DYTISCIDAE: X. Review of *Platynectes* subgen. *Gueorguievtes* VAZIRANI from Southeast Asia

(Coleoptera)

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Abstract

Species of the genus *Platynectes* RÉGIMBART (Coleoptera: Dytiscidae) with obtuse posterior pronotal angle from southeastern Asia are reviewed. Apart from the *P. dissimilis*-complex, *P. kashmiranus*-, *P. chujoi*- and *P. babai*-complexes are newly defined. Five new species and one new subspecies are described: *Platynectes gemellatus* sp.n. [China: Fujian, Guangdong, Guangxi, Guizhou, Hong Kong, Jiangxi, Macao, Taiwan], *P. mazzoldii* sp.n. [Thailand, China: Yünnan], *P. nanlingensis* sp.n. [China: Guangdong, Fujian], *P. rihai* sp.n. [China: Shandong], *P. wewalkai* sp.n. [Nepal], and *P. kashmiranus lemberki* ssp.n. [China: Yünnan]. *Platynectes dissimilis major* NILSSON, 1998 is given species status. *Platynectes kashmiranus kashmiranus* BALFOUR-BROWNE, 1946 and *P. chujoi* SATÔ, 1982 are redescribed. *Platynectes javanus* NILSSON, 1998 is recorded from Myanmar for the first time. Details of male and female genitalia in the *P. kashmiranus*-complex are studied and illustrated. Male genitalia, dorsal surface, color patterns and other important morphological characters of all species are figured. A key to males of all species (possibly) occurring in China is proposed, and notes on their distribution and ecology are given.

Key words: Coleoptera, Dytiscidae, *Platynectes*, taxonomy, faunistics, new species.

Introduction

The diving beetle genus *Platynectes* RÉGIMBART, 1878 comprises four subgenera (*Australonectes* GUÉORGUIEV, 1972, *Gueorguievtes* VAZIRANI, 1976 and *Platynectes* RÉGIMBART, 1878) and 38 species distributed in the Australian, Neotropical, Oriental and Palearctic Realms. The genus is represented in the Palearctic and Oriental Regions only by the subgenus *Gueorguievtes* with 26 currently known species (NILSSON 2001). The Palearctic fauna of *Gueorguievtes* is relatively poor: several species inhabit a transition zone between the Palearctic and Oriental Regions from the Himalayas to southern China; most species occur in the Oriental Region.

A world-wide revision of the genus was published by GUÉORGUIEV (1972). Two species included in that revision were transferred later to other genera by BRANCUCCI (1986, 1988): *P. formosanus* KAMIYA, 1938 to *Lacconectus* MOTSCHULSKY, 1855, and *P. guttula* RÉGIMBART, 1899 to *Platambus* THOMSON, 1859. More recently, WATTS (1978) revised the Australian species; NILSSON (1998) reviewed the Chinese *Platynectes* and revised the *P. dissimilis*-complex. Finally, HENDRICH & BALKE (2000) revised the members of the genus *Platynectes* occurring in the Moluccas.

The subgenus *Gueorguievtes* is characterised by the hind metacoxal lines being obsolete anteriorly and not reaching the hind margin of the metaventrite. It can be separated into two

major species groups (GUÉORGUIEV 1972): group 1 with posterior pronotal angle obtuse or rectangular and Group 2 with posterior pronotal angle acute. Species from group 2 were revised partly by HENDRICH & BALKE (2000); this group is distributed only in the Oriental and Australian Regions. Group 1 is distributed mainly in the southeastern Palearctic Region and the northern part of the Oriental Region. The Australian members of group 1 differ from Palearctic and Oriental species in the carinate prosternal process (WATTS 1978), which is flat in the Palearctic and Oriental species.

The present study deals with members of group 1 that occur in the Palearctic and Oriental Region, i.e. those characterised by the obtuse or rectangular posterior pronotal angles and by the flat prosternal process. The work is based mainly on a fairly large sample of the *P. dissimilis*-complex (sensu NILSSON 1998), which has been collected during the China Water Beetle Survey (CWBS) project. A smaller part of the material comes from several other expeditions to various regions in Southeast Asia. A preliminary study of the available material revealed conspicuous differences among specimens previously standing as *P. dissimilis* SHARP, 1873. Subsequent detailed morphological studies and the dissection of the syntypes of *P. dissimilis*, *Colymbetes lineatus* REDTENBACHER, 1844 and other type material showed that *P. dissimilis* is – despite a high external similarity – a complex of several closely related but nevertheless distinct species. Consecutively, examination of all other Chinese species of *Platynectes* revealed new characters, that probably justify the establishment of several new species complexes. These are described below together with the new species.

Platynectes deletus RÉGIMBART, 1899 is not included in this revision. Only one is known, probably a mislabelled female from "Japan" and should be housed in the Muséum National d'Histoire Naturelle, Paris (coll. Régimbart); unfortunately the type specimen could not be found (Hájek and Perrin, pers. com.).

Material and methods

More than 700 *Platynectes* specimens were examined. The specimens come from various institutions and private collections; most of them were collected during CWBS expeditions and are now deposited in NMW.

All measurements are summarised in the following form: n = number of measured specimens, value range (mean ± standard deviation). Exact label data are cited for all examined material; separate labels are indicated by slashes (/). Author's remarks and complementary data are given in square brackets.

Specimens chosen for scanning electron micrographs were cleaned by ultrasound. The SEM photographs were made with Jeol 6400 microscope at 10 or 15 kV. Specimens prepared for morphological study were cleaned in distilled water and examined under a Wild M3Z stereomicroscope. Female genitalia were extracted and examined following a method similar to that of MAZZOLDI (1996) and subsequently were dyed several minutes before drawing in an aqueous solution of chlorazol black. Morphological terminology concerning female genitalia was adopted from MILLER (2001). Male and female genitalia were studied and illustrated in temporary glycerine slides using a Leica transmitted light microscope at magnification of up to 120 or 180x; they were washed subsequently in distilled water and mounted in DMHF on the same card as the beetle. The illustrated male genitalia are extended somewhat following the treatment with glycerin. In dry condition, the median lobe often appears narrower and sometimes even deformed. In particular, the subapical fine hairs are indistinct in untreated aedeagi.

Description style follows NILSSON (1998) and HENDRICH & BALKE (2000).

Acronyms & CWBS localities:

CASS Chinese Academy of Sciences, Institute of Applied Ecology, Shenyang, China
CGW coll. Günther Wewalka, Vienna, Austria
CHF coll Hans Fery, Berlin, Germany [property of NMW]
CJF coll. Javier Fresneda, El Pont de Suert, Spain
CJH coll. Jiří Hájek, Prague, Czech Republic
CJS coll. Jaroslav Šťastný, Liberec, Czech Republic
CLH coll. Lars Hendrich, Berlin, Germany
CMT coll. Mario Toledo, Brescia, Italy
CNU coll. Anders N. Nilsson, Umeå, Sweden
CPM coll. Paolo Mazzoldi, Brescia, Italy
CWBS China Water Beetle Survey
MMM The Manchester Museum, Manchester, UK
MTD Staatliches Museum für Tierkunde, Dresden, Germany (O. Jäger)
NHML The Natural History Museum, London, UK (M. Brendell, S. Hine)
NMB Naturhistorisches Museum Basel, Switzerland (M. Brancucci)
NMW Naturhistorisches Museum Wien, Austria (M.A. Jäch)
NSMT National Science Museum Tokyo, Japan
NWU Nagoya Women's University, Japan

MW maximum width measured across the widest point of the elytra.
TLwH total length without head (total length including head depends on the actual orientation of head; TLwH corresponds on average to 92-93% of the total length).
WC/WS ratio of width of metacoxa (WC) along extension of line WS to maximum width of metaventrite (WS) at the point of closest approximation of metacoxa to mesocoxal cavity.

CWBS loc. 14: **Yünnan 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. L. Ji; [no label number].

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. L. Ji & M. Wang; [locality number on label: 73].

CWBS loc. 194: **Hainan Province**; Qiongzhong 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. 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. 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. 246: **Fujian Province**; Jianyuan 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. 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. 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. H. Schönmann, L. Ji & M. 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. H. Schönmann & M. 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 residual pools with decaying leaves, 900 - 1000 m a.s.l.; 31.X.1997; leg. H. Schönmann & M. Wang (see JÄCH & JI 1998: 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. 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. 302: **Jiangxi Province**; Yicun Prefecture; Jiuling Shan; Fengxin County; 18 km NW Shangfu City, near Jiu Xian Village, on Wumei Shan (1740 m); streams, 0.5 - 1.0 m wide, deep ditches, crystalline sand, little gravel, shaded by bushes and surrounded by rice fields, 700 - 800 m a.s.l.; 12.XI.1997; leg. H. Schönmann & M. Wang.

CWBS loc. 304: **Jiangxi Province**; Yicun Prefecture; Jiuling Shan; Fengxin County; 8 km NW Shangfu City, near Shang Bao Village; stream, ca. 1 - 2 m wide, in a dense bamboo forest, big granitic rocks and sand, man-made canals, 700 m a.s.l.; 13.XI.1997; leg. H. Schönmann & M. Wang.

CWBS loc. 351: **Yünnan Province**, Qüjing Prefecture, near road Songming - Yangjie, ca. 60 km NNE Kunming, altitude not recorded, 25°23'16"N 103°05'24"E; pond, size: ca. 50 x 100 m; 3.XI.1999; leg. M.A. Jäch, H. Schönmann, M. Wang & Y. Wei.

CWBS loc. 354: **Yünnan Province**, Xishuangbanna Dai Autonomous Prefecture, Mengla County, Menglun Town, near Mangmo Village, road Menglun - Ganlanba, ca. 15 km W Menglun, ca. 700 - 800 m a.s.l.; stream (left hand side tributary of CWBS loc. 355), ca. 1 - 2 m wide, flowing through degraded primary forest; 5.XI.1999; leg. M.A. Jäch, H. Schönmann, M. Wang & Y. Wei (see JÄCH & JI 2003: Fig. 5).

CWBS loc. 357: **Yünnan 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. 367: **Yünnan Province**, Xishuangbanna Dai Autonomous Prefecture, Mengla County, ca. 6 km NW Mengla, ca. 700 m a.s.l.; small stream (left hand side tributary of CWBS loc. 364), ca. 1 m wide, flowing through dense primary forest; 9.XI.1999; leg. M.A. Jäch, H. Schönmann, M. Wang & Y. Wei.

CWBS loc. 368: **Yünnan Province**, Xishuangbanna Dai Autonomous Prefecture, Mengla County, near summit of pass between Mengla and Mengyüan, ca. 20 km NW Mengla, ca. 1000 m a.s.l.; small stream, ca. 1 m wide, flowing in steep ravine through Dragon Forest (dense primary forest); 9.XI.1999; leg. M.A. Jäch, H. Schönmann, M. Wang & Y. Wei.

CWBS loc. 373: **Yünnan Province**, Xishuangbanna Dai Autonomous Prefecture, Jinghong City Region, Elefant Valley, Sanchahe (= Three Rivers) Forest Reserve, ca. 13 km N Mengyang, ca. 700 m a.s.l.; three small streams, ca. 0.5 - 1.0 m wide, flowing through dense primary forest; 10.XI.1999; leg. M.A. Jäch, H. Schönmann, M. Wang & Y. Wei.

CWBS loc. 392: **Yünnan 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. 394: **Yünnan Province**, Simao Prefecture, Mojiang County, 35 km SW Mojiang, ca. 1000 m a.s.l.; mountain river, ca 2 – 3 m wide (right tributary of River Najiu), large boulders of sandstone and very fine sediment, flowing through cultivated land and pine forest; 19.XI.1999; leg. H. Schönmann & M. Wang.

CWBS loc. 399: **Yünnan Province**, Gejiu Prefecture, Gejiu City, 15 km S Gejiu, ca. 1700 m a.s.l.; Tou Dao Shui (= Number One Water) stream, 50 – 100 cm wide, canalized, flowing through crop fields, pastures and pine forest, riparian vegetation dense, floating rootlets; 23.XI.1999; leg. H. Schönmann & M. Wang.

CWBS loc. 400: **Yünnan 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: **Yünnan 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. 404: **Yünnan Province**, Gejiu Prefecture, Gejiu City, 15 km S Gejiu, ca. 1700 m a.s.l.; stream (upper course of CWBS loc. 399), 50 – 100 cm wide, canalized, flowing through crop fields, pastures and pine forest, riparian vegetation dense, floating rootlets; 24.XI.1999; leg. H. Schönmann & M. Wang.

CWBS loc. 408: **Yünnan 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: **Yünnan 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. 445: **Guizhou Province**, Tongren Prefecture, Jiangkou County, ca. 50 km SW Jiangkou, opposite of Shidu Village, 650 - 680 m a.s.l., 27°32'42"N 108°36'18"E - 27°32'25"N 108°36'10"E; small stream (right tributary of River Guanhe), 0.5 – 1 m wide, partly shaded, flowing through secondary forest and agricultural area; 1./4.VII.2001; leg. H. Schillhammer & M. Wang (see JÄCH & JI 2003: Fig. 13).

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. 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. 456: **Guangdong Province**, Zhaoqing Prefecture, Fengkai County, ca. 50 km E of Fengkai, ca. 5 km W of Qixing, Yulao – Mocun road, Heishiding (= Black Stone Mountain Top) Nature Reserve, ca. 300 - 400 m a.s.l., 23°27'04"N 111°53'53"E; several streams, ca. 1 – 2 m wide, through dense primary forest; 1.XI.2001; leg. M.A. Jäch & A. Komarek.

CWBS loc. 457: **Guangdong Province**, Zhaoqing Prefecture, Fengkai County, ca. 50 km E of Fengkai, ca. 5 km W of Qixing, Yulao – Mocun road, Heishiding (= Black Stone Mountain Top) Nature Reserve, ca. 300 - 400 m a.s.l., 23°27'04"N 111°53'53"E; various pools along forest road near CWBS loc. 456; 1.XI.2001; leg. M.A. Jäch & A. Komarek.

CWBS loc. 462: **Guangdong Province**, Zhaoqing Prefecture, Fengkai County, ca. 60 km E of Fengkai, ca. 11 km E of Heishiding Nature Reserve head office, ca. 6 km E of Qixing, along Yulao – Mocun road, close to CWBS loc. 461, ca. 230 m a.s.l.; springfed, hygropetric rock, partly with small rock pools; 2.XI.2001; leg. M.A. Jäch & A. Komarek.

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. 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. 482: **Guangdong Province**, Shaoguan Prefecture, Shixing County, Shixing – Chebaling road, ca. 45 km SE of Shixing, ca. 30 km NE of Chebaling Village, ca. 200 m a.s.l., 24°47'28"N 114°15'56"E; stream (right tributary of River Shui), ca. 2 - 3 m wide, through primary forest; 8.XI.2001; leg. M.A. Jäch & A. Komarek.

CWBS loc. 487: **Guangdong Province**, Huiyang Prefecture, Boluo County, ca. 34 km E of Zengcheng, Luofu Shan Nature Reserve, near park gate, ca. 180 m a.s.l.; small spring in steep broadleaf forest; 10.XI.2001; leg. A. Komarek & M. Wang.

Taxonomy

Check list and key to the species and subspecies of subgenus *Gueorguievtes* from China and neighbouring countries

Platynectes kashmiranus-complex:	
P. wewalkai **sp.n.**	Nepal
P. kashmiranus kashmiranus BALFOUR-BROWNE, 1944	Afghanistan, Pakistan, India, Nepal, China (Tibet)
P. kashmiranus lemberki **ssp.n.**	China (Yünnan)
Platynectes dissimilis-complex:	
P. dissimilis (SHARP, 1873)	China (Anhui, Fujian, Guangdong, Guizhou, Hunan, Jiangxi, Shaanxi, Shanxi, ? Zhejiang)
P. major NILSSON, 1998	Vietnam, Thailand, China (Yünnan)
P. gemellatus **sp.n.**	China (Fujian, Guangdong, Guangxi, Guizhou, Hong Kong, Jiangxi, Macao, Taiwan)
P. nanlingensis **sp.n.**	China (Fujian, Guangdong)
P. ranongensis NILSSON, 1998	Thailand
P. javanus NILSSON, 1998	Malaysia, Indonesia, Thailand, Myanmar
P. mazzoldii **sp.n.**	China (Yünnan),Thailand
Platynectes chujoi-complex:	
P. chujoi SATÔ, 1982	Japan (Ryukyu Archipelago)
P. rihai **sp.n.**	China (Shandong)
Platynectes babai-complex:	
P. hainanensis NILSSON, 1998	China (Hainan)
P. babai SATÔ, 1982	China (Taiwan)

The key is modified partly after NILSSON (1998).

1 Elytron black with eight yellowish longitudinal vittae, of which some are formed by series of dots; or yellowish vittae reduced but basal fascia present 2

- Elytron black without eight yellowish longitudinal vittae and basal fascia; yellowish color pattern of elytron formed by apical yellow spot and narrow lateral vitta in posterior half of elytra (Figs. 14, 15) 12

2 Penis distally produced, apex truncate (Figs. 16, 17, 18) 3

- Penis distally not produced, apex rounded or pointed 4

3 Elytron with meshes of reticulation covering entire surface (Fig. 52, 53); yellowish red basal fascia absent or broadly interrupted at several points. Median lobe of aedeagus distally robust (Fig. 16) ..... ***wewalkai***

- Elytron with meshes of reticulation absent anteromesally (Figs. 54, 55); yellowish basal fascia present. Median lobe as in Figs. 17, 18 ..... ***kashmiranus***

4 Elytron black with yellow basal fascia 5

- Elytron black with yellow basal fascia combined with more or less well-developed longitudinal series of small yellow spots in vittate pattern 6

5 Body smaller, TLwH = ca. 4.9 – 5.4 mm; metacoxal lines (Fig. 50) very slightly divergent (almost parallel) anteriorly; median lobe (Fig. 26) ..... ***chujoi***

- Body larger, TLwH = 5.32 - 5.65 mm; metacoxal lines (Fig. 51) usually divergent in anterior half; median lobe (Fig. 27) ..... ***rihai***

6 Median lobe in lateral view more or less narrowly curved or in apical 0.25 markedly bent ventrad, apex rounded or with ventral sinuation (Fig. 22, 24, 25) 7

- Median lobe in lateral view usually distally broadened, apex rounded or pointed (Fig. 19, 20, 21, 23) 9

7 Median lobe in lateral view ventro-apically sinuate (Fig. 24); elytron with basal fascia broad and not interrupted ..... ***ranongensis***

- Median lobe in lateral view broadly rounded at apex; more or less regularly curved or in apical 0.25 markedly bent ventrad (Figs. 22, 25) 8

8 Median lobe in lateral view in apical 0.25 markedly bent ventrad (Fig. 25); elytron with basal fascia broad laterally ..... ***mazzoldii***

- Median lobe in lateral view more or less regularly curved, broadly rounded at apex (Fig. 22); elytron with basal fascia narrow and interrupted sublaterally ..... ***nanlingensis***

9 Median lobe in lateral view with left side abruptly reduced subapically, forming a more or less right angle, dorsoapically lobed (Fig. 23); body relatively narrow and large sized (Fig. 8, 9)... ..... ***javanus***

- Median lobe in lateral view with left side more smoothly reduced subapically, forming a wide angle (Figs. 19-21); body often smaller with rounded outline 10

10 Median lobe in lateral view apically more or less broadly rounded; dorsoapically wide beaded (Fig. 21 a, b) ..... ***gemellatus***

- Median lobe in lateral view apically pointed, dorsoapically narrowly beaded (Fig. 19, 20) 11

11 Body large, TLwH = 5.5 – 6.4 mm; median lobe long and distally slender, apically sharply pointed (Fig. 20). Head with interocular spots reduced (Fig. 5), pale transverse posteromedial spots absent ..... ***major***

- Body small TLwH = 4.7 – 5.3 mm; median lobe shorter and distally more broad, apically pointed (Fig. 19). Head with interocular spots large, pale transverse posteromedial spots present (Fig. 4) ..... ***dissimilis***

12 Median lobe broadly rounded in distal half (Fig. 29) ..... ***hainanensis***

- Median lobe narrower in distal half, apically pointed (Fig. 28) ..... ***babai***

Platynectes kashmiranus species complex

DIAGNOSIS: Median lobe distally produced to truncate apex (Figs. 16, 17, 18).

REMARKS: This complex includes two closely related species which are distributed in the mountains of the Himalayan area and in adjacent mountain ranges in southwestern China. The recognition of the second species (previously identified as *P. kashmiranus*, see NILSSON 1998) probably has been hampered by their great external similarity and the fact that both species have a sympatric distribution in Nepal.

Platynectes wewalkai sp.n.

Platynectes kashmiranus BALFOUR-BROWNE: NILSSON 1998: 117 (partim, Nepal).

TYPE LOCALITY: Dana, 60 km NW Pokhara, Nepal.

TYPE MATERIAL: **Holotype** ♂ (NMW): "Nepal, 60 km NW Pokhara Dana, 1400 m leg.Wewalka 9.5.1984 (N10,12) / P388 / HOLOTYPUS ♂ *Platynectes wewalkai* sp. n. J. ŠŤASTNÝ det. 2001 [red label with black line border]". **Paratypes:** 4 ♂♂, 1 ♀ with same data as holotype except / P219, P223-6 / Platynectes kashmiranus J. B-Br. [Balfour-Browne] det AN Nilsson-[19]98" (NMW, CGW); 1 ♀ "Nepal, 30km NW Pokhara Ghandrung 2000 m leg.Wewalka 11.5.1984 (N 19) / P222 / Platynectes kashmiranus J.B-Br. [Balfour-Browne] det AN Nilsson-[19]98" (CGW); 1 ♂ "Nepal, 50km NW Pokhara Sikha, 1800 m leg.Wewalka 7.u.10.5.1984 (N7,8,14) / P226 / Platynectes kashmiranus J.B-Br. [Balfour-Browne], det AN Nilsson-[19]98" (NMW); 1 ♂, 1 ♀ "Taunja Danda sw-slope 2400 mNN. 9.V. / NEPAL-HIMAL 1996 Annapurna mts. lg. Schmidt,Jäger" (MTD); 3 ♂♂, 1 ♀ "NEPAL centr., Dhunche env. Bagmati zone, Rasuwa distr., Langtang N.P., 1960-2000m 22.- 24.5.1999, J. Dalihod lgt." (CJS); 2 ♂♂, 1 ♀ "NEPAL centr., Bagmati zone Rasuwa distr., Langtang Nat. P., Dhunche env., 1960-2200m, 22.-24.5.1999, M. Pejcha lgt. / coll. Jiří Hájek, Prague, Charles Universtity [University]" (CJH). 1 ♀ "NEPAL 1994 Myagdi Distr. lg. Ahrens 11.3. / 2400-2160m, Lulang Dhara-Khola / Staatl. Museum für Naturkunde Dresden" (MTD). All paratypes are provided with a red, black-framed label with the following printed text: "PARATYPUS [with No. and male/female symbol] *Platynectes wewalkai* sp.n. J. ŠŤASTNÝ det. 2001".

DIAGNOSIS: Body medium-sized, elongate-oval to subparallel; coloration dark; yellow-red markings on elytron present but indistinct (Fig. 1). *Platynectes wewalkai* is very similar to *P. kashmiranus*. It is, however, distinguished clearly by the combination of the following characters: reticulation deeply incised and covering all elytral surface (elytron anteromessally without reticulation in *P. kashmiranus*); elytron without continuous basal fascia; head with black area overlapping two shallow transverse grooves on clypeus; median lobe very robust apically.

DESCRIPTION: Measurements (n = 11): TLwH = 5.62 - 6.0 mm (5.74±0.17 mm, holotype 5.65 mm), MW = 3.37 - 3.68 mm (3.54±0.11 mm, holotype 3.5 mm), TLwH/MW = 1.57 - 1.65 (1.62±0.02, holotype 1.61).

Male. Head reddish brown, with large black, roughly triangular interocular spots, their anterior margins surpassing shallow transverse grooves on clypeus; two small, sometimes fused oval spots on vertex reddish brown; anterior clypeal margin darkened; labrum red-brown. Reticulation strongly incised, consisting of small meshes of irregular size and shape, somewhat elongated longitudinally, some meshes opened; minute punctures present. Microreticulation indistinct. Clypeus with two shallow transverse grooves; anterior margin with pair of sublateral foveae. Frons with two shallow depressions beside inner eye margins. Antenna, labial and maxillary palpus reddish brown.

Pronotum black, anterior angles yellowish brown with dark edges, anterior margin with very thin reddish brown rim. Posterior angles of pronotum moderately obtuse. Reticulation consisting of small, sometimes interrupted meshes of irregular size and shape; minute punctures present, irregularly placed. Longitudinal median suture very short. Anterior transverse row of punctures coarse, punctures irregular in size and shape, sometimes confluent. Posterior row of punctures broadly interrupted medially, punctures confluent and forming transverse depression. Sides slightly rounded, pronotal lateral bead reaching only basal two-thirds.

Elytron black, shiny with eight yellowish red longitudinal vittae; vitta 1 almost continuous, vittae 2-7 formed by series of dots, vitta 8 continuous, beginning in basal third and running along sides

to apex; vitta 5 bifurcate anteriorly, vitta 7 forming humeral spot; preapical spot absent; basal fascia absent or broadly interrupted at several points. Epipleura dark reddish brown. Reticulation consisting of small, almost closed meshes of irregular size and shape, meshes not elongate, deeply incised and covering entire surface; minute punctures present, irregularly dispersed. Discal, lateral and sublateral elytral serial punctures interrupted just before base, with irregularly distributed punctures. Elytral subsutural stria indistinct, visible partly in apical third.

Ventral surface black. Legs reddish brown. Ventrites 3-5 laterally with indistinct reddish brown spot. Prosternal process broadly lanceolate, almost flat in cross section, pointed at apex, sides broadly beaded. Metaventrite with anteromedian impression almost attaining level of hind margin of mesocoxae; metaventral wing relatively broad (WC/WS 3.18 – 3.20). Metacoxal lines raised, divergent in anterior half and not reaching posterior border of metaventrite. Metaventrite and metacoxal plates with very sparse, obsolete punctation; integument microsculptured. Metacoxal plates anteriorly rugose. Abdominal ventrites obliquely microreticulate; ventrites 3 to 5 with transverse row of setiferous punctures and group of similar punctures in middle of disc. Male ventrite 6 with posteromedial smooth area broad and sparsely punctate, lateral striate area relatively narrow with 3-5 long striae, some punctures among striae setiferous (Fig. 60). Legs ventrally with fine transverse reticulation; metatibia ventrally with distinct row of oblong punctures. Pro- and mesotarsomeres 1 – 3 dilated, ventral surface with transverse rows of oval suckers; protarsal claws similar in shape and length, 0.68 times as long as protarsomere 5; metatarsal claws subequal in length, arcuate.

Male genitalia as in Figs. 16, 30, 56. Median lobe of aedeagus distally robust (Fig. 16).

Female genitalia as in Figs. 44, 47.

SEXUAL DIMORPHISM: Female differs from male in the following characters: meshes of dorsal surface reticulation more deeply engraved, surface appearing less shiny; ventrite 6 without striae, posterolaterally with confluent punctures, forming small longitudinal wrinkles, some punctures setiferous (Fig. 63); pro- and mesotarsomeres 1 – 3 not dilated and without adhesive setae.

VARIABILITY: The type series shows variation in the body size and slightly in the extent of yellow-red color pattern. The reticulation slightly varies in depth, size and shape of the meshes, mainly on head and pronotum.

COLLECTION CIRCUMSTANCES: Found at altitudes from 1400 to 2400 m a.s.l. in mountain streams and springs with gravelly bottom.

ETYMOLOGY: Dedicated to Prof. Günther Wewalka (Wien, Austria), a leading specialist in Dytiscidae and collector of the major part of the type series.

DISTRIBUTION: Nepal (Fig. 66).

Platynectes kashmiranus BALFOUR-BROWNE, 1944

This species clearly forms two allopatric subspecies (Fig. 66), which may be distinguished as follows:

1 Median lobe of aedeagus shorter; apex (lateral view) dorsally with obtuse lobe; subapically with dense and longer setae (Fig. 17). Pakistan, India, Nepal ..... ***kashmiranus kashmiranus***

– Median lobe of aedeagus markedly longer; apex (lateral view) elongate and dorsally straight; subapically with very sparse and short setae (Fig. 18). SW China..... ***kashmiranus lemberki* ssp.n.**

Additional diagnostic characters are given below.

REMARK: Specimens of *P. kashmiranus kashmiranus* from Nepal and marginal areas of distribution are different and possibly form additional subspecies; however, presence of specimens with transitional features in the zones of primary hybridisation does not allow delimiting these subspecies at present. The populations of *P. kashmiranus lemberki* inhabit a relatively isolated area in southwestern China and show distinct morphological differentiation from the nominate subspecies, thereby justifying their subspecific status.

Platynectes kashmiranus kashmiranus BALFOUR-BROWNE, 1944

Colymbetes lineatus REDTENBACHER in KOLLAR & REDTENBACHER 1844: 503 (orig. descr., preocc.).
Platynectes lineatus REDTENBACHER: RÉGIMBART 1899: 288 (descr.).
Platynectes kashmiranus BALFOUR-BROWNE 1944: 352 (repl. name); GUEORGUIEV 1972: 45 (partim); WEWALKA 1975: 159 (distr.); BRANCUCCI 1979: 202 (distr.); NILSSON 1998:117 (partim).
Platynectes kashmirensis BALFOUR-BROWNE: VAZIRANI 1970: 341 (misspell.); VAZIRANI 1976: 170 (misspell.), 1980: 29 (misspell.).

TYPE LOCALITY: Kashmir, India.

TYPE MATERIAL: **Syntype** ♀ (NMW): "Hügel [printed] 77. [handwritten, with pen] / P 324 / syntypus Colymbetes lineatus Redt., vide Nilsson-98 [handwritten, red label]".

ADDITIONAL MATERIAL EXAMINED:

P A K I S T A N: 1 ♂, 1 ♀ "PAKISTAN, SWAT, SE Mingora, Karakar 1100m, 25. 5. 1978 leg. C. Holzschuh" (CGW); 1 ♀ "PAKISTAN, Murree Hills Bhurban, 1900 m 3.-6.5.1978 leg. C. Holzschuh" (CGW).

I N D I A: HIMACHAL PRADESH: 1 ♂ "INDIA 25.7.2002, Himachal Pradesh, Manali 2100 m, Fresneda leg. / Platynectes kashmiranus Fresneda det. 2002" (CJF); UTTAR PRADESH: 2 ♂♂, 2 ♀♀ "Khaula, 4500ft. Almora, India H.G.C. / coll. Toledo (BS)" (MTB); 2 ♂♂, 1 ♀ "Khaula, 4500ft. Almora, India H.G.C. / H.G. Champion Coll., B.M. 1953–156 / coll. Toledo (BS)" (MTB); 2 ♂♂, 2 ♀♀ "India, Uttar Pradesh Garhwal, Gowind N.P., Taluka 1900m J. Šťastný lgt. 5.10.1997" (CJS); 5 ♂♂, 9 ♀♀ " India, Uttar Pradesh, Garhwal Himal. Kyliani 1900m J. Šťastný lgt. 16.10.1997" (2 exs. CJH, 10 exs. CJS); SIKKIM: 1 ♂ "INDIA – SIKKIM east, Gantok env., 2000-2500m, Fambong-Lho forest, 8.-15.7.1997, Jan Schneider lgt." (CJS); DARJEELING DISTRICT: 2 ♂♂, 2 ♀♀ "Indien Darjeeling Distr. Jole[erased]-Khola nördl. Sonada 2300m 20.6.1973 GvRosen / P325, P326, P327, P328 / Platynectes kashmiranus J.B-Br. det AN Nilsson-[19]98" (NMW); 2 ♂♂, 1 ♀ "N. India: Darjeeling. 7000ft. 11.-20. iii.1924. Maj. R.W.G.Hingston. / Everest Exp. Brit. Mus. 1924-386. / Platynectes lineatus Redt. J. Balfour-Browne det. 1945 [male]" (NHML); 1 ♂ "Andrewes, Bequest. B.M. 1922-221 / 3056.[handwritten], Lebong, 5000ft, VI,09" (NHML); 1 ♂ "Pedong, A. Desgodins / Platynectes dissimilis Sharp comparé du type [handwritten in black ink] / Platynectes dissimilis Sharp. [handwritten in blue ink]" (NHML); 2 ♀♀ "Pedong, A. Desgodins / Platynectes dissimilis Sharp." (NHML); 1 ♀ "Pedong, A. Desgodins / [printed] / Sharp Coll 1905-313." (NHML).

N E P A L: FAR WESTERN REGION: 1 ♀ "Nepal (Far West), Baetadi, Sera Kansan Gad, 7.12.1993, leg. S. Sharma (41) / Platynectes kashmiranus B.Br., det. Wewalka [19]97 / P398" (NMW); 1 ♂, 1 ♀ "W-Nepal: Silgarhi-Doti. Lokondo. 7,000ft. 17.vii.1953. J.B.Tyson / W. Nepal expedition. B.M.1953-592. / Platynectes kashmiranus B-Br., det. Wewalka [19]70" (NHML);WESTERN REGION: KASKI DISTRICT: 2 ♀♀ "NEPAL HIMALAYA SE Annapurna mts. lg. Jäger, 1997 / bel. Telbrung Danda near Gangpokhara 2000m, 14./15.VI" (MTD); 9 ♂♂, 7 ♀♀ "ca 20km W Pokhara unterh. Mt. Panchase, 1800m, 16.5. / Nepal Himalaya, S-Annapurna mts., leg. O. Jäger 1997 (MTD); 1 ♂, 1 ♀ "Nepal, Mt. Panchase, (15km westl. Pokhara), östl. exp. Bach nahe Sidhane, 1500-1700 m, leg. O. Jäger, 15.5.1997" (CLH, MTD); 1 ♂, 1 ♀ "NEPAL HIMALAYA 20 km w Pokhara Mt. Panchase / NE-slope, 2000m torrent/bank 18.V.1997 lg. Jäger" (CLH, MTD); 2 ♂♂, 6 ♀♀ "Taunja Danda sw-slope 2400 mNN, 9.5. / NEPAL HIMAL. 1996, Annapurna mts. lg. Schmidt, Jäger" (CLH, MTD); 2 ♀♀ "NO-Pokhara, 10.V., Madi Kh.-Uferpools unt. Siklis,1500m / NEPAL-HIMALAYA, SE-Annapurna mts., leg. O. Jäger 1996" (MTD); 5 ♂♂, 1 ♀ "N-Pokhara, Siklis, 2000m, Anf. August / NEPAL-HIMALAYA, Annapurna Mts., lg. Schmidt, 1995" (MTD); 1 ♂, 2 ♀♀ "Nepal Himal. 1996, Annapurna mts., lg. Schmidt, Jäger / Madi Khola-Tal, oberh. Khilang, 2000mNN, 12.V." (CLH, MTD); 2 ♀♀ "NO-Pokhara, 26.IV. Madi-Kh. Tal 3km nördl. Siklis, 1750m / NEPAL-HIMALAYA, SE-Annapurna mts., leg. O. Jäger 1996" (MTD); 5 ♂♂, 8

♀♀ "Ghara bis Shika SO Tatopani 1700-1900m, 14.VI. / NEPAL, HIMALAYA Annapurna Mts. leg. Ahrens, 1993" (CLH, MTD); 1 ♂, 2 ♀♀ "Nepal, 55 km NW Pokhara Tatopani, 1200m 8.5.1984 (N9,13), leg. Wewalka / P220, P380-1 / Platynectes kashmiranus J.B-Br. det AN Nilsson-[19]98" (NMW); 3 ♂♂, 3 ♀♀ "W-NEPAL, Buri Gandaki, Kholabenesi-Labubesi, 1650m, 5.6.1990 leg. J. Probst / P340-345 / Platynectes kashmiranus J.B-Br. [Balfour-Browne] det AN Nilsson-[19]98" (NMW); 1 ♂ "Buri Gandaki, Arughat Bazar-Sudi, 1300m, 24.-26.5.1990, leg. Probst / P347/ Platynectes kashmiranus J.B-Br. [Balfour-Browne] det AN Nilsson-[19]98" (NMW); 7 ♂♂, 5 ♀♀ "Nepal, 20km NW Pokhara Lumle 1600m, 2.5.1984 leg. Wewalka (N2) / P360, P372, P374-8, P383-7" (NMW); 1 ♂ "Nepal 25km NW Pokhara Landrung 1500-2000m, 12.5.1984 leg. Wewalka (N20) / P379" (NMW); 2 ♂♂ "Nepal, 50km NW Pokhara Sikha, 1800m leg. Wewalka 7.u.10.5.1984 (N7,8,14) / P218, P221 / Platynectes kashmiranus J.B-Br. [Balfour-Browne] det AN Nilsson-[19]98" (NMW); 1 ♀ "Nepal, 60km NW Pokhara, Dana, 1400m, leg, Wewalka, 9.5.1984 (N10,12) / P373" (NMW); 1 ♂ "Nepal Himalaya Annapurna Mts. leg. Jäger 1995 / Marsyandi-tal Tal 1600-1700m, Käscherf. 23.VIII. / Staatl Museum für Tierkunde Dresden / Platynectes kashmiranus Balf.-Br., Hendrich det. 1996" (MTD); 1 ♀ "Sikles 2000m, NO Pokhara, 15.5. / NEPAL-HIMALAYA, Annapurna Mts. 1993 lg. Schmidt / Staatl Museum für Tierkunde Dresden / Platynectes kashmiranus Balf.-Br., Hendrich det. 1996" (MTD); 1 ♂ "Madi Khola below Sikles 1500m, 4.8. / Nepal-Himalaya, Annapurna Mts. lg. Schmidt 1995 / Staatl Museum für Tierkunde Dresden / Platynectes kashmiranus Balf.-Br., Hendrich det. 1996" (MTD); 3 ♂♂, 3 ♀♀ "Nepal Himalaya, Annapurna Mts. leg. Jäger 1995 / Siklis 2000m, 2. VIII., kl. Wiesenbach / Staatl Museum für Tierkunde Dresden / Platynectes kashmiranus Balf.-Br., Hendrich det. 1996" (MTD); 1 ♀ "Nepal 1995, Annapurna Mts., lg. O. Jäger / N-Pokhara, Garlang, 1500mNN, 25.VII. / Staatl Museum für Tierkunde Dresden / Platynectes kashmiranus Balf.-Br., Hendrich det. 1996" (MTD); MYAGDI DISTRICT: 2 ♂♂, 3 ♀♀ "N-Pokhara, 18.IV., Kali Kh unt. Garlang, 1000-1200m / Nepal-Himalaya, SE-Annapurna mts. leg. O. Jäger 1996" (MTD); 3 ♂♂, 1 ♀ "W-Nepal, Kali Gandaki, Khola, C.J.Rai / Kopchepani, 1500-1700m, 15.V.1984 / Platynectes kashmiranus B.-B., det. M. Brancucci [19]85 / Platynectes kashmiranus J.Balfour-Browne, Fery det. 1998 / Collection H.Fery - Berlin" (CHF); 1 ♂, 1 ♀ "Nepal455 Myagdi Distr. Kuinekani to Marangpa 2300-2000 m, 19.V.1995 MARTENS & SCHAWALLER / Platynectes kashmiranus J.Balfour-Browne Fery det. 1999 [printed] / Collection H.Fery - Berlin" (CHF); 1 ♀ "NEPAL: Myagdi Distr.Tatopani (Gelisar) 4.4.1996 leg. Graf et al. / P338 / Platynectes kashmiranus J.B-Br. [Balfour-Browne] det AN Nilsson-[19]98" (NMW); 1 ♂ "NEPAL: Myagdi Dist. left. trib. to Kaligandaki [Kali Gandaki] 6 km below Tatopani 4.4.1996, leg. Graf et al. / P339 / Platynectes kashmiranus J.B-Br. [Balfour-Browne] det AN Nilsson-[19]98" (NMW); 1 ♀ "NEPAL Myagdi Distr. Kopchepani 18.6.1986 / 1600m leg. Probst / P346 / Platynectes kashmiranus J.B-Br. [Balfour-Browne] det AN Nilsson-[19]98" (NMW); 1 ♂, 5 ♀♀ "Nepal 1994, Myagdi Distr., lg. Ahrens, 11.3. / 2400-2160m, Lulang, Dhara-Khola / Staatl Museum für Tierkunde Dresden / Platynectes kashmiranus Balf.-Br., Hendrich det. 1996" (MTD); MUSTANG DISTRICT: 4 ♂♂, 2 ♀♀ "Z-NEPAL Jharkot 31.7.1985 leg. Preuler / Platynectes kashmiranus B.-B., Fery det. [handwritten] / Platynectes kashmiranus J.Balfour-Browne, Fery det. 1998 [printed] / Collection H.Fery - Berlin" (CHF, NMW); 1 ♀ "Z-Nepal, Jharkot 31.7.1985, leg. Preuler / P367 / Platynectes kashmiranus Bbr., det AN Nilsson-[19]98" (NMW); CENTRAL REGION: RASUWA DISTRICT: 2 ♂♂, 2 ♀♀ "NEPAL centr., Dhunche env., Bagmati zone, Rasuwa Distr. Langtang N. P., 1960-2000m, 22.-24.1999, J. Dalihod lgt." (CJS); 3 ♀♀ "NEPAL centr., Bagmati zone, Rasuwa Distr. Langtang Nat. P., Dhunche env., 1960-2000m, 22.-24.1999, M. Pejcha lgt. / coll. Jiří Hájek, Prague, Charles universtity [University]" (CJH); 1 ♂ "NEPAL (prov. Bagmati) below Tarke Ghyang 2200 m, 19.IV. [19]81Löbl & Smetana / Platynectes kashmiranus J.Balfour-Browne Fery det. 1998 [printed] / Collection H.Fery - Berlin" (CHF); 1 ♂, 6 ♀♀ "NC-Nepal (Lamjung), 900-1700m betw. Phalesangu & Barapokhari 28°12'-28°14'N/84°25'E, terrace fields/broadleaved forest, 12.-13.V.2001, B. Březina #1, #2" (CJH); 1 ♂ "NEPAL centr. Pokhara 3.6.1992 I. Jeniš leg. / Platynectes kashmiranus Bbr., det. A.N.Nilsson-[19]96" (CJS); 7 ♂♂, 11 ♀♀ "NEPAL centr. Pokhara 3.6.1992 I. Jeniš leg. / P348, P350-355, P357-359, P361-365, P369-371 / Platynectes kashmiranus Bbr., det AN Nilsson-[19]98" (NMW); DOLAKHA DISTRICT: 2 ♂♂ "612 NEPAL: Dolakha Distr. N slope of Khare Khola 2200m, 30.V.-1.VI.2000 leg. W. Schawaller" (CHF); 1 ♀ "613 NEPAL: Dolakha Distr. S slope of Khare Khola 2100m, 2.VI.2000 leg. W. Schawaller" (CHF); 1 ♂, 1 ♀ "614 NEPAL: Dolakha Distr. Khare Khola 1900-1200m, 3.VI.2000 leg. W. Schawaller" (CHF); 2 ♂♂, 2 ♀♀ "615 NEPAL: Dolakha Distr. lower Khare Khola 1200m, 3.-4.VI.2000 leg. W. Schawaller" (CHF); 1 ♂, 1 ♀ "622 NEPAL: Dolakha Distr. Chayarsa 2000m, 3.VI.2000 leg. W. Schawaller"

(CHF); 1 ♂, 2 ♀♀ "633 NEPAL: Kathmandu Mt. Phulchoki Khare Khola 1700m, 21.VI.2000 leg. W. Schawaller" (CHF); 1 ♂, 3 ♀♀ "NEPAL: Kathmandu val. Sundarijal Sundarijal riv. leg. B. Pradhan (B 76)" (NMW); SIDHUPALCHOK DISTRICT: 1 ♀ "NEPAL, Kabhre distr. (1), SE Dhulikel, 10.3.2000 27°36'40"N 85°33'58"E 1600m, trib of Thuloban, leg. C. Hörl" (NMW); 1 ♂ "NEPAL: 13.4.1995, 27°54'N, 85°38'E, Hanri Khola nr. Dhap 1200m, leg. Malicky / P391"; 6 ♂♂, 9 ♀♀ "Nepal Tibetan. Grenze, 1.3.[19]81leg. M. Jäch N36 / Tatopani / Platynectes kashmiranus B.Br., det. Wewalka [19]81 / P382, P396-7, P402-3, P407-13" (NMW); 1 ♂ "Gonda, 2350m, Dolakha, NEPAL, X.15.1979, Y. Nishikawa / Coll. Hendrich, Berlin / Platynectes kashmiranus Bbr., det AN Nilsson-[19]98" (CLH); 1 ♀ "Chauki, 2700m, Terhathum [Tehrathum], NEPAL, Oct. 30,1979, M. Sato leg. / Platynectes kashmiranus B-Br., det. M. Brancucci [19]87 / Coll. Hendrich, Berlin / P268 / Platynectes kashmiranus Bbr., det AN Nilsson-[19]98" (CLH); 1 ♀ "Tini Odhar, 730m, Chak Khola, Kabhre, NEPAL Nov.9, 1979, M. Sato leg. / Coll. Hendrich, Berlin Platynectes kashmiranus Bbr., det AN Nilsson-[19]98" (CLH); MAKAWANPUR DISTRICT: 1 ♂ "Nepal Hetauda – Umg., 19.2.[19]81 N23 leg. M. Jäch / Platynectes kashmiranus B.Br., det. Wewalka [19]81 / P368 / Platynectes kashmiranus Bbr. [J.Balfour-Browne], det AN Nilsson-[19]98" (NMW); EASTERN REGION: 1 ♂ "E-Nepal, 30.6.-1.7. 2000 Kanchenjunga Himal Mts., Chiruwa vill., 1260m, (27°29'N,87°45'E), J. Schneider leg. / coll. Jiří Hájek, Prague, Charles universtity [University]" (CJH); SANKHUA SABHA DISTRICT: 2 ♂♂, 1 ♀ "N-NEPAL, Dhankuta Arun-Valley, Hedangna-Navagaon 1000-800-1700m 5.6.1980 leg. C. Holzschuh" (CGW); 6 ♂♂, 3 ♀♀ "Dhankuta Arun-Valley, 1200-1900m Chichila-Pangma, 18. 6.1980 leg. C. Holzschuh" (CGW); 4 ♂♂, 1 ♀ "E-NEPAL, Dhankuta Arun-Valley, Aruthan-Chichila, 1300-1900m 23.5.1980, leg. C. Holzschuh" (CGW); 1 ♀ "E-Nepal, Dhankuta Arun-Valley, Lomobagar-Ghola, 1000-1400m, 27.5.-3.6.1980, leg. C. Holzschuh" (CGW); 1 ♂ "E-NEPAL, Arun Valley Khandbari- Bhotebas 1000-1750m, 5.6.1988 leg. G. Lebisch & J. Probst / P390" (NMW); SUNSARI DISTRICT: 1 ♂, 4 ♀♀ "NEPAL Dahran-Umg. 12.2.1981 leg. M. Jäch (N10) / P393-5, P401, P404" (NMW); SOLOKHUMBU DISTRICT: 1 ♀ "E-NEPAL: Solokhumbu Boskom Gomba 2530m Biha Khola, 5.4.1994 leg. S. Sharma (110) / P400" (NMW); 1 ♀ "NEPAL (East), 1320m Solokhumbu Bung Biha Khola 6.4.1994 leg. S. Sharma (112) / P399" (NMW).

Unknown locality: 2 ♂♂ "Sharp Coll, 1905-313. / Platynectes dissimilis Sharp. [handwritten in blue ink]". (NHML); 1 ♂ "Asia / 67-56 / Determined by Dr. Regimbart, [printed], Platynectes dissimilis Shp [handwritten in blue ink] / ♂ Platynectes dissimilis Sharp. [handwritten in blue ink]" (NHML); 1 ♀ "Asia / 67-56 / Platynectes dissimilis Sharp. [handwritten in blue ink] ♂" (NHML).

DIAGNOSIS: Body small to medium-sized; slender to elongate-oval; integument usually shiny; yellow markings on elytron distinct, yellow basal fascia present, interrupted only sublaterally (Fig. 2); elytron with meshes of reticulation deeply incised and anteromesally disappearing.

REDESCRIPTION: Measurements (n = 21): TLwH = 5.37 - 6.15 mm (5.68±0.28 mm, syntype 6.0 mm), MW = 3.18 - 3.65 mm (3.39±0.16 mm, syntype 3.6 mm), TLwH/MW = 1.65 - 1.69 (1.67±0.01, syntype 1.69).

Male. Head yellowish-red; interocular spots, hair-line like along anterior eye margin and sometimes two transverse clypeal grooves black; black area of interocular spots anteriorly almost reaching two shallow transverse clypeal grooves; anterior clypeal margin and frons before eyes darkened; labrum reddish brown. Reticulation deeply incised, consisting of small meshes of irregular size and shape, somewhat elongated longitudinally, meshes mostly opened; minute punctures present. Microreticulation indistinct. Clypeus with two shallow transverse grooves; anterior margin with pair of sublateral foveae. Frons with two shallow depressions beside inner eye margins. Antenna, labial and maxillary palpus yellowish red.

Pronotum black, anterior angles yellowish red, anterior margin with very thin reddish-brown rim. Posterior angles of pronotum moderately obtuse. Reticulation consisting of large, mostly opened meshes of irregular size and shape; minute punctures present and moderately dense, irregularly placed. Longitudinal median suture very short. Anterior transverse row of punctures distinct but clearly visible only medially, punctures small, irregular in size and shape. Posterior row of

punctures not visible. Sides slightly rounded, pronotal lateral bead distinct only in posterolateral angle, forming very thin line.

Elytron black, shiny with eight yellowish-red longitudinal vittae: vitta 1 almost continuous, vittae 2-7 formed by series of dots, vitta 8 continuous, beginning in basal third and running along sides to apex; vitta 5 bifurcate anteriorly, vitta 7 forming humeral spot; preapical spot small and variable, sometimes absent; basal fascia present, interrupted only sublaterally. Epipleura dark reddish brown. Reticulation consisting of large, sometimes opened meshes of irregular size and shape, meshes not elongate, on disc polygonal, deeply incised, anteromesally disappearing; minute punctures present, anteromesally dense, irregular in size and dispersion. Discal, lateral and sublateral elytral serial punctures distinct but formed by very sparsely distributed punctures forming irregular lines. Elytral subsutural stria indistinct, visible partly in apical third.

Ventral surface black. Legs, prosternum, metacoxal process reddish brown, ventrites 3-5 transversally reddish, laterally with a reddish-brown spot. Prosternal process broadly lanceolate, almost flat in cross section, pointed at apex, sides broadly beaded except on apex. Metaventrite with anteromedian impression almost attaining level of hind margin of mesocoxae; metaventral wing relatively narrow (WC/WS 3.40 – 4.10, mean – 3.64). Metacoxal lines poorly raised, divergent, slightly concave in anterior half and not reaching posterior border of metaventrite. Metaventrite and metacoxal plates with very sparse, obsolete punctation; integument microsculptured, metaventral wings with meshes of microreticulation obliquely longitudinally stretched, metacoxal plates with small and rounded, polygonal meshes and fan-wise arranged shallow grooves on disc. Abdominal ventrites obliquely transversally microreticulate or shiny; ventrites 3 to 5 with transverse row of setiferous punctures and group of similar punctures in middle of disc. Male ventrite 6 with breadth of posteromedial smooth area very variable, sparsely punctate, lateral striate area with four or five long striae, some punctures among striae setiferous (Fig. 61). Legs ventrally with fine transverse reticulation; metatibia ventrally with irregular row of oblong and shallow punctures. Pro- and mesotarsomeres 1 – 3 dilated, ventral surface with transverse rows of oval suckers; protarsal claws similar in shape and length, 0.57 times as long as protarsomere 5; metatarsal claws unequal in length, slightly arcuate.

Male genitalia as in Figs. 17, 31, 57, 58. Median lobe of aedeagus shorter; apex (lateral view) dorsally with obtuse lobe; subapically with dense and longer setae.

Female genitalia as in Figs. 45, 48.

SEXUAL DIMORPHISM: Female differs from male in the following characters: meshes of dorsal surface reticulation more deeply engraved, surface appearing less shiny, integument densely micropunctate; ventrite 6 posterolaterally rugose and punctures posteriorly confluent, forming small longitudinal wrinkles (Fig. 64); pro- and mesotarsomeres 1 – 3 not dilated and without adhesive setae.

VARIABILITY: A widespread and variable species varying in nearly all important diagnostics characters. The body size varies geographically, probably in response to environment: specimens from the coldest and highest elevations (in Nepal) are relatively smaller than specimens from the warmest and lowest valleys in India. The reticulation varies slightly in depth, size and shape of the meshes, mainly on head and pronotum. Specimens from Uttar Pradesh differ from specimens from Nepal mainly in the shape of the median lobe, which is more straight and less dilated in the preapical portion in species from Uttar Pradesh. The specimens from Uttar Pradesh possibly represent the "typical" population, since they were found relatively close to the type locality and the females are morphologically very close to the syntype. The specimens from Nepal thus may represent an undescribed subspecies. A solution of this problem needs further examination and morphometric studies of additional material from this area.

COLLECTION CIRCUMSTANCES: Found in different habitats at altitudes between 730 to 2700 m a.s.l. (rills, streams, springs, pools at foots of waterfalls), sometimes in gravel or detritus on the stream bottom, mostly under stones along stream edges. In Uttar Pradesh associated with *Agabus debilipes* RÉGIMBART, 1899 and *Agabus freudei* GUÉORGUIEV, 1957. In the Kathmandu Valley associated with *Platambus wittmeri* WEWALKA, 1975 and *Agabus amoenus sinuaticollis* RÉGIMBART, 1899 (BRANCUCCI 1988).

DISTRIBUTION: Afghanistan (GUEORGUIEV 1972; this record needs verification), Pakistan, India (Kashmir, Punjab, Himachal Pradesh, Uttar Pradesh, Darjeeling, Sikkim, Assam), Nepal, Bhutan, China (Tibet) (Fig. 66).

Platynectes kashmiranus lemberki ssp.n.

Platynectes kashmiranus BALFOUR-BROWNE: NILSSON 1998: 117 (China, Yünnan).

TYPE LOCALITY: Behai, 10 km NE Tengchong, Yünnan, China.

TYPE MATERIAL: **Holotype** ♂ (NMW): "China, Yünnan prov. 10km NE Tengchong;Behai ZingHai lake env; gravelly stream with muddy pools 27.10.1999, leg. J. Šťastný" / HOLOTYPUS ♂ *Platynectes kashmiranus lemberki* ssp.n. J.ŠŤASTNÝ det. 2002 [red label with black line border]". **Paratypes:** 3 ♂♂, 9 ♀♀ with same data as holotype (CJS); 1 ♂, 2 ♀♀ "China, Yünnan prov. E ZHONGDIAN 100°12'/27°47'; 2700m a.s.l. rock pool under waterfall 18.10.1999, leg. J.Šťastný" (CJS); 5 ♂♂, 3 ♀♀ "CHINA, W – Yünnan env. Baoshan 6.-8.6. 1993 E. Jendek & O. Sausa leg. / P88, P90, P91, P92, P93, P103, P105, P106 [handwritten, with pencil] / Platynectes kashmiranus J.B-Br. [Balfour-Browne] det AN Nilsson-[19]98" (NMW); 1 ♂ "CHINA: Yünnan Baoshan V/IV 1993 leg. Jendek & Sausa / P133 [handwritten, with pencil] / Platynectes kashmiranus J.B-Br. [Balfour-Browne] det AN Nilsson-[19]98" (NMW). All paratypes are provided with a red, black-framed label with the following printed text: "PARATYPUS [with No. and male/female symbol] *Platynectes kashmiranus lemberki* ssp.n. J. ŠŤASTNÝ det. 2002".

DIAGNOSIS: Body large, elongate-oval; integument shining; yellowish-red markings on elytron distinct, yellow basal fascia present, interrupted only sublaterally (Fig. 3); elytron with meshes of reticulation shallowly incised, anteromesally disappearing.

DESCRIPTION: Measurements (n = 13): TLwH = 5.75 - 6.35 mm (6.08±0.15 mm, holotype 5.78 mm), MW = 3.50 - 3.85 mm (3.70±0.09 mm, holotype 3.50 mm), TLwH/MW = 1.62 - 1.70 (1.64±0.02, holotype 1.65).

Male. Head yellowish brown; interocular spot, hair-line like along anterior eye margin and sometimes two shallow transverse clypeal grooves black; black area of interocular spots anteriorly almost reaching clypeal grooves; anterior clypeal margin darkened; labrum reddish brown. Reticulation shallowly incised, consisting of small meshes of irregular size and shape, somewhat elongated longitudinally, meshes mostly opened; minute punctures present. Microreticulation indistinct. Clypeus with two shallow transverse grooves; anterior margin with pair of sublateral foveae. Frons with two shallow depressions beside inner eye margins. Antenna, labial and maxillary palpus yellowish-brown.

Pronotum black, anterior angles yellowish red, indistinct transverse band on disc and very thin anterior margin red brown. Posterior angles of pronotum moderately obtuse. Reticulation consisting of large, mostly opened meshes of irregular size and shape; minute punctures present and moderately dense, irregularly placed. Longitudinal median suture very short. Disc with two variable transverse depressions. Anterior transverse row of punctures indistinct but clearly visible, punctures small, irregular in size and shape. Posterior row of punctures not visible. Sides slightly rounded, pronotal lateral bead indistinct, forming very thin lines in basal half.

Elytron black and shiny with eight yellowish-red vittae, vitta 1 almost continuous, vittae 2-7 formed by series of dots, vitta 8 continuous, beginning in basal third and running along sides to apex; vitta 5 bifurcate anteriorly, vitta 7 forming humeral spot; preapical spot small and variable, sometimes absent; basal fascia present, interrupted only sublaterally. Epipleura dark blackish

brown. Reticulation consisting of large, mostly opened meshes of irregular size and shape, meshes not elongate, shallowly incised, anteromesally disappeared; minute punctures present. Discal, lateral and sublateral elytral striae indistinct, interrupted just before base, with irregularly distributed punctures. Elytral subsutural stria indistinct, visible partly in apical third of elytron.

Ventral surface black; legs reddish-brown; ventrites 1-3 laterally with reddish-brown spot. Prosternal process broadly lanceolate, almost flat in cross section, pointed at apex, sides broadly beaded except on apex. Metaventrite with anteromedian impression almost attaining level of hind margin of mesocoxae; metaventral wing moderately narrow (WC/WS 3.75 – 4.0). Metacoxal lines poorly raised, divergent in anterior half and not reaching posterior border of metaventrite. Metaventrite and metacoxal plates with very sparse, obsolete punctation; integument indistinctly microsculptured, metacoxal plates with fan-wise arranged shallow grooves. Abdominal ventrites obliquely transversally microreticulate or shiny; ventrites 3 - 5 with transverse row of setiferous punctures and group of similar punctures in middle of disc. Male ventrite 6 with posteromedial smooth area broad, sparsely punctate, lateral striate area with 3-4 long striae, deep setiferous punctures among striae denser than in nominate subspecies (Fig. 62). Legs ventrally with fine transverse reticulation; metatibia ventrally with interrupted row of oblong and shallow punctures. Pro- and mesotarsomeres 1 - 3 dilated, ventral surface with transverse rows of oval suckers; protarsal claws similar in shape and length, 0.7 times as long as protarsomere 5; metatarsal claws subequal in length, slightly arcuate.

Male genitalia as in Figs. 18, 32, 59.

Female genitalia as in Figs. 46, 49.

SEXUAL DIMORPHISM: Female differs from male in the following characters: meshes of dorsal surface reticulation more deeply engraved, surface appearing less shiny, integument densely micropunctate; ventrite 6 more deeply punctate, punctures sometimes posteriorly confluent, forming small longitudinal wrinkles (Fig. 65); pro- and mesotarsomeres 1 – 3 not dilated and without adhesive setae.

VARIABILITY: The type series shows variation in the body size and extent of the yellow-red color pattern. The reticulation slightly varies in depth, size and shape of the meshes, mainly on head and pronotum.

COLLECTION CIRCUMSTANCES: Found in streams, springs and pools at the foot of waterfalls among gravel and detritus.

ETYMOLOGY: Dedicated to my friend and ornithologist Vladimír Lemberk from Pardubice (Czech Republic).

DISTRIBUTION: Known from southwestern China (Yünnan) at altitudes from 400 to 2700 m a.s.l. (Fig. 66).

Platynectes dissimilis species complex

DIAGNOSIS: Penis distally not produced; apex rounded or pointed. Elytron black with yellowish basal fascia and eight vittae, some of which are formed by series of dots (NILSSON 1998).

Platynectes dissimilis (SHARP, 1873)

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

Platynectes dissimilis SHARP: RÉGIMBART 1899: 288 (descr.); GUÉORGUIEV 1972: 46 (descr.); BRANCUCCI 1979: 202 (faun.); SATÔ 1982: 2 (syntype illustrated); NILSSON 1995: 56 (distr.); NILSSON 1998: 111 (descr.).

TYPE LOCALITY: Japan by indication; possibly mislabelled as never confirmed to occur in Japan (SATÔ 1982, NILSSON 1998).

TYPE MATERIAL: **Syntypes** 3 ♀♀ (NHML) "Agabus dissimilis Type D.S. [handwritten on the same label as the beetle] ♂ / syntype [circular blue-margined label] / Type [circular red-margined label] / Japan. Lewis. 815 / Sharp Coll. 1905-313. / Agabus dissimilis type D.S. [handwritten]"; "Syntype [circular blue-margined label] / Japan. Lewis. [label with yellow line] / Sharp Coll 1905-313. / Ngasaki [= Nagasaki] 1864 G. Lewis. / 815. / Platynectes dissimilis, ♀ Sharp."; "Japan. G. Lewis. 1910-320. / A. dissimilis [handwritten] / Syntype [circular blue-margined label] / Platynectes dissimilis, ♀ Sharp.". One syntype [holotype according to SATÔ (1982)], could not be found in the NHML.

ADDITIONAL MATERIAL EXAMINED:

C H I N A: SHANXI: 1 ♂ "Shensi [Shanxi], China A. David. 815 / Chine. Shensi A David [black margined label] / Sharp. Coll 1905-313./ Platynectes dissimilis, ♂ Sharp." (NHML); SHAANXI: 3 ♂♂ "China: Shaanxi, Qin Ling Shan 110.06 E, 34.27N Hua Shan Mt. A Valley, 1200-1400m 118 km E Xian, 18./20.08. 1995, leg.A. Pütz / Platynectes dissimilis (Sharp), det. A.N.Nilsson-[19]96 / P10., P11., P13 / Platynectes d. dissimilis (Sharp) det AN Nilsson-[19]98)" (NMW); JIANGXI: 1 ♂ "CHINA: Jiangxi, Jiuling Shan 18km NW Shangfu, 12.11.1997 env Jiu Xian, 700-800m leg. M. Wang (CWBS 302) / P295 / Platynectes d. dissimilis (Sharp) det AN Nilsson-[19]98" (NMW); 1 ♀ "CHINA: Jiangxi, Jiuling Shan 8km NW Shangfu, 13.11.1997 env Shang Bao, 700m leg. M. Wang (CWBS 304) / P294 / Platynectes d. dissimilis (Sharp) det AN Nilsson-[19]98" (NMW); GUIZHOU: 1 ♀ "CHINA: Guizhou, Jiangkou Co. ca 50 km SW Jiangkou nr. Shidu will. 27°32.71"N 108°36.30"E / trib. of Guanhe riv. 1./4.7.2001, 650-850m leg. Schillhammer & Wang (CWBS 445)" (NMW); GUANGDONG: 5 ♂♂, 2 ♀♀ "CHINA: Guangdong Prov. Dighu Nat. Res. 28.10.2001, ca. 250 m Jäch & Komarek (CWBS 449)" (NMW); 1 ♀ "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)" (NMW); HUNAN: 3 ♀♀ "CHINA, SW-Hunan 1993 SW Huitong, 350-450m Umg. Guangping, 3.11. leg. Schönmann (9) / P135, P136, P141, P145 [handwritten, with pencil] / Platynectes d. dissimilis (Sharp) det AN Nilsson-[19]98" (NMW); 4 ♀♀ "CHINA, SW-Hunan 1993 NE Huitong, 5.11. Jinlong Shan, 600-650m leg. Schillhammer (11) / P142-4, P146 [handwritten, with pencil] / Platynectes d. dissimilis (Sharp) det AN Nilsson-[19]98" (NMW); 1 ♂, 1 ♀ "CHINA, NW-Hunan 1993 Wulingyuan, A Dayong Zangjiajie, 30.10.,500m leg. Schillhammer (3) / P137, P138 [handwritten, with pencil] / Platynectes d. dissimilis (Sharp) det AN Nilsson-[19]98" (NMW); 1 ♀ "CHINA, NW-Hunan 1993 Wulingyuan, A Dayong Zangjiajie, 29.10. / 650m leg. Schönmann et Schillhammer (2) / P139 [handwritten, with pencil] / Platynectes d. dissimilis (Sharp), det AN Nilsson-[19]98" (NMW); 2 ♀♀ "CHINA - Prov. Hunan Zhang Jia Jie 14.7.1992 leg JI Lanzhou / P8, P9 [handwritten, with pencil] / Platynectes d. dissimilis (Sharp) det AN Nilsson-[19]98" (NMW); FUJIAN: 3 ♂♂, 2 ♀♀ "CHINA: Fujian, Chong'an, Wuyi Shan, 1 km W Wui Gong 250m, 15./18.1.1997, leg. H. Schönmann (CWBS 240) / P169, 171-174 / Platynectes d. dissimilis (Sharp), det AN Nilsson-[19]98" (NMW); 2 ♂♂, 2 ♀♀ "CHINA: Fujian, Chong'an, Wuyi Shan, 1 km W Wui Gong 250m, 15./18.1.1997 leg. Ji & Wang (CWBS 240) / P190-3 / Platynectes d. dissimilis (Sharp), det AN Nilsson-[19]98" (NMW); 1 ♂ "CHINA: Fujian, Chong'an, Wuyi Shan, 3 km SW Wui Gong 250m, 16.1.1997 leg. Ji & Wang (CWBS 243) / P194 / Platynectes d. dissimilis (Sharp), det AN Nilsson-[19]98" (NMW), 7 ♂♂, 8 ♀♀ "CHINA: Fujian, Chong'an, Wuyi Shan, 3 km W Da'an, 500m 19.1.1997 leg. Ji & Wang (CWBS 250) / P202-7, 209-17 / Platynectes d. dissimilis (Sharp), det AN Nilsson-[19]98" (NMW); ANHUI: 1 ♂, 1 ♀ "CHINA: Anhui, Huang Shan 30 km NW Tunxi, 30.10.1997 3km W Nantang, 350-550m leg. M. Wang (CWBS 291) / P195, 199 / Platynectes d. dissimilis (Sharp), det AN Nilsson-[19]98" (NMW); 1 ♀ "CHINA: Anhui, Dabie Shan 20 km N Yuexi, 6.11.1997 env. Shi Guan, 950-1000m leg. M. Wang (CWBS 297) / P201 / Platynectes d. dissimilis (Sharp), det AN Nilsson-[19]98" (NMW); 1 ♂, 3 ♀♀ "CHINA: Anhui, Huang Shan, 60 km NNW Tunxi, 31.10.1997 nr. Tang Kou, 900-1000m leg. H. Schönmann (CWBS 292) / P196-8, 200 / Platynectes d. dissimilis (Sharp), det AN Nilsson-[19]98" (NMW); 5 ♂♂, 1 ♀ "CHINA: Anhui, Huang Shan, 60 km NNW Tunxi, 31.10.1997 nr. Tang Kou, 900-1000m leg. M. Wang (CWBS 292) / P285-8, 296, 297 / Platynectes d. dissimilis (Sharp) det AN Nilsson-[19]98" (NMW).

DIAGNOSTIC CHARACTERS: Measurements (n = 11): TLwH = 4.7 - 5.3 mm (4.98±0.2 mm, syntype 4.75 mm), MW = 2.85 - 3.4 mm (3.17±0.12 mm, syntype 3.1 mm), TLwH/MW = 1.52 - 1.76 (1.57±0.04, syntype 1.53). Body small and relatively broad, moderately convex; integument shining. Head with large dark interocular spots. Elytron with yellow basal fascia narrow, interrupted sublaterally and sometimes also broadly medially; width of fascia usually subequal to

distance from first to second vitta; elytral vittae abridged anteriorly, not reaching basal fascia; preapical spot usually large, in some individuals reduced (Fig. 4).

Male. Head with large dark interocular spots (Fig. 4). Meshes of dorsal surface reticulation deeply engraved, consisting of wide and sometimes opened meshes of irregular size and shape, slightly longitudinally stretched. Elytral reticulation anteromesally disappearing; most meshes with two to five minute punctures, some intersections and lines with small punctures. Elytra with anterointernal area without reticulation narrow, reticulation visible from first discal line. Sutural row of punctures not visible. Metaventral wing relatively narrow (WC/WS 3.8 - 4.4, mean 4.18±0.2). Male ventrite 6 with sublateral rugose area with 7-9 long and deep grooves; medially not rugose, densely and deeply punctate. Protarsal claws subequal in length, anterior slightly longer than posterior one; 0.54 times as long as protarsomere 5; metatarsal claws subequal in length, slightly arcuate apically, posterior claw more robust than anterior one. Male genitalia as in Figs. 19, 33, median lobe subapically broad, apically bluntly pointed.

SEXUAL DIMORPHISM: Female with elytral reticulation laterally with meshes elongate and more deeply incised than in male; meshes very slender; integument densely micropunctate, surface appearing less shiny.

VARIABILITY: Specimens examined show variation in the extent of the yellow color pattern, mainly in the size of the preapical spot; syntypes and specimens from northern areas have the eight yellowish vittae on the elytron basally indistinct, with vittae beginning in the basal third of elytron; specimens from southern areas are fully colored, appear paler and possess reduced interocular spots. The reticulation varies slightly in depth, size and shape of the meshes. Median lobe of aedeagus varies in size (specimens from Guangdong are small) and shape of apical part, which may be slightly sinuate to straight dorsally.

AFFINITIES: *Platynectes dissimilis* is very similar to *P. major* but is distinguished clearly by its broader and smaller body, short median lobe that is broad in apical part, and by the large dark interocular spots. From *P. nanlingensis* it is distinguished clearly by its smaller body size and shape of the median lobe. It can be confused with *P. gemellatus*; for the separation from these two taxa see the diagnosis of *P. gemellatus* below.

COLLECTION CIRCUMSTANCES: See NILSSON (1998) and list of CWBS localities.

DISTRIBUTION: Known from Anhui, Fujian, Guangdong, Guizhou, Hunan, Jiangxi, Shaanxi, and Shanxi; most probably it is absent from Japan (Fig. 67). The record from Zhejiang by NILSSON (1998) needs verification; I was not able to examine the specimen deposited in the MMM.

Platynectes major NILSSON, 1998 new status

Platynectes dissimilis major NILSSON 1998: 114 (orig. descr.).

TYPE LOCALITY: Lang Bian, N Dalat, South 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 / P17. / HOLOTYPUS Platynectes dis-similis major n.ssp. AN Nilsson 1998", examined. **Paratypes:** 28 ♂♂, 22 ♀♀ with same data as holotype except P16, P18-45, P52, P54-71, P282, P283 (NMW).

ADITTIONAL MATERIAL EXAMINED:

VIETNAM: 1 ♂ "N-VIETNAM, Prov. Lao Cai, Cat Cat, nr. Sa Pa 1300-1400m, N22°19'43"; E103°50'; 25./26.V.1999, leg. Ahrens, Jäger, Fabrizi" (MTD); 1 ♀ "S-VIETNAM 14km SW Bao Loc 16. – 29.5. 1994 Pacholatko & Dembicky / P284 / Platynectes dissimilis major n.ssp. det. AN Nilsson 1998" (NMW).

THAILAND: 1 ♂, 1 ♀ "N-THAILAND, 3.-10.10. 18°32'N 98°32'E Doi Inthanon, 1200m Bang Khun Klang, Malicky & Chantaramongkol 1989 / P33, P 76 / Platynectes dissimilis major Nilsson, det. AN Nilsson-98"

(NMW); 4 ♂♂ 4 ♀♀ "Thailand 25.XII.1999 (5) Phu Hin Rongkla N.P. Huai Khamunoi Waterfall holes on stream bed m 1250, P.Mazzoldi" (CPM); 1 ♀ "THAILAND: 5.11.1995 Chiang Mai 900-1100m Doi Suthep NP leg. Zettel (7) / P281 / Platynectes dissimilis major Nilsson det. AN Nilsson-[19]98" (NMW); 1 ♂ "THAILAND. CHIANG MAI: Doi Inthanon NP , 1300m 2MAY 1990 u.v.light EF#90039D E. Fuller / Coll. HENDRICH Berlin / P271 / Platynectes dissimilis major Nilsson det. AN Nilsson-98" (NMW); 1 ♀ "THAILAND. CHIANG MAI: Doi Inthanon NP, 1300m 1990 UVLight: 1900-2300 11MAY EF#90056C E. Fuller / Coll. HENDRICH Berlin / P270 / Platynectes dissimilis major Nilsson det. AN Nilsson-98" (NMW); 1 ♂, 4 ♀♀ "THAILAND: Petchabun Nam Nao NP, 14.3. Huai Ya Krua, 1994 leg. W. Shepard / WDS A 1039 / P277 / Platynectes dissimilis major Nilsson det. AN Nilsson-98" (NMW).

C H I N A: YÜNNAN: 3 ♂♂, 2 ♀♀ "CHINA: Yünnan, Xishuangbanna ca. 15 km NW Menglun 5.11.1999, ca. 700 - 800 m leg. Jäch, et al. (CWBS 354)" (NMW); 1 ♂ "CHINA: Yünnan, Xishuangbanna ca. 3 km S Menglun 6.11.1999 ca. 500 m leg. Jäch, et al. (CWBS 357)" (NMW); 1 ♂ "CHINA: Yünnan, Xishuangbanna ca. 6 km NW Mengla 9.11.1999 ca. 700 m leg. Jäch, et al. (CWBS 367)" (NMW); 8 ♂♂, 5 ♀♀ "CHINA: Yünnan, Xishuangbanna ca. 20 km NW Mengla 9.11.1999, ca. 1000 m leg. Jäch, et al. (CWBS 368)" (NMW); 1 ♀ "CHINA: Yünnan Xishuangbanna ca. 13 km NW Mengyang 10.11.1999 ca. 700 m leg. Jäch, et al. (CWBS 373)" (NMW); 1 ♂, 1 ♀ "CHINA: Yünnan, 3.11.1999 ca. 60 km NNE Kunming Songming-Yangjie, ca. 1900m leg. Jäch, et al. (CWBS 351)" (NMW); 2 ♂♂, 1 ♀ "CHINA: Yünnan, Chuxiong Pref. Da Shui Go riv. nr. Ban Jiu, 10 km N Yipinglang 27.11.1999, ca. 1700 m Schönmann & Wang (CWBS 409)" (NMW); 4 ♂♂, 7 ♀♀ "CHINA: Yünnan, Gejiu Pref. 30 km S Gejiu, Tian Ba Shi env. 23.11. 1999, ca. 1300m Schönmann & Wang (CWBS 401)" (NMW); 2 ♂♂, 3 ♀♀ "CHINA: Yünnan, Gejiu Pref. 30 km S Gejiu, Tian Ba Shi env. 23.11. 1999, ca. 1300m Schönmann & Wang (CWBS 400)" (NMW); 6 ♂♂, 4 ♀♀ "CHINA: Yünnan, Gejiu Pref. 15 km S Gejiu, Tou Dao Shui 24.11. 1999, ca. 1700m Schönmann & Wang (CWBS 404)" (NMW); 8 ♂♂, 6 ♀♀ "CHINA: Yünnan, Gejiu Pref. 15 km S Gejiu, Tou Dao Shui 23.11. 1999, ca 1700m, Schönmann & Wang (CWBS 399)" (NMW); 13 ♂♂, 7 ♀ "CHINA: Yünnan, Chuxiong Pref. 15 km W Lufang 27.11. 1999, ca. 1500 m, Schönmann & Wang (CWBS 408)" (NMW); 8 ♂♂, 1 ♀ "CHINA: Yünnan, Simao Pref. 35 km S Simao 16.11.1999 Cayiang riv. NR, ca. 1100m Schönmann & Wang (CWBS 390)" (NMW); 1 ♂, 1 ♀ "CHINA: Yünnan, Simao Pref., 25 km SW Simao, Zhu Shan 17.11.1999 1000m, Schönmann & Wang (CWBS 392)" (NMW); 1 ♀ "CHINA: Yünnan, Simao Pref. 35 km SW Mojiang, 19.11.1999, ca. 1000 m Schönmann & Wang (CWBS 394)" (NMW); 1 ♂ "CHINA, Yünnan S Xiaguan 12 km S Weishan Weibaoshan / 2500-3000 m 1.-17.7.1993 leg. L. Ji / P129 / Platynectes dissimilis major Nilsson det. AN Nilsson-[19]98" (NMW); 19 ♂♂, 9 ♀♀ "CHINA-Yunnan 22.5.-2.6. 100 km W Kunming Diaolin Nat. Res., 1993 E. Jendek & O. Sausa leg. / P94-96, P98, P99-102, P104, P107-114, P117, P119-127, P130 / Platynectes dissimilis major Nilsson det. AN Nilsson-[19]98" (NMW).

DIAGNOSTIC CHARACTERS: Measurements (n = 11): TLwH = 5.5 - 6.4 mm (5.84±0.24 mm), MW = 3.50 - 4.05 mm (3.74±0.15 mm), TLwH/MW = 1.53 - 1.59 (1.56±0.01). Body moderately convex; integument shining. Head mainly yellowish red, black interocular spots narrow and reduced to black inner eye margins, yellowish posteromedial spots absent. Elytron with yellow basal fascia narrow, interrupted sublaterally; width of fascia usually subequal to distance from vitta 1 to vitta 2; preapical spot usually large, in some individuals reduced (Fig. 5).

Male. Meshes of dorsal surface reticulation deeply engraved, consisting of wide, polygonal, sometimes opened meshes of irregular size and shape, meshes not elongate. Elytral reticulation anteromesally disappearing; most meshes and lines with some minute but deep punctures. Sutural row of punctures not visible. Protarsal claws equal in length, 0.57 times as long as protarsomere 5; metatarsal claws subequal in length, slightly arcuate apically, posterior claw more robust than anterior one. Male genitalia as in Figs. 20, 34, median lobe narrowly curved and with sharply pointed apex.

SEXUAL DIMORPHISM: Female with elytral reticulation more deeply incised than in male, laterally with meshes elongate, integument densely micropunctate, surface appearing less shiny.

VARIABILITY: Specimens examined show variation in extent of preapical spot. Reticulation slightly varies in depth, size and shape of meshes mainly on pronotum. Median lobe of aedeagus varies in shape and width of apical part.

AFFINITIES: *Platynectes major* is very similar to *P. dissimilis* but is distinguished clearly by its larger body size, shape of median lobe (long and slender, in apical part sharply pointed), and by the narrow black interocular spots being confined to black inner eye margin. It is distinguished clearly from *P. nanlingensis* and *P. gemellatus* by the shape of the median lobe (regularly curved in *P. nanlingensis*, distally broadened and apically rounded in *P. gemellatus*).

COLLECTION CIRCUMSTANCES: See NILSSON (1998) and CWBS localities.

DISTRIBUTION: The species occurs in Vietnam, Thailand and China (Yünnan) (Fig. 67).

Platynectes gemellatus sp.n.

Platynectes dissimilis SHARP: NILSSON et al. 1995: 365 (faun.).
Platynectes dissimilis dissimilis SHARP: NILSSON 1998: 111 (partim).

TYPE LOCALITY: Hong Kong, China.

TYPE MATERIAL: **Holotype** ♂ (NMW): "HONGKONG University Campus at light, 1996 leg. G. de Rougemont / Platynectes dissimilis Shp. det. Wewalka 99 / HOLOTYPUS ♂ *Platynectes gemellatus* sp.n. J. ŠŤASTNÝ det. 2002 [red label with black line border]". **Paratypes:** 1 ♀ with same data as holotype (NMW); 1 ♂ "HONG KONG 1983 Taipo Kau 10.VIII. Dudgeon – upstream / Platynectes dissimilis Sharp det.G.Wewalka 92 / P15 / Platynectes d. dissimilis (Sharp) det AN Nilsson-[19]98" (NMW); 3 ♂♂ "CHINA: FUJIAN, Longyan Shizhong, Shangfang Shan 850m, 31.1.1997, leg. H.Schönmann (CWBS 264) / P182-4 / Platynectes d. dissimilis (Sharp) det AN Nilsson-[19]98" (NMW, CASS, CJS); 2 ♂♂, 3 ♀♀ "CHINA: FUJIAN, Longyan Shizhong, Shangfang Shan 850m, 31.1.1997, leg. Ji & Wang (CWBS 264) / P185-9 / Platynectes d. dissimilis (Sharp) det AN Nilsson-[19]98" (NMW, CASS, CJS). All paratypes are provided with a red, black-framed label with the following printed text: "PARATYPUS [with No. and male/female symbol] *Platynectes gemellatus* sp.n. J. ŠŤASTNÝ det. 2002".

ADDITIONAL MATERIAL EXAMINED:

C H I N A: GUIZHOU: 1 ♀ "China: B.M. 1980-491 P.M. Hammond / Guizhou, Guilin: Yaoshan 24-25.ix.80 / Platynectes dissimilis Shp. det. Toledo 1996" (NHML); GUANGXI: 4 ♀♀ "CHINA, SE-Guangxi Distr. Yulin Liuwan Mts. SW Yulin / 17.11. 1993 Kuishan, 600-700m leg. Schönmann (21) / P4-7 [handwritten, with pencil] / Platynectes d. dissimilis (Sharp) det AN Nilsson-[19]98" (NMW); JIANGXI: 7 ♂♂, 11 ♀♀ "CHINA Jiangxi W JINGGANG SHAN Ciping env. 2.-14.VI.1994 /P1-3, P147-155 [handwritten, with pencil], P254, 289-293 / Platynectes d. dissimilis (Sharp) det AN Nilsson-[19]98" (NMW); FUJIAN: 1 ♀ "CHINA: FUJIAN, Chong'an Wuyi Shan, 3 km NW Wuyi Gong, 300m, 17.1.1997 leg. H. Schönmann (CWBS 246) / P181 / Platynectes d. dissimilis (Sharp) det AN Nilsson-[19]98" (NMW); 1 ♂ "Kuatun (Fukien) China 1946.2.9 / Platynectes dissimilis Sharp det. G.Wewalka 92 / P14 / Platynectes d. dissimilis (Sharp) det AN Nilsson-[19]98" (NMW); GUANGDONG: 3 ♂♂, 2 ♀♀ "CHINA: Guangdong Prov. Dighu Nat. Res. 30.10.2001, ca. 50-150 m Jäch & Komarek (CWBS 454)" (NMW); 1 ♂, 1 ♀ "CHINA: Guangdong Prov. ca .50 km E Fengkai 23°27'04"N 111°53'53"E 1.11.2001, ca. 300-400 m Jäch & Komarek (CWBS 456)" (NMW); 2 ♂♂ "CHINA: Guangdong Prov. ca. 50 km E Fengkai 23°27'04"N 111°53'53"E 1.11.2001, ca. 300-400 m Jäch & Komarek (CWBS 457)" (NMW); 1 ♂, 1 ♀ "CHINA: Guangdong Prov. ca 60 km E Fengkai 2.11.2001, ca. 230 m Jäch & Komarek (CWBS 462)" (NMW); 1 ♀ "CHINA: Guangdong Prov. 45 km SE Shixing 24°47'28"N 114°15'56"E, 8.11.2001, ca. 200 m Jäch & Komarek (CWBS 482)" (NMW); 1 ♀ "CHINA: Guangdong Prov. Huanshi Shan 24°51'53"N 113°54'34"E, 8.11.2001, ca. 480 m Jäch & Komarek (CWBS 485)" (NMW); 1 ♂, 5 ♀♀ "CHINA: Guangdong Prov. ca. 34 km E Zengcheng Luofu Shan N.R. 10.11.2001, ca. 180 m Jäch & Komarek (CWBS 487)" (NMW); MACAO: 1 ♂ "MACAO: Taipa Island 30.9.1997 leg. E.Easton / Platynectes dissimilis Sharp det. G. Wewalka 1998 / P13 / Platynectes d. dissimilis (Sharp) det AN Nilsson-[19]98" (NMW); TAIWAN: 2 ♂♂ "Taiwan: Taipei Gongliao Gongliao 12-XI-1995 leg. L.J.Wang / Platynectes dissimilis Sharp. 1873 det. L.J.Wang" (CJS, CMT).

Locality unknown: 1 ♂ "Bowring, China / 982, 20.2.[18]53 / Platynectes dissimilis, ♂: Sharp / Platynectes sp.n. J. Balfour-Browne det. 1945" (NHML); 2 ♀♀ "Bowring, China / 982, 20.2.[18]53 / Platynectes dissimilis, ♂: Sharp / det. J. Balfour-Browne" (NHML).

DIAGNOSIS: Body small to medium-sized, relatively narrow, moderately convex; shining. Elytron with yellow basal fascia narrow, interrupted only sublaterally; elytral vittae sometimes

slightly abridged anteriorly, but vitta 4 always reaching basal fascia; preapical spot usually large, in some individuals reduced (Fig. 6).

DESCRIPTION (only differences from *P. dissimilis* noted): Measurements (n = 12): TLwH = 4.8 - 5.6 mm (5.12±0.16 mm, holotype 5.00 mm), MW = 3.10 - 3.55 mm (3.33±0.11 mm, holotype 3.32 mm), TLwH/MW = 1.50 - 1.58 (1.54±0.02 mm, holotype 1.51).

Male. Head yellowish red, posterior to eyes black, interocular spots narrow and vague; elytral yellow vittae almost not reduced basally. Elytra with reticulation visible approximately from vitta 2; with broad anterointernal area without reticulation. Metaventral wing relatively narrow (WC/WS 4.58). Male ventrite 6 with sublateral rugose area with four or five long and deep grooves; medially not rugose, shallowly punctate. Protarsal claws 0.57 times as long as protarsomere 5. Male genitalia as in Figs. 21a, b, 35a, b, median lobe subapically broad, widely beaded; apically roughly rounded.

SEXUAL DIMORPHISM: Female with elytral reticulation with meshes broadly elongate and shallowly incised; integument sparsely punctate.

VARIABILITY: Specimens examined show variation in the body size and extent of the yellow color pattern. Median lobe of aedeagus varies in size (in some specimens, mainly from Guangdong and Taiwan, it is smaller than in those from Fujian) and the shape of the apical part. Owing to the high variability of this species, with several populations differing in the characters cited above, it is most likely that various populations from Mainland China and Taiwan probably belong to several undescribed subspecies or species. As only limited material is available, I refrain from their formal description. Future morphometric and genetic analyses should resolve these questions.

AFFINITIES: *Platynectes gemellatus* is very similar to *P. dissimilis* but it can be distinguished by its slightly larger size, slender body shape, male ventrite 6 bearing only four or five grooves, and virtually complete elytral yellow vittae. However, examination of the male genitalia is needed for correct separation of the two species: the median lobe of *P. dissimilis* is apically pointed and finely beaded.

COLLECTION CIRCUMSTANCES: Found in streams and rills at altitudes varying widely from 50 to 1400 m a.s.l.

ETYMOLOGY: From Latin *gemellatus*, double, according to its external similarity with *P. dissimilis*.

KNOWN DISTRIBUTION: Known only from Taiwan and Mainland China (Guizhou, Guangxi, Guangdong, Hong Kong, Macao, Fujian, and Jiangxi) (Fig. 68).

Platynectes nanlingensis sp.n.

Platynectes dissimilis dissimilis SHARP: NILSSON 1998: 111 (partim, #208 Wuyi Shan).

TYPE LOCALITY: CWBS loc. 468, Yao Shan, Nanling N. P., Guangdong province, China.

TYPE MATERIAL: **Holotype** ♂ (CASS): "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) / HOLOTYPUS ♂ *Platynectes nanlingensis* sp.n. J. Šťastný det. 2002 [red label with black line border]". **Paratypes:** 1 ♂, 5 ♀♀ with same data as holotype (NMW); 3 ♂♂, 5 ♀♀ "CHINA: Guangdong Prov., Chengjia - Ruyuan rd. ca. 40 km E Chengjia 5.11.2001 Jäch & Komarek (CWBS 471)" (NMW, CJS). All paratypes are provided with a red, black-framed label with the following printed text: "PARATYPUS [with No. and male/female symbol] *Platynectes nanlingensis* sp.n. J. Šťastný det. 2002".

ADDITIONAL MATERIAL EXAMINED:

C H I N A: FUJIAN: 1 ♂ "CHINA: FUJIAN, Chong'an, Wuyi Shan, 3 km W Da'an 500m, 19.1.1997 leg. Ji & Wang (CWBS 250) / P208 / Platynectes d. dissimilis (Sharp), det AN Nilsson-[19]98" (NMW).

DIAGNOSIS: Body medium-sized, broadly oval, moderately convex; integument shining; yellowish-red markings on elytron distinct, basal fascia present, interrupted sublaterally; preapical spot variable (Fig. 7). Elytron with meshes of reticulation deeply incised, anteromesally disappearing.

DESCRIPTION: Measurements (n = 8): TLwH = 5.9 - 6.3 mm (6.08±0.1 mm, holotype 6.1 mm), MW = 3.85 - 4.05 mm (3.95±0.07 mm, holotype 4.0 mm), TLwH/MW = 1.52 - 1.57 (1.54±0.01, holotype 1.53).

Male. Head yellow; posterior area inside eyes, hair-like line along anterior eye margin, two transverse clypeal grooves and very narrow line along anterolateral clypeal margin black; labrum red-brown. Reticulation (visible at 40x) deeply incised, consisting of closed meshes of irregular size and shape, somewhat elongated longitudinally; minute punctures deeply impressed; each mesh usually with one or two small punctures. Microreticulation invisible. Clypeus laterally with two shallow transverse grooves; without reticulation, densely punctate; anterior margin with pair of sublateral foveae. Frons with two shallow punctate depressions beside inner eye margins. Antenna, labial and maxillary palpus yellowish brown.

Pronotum black, with anterior angles and lateral margin yellowish red, transverse medial band reddish brown. Posterior angles of pronotum moderately obtuse. Reticulation consisting of sometimes interrupted meshes of irregular size and shape, laterally deeply impressed; each mesh usually with two or three punctures, punctures coarser and more deeply incised than on head and elytron. Longitudinal median suture very short. Anterior row of punctures hardly distinct, punctures moderately sized and well separated. Posterior row of punctures indistinct, broadly interrupted medially, consisting only of isolated punctures. Sides moderately rounded, pronotal lateral bead well defined, reaching only basal 0.75.

Elytron black and shiny, with eight yellowish-red vittae; vitta 1 almost continuous, vittae 2-7 formed by series of dots, vitta 8 continuous, beginning in basal third and running along sides to apex; vitta 5 bifurcate anteriorly; preapical spot small and variable, sometimes absent; basal fascia present, interrupted only sublaterally; lateral margins distinctly beaded; lateral margins evenly rounded and broadest before middle. Epipleura reddish brown. Reticulation strong, consisting of deeply incised, sometimes interrupted meshes of irregular size and shape, meshes somewhat elongate; anteromesally disappearing; deep minute punctures present, smaller than on pronotum; each mesh with one to three punctures. Discal, lateral and sublateral elytral striae consisting of shallowly impressed and sparsely placed punctures; some punctures setiferous. Elytral subsutural stria indistinct.

Ventral surface black. Legs, anterior margin of metaventral wings, prosternal process and metacoxae reddish brown. Ventrites 2-3 laterally with reddish spot; ventrite 6 pale apically. Prosternal process moderately lanceolate, almost flat in cross section, pointed at apex, sides broadly beaded except on apex, sparsely and finely punctate. Metaventrite with anteromedian impression almost attaining level of hind margin of mesocoxae; metaventral wing relatively narrow, WC/WS 4.1. Metacoxal lines raised, poorly divergent in anterior half and not reaching posterior border of metaventrite. Metaventrite and metacoxal plates with very sparse, obsolete punctation; integument microsculptured anteriorly and laterally, posteriorly and medially smooth. Metacoxal plates with fan-wise arranged shallow grooves. Abdominal ventrites obliquely transversally microreticulate or shiny; ventrites 3 to 5 with transverse row of setiferous punctures and group of similar punctures in middle of disc. Male ventrite 6 with sublateral rugose area with six long and deep grooves; medially not rugose and finely punctate, lateral beading continuous, reaching lateral angles. Legs ventrally with fine transverse reticulation; metatibia ventrally with row consisting of 6-8 oblong, shallow and sparsely placed punctures. Pro- and mesotarsomeres 1 - 3 dilated, ventral surface with transverse rows of oval suckers;

protarsal claws equal in length, 0.72 times as long as protarsomere 5; metatarsal claws subequal in length, arcuate, posterior claw very slightly longer and more robust than anterior one.

Male genitalia as in Figs. 22, 36, median lobe with apex narrowly rounded and delicately setose.

SEXUAL DIMORPHISM: Female differs from male in the following characters: meshes of dorsal surface reticulation more deeply engraved and longitudinally stretched, surface appearing less shiny; ventrite 6 with sublateral rugose area with short and sparse grooves, densely punctate, marginal beading broad apically; pro- and mesotarsomeres 1 - 3 not dilated and without adhesive setae.

VARIABILITY: Specimens examined show variation in the extent of the yellowish-red color pattern. The reticulation varies slightly in depth, size and shape of the meshes. The specimen from Fujian labelled by Nilsson as #P 208 of *P. dissimilis dissimilis* is distinctly narrower than the specimens of the type series.

AFFINITIES: *Platynectes nanlingensis* resembles *P. dissimilis* but it can be distinguished by its large size, form of the median lobe, and broader metaventral wings. From *P. major*, it can be separated by the broad body and shape of the male genitalia.

COLLECTION CIRCUMSTANCES: Found in streams at moderate altitudes (400-500 m a.s.l.).

ETYMOLOGY: Named in reference to the type locality.

DISTRIBUTION: Known from southwestern China (Guangdong, Fujian) (Fig. 68).

Platynectes javanus NILSSON, 1998

Platynectes lineatus REDTENBACHER: CSIKI 1938: 129 (misident., W Java).
Platynectes kashmiranus BALFOUR-BROWNE: GUÉORGUIEV 1972: 45 (partim); HENDRICH 1995: 48 (misident.).

TYPE LOCALITY: Ranca Upas, 10 km S Ciwidey, W Java, Indonesia.

TYPE MATERIAL: **Holotype** ♂ (NMW): "INDONESIA: W Java 'Ranca Upas' ca. 1300m 10 km S Ciwidey lg.Schuh 9.8.1994 / Holotype Platynectes javanus n.sp. AN Nilsson 1998". - **Paratypes**: WEST MALAYSIA: 1 ♂ "W Malaysia/Cameron Highla, Tanah Rata G. Jasar, track 11, 1500 m 13.& 15.6.1994 MA 3 Hendrich leg. / P263 / Paratypus Platynectes javanus n.sp. AN Nilsson 1998 [printed red label]" (CLH); 1 ♀ "W Malaysia/Genting Highla., Awana Resort jungle track, 1200m, 28.6.1994, MA 9, Hendrich leg. / P266 / Paratypus Platynectes javanus n.sp. AN Nilsson 1998 [printed red label]" (CLH); THAILAND: 1 ♂ "W-Thailand 1990, Tham Tharn Lot NP, N Kanchanaburi (3) leg. Jäch 28./29.11. / Platynectes kashmiranus Hedrich det. 1993 / P423/ Paratypus Platynectes javanus n.sp. AN Nilsson 1998" (NMW). Additional paratypes: 27 ♂♂, 24 ♀♀ (NMW, CHB, CNU), not examined.

ADDITIONAL MATERIAL EXAMINED:

I N D O N E S I A: 1 ♂ "Gunnung Singgalang Sumatra's Westkust) 1800 M. 1925 leg. E. Jacobson. / W Sumatra, E. Jacobson. B.M. 1926-2. [label with yellow line] / Platynectes dissimilis ♂ Sh. det. A. Zimmermann 1926 / Platynectes sp.n. J. Balfour-Browne det. 1945"(NHML); 1 ♂ [right elytron and ventrites lacking] "Maxwell's Hill, Perak, Aug. 30 1908 3600' R.H. Coll. / 13. / Platynectes dissimilis Sharp, R. Peschet det. 1924 / Ex F.M.S. Museum. B.M. 1955-354." (NHML).

M Y A N M A R: 2 ♂♂ "MYANMAR: Shan State (MBS 81A) ca. 35 km N Aungban (FIT) 20°55.20'A 96°33.60'E, 31.5.-8.6.2002 ca. 1320 m" (NMW, CJS). 1 ♀ "Siamese Malay States. Nawngchik: Bukit Besar. 2500 ft., muddy [bottom side, handwritten] / 26 August, 1901. Coll. N.Annandale and H. C. Robinson No.245 / 1903-281 / Agabus dissimilis" (NHML).

T H A I L A N D: 3 ♂♂ 6 ♀♀ "Thailand, 26.XII.1999 (11) Phu Rua Nat.Park, stream near Him Tak Range m 1250, crevice in rock, P.Mazzoldi leg." (CJS, CPM); 2 ♂♂, 3 ♀♀ "Thailand, 26.XII.1999 (8a) Phu Rua Nat.Park, stream near Huai Phai Waterfall, holes in rock m 1000, P.Mazzoldi" (CPM); 1 ♀ "Thailand 25.XII.1999 (5) Phu Hin Rongkla N.P., Huai Khamunoi waterfall, holes on stream bed m 1250, P.Mazzoldi" (CPM).

DIAGNOSTIC CHARACTERS: Measurements (n = 4): TLwH = 6.30 – 6.45 mm (6.36 ± 0.05 mm), MW = 3.95 – 4.10 mm (4.01±0.05 mm), TLwH/MW = 1.57 – 1.60 (1.59 ± 0.01). Body

large and relatively narrow, elongate oval, moderately convex; integument shining. Elytron with yellow basal fascia interrupted sublaterally and rarely also medially; preapical spot usually large, sometimes absent; eight vittae well-developed (Figs. 8, 9).

Male. Meshes of dorsal surface reticulation deeply engraved, consisting of sometimes interrupted meshes of irregular size and shape, anteromesally disappearing; deep minute punctures present along some lines and medially on some meshes. Sutural row of punctures poorly visible. Metaventral wing relatively narrow (WC/WS 4.1 – 4.5). Male ventrite 6 with large sublateral rugose area with 12-14 deep rugae; medial smooth area narrower than sublateral rugose area and irregularly punctate; lateral beading continuous. Protarsal claws 0.72 times as long as protarsomere 5; metatarsal claws subequal in length, arcuate apically, posterior claw longer and more robust than anterior one. Male genitalia as in Figs. 23, 37. Median lobe of aedeagus with left side abruptly reduced subapically, forming more or less obtuse angle, dorsoapically markedly lobed.

SEXUAL DIMORPHISM: Female differs from male in the following characters: meshes of dorsal surface reticulation more deeply engraved and elongate, surface appearing less shiny, interstices densely punctate; ventrite 6 rather densely punctate with large oblong punctures sublaterally sometimes confluent to shallow longitudinal grooves, marginal beading broad apically; pro- and mesotarsomeres 1 - 3 not dilated and without adhesive setae. NILSSON (1998) noted that in Sumatra, females are reticulate all over the elytron whereas in females from other regions the anterior and internal margins are broadly smooth and with reticulation reduced.

VARIABILITY: Specimens examined show variation in the extent of yellow color pattern.

AFFINITIES: *Platynectes javanus* is a distinct species, distinguished clearly from others by its large size, elongate body, form of the median lobe, deeply engraved reticulation, and broad sublateral rugose area on male ventrite 6.

COLLECTION CIRCUMSTANCES: Found in streams at altitudes ranging from 350 to 1500 m a.s.l.

DISTRIBUTION: Myanmar (first record), Thailand, Malaysia, Indonesia (Sumatra, Java) (Fig. 68).

Platynectes ranongensis NILSSON, 1998

Platynectes ranongensis NILSSON 1998: 117 (orig. descr.).

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. Prûdek leg. / P272 / Holotypus Platynectes rhanongensis [sic!] n.sp. AN Nilsson 1998 [printed red label]", examined.

DIAGNOSTIC CHARACTERS: Measurements: TLwH = 5.92 mm, MW = 3.58 mm, TLwH/MW = 1.65. Body large and relatively narrow, elongately oval, moderately convex; integument shining. Elytron with yellow basal fascia broad, not interrupted sublaterally; inner width of fascia subequal to distance from suture to vitta 3; preapical spot large; eight vittae well-developed (Fig. 10).

Male. Meshes of dorsal surface reticulation finely engraved, consisting of wide meshes of irregular size and shape not longitudinally stretched; reticulation anteromesally disappearing; area without reticulation very large, reaching beyond first elytral stria. Minute punctures in meshes sparse. Sutural row of punctures not visible. Metaventral wing very narrow (WC/WS 5.19). Male ventrite 6 with sublateral rugose area with seven deep rugae, medially subrugose and sparsely punctate; lateral beading continuous. Protarsal claws subequal in length, anterior

slightly longer than posterior one; 0.66 times as long as protarsomere 5; metatarsal claws unequal in length, arcuate apically, posterior claws longer and more robust than anterior one. Male genitalia as in Figs. 24, 38, median lobe with apex narrowly rounded and with ventral sinuation.

SEXUAL DIMORPHISM: Female unknown.

AFFINITIES: *Platynectes ranongensis* is a very distinct species, clearly separated from all other species of the complex by its large and relatively narrow body, broad and uninterrupted basal fascia, and shape of the median lobe.

COLLECTION CIRCUMSTANCES: Unknown.

DISTRIBUTION: Known only from the type locality in Thailand (Fig. 68).

Platynectes mazzoldii sp.n.

TYPE LOCALITY: Huai Khamunoi, Phu Hin Rongkla National Park, Thailand.

TYPE MATERIAL: **Holotype** ♂ (NMW): "Thailand 25.XII.1999 (5) Phu Hin Rongkla N.P., Huai Khamunoi waterfall, holes on stream bed m 1250, P.Mazzoldi / HOLOTYPUS ♂ *Platynectes mazzoldii* sp.n. J. Šťastný det. 2002 [red label with black line border]". **Paratypes:** 1 ♂, 2 ♀♀ with same data as holotype (CJS, CPM). All paratypes are provided with a red, black-framed label with the following printed text: "PARATYPUS [with No. and male/female symbol] *Platynectes mazzoldii* sp.n. J. Šťastný det. 2002".

ADDITIONAL MATERIAL EXAMINED:

C H I N A: YÜNNAN: 1 ♀ "CHINA: Yünnan, Xishuangbanna ca. 15 km NW Menglun 5.11.1999, ca. 700 - 800 m leg. Jäch, et al. (CWBS 354)" (NMW).

DIAGNOSIS: Body large-sized, elongately oval, moderately convex; integument shining; yellowish-red markings on elytron distinct, basal fascia present, sublaterally uninterrupted but only narrowly infuscate; preapical spot well-developed (Fig. 11). Elytron with meshes of reticulation sometimes opened, deeply incised and elongate.

DESCRIPTION: Measurements (n = 5): TLwH = 6.35 - 6.60 mm (6.48±0.09 mm, holotype 6.6 mm), MW = 4.10 - 4.15 mm (4.12±0.02 mm, holotype 4.15 mm), TLwH/MW = 1.55 - 1.59 (1.57±0.02 mm, holotype 1.59).

Male. Head yellow, narrow vague interocular spot, posterior area inside eyes, hair-like line along anterior eye margin and mediobasal small triangular spot black; two transverse clypeal grooves infuscate; labrum red-brown. Reticulation (visible at magnification 40x) deeply incised, anteriorly disappearing, consisting of closed meshes of irregular size and shape, minute punctures deeply incised; each mesh on average with one puncture. Clypeus laterally with two shallow transverse grooves, without reticulation, densely punctate; anterior margin with pair of sublateral foveae. Frons with two shallow punctate depressions beside inner eye margin. Antenna, labial and maxillary palpus yellowish brown.

Pronotum black, with anterior angles and lateral margin yellowish red, transverse medial band reddish brown. Posterior angles of pronotum moderately obtuse. Meshes of reticulation irregular in size and shape, more deeply incised than on head and elytron; on disc deeply incised, laterally shallow; each mesh usually with one to three deep punctures and several micropunctures. Longitudinal median suture clearly visible. Anterior row of punctures distinct, punctures moderately sized and well separated. Posterior row of punctures distinct, interrupted medially, consisting only of isolated setose punctures. Sides moderately rounded, pronotal lateral beading fine, reaching only basal 0.75.

Elytron black and shiny, with eight yellowish-red vittae; vitta 1 continuous, anteriorly widened and confluent with basal fascia, vittae 2-7 formed by series of dots, which are often confluent, vitta 8 wide and continuous, anteriorly confluent with basal fascia, running along sides to apex; vitta 5 bifurcate anteriorly; preapical spot well-developed. Basal fascia present, sublaterally uninterrupted but only narrowly infuscate; from first to fifth vitta tapered and at level of fifth vitta as wide as distance between vitta 1 to 2, again broad from vitta 5 to humeral angle. Lateral outline evenly rounded, broadest before middle. Epipleura reddish brown. Reticulation consisting of deeply incised, sometimes interrupted meshes of irregular size and shape, somewhat elongate, anteromesally disappearing; deep minute punctures present, smaller than on pronotum; each mesh with one to three punctures. Discal, lateral and sublateral elytral striae consisting of shallowly incised and sparsely distributed punctures, some punctures setiferous. Elytral subsutural stria indistinct.

Ventral surface reddish brown. Legs, anterior margin of metaventral wings, prosternal process and metacoxae reddish. Ventrites 2 and 3 laterally with pale spot; ventrite 6 pale apically. Prosternal process moderately lanceolate, almost flat in cross section, pointed at apex, sides narrowly beaded except on apex, sparsely and finely punctate. Metaventrite with anteromedian impression almost attaining level of hind margin of mesocoxae; metaventral wing relatively narrow (WC/WS 4.2 – 3.9). Metacoxal lines raised, slightly divergent in anterior half and not reaching posterior border of metaventrite. Metaventrite and metacoxal plates with very sparse, obsolete punctation; integument microsculptured anteriorly and laterally, posteriorly and medially lacking microsculpture. Metacoxal plates shallowly grooved. Abdominal ventrites obliquely transversally microreticulate or shiny; ventrites 3 to 5 with transverse row of setiferous punctures and group of similar punctures in middle of disc. Male ventrite 6 with broad sublateral rugose area with 9-12 long and deep grooves; medially not rugose and finely punctate; lateral beading continuous, reaching lateral angles. Legs ventrally with fine transverse reticulation; metatibia ventrally with median row consisting of 13-15 oblong, shallowly and sparsely distributed punctures. Pro- and mesotarsomeres 1 - 3 dilated, ventral surface with transverse rows of oval suckers; protarsal claws equal in length, 0.55 times as long as protarsomere 5; metatarsal claws subequal in length, arcuate, posterior claw very slightly longer and more robust than anterior one.

Male genitalia as in Figs. 25, 39; median lobe regularly curved in lateral view, in apical 0.25 markedly bent, apically rounded.

SEXUAL DIMORPHISM: Female differs from male in the following characters: meshes of dorsal surface reticulation more deeply engraved and longitudinally stretched, surface appearing less shiny; ventrite 6 with sublateral area with deep setiferous punctures; pro- and mesotarsomeres 1 - 3 not dilated and without adhesive setae.

VARIABILITY: Specimens examined show variation in body size and slightly in the extent of yellow color pattern of head and pronotum. The reticulation slightly varies in depth, size and shape of the meshes.

AFFINITIES: *Platynectes mazzoldii* is a distinct species closely related to *P. nanlingensis* and *P. ranongensis*. It is clearly separated from all other species by its characteristic median lobe and shape of basal fascia.

COLLECTION CIRCUMSTANCES: Found in primary forest streams and pools near waterfalls at altitudes ranging from 700 to 1250 m a.s.l.

ETYMOLOGY: Dedicated to my friend Paolo Mazzoldi (Brescia, Italy), a leading specialist in Gyrinidae and collector of the type series.

DISTRIBUTION: Known from two National Parks in northern Thailand and from Xishuangbanna in southern Yünnan (Fig. 68).

Platynectes sp.

MATERIAL EXAMINED:

C H I N A: YÜNNAN: 2 ♀♀ "CHINA: Yünnan S Xiaguan 12 km S Weishan Weibaoshan / 2500-3000 m 1.-17.7.1993 leg. L. Ji / P255, 256 / Platynectes sp. ♀ det. A. Nilsson" (NMW).

These females from CWBS loc. 14 most probably belong to an undescribed species. The specimens show differences from all known species of the complex and are characterised by the combination of the following characters: TLwH = 6.71 mm, TL-h/MW = 1.59; elytral reticulation coarse, consisting of deeply incised and elongate meshes; see also NILSSON (1998).

Platynectes chujoi species complex

DIAGNOSIS: Elytron black with yellowish basal fascia and lateroapical markings; eight vittae indistinct. Median lobe apically moderately bluntly pointed (Figs. 26, 27).

Platynectes chujoi SATÔ, 1982

Platynectes chujoi SATÔ 1982: 1 (orig. descr.); NILSSON 1998: 110 (descr., misident.).

TYPE LOCALITY: Shirahama, Iriomote-jima, Ryukyu Archipelago, Japan.

TYPE MATERIAL: **Holotype** ♂ (NSMT), not examined. **Paratypes** (NMB): 2 ♂♂ "Kanpirahnotaki Iriomote-Jima 6, VIII, 1964 N.Ohbayashi leg. / Paratype Platynectes (Gueorguievtes) chujoi M. Satô det. M. Satô 1982 [red label]", examined.

DIAGNOSIS: Body small to medium-sized, oval, moderately convex; integument shining; yellowish markings on elytron distinct, basal fascia present, sometimes interrupted sublaterally; preapical spot well-developed (Fig. 12). Reticulation distinct but shallowly engraved.

REDESCRIPTION (partly modified after SATÔ 1982): Measurements (n = 2): TLwH = 4.9 - 5.0 mm, MW = 3.1 mm, TLwH/MW = 1.58 - 1.61.

Male. Head reddish brown; posterior area inside eyes, vertex, two transverse clypeal grooves and very narrow line along anterior clypeal margin black, labrum reddish brown. Reticulation (visible at magnification 40x) shallowly incised, consisting of wide meshes of irregular size and shape, somewhat elongated longitudinally, some meshes opened; minute punctures present, sparse and deeply incised. Microreticulation invisible. Clypeus on disc laterally with two shallow transverse grooves; punctate, without reticulation; anterior margin with pair of sublateral foveae. Frons with two shallow punctate depressions beside inner eye margins. Antenna, labial and maxillary palpus red-brown.

Pronotum black, anterior angles yellowish brown. Posterior angles of pronotum moderately obtuse. Reticulation consisting of wide, sometimes interrupted meshes of irregular size and shape; laterally deeply incised; minute punctures present, irregularly distributed, deeper but finer and sparser than on head. Longitudinal median suture very short. Anterior row of punctures hardly distinct, punctures shallow and widely distributed. Posterior row of punctures broadly interrupted medially, punctures isolated. Sides slightly rounded, pronotal lateral bead very fine, reaching only basal 0.75.

Elytron black and shiny, yellowish-red transverse basal fascia sometimes interrupted sublaterally; well-developed preapical spot and narrow yellowish band along margin in apical

third, confluent with preapical spot and not reaching apical angle of elytron; lateral margin distinctly beaded, sides evenly rounded and broadest in apical third. Epipleura dark yellow-red. Reticulation fine, consisting of wide, shallowly incised, sometimes interrupted meshes of irregular size and shape; meshes not elongate, anteromesally disappearing; deep minute punctures present, sparser than on pronotum, irregularly distributed. Discal, lateral and sublateral elytral striae consisting of fine and irregularly distributed punctures. Elytral subsutural stria indistinct.

Ventral surface brown. Legs reddish brown. Ventrites 1-3 laterally with reddish-brown spot, medially darkened to black. Prosternal process broadly lanceolate, almost flat in cross section, pointed at apex, sides broadly beaded ecept on apex, sparsely punctate. Metaventrite with anteromedian impression not attaining level of hind margin of mesocoxae; metaventral wing relatively narrow (WC/WS 4.39). Metacoxal lines raised, very slightly diverging or subparallel in anterior half and not reaching posterior border of metaventrite (Fig. 50). Metaventrite and metacoxal plates with very sparse, obsolete punctation; integument microsculptured anteriorly, posteriorly smooth. Metacoxal plates with transverse shallow grooves. Abdominal ventrites obliquely transversally microreticulate or shiny; ventrites 3 to 5 with transverse row of setiferous punctures and group of similar punctures at middle. Male ventrite 6 with sublateral rugose area with six long and deep grooves, medially not rugose and very finely punctate; lateral beading continuous, reaching lateral angles. Legs ventrally with fine transverse reticulation; metatibia ventrally with reduced row of some oblong, shallow punctures. Pro- and mesotarsomeres 1 - 3 dilated, ventral surface with transverse rows of oval suckers; posterior protarsal claw very slightly shorter than anterior one, 0.71 times as long as protarsomere 5; metatarsal claws subequal in length, arcuate apically, posterior claw very slightly longer and more robust than anterior one.

Male genitalia as in Figs. 26, 40.

SEXUAL DIMORPHISM: Females not examined.

VARIABILITY: Specimens examined show variation in the body size, extent of yellow-red color pattern, and intensity of the coloration of the ventral surface.

AFFINITIES: *Platynectes chujoi* resembles *P. rihai* in the coloration but differs by its narrow elytral yellowish band, which is present only in the apical third along the elytral margin and does not reach the apical angle of the elytron as in *P. rihai* (Fig. 13). Furthermore, it can be distinguished by its smaller size, elongate body, shallowly engraved reticulation, form of median lobe, broadly lanceolate prosternal process, larger sublateral rugose area on ventrite 6, and subparallel metacoxal lines (Fig. 50). It is distinguished clearly from *P. babai* by its color pattern.

COLLECTION CIRCUMSTANCES: Unknown.

DISTRIBUTION: Known only from the type locality. Probably endemic to Japan: Ryukyu Archipelago (Fig. 67).

Platynectes rihai sp.n.

Platynectes ? chujoi SATÔ: NILSSON 1998: 110 (descr., misident., China, Shandong).

TYPE LOCALITY: CWBS loc. 137, Tai Shan Nature Reserve, Tai'an Prefecture, Shandong Province, China.

TYPE MATERIAL: **Holotypus** ♂ (CASS): "CHINA: Shandong Taishan Nat. Res. 19.10.1994, 350m leg. JI & Wang (73) / Platynectes chujoi SATO Hendrich det. 1998 / P319 / Platynectes chujoi M.Satô det AN Nilsson-19[98] / HOLOTYPUS ♂ *Platynectes rihai* sp.n. J. ŠŤASTNÝ det. 2002 [red label with black line border]". **Paratypes:** 1 ♂,

1 ♀ "CHINA: Shandong, Taishan Nat. Res. 19.10.1994, 350m leg. JI & Wang (73) / Platynectes chujoi SATO, Hendrich det. 1998" (CLH); 2 ♂♂, 2 ♀♀ "CHINA: Shandong, Taishan Nat. Res. 19.10.1994, 350m leg. JI & Wang (73) / P162-164, 167 / Platynectes chujoi Satô det. AN Nilsson-19[98]" (NMW); 6 ♂♂, 7 ♀♀ "CHINA: Shandong Taishan Nat. Res. 19.10.1994, 350m leg. JI & Wang (73) / Platynectes chujoi SATO, Hendrich det. 1998 / P 304-317 / Platynectes chujoi Satô det. AN Nilsson-19[98]" (NMW, CJS); 1 ♂, 1 ♀ "CHINA: Shandong Qingdao City 17.10.1994 leg. JI & Wang (70) / P165, 168 / Platynectes chujoi Satô det. AN Nilsson-19[98]" (NMW); 2 ♂♂, 1 ♀ "CHINA: Shandong Taishan Nat. Res. 18.10.1994, 200m leg. JI & Wang (72) / Platynectes chujoi SATO, Hendrich det. 1998 / P159-161 / Platynectes chujoi Satô det. AN Nilsson-19[98]" (NMW); 1 ♂, 2 ♀♀ "CHINA: Shandong Taishan Nat. Res. 19.10.1994, 420m leg. JI & Wang (75) / Platynectes chujoi SATO, Hendrich det. 1998 / P156-158 / Platynectes chujoi Satô det. AN Nilsson-19[98]"; 1 ♀ "CHINA: Shandong (140), Tai Shan Nat. Res. nr. Doumugong, 350m 19.10.1994, JI & Wang / P166 / Platynectes chujoi Satô det. AN Nilsson-19[98]" (NMW). All paratypes are provided with a red, black-framed label with the following printed text: "PARATYPUS [with No. and male or female symbol] *Platynectes rihai* sp.n. J. ŠŤASTNÝ det. 2002".

DIAGNOSIS: Body medium-sized, oval, moderately convex; integument shining; yellowish-red markings on elytron distinct, basal fascia present, rarely interrupted sublaterally; preapical spot well-developed (Fig. 13). Reticulation very distinct, deeply engraved.

DESCRIPTION: Measurements (n = 10): TLwH = 5.32 - 5.65 mm (5.47±0.06 mm, holotype 5.5 mm), MW = 3.4 - 3.6 mm (3.46±0.06 mm, holotype 3.5 mm), TLwH/MW = 1.55 - 1.62 (1.58±0.02 mm, holotype 1.57).

Male. Head yellowish red; posterior area inside eyes, hair-like line along anterior eye margin, vertex, two transverse clypeal grooves and very narrow line along anterolateral clypeal margin black; labrum red-brown. Reticulation (visible at magnification 40x) deeply incised, consisting of closed meshes of irregular size and shape, somewhat elongated longitudinally; minute punctures dense and deeply incised. Microreticulation invisible. Clypeus laterally with two shallow transverse grooves; without reticulation, punctate; anterior margin with pair of sublateral foveae. Frons with two shallow punctate depressions beside inner eye margins. Antenna, labial and maxillary palpus reddish brown.

Pronotum black, with anterior angles and lateral margin yellowish red. Posterior angle, entire anterior margin and partly posterior margin of pronotum reddish brown. Posterior angles of pronotum moderately obtuse. Reticulation consisting of sometimes interrupted meshes of irregular size and shape, laterally deeply incised; minute punctures present, irregularly distributed, coarser and more deeply incised than on head and elytron. Longitudinal median suture mostly invisible. Anterior marginal row of punctures distinct mainly in middle, punctures moderate and well separated only marginally, before anterior angle sometimes confluent. Posterior row of punctures broadly interrupted medially, punctures isolated, sublaterally deeply and densely engraved. Sides moderately rounded, pronotal lateral bead fine, reaching basal 0.75.

Elytron black and shiny; yellowish-red transverse basal fascia rarely interrupted sublaterally; well-developed preapical spot and narrow yellowish band along margin before middle and in apical third, confluent with preapical spot and reaching apical angle of elytron; lateral margin distinctly bordered; sides evenly rounded and broadest in middle. Epipleura yellowish red. Reticulation strong, consisting of large, deeply incised, sometimes interrupted meshes of irregular size and shape somewhat longitudinally stretched, anteromesally disappearing; deep minute punctures present, smaller than on pronotum, irregularly distributed. Discal, lateral and sublateral striae consisting of deeply incised and sparsely distributed punctures. Subsutural stria indistinct.

Ventral surface dark brown. Legs yellowish red. Ventrites 2 and 3 laterally with yellow spot, medially darkened to black; ventrite 6 pale medially. Prosternal process moderately lanceolate, almost flat in cross section, pointed at apex, sides broadly beaded except on apex, sparsely punctate. Metaventrite with anteromedian impression not attaining level of hind margin of mesocoxae; metaventral wing relatively broad (WC/WS 3.11). Metacoxal lines raised, usually

divergent in anterior half and not reaching posterior border of metaventrite (Fig. 51). Metaventrite and metacoxal plates with very sparse, obsolete punctation; integument microsculptured anteriorly and laterally, posteriorly and medially lacking microsculpture. Metacoxal plates with some fan-wise arranged shallow grooves. Abdominal ventrites obliquely transversally microreticulate or shiny; ventrites 3 to 5 with transverse row of setiferous punctures and group of similar punctures at middle. Male ventrite 6 with sublateral rugose area with four to five long and deep grooves, medially not rugose and finely punctate; lateral beading continuous, reaching lateral angles. Legs ventrally with fine transverse reticulation; metatibia ventrally with row of oblong, shallow, sparsely distributed punctures. Pro- and mesotarsomeres 1 - 3 dilated, ventral surface with transverse rows of oval suckers; protarsal claws equal in length, 0.57 times as long as protarsomere 5; metatarsal claws subequal in length, arcuate apically, posterior claw very slightly longer and more robust than anterior one.

Male genitalia as in Figs. 27, 41.

SEXUAL DIMORPHISM: Female differs from male in the following characters: meshes of dorsal surface reticulation more deeply engraved and longitudinally stretched, surface appearing less shiny, interstices more densely punctate; ventrite 6 with sublateral rugose area large, punctures posteriorly confluent, forming shallow longitudinal wrinkles, medially not rugose and densely punctate; pro- and mesotarsomeres 1 - 3 not dilated and without adhesive setae.

VARIABILITY: Specimens examined show variation in the extent of yellow-red color pattern and intensity of the coloration of the ventral side. The reticulation slightly varies in depth, size and shape of the meshes.

AFFINITIES: *Platynectes rihai* is very close to *P. chujoi*. It can be distinguished by its large size, broad body shape, deeply engraved reticulation, form of the median lobe, narrowly lanceolate prosternal process, smaller sublateral rugose area on ventrite 6, broader metaventral wing, and divergent metacoxal lines. It is distinguished clearly from *P. babai* by its color pattern.

COLLECTION CIRCUMSTANCES: See NILSSON (1998). Found at altitudes ranging from 300 to 400 m a.s.l.

ETYMOLOGY: Dedicated to the late Dr. Pavel Říha (Prague, Czech Republic), specialist in Dytiscidae, my friend and mentor in entomology.

DISTRIBUTION: Known only from a few localities in the Shandong province, China (Fig. 67).

The *Platynectes babai*-complex

DIAGNOSIS: Elytron black with apical yellow spot and narrow lateral vitta in posterior half, without basal yellowish fascia and eight vittae.

Platynectes babai SATÔ, 1982

Platynectes babai SATÔ 1982: 3 (orig. descr.); NILSSON 1995: 56 (faun.); NILSSON et al. 1995: 365 (faun.); NILSSON 1998: 110 (descr.).

TYPE LOCALITY: "Naka-Onsen", Taiwan, China.

TYPE MATERIAL: **Holotype** ♂ (NWU), not examined.

ADDITIONAL MATERIAL EXAMINED:

C H I N A: TAIWAN: 2 ♀♀ "Taiwan, Nantou Tunpu 16.9.1992 L.J.Wang leg. / coll. HENDRICH / Platynectes babai Sato Hendrich det 1995" (CLH); 3 ♂♂ "TAIWAN: Kaohsiung Weijin Bridge 22-VIII-1995 leg. L.J.Wang / *Platynectes babai* SATÔ, 1982 det. L.J.Wang 1995" (CJS); 3 ♂♂, 1 ♀ "TAIWAN: Kaohsiung Weijin Bridge 23.VIII.1995 leg. L.J.Wang / *Platynectes babai* SATÔ, 1982 det. L.J.Wang 1995 / coll. Toledo (BS)" (CMT).

DIAGNOSTIC CHARACTERS: Measurements (n = 6): TLwH = 5.4 - 5.6 mm (5.47±0.08 mm), MW = 3.38 - 3.90 mm (3.61±0.21 mm), TLwH/MW = 1.38 – 1.61 (1.52±0.1). Body medium-sized, elongately oval, moderately convex; integument shining; coloration black with yellow markings on elytron consisting of preapical spot and narrow sublateral yellowish band in posterior third (Fig. 14).

Male. Meshes of dorsal surface reticulation deeply engraved, consisting of wide, sometimes interrupted meshes of irregular size and shape; meshes somewhat elongated, anteromesally disappearing; deep minute punctures present. Sutural row of punctures poorly visible. Metaventral wing very narrow, WC/WS 4.7. Male ventrite 6 with large sublateral rugose area with 9-11 deep rugae, medially not rugose and irregularly punctate; lateral beading continuous. Protarsal claws 0.59 times as long as protarsomere 5; metatarsal claws unequal in length, arcuate apically, posterior claw longer and more robust than anterior one.

Male genitalia as in Figs. 28, 42.

SEXUAL DIMORPHISM: Female differs from male in the following characters: meshes of dorsal surface reticulation more deeply engraved and elongate, surface appearing less shiny, interstices more densely punctate; ventrite 6 rather smooth, with large punctures and shallow longitudinal grooves; pro- and mesotarsomeres 1 - 3 not dilated and without adhesive setae; metatarsal claws unequal in length, slightly arcuate apically.

VARIABILITY: Specimens examined show variation in the extent of yellow color pattern, mainly in the size of the preapical spot. The reticulation slightly varies in depth, size and shape of the meshes.

AFFINITIES: *Platynectes babai* is very close to *P. chujoi* from the Ryukyu Archipelago and *P. rihai* from Shandong by the form of the median lobe, but it clearly differs from both species by the coloration of the elytra, which are almost black without basal yellow fascia. From *P. chujoi* it can be distinguished furthermore by its large size, elongate body, deeply engraved reticulation, and broad sublateral rugose area on male ventrite 6. *Platynectes babai* resembles *P. hainanensis* by the dorsal color pattern but it is distinguishable by the shape of the median lobe, which is very broadly rounded in the distal half in *P. hainanensis*.

COLLECTION CIRCUMSTANCES: Unknown.

DISTRIBUTION (Fig. 68): Known only from Taiwan (NILSSON et al. 1995).

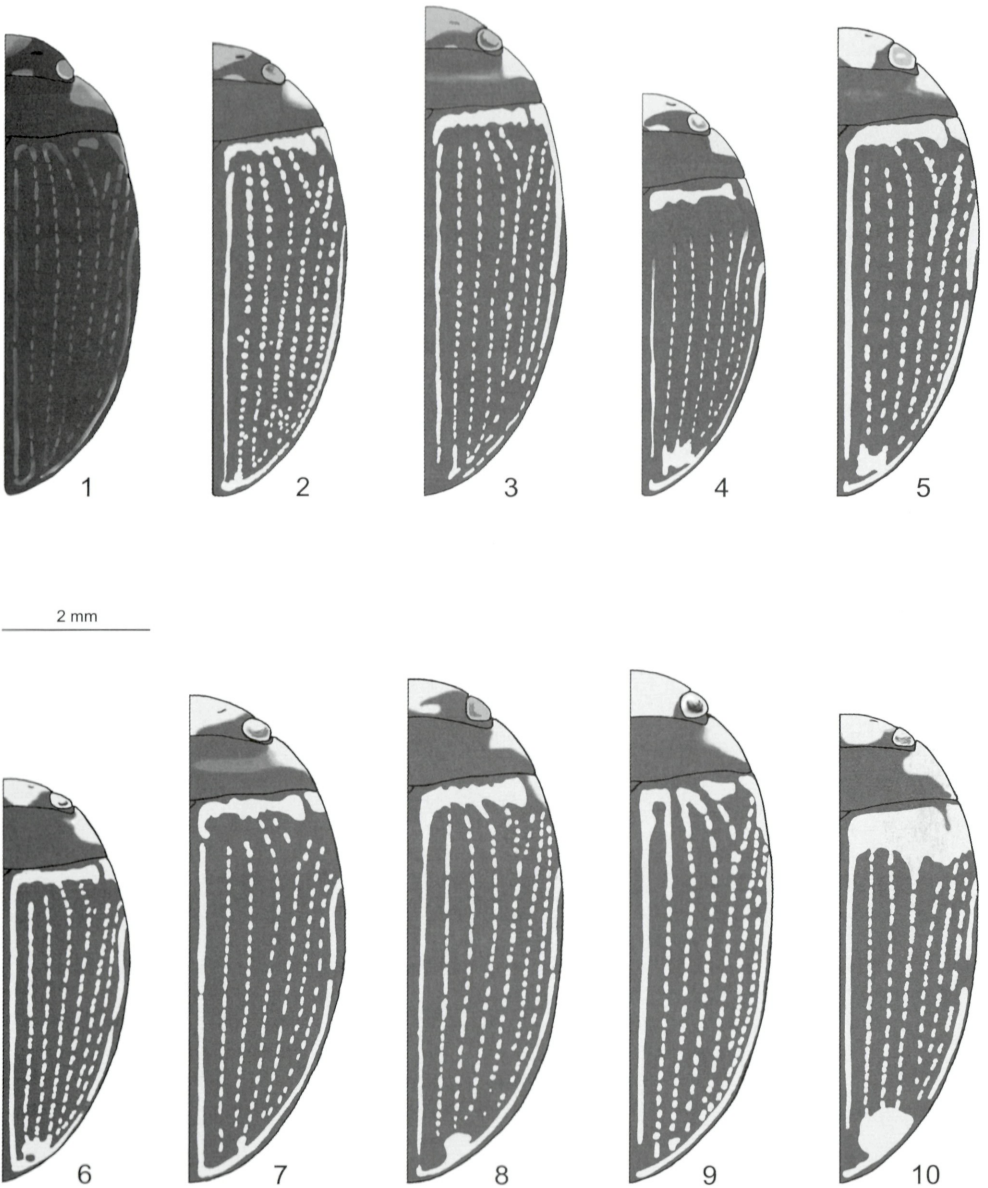
Platynectes hainanensis NILSSON, 1998

Platynectes hainanensis NILSSON 1998: 110 (orig. descr.).

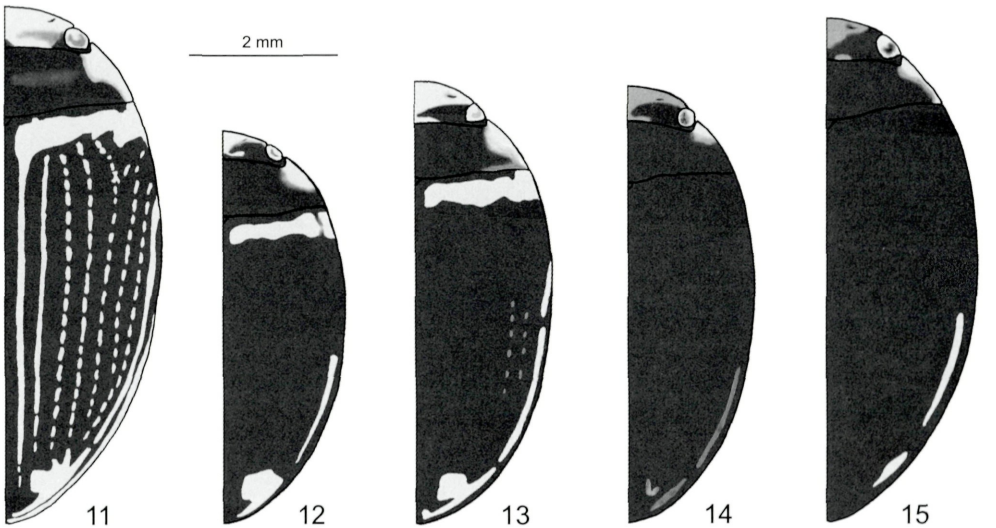
TYPE LOCALITY: CWBS loc. 194.

TYPE MATERIAL: **Holotype**: ♂ (CASS), not examined. **Paratype** ♂ "CHINA: Hainan (208) Jianfeng Mts., 800m 5km E Tian Chi 23.1.1996, leg. Jäch / P 250 / Platynectes hainanensis n. sp.AN Nilsson 1998 [printed red label]" (NMW), examined. Eleven additional paratypes are deposited in CLH, CNU and NMW.

A thorough description of this species was provided by NILSSON (1998). A distinct species, distinguished clearly by its dorsal color pattern (Fig. 15) and by the penis being broadly rounded in the distal half (Fig. 29). Parameres as in Fig. 43. For separation from *P. babai* see the key and description of both species.



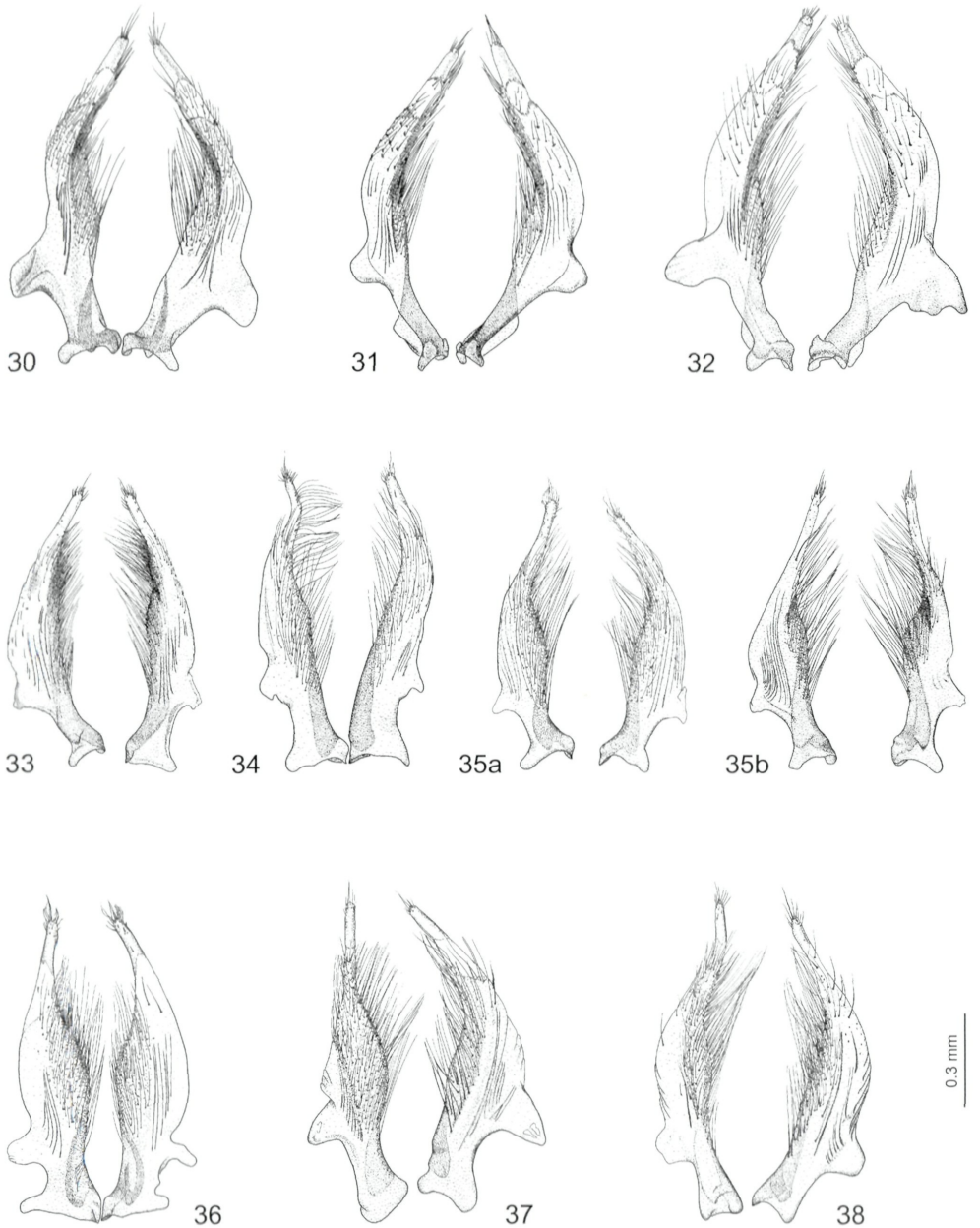
Figs. 1 – 10: Body outlines and color patterns: 1) *Platynectes wewalkai*, 2) *P. kashmiranus kashmiranus*, 3) *P. kashmiranus lemberki*, 4) *P. dissimilis*, 5) *P. major*, 6) *P. gemellatus*, 7) *P. nanlingensis*, 8) *P. javanus* (male, specimen from Thailand), 9) *P. javanus* (female, specimen from Java), 10) *P. ranongensis*.



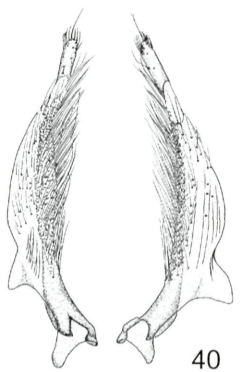
Figs. 11 – 15: Body outlines and color patterns: 11) *Platynectes mazzoldii*, 12) *P. chujoi*, 13) *P. rihai*, 14) *P. babai*, 15) *P. hainanensis*.
Figs. 16 – 18: Median lobes of aedeagi in lateral view: 16) *Platynectes wewalkai*, 17) *P. kashmiranus kashmiranus*, 18) *P. kashmiranus lemberki*.

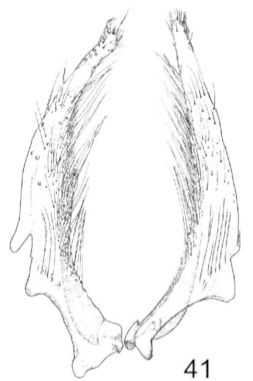
Figs. 19 – 23: Median lobes of aedeagi in lateral view: 19) *Platynectes dissimilis*, 20) *P. major*, 21) *P. gemellatus* a) specimen from Fujian, b) specimen from Taiwan, 22) *P. nanlingensis*, 23) *P. javanus*.

Figs. 24 – 29: Median lobes of aedeagi in lateral view: 24) *Platynectes ranongensis*, 25) *P. mazzoldii*, 26) *P. chujoi*, 27) *P. rihai*, 28) *P. babai*, 29) *P. hainanensis*.

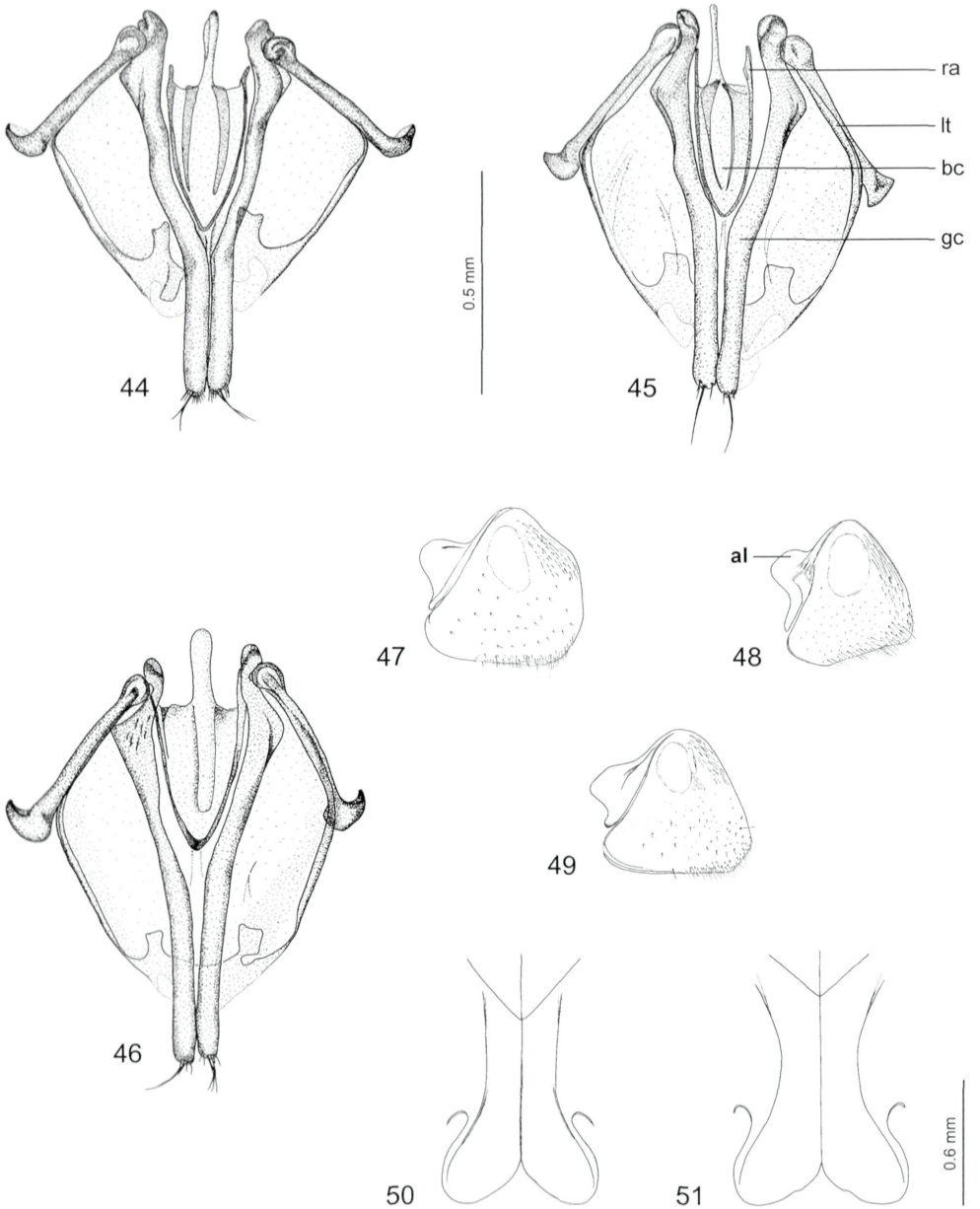


Figs. 30 – 38: Parameres: 30) *Platynectes wewalkai*, 31) *P. kashmiranus kashmiranus*, 32) *P. kashmiranus lemberki*, 33) *P. dissimilis*, 34) *P. major*, 35) *P. gemellatus* a) specimen from Fujian, b) specimen from Taiwan, 36) *P. nanlingensis*, 37) *P. javanus*, 38) *P. ranongensis*.

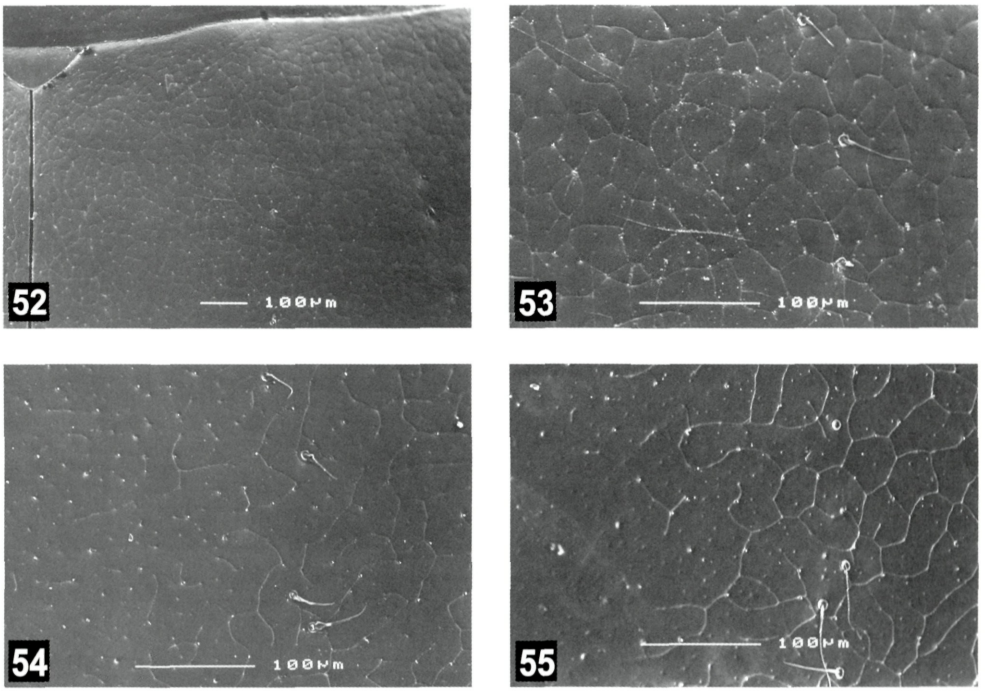




Figs. 39 – 43: Parameres: 39) *Platynectes mazzoldii*, 40) *P. chujoi*, 41) *P. rihai*, 42) *P. babai*, 43) *P. hainanensis*.



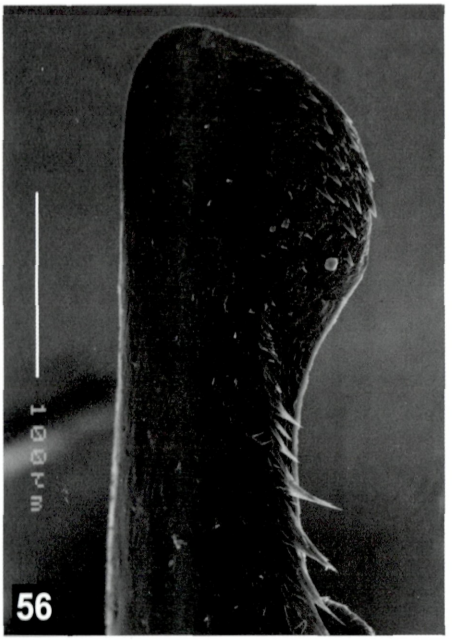
Figs. 44 – 51: 44 – 46) Female genitalia (ra = ramus, lt = laterotergite, gc = gonocoxa, bc = bursa copulatrix): 44) *Platynectes wewalkai*, 45) *P. kashmiranus kashmiranus*, 46) *P. kashmiranus lemberki;* 47 – 49) gonocoxosternite (al = anterior lobe of gonocoxosternite): 47) *P. wewalkai*, 48) *P. kashmiranus kashmiranus*, 49) *P. kashmiranus lemberki*; 50 – 51) metacoxa: 50) *P. chujoi*, 51) *P. rihai.*

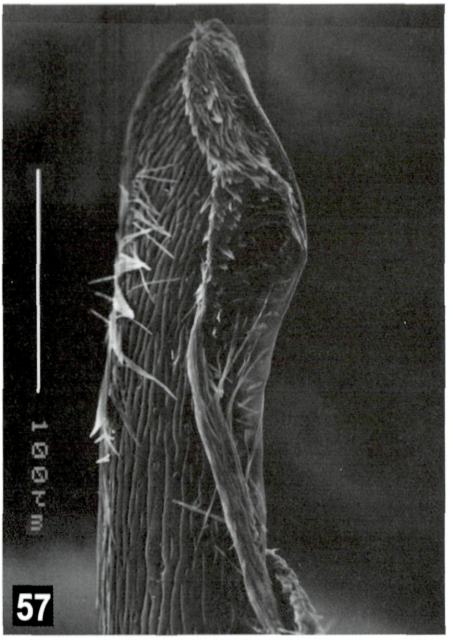


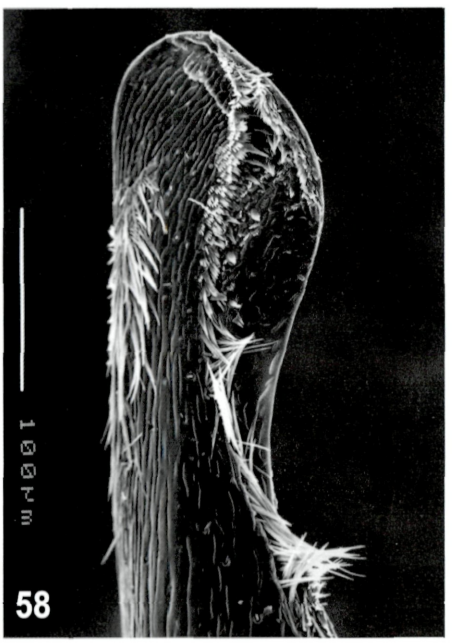
Figs. 52 – 55: Right elytron, meshes of reticulation: 52, 53) *Platynectes wewalkai*, 54) *P. kashmiranus kashmiranus*, 55) *P. kashmiranus lemberki.*

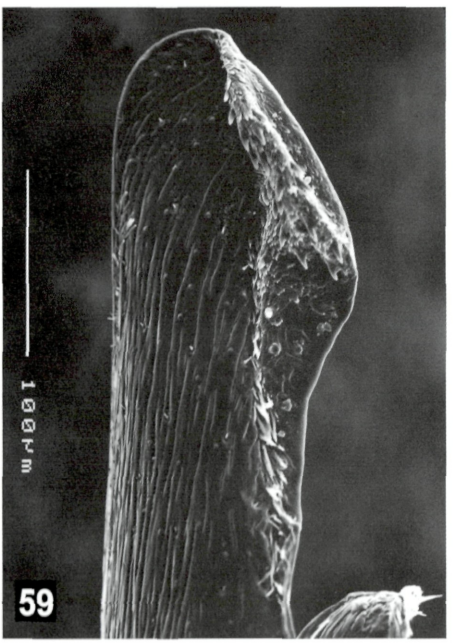
Discussion

At present, 13 species of *Platynectes* subgenus *Gueorguievtes* (with obtuse pronotal posterior angle) are reliably known from southeastern Asia. However, the available material suggests that several other undescribed species may be "discovered" in future, particularly in Mainland China. Nine of these 13 species (*P. kashmiranus*- and *P. dissimilis*-complexes) show an extremely similar dorsal color pattern: a yellow basal fascia and eight vittae formed by series of dots. This contrasting marking is seemingly a very successful adaptation for sunlit lotic habitats with sandy, gravelly or stony bottom that may occur both in open country (mountain streams) and along forest edges. On the other hand, specimens living in completely shaded forest streams with stony bed are characterised by contrasting coloration, consisting of eight to ten large yellow spots on the black ground (HENDRICH & BALKE 2000, Šťastný, personal observations). The transition zone between the Palearctic and Oriental Regions, above all in southwestern China (4 species) and mountainous areas of Myanmar, Thailand and Laos (4 species), seems to be the distribution centre of the *P. kashmiranus*- and *P. dissimilis*-complexes. Subsequent spread of species from this centre most likely has been prevented by various natural conditions (only *P. dissimilis* reaches further northeast) and barriers formed by high mountain ranges and deep valleys of large rivers such as Salween, Mekong and Jang Jiang (only *P. kashmiranus kashmiranus* and *P. wewalkai* are distributed further northwest). The latter two species exhibit rather different altitudinal preferences: *P. kashmiranus kashmiranus* is widespread in the Himalaya, ranging from Afghanistan to Bhutan and found at altitudes between 730 to 2700 m a.s.l., while *P. wewalkai* is known only from several localities in Nepal situated at relatively high altitudes between 1400 to 2400 m a.s.l.

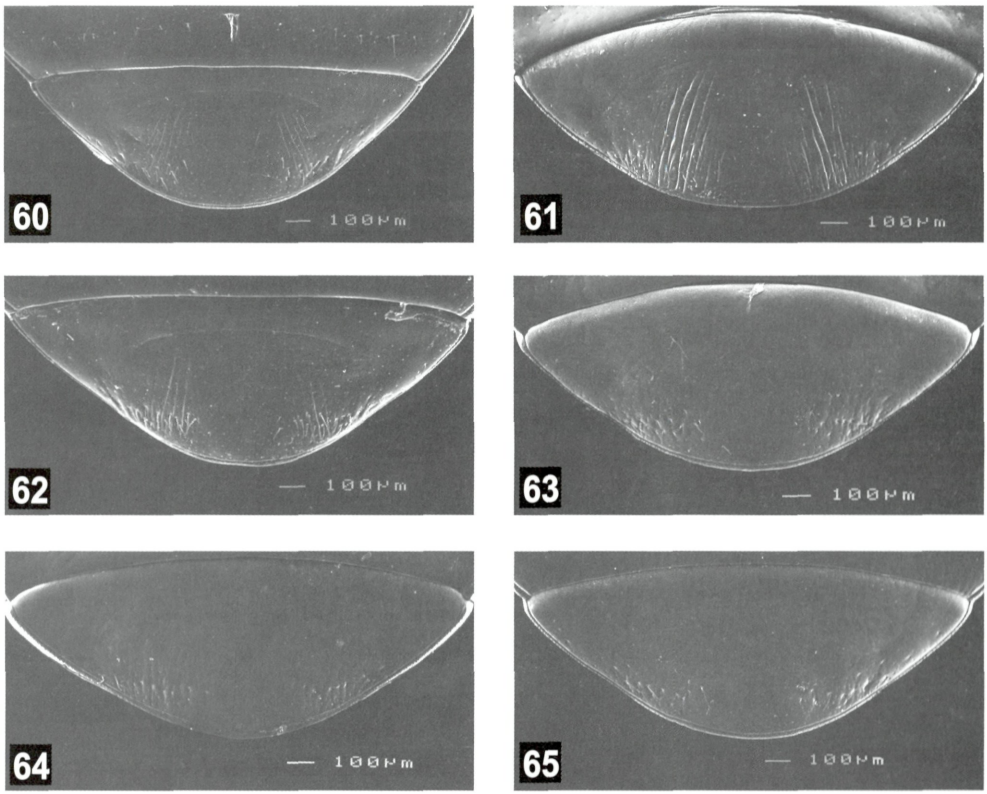








Figs. 56 - 59: Median lobe of aedeagus (dorsoapical view): 56) *Platynectes wewalkai*, 57) *P. kashmiranus kashmiranus* (Utttar Pradesh), 58) *P. kashmiranus kashmiranus* (Nepal), 59) *P. kashmiranus lemberki.*



Figs. 60 – 65: Ventrite 6: 60 – 62 male: 60) *Platynectes wewalkai*, 61) *P. kashmiranus kashmiranus*, 62) *P. kashmiranus lemberki*; 63 – 65 female: 63) *P. wewalkai*, 64) *P. kashmiranus kashmiranus*, 65) *P. kashmiranus lemberki*.

Unfortunately we have no records from the easternmost part of the Himalaya due to relatively poor entomological investigation. Representatives of *P. babai*- and *P. chujoi*-complexes inhabit completely isolated areas of distribution: Hainan (*P. hainanensis*), Ryukyu Archipelago (*P. chujoi*), and Taiwan (*P. babai*). The distribution of *P. rihai* represents the northeastern limit of *Platynectes* distribution in the Palearctic Region.

NILSSON (1998) briefly discussed the relevance of the body shape and color pattern for the identification of species within the *P. dissimilis*-complex. He stated that characters such as the presence or absence of the preapical spot or the anterior bifurcation of the fifth elytral vitta do not provide a sound basis for identification. Nevertheless, some color patterns are useful for identification, e.g. the shape of the yellow basal elytral fascia (*P. mazzoldii*, *P. ranongensis*) and the extent of the black interocular spot on the head (*P. wewalkai*, *P. major*, *P. dissimilis*, *P. gemellatus*). However, these patterns can only be used along with other diagnostic characters, the most important being the shape of the median lobe.

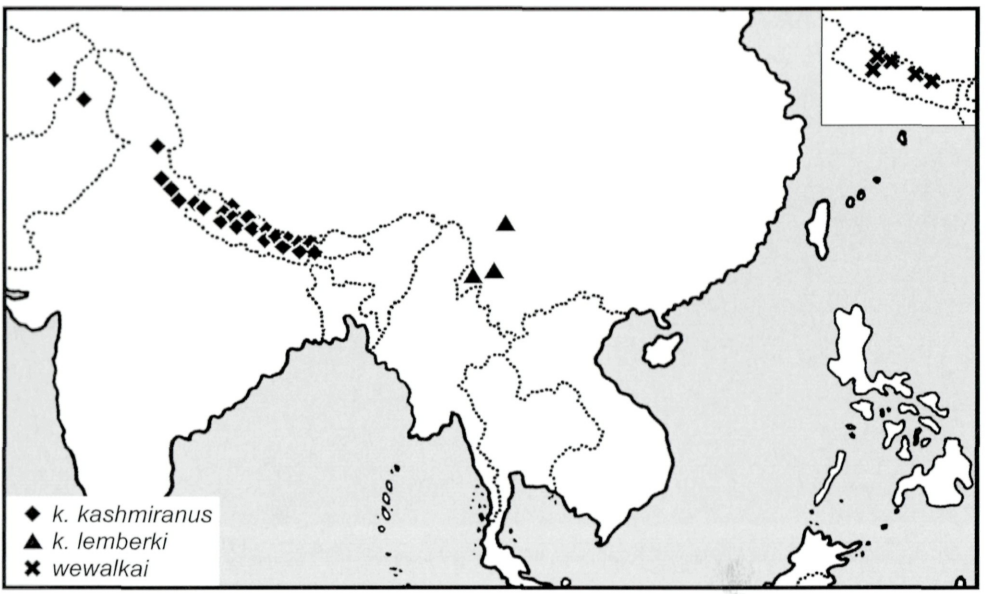


Fig. 66: Geographical distribution of: *Platynectes wewalkai*, *P. kashmiranus kashmiranus*, *P. kashmiranus lemberki*.

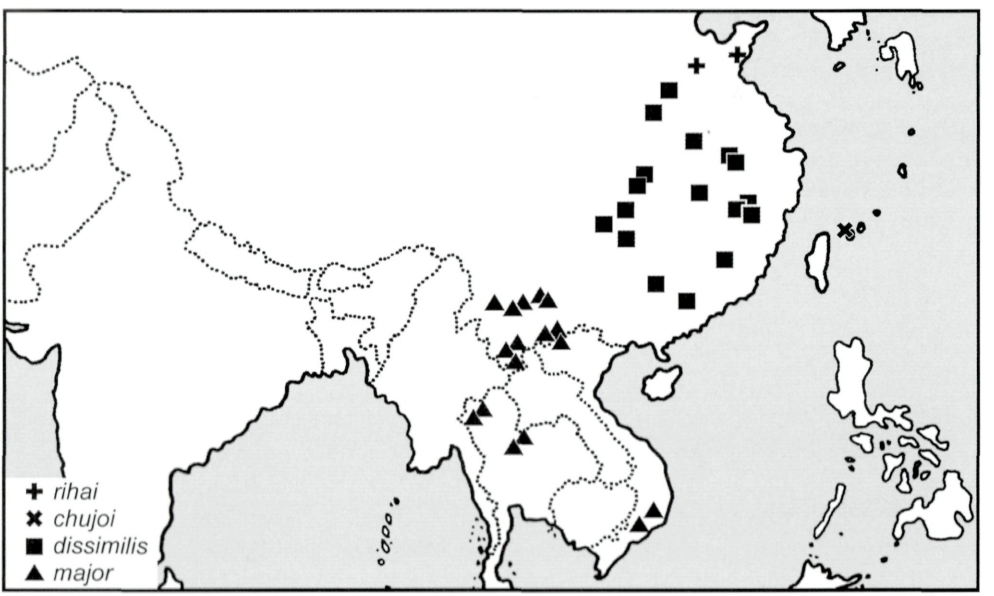


Fig. 67: Geographical distribution of: *Platynectes dissimilis*, *P. major*, *P. chujoi*, *P. rihai*.

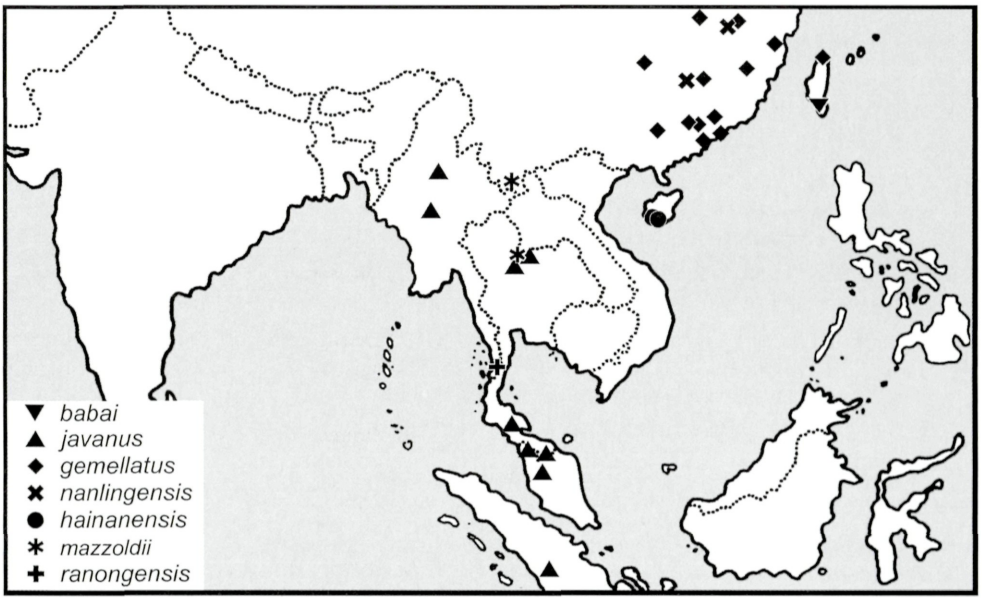


Fig. 68: Geographical distribution of: *Platynectes gemellatus P. nanlingensis*, *P. javanus*, *P. ranongensis*, *P. mazzoldii*, *P. babai*, *P. hainanensis*.

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