873: Catalogue of the specimens of heteropterous - Hemiptera in the collection of the British Museum. Part I (1867a): 1-240, II (1867b): 241-417, III (1868): 419-599, IV (1871): 1-211, V (1872): 1-202, VI (1873a): 1-210, VII (1873b): 1-213, VIII (1873c): 1-220 – British Museum (Natural History), London.
- WALTON G.A., 1943: The natural classification of the British Corixidae (Hemiptera). – Transactions of the Society of British Entomologists 8: 155-168.
- WERNER F., 1927: Zur Kenntnis der Fauna einer xerothermischen Lokalität in Niederösterreich (unteres Kamptal). – Zeitschrift für Morphologie und Ökologie der Tiere 9: 1-96.
- WERNER F., 1934: Beiträge zur Kenntnis der Tierwelt von Ost-Tirol II: Insekten, Spinnen und Krebstiere. – Veröffentlichungen des Museums Ferdinandeum Innsbruck 13: 357-388.

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