

**A Contribution to knowledge of the subfamily Panagaeinae Hope, 1838
from Asia and Australia.
Part 1. Revision of the genus *Dischissus* Bates, 1873 (Coleoptera: Carabidae)**

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Abstract. The eastern Palaearctic, Oriental and Australian genus *Dischissus* Bates, 1873 is revised and the following new species-level taxa are described: *Dischissus hajeki* sp. nov. (Laos, Malaysia: Perak, southern Thailand), *D. hesperos* sp. nov. (Indonesia: Sumatra), *D. indragiriensis* sp. nov. (Indonesia: Sumatra), *D. kalimantanensis* sp. nov. (Indonesia: Kalimantan), *D. notulatus pantarensis* ssp. nov. (Indonesia: Nusa Tenggara Prov.: Pantar I.), *D. notulatus queenslandicus* ssp. nov. (Australia: Queensland), and *D. vietnamensis* sp. nov. (Vietnam). *Dischissus begdugulensis* (Kirschenhofer, 2011) comb. nov. (Indonesia: Bali) is transferred from the genus *Craspedophorus*. *Dischissus tsengjialiae* Šustek, 1996 is regarded as a junior synonym of *Dischissus mirandus* Bates, 1873. *Dischissus phuongensis* Kirschenhofer, 1994 stat. nov. is regarded as a subspecies of *Dischissus notulatus* (Fabricius, 1801) rather than a full species. Neotype is designated for *Dischissus notulatus* ssp. *sumatranus* (Dohrn, 1891). The following new species group is recognized: *Dischissus guttiferus*. A key to the *Dischissus notulatus* group, a key to the Sumatran species of *Dischissus*, and a catalogue of Panagaeine species inhabiting Sumatra are presented.

INTRODUCTION

This work is concerned about carabid beetles of the genus *Dischissus* Bates, 1873 (Coleoptera: Carabidae: Panagaeinae) of Palearctic, Oriental and Australian Regions. Although one of us (Kirschenhofer) recently described a number of species from southeast Asia (see References), the taxa of this area still remain inadequately known. In this article we describe five new species and two new subspecies of the genus *Dischissus*, which we divide into three species groups. One new species cannot be presently assigned to a group because of our inadequate knowledge of the genus. The species groups are probably not monophyletic and are intended only to indicate morphological similarity and geographic proximity of the species to facilitate orientation in this heterogeneous genus. A subspecies of *Dischissus notulatus* (Fabricius, 1801) was for the first time collected outside of the east Palearctic and Oriental Regions, in Queensland, Australia.

MATERIAL AND METHODS

Repositories:

- BMNH The Natural History Museum, London, United Kingdom (C. Gillett);
CDW private collection of D. W. Wrase, Berlin, Germany;
CMH private collection of M. Häckel, Praha, Czech Republic;
CRS private collection of R. Sehnal, Unhošť, Czech Republic;
MIZW Museum & Institute of Zoology - PAN, Warszawa, Poland (T. Huflejt);
MSNG Museo Civico di Storia Naturale “Giacomo Doria”, Genova, Italy (R. Poggi);
NMPC National Museum, Praha, Czech Republic (J. Hájek);
NMWC Naturhistorisches Museum Wien (M. Jäch, H. Schillhammer);
SMNS Staatliches Museum für Naturkunde, Stuttgart, Germany (W. Schawaller);
ZMHB Museum für Naturkunde der Humboldt-Universität, Berlin, Germany (B. Jaeger);
ZMUC Statens Naturhistoriske Museum - Københavns Universitet, Denmark (O. Martin);
ZSMC Zoologische Staatssammlung München, Germany (M. Balke, M. Baehr).

SYSTEMATIC PART

Dischissus Bates, 1873

Dischissus Bates, 1873: 243 (type species: *D. mirandus* Bates, 1873)

This heterogeneous genus contains groups of alike-looking species as well as a number of species whose morphological characters do not permit assignments to known groups. It is distinguished from the genus *Craspedophorus* by a dentate excision of the penultimate (fourth) tarsomeres in both sexes, which is highly variable in some species. In a majority of species the excision hardly reaches over the midlength of the first tarsomere.

KEY TO SPECIES GROUPS OF THE GENUS *DISCHISSUS* (eastern Palearctic, Oriental and Australian Regions)

- 1 Paraglossae reach in front of glossa and increase slenderness and length of ligula (in contrast to *Euschizomerus*, *Panagaeus*, *Peronomerus*, *Trichisia*). Elytra black, each with two yellowish-red maculae (in contrast to *Cintaroa*). Tarsi same in both sexes (in contrast to *Microcosmodes* and *Tinoderus*). Fourth (penultimate) tarsomere usually not split more than others; if split more (*Craspedophorus sapaensis* and *Craspedophorus sublaevis* species groups) then split does not exceed one-half tarsomere length. .. *Craspedophorus* Hope, 1838
 - Fourth tarsomere split more than others, split exceeds one-half tarsomere length. *Dischissus* Bates, 1873
- 2 Smaller species (6.9-7.9 mm). *Dischissus notulatus* species group (Kirschenhofer 2000)
 - Larger species (11.0-18.0 mm). 3
- 3 A slightly smaller species (11.0-11.3 mm). Pronotal margins complete but weakly elevated, toward posterior angles emarginate, base always with a pit-shaped impression. Sumatra. *D. hesperos* sp. nov.
 - Larger species (11.0-18.0 mm). Pronotum black, without lighter color laterally. Humeral macula reaches from 5th interval to margin, preapical macula reaches from 5th to 8th interval. 4

- 4 Slightly larger species (11.0-13.5 mm). Pronotal margins complete and distinctly elevated, base with a well developed thin furrow on each side. *D. guttiferus* species group nov.
- Larger species (16.0-18.0). Pronotum weakly convex on disc, wider than long, maximum width at or behind midlength, at widest point margin often obliquely angular; margins complete, with a broad rim accompanied on inner side by a furrow. Basal impressions wide and deep, either pit- or groove-like, with punctures and rugae at bottom. *Dischissus mirandus* species group (Kirschenhofer 2000)

***D. mirandus* species group**

Apart from the type species *D. mirandus* Bates, 1873, we also place here the Chinese *D. hainanensis* Tian et Chen, 1997. Kirschenhofer (2000: 353) established this group for *D. mirandus* and *D. tsengjialiae*. The latter is hereby synonymized with the nominotypical species. The species of this group inhabit the eastern Palearct including eastern China, southern Japanese islands and other islands in the Japan, East China and South China Seas. The southernmost limit of distribution is Hai-Nan Island in the South China Sea (*D. hainanensis*).

Characters. Relatively large species, length 16.0-18.0 mm. Body narrowly ovoid. Elytra always with two yellowish-red maculae.

Coloration. Head, pronotum and elytra black, slightly glossy, sides of elytra usually setose, on each elytron always with two large yellowish-red maculae extending from 2nd, 3rd or 4th interval to margin and even on anterior part of epipleura. Mandibles, palps, antennae and legs black. Venter black, glossy, densely setose.

Head. Mandibles rather short and thick. Front of labrum arcuate, with margin more-or-less complete. Clypeus convex upward, smooth, without setae. Frontal grooves wide, anteriorly rather deep, reaching or slightly exceeding level of anterior edge of eyes and laterally bordered by a smooth, elevated rim. Middle of frons sparsely and coarsely punctured, eyes strongly convex. Temples either obliquely narrowing toward neck or not developed. Neck punctured or smooth. Anteromedial process of mentum simple, wide, slightly excised. Epilobes medially always narrowing toward anterior margin, toward oblique anterior corners weakly rounded. Inner sides of femora densely covered by yellowish setae. Tibiae shorter, with distal ends densely setose. Ventral sides of meso- and metatarsomeres densely covered by yellow setae.

Pronotum weakly convex on disc, wider than long, maximum width at or behind midlength, at widest point margin often obliquely angular. Surface densely and coarsely punctured, with occasional rugae. Margins complete, with a broad rim accompanied on inner side by a furrow. Basal impressions wide and deep, either pit- or groove-like, with punctures and rugae at bottom.

Elytra wide, convex, either posterolaterally widening or evenly oval. Basal rim incomplete, medial of fifth interval strengthened but laterally merging with margin. Humeri weakly slanted. Elytral margins slightly tuberoso before apex, narrowing toward apex, with apical end of suture always rimmed or briefly pointed. Striae clearly impressed and finely punctured. Intervals weakly convex, irregularly microstriate or densely punctured.

Venter densely, coarsely punctured and setose throughout. Sternites less punctured medially; metepisterna medially longer, anteriorly wider, posteriorly weakly narrowed and coarsely punctured.

Dischissus mirandus Bates, 1873

(Figs 11, 27, 37)

Dischissus mirandus Bates 1873: 244 (type species; type loc. „Nagasaki, Japan“). Chaudoir 1878: 152; Csiki 1929: 363; Andrewes, 1930b: 152; Jedlička 1965: 7; Habu 1978: 34, 75; Xie et Yu 1991: 162; Šustek 1996: 554; Tian et Chen 1997: 409; Kirschenhofer 2000: 353; Baehr 2003: 447; Häckel et Farkač 2012: 84.

Dischissus tsengjialiae Šustek, 1996, **syn. nov.**

Šustek 1996: 551 (type loc. „China, Hunan: Long Pou Pu near Zhu Zhou“). Kirschenhofer 2000: 325, 354; Baehr 2000: 447; Häckel et Farkač 2012: 84.

Material examined: 1♂, 1♀ labelled: „Japan, Ibaragi pref., Koge, 13.ii.1972“ (NMWC); 1♂: „Japan, Fujioka, Tochio pref., 04.viii.75“ (NMWC); 1♀: „Japan, Fujioka, Tochigi pref. 08.75“ (NMWC); 1♀: „Far East Asia Japan, Konzushima is. vii.1984, Tokyo Met.“ (Fig. 11CMH); 1♂: „China, Shanghai, 31°13'N 121°25'E, 12.iv.1924, leg. Eigin Suenson leg.“ (ZMUC); 1♀: „China, Hong Kong, 22°20'N 113°55'E, 23.vi.1924, leg. Eigin Suenson leg.“ (ZMUC); 1♀: „China: E Sichuan, 30 E Hanchuan, 29.ix.96, Beneš & Štěpař leg.“ (CDW); 1♂: „China, Guangdong prov., W of Qixing. 1.-3.v.2011, Heishiding (stream; pools), forested stream valley; at light). 23°27.9'N, 111°54.3'E, 190 m, M. Fikáček & J. Hájek leg.“ (NMPC).

Note. *D. tsengjialiae* Šustek, 1996 was based on a single female. Šustek (1996: 552) illustrated differences in pronota between *D. tsengjialiae* and *D. mirandus* (arcuate emargination in front of posterior angles Fig. 11p in Plate 6). This variable feature is also noticeable in Japanese populations, whereas exoskeletal characters and pattern of elytral maculation are the same in the Japanese and Chinese specimens (i.e. the nominotypical form).

Description (part, see Šustek 1996: 552). „Length 17.0-17.9 mm, width 6.9-7.1 mm. Proportions: Pronotum 1.29-1.44x wider than long, 1.62-1.71x wider than head; elytra 1.42-1.55x wider than pronotum“ (aedeagus in lateral view: Fig 37 in Plate 7).

Distribution. A species known from southern Japan: southern Honshu, Kyushu, Tsushima; China: provinces Fujian, Guangdong, Guangxi, Guizhou, Hunan, Jiangxi, Sichuan, Shanghai, Shanxi, Zhejiang. The exact limit of distribution in China is not known.

Dischissus hainanensis Tian et Chen, 1997

(Fig. 38)

Dischissus hainanensis Tian et Chen 1997: 409 (type loc. „China, Hainan, Wuzhishan Mountain“). Baehr 2003: 447; Häckel et Farkač 2012: 84.

Note. Description (part, see Tian et Chen 1997: 409). „Length 16.0 mm, width 6.5 mm“

Differential diagnosis. According to the description (Tian & Chen 1997: 409), this species differs from *D. mirandus* as follows: „Body slightly smaller and narrower, anterior (humeral) elytral macula of *D. mirandus* reaches from 3rd interval to the margin and its front half extends to the epipleuron, that of *D. hainanensis* reaches from 5th interval to the margin and

also extends to the epipleura. Differences in the structure of the aedeagus in lateral view: the median lobe of *D. hainanesis* (Fig. 38 in Plate 7) is more slender, the ventral margin vanishes toward the middle, toward the distal end slightly narrows and is not curled. In *D. mirandus* the median lobe is in lateral view more strongly curved and its ventral margin is strongly curled (Fig. X11 in Plate 7). The apex is more extended and weakly curled.“ Figures of Tian et Chen (1997: 407).

Wuzhishan is a mountain in the south-central part of the Chinese island (province) of Hainan; it is also the capital of Qióngzhōng Lízú Miáozú Zìzhìxiàn (autonomous county of the Li and Miao people).

This species is based on a single pair. We have not seen any specimens.

***Dischissus notulatus* species group**

This is a heterogeneous group of morphologically close species. The group (probably not monophyletic) now includes five species, one of them with four subspecies: *D. borneensis* Frivaldszky, 1883, *D. indragiriensis* sp. nov., *D. japonicus* Andrewes, 1933, *D. notulatoides* Xie et Yu, 1991, *D. notulatus notulatus* (Fabricius, 1801), *D. notulatus pantarensis* ssp. nov., *D. notulatus phuongensis* Kirschenhofer, 1994, *D. notulatus queenslandicus* ssp. nov. and *D. notulatus sumatranus* (Dohrn, 1891). These taxa, often described without exact localities, are according to currently available data distributed over vast areas of eastern Palearct, Southeast Asia and northeastern Australia (Cape York). Described below are *D. indragiriensis* sp. nov. from Sumatra, *D. notulatus pantarensis* ssp. nov. from Alor Islands, Indonesia, and *D. notulatus queenslandicus* from Cape York in Queensland, Australia. *D. phuongensis* is demoted to subspecies of *D. notulatus*. *D. sumatranus*, described by Dohrn (1891: 253) as *Panagaesus* and synonymized by Baehr (2003: 447) with *D. notulatus*, is regarded as a subspecies of *D. notulatus* sympatric with *D. indragiriensis*.

Characters. (Valid only for eastern Palearctic, Oriental and Australian species). Smaller species, length 6.0-9.5 mm.

Coloration. Head and pronotum black to brownish black, around posterior pronotal angles reddish yellow. Each elytron always with two yellowish-red maculae that reach laterally eighth or ninth interval and often margin, and medially third, fourth or fifth interval; preapical macula does not reach apex. Antennae black or brownish black; tip of terminal palpomere yellowish. Legs black (*D. borneensis*) or yellowish red, or femora yellowish red and tibiae and tarsi darker. Dorsum smooth and densely covered by semierect setae. Venter black or brownish black. Pronotal and elytral epipleura lighter, yellowish.

Head. Eyes large, strongly convex; temples short, together with eyes converging toward neck; frons and vertex coarsely rugose. Clypeus and neck smooth. Basal antennomere wider than others, columnar, somewhat shorter than two following antennomeres combined.

Pronotum wider than long, coarsely rugose nearly throughout, narrowing forward in straight line or obliquely. Margins complete but indistinctly rimmed. Posterior angles usually sharp, anterior angles not extending forward. Anterior and basal margins nearly straight.

Elytra convex, not widening posteriorly, toward apex evenly rounded. Basal rim incomplete, widening to fifth interval lateral of which merges with basal margin. Humeri

distinct, often weakly slanted. Striae deep, coarsely and densely punctured. Scutellary striole rather long and distinct, opening into a large basal pit. Intervals convex, punctured and often rugate. Seventh interval in front of apex elevated into a keel.

Venter. Anteromedial process of mentum absent, epilobes rounded forward. Metepisterna medially slightly longer than wide, posteriorly weakly angular. Pro-, meso- and metasternum as well as metepisterna densely and coarsely punctured. Ventrites 1-5 punctured laterally more coarsely than medially and covered by rather long setae; last ventrite punctured less coarsely and somewhat rugate.

***Dischissus borneensis* Frivaldszky, 1883**

Dischissus borneensis Frivaldszky 1883: 134 (type loc. „Insula Borneo ad fluvium Simunjon“). Andrewes, 1930b: 152; Stork 1986: 13; Häckel et Farkač 2012: 84.

Note. Description (part, see Frivaldszky 1883: 134). „Long.: 9,0 mm [width not given]. Niger, griseo-pilosus; antennis dimidii corporis longitudine, ab articulo quarto brunneis; pronoto rude rugoseque punctato, subopaco, angulis posticis dente parvo instructis; elytris subnitidis, crenato-striatis, maculis duabus luteis ornatis; pedibus nigris.“

Differential diagnosis. Differences from *D. notulatus* (ex descriptione): „A *Dischisso quadrinotato* et *longicorni* pronoto unicolore, pedibusque nigris distinctus.“ Illustrations cited by Frivaldszky (1883: 134) as in plates I and/or II were not found.

We have not seen this species and place it in the group because of its similarity to other species emphasized by the describer. These species are *D. quadrinotatus* (Motschulsky, 1865: 338) described as *Panagaeus* and *D. longicornis* (Schaum, 1863: 84) described as *Craspedophorus*. Both taxa are currently regarded as synonyms of *D. notulatus* (Baehr 2003: 447).

Remarks. Simunjon River is a small branch of the Sadong River entering the Sadong in the Simunjan District near the town of Simunjan located in western Sarawak State (part of east Malaysia in northern Borneo).

***Dischissus indragiriensis* sp. nov.**

(Figs 2, 17, 31)

Type material. Holotype (♂) labelled: „SE Asia W-Indonesia, NE-Sumatra Is.: Indragiri Hilir Regency, III-2006, coastal area lgt. S. Jákl“ (Fig. 2, CMH).

Description. Length 6.9 mm, width 2.7 mm. Proportions: Pronotum 1.28 x wider than long, 1.58 x wider than head; elytra 1.38 x wider than pronotum.

Coloration: Head, pronotum and elytra black, glossy, covered by semierect yellow setae. Pronotum from midlength to base with brownish hue. Each elytron with two yellowish red maculae covering third to seventh intervals, preapical macula slightly shortened in third interval. Venter black, densely setose, epipleura not with lighter hue. All palpomeres blackish brown, tip of terminal palpomere lighter. Antennae black. Legs yellowish red throughout.

Head with eyes strongly convex and temples short but somewhat different from *D. notulatus*. Frons more convex, matte and sparsely punctured, vertex with only a few scattered coarse punctures (in *D. notulatus* more densely and finely punctured).

Pronotum (Fig. 17 in Plate 4) widest behind midlength, from there narrowing toward anterior angles. Disc more convex than lateral parts and base. Sagittal line more deeply impressed near midlength. Margins complete, lateral parts of base briefly emarginate.

Elytra slightly different from *D. notulatus*. Convex, elongately oval, humeri inclined forward and somewhat slanted. Basal rim stronger at 5th interval, lateral of there gradually merging with anterior margin. Margins in front of apex weakly tuberoso, apex weakly pointed. Striae deeply impressed and strongly punctured. Intervals convex, with two to three rows if indistinct punctures and one row of coarse punctures adjacent to stria.

Characters of all species in the *D. notulatus* group are given in the key.

Etymology. Named after the locality. Indragiri Hilir is a regency (kabupaten) of Riau, Sumatra, Indonesia. It has an area of 11,605.97 km² and population of 662,305. The regency is divided into 20 subdistricts (kecamatan). The seat of the regency is located at Tembilahan.

Distribution. Known only from the type locality.

Dischissus japonicus Andrewes, 1933

(Figs 3a, b, 18, 32)

Dischissus quadrinotatus Bates 1873: 244 [nec Motschulsky] (type loc. „Kushiu and Nipon“). Chaudoir 1879: 152 [nec Motschulsky]; Andrewes 1930b: 153 (partim).

Dischissus japonicus Andrewes 1933a: 5, nom. nov. for *D. quadrinotatus* Bates 1873: 244. Habu et Baba 1959: 48; Jedlička 1965: 8; Tian et Chen 1997: 409; Kirschenhofer 1994: 1046; Kirschenhofer 2000: 325, 357; Baehr 2003: 447; Häckel et Farkač 2012: 84.

Material examined: 1♀ labelled: „Japan Tsushima, ex coll. A. Jedlička“ (Fig. 3a in Plate 1, CMH); 1♀: „E Asia Ryukyu Isl. (Japan), Okinawa Pref.: Ishigaki Is. Kawayoshihara X - 1973, lgt. T. Takamashi“ (CMH); 1♀: „China (S Gansu) Hanzhong City (at light) 4.viii.2012, D. W. Wrase“ (Fig. 3b in Plate 1, CDW).

Note. Andrewes (1933: 5) wrote about *Dischissus (Peronomerus) quadrinotatus* (Motschulsky): „A single example in rather a broken state. Although once again „Ind. or.“ is given as the locality, later authors have nevertheless identified Motchulsky's species with a Japanese insect. Bates in this case seems to be responsible for the misidentification; Chaudoir followed him, though without referring to Bates paper, and the mistake was reproduced in my own Catalogue. I have now seen all the types of this much described insect, and the other cases of synonymy have already been dealt with. The species is found in India, Burma, the Malay States, Sumatra, and Southern China. The above considerations will leave *D. quadrinotatus*, Bates and Chaudoir (not Motchulsky), briefly described by the former and more fully by the latter, without any name; I propose for it *japonicus*, nom. n., the type of which is in the British Museum.“

Tian et Chen (1997: 409) reported the Japanese species also from China: Guangdong (Guangzhou, Wengyuan, Xingfong). These data indicate that the listed populations must

be regarded as *D. n. notulatus*. In contrast, the occurrence in northern China (Gansu) corresponds to the morphology of the Japanese (nominotypical) populations of *D. japonicus* (Fig. 3b in Plate 1). Although we do not have accurate information on the distribution of this species in China, we regard the populations north of the Qinghai-Gansu-Ningxia-Shanxi-Hebei-Shandong line as *D. japonicus*, and those south of that line as *D. notulatus*.

Distribution. Species known from Japan and northern China: Gansu Province.

***Dischissus notulatoides* Xie et Yu, 1991**

(Fig. 30)

Dischissus notulatoides Xie et Yu 1991: 162 (type loc.: „Yunnan, Menglun“). Kirschenhofer 2000: 359; Baehr 2003: 447; Häckel et Farkač 2012: 84; Häckel et Farkač 2013: 251.

Note. Description (part, see Xie et Yu 1991:162). „Long: 8.0-8.5 mm; width 3.5 mm...“

Differential diagnosis. „Very similar to *D. notulatus* Fabricius, but differs from it in the broader pronotum, which is widest in the middle and the broader anterior elytral spot, which is present from the 3rd interval.“

We have not seen it and place it in the group because of similarity with other species of the *D. notulatus* group emphasized by the describers (Xie et Yu 1991: 172). Illustrated in Xie et Yu 1991: 163, figs 10a, b (aedeagus in lateral view: Fig. 30 in Plate 7).

Distribution. Southern China: Yunnan Province. Known only from the type locality.

Remarks. Menglun is located about 75 km southeast of Jinghong on the banks of the Luosuo River, a tributary of the Lancang Jiang (Mekong River). The main attraction of Menglun is the beautiful Menglun Tropical Garden situated across the Luosuo River and spreading over 900 hectares. The park has been founded in 1959 and today more than 8000 species of plants can be found in the Menglun Tropical Garden. There are several authentic Dai villages along the way. (Menglun, Xishuangbanna, Yunnan Province: 21°53'18"N, 101°18'05"E). This species was based on one ♂ and one ♀.

***Dischissus notulatus notulatus* (Fabricius, 1801)**

(Figs 1a-c, 12, 28)

Carabus notulatus Fabricius, 1801: 201 (type loc. „Bengalia“).

Craspedophorus notulatus Hope 1838: 90. Motschulsky 1855: 70.

Craspedophorus longicornis Schaum, 1863: 84 (type loc. „India orient., Neelgheries“, syn. see Andrewes 1921: 162).

Peronomerus quadrinotatus Motschulsky, 1865: 338 (type loc. „Indes Orientales“, syn. see Andrewes 1933: 5).

Epicosmus notulatus Chaudoir 1861: 347. Chaudoir 1879: 115.

Dischissus longicornis Chaudoir, 1879: 153. Bates 1892: 303; Heller 1916: 276.

Dischissus notulatus Andrewes 1921: 162. Andrewes 1922: 246; Andrewes 1927: xix; Csiki 1929: 363; Andrewes 1930b: 153 (partim).

Dischissus notulatus ab. *tibialis* Andrewes, 1933b: 5 [unavailable name] (partim, loc.: western Malaysia, syn. see

Baehr 2003: 447). Habu 1978: 33; Yunus et Ho 1980: 181; Kirschenhofer 1994: 1046; Kirschenhofer 2000: 357; Baehr 2003: 447; Häckel et Farkač 2012: 84.

Material examined (of nominotypical subspecies): 1♀ labelled: „S Asia, NE-India, Assam, Nameri N.P., 60 km N Tezpur, 27°20'N; 93°15'E, vii.1997, Igt. Afonin & Siniayev“ (Fig. 1a, CMH); 1♀: „Takao, Formosa, Sauter“, (NMWC); 1♀: „Formosa, Sauter/Kosempom 08.01“ (Fig. 1b, CMH); 1♀: „Kwala-Kangar Perak Grubauer 1902“, (NMWC); 1♂: „Ceylon Henauratgoda“, (NMWC); 1♂, 1♀: „China, Guangdong prov., W of Qixing. 1.-3.v.2011, Heishiding (stream; pools), forested stream valley; at light). 23°27.9'N, 111°54.3'E, 190 m, M. Fikáček & J. Hájek leg.“, (NMPC).

The following populations show tendency toward variation in color and differences in the exoskeleton and shape of the pronotum (emargination in front of posterior angles); 1♂ labelled: „SE Asia S-Cambodia, Sihanoukville, 5 m, i.2009, Igt. S. & M. Murzin“ (CMH); 1♀: „Cambodia (Pailin prov.), Pailin 600 m, 11.-16.V.2009, Igt. S. Murzin“, (CDW); 1♀: „N Thailand. 2004, 100km NE of Nan Doi Phu Kha N.P., F. Pavel leg. 20.-25.4.“ (CSF); 1♀: „SE Asia, Thailand, Mae Hong Son pr.: Soppong Pai, N: 19°27'E; E: 98°20', v.1996, J. Horák“, (CMH); 1♂, 1♀ (Fig. 1c): „SE Asia, W-Laos, Vientiane prov., (55 km NE), Lao Pako, 200 m, v.2004, Igt. Bezděk“, (CMH).

Note. The nominotypical subspecies is 6.0-7.2 mm long and 2.7-3.0 mm wide, and occurs in India, Sri Lanka, southern China and Taiwan. The pronotum is rather wide, widest slightly behind midlength, where the lateral rim is flattened, on inner side furred and then elevated toward the disk as in *D. notulatus* ssp. *phuogensis*, in front of posterior angles more strongly emarginate, and the angles themselves usually point outward (Fig. 12 in Plate 4). The puncturing is coarse, with occasional rugae, and the punctures are deeper than in *D. notulatus* ssp. *phuogensis*. Proportions (nominotypical subspecies): Pronotum 1.17-1.41x wider than long, 1.40-1.71x wider than head; elytra 1.30-1.69x wider than pronotum. For illustration of the aedeagus see Xie et Yu 1991: 163, Fig. 10d).

Distribution (*D. notulatus* s. str.). Bangladesh, Cambodia, China: Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hongkong, Hunan, Xizang, Zhejiang Provinces; India: Andhrapradesh, Arunachalpradesh, Assam, Bihar, Jharkhand, Karnataka, Kerala, Madhyapradesh, Manipur, Meghalaya, Mizoram, Nagaland, Orissa, Tripura, Uttarpradesh, Uttarkhand, Tamilnadu, West Bengal States; Laos, Malaysia, Burma, Nepal, Philippines, Sri Lanka, Taiwan, Thailand, southern Vietnam.

Dischissus notulatus pantarensis ssp. nov.

(Figs 1g, 15)

Type material. Holotype (♀) labelled: „SE Asia S-Indonesia, Nusa Tenggara Timur Prov.: Pantar I.: Tanah Labang env. e coast, 350 m, iii.2006. S. Jákł“ (Fig. 1g, CMH).

Description. Length 7.8 mm, width 3.0 mm. Proportions: Pronotum 1.26 x wider than long, 1.64 x wider than head; elytra 1.32 x wider than pronotum.

Coloration: Palps black with tips yellowish. Antennae black. Femora yellowish red, tibiae and tarsi darker. Anterior elytral macula covers 5th-9th intervals, in 9th interval is abbreviated. Preapical macula covers 5th to 7th intervals, in 8th interval is weakly indicated.

The population from this locality differs from the nominotypical subspecies in shape

of the pronotum (Fig. 15 in Plate 4). The sides are less convergent anteriorly, and the posterior angles are briefly tooth-like and less extending laterally than in the nominotypical subspecies. The puncturing is somewhat denser and finer, and the elytral maculae are smaller and medially narrower (see comparative table).

Etymology. Named for the island. Pantar (Indonesian: Pulau Pantar) is the second largest island in the Indonesian Alor Archipelago, after Alor. To the east is the island of Alor and other small islands in the archipelago; to the west is the Alor Strait, which separates it from the Solor Archipelago. To the south is the Ombai Strait, and 72 km away, the island of Timor. To the north is the Banda Sea. The island is about 50 km north-to-south, and varies from 11 to 29 km in east-west width. It has an area of 728 km². The main towns on the island are Baranusa and Kabir. Administratively, the island is part of the Alor Regency, East Nusa Tenggara, Indonesia.

Distribution. Known only from the type locality.

Dischissus notulatus phuongensis Kirschenhofer, 1994 stat. nov.

(Figs 1d, 13)

Dischissus phuongensis Kirschenhofer 1994: 1044 (type loc.: „N-Vietnam, Cuc Phuong, N.P. 100 km S Hanoi“). Kirschenhofer 2000: 358; Häckel et Farkač 2012: 84.

Type material. Holotype (♀) labelled: „N-Vietnam, Cuc Phuong, N. P. 100 km S Hanoi, 2.-12.v.1991, leg. E. Jendek“ and one paratype (♀), same data (NMWC).

Note. The following localities are inhabited by populations transitional to the nominotypical subspecies: 1♀ labelled: „Vietnam, Prov. Hoa Binh, vi.1986, leg., Horák“ (Fig. 1D, CMH); 1♂: „SE Vietnam, Phan Rung, xi.1979, leg. Starý“ (CMH); 1♀: „S Vietnam, Nam Cat Tien Nat. Park. 1.-15.v.1995, leg. Pacholátko & Dembický“ (NMWC).

Description (part, see Kirschenhofer 1994: 1044). „Length 7.5-8.5 mm (8.5 mm HT), width 3.0-3.5 mm. Proportions: Pronotum 1.42 x wider than long, 1.88 x wider than head; elytra 1.33 x wider than pronotum“.

Differential diagnosis. Differences from *D. notulatus notulatus* are barely noticeable. *D. n. phuongensis* either lacks emargination in front of the posterior pronotal angles altogether (holotype) or it is very slight, and the angles themselves are less pointed (Fig. 13 in Plate 4). The holotype is larger, whereas other specimens from the type locality and adjacent transitional populations are of the same average size as those of the nominotypical subspecies.

Distribution. Known only from the type locality.

***Dischissus notulatus queenslandicus* ssp. nov.**

(Figs 1h, 16)

Type material. Holotype (♀) labelled: „AUS. N-Queensland F. North R, Cape York P.: Iron Range N. P., 12°40.35'S 143°20.13'E 103 m, xi-2010, lgt. Hovorka“ (Fig. 1h, CMH).

Description. Length 7.7 mm, width 3.0 mm. Proportions: Pronotum 1.4x wider than long, 1.5x wider than head; elytra 1.3x wider than pronotum. The shape of the pronotum is the same as in the nominotypical subspecies (Fig. 16 in Plate 4).

Differential diagnosis. Differences from the geographically close *D. n. pantarensis*, *D. n. sumatranus*: Entire legs yellowish red, without darkening of the tibiae and tarsi. Differences from the nominotypical subspecies: Size slightly larger, humeral macula in 4th interval only half as long as in 5th interval.

Etymology. Named for the state. Queensland (abbreviated as QLD) is the second-largest and third-most populous state in Australia. Situated in the north-east of the country, it is bordered by the Northern Territory, South Australia and New South Wales to the west, south-west and south respectively. To the east, Queensland is bordered by the Coral Sea and Pacific Ocean. Queensland has a population of 4.560.059, concentrated along the coast and particularly in the state's South East.

Distribution. Known only from the type locality.

***Dischissus notulatus sumatranus* (Dohrn, 1891) stat. nov.**

(Figs 1e, 1f, 14, 29)

Panagaesus sumatranus Dohrn, 1891: 253 (type loc. „Sumatra“).

Dischissus notulatus (Fabricius), syn. see Andrewes, 1922: 246. Andrewes 1930b: 153; Csiki 1929: 253; Kirschenhofer 2000: 357; Baehr 2003: 447; Häckel et Farkač 2012: 84.

Type material. Neotype (♂) labelled: „SE Asia W-Indonesia, NE-Sumatra Is.: Indragiri Hilir regency, III-2006, coastal area leg. S. Jakl“ (NMPC, Figs 1e in Plate 1; Fig. 14 in Plate 4; Fig. 29 in Plate 7).

Other material examined: 3♂, 4♀: same data as neotype (Fig. 1f in Plate 1, CMH, NMWC).

Description. Neotype: Length 7.5 mm, width 2.9 mm. Proportions: Pronotum 1.29x wider than long, 1.66x wider than head; elytra 1.27x wider than pronotum.

Other examined specimens: Length 7.1-7.9 mm, width 2.8-3.0 mm. Proportions: Pronotum 1.22-1.32x wider than long, 1.64-1.66x wider than head; elytra 1.26-1.39x wider than pronotum.

Differential diagnosis. Differences from the nominotypical subspecies: Relatively larger and narrower. Pronotum slightly narrower (Fig. 14 in Plate 4), widest behind midlength (in *D. n. notulatus* closer to base). Tibiae and tarsi dark to black (in *D. n. notulatus* darkened only occasionally, more so in the eastern part of the distributional area).

Differences from *D. n. phuongensis*: Minor, mainly in shape of the pronotum. In *D. n. phuongensis* it is widest at or immediately behind midlength, in *D. n. sumatranus* it is widest closer to base (aedeagus in lateral view Fig. X1e in Plate 7).

Note. *Panagaeus sumatranus* Dohrn (1891: 253) was based on a female labeled only „Sumatra“ and deposited by the describer at the Stettin museum. Andrewes (1922: 246) synonymized the taxon with *Dischissus notulatus* (Fabricius, 1801) and his opinion was followed by Csiki (1929: 253), Baehr (2003: 447) and Kirschenhofer (2000: 325). Dohrn's holotype is lost, and other specimens from his collection allegedly preserved at MFN and MZW could not be found. More recent finds throughout the vast distributional area of *Dischissus notulatus* resulted in descriptions of a number of subspecies and in better understanding of the populations inhabiting Sumatra, hitherto regarded as belonging to the nominotypical subspecies. We hereby revive *Dischissus sumatranus* (Dohrn, 1891) as a valid subspecies of *D. notulatus* and designate its neotype.

Distribution. A subspecies known from Indonesia: Sumatra. It inhabits the same locality as *Dischissus indragiriensis* sp. nov.

Distribution (*D. notulatus* s. lat.). Bangladesh, Cambodja; eastern, southern China; eastern, southern India; Indonesia: Java, Sumatra, Sulawesi Islands, Moluccas; Laos, Malaysia, Burma, Nepal, Philippines, Sri Lanka, Taiwan, Thailand, Vietnam.

KEY TO SPECIES OF *DISCHISSUS NOTULATUS* GROUP

(eastern Palearctic, Oriental and Australian Regions, species 6.0-9.5 mm long)

- 1 Legs entirely black; larger species (9 mm); eastern Malaysia: Borneo, Sarawak *D. borneensis* Frivaldszky, 1883
 - Legs with at least femora yellowish red. 2
 - 2 Pronotum widest between midlength and base, where marginal rim is narrower; forward of this point sides slanted toward anterior angles in straight line; pronotum coarsely punctured, near base briefly but distinctly excavate, its sagittal line deeply impressed (Fig. 2). Elytral intervals strongly convex and smooth. Elytral striae very coarsely and densely punctured. Legs entirely yellowish red. Smaller species (6.9 mm). Sumatra. *D. indragiriensis* sp. nov.
 - Pronotum widest at midlength or immediately behind, where marginal rim is wider; forward of this point sides converge toward anterior angles obliquely; pronotum less coarsely punctured, near base indistinctly excavate or flat, its sagittal line only weakly impressed. Elytral intervals slightly convex and punctured. Elytral striae punctured more finely than intervals. Legs either entirely yellowish red or tibiae and tarsi darkened to brown 3
 - 3 Larger species (8.5-9.5 mm). Pronotum widest immediately behind midlength, in front of briefly extended posterior angles lateral rim wider and more distinctly excavate. Elytral intervals coarsely punctured. Japan and northern China *D. japonicus* Andrewes, 1933
 - Smaller species (6.0-8.2 mm). Lateral rim in front of posterior pronotal angles less widened. Elytral intervals less coarsely punctured. Southern China, Oriental and Australian Regions 4
 - 4 Humeral macula wider, reaching from 3rd interval to margin of elytron. Pronotum wider, widest at midlength. Southern China: Yunnan. *D. notulatoides* Xie et Yu, 1991
 - Humeral macula narrower, reaching from 4th interval to elytral margin. Pronotum less wide, widest short distance behind midlength. Southeastern Palearctic, Oriental and Australian Regions *D. notulatus* (Fabricius, 1801)
- Subspecies: *D. notulatus notulatus*, *D. n. pantarensis* ssp. nov. , *D. n. phuongensis* Kirschenhofer, 2000, *D. n. queenslandicus* ssp. nov., *D. n. sumatranus* (Dohrn, 1891). Differences among subspecies are given in descriptions.

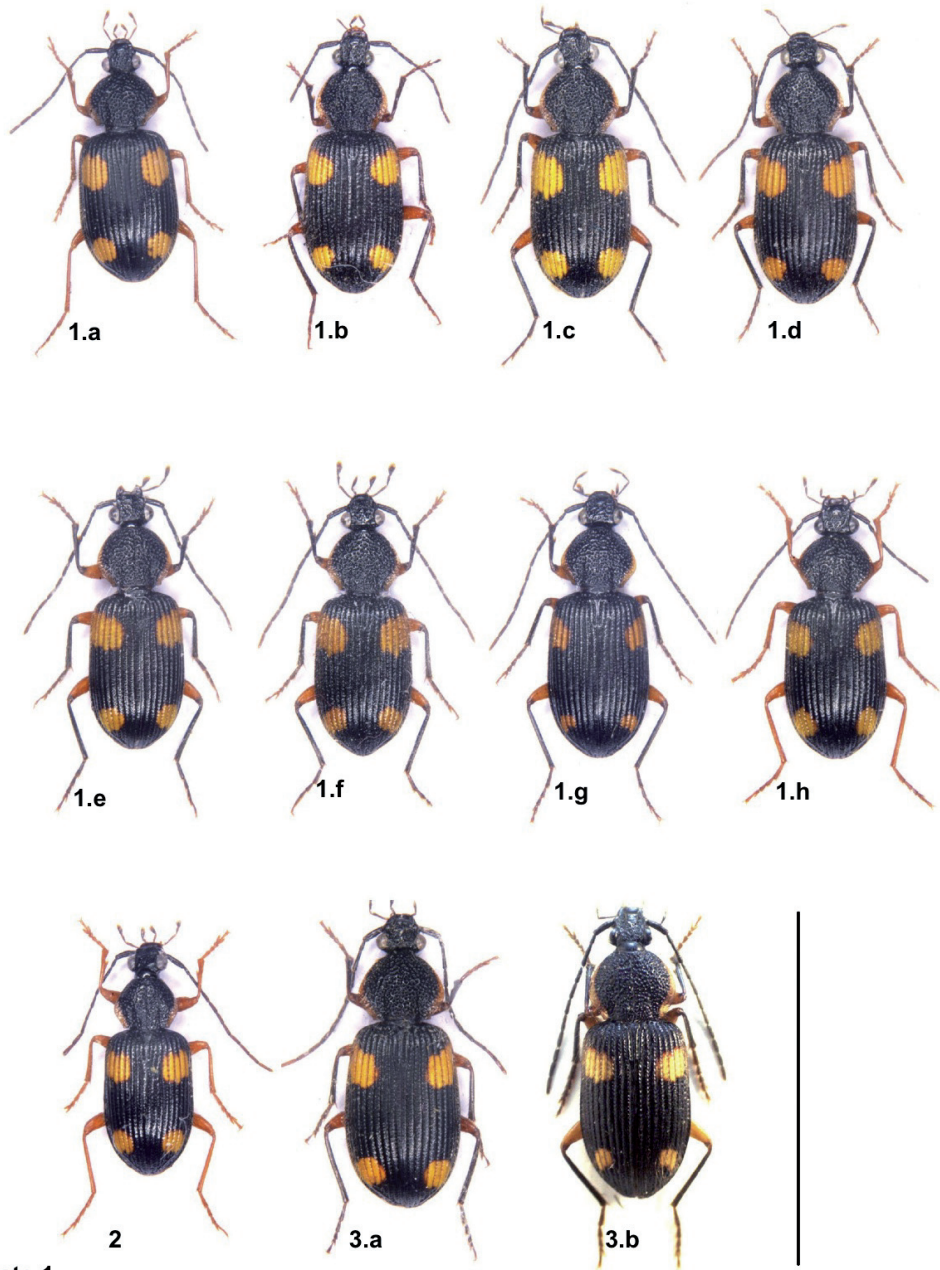


Plate 1

Plate. 1. Figs 1.a-3.b. Habitus: 1.a- *Dischissus notulatus notulatus* (♀ eastern India: Assam); 1.b- *Dischissus n. notulatus* (♀ Taiwan); 1.c- *Dischissus n. notulatus* (♀ Laos); 1.d- *Dischissus n. phuongensis* (♀ Vietnam); 1.e- *Dischissus n. sumatranus* (♂ neotype); 1.f- *Dischissus n. sumatranus* (♀ Sumatra); 1.g- *Dischissus n. pantarensis* (♀ holotype); 1.h- *Dischissus n. queenslandicus* (♀ holotype); 2- *Dischissus indragiriensis* (♂ holotype); 3.a- *Dischissus japonicus* (♀ Japan: Tsushima); 3.b- *Dischissus japonicus* (♀ northern China: Gansu).

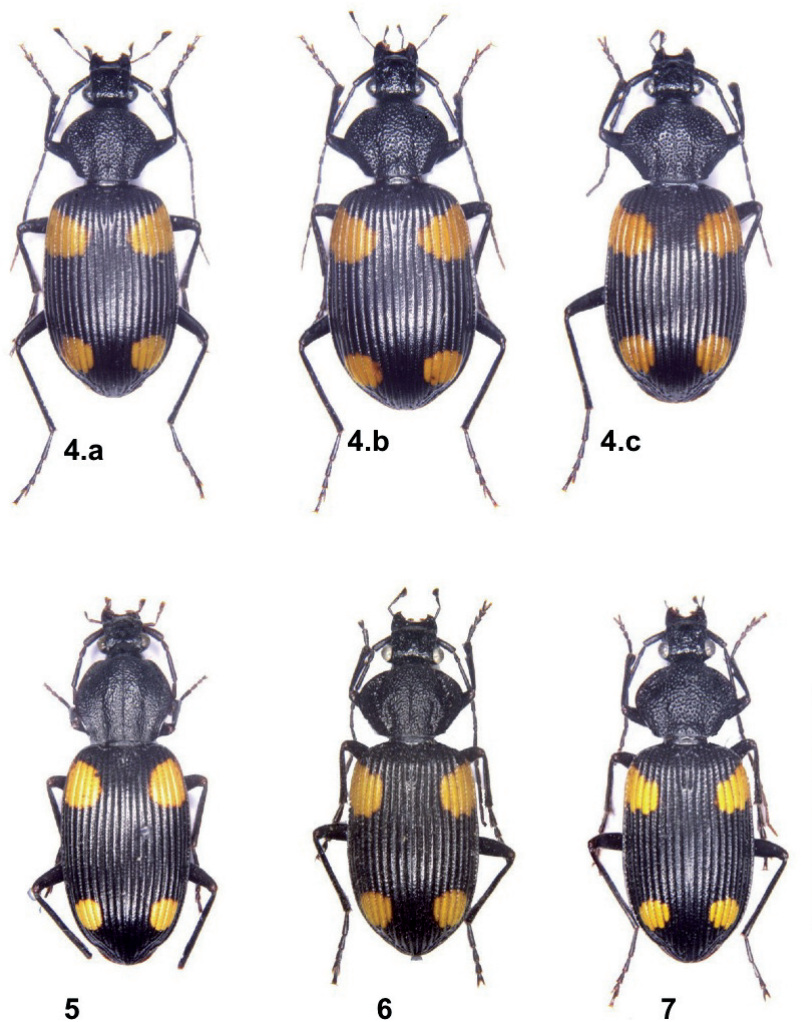


Plate 2. Figs 4.a-7. Habitus: 4.a- *Dischissus hajeki* (♂ holotype); 4.b- *Dischissus hajeki* (♀ paratype, Laos); 4.c- *Dischissus hajeki* (♂ paratype western Malaysia: Perak); 5- *Dischissus alaticollis* (♀ Burma); 6- *Dischissus baehri* (♀ Thailand); 7- *Dischissus vietnamensis* (♂ holotype).

Dischissus guttiferus species group

This least homogeneous group contains 10 species, some of them known to us only from the original descriptions.

Characters. Larger species (12-16 mm). Labrum anteriorly emarginate; eyes large and convex; frons rugate, behind eyes emarginate; neck smooth. Pronotum wide, obliquely converging toward rounded anterior angles, indistinctly emarginate toward posterior angles,

with a small, sharp tooth (*D. chaudiroi*, *D. hajeki*, *D. vietnamensis*) or a small trough in front of posterior angles; pronotal base nearly straight and slightly wider than anterior margin. Elytra wide (*D. begdugulensis*, *D. guttiferus*, *D. hajeki*, *D. kalimantanensis*) or narrowly oval (*D. alaticollis*, *D. baehri*, *D. vietnamensis*), with basal margin incomplete, medial of 5th interval thickened, lateral of there confluent; humeri wide, rounded, somewhat slanted; two larger yellowish-red maculae always present; striae rather deeply impressed, intervals weakly (*D. begdugulensis*, *D. guttiferus*, *D. hajeki*, *D. kalimantanensis*) or more distinctly (*D. alaticollis*, *D. baehri*, *D. vietnamensis*) convex, with scattered coarse punctures.

Venter. Anteromedial process of mentum wide, somewhat extended, without excision; epilobes laterally obliquely narrowing toward apex; metepisternum widest in anterior part, posteriorly narrower; prosternum evenly and rather coarsely punctured; sternites medially smooth, laterally with scattered coarse punctures.

***Dischissus alaticollis* Bates, 1892**

(Figs 5, 21)

Dischissus alaticollis Bates 1892: 302 (type loc. „Thagatà, Tenasserim“). Csiki 1929: 363; Andrewes 1930b: 152; Xie et Yu 1991: 172; Häckel et Farkač 2012: 84.

Redescription. Length 14.0 mm, width 4.5 mm. Proportions: Pronotum 1.2x wider than long, 1.81x wider than head; elytra 1.34 x wider than pronotum (Fig. 21 in Plate 5).

Coloration: Head, pronotum and elytra black, each elytron with two yellowish-red maculae. Humeral macula reaches from middle of 4th interval to elytral margin, preapical macula reaches from 4th to 7th interval. Side of epipleuron slightly lighter-colored. Mandibles dark brown, palps, antennae, legs and venter black. Venter slightly glossy and hirsute.

Eyes strongly convex; temples briefly oblique, converging to neck; labrum distinctly convex forward; clypeus smooth, convex forward; center of frons strongly convex; frontal impressions deep and wide, vaguely bordered, behind eyes obliquely cut off; neck smooth.

Pronotum slightly wider than long, finely tuberculate; maximum width immediately behind midlength, from there sides converge toward rounded, briefly extended anterior angles; in front of posterior angles sides briefly emarginate; lateral rim wide, in front of base distinctly excavate; basal troughs long, rather deep, between trough and margin surface lowered; base somewhat wider than anterior margin, laterally weakly slanted; sagittal line deeply impressed throughout length, widens near base.

Elytra elongately oval, in basal third flattened, then toward midlength medially weakly concave; basal rim medial of 5th interval widened, lateral of there becomes gradually confluent with margin; humeri rounded, not slanted; lateral parts in front of apex distinctly humped, toward apex somewhat pointed; striae deeply impressed and finely punctured; intervals weakly convex and punctured in two rows, in front of apex lateral intervals more convex than medial intervals.

Venter: Anteromedial process of mentum wide and simple. Metepisterna widening anteriorly and slightly narrowing posteriorly, surface rough and rather densely punctured. Sternites medially weakly tuberculate, on sides sparsely punctured.

Note. We have a specimen (♀) of older vintage labelled „Birna Helfer“. To facilitate identification of this little known species, we present a redescription (Fig. 5 in Plate 2).

Distribution. Species known from Burma: Tanintharyi Region; India: Andaman Is.

***Dischissus baehri* Kirschenhofer, 2000**
(Figs 6, 22)

Dischissus baehri Kirschenhofer 2000: 356 (type loc. „Burma, Dawna“). Häckel et Farkač 2012: 84.

Material examined. Apart from the holotype (♀) we have one specimen corresponding to the original description: 1♀ labelled: „SE Asia NW-Thailand, N of Chiang Mai: Chiang Dao, vi.2002, lgt. B. Makovský“ (Fig. 6 in Plate 2, CMH).

Note. Description (part, see Kirschenhofer 2000: 356) „Length 14.8 mm, width 5.8 mm. Coloration and statue as in *D. [Dischissus = here Craspedophorus] sapaensis* and *D. [Dischissus = here Craspedophorus] dehradunensis*... Coloration and gloss as in *D. sapaensis* and *D. dehradunensis*. Preapical elytral macula reaches medial of 3rd stria... Larger than *D. sapaensis* and *D. dehradunensis*. Differs from *D. dehradunensis* by more rounded and evenly convex elytra, somewhat wider lateral rim of pronotum (Fig. 22 in Plate 5), more finely impressed striae and less convex intervals. From *D. sapaensis* differs by larger and broader statue, more rounded anterior pronotal angles, more convex elytra and more densely punctured intervals.“

This species was described in the *D. sapaensis* group (see Kirschenhofer 2000: 354) together with *C. dehradunensis* (Kirschenhofer 2000: 354) and *C. sapaensis* (Kirschenhofer 1994: 1044). The original description pays attention to the morphological similarity of all three species. Both named species of the „*D. sapaensis*“ group are in this paper left in the genus *Craspedophorus* because of their split penultimate tarsomere, whereas *D. baehri* is maintained in *Dischissus* because of its more deeply split penultimate tarsomere. Whether this decision is correct will be shown by DNA analyses.

***Dischissus begdugulensis* (Kirschenhofer, 2011) comb. nov.**
(Figs 8a, 8b, 24)

Craspedophorus begdugulensis [sic*] Kirschenhofer, 2011: 41 (type loc. „Bali, 12 km NW of Begdugul, Buyan Lake“). Häckel et Farkač 2012: 77.

Type material. Holotype (♂) labelled: „Bali, 12 km NW of Begdugul [=Bedugul], Buyan Lake, 950 m, 29.iv.-02.v.2001, lgt. Bolm“, (SMNS).

Other material examined: 5 specimens, same data as holotype (SMNS, NMWC); 3♂, 3♀ labelled: „SE ASIA W-INDONESIA, Bali isl., Bedugul reg., Tamblingan lake, 1200 m, xi.2004, lgt. S. Jákl“ (Figs 8a, 8b, CMH, NMWC).

Note. Description (part, see Kirschenhofer 2011: 41). „Length 13.8 (HT) -14.1 mm. Width 5.1-5.3 mm.

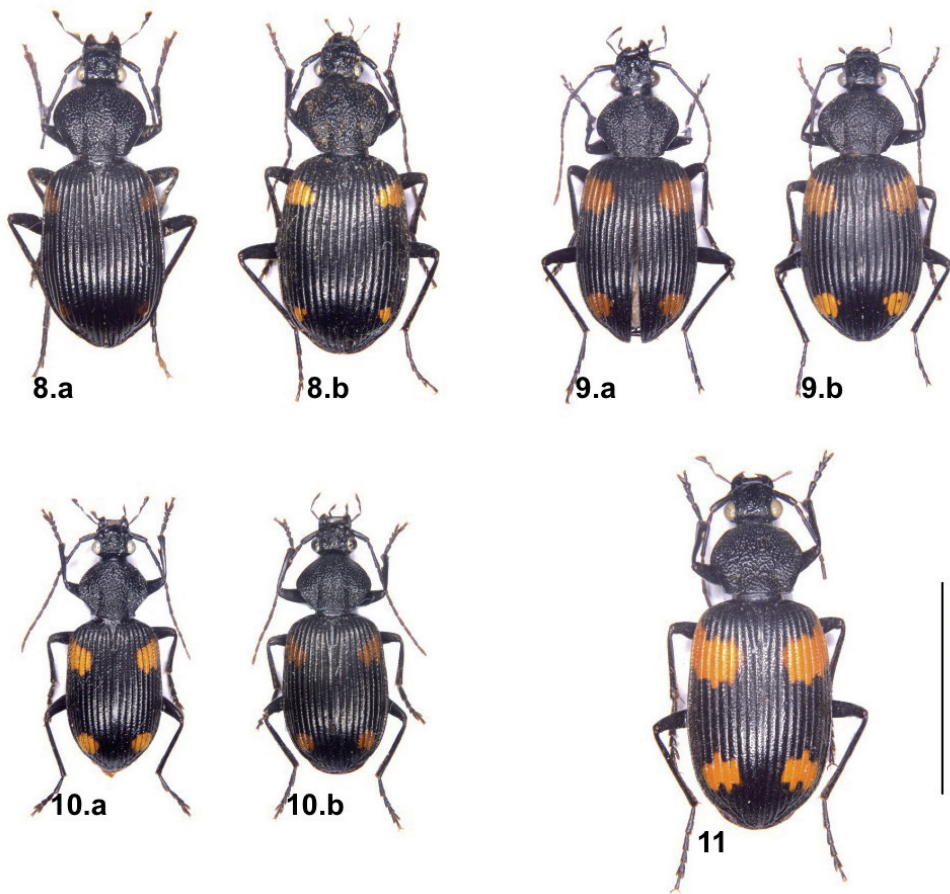


Plate 3. Figs 8.a-11. Habitus: 8.a- *Dischissus begdugulensis* (♂ Java); 8.b- *Dischissus begdugulensis* (♀ Java); 9.a- *Dischissus kalimantanensis* (♂ holotype); 9.b- *Dischissus kalimantanensis* (♀ paratype); 10.a- *Dischissus hesperos* (♂ holotype); 10.b- *Dischissus hesperos* (♀ paratype); 11- *Dischissus mirandus* (♀ Japan: Konzushima).

Coloration and gloss: Head, pronotum and elytra black, slightly glossy. Sides of elytra densely covered by yellow setae. Each elytron with two yellow maculae. Humeral macula is adjacent to basal margin and widens from 7th interval toward lateral margin. Adjacent to apex is a small, elongate macula on 6th and 7th intervals. Terminal palpomere reddish, other palpomeres, antennae and legs black. Venter black, strongly glossy, covered by yellow setae. Epipleuron at level of humeral macula yellowish.

Head as in *Craspedophorus bretschnideri*, but frons slightly less punctured and more glossy; clypeus glossy and strongly convex.

Pronotum 1.28x wider than long (Fig. 24 in Plate 6), very similar to *C. bretschnideri* but widest approximately at midlength, whereas in *C. bretschnideri* it is widest behind midlength, toward base...“ [translated from German original].

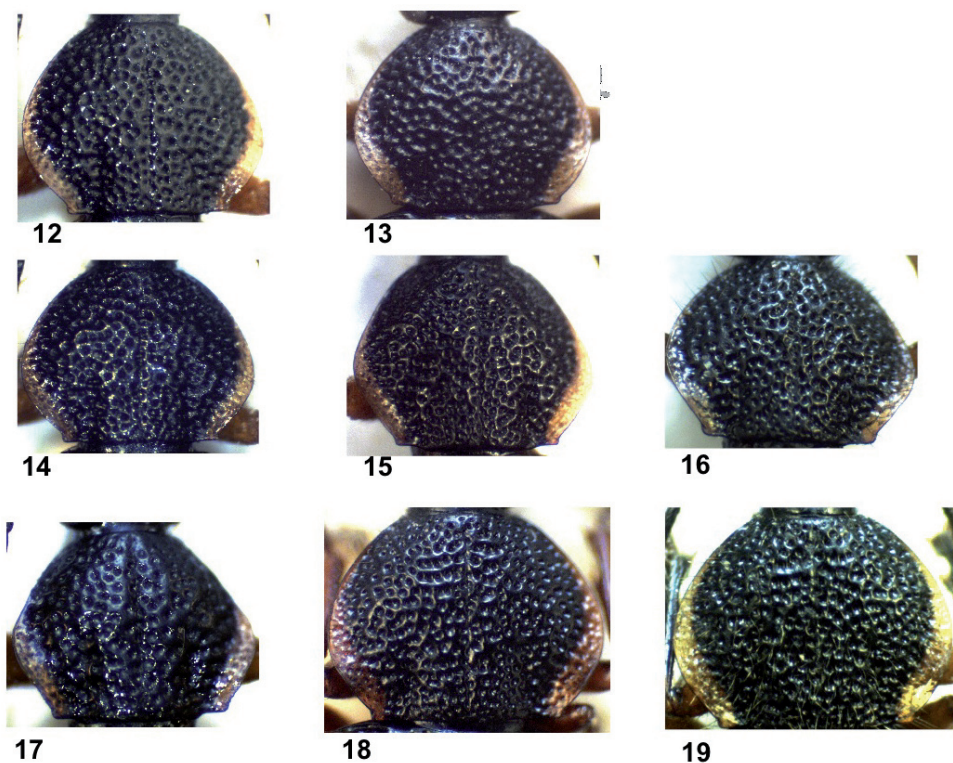


Plate 4. Figs 12-19. Pronotum: 12- *Dischissus n. notulatus*; 13- *Dischissus n. phuongensis*; 14- *Dischissus n. sumatranus*; 15- *Dischissus n. pantarensis*; 16- *Dischissus n. queenslandicus*; 17- *Dischissus indragiriensis*; 18- *Dischissus japonicus* (Japan: Tsushima); 19- *Dischissus japonicus* (northern China: Gansu).

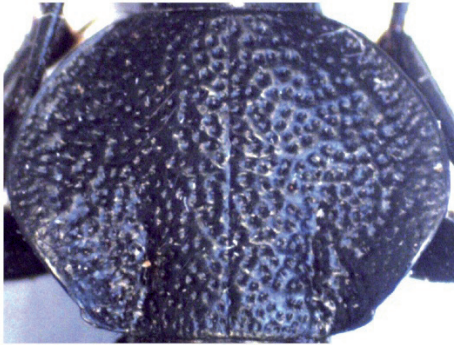
*Bedugul is a mountain lake resort area in Bali, Indonesia, located in the north-central region of the island near Lake Bratan on the road between Denpasar and Singaraja. Bedugul is located 48 km north of the city of Denpasar. Other nearby lakes are Lake Buyan and Lake Tamblingan.

Dischissus chaudiroidi Andrewes, 1919

Dischissus cereus Chaudoir 1869: 116. Chaudoir 1878: 150.

Dischissus chaudiroidi Andrewes, 1919: 135. Andrewes 1933a: 345; Andrewes 1939a: 345; Csiki 1929: 364; Häckel et Farkač 2012: 84.

Note. This is one of the first published species of the genus, based on a specimen from Java referred to by Chaudoir (1869: 116) as *Dischissus cereus*. Chaudoir assigned the specimen to a taxon previously described from Java (*Panagaesus cereus* MacLeay, 1825) and subsequently (1878: 150) re-assigned it to the genus *Dischissus*. According to Andrewes,



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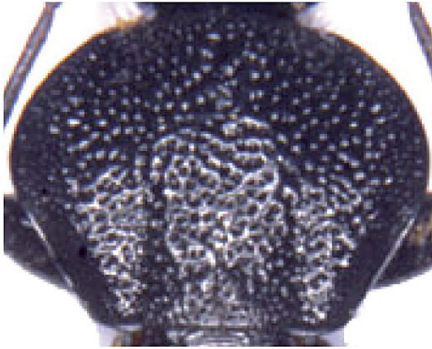
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Plate 5. Figs 20-23. Pronotum: 20- *Dischissus hajeki*; 21- *Dischissus vietnamensis*; 22- *Dischissus alaticollis*; 23- *Dischissus baehri*.

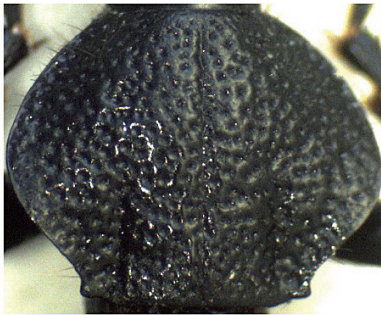
after selling the type Chaudoir assigned the species to the wrong genus. Andrewes' re-examination of MacLeay's type revealed lack of the tooth-like excision on the 4th tarsomere (as in *Dischissus*), and so he re-assigned the species to *Craspedophorus* (Andrewes 1919: 135). To preclude confusion in any future treatment of the genus, he designated a lectotype for Chaudoir's specimens from Java and the new name *Dischissus chaudiroidi*. We have not seen this species and provisionally place it in the *D. guttiferus* group only on the basis of the published description. Because of the characters in the following Chaudoir's description, we place this species in the *D. guttiferus* group. A great similarity to, and differences from, Schaum's species from Java (*D. guttiferus* Schaum 1854: 437) were noted by the describer himself (Chaudoir, see below). A close similarity with *D. guttiferus* was also noted by the describer of another species from eastern Java (*D. formaster* Andrewes 1936: 216). We place also this species in the group. Differences from the species recently described by Kirschenhofer (2011) from Java (*Craspedophorus begdugulensis*), which we re-assign to the genus *Dischissus*, can be finalized only after comparison of all types and formulation of a key to all Javanese species.



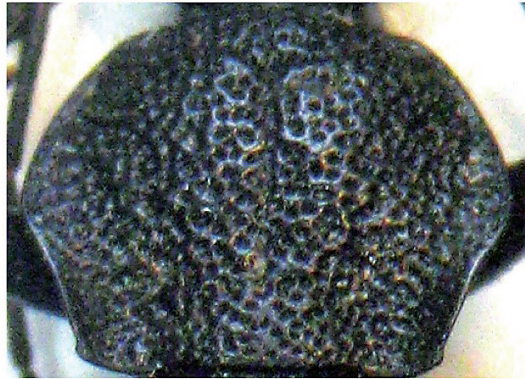
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Plate 6. Figs 24-27. Pronotum: 24- *Dischissus begdugulensis*; 25- *Dischissus kalimantanensis*; 26- *Dischissus hesperos*; 27- *Dischissus mirandus*.

Description of *Dischissus chaudi* (*Panagaeus cereus* Chaudoir, 1878: 150). „Length 13.5 mm, width 5.5 mm. Belongs together with [*Dischissus*] *mirandus* Bates and *guttiferus* Schaum among the larger species of the genus... Pronotum half as wide again as head, longer than wide, anteriorly narrowing to width of the neck; anterior angles blunt, incompletely rounded; sides distinctly oblique; posterior angles very blunt but forming a small tooth; base slanted to the width of mesosternum, but laterally distinctly wider; surface weakly convex, but only in anterior part; medial [sagittal] line fine, continuous, strongly impressed; lateral margins complete, distinctly convex, narrowing toward anterior angles; near base always a long and wide trough; surface coarsely punctured and setose; mesosternum short. Elytra black, glossy, a quarter wider than pronotum, elongate (8.75 mm), elytral base reclined. Each elytron with two lemon-yellow maculae; anterior macula reaches from 4th interval to elytral margin and on epipleura where it is lighter-colored, and on the covered intervals forms five straight, short and wide serrate blotches; posterior macula somewhat recedes near margin, covers 4th to 8th intervals, and so forms four blotches of which those on 6th and 8th intervals

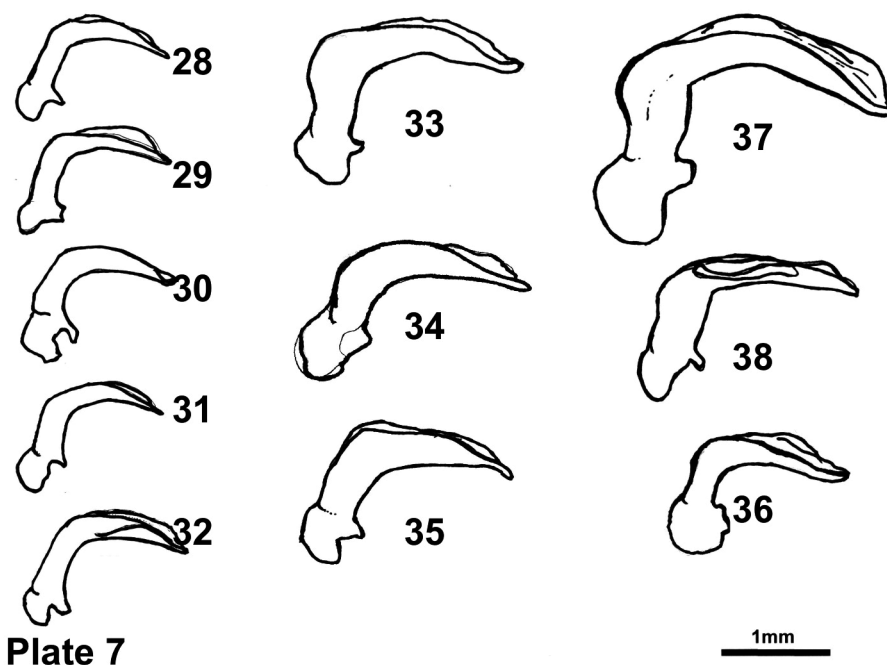


Plate 7. Figs 28-38. Illustrations of aedeagi (median lobe) in lateral view (scale = 1 mm): 28- *Dischissus notulatus notulatus* median lobe, lateral view (Kirschenhofer, see also Xie et Yu 1991); 29- *Dischissus notulatus sumatranus* median lobe, lateral view; neotype (Kirschenhofer); 30- *Dischissus notulatoides* Xi et Yu 1991, median lobe, lateral view (Xie et Yu 1991); 31- *Dischissus indragiriensis* median lobe, lateral view (Kirschenhofer); 32- *Dischissus japonicus* median lobe, lateral view (Kirschenhofer, see also Tian et Chen 1997); 33- *Dischissus hajeki* median lobe, lateral view (Häckel); 34- *Dischissus kalimantanensis* median lobe, lateral view (Kirschenhofer); 35- *Dischissus bisemilunatus* median lobe, lateral view (Xi et Yu 1991); 36- *Dischissus hesperos* median lobe lateral view (Häckel); 37- *Dischissus mirandus* median lobe, lateral view (Kirschnhofer); 38- *Dischissus hainanensis* median lobe, lateral view (Tian et Chen 1997).

are markedly shorter and that on the 7th interval is markedly longer and more elongate than the first medial blotch (on the 5th interval). The specimen I own is part of the Jeakes collection and comes from Java...“ [translated from the French original].

Part of the redescription of *Craspedophorus cereus* (MacLeay, 1825) Andrewes 1919: 135. „Length 12 mm, width 5 mm. Black, each elytron with two yellow spots, extreme apex of palpi yellowish. Head square, coarsely punctured, middle of front and neck smooth, frontal foveae fairly deep... Prothorax half as wide again as head, truncate at extremities, sharply rounded a little behind middle, where it is widest, with an extremely narrow margin-not reflexed; front angles contiguous to neck, hind angles obtuse, but not rounded with a minute indentation in the sides, just in front of them, forming a small right-angled tooth; surface a little convex in the middle, flat at sides, even more coarsely punctured than the

head, transverse impressions obsolete, median line reaching margins, a fairly deep fovea on each side of the base, within which is a furrow reaching nearly to the middle of the prothorax. Elytra half as wide again as prothorax, not very convex, a little dilated behind middle, margin sinuate near apex; striae well marked, finely punctured, intervals finely and moderately closely punctured, though leaving the surface rather shiny; front spot extending from stria 4 to margin and beyond it on the epipleura, running a little obliquely towards the shoulder on intervals 8 and 9, extending furthest towards apex on 6 and 8, hind spot covering intervals 5-8, projecting a little towards base on 5 and 6, and towards apex on 7 and 8. Sterna and sides of first two ventral segments coarsely punctured, ventral surface generally finely punctured; metepisterna much longer than wide; front margin of ventral segments crenulate; fourth tarsal joint simple.“

Dischissus formaster Andrewes, 1936

Dischissus formaster Andrewes 1936: 216 (type loc. „Residency Buitenzorg, Djampantengah, G. Tjisoeroe, 6-800 m“ [=Kota Bohor, Jawa Barat Provinsi, Indonesia]). Häckel et Farkač 2012: 84 [erroneous locality].

Note. Description (part, see Andrewes 1936: 216). „Length 14-15mm. Very closely allied to *D. guttiferus* though slightly larger... hind angles projecting on each side as a small, obtuse, though fairly sharp tooth; median line sharp, but visible... Elytra convex, ovate, about a third wider than prothorax, a fourth longer than wide, widest behind middle, and another close to apex, striae deep, finely punctate...”

We have not seen this species and provisionally include it in the group because of its morphological similarity with the type species (*D. guttiferus*) emphasized by the describer.

Bogor (Indonesian: Kota Bogor, Dutch: Buitenzorg) is a city on the island of Java in the West Java province of Indonesia. The city is located in the center of the Bogor Regency (Indonesian: Kabupaten Bogor), 60 kilometers (37 mi) south of the Indonesian capital Jakarta. Bogor itself is a recognized as a municipality (cat); it is an important economic, scientific, cultural and tourist center, as well as a mountain resort.

Dischissus guttiferus (Schaum, 1854)

Isotarsus guttiferus Schaum 1854: 437 (type loc. „Java“).

Epicosmus guttiferus Chaudoir 1861: 349.

Dischissus guttiferus Chaudoir 1878: 151. Andrewes 1927: 107; Csiki 1929: 364; Andrewes 1930b: 152; Andrewes 1936: 217; Häckel et Farkač 2012: 84.

Note. Description (part, see Schaum 1854: 437). „Long: 6 1/2 lin. (=13.5 mm see Chaudoir 1878: 151 as 6” [correctly converted 14-15 mm; width not given]. Ater, subnitidus, fortiter punctatus, thorace subhexagono, lateribus reflexis, elytris oblongo-ovalis, glabris sulcatis, guttis duabus flavis, anteriori marginali“.

Differential diagnosis. Differences from *D. chaudiroidi* (ex description): „Il a la grandeur du *cereus* [*Panagaesus cereus* = *Dischissus chaudiroidi*] MacLeay, dont il est cependant très

distinct par la forme et la punctuation du corselet, par les taches des élytres, etc.“ [Reaches the size of *D. cereus* MacLeay, from which it differs in shape and and punctuation of the pronotum, elytral maculae, etc.]

***Dischissus hajeki* sp. nov.**

(Figs 4a-c, 20, 33)

Type material. Holotype (♂) labelled: „SE AS. SE-Laos, Attapeu Pr. Annam Highlds. Dong Amphan, NBCA Nong Fa (crater lake) 15°0, 59'N 107°25,6'E, v.2010, lgt. S. Jákł“ (Fig. 4a in Plate 2, CMH). Paratypes: (2 ♂, 10 ♀): „SE AS. SE-Laos, Attapeu Pr. Annam Highlands. Dong Amphan NBCA Nong Fa (crater lake) 15°0, 59'N 107°25,6'E, v.2010, lgt. J. Hájek“ (Fig. 4b in Plate 2, CMH, NMPC); (1 ♂): „W Malaysia Perak, Cameron Highlands: Batu [=Mile] 19vill.env. 590 m, v.2006, S27°34'E101°20“, lgt. J. Hájek“ (Fig. 4c in Plate 2, CMH); (1 ♂, 1 ♀): „Thailand mer. Khao Sok nat. park, 5.vi.-9.vi.1999, P. Viktora lgt“, (CRS).

Description. Length 15.5-16.0 mm, width 6.1-6.2 mm. Proportions: Pronotum 1.32-1.36x wider than long, 1.78-1.82x wider than head; elytra 1.37-1.42x wider than pronotum.

Coloration: Head, pronotum and elytra black, weakly glossy; mandibles, palps, antennae and legs black. Each elytron with two yellowish-red maculae; humeral macula reaches from 3rd interval to margin, lower portion of epipleuron is lighter yellowish-colored; preapical macula reaches from 3rd to 7th interval. Venter black, matte. Both dorsum and venter densely covered by yellow setae.

Head with eyes strongly convex. Temples weakly developed. Labrum distinctly convex forward and rimmed. Clypeus smooth and convex upward. Frons between eyes flat, frontal grooves deep, wide and vaguely bordered; puncturing sporadic and coarse, a transverse indentation behind eyes. Neck smooth.

Pronotum wide, widest some distance behind midlength, with disc gently convex; lateral margins oblique, in front of posterior angles straight or only slightly emarginate, angles themselves with a small, sharp tooth; base nearly straight, wider than anterior margin. Lateral rim slightly elevated, wide, posteriorly opens into a basal pit. Surface usually strongly tuberculate; sagittal line distinct, not widening toward either end (Fig. 20 in Plate 5).

Elytra broadly oval, evenly and strongly convex, widening posteriorly, margins weakly tuberoso in front of apex; basal rim widening medial of 5th interval, lateral of there gradually merging with margin; humeri wide, rounded, weakly slanted; striae deeply impressed and densely punctured; intervals weakly convex, with scattered coarse and some fine punctures.

Etymology. Named in honour of our colleague and friend Jiří Hájek, a specialist in water beetles, who collected the species at two of the three localities.

Distribution. Laos, West Malaysia: Perak state; southern Thailand: Malay peninsula

***Dischissus kalimantanensis* sp. nov.**

(Figs 9a, 9b, 25, 34)

Type material. Holotype (♂) labelled: „SE Asia C-Indonesia, C Kalimantan: Payang mt., 800-1200 m, iii.2008, leg. loc. collectors“ (Fig. 9a in Plate 3, CMH). Paratype (1♀): the same data as holotype (Fig. 9b in Plate 3, CMH).

Description. Length 13.5-14.0 mm, width 5.6-5.8 mm. Proportions: Pronotum 1.40-1.41x wider than long, 1.62-1.76x wider than head; elytra 1.08-1.10x wider than pronotum.

Coloration: Head, pronotum and elytra black, slightly glossy, mandibles, palps, antennae and legs black. Each elytron with two yellowish-red maculae; humeral macula reaches from 4th interval to margin and epipleuron; preapical macula reaches from 5th to 8th interval, in 4th interval is accompanied by a minute blotch. Venter black. Both dorsum and venter densely covered by yellow setae.

Head with eyes strongly convex. Temples weakly developed. Labrum gently convex upward and rimmed. Clypeus smooth and convex upward. Frons between eyes flat, frontal grooves deep, wide and vaguely bordered; puncturing sporadic and coarse, a transverse indentation behind eyes. Neck smooth. Third antennomere distinctly longer than first.

Pronotum wide, widest some distance behind midlength, with disc gently convex; lateral margins broadly rimmed at midlength, from there gradually converging toward posterior angles, angles themselves slightly reclined; base nearly straight, somewhat wider than anterior margin. Lateral rim slightly elevated, wide, posteriorly opens into a basal pit. Surface usually strongly tuberculate; sagittal line distinct, not widening toward either end (Fig. 9ap in Plate 6).

Elytra elongately oval, evenly and strongly convex, widening posteriorly; basal rim widening medial of 5th interval, lateral of there gradually merging with margin; humeri wide, rounded, weakly slanted; striae deeply impressed and densely punctured; intervals weakly convex, with scattered coarse punctures.

Venter with metepisterna coarsely punctured, widening anteriorly and slightly narrowing posteriorly; sternites finely punctured.

Differential diagnosis. Differences from *D. begdugulensis*: pronotum is anteriorly more convex, not as wide, and becomes widest closer to base; its rim is anteriorly narrow, widens only close to midlength, and overall is not as wide and elevated (Fig. 25 in Plate 6). Elytral maculation is more extensive, with the humeral macula reaching the 6th interval (♀) and the apical macula reaching the 5th interval (♀); in ♂ of the two species the difference is even more profound.

Etymology. Named for the island. In English, the term Kalimantan refers to the Indonesian portion of the island of Borneo, while in Indonesian, the term “Kalimantan” refers to the whole island of Borneo. The Indonesian territory makes up 73% of the island by area, and 69.5% (13.772.543 at the 2010 Census of Indonesia) by population. The non-Indonesian parts of Borneo are of Brunei (400.000) and East Malaysia (5.625.000), the latter comprising the states of Sabah and Sarawak. The region within Indonesia is also known as Indonesian Borneo. Kalimantan’s total area is 544,150 square kilometres (210.097 sq mi)

Distribution. Central Indonesia, Kalimantan (= Borneo) I.

***Dischissus vietnamensis* sp. nov.**

(Figs 7, 23)

Type material. Holotype (♀) labelled: „SE Asia NE-Vietnam, Quang Ninh Pr.: 30 km W Uong Be, Yen Tu Mts., Vang Dam, vii.2011 lgt. M. Pejcha“ (Fig. 7 in Plate 2, CMH).

Description. Length 14.5 mm, width 5.6 mm. Proportions: Pronotum 1.37x wider than long (Fig. 7p in Plate 5), 1.75x wider than head; elytra 1.25x wider than pronotum.

Coloration: Head, pronotum and elytra black, latter two slightly glossy; mandibles, palps, antennae and legs black. Each elytron with two yellowish-red maculae; humeral macula reaches from 5th interval to margin and epipleuron, which is light yellow; preapical macula reaches from 4th to 8th interval. Venter black, matte. Both dorsum and venter desely covered by yellow setae.

Head with eyes strongly convex. Temples weakly developed. Labrum distinctly convex upward and rimmed. Clypeus smooth and convex upward. Frons between eyes flat, frontal grooves deep, wide and vaguely bordered; puncturing sporadic and coarse, a transverse indentation behind eyes. Neck smooth.

Pronotum wide, widest at midlength or immediately behind, with disc gently convex; lateral margins oblique, in front of posterior angles straight or only slightly emarginate, angles themselves with a small, sharp tooth; base nearly straight, wider than anterior margin. Lateral rim slightly elevated, wide, posteriorly opens into a basal pit. Surface usually strongly tuberculate; sagittal line distinct, not widening toward either end (Fig. 23 in Plate 5).

Elytra elongately oval, evenly and strongly convex, widening posteriorly, margins weakly tuberosely in front of apex; basal rim widening medial of 5th interval, lateral of there gradually merging with margin; humeri wide, rounded, weakly slanted; striae deeply impressed and densely punctured; intervals convex, with scattered coarse punctures.

Differential diagnosis. Differences from *D. hajeki* sp. nov.: Smaller (*D. hajeki* reaches 15.5 – 16.0 mm), elongately oval, distinctly more slender. Elytral margins more raised, toward anterior angles more rounded. Elytral maculae somewhat smaller, shorter. Dorsum more glossy. Lateral intervals more convex.

Etymology. Named after the country Vietnam.

Distribution. Known only from the type locality.

incertae Oriental species

***Dischissus hesperos* sp. nov.**

(Figs 10a, b, 26, 36)

Type material. Holotype (♂) labelled: „SE Asia W-Indonesia, NE-Sumatra Is.: Indragiri Hilir reGENCY, iii-2006, coastal area, lgt. S. Jakl“ (Fig 10a in Plate 3, CMH). Paratypes (2♀): same data as holotype (Fig. 10b in Plate 3, CMH)

Description. Length 11.0-11.3 mm, width 4.5-4.8 mm. Proportions: Pronotum 1.28-1.30x wider than long, 1.63-1.70x wider than head; elytra 1.69-1.40x wider than pronotum.

Coloration: Head, pronotum and elytra black, glossy; mandibles, palps, antennae and legs black. Each elytron with two yellowish-red maculae; humeral macula reaches from 5th interval to margin and epipleuron, which is light brown; preapical macula reaches from 5th to 8th interval. Venter black, matte. Both dorsum and venter densely covered by yellow setae.

Head with eyes strongly convex, transversely constricted behind eyes, temples weakly developed, neck smooth; labrum anteriorly straight, clypeus smooth and convex upward. Center of frons flat, densely tuberculate, frontal rugae wide, pitted, overlapping anterior margin of eyes.

Pronotum wide, on disc weakly convex, coarsely punctured; anterior angles surround neck rounded; maximum width immediately behind midlength, toward posterior angles margins markedly converge, angles themselves form a small, sharp tooth; base medially straight, laterally always briefly sinuate; lateral rim slightly wider and elevated, and near base in area of basal pits lowered. Sagittal line reaches base but not anterior angles; in anterior third is deeply impressed, near base becomes shallower and wider (Fig. 26 in Plate 6).

Elytra elongately oval, evenly convex, with humeri rounded and slightly slanted; basal rim incomplete, medial of 5th interval widens, lateral of there gradually merges with margin. In front of apex margins slightly concave, apex weakly pointed and indistinctly slanted. Striae deeply impressed and finely punctured. Intervals rather wide, slightly convex, with two rows of indistinct punctures and shagreening.

Venter with anteromedial process of mentum wide, short and simple. Epilobes laterally striate, converging toward apex in straight line. Metepisterna coarsely punctured and setose, Metepisterna widening anteriorly, posteriorly become narrower. Sternites finely punctured, more markedly near lateral margins. Prosternum strongly punctured.

Aedeagus in lateral view: Fig. 36 in Plate 7.

Differential diagnosis. A slightly smaller species (11.0-11.3 mm). Pronotal margins complete but weakly elevated, toward posterior angles emarginate, base always with a pit-shaped impression (also see the key to species of Sumatran *Dischissus*).

Etymology. Named after Hesperos (Éósforos, also Fosforos, in Latin Lucifer), in Greek mythology the god of the Morning star and its impersonation; son of goddess Éós and titan Astraia.

Distribution. Known only from the type locality.

CATALOGUE AND DISTRIBUTION OF SPECIES

a) *D. mirandus* species group (= *Dischissus* s. str., 2 species)

D. hainanensis Tian et Chen, 1997

Distribution: southern China: Hainan I.

D. mirandus Bates, 1873

Distribution: Japan: south of Honshu I.; China: Fujian, Guangdong, Guangxi, Guizhou, Hunan, Jiangxi, Sichuan, Shanghai, Shanxi, Zhejiang provinces

b) *D. notulatus* species group (5 species)

D. borneensis Frivaldszky, 1883

Distribution: eastern Malaysia: Borneo I.: Sarawak state

D. indragiriensis sp. nov.

Distribution: western Indonesia: Sumatra I.

D. japonicus Andrewes, 1933

Distribution: southern Japan: south of Honshu I., Kyushu I.; northern China: Gansu Province

D. notulatoides Xie et Yu, 1991

Distribution: southern China: Yunnan province

D. notulatus notulatus (Fabricius, 1801) as *Carabus*

Distribution: Bangladesh, Cambodia, China: Anhui, Fujian, Guangdong, Guangxi, Guizhou, Hunan, Xizang, Zhejiang provinces; India: Andhrapradesh, Arunachalpradesh, Assam, Bihar, Jharkhand, Karnataka, Kerala, Madhyapradesh, Manipur, Meghalaya, Mizoram, Nagaland, Orissa, Tamilnadu, Tripura, Uttarpradesh, Uttarkhand, West Bengal provinces; Laos, Burma, Nepal, Sri Lanka, Taiwan, Thailand, Vietnam.

D. notulatus pantarensis ssp. nov.

Distribution: southern Indonesia: Nusa Tenggara Timur province: Pulau Alor: Pantar I.

D. notulatus phuongensis Kirschenhofer, 1994, stat. nov.

Distribution: northern Vietnam

D. notulatus queenslandicus ssp. nov.

Distribution: northern Australia: Queensland: Cape York peninsula

D. notulatus sumatranus (Dohrn, 1891) as *Panagaeus*, stat. nov.

Distribution: western Indonesia: Sumatra I.

c) *D. guttiferus* species group nov. (10 species)

D. alaticollis Bates, 1892

Distribution: Burma; India: Andaman Is.

D. baehri Kirschenhofer, 2000

Distribution: Burma, Thailand

D. begdugulensis (Kirschenhofer, 2011) as *Craspedophorus*, comb. nov.

Distribution: western Indonesia: Bali I.

D. bisemilunatus Xie et Yu, 1991

Distribution: southern China: northern Guangxi, southern Guizhou provinces

Dischissus chaudierei Andrewes, 1919
Distribution: western Indonesia: Java, Sumatra I.

D. formaster Andrewes, 1936
Distribution: western Indonesia: Java I.

D. guttiferus (Schaum, 1854) as *Isotarsus*
Distribution: western Indonesia: Java I.

D. hajeki sp. nov.
Distribution: Laos, western Malaysia: Perak state; southern Thailand: Malay peninsula

Dischissus kalimantanensis sp. nov.
Distribution: central Indonesia: Kalimantan I.

D. vietnamensis sp. nov.
Distribution: northern Vietnam.

d) incertae orientalis species:

Dischissus hesperos sp. nov.
Distribution: western Indonesia: Sumatra I.

e) incertae afrotropicalis species:

D. angularis (Schaum, 1863) as *Craspedophorus*
Distribution: western Africa: from Guinea-Bissau to western part of Democratic Congo

D. amoenulus Péringuey, 1896
Distribution: southeastern Africa: southern Mozambique

D. obscuricornis (La Ferté-Sénéctère, 1851) as *Isotarsus*
Distribution: western Africa: Guinea-Bissau, Senegal

D. pradierei (Chaudoir, 1868) as *Epicosmus*
Distribution: westcentral Africa: Gabon to Bas-Congo Province in Democratic Congo

D. repertus Basilewsky, 1947
Distribution: eastern Africa: Tanzania: Zanzibar and Pemba Is.

CATALOGUE OF SUMATRAN PANAGAEINI

Andrewes (1929: 311) listed only two species for Sumatra, *Microcosmus flavospilosus* LaFerté-Sénéctère (= *Microcosmodes* Strand, 1936, see Häckel et Farkač 2012: 87) and *Peronomerus fumatus* Schaum, 1853. One year later he described *Craspedophorus mannae* (Andrewes 1930 a: 194). Häckel et Farkač (2012: 67) listed 9-10 species. This work brings the number of Sumatran Panagaeini up to 12.

Craspedophorus mannae Andrewes, 1930
Craspedophorus ovatulus Kirschenhofer, 2000
Craspedophorus sundaicus (Oberthür, 1883)
Dischissus chaudiroidi Andrewes, 1919
Dischissus hesperos sp. nov.
Dischissus indragiriensis sp. nov.
Dischissus notulatus sumatranus (Dohrn, 1891)
Euschizomerus denticollis Kollar, 1836
Euschizomerus vitalisi Vuillet, 1812
Microcosmodes flavospilosus LaFerté-Sénéctère, 1851
Peronomerus fumatus Schaum, 1854
Trichisia nesites Andrewes, 1931

KEY TO SPECIES OF SUMATRAN *DISCHISSUS*

- 1 Small species (6.9-7.9 mm). Pronotal lateral margins in posterior half with lighter, yellowish-red hue. Humeral macula reaches from 4th interval to margin, where epipleuron is of lighter color. 2
 - Larger species (11.0-13.5 mm). Pronotum black, without lighter color laterally. Humeral macula reaches from 5th interval to margin, preapical macula from 5th to 8th interval..... 3
- 2 Legs yellowish red throughout, pronotum widest near base *D. indragiriensis* sp. nov.
 - Tibiae and tarsi darker, pronotum widest immediately behind midlength. *D. notulatus sumatranus* (Dohrn, 1891)
- 3 A slightly smaller species (11.0-11.3 mm). Pronotal margins complete but weakly elevated, toward posterior angles emarginate, base always with a pit-shaped impression. *D. hesperos* sp. nov.
 - A larger species (13.5 mm). Pronotal margins complete and distinctly elevated, base with a well developed thin furrow on each side. *D. chaudiroidi* Andrewes, 1919

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