Key to the genera and subgenera of Gerridae (Gerromorpha) of Thailand and adjacent countries, with a check-list of species known from Thailand

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Abstract: A key to the gerrid genera of Thailand and adjacent countries is presented. The check-list of Gerridae of Thailand contains 23 genera (one of them undescribed) and 55 species (undescribed species not included). *Cryptobates johorensis* POLHEMUS & POLHEMUS, 1995, and *Neogerris assimilis* ANDERSEN, 1975, are recorded for Thailand for the first time.

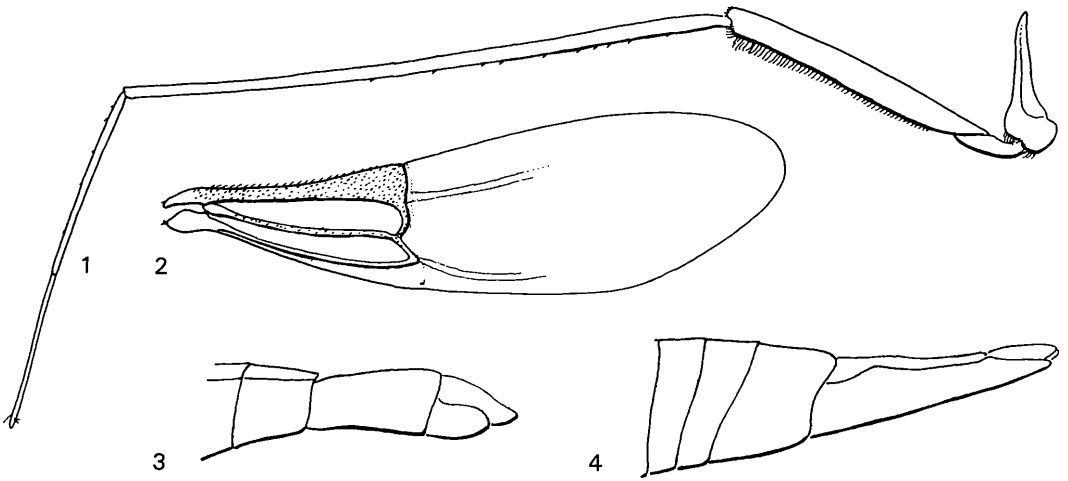
Introduction

The present phylogenetic system of the True Water Striders (Gerridae) contains eight subfamilies, seven of which are represented in the Oriental and Thai faunas. Presently more than 60 gerrid genera are known; about half of them occur in Southeast Asia, and 23 are so far recorded from Thailand.

After numerous revisions (see references) of Oriental Gerridae, the taxonomy of Thai species of this family are probably better known than most other Heteroptera of the area, and much better than the second large family of Gerromorpha, the Veliidae. Recent collections have brought a few additional species, mainly of the genera *Amemboa* and *Metrocoris*, which are (ZETTEL & CHEN 1997) or will be described by the authors in other papers. The key to families of Thai Gerromorpha (CHEN & ZETTEL 1996) will distinguish Gerridae from other families of the suborder.

Gerridae live in humid environment, in general in the presence of free water, either on the water surface or at the shore. The habitat preferences of Gerridae are diversified by the different groups. The known species of Rhagadotarsinae are usually found in still water, such as fish ponds, water reservoirs, lakes, and temporary pools; they usually assamblage in large schools. Most species of Trepobatinae and Gerrinae are found in stagnant and slowly flowing water, but some prefer streams. Eotrechinae live in stagnant water, but species of *Onychotrechus* and *Eotrechus* were found climbing and jumping upon seeping rock faces, sometimes upon rocks in streams, or rock walls splashed by waterfalls. Cylindrostethinae live in streams and stream pools, but avoid both, turbulent and still water. Ptilomerinae are exclusively found in flowing waters, preferably mountain streams, torrents with small waterfalls, or the most rapid courses of rivers. Species of most Halobatinae genera prefer flowing fresh water habitats. The genus *Halobates* comprises the well known sea scaters and the only truely ocean insects. Other *Halobates* and *Asclepios* species are confined to coastal habitats, as several Trepobatinae genera.

All Gerridae are predators and most of them are skating fastly on the water surface. The development of wings in adults is varying between groups. Wing dimorphism (macropterous/apterous, macropterous/brachypterous) and wing polymorphism (macropterous/brachypterous/micropterous) are common. As a rule, brachypterous specimens are more common in species living in running waters, but macropterous morphs dominate in species of stagnant waters. Marine species are obligatorily apterous.



Figs. 1 - 4: (1 - 2) *Trepobates* sp.: (1) middle leg, (2) forewing; (3 - 4) *Rhagadotarsus kraepelini*, tip of abdomen, lateral view, of (3) male, and (4) female (1, 2, 4: after ANDERSEN 1982a).

In general, using a light insect collecting net is suitable to catch gerrids from the water surface. Especially for collecting large species, the net should have a minimum diameter of 20 cm, and a minimum depth of 25 30 cm, because otherwise large specimens easily escape by jumping out of the net. Wide mashes (about 500 μm) allow it to pull the net fastly enough through water. For small species living near the edge of the water, a second, smaller net would be handy.

PC and HZ refers to personal observations of the authors.

Key to the genera and subgenera of Gerridae from Thailand and adjacent countries

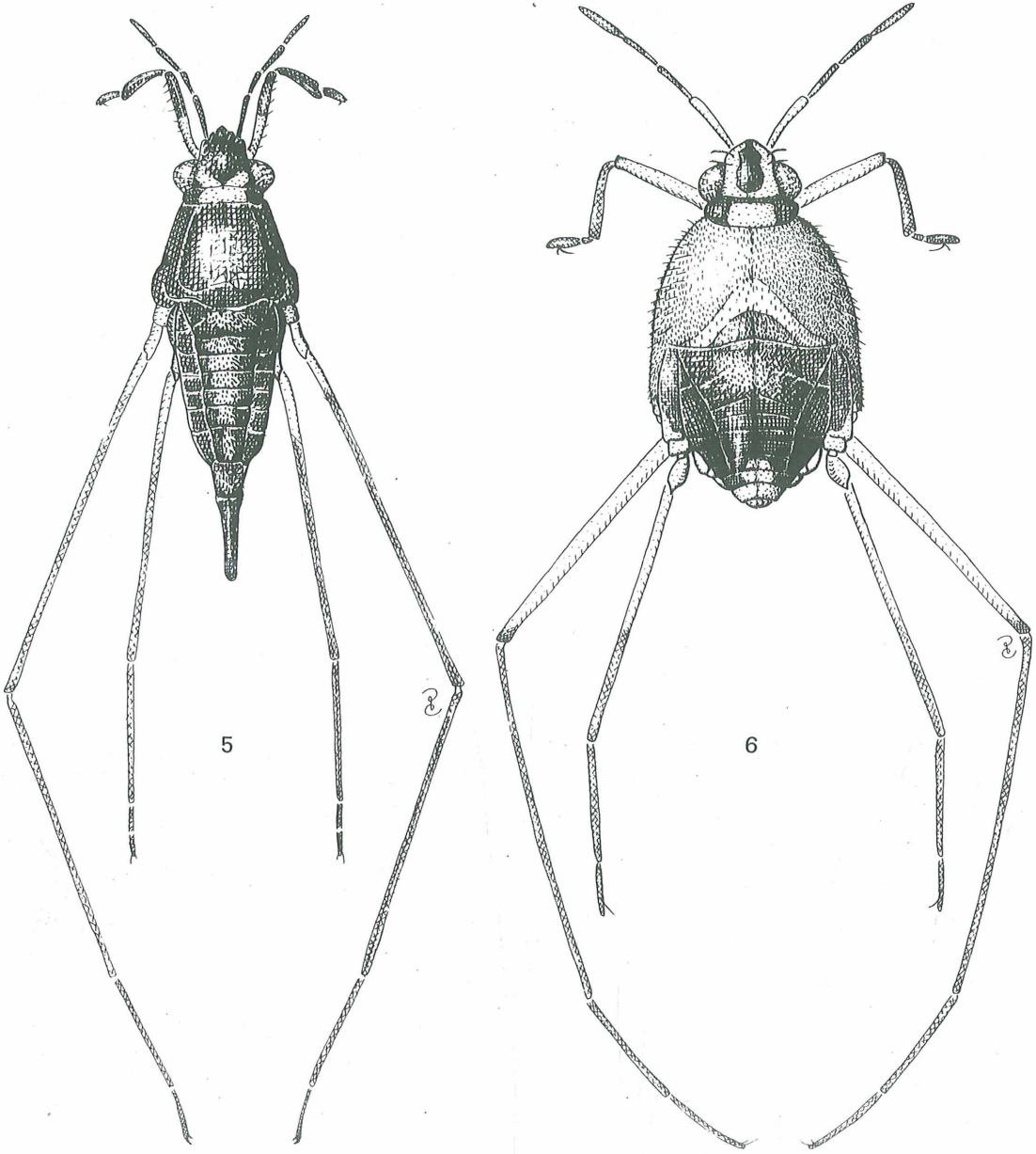
(partly adapted from keys in ANDERSEN 1982a, 1995, POLHEMUS & ANDERSEN 1984, POLHEMUS & POLHEMUS 1995, 1996; partly simplified according to the species known from the area)

1 Female tergite 8 and gonocoxae 1 long (Fig. 4); ovipositor long and serrate; male abdominal segment 8 long, cylindrical (Fig. 3), habitus as in Figure 5 (**Rhagadotarsinae**) ..... ***Rhagadotarsus***

With one species in the area; common at the edge of stagnant waters (lakes, artificial ponds, etc.) preferably in open areas; rarely also in lentic parts of larger streams and rivers (HZ, pers. observ.).

Female tergite 8 and gonocoxae 1 short; ovipositor short and nonserrate; male abdominal segment 8 much shorter. 2

2 Middle femur distinctly stouter than hind femur, distinctly shorter than middle tibia (Fig. 1) and usually shorter (except in *Cryptobates*) than hind femur; forewings (if present) with coriaceous basal part and membranous apical part (Fig. 2) (**Trepobatinae**) 3



Figs. 5 - 6: (5) *Rhagadotarsus kraepelini*, ♀ (body length 4 mm), (6) *Naboandelus signatus*, ♀ (3 mm).

- Middle femur about as slender as hind femur, usually longer than middle tibia and subequal or longer than hind femur; forewings (if present) not differentiated. 7

3 Third antennal segment twice as long as second or longer (freshwater species). 4

Third antennal segment shorter or slightly longer than second segment (freshwater and mangrove inhabiting species)..... 5

4 Head predominantly yellowish; antenna almost as long as body. ***Cryptobates***

One species known from Thailand, a second (*C. rufus* POLHEMUS & POLHEMUS, 1995) is described from West Malaysia, Singapore, and Indonesia (Batam Isl.) and may be found in Thailand, too. Species live in lentic areas at the edge of small, but deep rivers (POLHEMUS & POLHEMUS 1995) or in small pools (PC, pers. observ.).

Head predominantly blackish with yellow median stripe; antenna distinctly shorter than body. ***Gnomobates***

The genus includes one species only, which is rarely collected in India and Indochina. In India specimens have been collected in an artificial pond (POLHEMUS & POLHEMUS 1995).

5 Rostrum curved; foretibia distinctly widened apically (mangrove inhabiting species)..... 6

Rostrum nearly straight (Fig. 10); foretibia not widened apically; habitus as in Figure 6 (freshwater species). ***Naboandelus***

Naboandelus signatus is widespread in India and the Southeast Asian mainland and was found in several areas of Thailand, where it inhabits the edge of stagnant waters (lakes, artificial ponds etc.) preferably in open areas; (PC and HZ, pers. observ.). A second species (*N. johorensis* POLHEMUS & POLHEMUS, 1995) is described from West Malaysia and may occur in South Thailand.

6 Mesonotum with two pairs of slender elongate yellowish stripes; male metasternum anteriorly produced, metasternal scent gland large. [*Stenobates*]

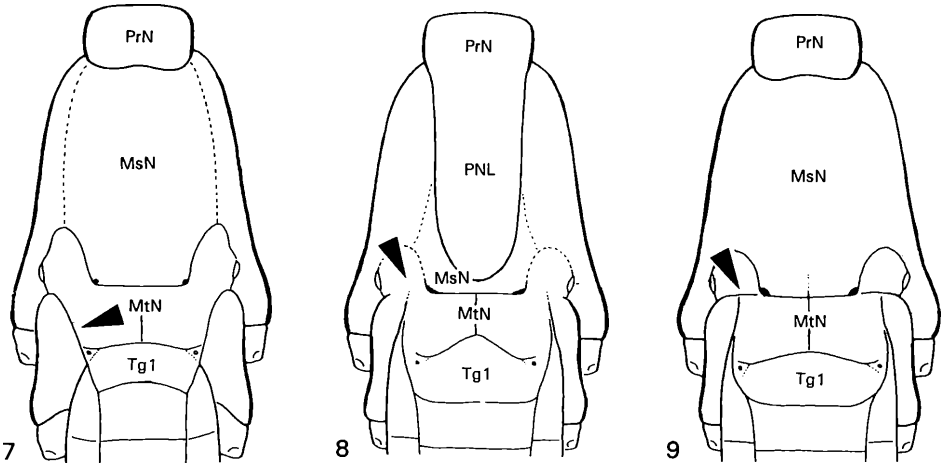
One species (*S. biroi* ESAKI, 1926) is known from Singapore and may also occur in South Thailand. *Stenobates* species inhabit mangroves.

Mesonotum with one pair of broad elongate yellowish stripes; male metasternum rarely produced anteriorly, metasternal scent gland small..... [*Rheumatometroides*]

One mangrove inhabiting species, *R. insularis* (POLHEMUS & CHENG, 1982), is known from Singapore and West Malaysia and may also occur in South Thailand.

7 Body of elongate shape, rarely stout (Figs. 15 20); metasternum well developed, clearly reaching the metacetabula laterally (freshwater species)..... 8

Body usually of short ovate or triangular shape (Figs. 25 27), rarely stoutly elongate (only in marine species); metasternum reduced to a short subtriangular plate, only in marine species reaching the metacetabula laterally (Halobatinae)..... 24



Figs. 7 9: Thorax and base of abdomen, dorsal view in (7) Ptilomerinae, (8) Gerrinae, and (9) Cylindrostethinae (all after ANDERSEN 1982a); arrows pointing at the metacetabular grooves; MsN - mesonotum, MtN - metanotum, PNL - pronotal lobe, PrN - pronotum, Tg1 - tergite 1.

8 Metacetabular groove dorsally reaching anterior end of abdominal tergite 1 (Fig. 7); length of foretarsus at least 0.5 times length of foretibia (Fig. 15) **(Ptilomerinae)**. 9

Metacetabular groove not reaching anterior end of abdominal tergite 1 (Figs. 8, 9); length of foretarsus shorter than 0.5 times length of foretibia..... 14

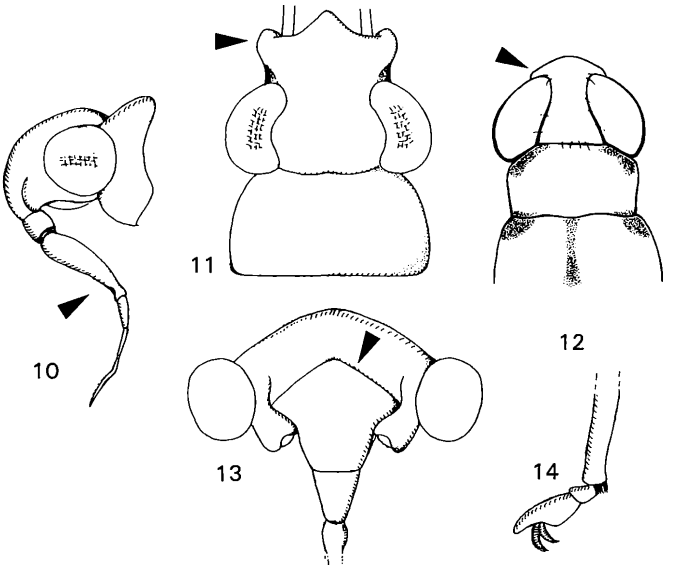
9 Large species, body length more than 15 mm; hind coxa with a small apical spine; hind femur much longer than middle femur; middle femur of male with a fringe of long hairs. ***Ptilomera***

Three species are known from Thailand, a fourth, undescribed species known from Laos (NHMW) may occur in Thailand, too. These large water striders are typical inhabitants of lotic sections of smaller and middle sized streams in forested areas.

Smaller species, body length less than 10 mm; hind coxa without spine; hind femur subequal or shorter than middle femur; middle femur without fringe of long hairs..... 10

10 Dorsal appearance predominantly yellowish; antennal segment 1 distinctly shorter than segments 2 4 together; in dorsal view head anteriorly more rounded (Fig. 12); male distinctly smaller than female; paramere crescent-shaped, not hirsute. ***Rheumatogonus***

The taxonomy of the Southeast Asian species of this difficult genus is not well known. Probably most of the Thai specimens belong to *R. intermedius* HUNGERFORD, 1933, at least those from the south. But further undescribed species and *R. vietnamensis* ZETTEL & CHEN, 1996, may also occur. *Rheuma-*



Figs. 10 14: (10) *Naboandelus signatus*, head, lateral view; (11 12) head and pronotum of (11) *Rhyacobates* sp. and (12) *Rheumatogonus vietnamensis* (from ZETTEL & CHEN 1996); (13) *Halobates* sp., head, frontal view (arrow: base of clypeus); (14) *Onychotrechus esakii*, foretarsus with claws.

togonus species inhabit small and middle sized streams in forested areas, where they prefer areas with lower water velocity than *Ptilomera* species do. Some species tend to accumulate to large groups (HZ, pers. observ.).

Dorsal appearance predominantly blackish; antennal segment 1 distinctly longer or subequal to segments 2 4 together; in dorsal view, head anteriorly with distinct corners at base of antenna (Fig. 11); male slightly smaller than female; paramere distally elongate, in most genera distally hirsute. 11

11 Mesonotum with a yellow median line; forefemur ventrally with thin, hair-like bristles; paramere of male apically bare; habitus: Fig. 15. ..... ***Rhyacobates***

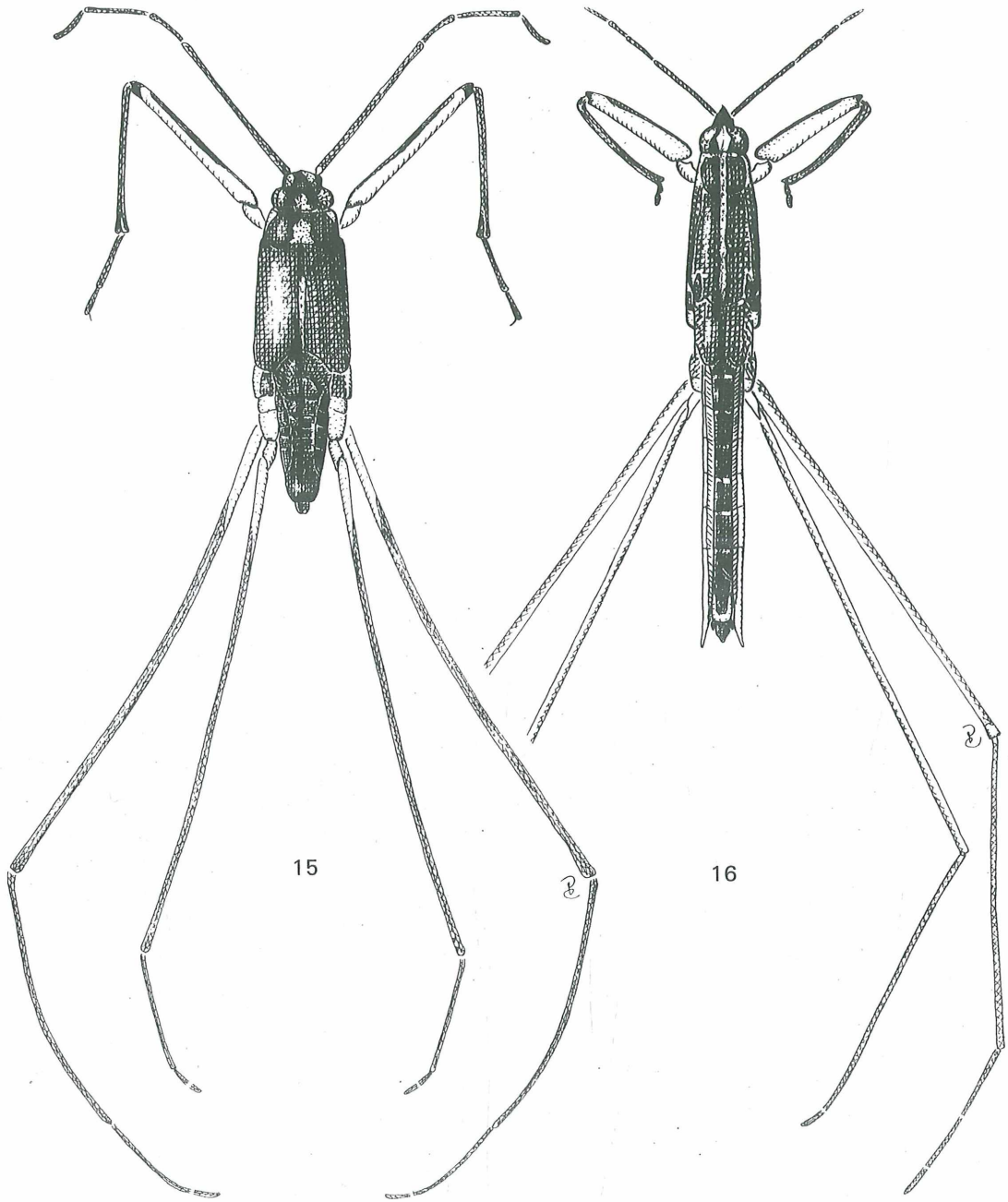
One species, *R. malaisei*, is known from Thailand. "*Rhyacobates*" *imadatei* was described after specimens from Brunei and Thailand, but the Thai record is probably wrong; *imadatei* belongs to an undescribed genus as pointed out by ANDERSEN & CHEN (1995). *Rhyacobates* species are specialized inhabitants of stream currents in forested areas (ANDERSEN & CHEN 1995).

Mesonotum medianly black; forefemur ventrally with thick bristles; paramere of male apically densely hirsute. 12

12 Mesopleura orange coloured; length of antennal segment 1 subequal to segments 2 4 together; connexivum of segment 6 of female produced into a long, slender process. **Genus 1**

An undescribed genus related with *Pleciobates*. Specimens have been found in a middle sized stream in a forested area (HZ, pers. observ.).

Mesopleura blackish; length of antennal segment 1 distinctly longer than segments 2 4 together; connexivum of segment 6 of female with or without process. 13



Figs. 15 - 16: (15) *Rhyacobates malaisei*, ♂ (body length 6 mm); (16) *Cylindrostethus costalis*, ♂ (16 mm).

13 Abdominal tergites 1 and 2 completely fused; female with long hind coxa (at least 3.5 times as long as wide) and without processes on connexivum of segment 6. ..... [*Andersenius*]

Two species (*A. dentifer* ZETTEL & CHEN, 1996, *A. longicoxa* ZETTEL & CHEN, 1996) are described from Vietnam and may also occur in Thailand. The habitat preference is unknown, but probably similar as in the related *Pleciobates*.

Suture between abdominal tergites 1 and 2 at least partly visible; female with normal short hind coxa (slightly longer than wide) and with long processes on connexivum of segment 6. ..... ***Pleciobates***

One species is recorded from Thailand, two further species are described from West Malaysia (*P. tuberculatus* ESAKI, 1930) and Vietnam (*P. vietnamensis* ZETTEL & CHEN, 1996) and may also occur in Thailand. Inhabitants of streams (PC, pers. observ.).

14 Metacetabular groove dorsally connected with hind margin of the mesonotum (Fig. 9); antennal segment 4 short and curved; rostrum short, not surpassing the posterior margin of prosternum; segment 2 of foretarsus more than twice as long as segment 1. Body very slender and cylindrical (Fig. 16) (**Cylindrostethinae**). ..... ***Cylindrostethus***

Three species are recorded from Thailand; no further species are expected. *Cylindrostethus costalis* and *C. malayensis* are allopatric species which inhabit smoothly flowing streams in lowland swamp forests (POLHEMUS 1994), but have been also found in wide pools of streams in higher altitudes (HZ, pers. observ.). *Cylindrostethus scrutator* typically inhabits rocky upland streams (POLHEMUS 1994).

Metacetabular groove dorsally indistinct (Fig. 8); antennal segment 4 straight; rostrum longer, always surpassing the posterior margin of prosternum; segment two of foretarsus usually less than twice as long as segment 1; body of different shape usually stouter and not cylindrical. 15

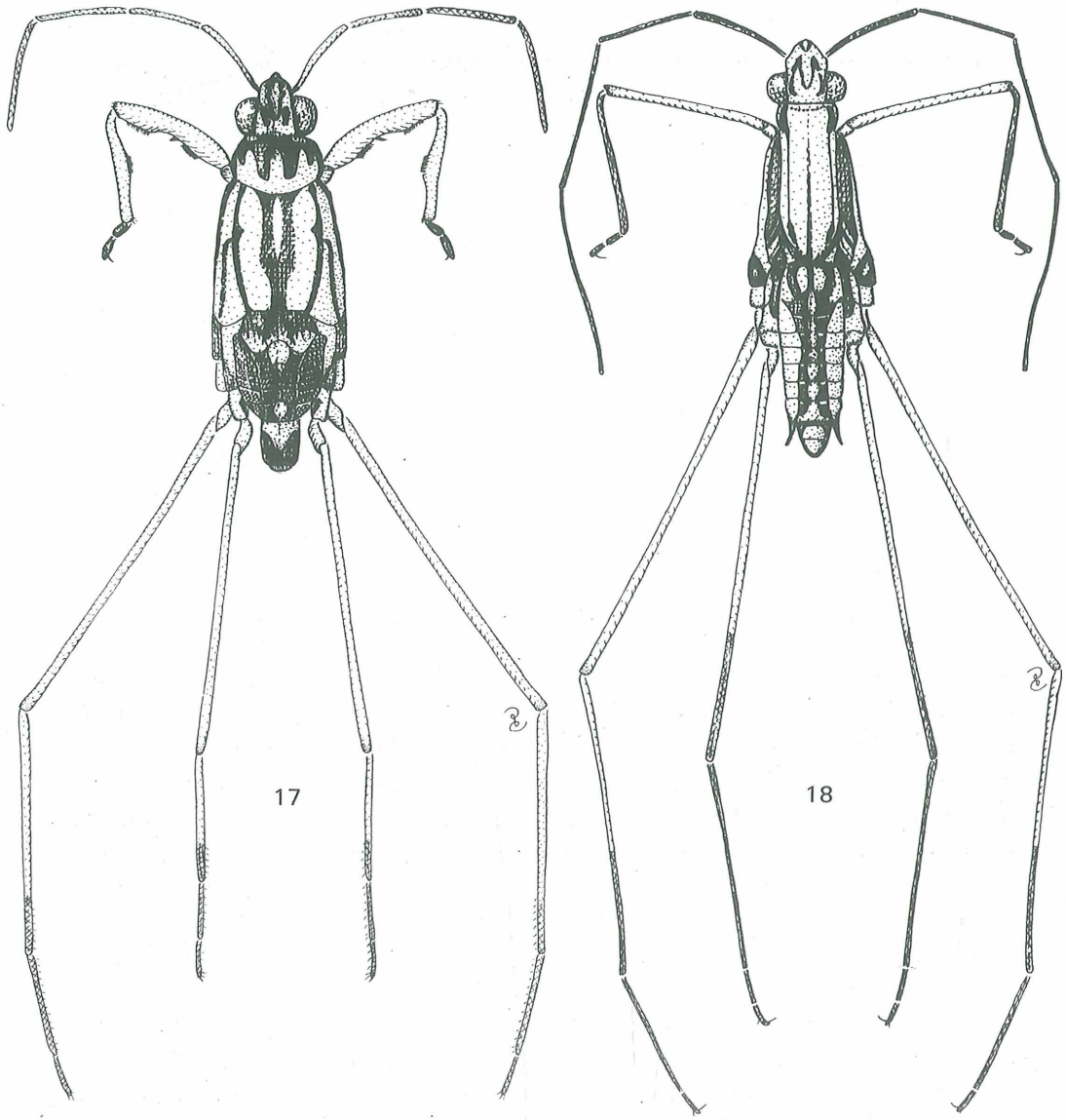
15 Meso- and metacetabula with distinct patches of dense, silvery reflecting hairs; pronotum of apterous morph short, without pronotal lobe (comp. Fig. 9) (**Eotrechinae**). 16

Meso- and metacetabula without distinct silvery reflecting hair patches, but with more or less uniform hair layer (not to mistake with frequently present yellowish coloured spots of the integument); pronotum of apterous morph usually long, with well developed pronotal lobe (Fig. 8) (Gerrinae). 18

16 Hind leg distinctly shorter than middle leg (habitus: Fig. 17). ***Amemboa***

a Segment 1 of middle tarsus about twice as long as segment 2. Male forefemur modified, with tubercles and/ or tufts or patches of dark hairs. ..... **sg. *Amemboa***

Segment 1 of middle tarsus distinctly less than twice as long as segment 2. Male forefemur not modified. ..... **sg. *Amemboides***



Figs. 17 - 18: (17) *Amemboa* (s.str.) *speciosa*, ♂ (body length 3 mm); (18) *Limnometra matsudai*, ♂ (8 mm).

Thirteen species of the genus *Amemboa* are recorded from Thailand, but several species more may occur. *Amemboa* species inhabit pot holes and pools associated with streams in forested areas and are only rarely found at less quiet edges of streams (PC and HZ, pers. observ.). Frequently a few species are found in the same habitat.

Lengths of hind leg and middle leg subequal. 17

17 Claws inserted in apex of tarsus; hind femur shorter than hind tibia and hind tarsus together..... ***Eotrechus***

Two species are known from Thailand, but, because of the specialized habitats, further undescribed species may be discovered. As far as known, *Eotrechus* species live in high altitudes of mountains, where they inhabit wet rock surfaces (ANDERSEN 1982b).

Claws inserted before apex of tarsus (Fig. 14); hind femur longer than hind tibia and hind tarsus together. ***Onychotrechus***

Onychotrechus esakii is widespread in North and Northeast Thailand. A second species (*O. pallidus* ANDERSEN, 1980, from West Malaysia) may occur in South Thailand. *Onychotrechus* species live hygropetric on wet rocks along streams and water falls in forested areas (ANDERSEN 1980).

(Gerrinae:)

18 Very large, body length 30 mm and more..... [*Gigantometra*]

The single species of the genus, *G. gigas* CHINA, 1925, is known from South China and North Vietnam. Probably it does not occur in Thailand. Its habitats are wide, slowly flowing small streams in primary forests (after various observations).

Smaller species up to 20 mm body..... 19

19 Pronotum inclusively pronotal lobe predominantly yellowish or brownish with blackish colour patterns, especially with blackish midline (Fig. 18); antenna very long and slender (Fig. 18). 20

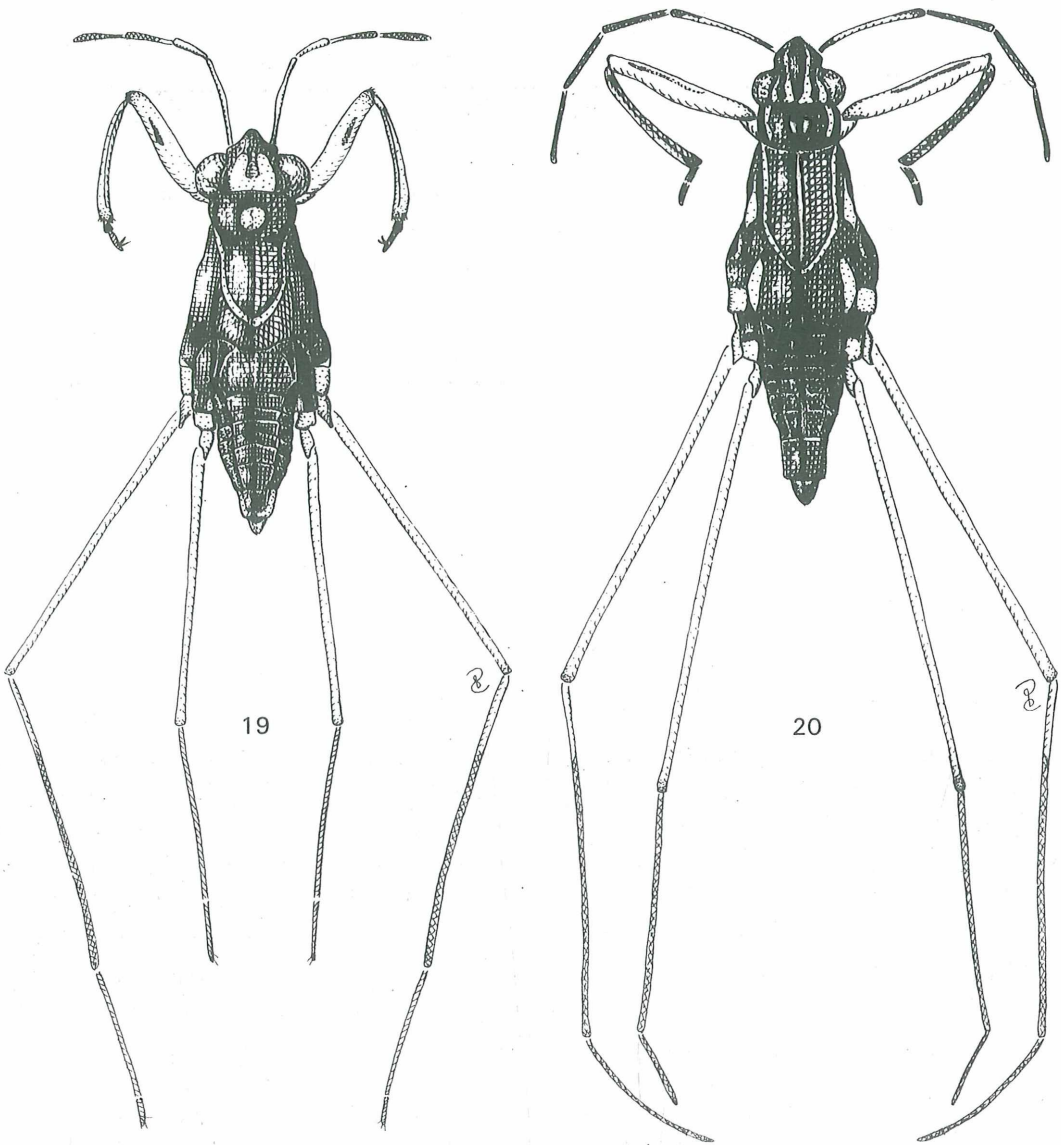
Pronotum inclusively pronotal lobe (if present) predominantly blackish, but frequently with distinct yellow or orange marks (middle line, spots, hind margin etc.) (Figs. 19, 20); antenna stouter. 21

20 Abdominal connexiva posteriorly without distinct spines. Abdomen relatively short..... ***Tenagogonus***

One species is so far recorded, but the presence of two further species, *T. kuiterti* HUNGERFORD & MATSUDA, 1958 (described from Myanmar) and *T. maai* HUNGERFORD & MATSUDA, 1958 (described from West Malaysia), are likely. *Tenagogonus* species are typically found in larger, quiet, lentic parts of running waters, but also in stagnant waters, especially if they are associated with streams.

Abdominal connexiva posteriorly with long distinct spines; abdomen slender elongate (habitus: Fig. 18). ***Limnometra***

Limnometra matsudai is a common species and frequently found in potholes or pools along streams in shaded places. *Limnometra ciliata* inhabits larger stagnant waters or wide lentic sections of larger streams. An undescribed species collected in Mae Hong Son Province keys out with *Limnometra*, but



Figs. 19 - 20: (19) *Neogerris parvulus*, ♂ (body length 4 mm); (20) *Limnogonus fossarum fossarum*, ♂ (8 mm).

shows a combinations of characters of *Tenagogonus* and *Limnometra*. No further species is so far expected.

21 Dorsal surface of head almost uniformly dark; venter mainly dark. 22

Dorsal surface of head with distinct longitudinal yellowish or transverse orange marks. 23

22 Antennal segment 1 longer than segments 2 and 3 together; larger species (11 mm or more). ..... ***Aquarius***

Two widely distributed species occur also in Thailand, no further species are expected. Both inhabit large lentic habitats.

Antennal segment 1 shorter than segments 2 and 3 together; smaller species (9 mm or less)..... ***Gerris***

a Pronotal lobe black. **sg. *Gerris***

Pronotal lobe reddish brown..... [sg. *Macrogerris*]

A mainly holarctic genus. So far only *Gerris* (s.str.) *nepalensis* is known from Thailand. The habitats of this species are unknown. Further species may occur in the mountains of North Thailand, e.g., *Gerris* (s.str.) *lobatus* ANDERSEN & CHEN, 1993, and *Gerris* (*Macrogerris*) *gracilicoris* (HORVATH, 1879), which are both known from Yunnan.

23 Pronotum with a central orange coloured mark (habitus: Fig. 19)..... ***Neogerris***

Neogerris parvulus is a widespread and common species of small and middle sized stagnant waters including paddy fields, ponds etc., whereas *N. assimilis* is so far only known from one collection in Thailand. No further species is expected.

Pronotum with a yellow midline, a pair of yellow spots, or both (habitus: Fig. 20)..... ***Limnogonus***

a Pronotum with a pair of yellowish spots. ..... **sg. *Limnogonus***

Pronotum without a pair of yellowish spots, but with a continuous yellow midline... **sg. *Limnogonoides***

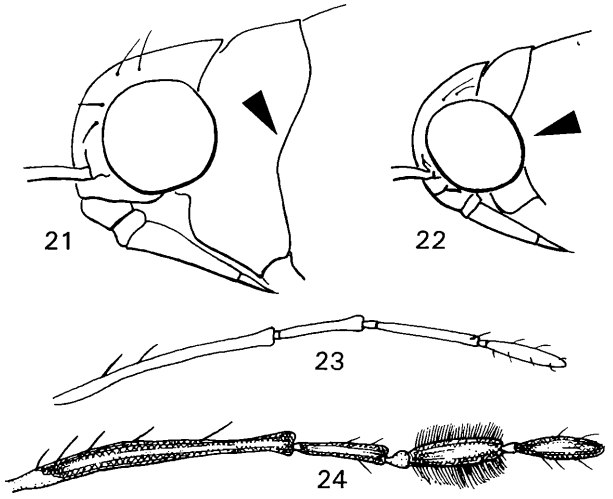
From Thailand, *L.* (*Limnogonoides*) *pectoralis* is so far only known from a single specimen (HECHER & ZETTEL 1996). The two recorded species of *Limnogonus* (s.str.) are common and widespread. *Limnogonus hungerfordi* ANDERSEN, 1975, is recorded from Singapore and may be found in South Thailand. *Limnogonus* species are typical inhabitants of all kinds of stagnant waters, but are also found in lentic parts of slow flowing streams (especially *L. nitidus*).

(Halobatinae)

24 Basal margin of clypeus well defined (Fig. 13), anterior margin of head not smoothly rounded (coastal marine species)..... 25

Basal margin of clypeus not present, anterior margin of head broadly and evenly rounded (freshwater species, rarely reaching river mangroves). 26

25 Middle tibia and segment 1 of middle tarsus with hair fringe..... ***Halobates***



Figs. 21 - 24: Head and prothorax, lateral view, of (21) *Metrocoris armatus* and (22) *Ventidius modulatus*; antennae of (23) female and (24) male of *Esakia ventidioides*.

Both species known from Thailand belong to the subgenus *Halobates* s.str. Further species may be recorded in future. The majority of *Halobates* species are known from marine coastal habitats; only a few species inhabit the open ocean.

Middle tibia with, segment 1 of middle tarsus without hair fringe..... ***Asclepios***

Asclepios annandalei is the only species so far recorded from Thailand; *A. apicalis* (ESAKI, 1924), which was recently recorded from Vietnam (ZETTEL & CHEN 1996), may also occur. Both species live in coastal marine habitats.

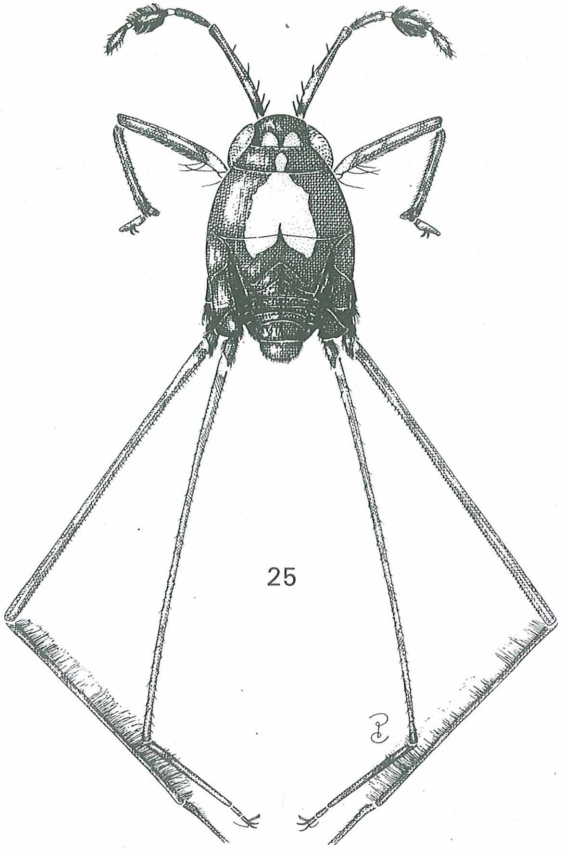
26 Eyes not overlapping the anterolateral angles of mesonotum (Fig. 21); body yellowish with black colour pattern as in Fig. 27 or similar..... ***Metrocoris***

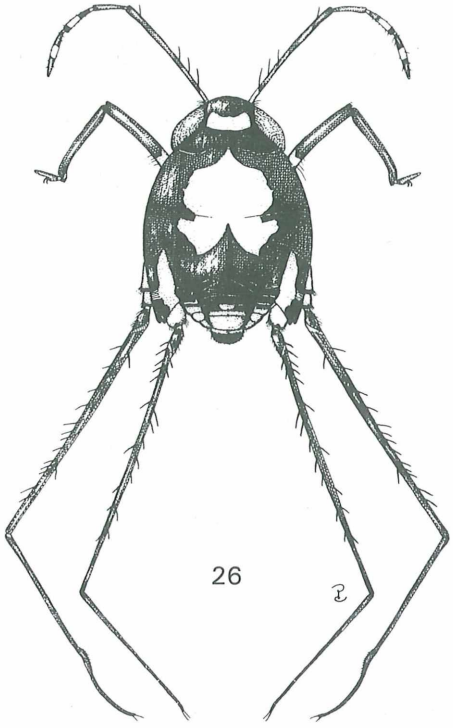
With ten described and several undescribed species, probably the most diverse gerrid genus in Thailand. Several species described from surrounding countries may be also recorded in future. *Metrocoris* species typically inhabit lentic parts of mountainous streams in forested areas (CHEN & NIESER 1993). Only a few lowland species (e.g., *M. tenuicornis*) are less demanding.

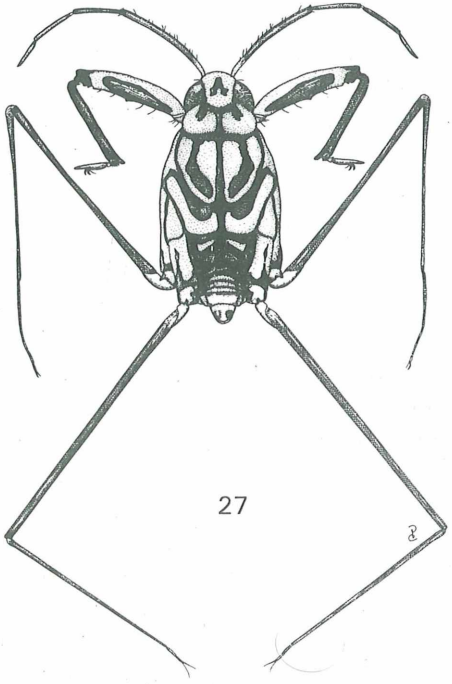
Eyes overlapping the anterolateral angles of mesonotum (Fig. 22); body greenish (after death yellowish) with black colour patterns as in Figs. 25 26 or similar. 27

27 Body strongly flattened, in anterior portion of thorax less narrowed (habitus: Fig. 25); antennal segment 3 of male enlarged and with a fringe of stiff hairs along margin (Fig. 24). [*Esakia*]

Esakia fernandoi CHENG, 1966, and an undescribed species known from Vietnam, may also occur in Thailand. *Esakia* species prefer smoothly flowing smaller streams in forested areas. *Esakia fernandoi* lives in the lentic areas, but some other species inhabit lotic sections, where they are aggregating to small or even large groups (HZ, pers. observ.).







Figs. 25 - 27: freshwater Halobatinae: (25) *Esakia ventidioides* LUNDBLAD, 1933, ♂ (2 mm), (26) *Ventidius* (*Ventidioides*) *karen*, ♂ (3 mm) (from CHEN & ZETTEL 1996), (27) *Metrocoris lituratus* (STÅL, 1854, ♂ (6 mm).

Body usually not distinctly flattened (except females of *V. hungerfordi*), in anterior portion of thorax distinctly narrowed (habitus: Fig. 26); antennal segment 3 of male slender. ***Ventidius***

a Pronotal lobe black; metacetabula bilobate. **sg. *Ventidioides***

Pronotal lobe partly yellowish; metacetabula triangular..... **sg. *Ventidius***

So far six species are known from Thailand, two further species may occur: *V.* (s.str.) *harrisoni* CHENG, 1965 (known from Malaysia) and *V.* (*Ventidioides*) *kuiterti* HUNGERFORD & MATSUDA, 1960 (from Myanmar). Usually, *Ventidius* species are found in small and middle sized streams and at the edge of large mountainous lakes, where they inhabit open, quiet areas (PC, pers. observ.).

Check-list of genera and species of Gerridae known from Thailand

This list includes all species presently known from Thailand based on literature and material deposited in the Natural History Museum Vienna (= NHMW). References in brackets refer to the first record for Thailand.

Subfamily Rhagadotarsinae

***Rhagadotarsus* BREDDIN, 1905**

Rhagadotarsus kraepelini BREDDIN, 1905 (POLHEMUS & KARUNARATNE 1993)

Subfamily Trepobatinae

***Naboandelus* DISTANT, 1910**

Naboandelus signatus DISTANT, 1910 (POLHEMUS & POLHEMUS 1994)

***Cryptobates* ESAKI, 1929**

Cryptobates johorensis POLHEMUS & POLHEMUS, 1995 (NHMW)

***Gnomobates* POLHEMUS & POLHEMUS, 1995**

Gnomobates kuiterti (HUNGERFORD & MATSUDA, 1958) (POLHEMUS & POLHEMUS 1995)

Subfamily Gerrinae

***Aquarius* SCHELLENBERG, 1800**

Aquarius adelaidis (DOHRN, 1860) (ANDERSEN 1990)

Aquarius paludum (FABRICIUS, 1794) (ANDERSEN 1990)

***Gerris* FABRICIUS, 1794**

Gerris (*Gerris*) *nepalensis* DISTANT, 1910 (HANBOONSONG & al. 1996)

***Limnogonus* STÅL, 1868**

Limnogonus (s.str.) *fossarum fossarum* (FABRICIUS, 1775) (ANDERSEN 1975)

Limnogonus (s.str.) *nitidus* (MAYR, 1865) (ANDERSEN 1975)

Limnogonus (*Limnogonoides*) *pectoralis* (MAYR, 1865) (HECHER & ZETTEL 1996)

***Neogerris* MATSUMURA, 1913**

Neogerris assimilis ANDERSEN, 1975 (NHMW)

Neogerris parvulus (STÅL, 1859) (ANDERSEN 1975)

***Limnometra* MAYR, 1865**

Limnometra ciliata MAYR, 1865 (ANDERSEN 1995)

Limnometra matsudai (MIYAMOTO, 1967) (ANDERSEN 1995)

***Tenagogonus* STÅL, 1853**

Tenagogonus nicobarensis ANDERSEN, 1964 (ANDERSEN 1995)

Tenagogonus/Limnometra sp. (undescribed species, generic position unclear, NHMW)

Subfamily Eotrechinae

***Amemboa* ESAKI, 1925**

Amemboa (s.str.) *armata* POLHEMUS & ANDERSEN, 1984 (POLHEMUS & ANDERSEN 1984)

Amemboa (s.str.) *brevifasciata* MIYAMOTO, 1967 (MIYAMOTO 1967)

Amemboa (s.str.) *cristata* POLHEMUS & ANDERSEN, 1984 (POLHEMUS & ANDERSEN 1984)

Amemboa (s.str.) *javanica* LUNDBLAD, 1933 (POLHEMUS & ANDERSEN 1984)

Amemboa (s.str.) *lyra* (PAIVA, 1918) (POLHEMUS & ANDERSEN 1984, as *A. riparia* POLHEMUS & ANDERSEN, 1984)

Amemboa (s.str.) *prostata* POLHEMUS & ANDERSEN, 1984 (POLHEMUS & ANDERSEN 1984)

Amemboa (s.str.) *speciosa* POLHEMUS & ANDERSEN, 1984 (POLHEMUS & ANDERSEN 1984)

Amemboa (s.str.) *aquafrigida* ZETTEL & CHEN, 1997 (ZETTEL & CHEN 1997)

Amemboa (s.str.) *schwendingeri* ZETTEL & CHEN, 1997 (ZETTEL & CHEN 1997)

Amemboa (*Amemboides*) *nodosa* POLHEMUS & ANDERSEN, 1984 (POLHEMUS & ANDERSEN 1984)

Amemboa (*Amemboides*) *perlata* POLHEMUS & ANDERSEN, 1984 (POLHEMUS & ANDERSEN 1984)

Amemboa (*Amemboides*) *velaris* POLHEMUS & ANDERSEN, 1984 (POLHEMUS & ANDERSEN 1984)

***Onychotrechus* KIRKALDY, 1903**

Onychotrechus esakii ANDERSEN, 1980 (ANDERSEN 1980)

***Eotrechus* KIRKALDY, 1902**

Eotrechus hygropetricus ANDERSEN, 1982 (ANDERSEN 1982b)

Eotrechus petraeus ANDERSEN, 1982 (ANDERSEN 1982b)

Subfamily Cylindrostethinae

***Cylindrostethus* MAYR, 1865**

Cylindrostethus costalis SCHMIDT, 1915 (POLHEMUS 1994)

Cylindrostethus scrutator (KIRKALDY, 1899) (POLHEMUS 1994)

Cylindrostethus malayensis POLHEMUS, 1994 (POLHEMUS 1994)

Subfamily Ptilomerinae

***Ptilomera* AMYOT & SERVILLE, 1843**

Ptilomera hemmingseni ANDERSEN, 1967 (ANDERSEN 1967)

Ptilomera hylactor BREDDIN, 1903 (HANBOONSONG & al. 1996)

Ptilomera tigrina UHLER, 1860 (HUNGERFORD & MATSUDA 1965, under *P. harpyia harpyia*)

***Pleciobates* ESAKI, 1930**

Pleciobates pacholatkoi ZETTEL & CHEN, 1996 (ZETTEL & CHEN 1996)

***Rhyacobates* ESAKI, 1923**

Rhyacobates malaisei ANDERSEN & CHEN, 1995 (ANDERSEN & CHEN 1995)

? "*Rhyacobates*" *imadatei* MIYAMOTO, 1967 (MIYAMOTO 1967) (Generic position unclear. Record from Thailand doubtful.)

***Rheumatogonus* KIRKALDY, 1909**

Rheumatogonus sp. (NHMW)

Genus 1 sp. (NHMW)

Subfamily Halobatinae

***Halobates* ESCHSCHOLTZ, 1822**

Halobates germanus WHITE, 1883 (HERRING 1961: map)

Halobates flaviventris ESCHSCHOLTZ, 1822 (HERRING 1961: map)

***Asclepios* DISTANT, 1915**

Asclepios annandalei DISTANT, 1915 (ANDERSEN & FOSTER 1992)

***Metrocoris* MAYR, 1865**

Metrocoris acutus CHEN & NIESER, 1993 (CHEN & NIESER 1993)

Metrocoris armatus CHEN & NIESER, 1993 (CHEN & NIESER 1993)

Metrocoris ciliatus DEN BOER, 1965 (CHEN & NIESER 1993)

Metrocoris inthanon CHEN & NIESER, 1993 (CHEN & NIESER 1993)

Metrocoris sp. aff. *malayensis* (nec *malayensis* CHEN & NIESER, 1993, as recorded by CHEN & NIESER 1993)

Metrocoris nigrofasciatus DISTANT, 1903 (CHEN & NIESER 1993)

Metrocoris nigrofascioides CHEN & NIESER, 1993 (CHEN & NIESER 1993)

Metrocoris squamifer LUNDBLAD, 1933 (CHEN & NIESER 1993)

Metrocoris strictus CHEN & NIESER, 1993 (CHEN & NIESER 1993)

Metrocoris tenuicornis ESAKI, 1926 (CHEN & NIESER 1993)

Metrocoris spp. (several undescribed species)

***Ventidius* DISTANT, 1910**

Ventidius (s.str.) *hungerfordi* CHENG, 1965 (CHEN & ZETTEL, in prep.)

Ventidius (s.str.) *malayensis* HUNGERFORD & MATSUDA, 1960 (CHEN & ZETTEL, in prep.)

Ventidius (s.str.) *modulatus* LUNDBLAD, 1933 (CHEN & ZETTEL, in prep.)

Ventidius (*Ventidioides*) *karen* LANSBURY, 1990 (LANSBURY 1990)

Ventidius (*Ventidioides*) *lundbladi* MIYAMOTO, 1967 (MIYAMOTO 1967)

Ventidius (*Ventidioides*) *pulai* CHENG, 1965 (CHEN & ZETTEL, in prep.)

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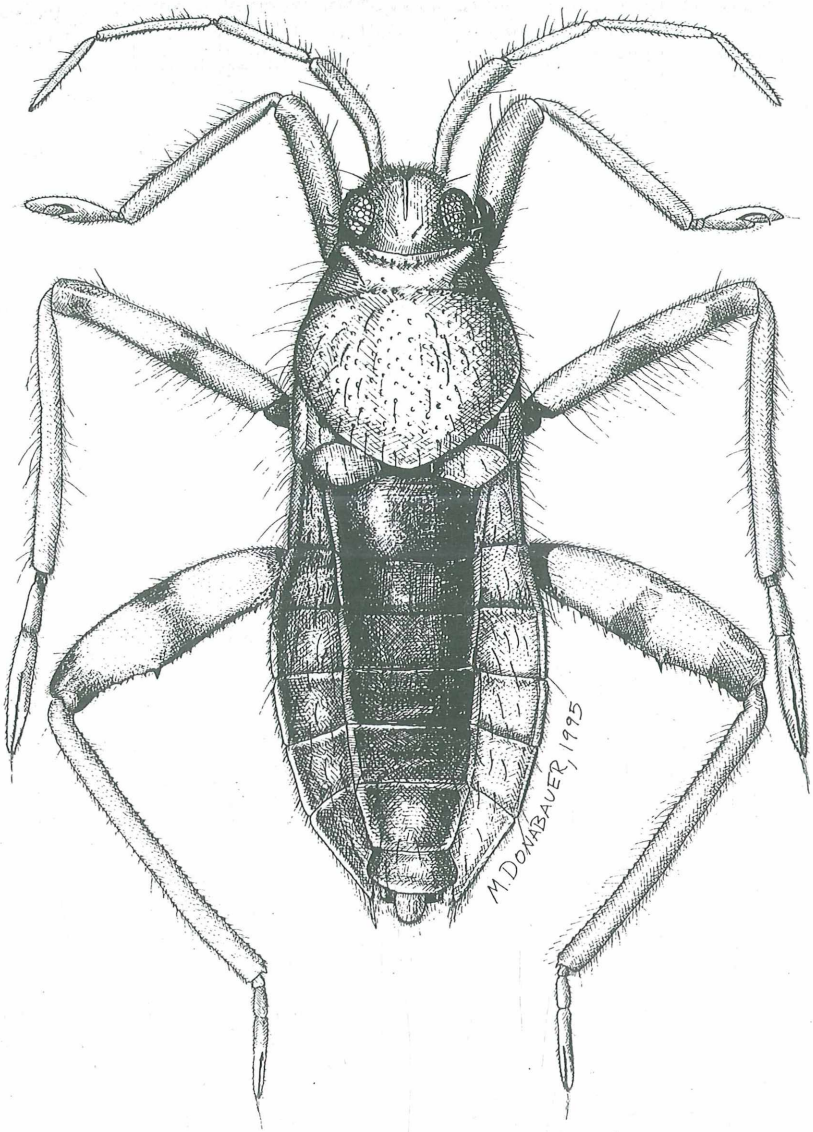
Thai Heteroptera Gallery (1)



Chenevelia stridulans ZETTEL, 1996, apterous female

This monotypic Veliidae genus is so far known only from two localities in North Thailand (Mae Hong Son, Phrae). It was named in honour of Dr. Ping-ping Chen.

Reprint from ZETTEL 1996, Annalen des Naturhistorischen Museums in Wien 98B: 356; graph: Dipl.Ing. Martin Donabauer, Vienna.