

DYTISCIDAE:
XI. New species, new synonymies,
and new records in *Platambus* THOMSON from China
(Coleoptera)

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Abstract

The *Platambus* specimens collected during CWBS expeditions between 1996 and 2001 were studied. The material includes the following five new species: *P. dabieshanensis* (Anhui), *P. denticulatus* (Sichuan), *P. heteronychus* (Guangdong), *P. micropunctatus* (Guangdong), and *P. yaanensis* (Sichuan). The following new synonymies are given: *Platambus jilanzhui* WEWALKA & BRANCUCCI, 1995, and *Agabus nakanei* NILSSON, 1997 both are considered junior synonyms of *Agabus stygius* RÉGIMBART, 1899 (now in *Platambus*). The paratype of *Agabus stygius*, earlier identified as *Platambus insolitus* (SHARP), here is identified as *P. schillhammeri* WEWALKA & BRANCUCCI, 1995. Consequently, *P. insolitus* is restricted to Japan. *Platambus optatus* (SHARP) is recorded from China (Fujian, Jiangxi) for the first time.

Key words: Coleoptera, Dytiscidae, *Platambus*, China, taxonomy, faunistics, new species, new synonymies.

Introduction

My review of Chinese Dytiscidae (NILSSON 1995) included ten named species of the genus *Platambus* THOMSON unambiguously recorded from China. Following my recent reclassification of the *Agabus*-group genera of the Agabini (NILSSON 2000, 2001), the five species in the *optatus*-group known from China have been transferred to *Platambus* from *Agabus*, increasing the number of *Platambus* species known from China to 15. In the present contribution, the study of new material has resulted in the addition to the Chinese fauna of seven more species of the genus.

Material and methods

This study is based on the examination of 374 specimens, most of them deposited in the NMW. Each specimen was measured and given a unique number on a label. Individual measurements are distributed by the author as a data file upon request. Samples from different localities were assigned to species chiefly on the shape of the penis. Variation in size and shape were used to find composite samples. Within each species, samples were grouped within regions.

All material belongs to NMW, if no other collection is given.

Specification of content of references: (cat.) catalogue, (class.) classification, (distr.) distribution, (faun.) faunistic records, (misident.) misidentified, (orig. descr.) original description, (redescr.) redescription, (rev.) revision.

Acronyms & CWBS localities:

CASS	Chinese Academy of Sciences, Institute of Applied Ecology, Shenyang
CFB	Coll. Fery, Berlin (property of NMW)
CHB	Coll. Hendrich, Berlin
CNU	Coll. Nilsson, Umeå
CWBS	China Water Beetle Survey
MHNP	Muséum national d'Histoire naturelle, Paris
NHML	Natural History Museum, London
NMW	Naturhistorisches Museum Wien.

Measurements and positions: (AV) anteroventral, (D) dorsal, (MW) maximum body width, (PV) posteroventral, (TL-h) body length without head (corresponds in average to 92 % of total length), and (WC/WS) ratio between width of metacoxa and width of metaventricle (LARSON 1975), measured inside bead.

CWBS loc. 10: **Beijing Municipality**; Xiang Shan (= Fragrant Hills), ca. 35 km NW Beijing City; small stream (epirhitron), flowing through forest; 2.VII.1992; leg. M.A. Jäch & L. Ji; [locality number on label: 10 (leg. M.A. Jäch) and 10a (leg. L. Ji)]; (see JÄCH & Ji 1995: Fig. 10).

CWBS loc. 23: **Hunan Province**; Xiangxi Prefecture; Dayong County; Zhangjiajie Forest National Park, Suoxiyü Nature Reserve, Wulingyuan section (ca. 30 km N Dayong City); ca. 2 km downstream of Shuiraosimen; small branch of Jinbian Xi, ca. 1 - 2 m wide, slowly flowing, with riffle areas and pools; 30.X.1993; leg. H. Schönmann, H. Schillhammer & L. Ji; [locality number on label: 4].

CWBS loc. 93: **Jilin Province**; Yanbian Korean Autonomous Prefecture; Antu County; Baihe City, Baohujü District; near Power Plant of Baihe City, near CWBS loc. 90; unshaded, springfed pools, cold water, ca. 750 m a.s.l.; 19.VIII.1994; leg. M.A. Jäch; [locality number on label: 29].

CWBS loc. 96: **Liaoning Province**; Jinzhou City Region; Beizhen County; Yiwulü Shan; ca. 5 km NW Beizhen City (Guaning); Toudao Gou He (= 1st Valley River), 2 - 5 m wide, only partly shaded, flowing through Chinese Pine (*Pinus tabulaeformis*) forest, strongly washed out due to heavy spates which occurred two weeks before, ca. 200 m a.s.l.; 22.VIII.1994; leg. M.A. Jäch, L. Ji & M. Wang; [locality number on label: 32].

CWBS loc. 101: **Liaoning Province**; Jinzhou City Region; Beizhen County; Yiwulü Shan, ca. 15 km W Beizhen City; upstream of CWBS loc. 100; small stream, ca. 1 m wide, partly through secondary forest, granite, ca. 200 m a.s.l.; 23.VIII.1994; leg. M.A. Jäch, L. Ji & M. Wang; [locality number on label: 37].

CWBS loc. 122: **Liaoning Province**; Benxi City Region; Benxi County; ca. 50 km SE Benxi City; 1 km W Xiamatang Village; springfed pool, including *Sphagnum* swamp, 50 m long, 1 - 2 m wide, 1 m deep, margin with stones and mud, decaying plant material, 20°C, surrounding vegetation composed of shrubs, ca. 200 m a.s.l.; 26.IX.1994; leg. L. Ji & M. Wang; [locality number on label: 58].

CWBS loc. 123: **Liaoning Province**; Benxi City Region; Benxi County; ca. 50 km SE Benxi City; 1 km W Xiamatang Village; small and shallow ground water pool near CWBS loc. 122, stones, mud and water plants, decaying plant material, 20°C; 26.IX.1994; leg. L. Ji & M. Wang; [locality number on label: 59].

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. L. Ji & M. Wang; [locality number on label: 70].

- CWBS loc. 136: **Shandong Province**; Tai'an Prefecture; Tai Shan Nature Reserve; 1 km N of CWBS loc. 135, 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. L. Ji & M. Wang; [locality number on label: 72].
- CWBS loc. 138: **Shandong Province**; Tai'an Prefecture; Tai Shan Nature Reserve; 50 m upstream of CWBS loc. 137, near Jingshigu Stone Carvings; small stream, 2 m wide, slowly flowing to loc. 137, shaded, small stones, gravel pools, unpolluted; 19.X.1994; leg. L. Ji & M. Wang; [locality number on label: 74].
- 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. L. Ji & M. Wang; [locality number on label: 75].
- CWBS loc. 140: **Shandong Province**; Tai'an Prefecture; Tai Shan Nature Reserve; near Doumugong, near CWBS 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 CWBS loc. 137; 19.X.1994; leg. L. Ji & M. Wang; [locality number on label: 76].
- CWBS loc. 157: **Liaoning Province**; Dalian City Region; Jinzhou Qū (= Jin Xian); Dahei Shan, ca. 10 km E Jinzhou City; small stream, fast flowing, shaded and unpolluted, flowing through forest, 100 m a.s.l.; 21.VII.1995; leg. L. Ji.
- CWBS loc. 158: **Liaoning Province**; Dandong City Region; Kuandian County; Baishila Natural Reserve; ca. 35 km NE Kuandian City; small stream near the Village, ca. 0.5 m wide, slowly flowing, unshaded, mud and gravel, banks with gravel pools, 400 m a.s.l.; 30.VIII. 1995; leg. L. Ji & M. Wang.
- CWBS loc. 160: **Liaoning Province**; Dandong City Region; Kuandian County; Baishila Natural Reserve; ca. 35 km NE Kuandian City; 10 km N of Baishila Village; rain and ground water pool (ca. 3 m²), surrounded by forest, cold water, shaded, with mud and gravel, 500 m a.s.l.; 30.VIII.1995; leg. L. Ji & M. Wang.
- CWBS loc. 161: **Liaoning Province**; Dandong City Region; Kuandian County; Baishila Natural Reserve; 35 km NE Kuandian City; 10 km N Baishila Village; rain and ground water pool in forest, shallow, ca. 3 m², mud and gravel, ca. 600 m uphill CWBS loc. 160, 500 m a.s.l.; 30.VIII.1995; leg. L. Ji & M. Wang.
- CWBS loc. 221: **Sichuan Province**; Ya'an City Region; ca. 14 km N Ya'an City; near road to Shangli Town; river, ca. 5 - 8 m wide, with large rocks, some of these partly moss-covered, flowing through secondary forest, ca. 800 m a.s.l.; 8.VI.1996; leg. L. Ji & M. Wang.
- CWBS loc. 225: **Sichuan Province**; Ya'an City Region; ca. 16 km N Ya'an City and ca. 3 km N Shangli Town; small stream, ca. 0.5 m wide, tributary to CWBS loc. 223, ca. 950 m a.s.l.; 9.VI.1996; leg. L. Ji & M. Wang.
- CWBS loc. 229: **Sichuan Province**; Ya'an City Region; Lushan County; ca. 5 km N Lushan City, 2 km N Renjia Village, near abandoned power plant (between gate to gorge and bridge); Xichuan He [river], with pebbles and cobbles, and aquatic vegetation, unpolluted, ca. 900 m a.s.l.; 11.VI.1996; leg. L. Ji & M. Wang.
- CWBS loc. 230: **Sichuan Province**; Ya'an City Region; Lushan County; ca. 3 km S Lushan City; stream, ca. 3 m wide, fast flowing through secondary vegetation (trees and shrubs), valley slopes cultivated, ca. 650 m a.s.l.; 11.VI.1996; leg. L. Ji & M. Wang.
- CWBS loc. 231: **Sichuan Province**; Ya'an City Region; Tianqian County; Xingou (= New Gorge) Village; ca. 57 km W Ya'an City, 6 km SW Zishi Village; Tianqian He (= Sky Spring River), ca. 6 - 8 m wide, cold and fast flowing, with gravel and cobbles, slightly polluted, cultivated forest on valley slopes, ca. 1500 m a.s.l.; 12.VI.1996; leg. L. Ji & M. Wang.
- CWBS loc. 240: **Fujian Province**; Jianyuan Prefecture; Chong'an City Region; ca. 1 km W Wuyi Gong Village (= Shanqian, ca. 10 km S Chong'an City); residual pools in dry riverbed in steep valley, crystalline rock, 200 - 250 m a.s.l.; 15. and 18.I.1997; leg. H. Schönmann, L. Ji & M. Wang.

- CWBS loc. 250: **Fujian Province**; Jianyuan 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, rock pools and waterfalls, sections with coarse crystalline gravel, densely shaded by forest, water very cold, 500 m a.s.l.; 19.I.1997; leg. H. Schönmann, L. Ji & M. Wang.
- CWBS loc. 259: **Fujian Province**; Jianyuan Prefecture; Yong'an City Region; ca. 20 km SE Yong'an City, 6 km N Xiyang Village; roadside pools, unshaded, and shallow pools in rice fields, 400 m a.s.l.; 26.I.1997; leg. H. Schönmann, L. Ji & M. Wang.
- CWBS loc. 260: **Fujian Province**; Longyan City Region; near Ke Shan Monastery, near Jiangshan (= Tongbo), on the slope of Meihua Shan (ca. 1700 m), 20 km N Longyan City; small stream, ca. 0.5 m wide, partly flowing over granitic rock (incl. small pools), partly running over coarse gravel, turbid, partly shaded by bushes, surrounded by rice fields, 900 - 1000 m a.s.l.; 28.I.1997; leg. H. Schönmann, L. Ji & M. Wang.
- CWBS loc. 268: **Guizhou Province**; Liupanshui City Region; 10 km W Liupanshui City; Yao Shang Reservoir, bank with aquatic vegetation, mud and sand, slightly polluted, surrounded by agricultural fields, ca. 1800 m a.s.l.; 27.VII.1997; leg. M. Wang.
- CWBS loc. 272: **Guizhou Province**; Bijie Prefecture; Bijie County; 2 km SE CWBS loc. 271; Dao Tian He (= Rice Field River), 10 m wide, slightly polluted, fast flowing, banks with aquatic vegetation, ca. 1200 m a.s.l.; 28.VII.1997; leg. M. Wang.
- CWBS loc. 297: **Anhui Province**; Anqing Prefecture; Yuexi County; Dabie Shan; near Shi Guan, ca. 20 km N Yuexi City; stream, ca. 0.5 - 1.0 m 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. H. Schönmann & M. Wang.
- CWBS loc. 299: **Anhui Province**; Anqing Prefecture; Yuexi County; Dabie Shan; ca. 50 km NW Yuexi City, Huang Liyan Village, near Baojia Village; two streams (tributaries of CWBS loc. 298), ca. 0.5 - 1.0 m wide, in steep and narrow forested valleys, mainly running over rock, small sandy pools with decaying leaves, densely shaded, 1000 - 1050 m a.s.l.; 8.XI.1997; leg. H. Schönmann & M. Wang.
- CWBS loc. 301: **Anhui Province**; Anqing Prefecture; Yuexi County; Dabie Shan; ca. 25 km N Yuexi City, near Shi Guan Village; stream, ca. 1 - 2 m wide, slowly flowing, big rounded granitic boulders, sand, gravel and decaying leaves, densely shaded, 1100 m a.s.l.; 9.XI.1997; leg. H. Schönmann & M. Wang.
- CWBS loc. 322: **Gansu Province**; Wudu Prefecture; Wen County; 4 km N Shangdan Village; stream, ca. 3 m wide, fast flowing, warm, slightly polluted, ca. 1100 m a.s.l.; 13.VI.1998; leg. M. Wang.
- CWBS loc. 349: **Yunnan Province**, Qüjing Prefecture, Liangwang Shan (= King Liang Mountains), ca. 100 km NNE Kunming, few km E Banqiao, ca. 2300 m a.s.l., 25°33'14"N 103°05'52"E; river (tributary of Xiao Jiang (= tributary of Jang Jiang)), ca. 4 - 6 m wide, unshaded, shrubs; 3.XI.1999; leg. M.A. Jäch, H. Schönmann, M. Wang & Y. Wei.
- CWBS loc. 350: **Yunnan Province**, Qüjing Prefecture, Liangwang Shan (= King Liang Mountains), ca. 2300 m a.s.l., 25°33'14"N 103°05'52"E; stream, ca. 1 - 2 m wide (right hand side tributary of CWBS loc. 349); 3.XI.1999; leg. M.A. Jäch & H. Schönmann (see JÄCH & Ji 2003: Fig. 2).
- CWBS loc. 357: **Yunnan Province**, Xishuangbanna Dai Autonomous Prefecture, Mengla County, Menglun Town, Green Stone Forest Park, ca. 3 km S Menglun, ca. 500 m a.s.l.; pond (size: ca. 10 x 20 m) and small effluent (ca. 0.5 m wide and disappearing in ponor after ca. 20 m), shaded, surrounded by primary forest; 6.XI.1999; leg. M.A. Jäch, H. Schönmann, M. Wang & Y. Wei (see JÄCH & Ji 2003: Fig. 3).
- CWBS loc. 359: **Yunnan Province**, Xishuangbanna Dai Autonomous Prefecture, Mengla County, Menglun Town, ca. 10 km NW Menglun, along road Menglun - Mengyang, ca. 700 m a.s.l.; Wushiwu He (= River Fiftyfive), ca. 3 - 5 m wide, flowing through primary forest in steep valley; 7.XI.1999; leg. M.A. Jäch, H. Schönmann, M. Wang & Y. Wei.

- CWBS loc. 369: **Yunnan Province**, Xishuangbanna Dai Autonomous Prefecture, Mengla County, ca. 50 km NW Mengla, ca. 800 m a.s.l.; River Nangong, ca. 5 - 8 m wide, flowing through dense forest; 9.XI.1999; leg. M.A. Jäch & H. Schönmann.
- CWBS loc. 374: **Yunnan Province**, Xishuangbanna Dai Autonomous Prefecture, Jinghong City Region, pass, road Jinghong - Menghai, ca. 20 km W Jinghong, ca. 1000 m a.s.l.; two small streams, ca. 0.5 m wide, partly shaded, flowing through shrubs; 11.XI.1999; leg. M.A. Jäch, H. Schönmann, M. Wang & Y. Wei.
- CWBS loc. 375: **Yunnan Province**, Xishuangbanna Dai Autonomous Prefecture, Jinghong City Region, road Jinghong - Menghai, ca. 25 km W Jinghong, ca. 1000 m a.s.l.; two small, shallow, springfed, roadside pools, size. ca. 2 m², shaded, bottom with mud and leaves; 11.XI.1999; leg. M.A. Jäch, H. Schönmann, M. Wang & Y. Wei.
- CWBS loc. 388: **Yunnan Province**, Simao Prefecture, 36 km SW Simao, road Simao - Lancang, ca. 1000 m a.s.l.; stream, 3 – 5 m wide, flowing through dense pine forest, substrate: sandstone rocks, hardly gravel and organic debris; 15.XI.1999; leg. H. Schönmann & M. Wang.
- CWBS loc. 392: **Yunnan Province**, Simao Prefecture, 25 km SW Simao, road Simao - Lancang, Zhu Shan (= Bamboo Mountain), ca. 1000 m a.s.l.; River Zhu, 5 – 7 m wide, flowing through degraded forest; sample taken from plant debris after pronounced flood period; 17.XI.1999; leg. H. Schönmann & M. Wang.
- CWBS loc. 393: **Yunnan Province**, Simao Prefecture, 25 km SW Simao, road Simao - Lancang, Zhu Shan, ca. 1000 m a.s.l.; forest stream (right tributary of River Zhu Shan), 1 – 2 m wide, residual pools and plant debris, substrate: rock steps, coarse and fine sandstone gravel; 17.XI.1999; leg. H. Schönmann & M. Wang.
- CWBS loc. 397: **Yunnan Province**, Simao Prefecture, Mojiang County, 35 km SW Mojiang, ca. 1050 m a.s.l.; small stream (right tributary of River Najiu), ca. 30 – 50 cm wide, steep, sinter, seepages; 19.XI.1999; leg. H. Schönmann & M. Wang.
- CWBS loc. 398: **Yunnan Province**, Gejiu Prefecture, Gejiu City, 10 km N Gejiu, ca. 1300 m a.s.l.; river, ca. 2 – 3 m wide, flowing through deforested area, sediment: marble, limestone, sandstone, clay; 22.XI.1999; leg. H. Schönmann & M. Wang.
- CWBS loc. 400: **Yunnan Province**, Gejiu Prefecture, Gejiu City, 30 km S Gejiu, surroundings of Tian Ba Zhi, ca. 1300 m a.s.l.; mountain stream, ca. 2 – 3 m wide, with sinter, mossy waterfalls and marble boulders, dense riparian vegetation, *Cunninghamia* forest; 23.XI.1999; leg. H. Schönmann & M. Wang.
- CWBS loc. 401: **Yunnan Province**, Gejiu Prefecture, Gejiu City, surroundings of Tian Ba Zhi, 30 km S Gejiu, ca. 1300 m a.s.l.; small stream, ca. 1 m wide, slowly flowing tributary to CWBS loc. 400, rich riparian vegetation; 23.XI.1999; leg. H. Schönmann & M. Wang.
- CWBS loc. 402: **Yunnan Province**, Gejiu Prefecture, Gejiu City, 5 km W Gejiu, ca. 1900 m a.s.l.; springfed karst pool, with rich aquatic vegetation, in *Cunninghamia* forest; 24.XI.1999; leg. H. Schönmann & M. Wang.
- CWBS loc. 408: **Yunnan Province**, Chuxiong Prefecture, Lufeng City, 15 km W Lufeng, ca. 1500 m a.s.l.; stream, ca. 30 – 50 cm wide, with waterfalls, moss, small pools with leaves, strongly insolated; 27.XI.1999; leg. H. Schönmann & M. Wang.
- CWBS loc. 409: **Yunnan Province**, Chuxiong Prefecture, 10 km N Yipinglang, near Ban Jiu, ca. 1700 m a.s.l.; River Da Shui Go, 1 – 2 m wide, with large sandstone boulders, little organic debris; 27.XI.1999; leg. H. Schönmann & M. Wang.
- CWBS loc. 449: **Guangdong Province**, Zhaoqing Prefecture, Zhaoqing County, Dinghu Nature Reserve, core area, above Qingyun Temple, ca. 250 m a.s.l.; stream, ca. 1.5 – 2 m wide, through dense primary forest, geology: sandstone; 28.X.2001; leg. M.A. Jäch & A. Komarek (see JÄCH & JI 2003; Fig. 20).

- CWBS loc. 453: **Guangdong Province**, Zhaoqing Prefecture, Zhaoqing County, southeastern margin of Dinghu Nature Reserve, near Zhuzhai Village, NE of Dinghu Town, near rock quarry (sandstone), ca. 20 - 30 m a.s.l., 23°11'03"N 112°33'06"E; stream, ca. 1 - 2 m wide, through deforested valley near rock quarry (see CWBS loc. 452); 29.X.2001; leg. M.A. Jäch & A. Komarek.
- CWBS loc. 454: **Guangdong Province**, Zhaoqing Prefecture, Zhaoqing County, southwestern part of Dinghu Nature Reserve, ca. 50 - 150 m a.s.l.; stream Xigou (= West Valley), ca. 3 - 5 m wide, through gorge with dense primary forest with tourist path, incl. hygropetric rock near waterfall, geology: sandstone; 30.X.2001; leg. M.A. Jäch & A. Komarek (see JÄCH & Ji 2003: Figs. 17, 21).
- CWBS loc. 464: **Guangdong Province**, Shaoguan Prefecture, Yangshan County, mountain pass (summit: ca. 700 m), Huaiji - Yangshan road, ca. 530 m a.s.l.; torrent, ca. 2 - 3 m wide, with large boulders, on steep slope, through degraded primary forest; 3.XI.2001; leg. M.A. Jäch, A. Komarek & M. Wang.
- CWBS loc. 468: **Guangdong Province**, Shaoguan Prefecture, Yangshan County, Nanling National Park, Chengjia Nature Reserve, Yao Shan, ca. 35 km NE of Chengjia Village, near Taipingdong Village, ca. 950 m a.s.l., 24°53'03"N 112°57'37"E; River Chengjia, ca. 8 - 10 m wide, through cultivated land, margins with grass and undercut banks; 4.XI.2001; leg. M.A. Jäch & A. Komarek.
- CWBS loc. 471: **Guangdong Province**, Shaoguan Prefecture, Ruyuan County, Chengjia - Ruyuan road, ca. 40 km E of Chengjia Village, near Tianluokeng Village, ca. 550 m a.s.l.; stream, ca. 2 - 3 m wide, margins partly with grass, strongly meandering, flowing through cultivated land in small plain surrounded by pine forest; 5.XI.2001; leg. M.A. Jäch & A. Komarek.
- CWBS loc. 477: **Guangdong Province**, Shaoguan Prefecture, Shixing County, Chebaling Nature Reserve, ca. 60 km SE of Shixing, ca. 2 km E of Chebaling Village, ca. 450 m a.s.l., 24°41'47"N 114°11'57"E; stream (right tributary of River Shui), 1 - 2 m wide, through dense primary forest; 7.XI.2001; leg. M.A. Jäch & A. Komarek.
- CWBS loc. 481: **Guangdong Province**, Shaoguan Prefecture, Shixing County, Shixing - Chebaling road, ca. 25 km SE of Shixing, ca. 2 km NW of Shuicheng Village, ca. 150 m a.s.l., 24°50'23"N 114°14'03"E; River Shui, ca. 8 - 15 m wide, through valley with secondary vegetation; 8.XI.2001; leg. M.A. Jäch & A. Komarek.
- CWBS loc. 483: **Guangdong Province**, Shaoguan Prefecture, Shixing County, Chebaling Nature Reserve, ca. 55 km SE of Shixing, ca. 7 km E of Chebaling Village, ca. 300 m downstream from CWBS loc. 476, ca. 340 m a.s.l.; River Shui, ca. 7 - 10 m wide, through dense primary forest; 8.XI.2001; leg. M.A. Jäch & A. Komarek.
- CWBS loc. 485: **Guangdong Province**, Shaoguan Prefecture, Shixing County, Huashi Shan, Siqian - Shaoguan road, ca. 10 km NW of Zhongxintao Village, near Longdoushe Forest Farm, ca. 480 m a.s.l., 24°51'59"N 113°54'34"E; small river, ca. 3 m wide, including small cascading tributary (ca. 1 - 2 m wide), flowing along road and through degraded forest; 8.XI.2001; leg. M.A. Jäch & A. Komarek.

Platambus optatus species group

Platambus dabieshanensis sp.n.

Type locality: China, Anhui Province, Anqing Prefecture, Yuexi County, Dabie Shan, 25 km N Yuexi City, near Shi Guan Village, 1100 m a.s.l. (CWBS loc. 301).

Type material: **Holotype** ♂ (CASS): "China: Anhui, Dabie Shan, 25 km N Yuexi, 9.11.1997, env. Shi Guan, 1100m, leg. M. Wang (CWBS 301)". - **Paratypes**: 2 ♀♀ (NMW, CNU): China, Anhui, Dabie Shan: (1) "50 km NW Yuexi, 8.11.1997, Huang Liyan/ Baojia, 1050m, leg. M. Wang (CWBS 299)"; (2) "20 km N Yuexi, 6.11.1997, env. Shi Guan, 950-1000m, leg. M. Wang (CWBS 297)".

Diagnosis: Within the *optatus*-group recognized on small body size, narrow metaventral wing, and a weakly curved penis with four ventral spinulae and apex bent downwards.

Description: Body small and of medium width (Fig. 3, Tab. 1). Maximum width of prosternal process subequal to minimum width of very narrow metaventral wing (Tab. 1). Elytral microsculpture with relatively large and finely engraved meshes. Most meshes with central micropuncture. Metatibia without AV spines. Metatarsomere 1 with 0-2 PV spines. Metacoxae with intralinear space wide; angle of line very obtuse. Penis very weakly curved in lateral view and with apex acute and ventrally curved; with four ventrodiscal spiniform setae (Fig. 18).

Etymology: The specific epithet is an adjective formed from the geographical name Dabie Shan.

Distribution: This species is seemingly restricted to east China, and known only from the Dabie Shan (Anhui).

Habitat: The species was collected in three different shaded mountain streams, 0.5 - 2 m wide.

***Platambus schillhammeri* WEWALKA & BRANCUCCI, 1995**

Platambus schillhammeri WEWALKA & BRANCUCCI 1995: 99 (orig. descr.); NILSSON 2001: 39 (cat.).

Agabus stygius RÉGIMBART 1899: 279 (in part, misident.); FENG 1933: 113 (in part); WU 1937: 214 (in part).

Agabus insolitus SHARP 1884; NILSSON 1997: 630 (in part, misident.).

CWBS: Hunan: CWBS loc. 23 (6 exs.); Guizhou: CWBS loc. 438 (2 exs.); Sichuan: CWBS loc. 231 (1 ex.).

Other records: Shaanxi: Qin Ling, 1200 – 1400 m, Hua Shan, N Valley, 118 km E Xian, 18-20.VIII.1995, leg. M. Schülke (4 exs. NMW); same, leg. Wrase (1 ex. CHB); same, leg. A. Pütz (2 exs. CNU); Hubei: Changyang (1 ex. MNHP, paralectotype of *Agabus stygius*).

This species was described from Hunan. It is here recorded also from Shaanxi, Hubei, Guizhou and Sichuan. The Hubei record is based on the female paralectotype of *P. stygius* that earlier (NILSSON 1997) I had identified as belonging to *P. insolitus*. After correcting this error, *P. insolitus* is known only from Japan.

***Platambus stygius* (RÉGIMBART, 1899)**

Agabus stygius RÉGIMBART 1899: 279 (orig. descr.).

Platambus stygius RÉGIMBART; NILSSON 2000: 34 (class.), 2001: 39 (cat.).

Platambus jilanzhui WEWALKA & BRANCUCCI 1995: 98 (orig. descr.); **syn.n.**

Agabus nakanei NILSSON 1997: 631 (orig. descr.); **syn.n.**

Platambus nakanei NILSSON; NILSSON 2000: 34 (class.).

CWBS: Jilin: CWBS loc. 93 (4 exs.); Liaoning: CWBS loc. 96 (18 exs.), CWBS loc. 101 (6 exs.), CWBS loc. 122 (11 exs.), CWBS loc. 123 (2 exs.), CWBS loc. 157 (2 exs.), CWBS loc. 158 (5 exs.); Beijing: CWBS loc. 10 (6 exs.); Shandong: CWBS loc. 134 (16 exs.), CWBS loc. 136 (29 exs.), CWBS loc. 138 (15 exs.), CWBS loc. 139 (12 exs.), CWBS loc. 140 (2 exs.); Sichuan: CWBS loc. 231 (1 ex.); Yunnan: CWBS loc. 349 (2 exs.), CWBS loc. 350 (7 exs.).

Other records: Sichuan: Gongga Shan, Lake above Camp 2, 2750 m, 24.VII.1994, leg. A. Smetana (2 exs. CFB); Kuanhsien [= Dujiangyan Shi], Chin Lao Pa, 26.IV.1940 (3 exs. NHML).

In my *optatus*-group revision (NILSSON 1997) only two females of *P. stygius* were available for study. Based on the study of additional material from Sichuan, including males, the identity of this species has been fixed. All Sichuan specimens studied, including the holotype, were collected in the mountains of W Sichuan between the Yalong Jiang river and the Red Basin. As no differences in the shape of the male genitalia could be observed in the studied material of *P. nakanei* from Japan, *P. jilanzhui* from China, and *P. stygius* from Sichuan, only one species has been recognized, resulting in the synonymy given above. The samples studied from various regions also are morphometrically more or less homogeneous (Tab. 1). As noted by WEWALKA

& BRANCUCCI (1995), the strength of the dorsal reticulation displays some variation in females; from being almost as weak as in the male to submat as in the holotype of *P. stygius*.

***Platambus ussuriensis* (NILSSON, 1997)**

Agabus ussuriensis NILSSON 1997: 632 (orig. descr., Jilin, Liaoning).

Platambus ussuriensis NILSSON: NILSSON 2000: 34 (class.), 2001: 40 (cat.).

CWBS: Liaoning: CWBS loc. 160 (6 exs.), CWBS loc. 161 (1 ex.).

This species was recorded from the Chinese provinces Jilin and Liaoning by NILSSON (1997); two additional Liaoning records are given here. The Chinese specimens are morphometrically very similar to the type series from Primorye (Tab. 1).

***Platambus optatus* (SHARP, 1884)**

Agabus optatus SHARP 1884: 445 (orig. descr.); NILSSON 1997: 633 (redescr.).

Platambus optatus SHARP: NILSSON 2000: 34 (class.), 2001: 39 (cat.).

CWBS: Fujian: CWBS loc. 240 (2 exs.), CWBS loc. 250 (1 ex.), CWBS loc. 259 (2 exs.), CWBS loc. 297 (1 ex.), CWBS loc. 299 (1 ex.).

Other records: Jiangxi: W Jinggang Shan, Ciping environment, 2.-14.VI.1994 (12 exs.).

This species is here recorded from China for the first time. It was previously known only from Japan (Honshu, Kyushu and Shikoku). I have stated earlier (NILSSON 1995) that the presence in China of the rather similar species *P. koreanus*, known from South Primorye and Korea, should be expected. However, I have seen no material of *P. koreanus* from China, and the presence of *P. optatus* in Southeast China came somewhat as a surprise. The Chinese samples are morphometrically close to the Japanese samples studied (Tab. 1).

***Platambus princeps* (RÉGIMBART, 1888)**

Platynectes princeps RÉGIMBART 1888: 615 (orig. descr.).

Agabus princeps RÉGIMBART: NILSSON 1995: 59 (cat.), 1997: 641 (rev.).

Platambus princeps RÉGIMBART: NILSSON 2000: 34 (class.), 2001: 39 (cat.).

CWBS: Yunnan: CWBS loc. 350 (1 ex.), CWBS loc. 354 (1 ex.), CWBS loc. 357 (1 ex.), CWBS loc. 359 (1 ex.), CWBS loc. 369 (1 ex.), CWBS loc. 374 (1 ex.), CWBS loc. 375 (3 exs.), CWBS loc. 388 (1 ex.), CWBS loc. 392 (10 exs.), CWBS loc. 393 (5 exs.), CWBS loc. 397 (2 exs.), CWBS loc. 398 (1 ex.), CWBS loc. 400 (1 ex.), CWBS loc. 401 (11 exs.), CWBS loc. 402 (5 exs.), CWBS loc. 408 (1 ex.); Guangdong: CWBS loc. 449 (1 ex.).

Other records: Yunnan: 100 km W Kunming, Diaolin Nat. Res., 22.V.-2.VI.1993, leg. E. Jendek & O. Šauša (7 exs.); S Xiaguan, 12 km S Weishan, Weibaoshan, 1.-17.VII.1993, leg. L. Ji (1 ex.); N Baoshan, Yunlong, 2000 m a.s.l., 28.VI.1993, leg. L. Ji (1 ex.).

This species already was known from Yunnan, where it is seemingly rather common. The large number of specimens studied made it possible to verify that males of this species are indeed larger than females (TL-h: males: N = 25, mean = 9.5, SD = 0.3 mm; females: N = 30, mean = 9.1, SD = 0.3 mm). It is here recorded from Guangdong for the first time.

***Platambus sawadai* species group**

***Platambus punctatipennis* BRANCUCCI, 1984**

Platambus punctatipennis BRANCUCCI 1984: 153 (orig. descr.), 1988: 214 (redescr.); WEWALKA & BRANCUCCI 1995: 102 (faun.); NILSSON 2001: 40 (cat.).

CWBS: Fujian: CWBS loc. 260 (1 ex.); Guangdong: CWBS loc. 464 (1 ex.), CWBS loc. 477 (1 ex.), CWBS loc. 484 (1 ex.), CWBS loc. 485 (1 ex.).

Other records: Jiangxi: W Jinggang Shan, Ciping environment, 2-14.VI.1994 (2 exs.).

This species previously was known only from Fujian and Jiangxi, and it is here recorded from Guangdong for the first time.

***Platambus micropunctatus* sp.n.**

Type locality: China, Guangdong Province, Dinghu Nat. Res., ca. 50 - 150 m a.s.l. (CWBS loc. 454).

Type material: **Holotype** ♂ (CASS): "China: Guangdong Prov., Dinghu Nat. Res., 30.10.2001, ca. 50 - 150 m, Jäch & Komarek (CWBS 454)". - **Paratypes** 5 ♂♂, 2 ♀♀ (NMW, CNU); 2 ♂♂, 1 ♀ with same label data as holotype; 2 ♂♂, 1 ♀: "China: Guangdong Prov., Dinghu Nat. Res., 28.10.2001, ca. 250 m, Jäch & Komarek (CWBS 449)"; 1 ♂: "China: Guangdong Prov., Dinghu Nat. Res., 23°11'03"N 112°33'06"E 28.10.2001, ca. 20 - 30 m, Jäch & Komarek (CWBS 453)".

Diagnosis: This species is very similar to *P. punctatipennis*, from which it differs in the finer elytral punctation and smaller body size.

Description: Body broadly rounded (Fig. 4; TL-h/MW 1.52 ± 0.03 , N = 7), moderately convex reaching maximum height slightly anterior of middle, and relatively small (TL-h 5.3 ± 0.2 mm, MW 3.5 ± 0.2 mm, N = 7). Elytral microsculpture weakly impressed with meshes relatively large; each mesh with one or more central micropunctures. Elytron with evenly dispersed macropunctuation; punctures relatively small and separated by distance equal to 2-4 times diameter of single puncture. Microsculpture slightly more strongly impressed on head and pronotum.

Head dark with anterior margin reddish; appendages without infuscation. Anterior clypeal margin with linear fovea in lateral 0.25. Pronotum and elytron black, laterally with reddish tinge. Ventral surface, including epipleuron, rufopiceous.

Prosternal process broad, convex, and apically pointed (Fig. 28). Metaventrite with antero-median impression ending in pit-like structure; lateral plate very narrow (Fig. 27), WC/WS about 7. Metacoxal lines and mid-line plus posterior part of metaventrite forming sulci. Metafemur without linear group of setae at posterolateral angle. Metatibia ventrally with 4-7 spiniferous punctures in external half.

Male last sternum truncate and with median impression and few weak longitudinal grooves. Male protarsal claws not modified; pro- and mesotarsomeres 1-3 slightly dilated and provided with adhesive setae; metatarsomeres 1-4 provided with ventral swimming hairs. Penis curved in lateral view, apex bluntly pointed in dorsal view (Figs. 14, 15).

Etymology: The specific epithet refers to the elytral punctation, that is markedly finer than in the other *sawadai*-group species.

Distribution: This species is seemingly restricted to China, and known only from three localities in the Dinghu Nature Reserve (Guangdong).

Habitat: The new species was collected in streams, 1 – 5 m wide, running over sandstone through primary forest or a deforested valley. It was collected in late October at altitudes between 20 and 250 m a.s.l.

***Platambus* sp.**

CWBS: Yunnan: CWBS loc. 409 (1 ex.).

As females of this group are not very diagnostic, it is impossible to identify this single female from Yunnan to species level. It differs from the foregoing species in its larger size and its more irregular dorsal punctation. It is impossible to say whether it belongs to an undescribed species, or to one of the following species: *P. kemp*i (VAZIRANI, 1970), described from India, *P. khukri* BRANCUCCI, 1990 from Nepal, or *P. regulae* BRANCUCCI, 1991 from Vietnam.

Platambus maculatus species group

Platambus excoffieri RÉGIMBART, 1899

Platambus excoffieri RÉGIMBART 1899: 281 (orig. descr.); BRANCUCCI 1988: 186 (redescr., distr.); NILSSON 1995: 57 (distr.), 2001: 39 (cat.); WEWALKA & BRANCUCCI 1995: 102 (faun.).

CWBS: Gansu: CWBS loc. 322 (1 ex.); Sichuan: CWBS loc. 221 (2 exs.), CWBS loc. 225 (1 ex.), CWBS loc. 229 (2 exs.), CWBS loc. 230 (4 exs.); Guizhou: CWBS loc. 268 (3 exs.), CWBS loc. 272 (3 exs.).

Other records: Hunan: N26°45'52.5", E111°09'41.1", river, III.2002, leg. S. Andersson, ♂ (CNU); N27°04'32.8", E110°30'14", small river, III.2002, leg. S. Andersson, ♀ (CNU); N29°27'41", E110°08'55", stream, 26.III.2002, leg. S. Andersson, ♀ (CNU).

This species already was known from these provinces, except Hunan. It is not known from outside China. The dorsal colour pattern as well as in the shape of the penis show some geographic variation, and a more detailed study is needed in order to see if more than one species is included or not. The two samples from Guizhou differ in these characters, with the specimens from CWBS loc. 268 having more widespread yellow markings on the elytra and the penis more strongly curved in distal third, compared to those from CWBS loc. 272.

Platambus denticulatus sp.n.

Type locality: China, Sichuan Province, Ya'an City Region, ca. 16 km N of Ya'an City and ca. 3 km N Shangli Town, 950 m a.s.l. (CWBS loc. 225).

Type material: **Holotype** ♂ (CASS): "China: Sichuan, 9.6.1996, ca 16 km N Ya'an City, leg. Ji & Wang (CWBS 225)". – **Paratypes**: 9 ♂♂, 10 ♀♀ (NMW, CNU) with same label data.

Diagnosis: The new species differs from all other *maculatus*-group species in the denticulate male anterior protarsal claw. It is most similar to *P. excoffieri*, from which it differs also in the structure of the male genitalia.

Description: Body broadly rounded (Fig. 1; TL-h/MW 1.59 ± 0.02 , N = 20), moderately convex reaching maximum height about 1/3 from front, and relatively small (TL-h 6.4 ± 0.1 mm, MW 4.0 ± 0.1 mm, N = 20). Elytral microsculpture weakly impressed with meshes, which are relatively large and with tendency of transverse stretching; each mesh with one or more central micropuncture. Elytron with ca. six punctures in posterior half along suture. Microsculpture more strongly impressed on head and pronotum.

Head dark with anterior margin and two frontal spots reddish; appendages without infuscation. Pronotum dark with anterior angle broadly testaceous (Figs 21, 22). Elytron dark with subbasal fascia, sublateral vitta with variously developed inner extensions, and subapical spot yellow (Figs. 1, 21, 22). Dark central area separating subbasal fasciae 0.37 - 0.50 as wide as pronotum at hind angles. Venter reddish brown; epipleuron testaceous.

Prosternal process broad, flattened, and apically acuminate (Fig. 26). Lateral plate of metaventricle narrow (Fig. 25), WC/WS 5.1 - 5.2. Epipleuron as in Fig. 19. Hind wing relatively long, about 1.4 x as long as elytron. Metatibia ventrally with 12-16 spiniferous punctures in external half.

Male last sternum truncate and with few weak longitudinal grooves (as in *P. excoffieri*). Male anterior protarsal claw denticulate (Fig. 16); pro- and mesotarsomeres 1-3 slightly dilated and provided with adhesive setae; metatarsomeres 1-4 provided with ventral swimming hairs. Penis relatively robust, subparallel in dorsal view (Figs 6, 7). Paramere as in Fig. 8.

Etymology: The specific epithet refers to the denticulate male anterior protarsal claw, unique within the *maculatus*-group.

Distribution: This species is seemingly restricted to China, and known only from the type locality in the Sichuan province.

Habitat: The species was collected in a small mountain stream, ca. 0.5 m wide. In this stream it co-occurred with *P. excoffieri* and *P. yaanensis*.

Platambus heteronychus sp.n.

Type locality: China, Guangdong Province, ca. 40 km E of Chengjia at road to Ruyuan (CWBS loc. 471).

Type material: **Holotype** ♂ (CASS): "China: Guangdong Prov., Chengjia – Ruyuan rd. ca 40 km E Chengjia, 5.11.2001, Jäch & Komarek (CWBS 471)". – **Paratypes:** 10 ♂♂, 18 ♀♀ (NMW, CNU); 9 ♂♂, 13 ♀♀ with same label data as holotype; 3 ♀♀: "China: Guangdong Prov., 25 km SE Shixing 24°50'23"N 114°14'03"E, 8.11.2001 ca 150 m, Jäch & Komarek (CWBS 481)"; 1 ♂, 2 ♀♀: "China: Guangdong Prov., Nanling N.P., Yao Shan, 24°53'03"N 112°57'37"E, 4.11.2001 ca 950 m, Jäch & Komarek (CWBS 468)".

Diagnosis: The new species is most similar to *P. denticulatus*, from which it differs in the structure of the male genitalia and the broader body shape. The male protarsal claws lack teeth, but the anterior claw is thicker and longer than the posterior claw.

Description: Body broadly rounded (Fig. 2; TL-h/MW 1.54 ± 0.04 , N = 29), moderately convex reaching maximum height about 0.3 from front, and relatively small (TL-h 6.1 ± 0.2 mm, MW 4.0 ± 0.1 mm, N = 29). Elytral microsculpture weakly impressed with meshes relatively large; each mesh with one or more central micropunctures. Somewhat coarser punctures present at many intersections of meshes. Microsculpture more strongly impressed on head and pronotum.

Head dark with broad anterior margin and two frontal spots reddish; appendages without infuscation. Pronotum dark with anterior angle broadly testaceous. Elytron dark with subbasal fascia, sublateral vitta with variously developed inner extensions, and subapical spot yellow (Fig. 2). Dark central area separating subbasal fasciae 0.35 - 0.50 as wide as pronotum at hind angles. Venter reddish brown; epipleuron testaceous.

Prosternal process broad, flattened, and apically acuminate (Fig. 30); angulate at posterior end of lateral bead. Metaventricle with anteromedial excavation deep, reaching slightly posteriad of metacoxae. Lateral plate of metaventricle very narrow (Fig. 29), WC/WS 6.6 - 7.1. Metatrochanter large, about 0.5 as long as metafemur. Metafemur with about six spiniferous punctures at posterodistal angle. Metatibia ventrally with 9-12 spiniferous punctures in external half.

Male last sternum truncate and with few weak longitudinal grooves (as in *P. excoffieri*). Male anterior protarsal claw longer and thicker than posterior claw (Fig. 17); pro- and mesotarsomeres 1-3 slightly dilated and provided with adhesive setae; metatarsomeres 1-4 provided with ventral swimming hairs. Penis relatively robust, distal part narrow in dorsal view (Figs 9, 10).

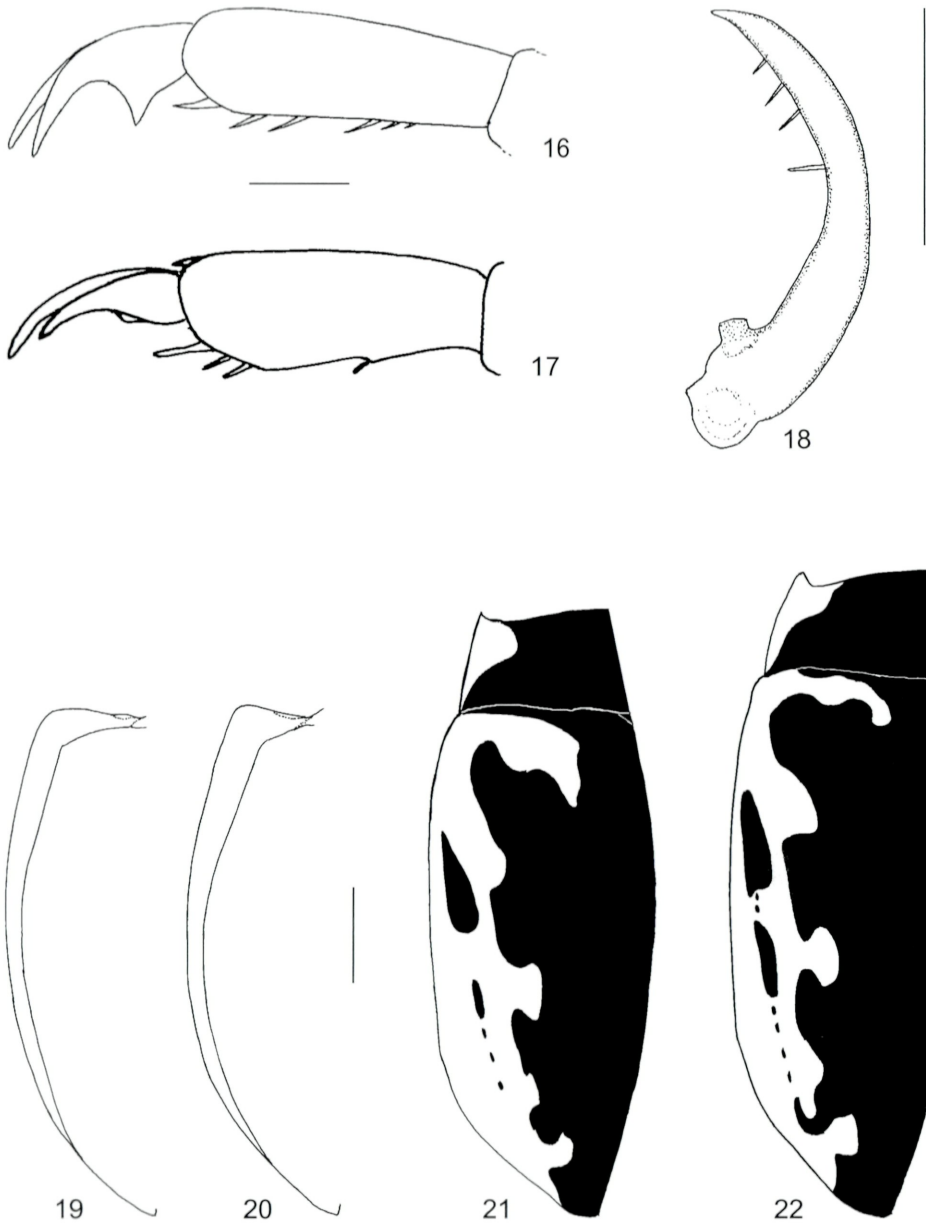
Etymology: The specific epithet refers to the difference in length between the two male protarsal claws.



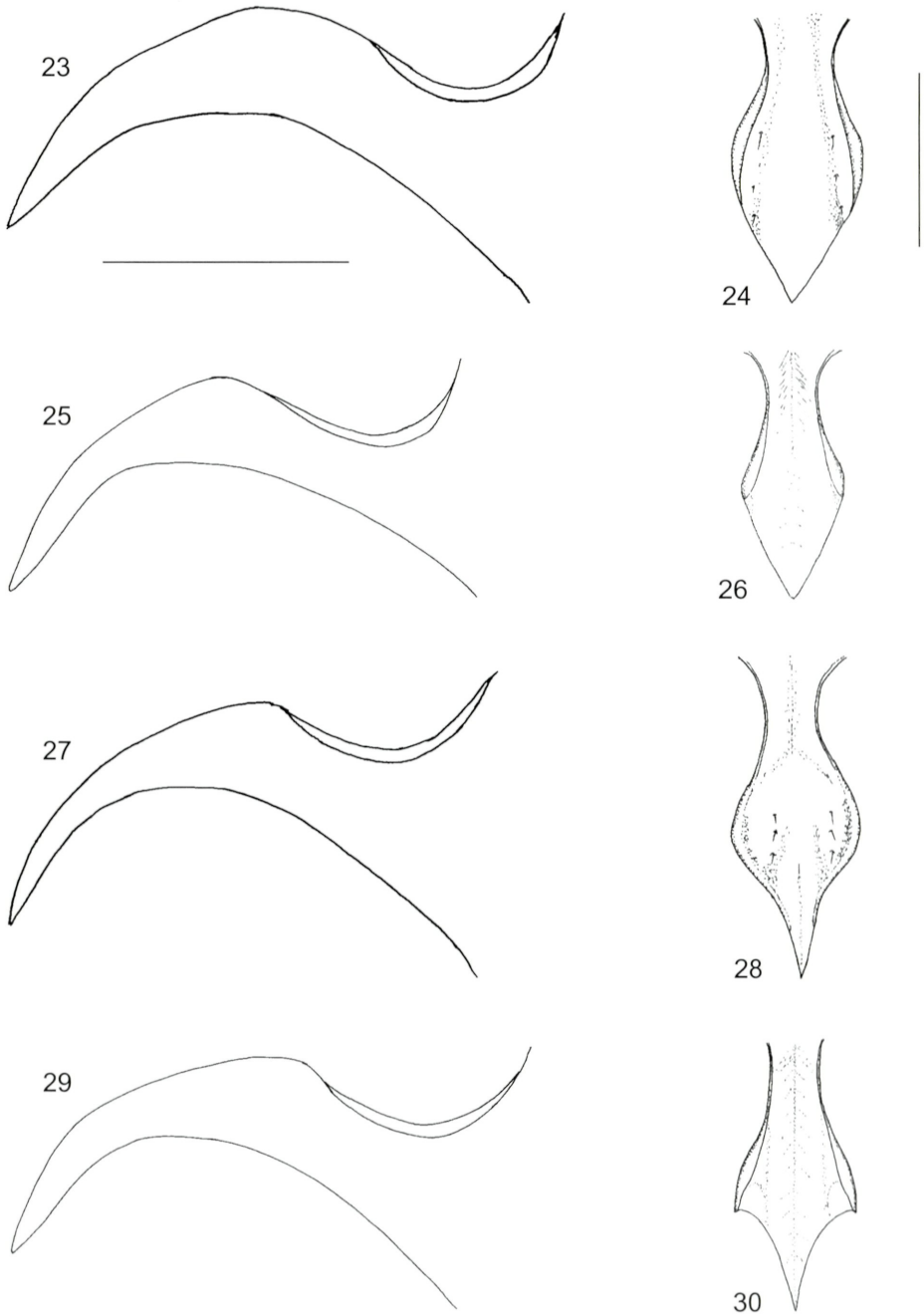
Figs. 1 - 5: *Platambus*, dorsal habitus: 1) *P. denticulatus*, female #20; 2) *P. heteronychus*, male #4; 3) *P. dabieshanensis*, holotype; 4) *P. micropunctatus*, male #40; 5) *P. yaanensis*, female #85. Scale bar: 1 mm.



Figs. 6 - 15: *Platambus*, penis in lateral (6, 9, 11, 14) and dorsal view (7, 10, 12, 15), and paramere (8, 13): 6 - 8) *P. denticulatus*, #18; 9, 10) *P. heteronychus*, #29; 7, 11 - 13) *P. yaanensis*, #69; 14, 15) *P. micropunctatus*, #41. Scale bar: 0.5 mm.



Figs 16 - 18: *Platambus*, male protarsomere 5 with claws in anterior (16) and posterior view (17), and penis in lateral view (18): 16) *P. denticulatus*; 17) *P. heteronychus*; 18) *P. dabieshanensis*, holotype. Scale bars: 16 - 17 (left 0.1 mm), and 18 (right 0.5 mm).
 Figs. 19 - 22: *Platambus*, epipleuron (19, 20), and dorsolateral colour-pattern (21, 22): 19, 21, 22) *P. denticulatus*, #18, 20, 21; 20) *P. yaanensis*, #69. Scale bar: 1 mm.



Figs. 23 - 30: *Platambus*, metaventral wing (23, 25, 27, 29), and prosternal process (24, 26, 28, 30):
 23, 24) *P. yaanensis*, #69; 25, 26) *P. denticulatus*, #18; 27, 28) *P. microunctatus*, #41;
 29, 30) *P. heteronychus*, #29. Scale bars 0.5 mm: 23, 25, 27, 29 (horizontal), and 24, 26, 28, 30 (vertical).

Species & region	N	TL-h	MW	TL-h/MW	N	WC/WS
<i>P. dabieshanensis</i>						
*Anhui	3	4.75	2.86	1.66	2	4.40
<i>P. insolitus</i>						
*Japan	11	5.30	3.07	1.68	8	5.06
<i>P. schillhammeri</i>						
*Hunan	6	5.28	3.28	1.61	1	4.50
Shaanxi	5	5.63	3.34	1.69	1	4.00
Hubei	1	5.41	3.33	1.63	1	5.00
<i>P. stygius</i>						
Liaoning	18	6.25	3.80	1.64	1	2.78
Shandong	66	6.19	3.74	1.65	2	2.85
*Sichuan	8	6.48	3.91	1.66	2	2.95
Yunnan	9	6.50	3.86	1.68	1	2.95
Japan	20	6.47	3.90	1.66	18	2.75
<i>P. ussuriensis</i>						
Liaoning	6	6.08	3.58	1.70	1	3.15
Korea	5	6.07	3.60	1.69	4	3.02
*Primorye	5	6.04	3.55	1.70	5	2.96
<i>P. ikedai</i>						
*Japan	4	6.71	3.96	1.70	4	4.18
<i>P. koreanus</i>						
*Primorye	7	5.92	3.58	1.66	6	2.72
<i>P. optatus</i>						
Fujian	5	6.14	3.69	1.66	2	3.34
Jiangxi	13	6.32	3.83	1.65	2	3.53
*Japan	28	6.43	3.85	1.67	23	3.50

Table 1: Mean values of selected measurements and ratios for regional samples of the different species of the *Platambus optatus* subgroup of the *P. optatus* species group. Regions including type localities are marked with an asterisk. See text for coding of measurements.

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