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## Description of *Hydrophilomima* gen.n. from Southeast Asia (Coleoptera: Hydrophilidae)

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### Abstract

*Hydrophilomima* gen.n. from Southeast Asia is described. It comprises three species so far, *Hydrophilomima jaechi* sp.n. (typus generis), *H. vietnamica* sp.n. and *H. yunnanensis* sp.n. The new genus belongs to the subfamily Hydrophilinae (tribe Laccobiini) and is characterized by its continuous meso-metasternal carina. It is closely related to *Pelthydrus* d'ORCHYMONT.

**Key words:** Coleoptera, Hydrophilidae, Hydrophilinae, Laccobiini, *Hydrophilomima*, new genus, new species, Oriental Region

### Introduction

The study of material deposited in museum collections, as well as several collecting trips in recent years, continues to reveal previously unknown hydrophilid genera (e.g., BAMEUL 1993, HANSEN 1989, 1990, SCHÖDL 1995). The genus described below was recognized independently by the two authors as new.

The material used for this study is deposited in the following collections: NMW = Naturhistorisches Museum, Wien; CHC = Coll. M. Hansen, Copenhagen; ZMC = Zoological Museum, Copenhagen.

As an auxiliary means for separating the species the elytral index (EI: elytral length / width of both elytra) is here used.

The authors would like to express their sincere thanks to W. Zelenka (Vienna) for the habitus illustration.

### *Hydrophilomima* gen.n.

TYPE SPECIES: *Hydrophilomima jaechi* sp.n.

**DESCRIPTION:** Body elongate, widest behind pronotal-elytral junction, rather strongly attenuated posteriorly, rather weakly convex.

Labrum well sclerotized and well pigmented, fully visible in front of clypeus, but deflexed. Clypeus forming a shelf above antennal base, reaching almost to outer edge of eyes; anterior margin slightly convex in outline; anterior corners rounded. Eyes of moderate size, separated by about 6 x the width of one eye, very slightly protruding from outline of head; anterior margin very slightly emarginate. Head somewhat narrowed behind eyes. Maxillary palpi almost 2/3 x as long as width of head; 2nd segment rather slender, not thicker than following segments; 3rd segment a little shorter than 2nd; 4th segment almost symmetrical (with slightly more straight inner face), about 1 1/2 x as long as 3rd. Mentum about 1 2/3 x as wide as long, rectangular, very slightly concave; anterior margin subtruncate. Labial palpi slightly shorter than mentum; 2nd segment without subapical wreath of setae; 3rd segment about as long as 2nd, asymmetrical with straight inner face and convex outer face. Gula well developed, somewhat narrowed (but still rather wide) anteriorly. Posterior tentorial pits very small. Antenna 8-segmented, almost 1/2 x as long as width of head; 1st segment moderately long; 2nd about 1/2 x as long as 1st; 3rd-4th seg-

ments very small, subequal; 5th segment forming a large and well differentiated cupule; 6th-8th forming a somewhat compact, pubescent club, which is slightly more than 2 x as long as wide.

Pronotum widest at base, narrowed anteriorly, surface evenly convex, without transverse series of punctures at posterior margin. Prosternum rather well developed, somewhat tectiform, with fine, sharp median carina, without antennal grooves; prosternal process pointed, reaching midlength of procoxae. Procoxal cavities not closed posteriorly.

Mesosternum not fused to mesepisterna, rather narrowly reaching anterior mesothoracic margin; with strongly and abruptly raised posteromedian, somewhat arrowhead-shaped elevation, which is acutely projecting anteriorly; margined laterally and rather strongly tectiform and carinate medially; mesosternum without anteromedian groove for the reception of prosternal process.

Metasternum rather large, slightly tectiform, with slightly raised and flattened middle portion, and with fine median carina which is fused with median mesosternal carina and ends in a bifurcate spine between posterior coxae. Metasternum with fine and dense pubescence except on median carina, a little more sparsely pubescent on raised middle portion; metasternum without femoral lines. Metepisterna about 5 x as long as wide, parallel-sided.

Abdomen with 5 ventrites of subequal length (the 5th slightly longer), slightly convex; all ventrites rather dull and with uniform, fine and dense pubescence; 1st ventrite with sharp median carina; posterior margin of 5th ventrite simply rounded, not emarginate.

Elytra entirely without distinct striae or series of punctures, margined throughout. Epipleura well developed, relatively wide anteriorly (narrower at extreme base), narrowed behind to level of metacoxae; pseudopipleura somewhat wider than epipleura anteriorly (much wider at extreme base), narrowed posteriorly to level of metacoxae, from here narrowly continued towards apex, more oblique than epipleura. Scutellum of moderate size, triangular, about as long as wide.

Anterior and posterior coxae almost contiguous; middle coxae moderately narrowly separated by sternal ridge. All femora completely glabrous (few hairs at extreme base), with sharply defined tibial grooves on inner face (tibial grooves becoming weaker basally). Tibiae moderately slender, slightly flattened, with moderately long and moderately dense spines on outer face. Tarsi 5-segmented, with very fine and sparse, inconspicuous setae beneath; 1st segment of middle and hind tarsi very short, much shorter than the very long 2nd segment; claws moderately large, moderately curved.

Hind wing (fig. 5) almost  $1 \frac{2}{3}$  x as long as elytra; radial cross vein r4 rising from about middle of radial cell; medial spur rising from apex of medial loop; basal cell elongate, reaching a little less than halfway towards posterior wing margin; wedge cell present, only a little shorter than basal cell; anal lobe well developed, demarcated from remainder of wing by a sharp excision at posterior wing margin.

**AEDEAGUS:** The penis is slender apically, moderately to strongly dilated basally and the base bifurcate. Parameres distally only feebly sclerotized and provided with papillae; in dorsal view with a medio-basal excision.

**BIONOMICS:** *Hydrophilomima* is found among debris in running water (M.A. Jäch and H. Zettel, personal communication). It occurs from sea level up to 1100 m above sea level.

**DISCUSSION:** The genus has features diagnostic of Laccobiini (Oocyclini) as given by HANSEN (1991), although the mandibles, maxilla and laterosternite 3 were not examined here. It is easily recognized among the other genera of Laccobiini by its continuous, median meso-metasternal carina. It is similar to *Pelthydrus* d'ORCHYMONT and *Laccobius* ERICHSON in having the epipleura delimited from the pseudopipleura by a fine ridge appearing as a series of small arcs, and in having extremely fine and inconspicuous "systematic punctures" on head, pronotum and elytra. Furthermore, the carinate 1st ventrite and the long hind wing wedge cell are shared only with *Pelthydrus* within Laccobiini, and it is likely that *Hydrophilomima* is most closely related to this

genus (*Pelthydrus* was recently revised by SCHÖNMANN 1994, 1995). It differs, however, in addition to its meso-metasternal carina, e.g., by having well developed tibial grooves on inner faces of femora, by not having tarsal swimming hairs, and by having somewhat shorter maxillary palpi. *Hydrophilomima* differs from *Laccobius*, e.g., by having only 5 ventrites (all dull and densely pubescent), by the carinate 1st ventrite, and by the normal (not enlarged) posterior trochanters. *Hydrophilomima* differs from *Scoliopsis* d'ORCHYMONT and *Tritonus* MULSANT, e.g., by the absence of a sutural stria on elytra, by having 8-segmented antennae, by the entirely pubescent ventrites, and by the carinate 1st ventrite. It differs from *Beralitra* d'ORCHYMONT and *Oocyclus* SHARP, e.g., also by non-deflexed (non-swollen) clypeal margins and by the carinate 1st ventrite. Moreover, *Hydrophilomima* does not have rigid spines on mesosternum as in *Scoliopsis*, *Beralitra* and *Oocyclus*.

ETYMOLOGY: The generic name is a combination of *Hydrophilus*, a genus of Hydrophilidae, and the Greek mimos, imitator, referring to the characteristic, continuous meso-metasternal carina (similar to that of *Hydrophilus* GEOFFROY). The gender is feminine.

### Key to the species of *Hydrophilomima*

- 1 Dorsal surface coarsely and rather densely punctate; aedeagus (fig. 4) ..... *H. yunnanensis* sp.n.
- Dorsal surface very finely and sparsely punctate ..... 2
- 2 Body outline elongately oval (figs. 1, 6); tibiae of front legs with few long projecting spines on lateral margins; EI 1.38 - 1.50; aedeagus (fig. 2). Length: 3.6 - 4.0 mm ..... *H. jaechi* sp.n.
- Body outline less elongate (fig. 7); tibiae of front legs without long projecting spines. EI 1.29 - 1.40; aedeagus (fig. 3). Length: 2.8 - 3.4 mm ..... *H. vietnamica* sp.n.

### *Hydrophilomima jaechi* sp.n.

TYPE LOCALITY: 15 km SW Bao Loc, S-Vietnam.

TYPE MATERIAL: Holotype ♂: "S-VIETNAM: 22.-24.4. 15km SW Bao Loc 1995 900m, 11°27'N 107°43'E Pacholatko & Dembicky" (NMW). Paratypes (♂♂ + ♀♀): 24 exs., same locality data as holotype (CHC, NMW, ZMC); 4 exs., "THAILAND: Khao Yai NP, 16.XI.1988, leg. Jäch" (NMW, ZMC); 2 exs., "O-THAILAND 1990, Ko Chang (12), White Sands Beach, leg. Jäch, 10.12." (NMW); 1 ex., "THAILAND: 30.-31.10.1995 Chiang Mai Prov. W Mae Rim, Mae Sa NP, Mae Sa Falls leg. Zettel (2)" (NMW); 3 exs., "THAILAND: 2.11.1995 Chiang Mai Prov. Doi Suthep, 750-800m, leg. Zettel (4)" (NMW, ZMC); 5 exs., "THAILAND: 5.11.1995 Chiang Mai 900-1100m Doi Suthep NP leg. Zettel (7)" (NMW, ZMC); 1 ex., "THAILAND: 12.XI.1995 12 km S Mae Hong Son Pha Bong leg. Zettel (13a)" (NMW); 1 ex., "THAILAND: 16.11.1995 Phrae Prov., Mae Khaem 15km E Phrae, ca. 350m leg. Zettel (16b)" (NMW); 1 ex., "THAILAND: 18.11.1995, Phrae Prov.n 50km NE Phrae, 5km SE Huai Kaet leg. Zettel (18a)" (NMW).

DESCRIPTION: Habitus (fig. 1). Length 3.6 - 4.0 mm. Elytra elongate [EI: 1.38 - 1.50 (fig. 8), average: 1.42 (n = 10)]. Piceous brown to black, head, pronotum and elytra reddish towards margins. Legs reddish, maxillary palpi and antennae yellow, the latter with brownish club. Head, pronotum and elytra shining, without microsculpture, very finely and sparsely, rather uniformly punctate; punctuation of head a little more dense, especially on clypeus. Ventral face of body dull except for median meso-metasternal carina, the latter a little widened in anterior metasternal half (fig. 10). Mentum coarsely punctate. Prosternum with a fine oblique ridge on each side of median carina. Anterior part of mesosternal process in lateral view deeply excised, with strongly sinuate outline (fig. 8). Anterior tibiae with few long projecting rigid spines on outer face.

Aedeagus (fig. 2): Penis evenly dilated towards base, apex slender; corona situated in apical third of penis. Parameres as long as penis, slightly narrowed towards apex, evenly rounded apically.

Differential diagnosis: *Hydrophilomima jaechi* differs from both the following species in its elongate body outline, and in the shape of the anterior excision of the mesosternum and the aedeagus.

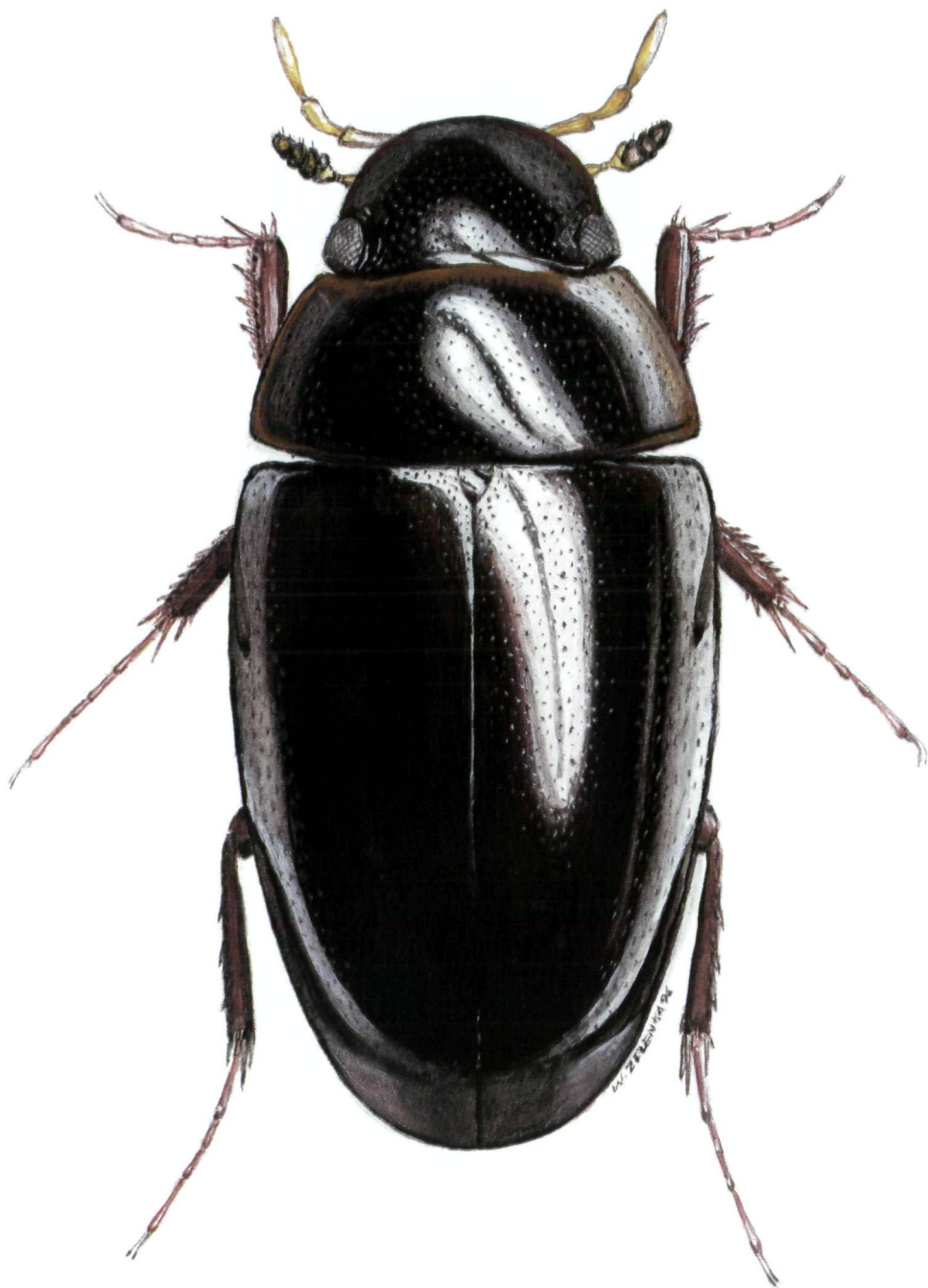
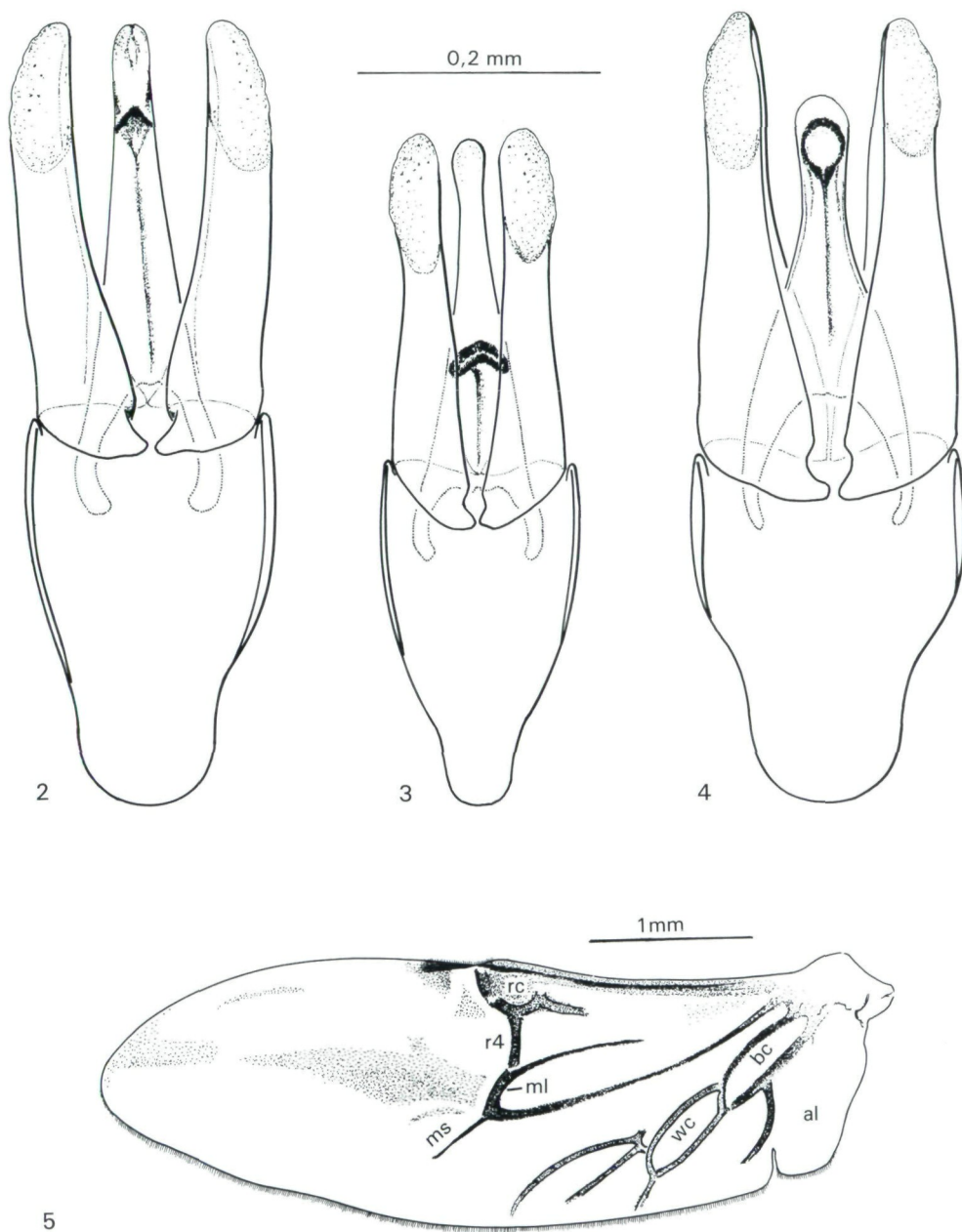
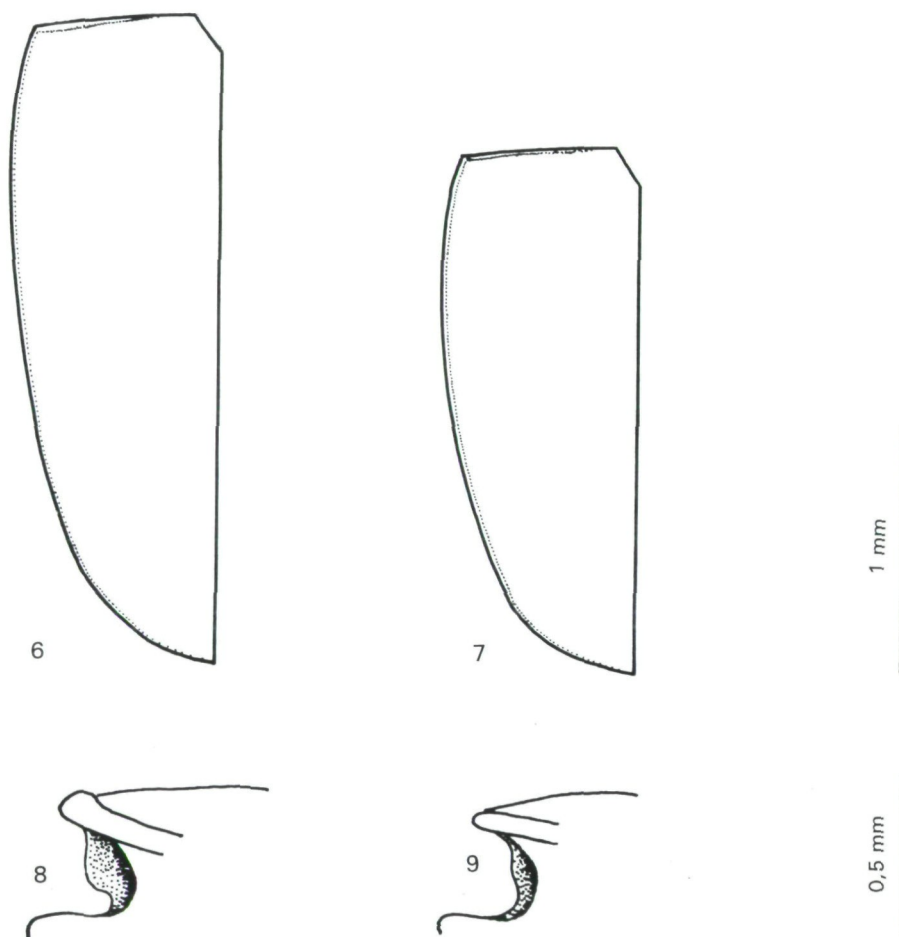


Fig. 1: Habitus of *Hydrophilomima jaechi*.



Figs. 2 - 4: Aedeagus, dorsal view of (2) *Hydrophilomima jaechi*, (3) *H. vietnamica*, (4) *H. yunnanensis*.

Fig. 5: Hind wing of *H. jaechi*. al = anal lobe, bc = basal cell, ml = medial loop, ms = medial spur, rc = radial cell, r4 = radial cross vein, wc = wedge cell.



Figs. 6 - 7: Outline of elytra of (6) *Hydrophilomima jaechi*, (7) *H. vietnamica*.

Figs. 8 - 9: Antero-median mesosternal process, lateral view of (8) *H. jaechi*, (9) *H. vietnamica*.

Discussion: Specimens from Khao Yai differ by less elongate body outline (EI: 1.35 - 1.42; average 1.39 (n = 4)), and by the whole body surface being more or less reddish, but these differences do not seem to be of specific significance.

ETYMOLOGY: Named after Manfred A. Jäch, who discovered the new genus in 1988.

DISTRIBUTION (fig. 11): Thailand, S-Vietnam.

### *Hydrophilomima vietnamica* sp.n.

TYPE LOCALITY: 15 km SW Bao Loc, S-Vietnam.

TYPE MATERIAL: Holotype ♂: "S-VIETNAM: 22.-24.4. 15km SW Bao Loc 1995 900m, 11°27'N 107°43'E Pacholatko & Dembicky" (NMW). Paratypes (♂ ♀): 25 exs., same locality data as holotype (CHC, NMW, ZMC).



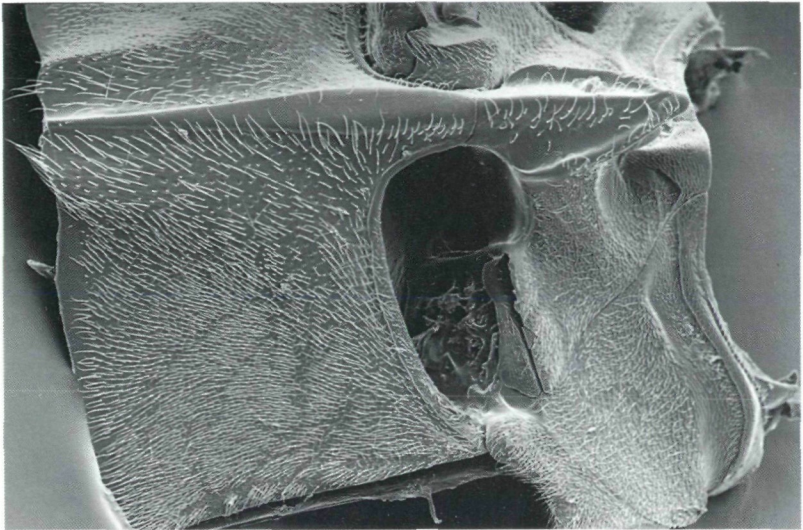


Fig. 10: Ventral aspect of *Hydrophilomima jaechi* (SEM-photograph by J. Kodada).

**DESCRIPTION:** Length 2.8 - 3.4 mm. Elytra less elongate than in preceding species [EI: 1.29 - 1.40 (fig. 9), average: 1.33 (n = 10)]. Piceous-brown to black, clypeus, pronotum and elytra reddish near margins. Legs reddish, maxillary palpi and antennae yellow, antennal club distinctly darker. Head, pronotum and elytra moderately finely and rather uniformly dispersed punctate, punctation on anterior half of clypeus a little more dense. Ventral face of body similar to that of *H. jaechi*. Mentum rugosely punctate. Prosternum without distinct ridges except for median carina. Outline of anterior excision of mesosternal process less sinuate in lateral view (fig. 9).

**Aedeagus** (fig. 3): Penis evenly dilated towards base; apex slightly dilated and rounded (digitate); corona situated near middle of penis. Parameres about as long as penis, slender, slightly dilated distally.

**Differential diagnosis:** *Hydrophilomima vietnamica* can be separated from the two other species by the distinctly smaller average size, the smaller elytral index and the aedeagus.

**DISTRIBUTION** (fig. 11): So far known only from the type locality.

### *Hydrophilomima yunnanensis* sp.n.

**TYPE MATERIAL:** Holotype ♂: "CHINA, W - Yunnan env. Baoshan 6.-8.6.1993" [collector unknown] (NMW).

**TYPE LOCALITY:** Baoshan, western Yunnan province, South China.

**DESCRIPTION:** 3.6 x 1.7 mm. [EI: 1.47]. Piceous-brown, head, pronotum and elytra reddish towards margins. Legs reddish, maxillary palpi and antennae yellow, antennal club only slightly darker. Pronotum and elytra coarsely punctate. Punctuation on head less coarse and a little more dense than on pronotum. Ventral face of body similar to that of both preceding species. Mentum rugose with few coarse punctures. Prosternum with a fine oblique ridge on each side of median carina. Outline of anterior excision of mesosternal process similar to that of *H. vietnamica*.

Aedeagus (fig. 4): Penis slender apically, abruptly dilated towards base; corona situated near apex. Parameres considerably longer than penis, stout.

Differential diagnosis: *Hydrophilomima yunnanensis* is easily separable from the two preceding species by the coarser punctation and the shape of the aedeagus.

DISTRIBUTION (fig. 11): So far known only from the type locality.

### Zusammenfassung

*Hydrophilomima* gen.n. aus Südostasien wird beschrieben. Die Gattung beinhaltet derzeit drei Arten, *Hydrophilomima jaechi* sp.n. (typus generis), *H. vietnamica* sp.n. und *H. yunnanensis* sp.n. Die neue Gattung gehört der Unterfamilie Hydrophilinae an und wird in die Tribus Laccobiini gestellt. Sie ist mit der Gattung *Pelthydrus* nahe verwandt.

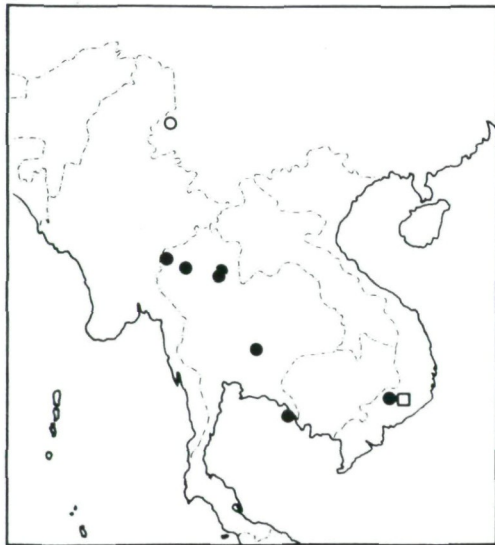


Fig. 11: Distribution of *Hydrophilomima jaechi* (black circles), *H. vietnamica* (square) and *H. yunnanensis* (white circle).

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