

DYTISCIDAE:
V. The genus *Platynectes* RÉGIMBART in China,
with a revision of the *dissimilis*-complex
(Coleoptera)

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Abstract

The *Platynectes dissimilis*-complex (Coleoptera: Dytiscidae) is revised and the following new taxa are described: *P. dissimilis major* ssp.n. [Vietnam], *P. javanus* sp.n. [Thailand, Malaysia, Sumatra and Java], and *P. ranongensis* sp.n. [Thailand]. The *Platynectes* species recorded from China are reviewed. *Platynectes hainanensis* sp.n. is described from Hainan. *Platynectes kashmiranus* J. BALFOUR-BROWNE is recorded from China (Yünnan, Tibet) for the first time; specimens possibly belonging to *P. chujoii* SATÔ are recorded from Shandong.

Key words: Coleoptera, Dytiscidae, *Platynectes*, China, taxonomy, faunistics, morphometrics.

Introduction

Only two *Platynectes* species were previously known from China (NILSSON 1995), with *P. babai* SATÔ being confined to Taiwan, and *P. dissimilis* (SHARP) known also from the mainland. Meanwhile, more material has become available for study, mainly due to the activities of the China Water Beetle Survey (CWBS). I will here add new faunistic data, also of a few additional species. Special attention will be paid to the taxonomy of the *dissimilis*-complex, previously including only two species: *P. dissimilis* and *P. kashmiranus*.

The genus *Platynectes* RÉGIMBART was reviewed by GUÉORGUIEV (1972), who placed *P. dissimilis* and *P. kashmiranus* in the *dissimilis*-group of the subgenus *Platynectes* s.str. together with four other species. Later, *P. guttula* RÉGIMBART was transferred to *Platambus* by BRANCUCCI (1988), and SATÔ (1982) described two new species of the group from the Ryukyu Islands and Taiwan. As GUÉORGUIEV (1972) had mixed up the type species, the *dissimilis*-group is now to be placed in the subgenus *Gueorguievtes* VAZIRANI (NILSSON & al. 1989). Within the group, the *dissimilis*-complex is characterized by elytron with yellow fascia and eight vittae, of which the six central ones are formed by series of dots.

Methods, abbreviations and CWBS localities

This study is based on the examination of 431 specimens, most of them deposited in NMW. Each specimen was measured and given a unique number on a label. Samples from different localities were assigned to species chiefly on the shape of the penis. Variation in size and shape was used to find composite samples. Within each species, samples were grouped within regions. Habitus illustrations were made from digital images captured by a video camera attached to a dissection microscope. Outlines of these images were traced on transparent drawing film from laser outprints. Finally, the outline drawings were scanned into the computer for shading and final printing.

Abbreviations: Collections: (CASS) Chinese Academy of Sciences, Institute of Applied Ecology, Shenyang; (CCH) coll. J. Cooter, Hereford, England; (CHB) coll. L. Hendrich, Berlin; (CNU) coll. A.N. Nilsson, Umeå; (NHML) Natural History Museum, London; (NMW) Naturhistorisches Museum, Wien; (NSMT) National Science Museum, Tokyo; (NWU) Nagoya Women's University. - Measurements: (MW) maximum body width; (TL-h) total body length without head; (WC) width of metacoxa; (WS) width of metasternum.

- CWBS loc. 14: **Yunnan Province**; Dali Autonomous Prefecture; Weishan County; Weibao Shan, 60 km S Xiaguan City and 12 km S Weishan City; pool in a small, shaded, unpolluted stream, 2500 - 3000 m a.s.l.; 1. - 17.VII.1993; leg. Ji.
- CWBS loc. 22: **Hunan Province**; Xiangxi Prefecture; Dayong County; Zhangjiajie Forest National Park, Suoxiyü Nature Reserve, Wulingyuan section (ca. 30 km N Dayong City); ca. 500 m upstream of Shuiraosimen bus station; tributary of Jinbian Xi [= Gold Whip River], slowly flowing, 0.5 - 1.0 m wide; 30.X.1993; leg. Schönmann, Schillhammer & Ji.
- CWBS loc. 29: **Hunan Province**; Huaihua Prefecture; Huitong County; Guangping Township; Moshao Village, ca. 15 km W Guangping Town; south slope below the upper Research Station of Academia Sinica; small stream in a deep ravine, shaded, unpolluted, secondary (broadleaf) vegetation, ca. 450 - 550 m a.s.l.; 3.XI.1993; leg. Schönmann, Schillhammer & Ji.
- CWBS loc. 32: **Hunan Province**; Huaihua Prefecture; Huitong County; Jinlong Shan [= Golden Dragon Mountain]; ca. 30 km NE Huitong City; forest stream, ca. 2 - 3 m wide, shaded, large boulders, small waterfalls and flat stretches with shingle and moss-covered stones, pools and accumulations of decaying plant material, upper reaches through broadleaf forest, lower reaches through *Cunninghamia* forest, amphibolite, ca. 600 - 650 m a.s.l.; 5.XI.1993; leg. Schönmann, Schillhammer & Ji.
- CWBS loc. 43: **Guangxi Autonomous Region**; Yulin Prefecture; Liawan Da Shan; small, steep mountain streams on the S slope of Kui Shan Ding [= Helmet Mountain], cataracts, large crystalline boulders, coarse sand, dense vegetation, slopes covered with planted forest, 600 - 700 m a.s.l.; 17.XI.1993; leg. Schönmann, Schillhammer & Ji.
- CWBS loc. 134: **Shandong Province**; Zhongshan Park in Qingdao City; man made lake, slightly polluted, margin with stones, mud, decaying plant material, surrounding vegetation mainly composed of *Maackia* sp., *Quercus* sp., *Pinus* sp.; 17.X.1994; leg. Ji & Wang.
- CWBS loc. 136: **Shandong Province**; Tai'an Prefecture; Tai Shan Nature Reserve; upstream of Puzhaishi Temple; small, slowly flowing stream and ground water pools among big rocks, unshaded, gravel and mud, some stones with moss, ca. 300 m a.s.l.; 18.X.1994; leg. Ji & Wang.
- CWBS loc. 137: **Shandong Province**; Tai'an Prefecture; Tai Shan Nature Reserve; near Doumugong Temple; small stream, 3 m wide, slowly flowing, limestone, shaded, with stones and gravel, including rock pools, decaying leaves, unpolluted, surrounding vegetation: *Platycladus* sp., *Maackia* sp., *Castanea* sp., *Quercus* sp., *Firmiana* sp., ca. 350 m a.s.l.; 19.X.1994; leg. Ji & Wang.
- CWBS loc. 139: **Shandong Province**; Tai'an Prefecture; Tai Shan Nature Reserve; 100 m upstream of st. 138; small stream, 1 m wide, slightly polluted, limestone, shaded, gravel and rock pools; 19.X.1994; leg. Ji & Wang.
- CWBS loc. 140: **Shandong Province**; Tai'an Prefecture; Tai Shan Nature Reserve; near Doumugong, near loc. 137; spring and small, cold stream below the spring, 0.5 m wide, slowly flowing, shaded, gravel, stones with moss, slightly polluted, surroundings similar to loc. 137; 19.X.1994; leg. Ji & 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. Jäch, Ji & Wang (see JACH & Ji 1988: Fig. 2).

- 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. Jäch, Ji & 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. Jäch, Ji & 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. Jäch, Ji & Wang.
- CWBS loc. 210: **Hainan Province**; Ledong County; Jianfeng Mountains; Tian Chi Botanical Garden; springfed pool, ca. 10 cm deep, 0.5 m² large, shaded, in degraded primary forest, ca. 800 m a.s.l.; 23.I.1996; leg. Jäch, Ji & Wang (see JÄCH & JI 1988: Fig. 8).
- CWBS loc. 213: **Hainan Province**; Ledong County; Jianfeng Town, Botanical Garden; rest water pools of dried up stream, ca. 1 m wide, ca. 60 m a.s.l.; 24.I.1996; leg. Jäch, Ji & Wang.
- CWBS loc. 240: **Fujian Province**; Jiayuan Prefecture; Chong'an City Region; ca. 1 km W Wuyi Gong Village (= Shanqian, ca. 10 km S Chong'an City); rest water pools in dry riverbed in steep valley, crystalline rock, 200 - 250 m a.s.l.; 15. and 18.I.1997; leg. Schönmann, Ji & Wang.
- CWBS loc. 243: **Fujian Province**; Jiayuan Prefecture; Chong'an City Region; ca. 3 km SW Wuyi Gong Village [= Shanqian], ca. 10 km S Chong'an City; small springfed pool (ca. 0.5 m²) on a slope with plum tree plantations near CWBS loc. 242, ca. 250 m a.s.l.; 16.I.1997; leg. Schönmann, Ji & Wang (see JÄCH & JI 1988: Fig. 13).
- CWBS loc. 246: **Fujian Province**; Jiayuan Prefecture; Chong'an City Region; ca. 3 km NW Wuyi Gong Village [= Shanqian], ca. 10 km S Chong'an City; upper part of small river, mostly dried out, partly 20 - 30 cm wide sections of flowing water in narrow gorges, crystalline sand and gravel, partly larger pools, shaded by dense vegetation, gravel mostly covered by algae, 300 m a.s.l.; 17.I.1997; leg. Schönmann, Ji & Wang.
- CWBS loc. 250: **Fujian Province**; Jiayuan Prefecture; Chong'an City Region; 3 km W Da'an Town, ca. 20 km NW Chong'an City; small stream in steep valley, < 0.5 m wide, surrounded by forest, rock pools and waterfalls, sections with coarse crystalline gravel, densely shaded, water very cold, 500 m a.s.l.; 19.I.1997; leg. Schönmann, Ji & Wang.
- CWBS loc. 264: **Fujian Province**; Longyan City Region; 2 km E Shizhong Town, ca. 40 km S Longyan City; small stream, < 0.5 m wide, descending from Shangfang Shan (ca. 1400 m, partly forested), only little water running in deep gorge, waterfalls and small pools, surrounded by rice fields and *Cunninghamia* forest, 850 m a.s.l.; 31.I.1997; leg. Schönmann, Ji & Wang.
- CWBS loc. 291: **Anhui Province**; Weizhou Prefecture; Huang Shan NP; 30 km NW Huang Shan City [= Tunxi], 3 km W Nantang; stream, ca. 0.5 - 1.0 m wide, waterfalls and pools, rocky and gravelly sections, partly shaded by bushes and bamboo, surrounded by vegetable gardens, 350 - 550 m a.s.l.; 30.X.1997; leg. Schönmann & Wang.
- CWBS loc. 292: **Anhui Province**; Weizhou Prefecture; Huang Shan NP; 60 km NNW Huang Shan City [= Tunxi]; stream (beneath cable car), ca. 3 - 5 m wide, almost completely dried out, surrounded by primary forest, very big granitic rocks and sand, short sections with running water (20 - 30 cm wide), small rest water pools with decaying leaves, 900 - 1000 m a.s.l.; 31.X.1997; leg. Schönmann & Wang (see JÄCH & JI 1988: Figs. 17, 20).
- CWBS loc. 297: **Anhui Province**; Anqing Prefecture; Yuexi County; Dabie Shan; near Shi Guan, ca. 20 km N Yuexi City; stream, ca. 50 - 100 cm wide, surrounded by dense bushes and *Cunninghamia* forest, completely shaded, small waterfalls, sections with gravel, decaying leaves, 950 - 1000 m a.s.l.; 6.XI.1997; leg. Schönmann & Wang.

Review of species

Platynectes babai SATÔ

Platynectes babai SATÔ, 1982:3 (orig. descr.); NILSSON 1995:56 (faun.).

Type locality: "Naka-Onsen", Taiwan, China.

Type material: Holotype ♂ (NWU), not seen.

Studied material: CHINA: Taiwan: 1 ♂, Nantou, Tungpin, 19.IX.1992, leg. L.-J. Wang (CNU); 1 ♂, Yenping, 10.VII.1992, leg. C.-F. Lee (CNU).

Description: Body length without head 5.4 - 5.6 mm; maximum width 3.3 - 3.5 mm; length to width ratio 1.60 - 1.65 (Tab. 1). Dorsal colour pattern as in Fig. 2. Penis similar to *P. ? chujoi* (Fig. 10), although slightly more robust. Female not seen.

Distribution (Fig. 12): China (Taiwan).

Platynectes ? chujoi SATÔ

Platynectes chujoi SATÔ, 1982:1 (orig. descr.); MORI & KITAYAMA 1993:110 (descr.).

Type locality: Shirahama, Iriomote-jima Island, Ryukyu Islands, Japan.

Type material: Holotype ♂ (NSMT), not seen.

Studied material: CHINA: Shandong: 1 ♂, 1 ♀ CWBS loc. 134 (NMW); 2 ♂♂, 1 ♀ CWBS loc. 136 (NMW); 15 ♂♂, 11 ♀♀ CWBS loc. 137 (NMW, CASS), 3 ♂♂, 3 ♀♀ (CNU); 1 ♂, 2 ♀♀ CWBS loc. 139 (NMW); 1 ♀ CWBS loc. 140 (NMW).

Description: Body length without head 5.3 - 5.5 mm; maximum width 3.4 - 3.5 mm; length to width ratio 1.56 - 1.60 (Tab. 1). Dorsal colour pattern as in Fig. 2. Elytron with basal fascia normally not totally interrupted sublaterally; preapical spot well-developed. Penis as in Fig. 10.

Distribution (Fig. 12): Japan (Ryukyu Islands: Iriomote-jima), China (Shandong).

Biology: Most of the specimens from Shandong were collected in slowly flowing mountain streams. At Qingdao City it was found in a man-made lake. Found at altitudes from near sea level up to 420 m a.s.l.

Note: It should be kept in mind that the Shandong specimens could turn out to represent a new species after comparison with type specimens of *P. chujoi*.

Platynectes hainanensis sp.n.

Type locality: CWBS loc. 194.

Type material: **Holotype** ♂ (CASS): "CHINA: Hainan (194) 30km E Maoyang, 18.1. Wuzhi Shan Resort 1996 700-800m, leg. Jäch", and my holotype label. - **Paratypes** (NMW, CNU, CHB): 3 ♂♂, 9 ♀♀ with same locality label as holotype (CWBS loc. 194); 2 ♀♀ CWBS loc. 188; 1 ♀ CWBS loc. 199; 1 ♂ CWBS loc. 208; 1 ♀ CWBS loc. 210; 1 ♂ CWBS loc. 213.

Diagnosis: This species is very similar to *P. babai* from which it differs in its larger body size and broader penis apex.

Description: Body length without head 6.1 - 6.4 mm; maximum width 3.8 - 4.0 mm; length to width ratio 1.58 - 1.62 (Tab. 1). Dorsal colour pattern as in Fig. 2. Elytron anterointernally without microreticulation; meshes in other parts in female elongate and more deeply incised than in male. Penis shape as in Fig. 3.

Distribution (Fig. 12): China (Hainan).

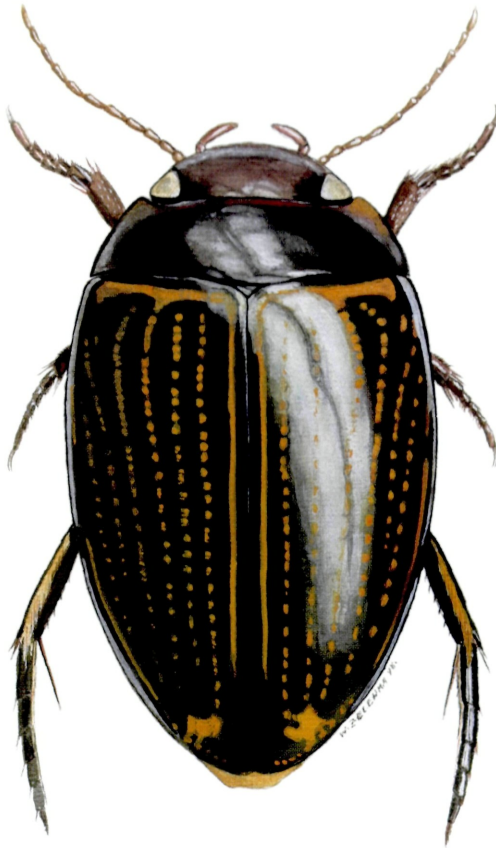


Fig. 1: Habitus of *Platynectes dissimilis major* spp.n.

Biology: Found in rivers and streams, at altitudes between 60 and 800 m a.s.l. Few specimens were found in springfed pools and pools in dried up streams.

The *Platynectes dissimilis*-complex

Platynectes dissimilis dissimilis (SHARP)

Agabus dissimilis SHARP, 1873:50 (orig. descr.).

Platynectes dissimilis (SHARP, 1873): RÉGIMBART 1899:288 (descr.); GUÉORGUEV 1972:46 (descr.); BRANCUCCI 1979:202 (faun.); SATŌ 1982:2 (syntype illustrated); NILSSON 1995:56 (distr.).

Type locality: Japan by indication; possibly mislabelled as never confirmed to occur in Japan.

Type material: Three syntypes (NHML), not seen; one syntype illustrated in SATŌ (1982).

Studied material: CHINA: ANHUI: 2 ♂♂, CWBS loc. 291 (NMW); 6 ♂♂, 4 ♀♀, CWBS loc. 292 (NMW); 1 ♀, CWBS loc. 297 (NMW). - FUJIAN: 1 ♂, "Kuatun" [= Guadun], 9.II.1946 (NMW); 3 ♂♂, 3 ♀♀, CWBS loc. 240 (NMW); 1 ♂, CWBS loc. 243 (NMW); 1 ♀, CWBS loc. 246 (NMW); 11 ♂♂, 12 ♀♀, CWBS loc. 250 (NMW, CASS), 3 ♂♂, 3 ♀♀ (CNU); 7 ♂♂, 4 ♀♀, CWBS loc. 264 (NMW). - GUANGXI: 4 ♀♀, CWBS loc. 43 (NMW). - HONG KONG: 1 ♂, Taipo Kau, 10.VIII.1983, leg. Dudgeon (NMW). - HUNAN: 2 ♂♂, 1 ♀, CWBS loc. 22 (NMW); 3 ♂♂,

2 ♀♀, CWBS loc. 29 (NMW); 4 ♀♀ CWBS loc. 32 (NMW); 2 ♀♀, Zhang Jia Jie, 14.VII.1992, leg. L. Ji (NMW). - JIANGXI: 8 ♂♂, 12 ♀♀, Ciping, Jinggang Shan, 2.-14.VI.1994 (NMW). - MACAO: 1 ♂, Taipa Island, 30.IX.1997, leg. E. Easton (NMW). - SHAANXI: 3 ♂♂, 2 ♀♀, Qin Ling, Hua Shan, 118 km E Xian, 1200 - 1400 m a.s.l., 18.-20.VIII.1995, leg. A. Pütz (NMW). - TAIWAN: 1 ♀, Taipei, Gongliao, 12.XI.1992, leg. L.-J. Wang (CHB); 1 ♀, Gongliao Hermei, 22.VII.1992, leg. M.-L. Jeng (CNU). - ZHEJIANG: 1 ex., Anji county, Long Wang Shan, 450 m a.s.l., V.1996, leg. J. Cooter (CCH).

Species	Region	n	TL-h		MW		TL-h/MW	
			Mean	SD	Mean	SD	Mean	SD
<i>babai</i>	Taiwan	2	5.54		3.42		1.62	
<i>?chujoi</i>	Shandong	35	5.42	0.08	3.43	0.06	1.58	0.02
<i>hainanensis</i>	Hainan	18	6.28	0.14	3.94	0.09	1.60	0.02
<i>d. dissimilis</i>	Anhui	13	4.99	0.14	3.21	0.10	1.55	0.02
	Fujian	43	5.01	0.25	3.20	0.18	1.57	0.02
	Guangxi	4	4.98	0.08	3.15	0.05	1.58	0.02
	Hong Kong	1	4.92		3.17		1.55	
	Hunan	13	5.04	0.08	3.18	0.08	1.59	0.02
	Jiangxi	20	5.21	0.19	3.35	0.13	1.56	0.02
	Macao	1	5.00		3.17		1.58	
	Shaanxi	5	5.29	0.12	3.37	0.09	1.57	0.01
<i>d. major</i>	Taiwan	2	5.21		3.25		1.60	
	Thailand	10	5.72	0.22	3.58	0.11	1.60	0.04
	Vietnam S	61	5.82	0.18	3.56	0.12	1.63	0.02
<i>javanus</i>	Yünnan	36	5.79	0.17	3.66	0.11	1.58	0.02
	Java W	4	6.31	0.14	3.78	0.10	1.67	0.02
	Malaysia	10	6.18	0.20	3.82	0.14	1.61	0.03
	Sumatra N	29	6.00	0.23	3.75	0.15	1.60	0.02
<i>kashmiranus</i>	Thailand	6	6.17	0.20	3.87	0.11	1.59	0.02
	Darjeeling	4	5.37		3.18		1.69	
	Kashmir	1	5.96		3.58		1.66	
	Nepal	92	5.52	0.19	3.34	0.12	1.65	0.02
	Sikkim	3	5.44		3.26		1.67	
<i>ranongensis</i>	Yünnan	11	5.86	0.14	3.56	0.08	1.65	0.01
	Thailand	1	5.92		3.58		1.65	

Table 1: Body length (TL-h), body width (MW), and length to width ratio of studied specimens of the studied *Platynectes* species from different regions.

Description: Body relatively small and broad (Tab. 1). Metasternal wing relatively narrow, mean of WC/WS 4.52 (SD 0.23, n= 5). Elytron with preapical spot normally large, but absent in some individuals; basal fascia interrupted only sublaterally (Fig. 2). Elytral microreticulation in female laterally with meshes elongate and more deeply incised than in male. Male sternum 6 with sublateral rugose area relatively narrow with 5 - 8 long rugae. Penis apically broadly rounded (Fig. 6).

Distribution (Figs. 12, 13): China (Anhui, Fujian, Guangxi, Hong Kong, Hunan, Jiangxi, Macao, Shaanxi, Taiwan, Zhejiang), ? Japan.

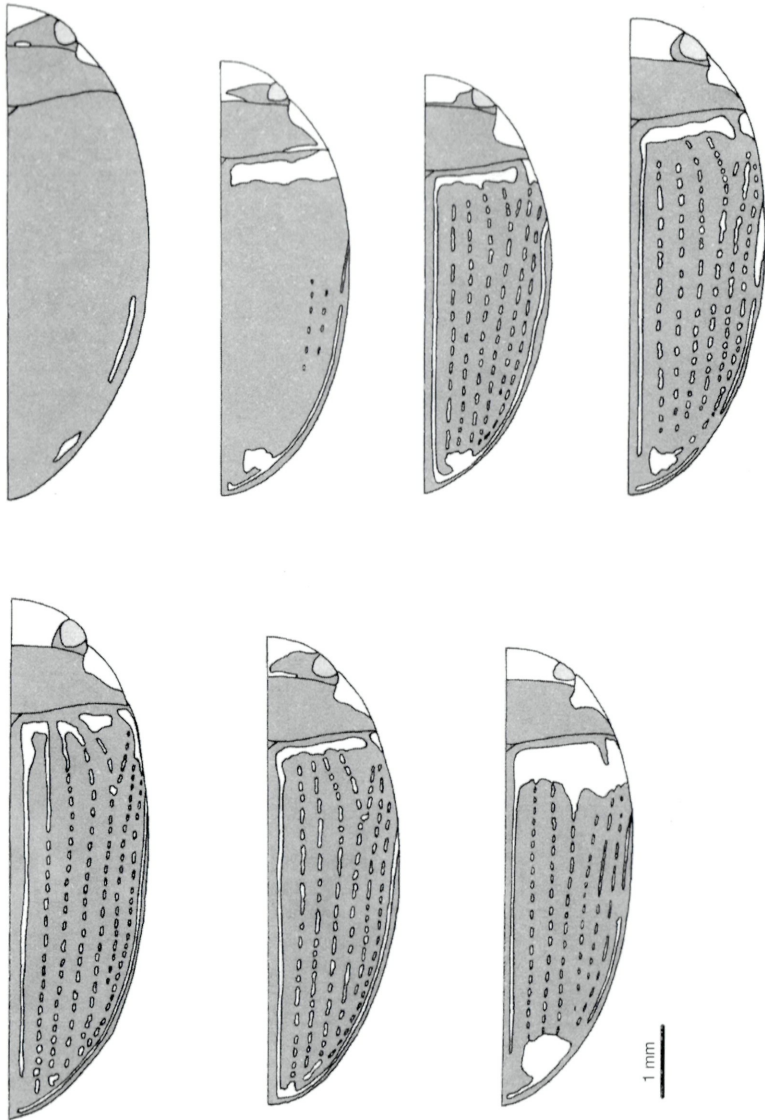
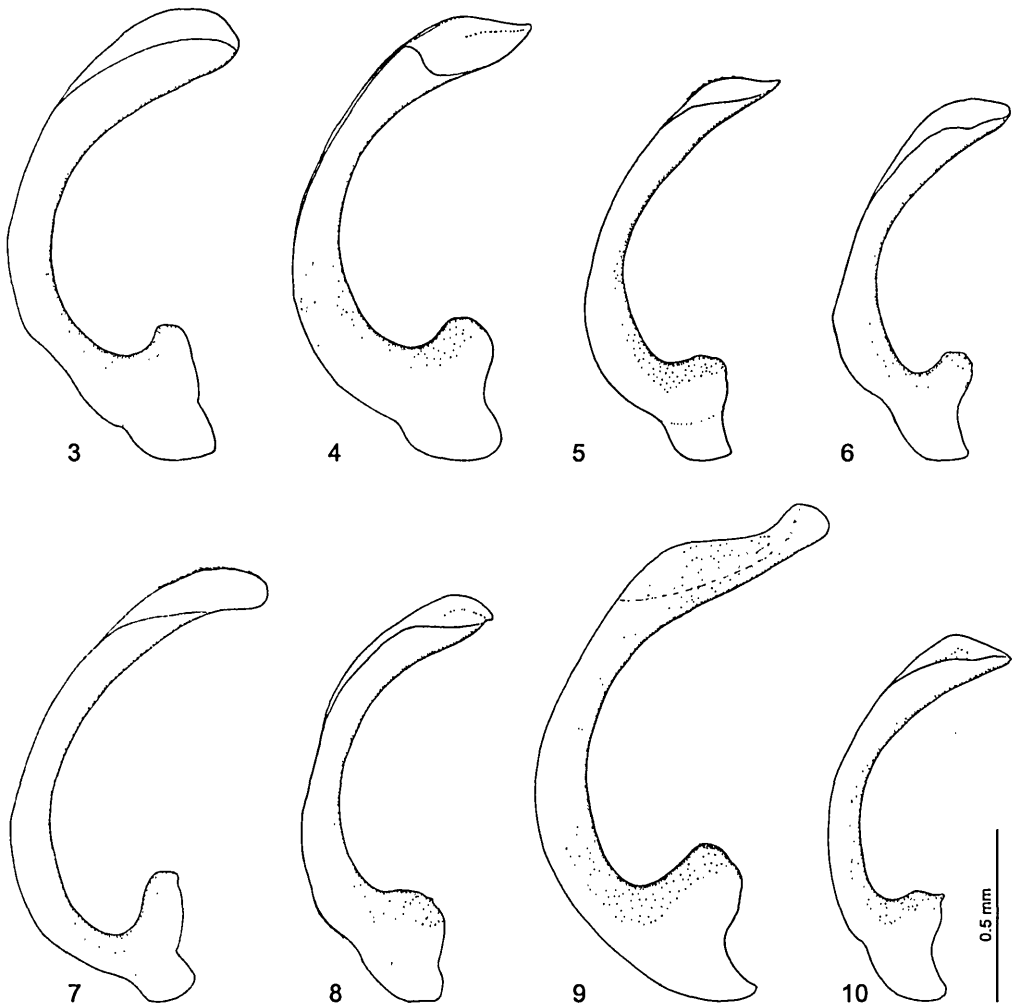


Fig. 2: *Platynectes*, dorsal habitus, right side: above, from left to right: *P. hainanensis*, Hainan, paratype #245; *P. ? chujoi*, Shandong #310; *P. d. dissimilis*, Fujian #188; *P. d. major*, S Vietnam, paratype #35; below, from left to right: *P. javanus*, Java, paratype #86; *P. kashmiranus*, Yünnan #133; *P. ranongensis*, Thailand, holotype #272.

Biology: Found from the coast up to an altitude of 1300 m a.s.l. Habitat information from the CWBS localities indicates that small streams provide the preferred habitat. Several specimens were also found in springfed pools or pools in dried out streams.



Figs. 3 - 10: *Platynectes*, penis, left view, 3) *P. hainanensis*, Hainan, paratype #250, 4) *P. javanus*, Java, paratype #74, 5) *P. dissimilis major*, S Vietnam, paratype #53, 6 - 7) *P. d. dissimilis*, Fujian, 6) normal shape, Shangfang Shan #189, 7) abnormal shape, Wuyi Shan #208, 8) *P. ranongensis*, holotype, 9) *P. kashmiranus*, Yünnan #133, 10) *P. ? chujoi*, Shandong #156.

***Platynectes dissimilis major* ssp.n.**

Type locality: Lang Bian, N Dalat, S Vietnam.

Type material: **Holotype** ♂ (NMW): "S-Vietnam: 17.-21.4. 12km N Dalat 1995 Lang Bian / 12°03'N 108°27'E 1580-1750 m Pacholatko & Dembicky", and my holotype label. - **Paratypes** (NMW, CNU, CASS): 35 ♂♂, 24 ♀♀ with same locality label as holotype; 1 ♀, S Vietnam, 14 km SW Bao Loc, 16.-29.V.1994. leg. P. Pacholatko & L. Dembicky.

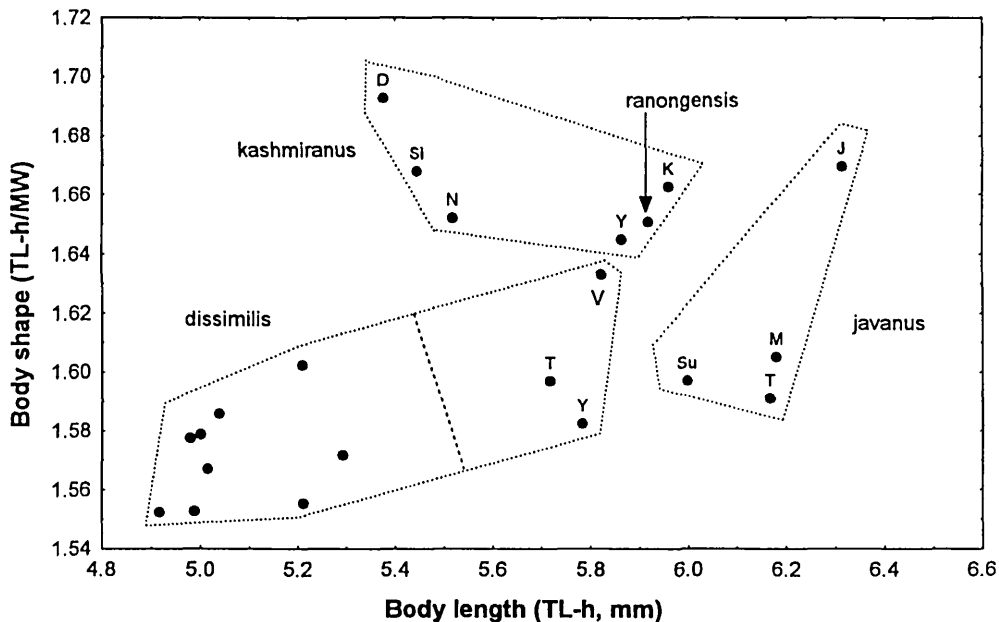


Fig. 11: Mean body shape as a function of mean body length in the studied samples of the species of the *Platynectes dissimilis*-complex. Samples were grouped first species-wise and then region-wise. Regions coded as: (D) Darjeeling, (J) Java, (K) Kashmir, (M) West Malaysia, (N) Nepal, (Si) Sikkim, (Su) Sumatra, (T) Thailand, (V) Vietnam, and (Y) Yünnan. Within the *dissimilis*-cluster, the line separates the two subspecies *P. dissimilis dissimilis* (left) from *P. d. major* (right).

Additional material: CHINA: YÜNNAN: 22 ♂♂, 13 ♀♀, 100 km W Kunming, Diaolin, 22.V.-2.VI.1993, leg. E. Jendek & C. Šauša (NMW), 2 ♂♂, 2 ♀♀ (CNU); CWBS loc. 14 (NMW). - THAILAND: Chiang Mai: 1 ♀, Doi Suthep NP, 900 - 1100 m a.s.l., [7] leg. H. Zettel (NMW); 1 ♂, 1 ♀, Doi Inthanon NP, 1300 m a.s.l., UV Light, 2.-11.V.1990, leg. E. Fuller (NMW); 1 ♂, 1 ♀, Doi Inthanon, Bang Khun Klang, 1200 m a.s.l., 18°32'N 98°32'E, 3.-10.X.1989, leg. H. Malicky & P. Chantaramongkol (NMW). - Petchabun: 1 ♂, 4 ♀♀, Nam Nao NP, Huai Ya Krua, leg. W.D. Shepard (NMW).

Diagnosis: This species is very similar to the nominate subspecies from which it differs in the larger body size and more narrowly rounded to pointed penis apex.

Description: Habitus (Fig. 1). Body length without head 5.5 - 6.0 mm; maximum width 3.5 - 3.8 mm; length to width ratio 1.56 - 1.65 (Tab. 1). Metasternal wing relatively narrow, mean of WC/WS 4.17 (SD 0.31, n=4). Dorsal colour pattern as in Figs. 1, 2. Elytron with preapical spot of varying development, absent in some individuals. Male sternum 6 with sublateral rugose area relatively narrow with 5 - 8 long rugae. Penis as in Fig. 5.

Distribution (Figs. 12, 13): China (Yünnan), Thailand, Vietnam.

Biology: Found at altitudes between 1000 and 2750 m a.s.l.

Platynectes javanus sp.n.

Platynectes lineatus (REDTENBACHER, 1844): CSIKI 1938:129 (misident., W Java).

Platynectes kashmiranus J.BALFOUR-BROWNE, 1944: GUF.ORGUIEV 1972:45 (in part).

Type locality: Ranca Upas, 10 km S Ciwidey, W Java, Indonesia.

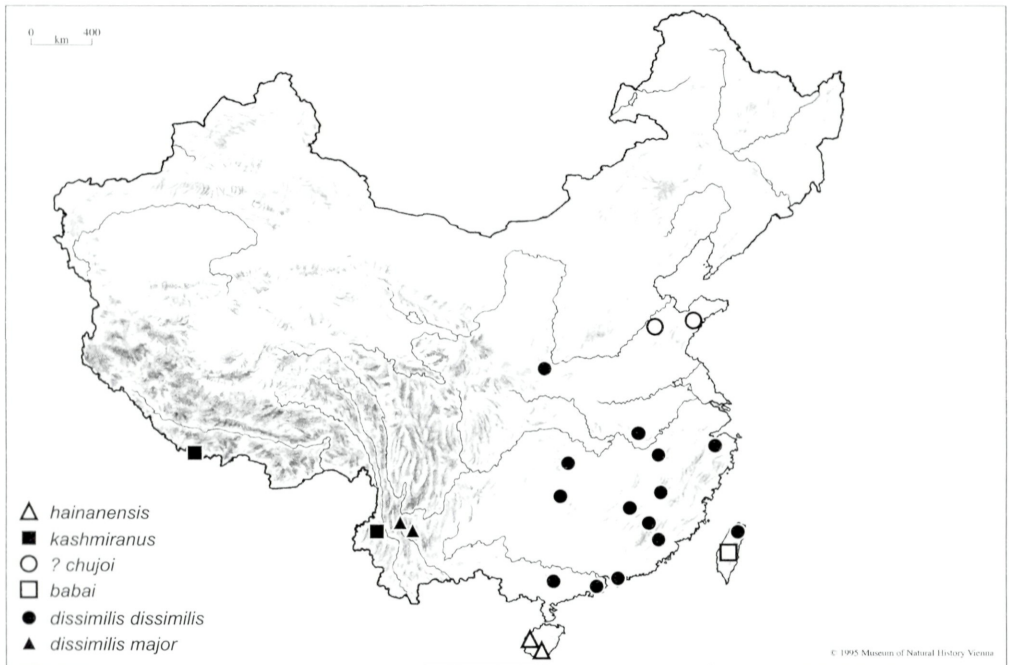


Fig. 12: Known records of Chinese *Platynectes* species.

Type material: **Holotype** ♂ (NMW): "INDONESIA: W Java 'Ranca Upas' ca. 1300m 10 km S Ciwidey lg.Schuh 9.8.1994", and my holotype label. - **Paratypes** (NMW, CHB, CNU): JAVA: 1 ♂, 1 ♀, same locality data as holotype, 1 ♂ (CNU); 1 ♀, Cibodas, Telaga Biru, 1500 m, 16.I.1987, leg. M.A. Jäch [J8] (NMW). - SUMATRA: 10 ♂♂, 8 ♀♀, Lumban Julu, ca. 1200 m a.s.l., 18.II.1990, leg. M.A. Jäch [14] (NMW), 1 ♂, 1 ♀ (CNU); 3 ♂♂, 2 ♀♀, Lembah Harau, 15 km NE Payakumbu, 11.II.1991, leg. S. Schödl [12c] (NMW); 1 ♂, 1 ♀, Gunung Talang, 70 km SE Padang, 1500 m a.s.l., 25.II.1991, leg. M.A. Jäch [29] (NMW); 2 ♀♀, Samosir/Tomok, 1200 m a.s.l., 5.II.1990, leg. S. Schödl [3] (NMW); 1 ♂, Hutaimbaru, NW Sipirok, 4.II.1991, leg. S. Schödl [3] (NMW); 1 ♀, Lembah Anai, W Padangpanjang, 12.II.1991, leg. M.A. Jäch [14] (NMW). - WEST MALAYSIA: 3 ♂♂, 3 ♀♀, Cameron Highland, Tanah Rata, Gunung Jasar, track 11, 1500 m a.s.l., 16.XII.1996, leg. L. Hendrich [MA3] (CHB); 1 ♀, Genting Highland, Awana Resort, jungle track, 1200 m a.s.l., 28.VI.1994, leg. L. Hendrich [MA9] (CHB); 2 ♂♂, Kedah, Gunung Jerai, N Sungai Petani, 700 m a.s.l., 2.II.1992, leg. M.A. Jäch [18] (NMW), 1 ♂ (CNU); 1 ♂, Kedah, SW Langkawi, Telaga Tujuh, 29.I.1992, leg. M.A. Jäch [12] (NMW). - THAILAND: 1 ♂, 1 ♀, Phrae Prov., Mae Khaem, 15 km E Phr., ca. 350 m a.s.l., 16.XI.1995, leg. H. Zettel [16b] (NMW); 2 ♂♂, 2 ♀♀, Tham Tharn Lot NP, N Kanchanaburi, 28.-29.XI.1990, leg. M.A. Jäch [3] (NMW).

Diagnosis: Within the *dissimilis*-complex characterized by large body size and broad pointed penis apex with left side much reduced distally (Fig. 4).

Description: Body length without head 5.8 - 6.4 mm (Tab. 1). Body relatively narrow, length/width ratio 1.58 - 1.69. Metasternal wing relatively narrow, WC/WS 4.1 - 4.5. Elytron with preapical spot normally large, sometimes absent; basal fascia normally interrupted only sublaterally, sometimes also medially. Elytron in female with meshes of microreticulation longitudinally stretched and deeply incised; in Sumatra females reticulated all over the elytron whereas in females from other regions the anterior and internal margins are broadly smooth and with reticulation reduced. Penis with left side abruptly reduced subapically, forming a more or less right angle (Fig. 4). Male sternum 6 with central smooth area narrower than lateral striate area that has 12 - 14 long striae.

Distribution (Fig. 12): Thailand, Malaysia (West Malaysia), Indonesia (Sumatra, Java).

Biology: Found at altitudes between 350 and 1500 m a.s.l.

Platynectes kashmiranus J.BALFOUR-BROWNE

Colymbetes lineatus REDTENBACHER in KOLLAR & REDTENBACHER, 1844:503 (orig. descr., preocc.).

Platynectes lineatus (REDTENBACHER, 1844): RÉGIMBART 1899:288 (descr.).

Platynectes kashmiranus J.BALFOUR-BROWNE, 1944:352 (repl. name); GUÉORGUIEV 1972:45 (in part); WEWALKA 1975:159 (distr.); BRANCUCCI 1979:202 (distr.).

Platynectes kashmirensis J.BALFOUR-BROWNE, 1944: VAZIRANI 1970:341 (misspell.).

Platynectes kashmirens J.BALFOUR-BROWNE, 1944: VAZIRANI 1977:68 (misspell.), 1980:29 (misspell.).

Type locality: Kashmir, India.

Type material: Syntype ♀ (NMW): "Hügel 77", and my syntype label.

Additional material: INDIA: Darjeeling District: 2 ♂♂, 2 ♀♀, Khola, N Sonada, 2300 m a.s.l., 20.VI.1973, leg. G. von Rosen (NMW); Sikkim: 2 ♂♂, 1 ♀, Malli, 900 m a.s.l., 28.IV.1981, leg. B. Bhakta (CNU). - NEPAL: Far Western Region: 1 ♀, Baetadi, Sera, Kansan Gad, 7.XII.1993, leg. S. Sharma [41] (NMW); Western Region: 3 ♂♂, 3 ♀♀, Buri Gandaki, Kholabensi-Labubesi, 1650 m a.s.l., 5.VI.1990, leg. J. Probst (NMW); 1 ♂, Buri Gadaki, Arughat, Bazar-Sudi, 1300 m a.s.l., 24.-26.V.1990, leg. J. Probst (NMW); Mustang Distrikt: 2 ♂♂, 3 ♀♀, Jharkot, 31.VII.1985, leg. E. Preuler (NMW); Kaski Distrikt: 8 ♂♂, 12 ♀♀, Pokhara, 3.VI.1992, leg. I. Jenis (NMW), 1 ♂, 1 ♀ (CNU); 10 ♂♂, 4 ♀♀, 20 km NW Pokhara, Lumle, 1600 m a.s.l., 2.V.1984, leg. G. Wewalka [N2] (NMW); 1 ♀, 30 km NW Pokhara, Ghandrung, 2000 m a.s.l., 11.V.1984, leg. G. Wewalka [N19] (NMW); 3 ♂♂, 50 km NW Pokhara, Sikha, 1800 m a.s.l., 7. & 10.V.1984, leg. G. Wewalka [N7, 8, 14] (NMW); 1 ♂, 2 ♀♀, 55 km NW Pokhara, Tatopani, 1200 m a.s.l., 8.V.1994, leg. G. Wewalka [N9, 13] (NMW); 2 ♂♂, 3 ♀♀, 60 km NW Pokhara, Dana, 1400 m a.s.l., 9.V.1984, leg. G. Wewalka [N10, 12] (NMW); Myagdi District: 1 ♀, Tatopani, Galisar, 4.IV.1996, leg. Graf & al. (NMW); 1 ♂, left tributary to Kali Gandaki, 6 km below Tatopani, 4.IV.1996, leg. Graf & al. (NMW); 1 ♀, Kopchepani, 18.VI.1986 (NMW); Central Region: Sindhupalchok Distrikt: 1 ♂, Hanri Khola, near Dhap, 1200 m a.s.l., 27°54'N, 85°38'E, 13.IV.1995, leg. H. Malicky (NMW); 1 ♀, Chauki, Terhathum, 2700 m a.s.l., 30.X.1979, leg. M. Satô (CHB); 1 ♂, Gonda, Dolakha, 2350 m a.s.l., 15.X.1979, leg. Y. Nishikawa (CHB); 1 ♀, Tini Odhar, Chak Khola, Kabhre, 730 m a.s.l., 9.XI.1979, leg. M. Satô (CHB); 8 ♂♂, 10 ♀♀, Tibet-Nepal border, Tatopani, Kodari, 1.III.1981, leg. M.A. Jäch [N3b] (NMW), 1 ♂, 1 ♀ (CNU); Makawanpur Distrikt: 1 ♂, Hetauda, 19.II.1981, leg. M.A. Jäch [N23] (NMW); Eastern Region: Solukhumbu Distrikt: 2 ♀♀, Biha Khola, 5.-6.IV.1994, leg. S. Sharma (NMW); Sunsari Distrikt: 1 ♂, 4 ♀♀, Dahran, 12.II.1981, leg. M.A. Jäch [N10] (NMW); Sankhua Sabha Distrikt: 1 ♂, Arun Valley, Khandhari-Bhotebas, 1000-1750 m a.s.l., 5.VI.1988, leg. G. Lebisch & J. Probst (NMW). - CHINA: TIBET: 8 ♂♂, 10 ♀♀, Tibet-Nepal border, Kodari, Tatopani, 1.III.1981, leg. M.A. Jäch [N3b] (NMW), 1 ♂, 1 ♀ (CNU). - YÜNNAN: 7 ♂♂, 4 ♀♀, Baoshan, 5.-8.VI.1993, leg. E. Jendek & O. Šauša (NMW), 1 ♂ 1 ♀ (CNU).

Diagnosis: Elytron without preapical spot; basal fascia rarely absent (Fig. 2). Elytron in female laterally with meshes of microreticulation small and deeply incised but not longitudinally stretched.

Distribution (Figs. 12, 13): Afghanistan, Pakistan, India (Kashmir, Punjab, Himachal Pradesh, Uttar Pradesh, Darjeeling, Sikkim, Assam), Nepal, Bhutan, China (Tibet, Yünnan).

Biology: Found at altitudes between 730 and 2700 m a.s.l.

Note: These are the first records from China of this species.

Platynectes ranongensis sp.n.

Type locality: Ranong, Ranong province, S Thailand.

Type material: **Holotype** ♂ (NMW): "Thailand, 23-27.ii.1996 Ranong prov. 9°56'98"40' Ranong: Hot Springs P. Prudek leg.", and my holotype label.

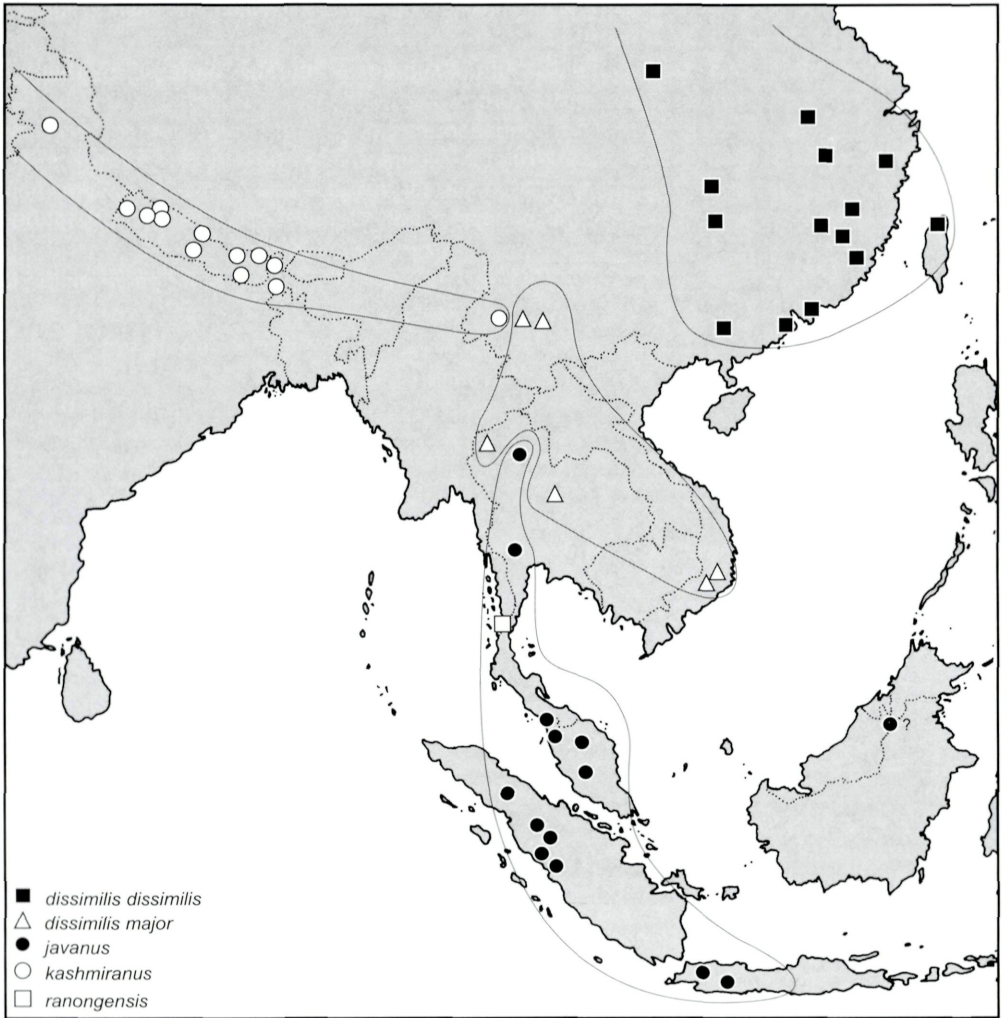


Fig. 13: Distribution of taxa in the *Platynectes dissimilis*-complex. Range of each taxon outlined with line.

Diagnosis: Elytron with basal fascia broad and not interrupted sublaterally; inner width of fascia subequal to distance from suture to third vitta; apical spot large (Fig. 2). Penis apex narrowly rounded with ventral sinuation (Fig. 8).

Description: Body relatively large and narrow (Tab. 1). Metasternal wing narrow, WC/WS 5.19. Metafemur with rounded central depression in distal half. Male sternum 6 with central area subrugose in anterior half; sublateral area with 7 long rugae. Female unknown.

Distribution (Fig. 13): Thailand.

Biology: Unknown.

Unidentified material

Two females (NMW) from Yunnan (CWBS loc. 14) were found together with one male of *P. d. major*. However, their large body size and coarse dorsal sculpture provide important differences from other females of this subspecies. The mean body length (without head) of these two females is 6.71 mm, i.e. larger than any other specimen of this complex seen. The elytral microsculpture consists of deeply incised and longitudinally stretched meshes, similar to some females of *P. javanus*. The TL-h/MW ratio of these two females is about 1.59.

One female (NMW) from East Malaysia (Sarawak, Kelabit Highland, Bareo 1000-1200 m a.s.l., 26.II.-1.III.1993, leg. H. Zettel [11]) may well represent *P. javanus*, although this conclusion should be confirmed by the examination of males from Borneo.

Key to Chinese species and subspecies of *Platynectes*

- 1 Elytron black with small apical yellow spot and narrow lateral vitta in posterior half 2
- Elytron black with yellow basal fascia in most species combined with longitudinal series of small yellow spots resulting in a vittate pattern 3
- 2 Body length without head 6.1 - 6.4 mm. Penis broadly rounded in distal half (Fig. 3) *hainanensis*
- Body length without head 5.4 - 5.6. Penis narrower in distal half (cf. Fig. 10) *babai*
- 3 Elytron black with yellow basal fascia, but without longitudinal series of small yellow spots
..... ? *chujoi*
- Elytron black with yellow basal fascia combined with more or less well-developed longitudinal series of small yellow spots 4
- 4 Penis distally produced to truncate apex (Fig. 9). Body length without head 5.4 - 6.0 mm. Body narrow, length/width ratio 1.62 - 1.67 *kashmiranus*
- Penis distally not produced; apex pointed or rounded (Figs. 5 - 7). Body often smaller and broader (*dissimilis*) 5
- 5 Penis apically broadly rounded (Figs. 6, 7). Body length without head 4.8 - 5.3 mm
..... *dissimilis dissimilis*
- Penis apically more or less pointed (Fig. 5). Body length without head 5.5 - 6.0 mm
..... *dissimilis major*

Key to species and subspecies of the *Platynectes dissimilis*-complex

- 1 Penis distally produced to truncate apex (Fig. 9). Body length without head 5.4 - 6.0 mm. Body narrow, length/width ratio 1.62 - 1.67 *kashmiranus*
- Penis distally not produced; apex pointed or rounded (Figs. 4 - 8). Body often smaller and broader 2
- 2 Penis with left side abruptly reduced subapically, forming a more or less right angle (Fig. 4). Male sternum 6 with central smooth area narrower than lateral striate area that has 12 - 14 long striae. Body length without head 5.8 - 6.4 mm. Body relatively narrow, length/width ratio 1.58 - 1.69 *javanus*
- Penis with left side more smoothly reduced subapically, forming a wide angle (Figs. 5 - 8). Male sternum 6 with central smooth area as wide as lateral striate area that has 5 - 8 long striae. Body often smaller and narrower 3
- 3 Elytron with basal fascia broad and uninterrupted (Fig. 2). Penis ventro-apically sinuate (Fig. 8)
..... *ranongensis*

- Body with basal fascia narrow and normally interrupted sublaterally. Penis ventro-apically not sinuate (Figs. 5 - 7) (*dissimilis*) 4
- 4 Penis apically broadly rounded (Figs. 6, 7). Body length without head 4.8 - 5.3 mm *dissimilis dissimilis*
- Penis apically more or less pointed (Fig. 5). Body length without head 5.5 - 6.0 mm *dissimilis major*

Discussion

Some of the studied species show a pronounced variation in body colour pattern, size and shape. The material at hand does not allow a more detailed study of how this variation relates to environmental variables like altitude and latitude. Both *P. dissimilis* and *P. javanus* show a tendency for larger specimens to be narrower, whereas the opposite is true for *P. kashmiranus* (Fig. 11). This difference may well be an artefact due to how different altitudes were sampled in different regions. The altitudinal range of each species is seemingly rather wide, from 1000 to 2000 m.

Earlier authors have recognized only two species within the *dissimilis*-complex (e.g. VAZIRANI 1970, GUÉORGUIEV 1972). Following CSIKI (1937), specimens from Java and Sumatra have erroneously been assigned to *P. kashmiranus*. Species separation has chiefly relied on body shape and colour; characters that have turned out to be rather plastic also within species. Characters like the presence or absence of the elytral preapical spot, or the anterior bifurcation of the fifth elytral vitta do not provide a sound basis for identification within this complex.

The recognized taxa within the *dissimilis*-complex are more or less allopatric (Fig. 13). The studied material suggests that *P. dissimilis major* probably is sympatric with *P. kashmiranus* in Yünnan and with *P. javanus* in north Thailand. Moreover, the type locality of *P. ranongensis* is situated within the range of *P. javanus*. The subspecific status of *P. d. major* is motivated from the relatively small difference in penis shape compared to the nominate subspecies.

The study of additional material of this group may reveal the presence of one or more undescribed species. The two unidentified females from Yünnan definitely fall outside the range of variation of the other species. Moreover, the penis drawing given by VAZIRANI (1970) as representing *P. kashmiranus* is from some other species. The identity of the specimens reported by GUIGNOT (1954) as *P. dissimilis* from Burma needs to be checked. The presence of two penis morphs in one of the Fujian samples of *P. d. dissimilis* may deserve further study (Figs. 6, 7).

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