

Notes on synonymy and nomenclature of Palaearctic Heteroptera

I.M. Kerzhner

I.M. Kerzhner. 1993. Notes on synonymy and nomenclature of Palaearctic Heteroptera. *Zoosystematica Rossica*, 2(1): 97-105.

The following new synonymies are established: NABIDAE: *Himacerus apterus* (Fabricius) = *Nabis dis* China; *Nabis nigrovittatus* J.Sahlberg = ?*N. flavomarginatus* var. *sibiricus* Reuter; *Alloeorhynchus putoni* Kirkaldy = *Metastemma serripes* Costa (nomen oblitum; not a synonym of *A. flavipes* Fieber); MIRIDAE: *Polymerus unifasciatus* Fabricius = ? *Phytocoris*? *galii* Gistel; *P. nigrita* Fallén = ? *Phytocoris*? *galii* var. *arvensis* Gistel; *Pinalitus rubricatus* Fallén = *Phytocoris testaceus* Schilling; *Camptozygum aequale* Villers = ? *Phytocoris upupa* Gistel; *Mecomma ambulans* Fallén = *Capsus gramineti* Gistel; *Globiceps* subg. *Kelidocoris* Kolenati = subg. *Paraglobiceps* Wagner; *Pilophorus erraticus* Linnavuori = *P. alni* Josifov; *Paralaemocoris anabasis* Linnavuori = *P. anabaseus* Kerzhner; *Macrotylus dimidiatus* Jakovlev = ? *Macrocoleus soror* Reuter; *Psallus* subg. *Apo-cremnus* Fieber = subg. *Mesopsallus* Wagner; *P. haematodes* Gmelin = ? *Phytocoris*? *roralis* Gistel; *Campylomma annulicorne* Signoret = ? *Capsus coerulescens* Scholtz; PIESMATIDAE: *Piesma capitatum* Wolff = ? *Tingis apiaster* Gistel; LYGAEIDAE: *Artheneidea* Kiritshenko = *Artheneis* subg. *Thenareis* Stichel; *Heterogaster cathariae* Geoffroy = *H. xinjiangensis* Zou & Zheng; *H. distincta* Jakovlev = *H. albida* Kiritshenko; ACANTHOSOMATIDAE: *Elasmucha fieberi* Jakovlev = *Cimex*? *scansor* Gistel (nomen oblitum); SCUTELLERIDAE: *Phimodera nigra* Reuter, stat. n. (upgraded from varietal rank) = *Ph. carinata* var. *pallida* Reuter = *Ph. klementzorom* Kerzhner; PENTATOMIDAE: *Anthemina eurynota remota* Horváth, stat. n. (downgraded from specific rank) = *A. e. tamaninii* Kerzhner; *Capnoda nigroaenea* Jakovlev (non sensu Kerzhner, 1972) = *C. altaica* Kerzhner; *Eurydema ornata* Linnaeus = *Cimex*? *umbralis* Gistel; *Rhacognathus punctatus* Linnaeus = *Cimex avenicola* Gistel. The following taxa are restored as good species: LYGAEIDAE: *Geocoris chinensis* Jakovlev, *G. mongolicus* Horváth; PENTATOMIDAE: *Capnoda maculaalba* Kiritshenko. A key to species of *Heterogaster* from Russia and adjacent countries is given. Lectotypes of some species are designated, nomenclature of some taxa discussed, distribution of several species precised.

I.M. Kerzhner, Zoological Institute, Russian Academy of Sciences, Universitetskaya nab. 1, St.Petersburg 199034, Russia.

Introduction

The paper contains notes on Heteroptera belonging to seven families. Nomenclatural and bibliographic notes on Miridae are connected with preparation of the corresponding part of the catalogue of Palaearctic Heteroptera. An effort is made to clarify identity of some species described by Schilling (1837), Scholtz (1846), and Gistel (1857); among the heteropteran species described in the latter work only *Lygaeus? cunicularis* (p. 68) and *L. ? perhibernans* (p. 83) remain unclarified.

The following abbreviations are used for institutions in which the examined material is conserved (curators are indicated in parentheses): BMNH – Natural History Museum, London (Dr. W.R. Dolling); HNM – Hungarian National Museum of Natural History, Budapest (Dr. T. Vászárhelyi); MCG – Museo civico di

storia naturale, Genova (Dr. R. Poggi); NMW – Naturhistorisches Museum, Wien (the late Prof. A. Kaltenbach); RL – collection of R. Linnavuori, Turku; USNM – U.S. National Museum, Smithsonian Institution, Washington, D.C. (Dr. Th.J. Henry); ZIN – Zoological Institute, Russian Academy of Sciences, St. Petersburg; ZIS – Zoological Institute, Bulgarian Academy of Sciences, Sofia (Dr. M. Josifov); ZMH – Zoological Museum, Finnish Museum of Natural History, Helsinki (Dr. A. Jansson); ZMT – Zoological Museum, Finnish University of Turku (Dr. M. Saaristo and Dr. V. Rinne).

Family NABIDAE

Himacerus apterus (Fabricius, 1794) = *Nabis* (*Aptus*) *dis* China, 1925, syn. n. I examined the holotype of *N. dis* (brachypterous female from Yunnan, BMNH) and

two other specimens from South China, a macropterous male from Yunnan and a macropterous female from Sichuan (both in USNM). These specimens differ from *H. apterus* in well-developed spotted pattern on pronotum and hemelytra and numerous dark rings on antennal segment II and tibiae; besides, the macropterous specimens are very large (body length ♂ 12.5, ♀ 12 mm, pronotum width about 3 mm) and with hemelytra surpassing well the apex of abdomen. However, some traces of the coloration characteristic of these specimens are found in specimens from other regions. For example, dark rings on antennal segment II additional to the dark brown apical ring are found in some specimens from Europe and from the Amur basin, often at one side only. In all other respects, specimens from South China are similar to specimens from northern localities. It is not excluded that *H. fuscopennis* Ren, 1981 (East Tibet) may also be a synonym of *H. apterus*.

Nabis (*Dolichonabis*) *nigrovittatus* J.Sahlberg, 1878 = ? *Nabis flavomarginatus* var. *sibiricus* Reuter, 1875, syn. n. Reuter (1875d, 1879) described *N. flavomarginatus* var. *sibiricus* from one macropterous male collected in the vicinity of Irkutsk. The holotype was found neither in ZMN nor in ZMT. Reuter mentioned as characteristic of var. *sibiricus* the feebly bent stalk of paramere and prevalence of yellow colour on male genital segment; both characters support the synonymy supposed above: in all species of *Nabis* known from the vicinity of Irkutsk, except *N. nigrovittatus*, the stalk of paramere is strongly bent; male genital segment of *N. flavomarginatus* is with prevalence of black colour.

Nabis meridionalis tauricus Kerzhner, 1963. Lectotype (here designated): ♂, Simferopol', Crimea, 6.VI. 1899 (Bazhenov), ZIN.

Alloeorhynchus putoni Kirkaldy, 1901 = *Metastemma serripes* Costa, 1864 (nomen oblitum), syn. n. *M. serripes* is described from Sicily, where only one species of *Alloeorhynchus*, *A. putoni*, occurs (Faracci & Rizzotti Vlach, 1987; Péricart, 1987). The original description and figure of *M. serripes* agree well with this species: membranes of hemelytra are overlapping in the brachypterous form. Hence, *M. serripes* is not a junior synonym of *A. flavipes* (Fieber, 1836) as was accepted by Garbiglietti (1870) and all later authors, but a senior synonym of *A. putoni*. In the preceding 50 years, the name *A. putoni* was used as valid no less than in 12 papers of 10 authors, therefore it deserves conservation. I examined the holotype of *A. putoni*, a male labelled "Tunis, M. v. d. B" and "Geo. W. Kirkaldy collection", and two female paratypes from L'Arba and Oued Riou, all in the USNM. I examined also the specimen from Corfu (in ZMT) recorded by Linnavuori (1953) as *A. putoni*; it belongs to *A. flavipes*.

Notes on distribution of some species. The following records are, in my opinion, based on mislabelled specimens: Lindberg's (1932) records of *Nabis lineatus* Dahlbom, *N. limbatus* Dahlbom, and *N. fesus* Linnaeus from South Spain (all species not found later in this region; one of specimens identified as *N. fesus* proved to be *N. pseudoferus pseudoferus* Remane, a subspecies replaced in South Spain by *N. p. ibericus* Remane); Strawiński's (1959) record of *N. ericetorum* Scholtz from Bulgaria (according to M. Josifov, *Calluna vulgaris*, the plant with which the bug is connected in

eastern part of its range, has a very restricted distribution in Bulgaria and does not occur in the area from which Strawiński recorded the bug). Protić's (1986a, 1986b) record of *Prostemma bicolor* Rambur from Yugoslavia, judging from the photograph of the specimen, is based on misidentification of *P. sanguineum* Rossi. Records of *Himacerus apterus* Fabricius, *Nabis limbatus* Dahlbom, *N. rugosus* Linnaeus, *N. brevis* Scholtz, *N. ericetorum* Scholtz from Algeria (Fokker, 1899; also in later catalogues) are based on mislabelled specimens originating from Europe (see Péricart, 1983, p. 106, concerning the specimens of Schmiedeknecht).

Family MIRIDAE

Sequence of publication of some works. Some works of Reuter and Poppius are published in the same year. It is important to clarify the sequence in which they are published to give a correct reference to the new names established in these works and in some cases to decide what species and in what way was fixed as type.

Reuter, 1875a, 1875b, 1875c. The paper 1875b is a dissertation with date of defence (27 May) indicated on the title page. This date can be accepted as the date of publication. The work consists of two parts, the second part (190 pages) is printed from the same set as pages 17-206 of 1875a, except that running titles are absent and pagination and signatures different. However signature "5" (p. 65 in 1875a, p. 49 in 1875b) remains unchanged, which confirms the earlier printing of 1875a. Reuter 1875c was apparently published after 27.V, because at 31.III the last issue of the preceding volume of the periodical was still not published (see *Öfv. Vet. Akad. Förh.*, 32(4): 46). *Tuponia* was described (as a subgenus of *Megalodactylus*) in Reuter 1875b. *Megalodactylus* (*Tuponia*) *lethierryi* Reuter, fixed by Kirkaldy (1906) as type species of *Tuponia*, was listed in *Tuponia* in 1875b, but made available in 1875c; therefore it was ineligible for type fixation. I designate here as type species *Capsus tamaricis* Perris, 1857; this action does not change the current subgeneric nomenclature within the genus.

Reuter, 1896a, 1896b, 1896c. The paper 1896a is published 30.IX (indicated on p. 255); 1896c is published later, because it contains references to 1896a (see p. 148-150). 1896b does not contain references to either 1896a or 1896c and is not mentioned in 1896c; I accepted that it was published between 1896a and 1896c. It follows that five new genera of Mirinae (*Actinonotus*, *Adelphocoris*, *Camptozygum*, *Eremobiellus*, *Trichophoronus*) are established in 1896b, with type species fixed by original designation.

Poppius, 1915a, 1915b, 1915c. Dates of publication are March for 1915a (indicated on cover), 14.VII for 1915b (indicated in *Phil. J. Sci.*, 10(6): 405, contrary to "January" on cover of pt. 1), and 15.VII for 1915c (indicated after Contents). *Eupachypeltis* becomes available in Poppius, 1915a (see Code, Art. 12b(5)) with two new species, *E. flavicornis* and *E. pilosus*. The latter name becomes available in result of comparison of *E. pilosus* with *E. flavicornis*; *E. pilosus* was subsequently (Poppius, 1915b) fixed as type species. By the same reason *Cimicicapsus* becomes available in Poppius, 1915a with two new species, *C. parviceps* and

C. elongatus, the first one designated here as type species because designation of *C. brunneus* by Poppius (1915c) is invalid.

Fieber, 1858. The paper was published in two successive numbers of the journal. In some new genera established in the first part were listed names of species described later in the second part; they cannot be regarded as originally included species. It follows that type species of *Atractotomus*, *Tinicephalus*, *Macrolophus*, and *Malacocoris* were fixed by monotypy, and type species of *Pachypterna*, *Cyphodema*, *Xenocoris*, *Auchenocrepis*, and *Macrotylus* were fixed by subsequent monotypy (in the second part of Fieber's work). Fieber included in *Brachyarthrum* "*limitatum* Fieb. (ob *nigriceps* Boh.)" and "*pinetellum* Zett.". The first two nominal species are ineligible for type fixation: *limitatum* at that time was a nomen nudum and *nigriceps* was doubtfully included. The only remaining species, *Phytocoris pinetella* Zetterstedt, which under the Code would be the type species of *Brachyarthrum* by monotypy, is now placed in *Plesiodema* Reuter, 1875; besides, this species was misidentified by Fieber, his material belonged to *Orthotylus fuscescens* (Kirschbaum, 1856). The case should be referred to the Commission for designation of type species under the plenary powers.

Polymerus unifasciatus (Fabricius, 1794) = ? *Phytocoris* ? *galii* Gistel 1857, syn. n. Gistel's (1857, p. 58) description is: "P[hytcoris] niger aureo-pubescent, thoracis margine postico, scutelli apice flavis; macula elytrorum flavo-nigroque variorum apicis luteo-rufa interdum deficiente". The type locality (Germany) was indicated after the description of a variety (see below). The description, the food plant (judging from the specific name), and the comparison of the variety (see below) with [Wolff's] *Miris semiflavus* (= *Polymerus unifasciatus*) show that Gistel described a species of *Polymerus* subg. *Poeciloscytus*. Four species of this subgenus are living in Germany on *Galium*, namely *P. brevicornis* Reuter, 1878, *P. unifasciatus*, *P. microphthalmus* (Wagner, 1952), and *P. palustris* (Reuter, 1905). Gistel's description is more or less fitting all of them. As Gistel's types are lost, I gave preference to the synonymy with the oldest name.

Polymerus nigrita (Fallén, 1807) = ? *Phytocoris* ? *galii* var. *arvensis* Gistel, 1857, syn. n. Gistel's (1857, p. 58) description is: "P[hytcoris] thorace scutelloque miris semiflavus immaculatis atris. — Germania". The description fits *Polymerus* s. str. with 3 species in Germany. I gave preference to the synonymy with the oldest name.

Pinalitus rubricatus (Fallén, 1807) = *Phytocoris testaceus* Schilling, 1837, syn. n. Schilling's (1837, p. 83) description is: "Hellbraun; Flügeldecken fast doppelt so lang als Hinterleib; die Spitze des Flügelanhangs roth; Länge des *Ph. pratensis*, aber nur halb so breit als dieser. Wohnt in Birkenwäldern um Breslau". It fits well *P. rubricatus*.

Taylorilygus apicalis (Fieber, 1861), nom. valid. = *T. pallidulus* (Blanchard, 1852), nom. praecoc. *Phytocoris pallidulus* Blanchard, 1852 is a junior primary homonym of *Ph. pallidulus* Dahlbom, 1851 (= *Plagiognathus albipennis* Fallén, 1829) and thus *T. pallidulus* cannot be used as a valid name.

Campotozygum aequale (Villers, 1789) = ? *Phytocoris upupa* Gistel, 1857, syn. n. Gistel's (1857, p. 60) description is: "P[hytcoris] niger nitidus capite antennisque flavis; thorace elytrisque immaculatis nigris puncto ante membranam flavo; femorum basi nigra, apice nigro punctato. Germania". A number of species occurring in Germany have shining black bodies with yellow heads (e. g. *Strongylocoris leucocephalus*, *Monalocoris filicis*, melanistic forms of some *Deraeocoris*), but only in *C. aequale* are the antennae yellow and femora with black markings as described by Gistel. However, it remains unclear what he meant by "puncto ante membranam flavo" (slightly paler base of cuneus?).

Phytocoris (*Ktenocoris*) *tauricus* Kerzhner, 1964. Lectotype, here designated: ♂ Koktebel', Crimea, 8[-21] J.VI.1914 (Golovleva; Kiritschenko's collection), ZIN. Paralectotypes: 2 ♂, same data.

Phytocoris (*Ktenocoris*) *platydens* Kerzhner, 1964. Lectotype, here designated: ♂, Khodzhal-Makhi, Darginsk Distr. (now in Levashi Distr.), Dagestan, 27.IX.1932 (Rjabov), ZIN. Paralectotypes: 34 ♂, same locality and collector, 29.VI.1926 and 22-27.IX.1932, ZIN.

Phytocoris (*Ktenocoris*) *rjabovi* Kerzhner, 1964. Lectotype, here designated: ♂, Khodzhal-Makhi, Darginsk Distr. (now in Levashi Distr.), Dagestan, 20.VI.1944 (Rjabov), ZIN. Paralectotypes: 4 ♂, Sulak River, Dagestan, 5.X.1934 (Rjabov), ZIN; 6 ♂ (one of them destroyed, except genitalia), Akhty, Samur Distr. (now in Akhty Distr.), Dagestan, 6-8.IX.1926 and 27.VIII.1933 (Rjabov), ZIN.

Phytocoris (*Ktenocoris*) *caucasicus* Kerzhner, 1964. Lectotype, here designated: ♂, Akhty, Samur Distr. (now in Akhty Distr.), Dagestan, 27.VIII.1933 (Rjabov), ZIN. Paralectotypes: 3 ♂, same locality and collector, 6-7.IX.1926 and 27.VIII.1933, ZIN.

Mecomma ambulans (Fallén, 1807) = *Capsus gramineti* Gistel, 1857, syn. n. Gistel's (1857, p. 73) description is: "C[apsus] niger nitidus, apterus; elytris abbreviatis subcoriaceis; pedibus pallidis; antennis nigris, apice capillari albis; membrana nulla. Germania". It fits well brachypterous females of *Mecomma ambulans*.

Globiceps subg. *Kelidocoris* Kolenati, 1845 = subg. *Paraglobiceps* Wagner, 1957, syn. n. Kolenati (1845) established *Kelidocoris* with two species, *Cimex histronicus* Linnaeus, 1758 (now in *Cyllocorus* Hahn, 1834) and *Lygaeus flavomaculatus* Fabricius, 1794 (now in *Globiceps* Lepeletier & Serville, 1825), the last was designated as type species by Reuter (1888: 762). For about 80 years the name *Kelidocoris* was used for a subgenus of *Globiceps* (e. g., Reuter, 1875a; Hedicke, 1935; Wagner, 1952). Kirkaldy (1906: 128) indicated as type *histronicus*, his type fixation was wrongly accepted as valid by China (1943), Carvalho (1958), and Wagner (1957). The last author established a new subgenus *Paraglobiceps* for *Kelidocoris* sensu Reuter. Here the error is corrected. The case is complicated by the fact that *G. flavomaculatus* does not occur in Transcaucasia, Kolenati's specimens belong to *G. fulvicollis* var. *cruciatus* Reuter, 1879 (see Oshanin, 1912). A ruling of the Commission is necessary.

Pilophorus erraticus Linnavuori, 1962 = *P. alni* Josifov, 1987, syn. n. I examined the holotype of *P. erraticus* (RL) and 2 paratypes (male and female) of *P. alni* (ZIS). Specimens from Korea identified by Josifov (1987) as *P. erraticus* belong to a new species.

Paralaemocoris anabasis Linnavuori, 1984 (8.VI) = *P. anabaseus* Kerzhner, 1984 (XII), syn. n. In the characteristic of the genus *Laemocoris* Reuter, Linnavuori (1984: 39) indicated: "in *P[aralaemocoris] anabasis* Krz. ... the female clytra are strongly reduced and strap-like as in *Mimocapsus*". This sentence made the name *P. anabasis* available some months before I (Kerzhner, 1984) published the formal description of this species (with a differing spelling of the specific name). Lectotype of *P. anabasis* (designated here): ♀, Kazakhstan, Zhezkazgan Prov., 40 km S of Zhana-Arka, Koksengir Mts (Kerzhner). The specimen was in the collection RL and later returned (together with type series of some other species) to ZIN.

Macrotylus dimidiatus Jakovlev, 1889 = ? *Macrocoelus soror* Reuter, 1875, syn. n. Descriptions of *M. soror* (Reuter, 1875d, 1879) were based on a damaged male from Irkutsk Gouvernement. The holotype is found neither in ZMH, nor in ZMT. The combination of characters indicated by Reuter (small size, greenish body, black pubescence, presence of a pattern on membrane, convex xyphus of prothorax) agrees only with a group of related species from East Siberia: *Macrotylus dimidiatus* Jakovlev, 1889 (its light form), *M. mundulus* Stål, 1868, and *M. zinovievi* Kerzhner, 1984.

Synonymy of *M. soror* with *M. dimidiatus* seems more substantiated because only in the pale specimens of the latter the clavus in its hind part along suture and corium in the inner apical corner are brownish, membrane with single glassy spot, and hairs on cuneus and apex of clavus sometimes arising from brownish dots. On the other hand, the body length 2.5 mm is very rarely attained by males of *M. dimidiatus* (this size agrees better with two other species) and Reuter's indication (in 1875d, but not in 1879!) that the hairs of hemelytra are almost arranged in rows ("sub-seriatis") also contradicts synonymy with *M. dimidiatus* (hairs on hemelytra are evenly distributed in *M. dimidiatus* and concentrated in distinct rows in *M. mundulus* and *M. zinovievi*). Considering these contradictions, I establish the synonymy as presumable.

Psallus Fieber, 1858. The subgeneric classification of *Psallus* established for West Palaearctic species by Wagner (1952 and some later works) was based mainly on colour characters. His subgenera *Coniortodes*, *Nannopsallus*, *Parapsallus*, and *Stenopsallus*, some species of the subgenus *Apocremnus*, and some other species subsequently were excluded from *Psallus*. For the Palaearctic fauna the problem of the composition of the genus is nearly solved now, but the subgeneric classification is still inadequate and should be revised with special attention to the structure of the vesica of aedeagus.

Psallus subg. *Apocremnus* Fieber, 1858 = subg. *Mesopsallus* Wagner, 1970, syn. n. The same species, *Lygaeus ambiguus* Fallén, 1807, is the type species of *Apocremnus* by subsequent designation (Kirkaldy, 1906) and of *Mesopsallus* by original designation, hence both subgeneric names are objective synonyms.

In Wagner's (1975) work, *Apocremnus* included a mixture of unrelated species. Later, *P. kolenatii* Flor has been transferred to *Atractotomus*, *P. ancorifer* Fieber and related species are transferred to *Lepidargyrus* in this volume (see the paper by I.S. Drapolyuk) and two other species (*P. karakardes* and *P. hartigi*) should be placed in the subgenus *Phylidea*. The remaining species are living on Betulaceae, Salicaceae, and Rosaceae. By the structure of the vesica, they can be subdivided into two distinct groups. The first, for which the name *Apocremnus* should be retained, includes *P. ambiguus* Fallén, *P. pseudambiguus* Wagner, *P. tibialis* Reuter, and *P. samdzijonicus* Josifov. The second group includes *P. betuleti* Fallén, *P. anatolicus* Wagner, *P. aethiops* Zetterstedt, *P. graminicola* Zetterstedt, *P. cognatus* Jakovlev, *P. stackelbergi* Kerzhner, *P. crataegi* Kulik, and *P. atratus* Josifov. They differ from species of the first group in having in the vesica a toothed plate near the secondary gonopore. Would further investigations show that these two groups are unrelated, the second of them should be described as a new subgenus.

Psallus subg. *Liops* Fieber, 1870, nom. valid. = subg. *Liops* Stichel, 1958 (unnecessary new name). Stichel (1958) rejected the name *Liops* Fieber, 1870 on the erroneous assumption that it is preoccupied by "*Liops* Rondani, 1857 (Diptera, Syrphidae)". In fact, the original spelling of the dipteran name is *Lejops*; the emendation *Liops* was established much later by Verrall (in Scudder, 1882, p. 190).

Psallus subg. *Phylidea* Reuter, 1900 (= subg. *Asthenarius* Kerzhner, 1962). The taxonomy of this group is highly confused. In the past, some species of this subgenus were included in *Psallus*, some in *Sthenarus*, and one in a separate genus *Phylidea*. Seidenstücker (1962) placed *Phylidea* as a subgenus in *Psallus*; Kerzhner (1962) established in *Psallus* a new subgenus *Asthenarius* for species previously placed in *Sthenarus*, but later (Kerzhner, 1964b) placed *Asthenarius* in synonymy of *Phylidea*. Both authors regarded *Hypopsallus* Wagner, 1952 as a junior synonym of *Phylidea*, which is only partly correct. Of the four species originally included in the subgenus *Hypopsallus*, only one (*P. quercus*) belongs in fact to the subgenus *Phylidea*, one (*P. callunae*) is of unclear subgeneric position, and the remaining two, *P. variabilis* (the type species of *Hypopsallus*) and *P. perrisi*, are not closely related to *Phylidea* and should be considered as representing a separate subgenus *Hypopsallus*. Species of the subgenus *Phylidea* are mostly black and live on *Quercus*, but two Far Eastern species (*P. ulmi* Josifov & Kerzhner and *P. cinnabarinus* Kerzhner) are red and live on *Ulmus*, and in the Mediterranean *P. dichrous* Kerzhner (*wagneri* Carvalho) living on *Quercus* the head and fore half of pronotum are yellow. Usually the femora are black and the antennae yellow, but exceptions occur in both characters. The most characteristic of the subgenus is the structure of vesica: secondary gonopore subapical, apex of vesica with an untoothed spine-like process being a continuation of a sclerotized band toothed on the outer margin and strongly bent circularly or spirally (in *P. ulmi*, with a second apical process being an outgrowth of the vesica wall). Of the Mediterranean species, to the subgenus *Phylidea* certainly belong *P. dichrous* Kerzhner (*wagneri*

Carvalho), *P. ocularis* Mulsant & Rey, *P. nigripilis* Reuter, *P. flavipes* Reuter, *P. henschii* Reuter, *P. karakardes* Seidenstücker, *P. hartigi* Wagner, *P. cerridis* Wagner, *P. quercus* Kirschbaum. They are placed by Wagner (1975) in *Sthenarus* (*Asthenarius*), *Phylidea*, *Psallus* (*Apocremnus*), and *Psallus* (*Hylopsallus*), but a number of species placed by him in *Heterocapillus*, *Psallus* (*Ilops*), and *Psallus* (*Psallus*) may also belong to the subgenus *Phylidea* (some of them differ in coloration from that typical of the subgenus). To the subgenus *Phylidea* certainly also belong *P. transcaucasicus* Zaitzeva from the Caucasus, *P. pseudoquercus* Josifov from Bulgaria, and no less than 3 species from the Far East (*P. ussuriensis* Kerzhner, *P. ulmi* Josifov & Kerzhner, *P. cinnabarinus* Kerzhner).

Psallus subg. *Hylopsallus* Wagner. Species of this subgenus are similar in appearance to typical representatives of the subgenus *Phylidea*, but the secondary gonopore is far removed from the apex of vesica (lying nearly in its middle) and the apical process of vesica is an outgrowth of its outer wall. The species are living on *Quercus*. To this subgenus certainly belong *P. variabilis* Fallén, *P. perrisi* Mulsant & Rey, *P. wagneri* Ossiannilsson, *P. kiritshenkoi* Zaitzeva, and *P. ton-naichanus* Muramoto.

Psallus haematodes (Gmelin, 1790) = ? *Phytocoris* ? *roralis* Gistel, 1857, syn. n. Gistel's (1857, p. 73) description is: "P[hytocoris] obscure-flavescens, supra aureo-pilosus obscure roseus vel fusco-ferrugineus; elytrorum apice concolore; femoribus apice nigropunctatis. Germania". Reddish colour and golden pubescence of the dorsal side combined with black spots on apex of femora are typical of some species of *Psallus*. If "elytrorum apice concolore" means that the cuneus and membrane are of the same (whitish) colour, the description would fit *P. haematodes*.

Campylomma annulicorne (Signoret, 1865) = ? *Capsus coerulescens* Scholtz, 1846, syn. n. Scholtz (1846) described his species from specimens collected in early September from *Salix* in botanical garden in Wrocław (Poland). The description is sufficiently detailed and fits well *C. annulicorne*, except black ventral side of thorax and abdomen, and fore margin of pronotum. Possibly, Scholtz examined an extremely dark male.

Family PIESMATIDAE

Piesma capitatum (Wolff, 1804) = ? *Tingis apiaster* Gistel, 1857, syn. n. Gistel's (1857, p. 87) description is: "T[ingis] grisea, capite nigro, antennis luteis, thorace obscuro, elytris griseis, parum aut innubulosis, macula ad basin alba; antennis pedibusque luteis. — Germania. Membrana apicali deficiente. Subtilissime impresso-punctata. Rudimentum villullum carinarum". This description fits well *Piesma* and, judging from the mention of carinae (elevated veins) on "rudiment" of membrane, it is based on macropterous or subbrachypterous specimens. It is difficult to conclude with certainty which species Gistel had. As in *P. capitatum* specimens with black head are more frequent, I placed Gistel's name in synonymy of this species.

Family LYGAEIDAE

Geocoris chinensis Jakovlev, 1904, sp. dist. I (Kerzhner, 1979) placed *G. chinensis* in synonymy of *G. ochropterus* (Fieber, 1844), whereas Zheng & Zou (1981) considered these species as different. After re-examination of material at my disposal, I confirm the correctness of Zheng & Zou's view and of distinguishing characters indicated by them. In *G. chinensis*, the yellow marginal stripe of abdomen is interrupted by black spots on its dorsal side and narrowed towards the fore and hind margins of segments (looking as a row of yellow triangles) on the ventral side of abdomen. In *G. ochropterus* this stripe is not interrupted and is of equal width throughout. Besides, in *G. chinensis* the punctuation of pronotum is less dense than in *G. ochropterus*. *G. chinensis* is known from the mountains of provinces Sichuan and Yunnan only. *G. ochropterus* inhabits lowlands in China.

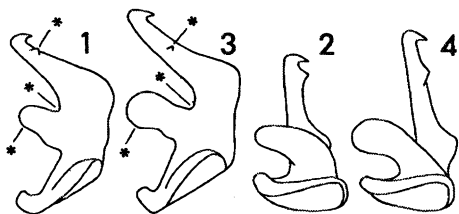
Geocoris mongolicus Horváth, 1901, sp. dist. Montandon (1907) placed *G. mongolicus* in synonymy of *G. lapponicus* Zetterstedt, 1838. I (Kerzhner, 1979) found that European specimens of *G. lapponicus* are always macropterous, whereas in Siberia and Mongolia both brachypterous and macropterous specimens occur. I concluded that *G. mongolicus* is an eastern subspecies of *G. lapponicus*. A re-examination of the material has shown that they are distinct and partly sympatric species. *G. mongolicus* is distributed in steppes of Siberia and Mongolia, it is nearly always brachypterous (only 1 ♂ of the 500 examined specimens is macropterous). *G. lapponicus* has a boreo-montane transpalaearctic distribution, and it is always macropterous. In *G. mongolicus*, the coloration is as a rule paler: pronotum always yellow or yellowish brown at least before and behind calli (in the most pale specimens only calli remain dark), scutellum as a rule partly yellowish or brownish. In *G. lapponicus*, pronotum is usually entirely black, rarely brownish or yellowish behind calli or on the hind margin, exceptionally also before calli, scutellum always entirely black.

In the Asiatic part of Russia, *G. lapponicus* is found in Polar Urals, in Tobol'sk, near Abakan, at Lake Baikal (Listvennichnoe, Bol'shie Koty), in Transbaikalia (near Chita), in Central (Arangastakh), West (Akhtaranda River) and North (Cherskiy) Yakutia, Magadan Prov. (upper part of Kolyma River), and Central Kamchatka. In Mongolia it is collected in the mountains only: Taishiryn-Ula (15 km SSW of Altai), Khangai (Gantsyn-Daba Pass), and Khentei (Sudzukte and sources of Kerulen River).

G. mongolicus is distributed in South Siberia from Tarbagatay to Transbaikalia, in Central Yakutia, and in Mongolia (from the extreme north to Azh Bogd Mts and Kerulen River).

Artheneidea Kiritshenko, 1914 = *Artheneis* subg. *Thenareis* Stichel, 1958, syn. n. The subgenus *Thenareis* was established for a single species, *Artheneis chlorotica* Bergevin, 1930. Examination of this species showed that it belongs to *Artheneidea*. It is extremely close to *Artheneidea tenuicornis* Kiritshenko, 1914 and differs from it in the shape of paramere only (Figs 1-4). It is not excluded that *A. chlorotica* will prove to be a subspecies of *A. tenuicornis*.

Artheneidea tenuicornis Kiritshenko, 1914. Lectotype (here designated): ♂ Khodzha-Davlet, Uzbekistan, 20.IV.1912 (A.N. Kiritshenko), ZIN. Paralectotypes: 4♂, 4♀ from the same locality and from Farab, Turkmenistan, all in ZIN. I examined also further specimens from Turkmenistan and Uzbekistan, as well as (new records!) from South Kazakhstan (Kzyl Orda; Sarysu River in Kzyl-Orda Prov.; Akkol' at Ili River), Iran (Dasht-e-Lut Desert), China (Edzin-Gol [Xi He] River and Sogo-Nur Lake), and Mongolia



Figs 1-4. *Artheneidea*, paramere: 1-2, *A. tenuicornis* Kiritshenko, lectotype; 3-4, *A. chlorotica* Bergevin, male from Nubia. Distinguishing characters are indicated by asterisks.

(Khovd Aimak: Bodonchin Gol River; Gobi-Altai Aimak: near Khatan-Khairkhan Mt.; Bayan-Khongor Aimak: Ekhin-Gol and Shara-Khulsny-Bulak). The species is reported also from Iraq, Israel, and Egypt; I did not examine males from these countries.

Artheneidea chlorotica (Bergevin, 1930), comb. n. (*Artheneis*). I examined 1 ♀, syntype, from Libya kept in MCG and 1 ♂ from Nubia identified by Wagner (1963) and kept in NMW.

Heterogaster cathariae (Geoffroy, 1785) = *H. xinjiangensis* Zou & Zheng, 1981, syn. n. The original description of *H. xinjiangensis* contains sufficient information to establish this synonymy.

Heterogaster distincta Jakovlev, 1881 = *H. albida* Kiritshenko, 1911, syn. n. I examined the holotype of *H. distincta* (male from Shahrud, N.Iran; ZIN) and syntypes of *H. albida* (male, designated here as lectotype, and female from Echmiadzin, Armenia; ZIN). The latter are teneral, discoloured specimens of *H. distincta*. From both type localities I have also seen additional material.

The species of *Heterogaster* occurring in Russia and neighbouring countries (former republics of the USSR) can be distinguished as follows:

- 1(4). Head, pronotum, and tibiae with long erect hairs. – Tibiae with 3 dark rings (at base, in middle, and at apex). Fore femora with marked tooth, sometimes with an additional small tooth. Antennal tubercle below without a white projection.
- 2(3). Fore margin of pronotum narrowly yellow, its lateral margin with a narrow yellow keel along the whole length. Antennal segments II-IV reddish yellow (segment II often with a dark stripe beneath). Coxae and basal half (rarely third) of middle and

hind femora yellow. Corium with small black spots in apical half. 5.1-8.0 mm. Europe northwards up to British Isles, S. Sweden, SW Finland, Estonia, Bryansk, Kazan' and environs of Zlatoust (Kuvash), eastwards to Voronezh Prov. and Ciscaucasia; record from Lower Volga needs confirmation; West Siberia (Samko, 1930); North Africa; Turkey, Georgia, Armenia, Azerbaijan, NE Iran (new record: Gorgan and Great Ashurade I.). On *Urtica dioica*, *U. urens* *H. urticae* (Fabricius, 1775)

- 3(2). Fore and lateral margins of pronotum black along the whole length. Antennal segment II black, dorsally with a yellow medial stripe; segments III and IV black. Coxae and femora almost entirely black. Corium without black spots. 6.5-7.0 mm. Tajikistan (Gissar, Peter the First, and Khozratishokh Ranges), Kyrgyzstan (Alai and Fergana Ranges). Lectotype, here designated: ♀, "Alai, 8 VI 89, Gr[ombczewski]" (ZIN) *H. parens* Jakovlev, 1902

- 4(1). Head, pronotum, and tibiae without erect hairs or, in *H. cathariae* and *H. distincta*, with only few suberect hairs.

- 5(6). Fore margin of pronotum with a pale callose spot, sometimes narrowly pale along the whole length. – Light-coloured parts of body sometimes reddish. Antennae black, sometimes segment II dorsally brownish or reddish in apical two-thirds (more widely towards apex) and segment III narrowly pale at base. Tibiae with 3 dark rings, but the middle ring on hind and middle tibiae sometimes indistinct. Sides of pronotum in their fore half with a longitudinal yellow stripe. All femora entirely or almost entirely black. Antennal tubercles below without projection. 5.7-7.0. West Europe northwards up to Germany and Poland, Ukraine, Cis- and Transcaucasia, Turkmenistan (Great Balkhan and Kopetdag Mts), Tajikistan (Khurmi at Zeravshan River), Kyrgyzstan (Talas River and Chatkal Range), Kazakhstan (Karatau, Kandyktau, Zailiysk Alatau and Dzhungarian Alatau Mts), NE Africa, Turkey, Iran (new record: Serkhun in Huzestan Prov.). Records from Tuva and Mongolia refer to *H. distincta*. On various Lamiaceae.

- *H. affinis* Herrich-Schaeffer, 1835

- 6(5). Fore margin of pronotum entirely black or (sometimes in *H. artemisiae*) narrowly pale, but without a callose spot in the middle.

- 7(8). Antennal segment II yellow with base and ventro-apical spot black; segment III yellow with extreme base and apical one-third to two-thirds black. Antennal tubercle without a projection. Middle and hind femora at least in basal half or third yellow, sometimes narrowly black at base. Tibiae with 2 dark rings, of which the apical one usually incomplete. Sides of pronotum in their fore half black or dirty yellow. Yellow spot on vertex not larger than ocellus. 4.9-5.8 mm. Europe northwards up to England, Poland, Kiev and Ryazan' provinces, and Bashkortostan (near Chishma); Ciscaucasia and Transcaucasia; mountains of Middle Asia (Kopetdag, Tien Shan; in Tajikistan found in north-east only), Kazakhstan (Kustanay Prov. and mountains in the south up to Ust'-Kamenogorsk in the east); NE Africa; Turkey, Syria, NW China (new record: Yining). On *Thymus* spp., more rarely on other

- Lamiaceae *H. artemisiae* Schilling, 1829
- 8(7). Antennal segment II black with a yellow stripe dorsally, sometimes this stripe notable at apex only or absent at all. Segment III black with base narrowly pale (very rarely in *H. distincta* the whole segment pale). Antennal tubercle below with a small white projection (sometimes absent in *H. distincta*). Yellow spot on vertex usually larger than ocellus.
- 9(10). Middle and hind femora black, except apices. Tibiae with 2 dark rings. Lateral margins of pronotum in fore half black. 5.2-6.9 mm. Europe northwards up to France, Germany, Romania, Transcarpathian and Kiev provinces of Ukraine, Voronezh and Orenburg provinces of Russia; Cis- and Transcaucasia; Middle Asia (Kopetdag, Tien Shan), Kazakhstan (mountains from Karatau to extreme east), Altai (Russian part); North-East Africa, Turkey, Syria, W. China (Habahe in the valley of Cherny Irtysh). On *Nepeta* spp., sometimes on other Lamiaceae *H. cathariae* (Geoffroy, 1785)
- 10(9). Middle and hind femora yellow with black stripes or spots, sometimes confluent, but base of femora always widely yellow. Tibiae with 3 dark rings. Lateral margin of pronotum in fore half with a yellow keel. 5.1-6.3 mm. Armenia, Azerbaijan, Tadzhikistan (Iskanderdar'ya River), Uzbekistan (Guralash Nature Reserve in Turkistan Ridge), Kyrgyzstan (Tuyuk River in Kyrgyz Ridge), Kazakhstan (Kzyl-Orda Prov.: Sarkul', 35 km of Karaketken), Tuva, Iran (Shahrud, Bampur, Isfahan), Mongolia (Mongolian and Gobi Altai), N. China (first record: Nanshankeu) *H. distincta* Jakovlev, 1881

Plinthinus vestitus Jakovlev, 1889, nom. valid. = *P. sibiricus* Jakovlev, 1889. The above synonymy was published by Kulik (1967), who did not mark it as new and used *P. vestitus* as the valid name, and by Josifov & Kerzhner (1978), who also did not mark it as new and used *P. sibiricus* as the valid name. Kulik's nomenclatural act has priority, and therefore the valid name of the species is *P. vestitus*.

Family PYRRHOCORIDAE

Pyrrhocoris sinuaticollis Reuter, 1885 = *P. stehliki* Kanyukova, 1982. This synonymy was published by Kanyukova (1988) but deserves further comment. The lectotype of *P. sinuaticollis* (here designated) is a male in the collection of ZMH labelled "*Pyrrhocoris sinuaticollis* Reut. typ." (O.M.Reuter's handwriting) and "Amur". The coloration of thorax in lectotype is aberrant: margins of coxal cavities and hind margin of metathorax are brownish yellow, not black. This coloration was mentioned in the original description and led Josifov & Kerzhner (1978) to incorrect synonymization of *P. sinuaticollis* with *P. sibiricus* Kushakevitch.

Family ACANTHOSOMATIDAE

Elasmucha fieberi (Jakovlev, 1865) = *Cimex? scansor* Gistel, 1857 (nomen oblitum), syn. n. Gistel's (1857, p. 66) description is: "C[imex] thorace brevissimo spinoso, fusco-virescens, antennis totis nigris, membrana late fusco-maculata, abdominis margine albo-

nigroque-variegato; sterno carinato. Germania". This description fits well males of *E. fieberi*, a well-known species mentioned in many dozens of publications.

Family SCUTELLERIDAE

Phimodera nigra Reuter, 1879, stat. n. = *Ph. carinata* var. *nigra* Reuter, 1879 = *Ph. carinata* var. *pallida* Reuter, 1879, syn. n. = *Ph. klementzorum* Kerzhner, 1976, syn. n. Reuter (1879) described *Ph. carinata* from 2 males and 2 females collected in "Dauria" (Transbaikalia) by R.F. Sahlberg, each specimen was referred to a separate variety: males to var. *nigra* and var. *carinata* (i.e., forma typica), females to var. *callosa* and var. *pallida*. In the collection of ZMH I found 2 females from the type series of *Ph. carinata*, both without Reuter's identifications (usually he did not label varieties). Judging from the sex and size, I concluded (Kerzhner, 1976) that these females are holotypes of var. *callosa* (smaller specimen) and var. *pallida* (larger specimen), respectively. More recently I found in ZMT 2 males with bottom label "*Phimodera carinata* Reut.", pinned labels "coll. J.Sahlb." and pinned small green squares with handwritten number ("8" and "9", respectively). As the type specimen of *Sternodontus purpureus*, described by Reuter in the same paper and kept in ZMT, has a similar green square with "10", I concluded that these numbers were written by Reuter when returning the material to Sahlberg and that the mentioned 2 males form the hitherto non-located part of the type series of *Ph. carinata*. Both specimens belong to *Ph. klementzorum*. Male labelled "9" is undoubtedly the holotype of var. *nigra*: its unusual melanistic coloration and development of keels agree closely with the original description, except for the insignificantly larger size (length 5.5 mm, instead of 5.25 mm). But the second male in many characters (obscure keel on pronotum; very small lateral callose keels on scutellum, not margined by black; base of tibiae blackened on ventral side only; body length 5.8 mm) does not correspond to the original description of var. *carinata* and agrees well with description of var. *pallida*. Moreover, re-examination of females in ZMH shows that my earlier conclusion was incorrect, the smaller of them agrees better with the description of var. *carinata* and the larger with that of var. *callosa*, though body length differs in both cases (5.6 instead of 4.8 mm, and 5.90 instead of 5.75 mm). I suppose that Reuter in two cases indicated the sex incorrectly: his var. *carinata* was based on a female and var. *pallida* on a male. Correspondingly, I labelled the males in ZMT as holotypes of var. *nigra* and var. *pallida*, and the females in ZMH (belonging to *Ph. carinata*) as holotypes of var. *carinata* and var. *callosa*.

Family PENTATOMIDAE

Antheminia eurynota remota (Horváth, 1907), stat. n. = *A. remota* (Horváth, 1907) = *A. eurynota tamaninii* Kerzhner, 1972, syn. n. I examined a syntype of *A. remota*, female from Colorado (HNM), and males and females from the USA kept in ZIN. They are conspecific with *A. eurynota*. In the structure of parameres,

American specimens are similar to those from East Siberia and Mongolia described by me as *A. e. tamarii*.

Capnoda nigroaenea Jakovlev, 1887 (non sensu Kerzhner, 1972) = *C. altaica* Kerzhner, 1972, syn. n. I.I. Kabak in 1990 collected in Dzhungarian Alatau (Maylikol' Lake, southern slope of eastern part of Toksonbay Ridge, 3000 m) 1 ♂ and 1 ♀ of *C. altaica*. Hence, in both mountain ranges from which the holotype of *C. nigroaenea* (female labelled "Songaria") could originate, in Tarbagatay and in Dzhungarian Alatau, the same species is found, and the name *C. nigroaenea* should be referred to it. The species is known from Dzhungarian Alatau, Tarbagatay, Altai, Mongolian and Gobi Altai, as well as from Cherskiy Range in Yakutia.

Capnoda maculaalba Kiritschenko, 1952, sp. dist. I (Kerzhner, 1964a, 1972) placed *C. maculaalba* in synonymy of *C. nigroaenea*. Now it is clear that the holotype of *C. nigroaenea* belongs to another species, and the name *C. maculaalba* should be resurrected for the species from Tien Shan and Pamiro-Alay. The third related species, *C. caucasica* Horváth, known hitherto from eastern part of Caucasus only, has been recently collected by N.V. Lukasheva in its western part (Malaya Khatipara Mt. in Teberda Nature Reserve).

Eurydema ornata (Linnaeus, 1758) = *Cimex ? umbralis* Gistel, 1857, syn. n. Gistel's (1857, p. 74) description is: "[C]imex]rubro-varius, pectore abdominisque medio nigris, punctis lateralibus et marginalibus distinctis, thoracisque sex confluentibus nigris. Germania". The description fits *Eurydema* well. Among the species occurring in Germany, only *E. ornata* and *E. dominulus* Scop. have six spots on pronotum, and as in *E. dominulus* lateral black spots of abdomen are large (hardly could be named "punctis") and marginal ones small, synonymy with *E. ornata* seems to be more probable.

Rhacognathus punctatus (Linnaeus, 1758) = *Cimex ? avenicola* Gistel, 1857, syn. n. Gistel's (1857, p. 57) description is: "[C]imex]thorace subspinoso, subtus aeneo-fusca, supra obscure aeneo-caerulescens, abdominis margine variegato, annulo tibiarum albo. - Germania". It fits *Rh. punctatus* well.

References

- Carvalho, J.C.M. 1958. Catalogue of the Miridae of the World. Part III. Subfamily Orthotylinae. *Arq. Mus. nacn.* (Rio de Janeiro), 47: 1-161.
- China, W.E. 1943. The generic names of the British Hemiptera-Heteroptera, with a check list of the British species. *The generic names of British insects*, 8: 211-342. London.
- Faracci, F. & Rizzotti Vlach, M. 1987. I Nabidi italiani (Hemiptera, Heteroptera). *Boll. Mus. civ. Stor. nat. Verona*, 13: 81-138.
- Fieber, F.X. 1858. Kriterien zur generischen Theilung der Phytocoriden (Capsini auct.). *Wien. entomol. Monatschr.*, 2(10): 289-327, (11): 329-347.
- Fokker, A.J.F. 1899. Hemiptera gevangen in de Provincie Oran, Algerie door Dr. O. Schmiedeknecht. *Tijdschr. Entomol.*, 42(1/2): 17-27.
- Garbiglietti, A. 1870. Additamenta et emendationes ad catalogum methodicum et synonymicum Hemipterorum Heteropterorum Italiae indigenarum. *Bull. Soc. entomol. ital.*, 2(2): 160-163.
- Gistel, J. 1857. *Achthundert und zwanzig neue oder unbeschriebene wirbellose Thiere*. 94 pp. Straubing. (Also *Vacuna*, 2: 513-606).
- Hedicke, H. 1935. Heteroptera. In: Brohmer, P. & al. *Die Tierwelt Mitteleuropas (Insekten)*, 4(3:1:Sect. X): 15-113. Leipzig.
- Josifov, M. 1987. Einige neue Miriden aus Nordkorea (KVDR) (Heteroptera). *Reichenbachia*, 24(15): 115-122.
- Josifov, M. & Kerzhner, I.M. 1978. Heteroptera aus Korea. II. Teil. *Fragm. faun.* (Warszawa), 23(9): 137-196.
- Kanyukova, E.V. 1988. Family Pyrrhocoridae. In: Lehr, P.A. (ed.). *Opredelitel' nasekomykh Dal'nego Vostoka SSSR* [Keys to the insects of the USSR Far East], 2: 902-903. Leningrad. (In Russian).
- Kerzhner, I.M. 1962. Materials on the taxonomy of capsid bugs (Hemiptera, Miridae) in the fauna of the USSR. *Entomol. Obozr.*, 41(2): 372-387. (In Russian).
- Kerzhner, I.M. 1964a. Materials on the synonymy of shieldbugs (Heteroptera, Pentatomioidea) in the fauna of the USSR and of the adjacent countries. *Entomol. Obozr.*, 43(2): 363-367. (In Russian).
- Kerzhner, I.M. 1964b. Family Miridae. In: Bey-Bienko, G.Ya. (ed.). *Opredelitel' nasekomykh evropeyskoy chasti SSSR* [Keys to the insects of the European part of the USSR], 1: 700-765. Leningrad. (In Russian).
- Kerzhner, I.M. 1972. New and little-known Heteroptera from Mongolia and adjacent regions of the USSR. I. *Nasekomye Mongolii*, 1: 349-379. Leningrad. (In Russian).
- Kerzhner, I.M. 1976. New and little-known Heteroptera from Mongolia and adjacent regions of the USSR. III. *Nasekomye Mongolii*, 4: 30-86. Leningrad. (In Russian).
- Kerzhner, I.M. 1979. Bugs of the genus *Geocoris* (Heteroptera, Lygaeidae) from the USSR and Mongolia. *Nasekomye Mongolii*, 6: 47-71. Leningrad. (In Russian).
- Kerzhner, I.M. 1984. New and little-known Heteroptera from Mongolia and adjacent regions of the USSR. IV. Miridae, 1. *Nasekomye Mongolii*, 9: 35-72. Leningrad. (In Russian).
- Kerzhner, I.M. 1988. Family Miridae. In: Lehr, P.A. (ed.). *Opredelitel' nasekomykh Dal'nego Vostoka SSSR* [Keys to the insects of the USSR Far East], 2: 778-857. Leningrad. (In Russian).
- Kirkaldy, G.W. 1906. List of the genera of the pagopodous Hemiptera-Heteroptera, with their type species from 1758 to 1904 and also of the aquatic and semiaquatic Trochalopoda. *Trans. amer. entomol. Soc.*, 32(2): 117-156, 156a-156b.
- Kolenati, F.A. 1845. *Hemiptera Caucasi. Tesseratomidae monographice dispositae* [Meletemata entomologica, fasc. 2]. 132 p. Petropoli.
- Kulik, S.A. 1967. Land bugs (Heteroptera) of Eastern Siberia and the Far East. [III]. *Fragm. faun.* (Warszawa), 13(22): 391-406. (In Russian).

- Lindberg, H. 1932. Inventa entomologica itineris Hispanici et Marocani, quod a. 1926 fecerunt Harald et Håkan Lindberg. XIII. Hemiptera Heteroptera (excl. Capsidae et Hydrobiotica). *Soc. Sci. fenn. Comment. biol.*, 3(19): 1-54, 2 pls.
- Linnavuori, R. 1953. A Palaearctic Heteropterous material collected by J. Sahlberg and U. Saalas. *Ann. entomol. fenn.*, 19(4): 147-167.
- Linnavuori, R. 1984. New species of Hemiptera Heteroptera from Iraq and the adjacent countries. *Acta entomol. fenn.*, 44: 1-59.
- Montandon, A. 1907. Hémiptères Hétéroptères. Espèces nouvelles ou peu connues. *Bull. Soc. Sci. Bucarest*, 15(5/6): 308-331.
- Oshanin, B. 1912. *Katalog der paläarktischen Hemipteren (Heteroptera, Homoptera-Auchenorrhyncha und Psyllidae)*. XVI, 187 p. Berlin.
- Péricart, J. 1983. Hémiptères Tingidae euro-méditerranéens. *Faune de France*, 69. 620 p. Paris.
- Péricart, J. 1987. Hémiptères Nabidae d'Europe occidentale et du Maghreb. *Faune de France*, 71. 185 p. Paris.
- Poppius, B. 1915a. Sauter's Formosa-Ausbeute: Nabidae, Anthoridae, Termatophylidae, Miridae, Isometopidae und Ceratocombidae (Hemiptera). *Arch. Naturg.*, 80A(8): 1-80.
- Poppius, B. 1915b. Neue Orientalische Bryocorinen. *Philipp. J. Sci. (D)*, 10(1): 75-88.
- Poppius, B. 1915c. Zur Kenntnis der Indo-Australischen Capsarien. I. *Ann. Mus. natn. hung.*, 13(1): 1-89.
- Protić, L. 1986a. Prvi prilog poznavanju faune Hemiptera-Heteroptera Deliblatskog peska. In: *Deliblatski Pesak*, 5: 203-232. Pancevo.
- Protić, L. 1986b. Prilog poznavanju Hemiptera-Heteroptera Rasko-Golubačke peščare. *Glasn. prirod. Muz. Beogradu (B)*, 41: 57-87.
- Reuter, O.M. 1875a. Hemiptera Gymnocerata Scandinaviae et Fenniae disposuit et descripsit. Pars I. Cimicidae (Capsina). *Acta Soc. Fauna Fl. fenn.*, 1(1): 1-206.
- Reuter, O.M. 1875b. *Revisio critica Capsinarum, praecipue Scandinaviae et Fenniae. Försök till de Europäiska Capsinernas naturenliga uppställning jämte Kritisk öfversigt af de Skandinaviskt-finska arterna: Akademisk afhandling*. 101 and 190 p. Helsingfors.
- Reuter, O.M. 1875c. Genera Cimicidarum Europae disposuit. *Bih. k. sv. Vet. Akad. Handl.*, 3(1): 1-66.
- Reuter, O.M. 1875d. Hémiptères nouveaux. *Pet. Nouv. entomol.*, 1(136): 544-545.
- Reuter, O.M. 1879. De Hemipteris e Sibiria orientali nonnullis adnotationes criticae. *Ofv. finsk. Vet. Soc. Forh.*, 21: 42-63.
- Reuter, O.M. 1888. Revisio synonymica Heteropterorum palaearcticorum quae descripserunt auctores vetustiores (Linnaeus 1758 - Latreille, 1806). *Acta Soc. Sci. fenn.*, 15: 241-315, 443-812.
- Reuter, O.M. 1896a. Die Capsiden-Gattung *Grypocoris*. *Wien. entomol. Ztg.*, 15: 254-257.
- Reuter, O.M. 1896b. Dispositio generum palaearcticorum divisionis Capsariae familiae Capsidae. *Öfv. finsk. Vet. Soc. Förh.*, 38: 156-171.
- Reuter, O.M. 1896c. *Hemiptera Gymnocerata Europae. Hémiptères Gymnocérates d'Europe, du bassin de la Méditerranée et de l'Asie Russe*. Vol. 5. 392 p., 10 pls. Helsingfors. (Also in *Acta Soc. Sci. fenn.*, 33(2)).
- Samko, K.P. 1930. Contribution to the knowledge of entomofauna of Tobol'sk District. III. Hemiptera Heteroptera of Tobol'sk District. *Izv. zapadno-sibir. geogr. Obshch.*, 7: 3-17. (In Russian).
- Schilling, P.S. 1837. Neue Arten der von Fallen gegründeten Gattung *Phytocoris*. *Arb. Veränd. schles. Ges. vaterl. Kult.*, 1836: 83-84.
- Scholtz, H. 1846. Beschreibung zweier neuen Wanzenarten. *Übers. Arb. Veränd. schles. Ges. vaterl. Kult.*, 1845: 53-54.
- Scudder, S.H. 1882. Nomenclator zoologicus. I. - Supplemental list of genera in zoology. *Bull. US natn. Mus.*, 19: 1-376.
- Seidenstücker, G. 1962. Über einige Miriden aus Kleinasien mit Beschreibung von zwei neuen Halticinen (Heteroptera). *Reichenbachia*, 1(17): 129-143.
- Stichel, W. 1958. Nomenklatorisches ueber Heteropteren. *Boll. Soc. entomol. ital.*, 88(1/2): 21-23.
- Strawiński, K. 1959. Hemiptera-Heteroptera less known or new to the Bulgarian fauna. *Fragm. faun. (Warszawa)*, 8(15): 235-245.
- Wagner, E. 1952. Blindwanzen oder Miriden. *Tierw. Deutschl.*, 41. IV, 218 p.
- Wagner, E. 1956. Familie: Miridae Dhrn, 1859 (Capsidae auct.). In: Gulde, J. *Die Wanzen Mitteleuropas*, 11: 321-480. (Not seen).
- Wagner, E. 1963. Ergebnisse der Zoologischen Nubien-Expedition 1962. Teil XVII. Heteropteren. *Ann. naturhistor. Mus. Wien*, 66: 477-487.
- Wagner, E. 1975. Die Miridae Hahn, 1831, des Mittelmeerraumes und der Makaronesischen Inseln (Hemiptera, Heteroptera). Teil 3. *Entomol. Abhandl. staatl. Mus. Tierk. Dresden*, 40, suppl.: 1-483.
- Zheng Le-yi & Zou Huan-guang. 1981. Family Lygaeidae. In: Hsiao Tsai-yu & al. *A handbook for the determination of the chinese Hemiptera-Heteroptera*, 2: 1-215, 589-612. Beijing. (In Chinese, with English summary).

Received 1 October 1992

BOOK REVIEW

A synthesis of Holarctic Miridae (Heteroptera): distribution, biology, and origin, with emphasis on North America. – A.G. Wheeler, Jr. & Thomas J. Henry. 1992. Published by the Entomological Society of America. Lanham, Maryland. 282 p. (The Thomas Say Foundation, vol. 15). \$ 50.00.

This book is one of the most careful and informative works on faunal connections between the Palaearctic and Nearctic regions. The authors examined this problem for Miridae, the largest family of Heteroptera, known by its high ability to dispersal and including many agricultural and forestal pests.

98 species of Miridae are common to North America and the Old World. 36 of them are naturally Holarctic species, which apparently crossed the Beringian land bridge; 1 species has been recently introduced from North America to Europe; 5 species are tropicopolitan and inhabit the southern belts of temperate regions in both the Old and the New World; 55 species are introduced to North America from Europe and 1 from Japan. Adventive species were introduced with egg-infested plants, especially with nursery stock. Of the adventive species, 26 are distributed in the eastern part of North America, 10 in its western part, and for 20 species widely spread in North America a multiple introduction is presumed.

For each species are given: distribution in North America with maps and lists of new records; host plants and habits; discussion of zoogeographical status. 30 species are figured. About 500 publications are listed in the "References Cited".

The book is hard-bound, with high-quality print and attractive appearance typical of the Thomas Say Foundation publications. – *I.M. Kerzhner*.

An iconography of Hemiptera-Heteroptera eggs in China. – Ren Shu-zhi. 1992. Science Press, Beijing. vi, 118 p., 80 pls. (In Chinese). \$ 50.00, available from the author.

This hard-bound book includes a key to families and in some cases to species of Chinese Heteroptera based on structures of eggs, as well descriptions of eggs of 236 species in 35 families. The work is illustrated by 487 scanning electron micrographs, 30 coloured photographs, and 96 figures. For many species and higher taxa the eggs are illustrated for the first time. The quality of illustrations is very high. Undoubtedly, this work being a major achievement in the study of Heteropteran eggs will be widely used for improvement of the classification of bugs at various levels. – *I.M. Kerzhner*.