Introduction to the Notonectidae (Nepomorpha) of Thailand

by Nico Nieser

Abstract: A key to the Old World genera of Notonectidae is given followed by a list of species of Notonectidae known from Thailand and adjacent regions and a few notes on habits and habitat preferences of the Thai genera. *Nychia sappho* KIRKALDY is newly recorded from Thailand.

The following key is meant to serve in sorting out genera of Notonectidae (Back Swimmers) in SE Asia and the Pacific. Whether a specimen of water bug belongs to this family can be checked by the key to families (NIESER 1996, Amemboa 1: 4-9). As can be seen from the key below, the remark on antennae in Notonectidae in couplet 10 of that paper is incorrect.

Key to subfamilies and Old World genera of Notonectidae

1 Hemielytral commissure with a definite hair-lined pit at anterior end (Fig. 1) **(Anisopinae)** 2

Hemielytral commissure without a definite hair-lined pit at anterior end **(Notonectinae)** 4

2 Coxal plates of hind legs bare (Fig. 3). Male fore tibia proximally with a row of stridulatory pegs which usually are placed on a protrusion 3

Coxal plates of hind legs covered with long black hairs (Fig. 2). Males without stridular teeth or pegs on fore tibia [Australian] ..... ***Paranisops***

3 Antennae three-segmented. Male rostrum with a prominent lateral prong, stridular teeth or pegs proximally on fore tibia packed closely together and situated on a protuberance (Fig. 4) [palaetropical and subtropical] ..... ***Anisops***

Antennae two-segmented. Male rostrum without a lateral prong, stridular pegs proximally on fore tibia clearly separate and not situated on a protuberance (Fig. 5) [Australian] ..... ***Walambianisops***

4 Anterolateral margins of prothorax foveate (Fig. 6) 5

Anterolateral margins of prothorax not foveate 7

5 Mid femur with an anteapical pointed protuberance (Fig. 7) [Tropicopolitan].. ***Enithares***

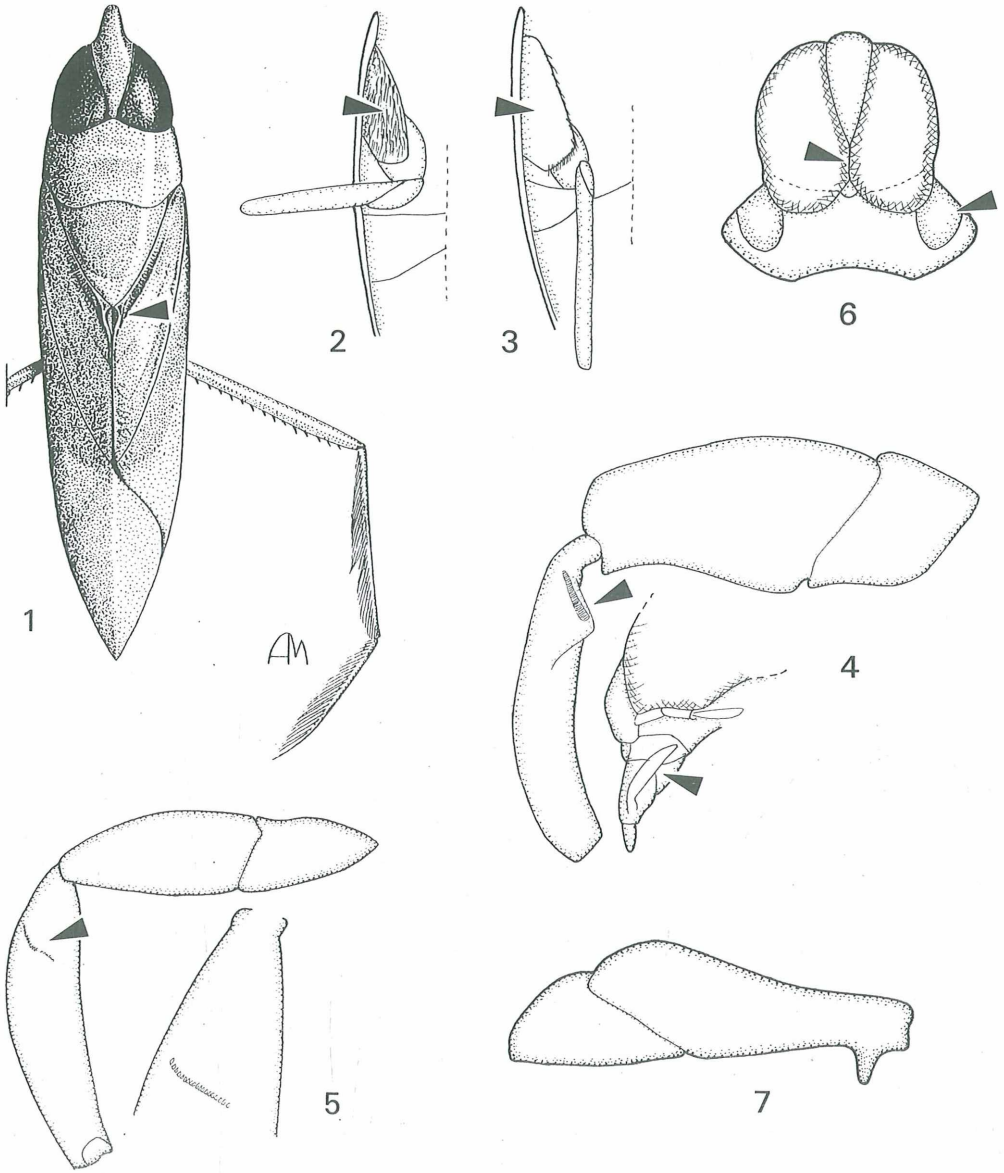
Mid femur without an anteapical pointed protuberance 6

6 Eyes basally contiguous, forming an ocular commissure (Fig. 6) [Palaeotropical] ..... ***Nychia***

Eyes basally widely spaced [southeast and insular Asia] ..... ***Aphelonecta***

7 Eyes posteriorly separated, mid femur with anteapical pointed protuberance [Cosmopolitan, predominantly temperate and subtropical zones] ..... ***Notonecta***

Eyes posteriorly contiguous, mid femur without anteapical pointed protuberance [Tropical Africa] ***Neonychia***



Figs. 1 - 7: (1) *Anisops sardeus*, ♂, habitus, illustrating the hair-lined pit (from NIESER 1982). 2 - 3: Right side of metathorax and base of abdomen in ventral view: (2) *Paranisops* with hairy coxal plate, (3) *Anisops* with surface of coxal plate bare. (4) Trochanter, femur and tibia of fore leg and rostrum in lateral view of *Anisops tahitiensis* illustrating tibial protuberance with closely packed pegs and rostral prong. (5) Trochanter, femur and tibia of fore leg of *Walambianisops wandjina* LANSBURY illustrating tibial pegs not on protuberance and not closely packed together (simplified from LANSBURY 1984). (6) Head of *Nychia sappho* in dorsal view, illustrating pronotal fovea's and ocular commissure. (7) Mid femur of *Enithares* illustrating ante-apical protuberance.

Preliminary list of Notonectidae occurring in Thailand and adjacent areas (mainly based on literature)

Abbreviations used in the following table: Countries: B = Myanmar; C = China (SW); I = India (especially Assam); L = Laos and Cambodia; M = West Malaysia and Singapore; S = Sumatera; T = Thailand; V = Viêt-Nam. + recorded, +! first record, ? uncertain record.

	I	B	T	L	V	M	S	C
Anisops								
barbatus BROOKS	+	+	+	+	+!	+	+	+
bouvieri KIRKALDY	+!	+	+	+	+!		+	+
breddini KIRKALDY	+	+	+		+	+		
campbelli BROOKS	+	+						
exiguus HORVATH	+				+			
kempi BROOKS	+	+	+		+			
kuroiwae MATSUMURA	+	+	+	+	+			
nigrolineatus LUNDBLAD	+	+	+				+	
niveus (FABRICIUS)	+				+	+	+	
sardeus (HERRICH-SCHÄFFER)	+	+						
tahitiensis LUNDBLAD					+			
Aphelonecta								
gavini LANSBURY			+	+	+			
Enithares								
ciliata (FABRICIUS)	+		+	+	+	+	+	+!
intha PAIVA		+						
mandalayensis DISTANT		+	+		+			
metallica BROOKS			+		+	+		
sinica (STÅL)				+	+			+
stridulata BROOKS			+	+	+			
Nychia								
sappho KIRKALDY		?	+!			+	+	?
	I	B	T	L	V	M	S	C

Notes on habits and habitat preferences of the genera occuring in Thailand

***Anisops* SPINOLA, 1837.** There are six species known from Thailand (see list). Species of *Anisops* and their New World counterpart *Buenoa* are remarkable for having haemoglobin cells at the base of their abdomen. Here they store the reserve oxygen during a dive. The amount of air they take with them under water can be regulated and in this way they can obtain neutral buoyancy which makes them belong to the few really planktonic insects.

They live usually in ponds or pools with little or no fish; an exception are fish ponds with fry on which they prey. Some species live in ponds in agricultural situations; several of these are widely distributed, e.g. *A. bouvieri*, *A. breddini*, and *A. kuroiwae*.

***Aphelonecta* LANSBURY, 1965.** A small genus, only six species known so far, with one species known in Thailand, *A. gavini* LANSBURY. Its ecology seems to be similar to that

of the species of *Enithares* associated with streams but, as representatives of this genus are rarely collected and usually only as single specimens, their ecology is poorly known.

***Enithares* SPINOLA, 1837.** There are four species known from Thailand (see list). They live in stagnant water including virtually stagnant potholes or side pools of streams. Based on experience with the Indonesian fauna (mainly in Sulawesi where this genus is richly represented, NIESER & CHEN 1996), there are two types of habitat preference. Some smaller species like *E. mandalayensis* live in various ponds including man-made ones. The larger species live in small ponds and pools associated with streams, usually only one or two at one place. It is not yet known if these habitat preferences are also shown by the Thai species of the genus. Like most Notonectinae, *Enithares* species usually float against the underside of the surface film when resting or awaiting prey. However, most species scare easily and hide under water when someone approaches the pond.

***Nychia* STÅL, 1859.** A small genus with some three species which tend to have wide distributions. Only one species in Thailand. If the species from South China is the same as *N. sappho* KIRKALDY, the correct name for this species is *N. limpida* STÅL. Specimens from Myanmar have been described as *N. infuscata* PAIVA. The status of these is not certain as the description refers nearly only to colour pattern. However, as various Thai specimens of *N. sappho* (which have been compared with specimens from Sulawesi) agree exactly with the description of *N. infuscata* the synonymy is very probable.

Nychia sappho lives in various stagnant waters, ponds, potholes with very little current in streams, etc. They rest against the underside of the surface film of the water (as do most *Enithares* and *Aphelonecta*) awaiting prey, which may be aquatic animals but also terrestrial species which fall in the water. Usually when present they are found in fair to large numbers.

References and bibliography

BROOKS, G.T. 1951: A revision of the genus *Anisops* (Notonectidae, Hemiptera). University Kansas Science Bulletin 34(1): 301-519.

HANBOONSONG, Y., MUNGKANDEE, P. & ZETTEL, H. 1996: A preliminary list of aquatic and semiaquatic Heteroptera (Nepomorpha, Gerromorpha) from the Maekhong-Chi-Mun rivers area, Thailand. Amemboa 1: 19-24.

LANSBURY, I. 1964: Some Observations on the Notonectidae (Hemiptera-Heteroptera) of Viêt-Nam and Adjacent Regions. - Annales Zoologici Polska Akademia Nauk 22: 203-219.

LANSBURY, I. 1968: The *Enithares* (Hemiptera-Heteroptera: Notonectidae) of the Oriental Region. Pacific Insects 10: 353-442.

LANSBURY, I. 1974: Notes on the genus *Enithares* SPINOLA (Hem., Notonectidae). Entomological Monthly Magazine 109: 226-231.

LANSBURY, I. 1984: Some Nepomorpha (Corixidae, Notonectidae and Nepidae) (Hemiptera-Heteroptera) of North-West Australia. - Transactions Royal Society South Australia 108: 35-49.

LANSBURY, I. 1985: Notes on the identity of *Nychia* STÅL (Hem.- Het.: Notonectidae) in Australia. The Beagle - Occasional Papers of the Northern Territories Museum of Arts and Sciences 2: 1-9.

NIESER, N. 1982: De nederlandse water- en oppervlakte wantsen (Heteroptera: Nepomorpha en Gerromorpha). - Wetenschappelijke Medelingen K.N.N.V. 156: 1-103.

NIESER, N. 1996: An illustrated key to the families of Nepomorpha in Thailand. - Amemboa 1: 4-9.

NIESER, N. & CHEN, P.P. 1996: Six new taxa of Nepomorpha from Sulawesi and Mindanao. - Tijdschrift voor Entomologie 139: 161-174.

ZETTEL, H. 1995: Neubeschreibungen von zwei Arten der Gattung *Aphelonecta* LANSBURY aus Indonesien und den Philippinen sowie ein Bestimmungsschlüssel zu den Arten (Heteroptera: Notonectidae). - Linzer Biologische Beiträge 27: 107-113.

Author's address: Dr. Nico Nieser, Htg. Eduardstraat 16, NL-4001 Tiel, Netherlands (e-mail: iftang@icns.nl)

The project is supported by: