

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 hellensii* (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 hellensii* (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. AUKEMA & 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 Staatssammlung 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).

Arctocorisa 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 zebei GÜNTHER, 1997: RABITSCH (2001b).

Strongylocoris luridus (FALLÉN, 1807): OSHANIN (1910), STICHEL (1937), FRANZ & WAGNER (1961), LUGHOFFER (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 (POPPIUS, 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).
Oxycarenum (Oxycarenum) 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.

***Glaenocoris 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 *Glaenocoris propinqua* (FIEBER, 1860). The same is true for the record of STICHEL (1937), which was not repeated later (STICHEL 1957-62). *Glaenocoris cavifrons*, recently elevated from subspecific rank by JANSSEN (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 (JANSSEN 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 JANSSEN (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 (JANSSEN 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 JANSSEN (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 JANSSEN (1995) (AU?) and excluded by GÜNTHER & SCHUSTER (2000a). However, a verified record from Vienna (Wienerberg, NHMW) was published in the distribution map by JANSSEN (1986) (Janssen, 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, "Legeralm 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 henshii* (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 *Monanthia 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 "Österreich" 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 today's 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***Myrmedobia 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.

***Myrmedobia 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 tenral 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 DOBŠÍK (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. Dobšík no Austrian specimens were found so far, so it most probably is a case of misidentification (Stehlik, 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).

***Dichroscytus 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-SCHIEDING (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.

***Plagiotylus 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 AUKEMA & RIEGER (2001:345) should be deleted.

***Dasyscytus 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 AUKEMA & 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 Südwestabhange 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 palaearctic 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. melanocephalus* (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. Anthcoridae***Anthcoris sarothamni* 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). *Anthcoris sarothamni* lives on *Sarothamnus 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 northwestern Africa (Algeria, Morocco, Tunisia) (PUTSHKOV & PUTSHKOV 1996). Also, southern European records (Italy, e.g. GREDLER 1870) are considered as confusions with *P. crasipes* (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 misidentifications 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 collections (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 misidentification 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). However, colouration is not of discriminatory value and records of *R. rubricus* for AU (e.g. GREDLER 1870, STROBL 1900, PRIESNER 1928, FRANZ & WAGNER 1961, LUGHOFFER 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. iracundus* (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 calcarous 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, "mediterrane 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) (STEHLÍK & 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. orgiani* (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. Graber, 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 cribratissimus* (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 LUGHOFFER (1964, 1972) from Upper Austria and repeated by PÉRICART (1999) and GÜNTHER & SCHUSTER (2000a). Specimens in the coll. Lughoffer (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 PRIESNER (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 OSHANIN (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 "obtusum" 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. *lepida*) 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-SCHIEDING 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 pruinus* (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", today's Prevalje in Slovenia. *Dicranocephalus pruinus* was synonymized with *D. marginicollis* by MOULET (1994).

Fam. Cydnidae

Byrsinus flavicornis (FABRICIUS, 1794)

This species has a dispersed distribution in Europe and is mentioned erroneously for AU by GÜNTHER & SCHUSTER (2000a). *Byrsinus flavicornis* 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. Putton". 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.

***Ancyrosoma 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 (Gorizia 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 Gorizia 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 Ostirol. 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 nigridentis* (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*, *Oxycaenus lavaterae*, *Arocatus longiceps*).

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