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## ***Pelthydrus* ORCHYMONT, 1919 from Hainan (China) with descriptions of three new species** (Coleoptera: Hydrophilidae)

D. BIAN, H. SCHÖNMANN & L. JI

### **Abstract**

Six species of the genus *Pelthydrus* ORCHYMONT, 1919 (Coleoptera: Hydrophilidae) are recorded from Hainan Island (China). Three of these species (*Pelthydrus angulatus* sp.n., *P. tongi* sp.n., and *P. waltraudae* sp.n.) are described herein. The remaining three species (*P. incognitus* SCHÖNMANN, 1995, *P. insularis* SCHÖNMANN, 1995, and *P. minutus* ORCHYMONT, 1919) are recorded from Hainan for the first time.

**Key words:** Coleoptera, Hydrophilidae, *Pelthydrus*, faunistics, taxonomy, new species, new records, Hainan, China.

### **Introduction**

Until today 55 species of the predominantly Oriental genus *Pelthydrus* ORCHYMONT, 1919 are known. Thirteen of these species occur in China, however, not a single species has so far been recorded from Hainan (GENTILI et al. 1995; HANSEN 1999, 2004; KOMAREK 2003; SCHÖNMANN 1994, 1995).

In the present paper we are dealing with the rich collections of *Pelthydrus* sampled in the course of the China Water Beetle Survey (see JÄCH 2004, and <http://www.nhm-wien.ac.at/Content.Node/forschung/2zoo/china-water-beetle-survey.html>) in 1996, and additional specimens collected in 2007. Three of the six species found on Hainan are new to science. They are described below.

The high number of new species (50 %) corroborates the fact, that Hainan is remarkably rich in endemic species (see also JÄCH & JI 1998a).

### **Material and methods**

Specimens were examined with an Olympus SZX16 and a LEICA–WILD M10 compound microscope. The body length was measured from the front margin of the labrum to the elytral apex. Male genitalia were placed in concentrated lactic acid several hours before they were examined. Aedeagi were drawn with the aid of a drawing tube. Habitus images have been captured with a Leica DFC 490 attached to a Leica MZ16 stereoscopic microscope using Automontage for stacking. Final post-processing was done in Adobe Photoshop CS.

### **Abbreviations:**

CWBS	China Water Beetle Survey
IAECAS	Institute of Applied Ecology, Chinese Academy of Sciences, Shenyang
NMW	Naturhistorisches Museum Wien

**List of CWBS localities (leg. M.A. Jäch, L. Ji & M. Wang 1996)**

- CWBS loc. 182: **Hainan Province**; Qionghai City Region; Baishiling Scenic Spot, ca. 10 km SW of Qionghai City; small stream, ca. 0.5 m wide, slowly flowing through rubber plantation, granite, sand and gravel, shaded, 20 m a.s.l.; 14.I.1996; leg. L. Ji & M. Wang.
- CWBS loc. 184: **Hainan Province**; Qionghai City Region; Baishiling Scenic Spot, ca. 20 km SW of Qionghai City; very small stream, slowly flowing to CWBS loc. 182; 0.3 m wide, granite, stones and gravel, shaded, 20 m a.s.l.; 14.I.1996; leg. L. Ji & M. Wang.
- CWBS loc. 188: **Hainan Province**; Qiongzong County; Baihua Ling (= Hundred Flowers Mountain), ca. 7 km W Qiongzong City (= Yinggen); river, ca. 5 m wide, flowing through degraded forest, large boulders, sand, cataracts, ca. 300 m a.s.l.; 16.I.1996; leg. M.A. Jäch, L. Ji & M. Wang (see JÄCH & Ji 1998b: Fig. 2).
- CWBS loc. 189: **Hainan Province**; Qiongzong County; small tributary to CWBS loc. 188, ca. 1 m wide, densely shaded; 16.I.1996; leg. L. Ji.
- CWBS loc. 191: **Hainan Province**; Qiongzong County; 4 km W Qiongzong City; ca. 150 m a.s.l., small stream ca. 0.5 m wide, partly shaded by shrubs; 16.I.1996; leg. M.A. Jäch, L. Ji & M. Wang.
- CWBS loc. 192: **Hainan Province**; Qiongzong County; Maoyang Town; Changhua River, ca. 40 m wide (river bed ca. 80 m wide), potamal, banks with gravel and sand, ca. 100 m a.s.l.; 17.I.1996; leg. M.A. Jäch, L. Ji & M. Wang (see JÄCH & Ji 1998b: Fig. 4).
- CWBS loc. 193: **Hainan Province**; Qiongzong County; Wuzhi Shan (= Five Finger Mountain) Resort, ca. 2 km from Wuzhi Shan Village, ca. 30 km E Maoyang Town; small stream, ca. 2–3 m wide, shaded, flowing through degraded primary forest, below Wuzhi Shan Resort, ca. 600 m a.s.l.; 17./18.I.1996; leg. M.A. Jäch, L. Ji & M. Wang (see JÄCH & Ji 1998b: Fig. 3).
- CWBS loc. 194: **Hainan Province**; Qiongzong County; stream, ca. 5 m wide, densely shaded, flowing partly through deep gorge, through primary forest, above Wuzhi Shan Resort; ca. 700–800 m a.s.l.; 18.I.1996; leg. M.A. Jäch, L. Ji & M. Wang.
- CWBS loc. 197: **Hainan Province**; Qiongzong County; ca. 3 km E Maoyang; Wuzhi Shan River, ca. 20 m wide, fast flowing, with big boulders, flowing through secondary forest and pastures, ca. 200 m a.s.l.; 19.I.1996; leg. M.A. Jäch, L. Ji & M. Wang.
- CWBS loc. 198: **Hainan Province**; Qiongzong County; 3 km NE Maoyang; Wuzhi Shan River, ca. 30 m wide, slowly flowing through wide, deforested valley, only few riffles, banks with sand, grass and mud, ca. 100 m a.s.l.; 19.I.1996; leg. M.A. Jäch, L. Ji & M. Wang.
- CWBS loc. 199: **Hainan Province**; Tongza City Region; ca. 2 km S Mao'an; river, ca. 5 m wide, banks with shrubs, grass, sand, mud, rock pools and seepage water, ca. 250 m a.s.l.; 20.I.1996; leg. M.A. Jäch, L. Ji & M. Wang.
- CWBS loc. 202: **Hainan Province**; Ledong County; E Jianfeng Town; several streams (including residual pools), 1–5 m wide, slowly flowing through rice fields and shrubs, only partly shaded, ca. 60 m a.s.l.; 21.I.1996; leg. M.A. Jäch, L. Ji & M. Wang.
- CWBS loc. 204: **Hainan Province**; Ledong County; foot of Jianfeng (= Sharp Peak) Mountain, ca. 4 km E Jianfeng Town; river, ca. 5–10 m wide, fast flowing, through secondary forest, with big boulders, margins with rock pools, springfed pools and some seepage water, ca. 150 m a.s.l.; 22./24.I.1996; leg. M.A. Jäch, L. Ji & M. Wang (see Ji & JÄCH 1998b: Fig. 11).
- CWBS loc. 205: **Hainan Province**; Ledong County; Jianfeng Mountains; Jianfeng Forest Reserve, ca. 5 km NE Tian Chi Village; river, ca. 5 m wide, flowing through very dense primary forest, banks with stones and sand, ca. 800 m a.s.l.; 22.I.1996; leg. M.A. Jäch, L. Ji & M. Wang (see JÄCH & Ji 1998b: Figs. 7, 9).

- CWBS loc. 207: **Hainan Province**; Ledong County; Jianfeng Mountains; Jianfeng Forest Reserve, ca. 500 m NE Tian Chi Village; small streamlet, ca. 1 m wide, flowing through degraded primary forest, and deep, man-made pool, ca. 800 m a.s.l.; 22.I.1996; leg. M.A. Jäch, L. Ji & M. Wang.
- CWBS loc. 208: **Hainan Province**; Ledong County; Jianfeng Mountains; ca. 5 km E Tian Chi Village; two small streams, ca. 3 m wide, flowing through degraded primary forest and shrubs, ca. 800 m a.s.l.; 23.I.1996; leg. M.A. Jäch, L. Ji & M. Wang.
- CWBS loc. 213: **Hainan Province**; Ledong County; Jianfeng Town, Botanical Garden; residual pools of dried up stream, ca. 1 m wide, ca. 60 m a.s.l.; 24.I.1996; leg. M.A. Jäch, L. Ji & M. Wang.
- CWBS loc. 214: **Hainan Province**; Wanning County; ca. 15 km SW Dongxing Town, ca. 1 km W Jianfeng Village; small stream, ca. 1–2 m wide, probably a tributary of CWBS loc. 215, meandering, water turbid, flowing through cultivated land (rubber plantations, bamboo groves, villages, etc.), ca. 70 m a.s.l.; 25.I.1996; leg. M.A. Jäch, L. Ji & M. Wang.
- CWBS loc. 215: **Hainan Province**; Wanning County; ca. 500 m W CWBS loc. 214; river, ca. 5 m wide, with sand and gravel, flowing through cultivated land, ca. 70 m a.s.l.; 25.I.1996; leg. M.A. Jäch, L. Ji & M. Wang.
- CWBS loc. 216: **Hainan Province**; Wanning County; ca. 8–10 km W Dongxing Town; meandering river, crossing the Dongxing – Jianfeng road three times, ca. 3–6 m wide, slightly turbid, with sand and gravel, flowing through cultivated land (rubber plantations, village gardens, rice fields, bamboo groves), probably being the lower course of CWBS loc. 215; ca. 70 m a.s.l.; 26.I.1996; leg. M.A. Jäch, L. Ji & M. Wang (see JÄCH & JI 1998b: Fig. 11).

### Check list of *Pelthydrus* species from Hainan

#### *Pelthydrus* (*Globipelthydrus*) *jendeki* group

1. *Pelthydrus* (*Globipelthydrus*) *waltraudae* sp.n.

#### *Pelthydrus* (s.str.) *inaspectus* group

2. *Pelthydrus* (s.str.) *incognitus* SCHÖNMANN, 1995

#### *Pelthydrus* (s.str.) *minutus* group

3. *Pelthydrus* (s.str.) *angulatus* sp.n.
4. *Pelthydrus* (s.str.) *insularis* SCHÖNMANN, 1995
5. *Pelthydrus* (s.str.) *minutus* ORCHYMONT, 1919

#### *Pelthydrus* (s.str.) *sculpturatus* group

6. *Pelthydrus* (s.str.) *tongi* sp.n.

### *Pelthydrus* (*Globipelthydrus*) *waltraudae* sp.n.

TYPE LOCALITY: CHINA: Hainan Province; Wuzhishan City; Maoyang Town, 18°55'N, 109°28'E, 255 m a.s.l.; small stream, ca. 0.5 m wide, unpolluted, sand, shatters, bank with sand, shrubs and grass.

TYPE MATERIAL: **Holotype** ♂ (IAECAS): “CHINA: Hainan Province, Wuzhishan City Maoyang Town, 18°55'N, 109°28'E 255 m, 25.11.2007, leg. D. Bian & Y. Tong”. **Paratypes**: 1 ♂, 2 ♀♀ (IAECAS): same data as holotype; 5 exs. (IAECAS): “CHINA: Hainan Province, Lingshui County Diaoluo National Natural Reserve NE [of] Diaoluo Holiday Village, 18°44'N 109°52'E 920 m, 16.11.2007, leg. D. Bian, Y. Tong & M. Wang”; 3 exs. (NMW): “CHINA: Hainan (188) 7 km W Qiongzong Baihua Ling, 300 m 16.1.1996, Ji & Wang”; 1 ex. (NMW): “CHINA: Hainan (188) 7 km W Qiongzong Baihua Ling, 300 m 16.1.1996, leg. Jäch”; 1 ex. (NMW): “CHINA: Hainan (215) 1.5 km SW Dongxing 1.5 km W Jianfeng, 70 m 25.1.1996, leg. Jäch”.

DIAGNOSIS: Habitus as in Fig. 1. Body length 3.0–3.5 mm; body width 1.9–2.2 mm. Externally, very similar to *P. dudgeoni* SCHÖNMANN, 1995. Body strongly convex, broadly oval and acute at elytral apex, upper surface shining, darkish brown to black, lateral margins of pronotum and elytra as well as legs reddish brown, antennae and maxillary palpi yellowish brown.

Head trapezoidal, about 1.8 times as wide as long, distinctly narrower than pronotum; covered with deeply impressed punctures of two different sizes, appearing wrinkled along inner margins of eyes, clypeal suture distinctly impressed; anterior margin of clypeus concave, anterior corners angulate; maxillary palpi distinctly longer than antennae, as long as width of head.

Shape of pronotum trapezoidal, about 2.4 times as wide as long; lateral sides narrowed distally, ridged, anterior part obscurely dentate; punctures of two different sizes, with denser arrangement than on head; posterior corners broadly rounded and shining transparent.

Elytra broadest at basal fifth, slightly narrowed posteriorly towards acute apex; ten distinct striae consisting of bigger punctures; intervals not raised, densely covered with small punctures.

Underside reddish brown, covered with fine pubescence; mentum somewhat rugulose; prosternum with medio-longitudinal carina; mesoventrite strongly elevated, producing a triangular plate; metaventrite highly raised, with a  $\Lambda$ -shaped projection anteriorly; hind margin of fifth sternite somewhat truncate in males, with a distinct mesal emargination in females.

Aedeagus (Fig. 4): 1.2 mm long, slender, outline nearly parallel-sided; phallobasis approximately as long as median lobe; median lobe strongly narrowed from midlength towards base, broadest subapically, with a sharply pointed apex; parameres gradually narrowed from base to apices, strongly narrowed and medially arched in distal third, encircling the broadest part of median lobe.

DIFFERENTIAL DIAGNOSIS: This species is a member of the *Pelthydrus jendeki* species group. It can easily be distinguished from the other members of the *P. jendeki* group by the combination of the following characters: head and pronotum with double sized punctation; elytra with ten punctate striae, intervals not elevated and densely covered with small punctures; aedeagus longer and much more slender than in *P. dudgeoni*, its shape more narrow, elongated and parallel-sided than in all other species of the group.

DISTRIBUTION: Hainan. CWBS locs. 188, 215. Diaoluo National Natural Reserve (Fig. 7).

DERIVATIO NOMINIS: Waltraude Neiszer-Kühnberger runs the small restaurant “Zum Schwarzen Mohren” not far from the Vienna Natural History Museum. She is very interested in various aspects of biology and nature protection. Since more than twenty years she warmly welcomes coleopterists from all over the world, especially at lunch time. After serving “all you can eat” lunch, she usually invites coleopterists to have coffee, beer or wine “on the house”.

In the name of all beetle lovers who had the opportunity to enjoy her hearty hospitality we want to express our warmest thanks by dedicating this little roundish species to her.

### *Pelthydrus (s.str.) angulatus* sp.n.

TYPE LOCALITY: CHINA: Hainan Province; Wuzhishan City; Maoyang Town, 18°55'N, 109°28'E, 255 m a.s.l.; small stream, ca. 0.5 m wide, unpolluted, sand, shatters, bank with sand, shrubs and grass.

TYPE MATERIAL: **Holotype** ♂ (IAECAS): “CHINA: Hainan Province, Wuzhishan City Maoyang Town, 18°55'N, 109°28'E 255 m, 25.11.2007, leg D. Bian & Y. Tong”. **Paratypes**: 4 ♂♂, 7 ♀♀ (IAECAS): same data as holotype; 4 exs. (IAECAS): “CHINA: Hainan Province, Ledong County Jianfeng Town, Jianfeng Mountains, Jianfeng Forest Reserve, 18°44'N, 108°52'E 785 m, 21.11.2007, leg. D. Bian, Y. Tong & M. Wang”; 1 ex. (IAECAS): “CHINA:

Hainan Province, Lingshui County Diaoluo National Natural Reserve NE Diaoluo Holiday Village, 18°44'N 109°52'E, 920 m, 16.11.2007, leg. D. Bian, Y. Tong & M. Wang"; 3 exs. (NMW): "CHINA: Hainan (182) 10 km SW Qionghai, 20 m Baishiling, 14.1.1996 leg. Ji & Wang"; 2 exs. (NMW): "CHINA: Hainan (191) 4 km W Qiongzong 150 m, 16.1.1996 leg. Ji"; 2 exs. (NMW): "CHINA: Hainan (191) 4 km W Qiongzong 150 m, 16.1.1996 leg. Jäch"; 1 ex. (NMW): "CHINA: Hainan (198) 3 km NE Maoyang Wuzhi Shan Riv., 100 m 19.1.1996, Ji & Wang"; 1 ex. (NMW): "CHINA: Hainan (205) Jianfeng Mts., 800 m 5 km NE Tian Chi 22.1.1996, leg. Jäch"; 1 ex. (NMW): "CHINA: Hainan (215) 15 km SW Dongxing 1.5 km W Jianfeng, 70 m 25.1.1996, Ji & Wang".

**DIAGNOSIS:** Habitus as in Fig. 2. Body length 1.9–2.2 mm; body width 0.9–1.1 mm. Externally, very similar to *P. minutus*. Body sub-ovoid, moderately convex, somewhat acute posteriorly, elytral apices separately rounded; surface shining dark brown to black; lateral margins of head, pronotum, elytra and legs reddish brown; antennae, labial and maxillary palpi yellowish brown.

Head rectangular, about 1.6 times as wide as long; densely punctate; lateral sides of head and inner margins of eyes appearing wrinkled; clypeal suture slightly impressed; anterior margin of clypeus concave, anterior corners distinctly angulate.

Pronotum trapezoidal, about 2.5 times as wide as long, punctation similar to that on head; lateral margins ridged, anterior corners angulate, posterior corners broadly rounded.

Elytra about 1.4 times as long as wide, lateral margins smoothly ridged; broadest part at two basal fifths, from there slightly narrowed anteriorly and distinctly narrowed posteriorly, terminating in two separately rounded elytral apices; punctation similar to that of head and pronotum, consisting of equally distributed, completely unordered punctures.

Ventral side mostly black; mentum rugulose microreticulate, anterior tenth shining and sparsely punctate; prosternum with a medio-longitudinal carina; mesoventrite elevated posteriorly, produced into a triangular plate pointing towards anterior part; metaventrite progressively elevated towards posterior part of plate, with a cordiform, shining, and glabrous area posteriorly; first sternite with a medio-longitudinal carina not reaching hind margin.

Aedeagus (Fig. 5): 0.6 mm long, median lobe abruptly narrowed at base, then parallel-sided and slender, corona in apical position; parameres nearly parallel-sided from base to level of apex of median lobe, then abruptly narrowed and sharply angled laterad extending into acute apices.

**DIFFERENTIAL DIAGNOSIS:** *Pelthydrus angulatus* is a member of the *P. minutus* species group. Body shape and body surface similar to *P. minutus* but easily to be distinguished by separately rounded elytral apices and mainly by the unique shape of the parameres.

**DISTRIBUTION:** Hainan. CWBS locs. 182, 191, 198, 205, 215. Diaoluo National Natural Reserve (Fig. 7).

**DERIVATIO NOMINIS:** *angulatus* (Latin for "angled") in reference to the typical shape of the apical part of the parameres.

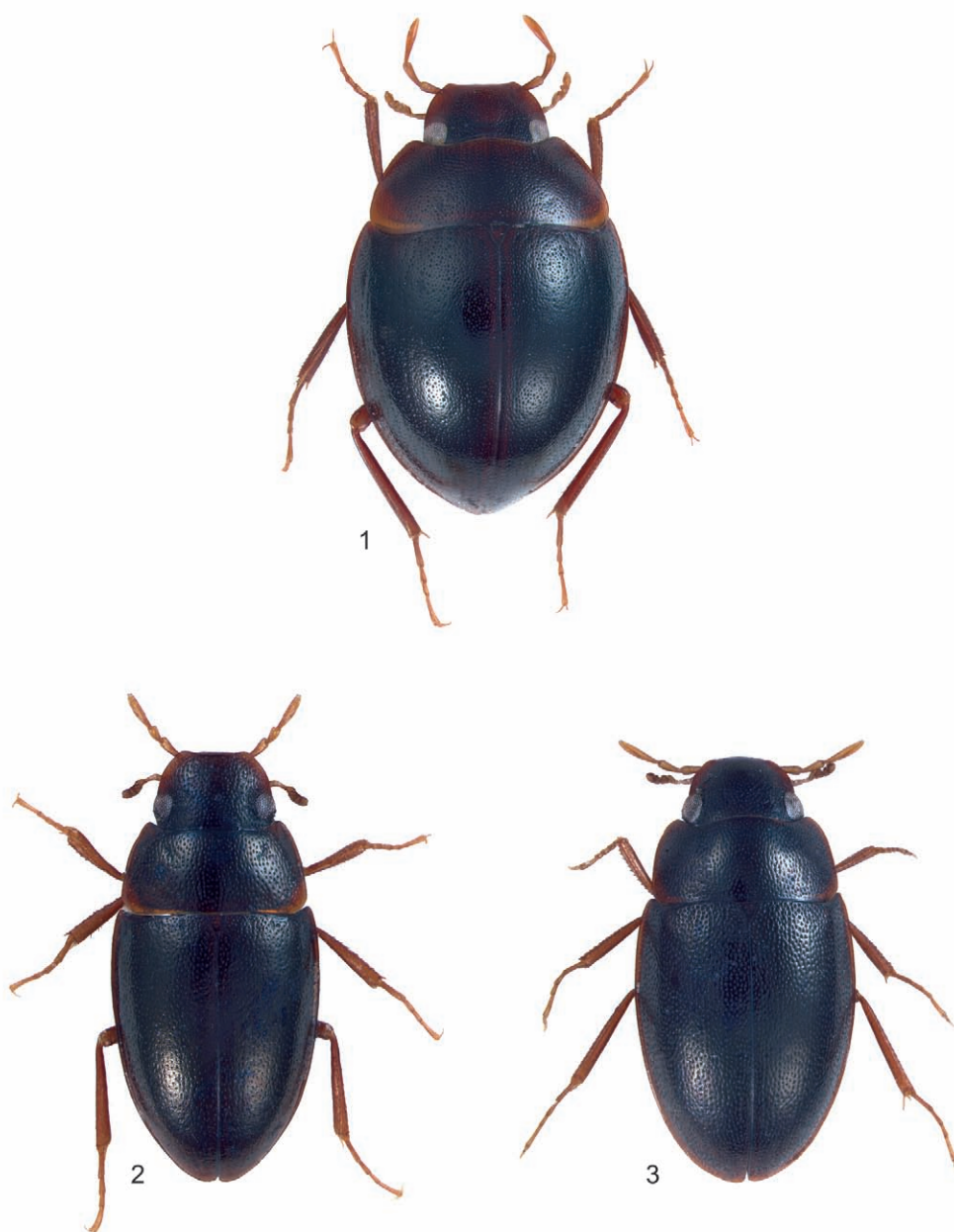
### *Pelthydrus* (s.str.) *incognitus* SCHÖNMANN

*Pelthydrus incognitus* SCHÖNMANN 1995: 139. – GENTILI et al. 1995: 214. – HANSEN 1999: 128. – HANSEN 2004: 59.

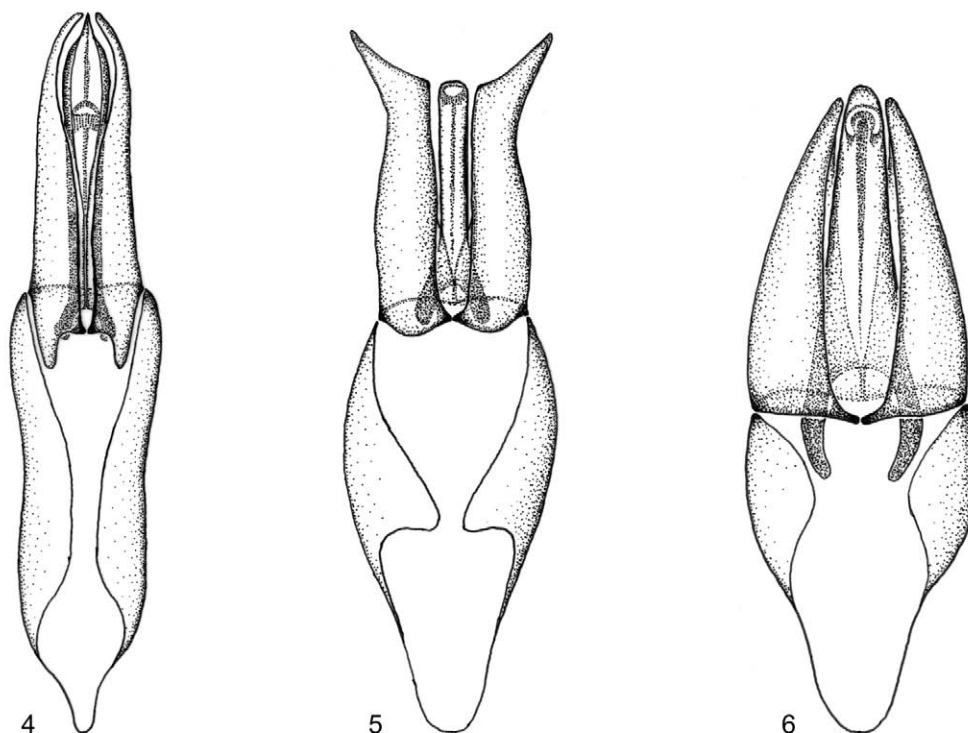
**ADDITIONAL MATERIAL EXAMINED:** 1 ex. (IAECAS): CHINA: Hainan Province, Changjiang County; Bawangling National Natural Reserve, 19°05'N, 109°04'E, 127 m, 23.11.2007, leg. D. Bian & Y. Tong; 7 exs. (IAECAS): CHINA: Hainan Province, Lingshui County, Diaoluo National Natural Reserve, NE Diaoluo Holiday Village, 18°44'N, 109°52'E, 920 m, 16.11.2007, leg. D. Bian, Y. Tong & M. Wang.

**DISTRIBUTION:** This species is widely distributed from northern Thailand to southern China.

It is here recorded from Hainan for the first time. CWBS locs. 188, 193, 194, 207. Diaoluo National Natural Reserve (Fig. 7), Bawangling National Natural Reserve.



Figs. 1–3: Habitus, dorsal view; 1) *Pelthydrus waltraudae* sp.n.; 2) *P. angulatus* sp.n.; 3) *P. tongi* sp.n.



Figs. 4–6: Aedeagus, dorsal view; 4) *Pelthydrus waltraudae* sp.n.; 5) *P. angulatus* sp.n.; 6) *P. tongi* sp.n.

***Pelthydrus* (s.str.) *insularis* SCHÖNMANN**

*Pelthydrus insularis* SCHÖNMANN 1995: 129–130. – GENTILI et al. 1995: 214. – HANSEN 1999: 128. – HANSEN 2004: 59.

**DISTRIBUTION:** Described from Lantau Island (Hong Kong), this species also occurs in Guangxi, and is now recorded from Hainan for the first time. CWBS locs. 188, 189, 191, 193, 194, 198, 199, 204, 208, 215.

***Pelthydrus* (s.str.) *minutus* ORCHYMONT**

*Pelthydrus minutus* ORCHYMONT 1919: 153. – ORCHYMONT 1932: 695–697. – SATÔ 1960: 80. – SCHÖNMANN 1995: 128–129. – GENTILI et al. 1995: 214. – HANSEN 1999: 128. – HANSEN 2004: 59.

**DISTRIBUTION:** This species is most common and widely distributed in the Oriental Region. It is here recorded from Hainan for the first time. CWBS locs. 188, 192–194, 197–199, 215, 216.

***Pelthydrus* (s.str.) *tongi* sp.n.**

**TYPE LOCALITY:** CHINA: Hainan Province; Wuzhishan City; Maoyang Town, 18°55'N, 109°28'E, 255 m a.s.l.; small stream, ca. 0.5 m wide, unpolluted, sand, shatters, bank with sand, shrubs and grass.

TYPE MATERIAL: **Holotype** ♂ (IAECAS): “CHINA: Hainan Province, Wuzhishan City Maoyang Town, 18°55'N, 109°28'E 255 m, 25.11.2007, leg Y. Tong”. **Paratypes**: 6 ♂♂, 8 ♀♀ (IAECAS): same data as holotype; 12 exs. (IAECAS): “CHINA: Hainan Province, Qionghai City Nanfeng Town, 19°10'N, 110°12'E, 110 m 15.11.2007, leg. D. Bian, Y. Tong & M. Wang”; 3 exs. (NMW): “CHINA: Hainan (182) 10 km SW Qionghai, 20 m, Baishiling, 14.1.1996 leg. Ji & Wang”; 1 ex. (NMW): “CHINA: Hainan (184) 20 km SW Qionghai, 20 m Baishiling, 14.1.1996 leg. Ji & Wang”; 1 ex. (NMW): “CHINA: Hainan (191) 4 km W Qiongzong 150 m, 16.1.1996 leg. Jäch”; 1 ex. (NMW): “CHINA: Hainan (198) 3 km NE Maoyang Wuzhi Shan Riv., 100 m 19.1.1996, Ji & Wang”; 2 exs. (NMW): “CHINA: Hainan (199) 2 km S Mao'an 250 m, 20.1.1996 leg. Ji & Wang”; 5 exs. (NMW): “CHINA: Hainan (202) E Jianfeng 60 m, 21.1.1996 leg. Jäch”; 1 ex. (NMW): “CHINA: Hainan (204) 4 km E Jianfeng, 150 m Jianfeng Mt., 1996 22./24.1., Ji & Wang”; 1 ex. (NMW): “CHINA: Hainan (213) Jianfeng, 700 m Bot. Garden 24.1.1996, leg. Jäch”; 38 exs. (NMW): “CHINA: Hainan (214) 15 km SW Dongxing 1 km W Jianfeng, 70 m 25.1.1996, Ji & Wang”; 21 exs. (NMW): “CHINA: Hainan (214) 15 km SW Dongxing 1 km W Jianfeng, 70 m 25.1.1996, leg. Jäch”; 4 exs. (NMW): “CHINA: Hainan (215) 15 km SW Dongxing 1.5 km W Jianfeng, 70 m 25.1.1996, Ji & Wang”; 11 exs. (NMW): CHINA: “Hainan (215) 15 km SW Dongxing 1.5 km W Jianfeng, 70 m 25.1.1996, leg. Jäch”; 4 exs. (NMW): “CHINA: Hainan (216) 8-10 km W Dongxing 70 m, 26.1.1996 leg. Jäch”.

**DIAGNOSIS:** Habitus as in Fig. 3. Body length 2.4–2.8 mm; body width 1.3–1.5 mm. Externally, very similar to *P. siamensis* SCHÖNMANN, 1995. Body elongate, ovoid and strongly convex; gradually narrowed in posterior part with a broadly rounded elytral apex. Shining dark brown with yellowish brown margins; legs, maxillary palpi and anterior part of antennae yellowish brown, last three antennomeres dark brown.

Head rectangular, about 1.5 times as wide as long, distinctly narrower than pronotum, surface microreticulate between sparsely distributed large punctures; inner margins of eyes wrinkled, clypeal suture slightly impressed; clypeus with distinctly angulate anterior corners.

Pronotum rectangular, about 2.3 times as wide as long; lateral margins reddish brown, ridged and finely serrated, straight and nearly parallel-sided; punctation larger and denser than on head, interspaces with a distinct mesh-like microreticulation.

Elytra broadest at basal three tenths, about 1.2 times as long as wide; lateral margins reddish brown and ridged, finely serrated in distal half and rather strongly reflexed towards broadly rounded apex; punctation similar to that on pronotum, but smooth and shining between punctures.

Underside mostly covered with white pubescence; mentum microreticulate with anterior margin shining and sparsely punctate; prosternum reddish brown with a median longitudinal progressively elevated carina; mesoventrite strongly elevated posteriorly forming a triangular plate with a median longitudinal carina; metaventrite black with a lumpish protuberance, medially with a  $\Lambda$ -shaped portion projecting between the mesocoxae and the rhombic shining area situated posteriorly; first sternite with a median longitudinal carina, which almost reaches the hind margin.

Aedeagus (Fig. 6): 0.5 mm long, moderately wide; phallobasis approximately as long as median lobe and parameres; median lobe broadest basally, gradually narrowed towards broadly rounded apex; parameres gradually narrowed from base towards straight apices.

**DIFFERENTIAL DIAGNOSIS:** This species is a member of the *Pelthydrus sculpturatus* species group. Body shape and body surface similar to *P. siamensis*, but aedeagus resembles *P. vitalisi* ORCHYMONT, 1926, from which it can be distinguished by its more slender shape of the median lobe, which is a bit longer than the parameres and by the equally narrowed parameres, which are not arched.

**DISTRIBUTION:** Hainan. CWBS locs. 182, 184, 191, 198, 199, 202, 204, 213–216. Nanfeng.

**DERIVATIO NOMINIS:** This species is dedicated to Dr. Yanfeng Tong, who recently has collected a large number of the type specimens.



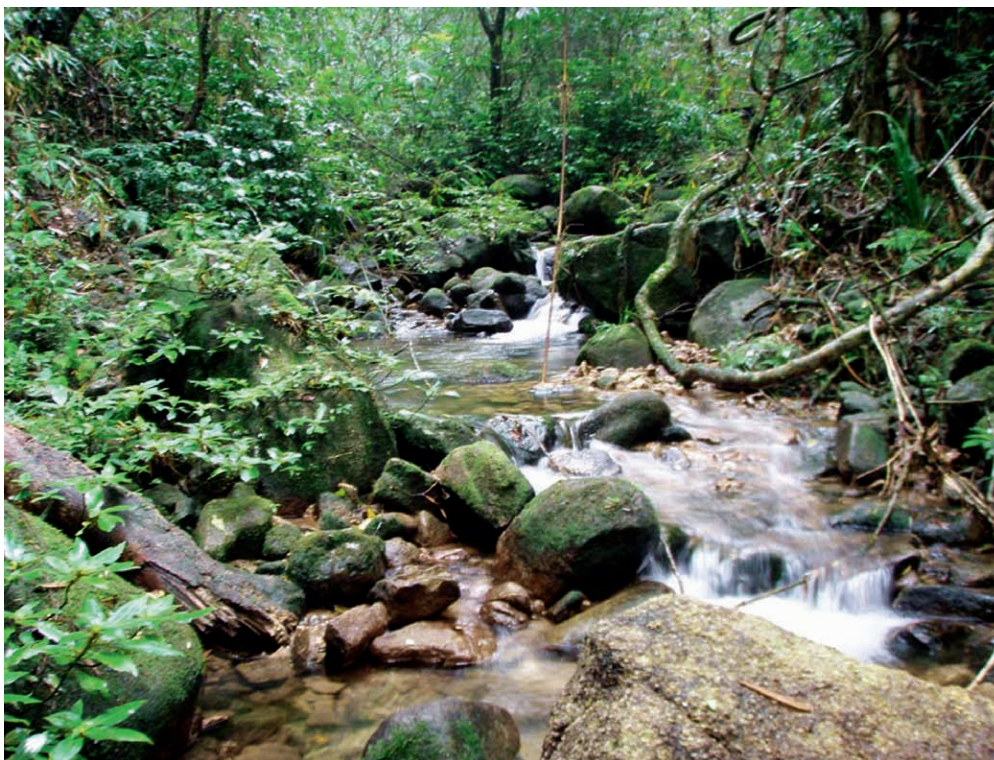


Fig. 7: Stream in Diaoluo National Natural Reserve, Hainan, China. Habitat of *Pelthydrus angulatus*, *P. incognitus* and *P. waltraudae*. Photograph by D. Bian.

### Acknowledgements

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Dongju BIAN

*Institute of Applied Ecology, Chinese Academy of Sciences, Shenyang, 110016, China* (biandongju@163.com)  
*Graduate University of Chinese Academy of Sciences, Beijing, 100039, China*

Dr. Heinrich SCHÖNMANN

*Naturhistorisches Museum, Burgring 7, A – 1010 Wien, Austria* (heinrich.schoenmann@nhm-wien.ac.at)

Prof. Dr. Lanzhu Ji

*Institute of Applied Ecology, Chinese Academy of Sciences, Shenyang, 110016, China* (ji.lanzhu@iae.ac.cn)

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