

**Contribution to the Asian and Afrotropical species
of the genus *Dyschiriodes*
(Coleoptera: Carabidae: Scaritinae)**

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Abstract. Seven new species of the genus *Dyschiriodes* Jeannel, 1959 are described, illustrated and compared to the related taxa: *D. sabahensis* sp. nov. from Malaysia (Sabah), *D. hajeki* sp. nov. from China (Yunnan), *D. kadleci* sp. nov. from India (Maharashtra), *D. facchinii* sp. nov. from Thailand, *D. jelineki* sp. nov. from Iran, *D. ruthmuelleriae* sp. nov. from South Africa and *D. genieri* sp. nov. from Burkina Faso and Ghana. The holotype and additional material of *D. kalalae* (Mařan, 1935) are studied and the synonymy of this species to *D. cariniceps* (Baudi di Selva, 1864) is confirmed. Finally, the holotype and additional specimens of *D. disjunctus* (Andrewes, 1929) are examined, its status is refined and the first record from China (Yunnan) is given.

Key words. Coleoptera, Carabidae, Scaritinae, *Dyschiriodes*, taxonomy, new species, new synonymy, Afrotropical Region, Oriental Region, Palaearctic Region

Introduction

Dyschiriodes Jeannel, 1941 is a widespread genus of the carabid subfamily Scaritinae. It occurs worldwide except the Australian Region and contains almost 200 species and several subspecies. The genus was classified either as a subgenus or a junior synonym of *Dyschirius* Bonelli, 1810 until FEDORENKO (1996, 2001) raised it to a separate genus and transferred to it most species from *Dyschirius*. Some catalogues, such as LORENZ (1998) and BALKENOHL (2003), did not follow Fedorenko's opinion and kept *Dyschiriodes* as a subgenus of *Dyschirius*.

The genus *Dyschiriodes* was reviewed by FEDORENKO (1996), but only the Palaearctic species were revised in detail and keyed to (sub)species. Modern revisions of the Afrotropical and Oriental species are missing, except early contributions to the Afrotropical *Dyschiriini* by KULT (1954) and BASILEWSKY (1962) and more recent papers by BULIRSCH (2006) and FEDORENKO (1997a,b, 1999a,b, 2000), who described several new species and established and/or

revised some species groups. The Oriental species have been reviewed by ANDREWES (1929; species from India, Sri Lanka and Burma) and KULT (1949; species from south-eastern Asia). BALKENOHL (1994), BULIRSCH (1996), BULIRSCH & FEDORENKO (2007), BULIRSCH & MAGRINI (2006) and FEDORENKO (1994, 1997a,b, 1999a, 2001) described additional Asian species and established and/or revised some species groups.

Material and methods

The specimens were dry-mounted and studied, including measurements and examination of the microsculpture, at a magnification of 56×. Up to 30 specimens of each new species were measured. Standard measurements follow FEDORENKO (1996). Length of body is given with 0.05 mm accuracy; other measurements including ratios and means are down to two decimal places. Label locality data of all specimens are quoted verbatim except standardized dates. Male genitalia (aedeagi) were embedded in Canada balsam (all male holotypes) or fixed with water-soluble glue.

The following abbreviations are used to indicate the depository of specimens:

| | |
|------|---|
| ADWA | Alexander Dostal collection (including Karel Kult's collection), Wien, Austria; |
| BMNH | Natural History Museum, London, U.K.; |
| FGGC | François Génier collection, Gatineau, Canada; |
| NMPC | National Museum, Praha, Czech Republic; |
| PBPC | Petr Bulirsch collection, Praha, Czech Republic; |
| PSHG | Peter Schüle collection, Herrenberg, Germany; |
| SFPI | Sergio Facchini collection, Piacenza, Italy; |
| TMSA | Transvaal Museum, Pretoria, South Africa; |
| USNM | National Museum of Natural History, Washington D.C., USA; |
| ZSM | Zoologische Staatssammlung, München, Germany. |

Other abbreviations:

ASP – apical setiferous puncture(s); BSP – basal (prescutellar) setiferous puncture(s); DSP – dorsal setiferous puncture(s); PHSP – posthumeral setiferous puncture(s); HT – holotype; PT(s) – paratype(s).

Results

Genus *Dyschiriodes* Jeannel, 1941 Subgenus *Paradyschirius* Fedorenko, 1996

This subgenus was established and revised by FEDORENKO (1996, 1997a). To date it contains 20 species (14 from the Old World and six from North and Central America), divided into two species groups: the *D. dispar* group with a single South African species and the *D. substriatus* group with three subgroups: the *D. analis* subgroup (four Palaearctic species), the *D. verticalis* subgroup (three Indian and a single West African species) and the *D. substriatus* subgroup (East Palaearctic and a single West Palaearctic species).

***Dyschiriodes (Paradyschirius) sabahensis* sp. nov.**

(Figs. 1, 8, 14)

Type locality. Malaysia, Sabah, 25 km E of Telupid.**Type material.** HOLOTYPE: ♂, 'MALAYSIA: SABAH: / 25 km E Telupid / 17.viii.1983 / at blacklight / G. F. Hevel & W. E. Steiner (leg.)' (USNM). PARATYPES: **MALAYSIA: SABAH:** 15 spec. with the same data as HT (USNM, PBPC); 2 spec., 'MALAYSIA: SABAH: / 20 km E Telupid / 14.viii.1983 / at blacklight / G. F. Hevel & W. E. Steiner' (USNM, PBPC).**Description.** Habitus as in Fig. 1; length 2.90–3.35 mm (mean 3.17 mm, $n = 18$; HT 3.15 mm). Colour brown fuliginous, surface with slight green-bronze metallic lustre, anterior parts of head and base and apical part of elytra slightly lighter, brownish translucent, legs rusty red, antennae and mouth-parts slightly lighter, yellowish.

Head. Anterior margin of clypeus with distinctly protruding lateral lobes, between them slightly convex; clypeofrontal area with characteristic T-forming carina and with additional fine, irregular carinae/rugosities between longitudinal carina and facial furrows; facial furrows deep, regularly diverged posteriorly; distance between them larger than length of eye. Surface of vertex even, smooth, with very fine and sparse micropunctures. Eyes moderately large, strongly convex. Antennae submoniliform.

Pronotum. Strongly convex; outline regularly and moderately strongly rounded, moderately attenuated anteriorly; 0.97–1.04 (mean 1.00; HT 0.99) times as wide as long, 1.36–1.43 (mean 1.41; HT 1.40) times as wide as head; widest in anterior two thirds. Anterior angles blunt, posterior ones moderately rounded. Anterior transverse impression distinct, with sparse cross striae; median line moderately impressed at sides and much finer, superficial on disc; lateral channel moderately broad, reflexed lateral margin extended slightly beyond posterior setiferous puncture. Surface shiny, mirror-like, with very fine micropunctures.

Elytra. Elongate, very slightly and broadly concave in anterior fifth in lateral view; 1.72–1.83 (mean 1.78; HT 1.78) times as long as wide, 1.10–1.17 (mean 1.14; HT 1.13) times as wide as pronotum; humeri moderately protruded, without humeral teeth; elytral base strongly sloping; outline in basal half slightly broadened on sides, broadest at anterior third, more strongly attenuated towards apex than towards humeri; suture not depressed at base. Base without basal border and tubercles; BSP deeply connected with first stria. Striae characteristic of subgroup: striae 1–7 deep, moderately punctate, punctures disappearing in third fourth, distinctly narrower than width of intervals; stria 8 very fine, recognisable only in middle third, striae 2–3 and 6–7 diminish basally, stria 3 disappearing before anterior DSP; striae 4–5 distinctly deeper and broader behind base; all striae moderately deep apically; intervals slightly vaulted. Three PHSP (only two in two PTs), three DSP (all in stria 3) and two ASP (both in deep apical stria).

Protibia. Apical spine broad and blunt, strongly curved backwards but not inwards, slightly shorter than uncinat apical spur; distal marginal tooth large, moderately sharp, proximal one small, blunt.

Aedeagus. Shape as in Figs. 8 and 14; in HT 0.59 mm long, median lobe moderately bent down, indistinctly bulging in apical third. Apical lamella medium sized, asymmetric rounded, narrowed apically (Fig. 14). Paramere without setae.

Differential diagnosis. *Dyschiriodes sabahensis* sp. nov. belongs to the *D. verticalis* subgroup of the *D. substriatus* group (sensu FEDORENKO 1996, 1997a). It can be distinguished from the most similar *D. (Paradyschirius) verticalis* (Putzeys, 1878) by a more rounded and anteriorly less attenuated pronotum, different number of setiferous punctures on the elytra (two ASP and 2–3 PHSP in *D. sabahensis* sp. nov., one ASP and 1–2 PHSP in *D. verticalis*), finer and distinctly punctate elytral striae, especially more distinctly punctate stria 7, and anteriorly more abbreviated stria 3. From *D. (P.) hingstoni* (Andrewes, 1929) it differs mainly by a smaller body (2.90–3.35 mm in *D. sabahensis* sp. nov., 3.60–4.15 mm in *D. hingstoni*), more rounded and anteriorly less attenuated pronotum and different number of setiferous punctures on the elytra (one ASP and two PHSP in *D. hingstoni*). Finally, it differs from *D. (P.) tenuescens* (Andrewes, 1929) by larger body (2.10–2.70 mm in *D. tenuescens*), different number of setiferous punctures on the elytra (one ASP and one PHSP in *D. tenuescens*), basally more abbreviated elytral stria 3 and distinctly punctate stria 7. Moreover, *D. sabahensis* sp. nov. can be distinguished from all these species by the shape of the median lobe of the aedeagus and its apical lamella (see Figs. 8 and 14 versus Figs. 21–25 in FEDORENKO (1997a)).

Etymology. The species epithet is derived from the state in which the species was found.

Distribution. Malaysia (Sabah).

***Dyschiriodes (Paradyschirius) hajeki* sp. nov.**

(Fig. 2)

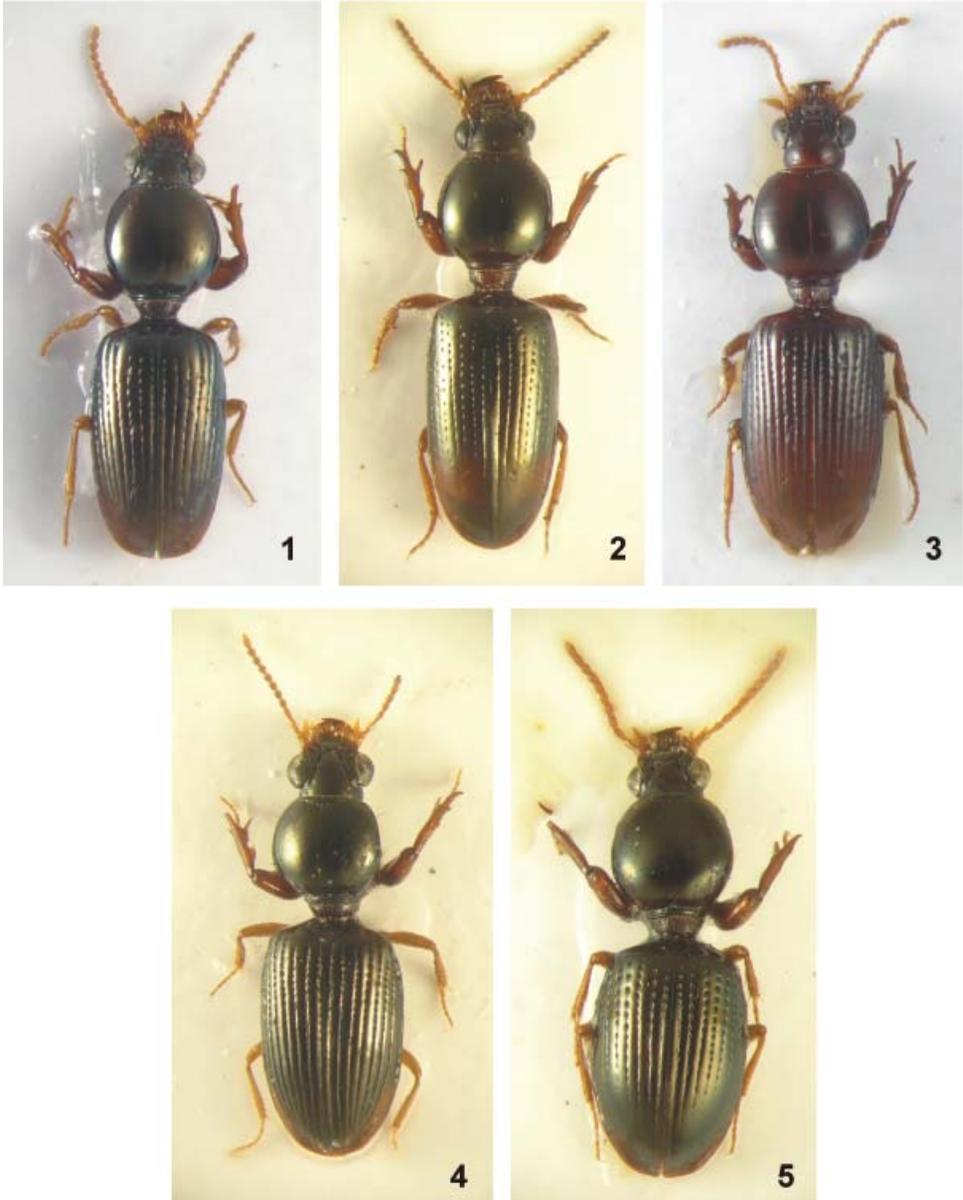
Type locality. China, Yunnan province, S of Haba, Haba Xueshan Mountains, 2830–3000 m a.s.l., 27°22.1'N; 100°08.2'E.

Type material. HOLOTYPE: ♀, 'CHINA, YUNNAN prov., 1.3–2.0 / km S of Haba, 17.–20.vi.2007 / Haba Xueshan Mts., 2830– / 3000m, 27°22.1'N 100°08.2'E, / J. Hájek & J. Růžička leg. // individually collected on soil / surface and on plants and / shrubs, sparse mixed forest / (with dominant *Pinus*), / in-near the brook' (NMPC).

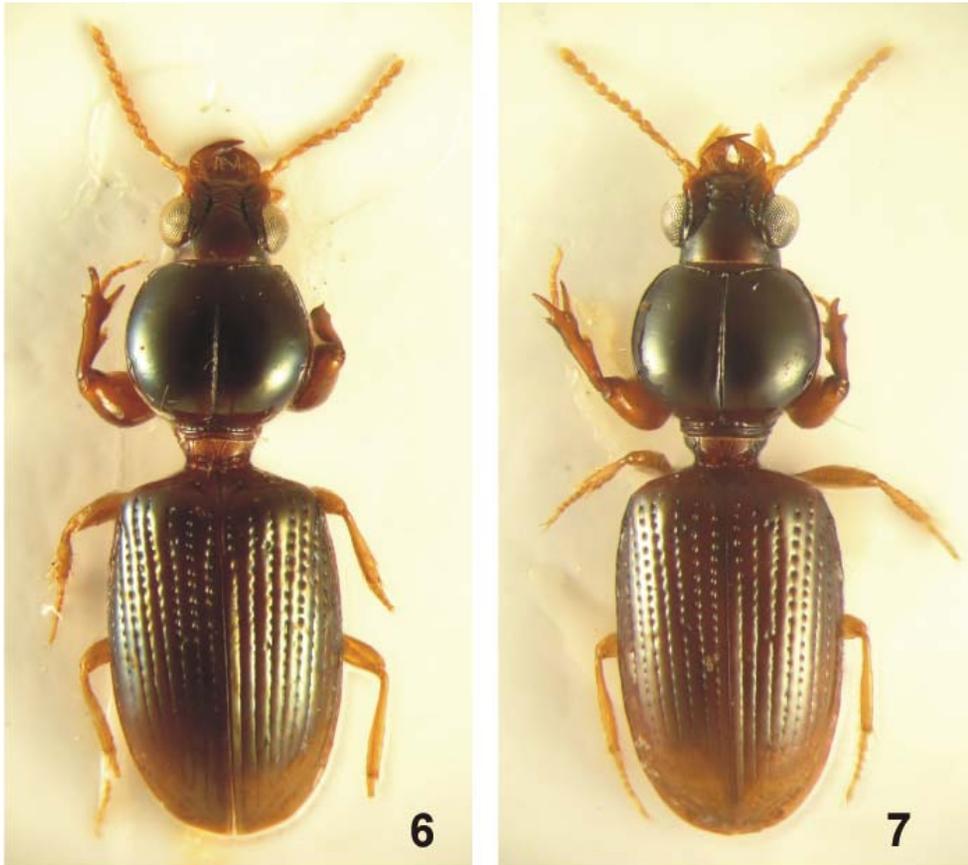
Description. Habitus as in Fig. 2; length 3.75 mm. Colour dark fuliginous, surface with slight green-bronze metallic lustre; anterior part of head, pronotum along anterior and posterior margins and elytral base ferrugineous; each elytron with indistinct, large latero-apical yellowish spot, interval 1 and apex darker; legs rusty red, basal antennomeres and mouth-parts slightly lighter; epipleura in anterior third, head and pronotum ventrally ferrugineous; sternites ventrally with indistinct, slightly lighter latero-apical spots.

Head. Anterior margin of clypeus with rounded, strongly protruded lateral lobes, between them with two paramedian, small and very blunt teeth, clypeofrontal area in anterior part with rough, irregular rugosity, bordered anteriorly by blunt and irregular keel and posteriorly (i.e., at the level of middle of eyes) by irregular, very broadly V-shaped ridge; posterior part of head strongly vaulted, with rough and dense punctures; facial furrows moderately divergent in its posterior half, distance between them larger than eye length. Vertex less vaulted, shiny, with sparse micropunctures, separated from roughly punctate area by superficial, broad furrow. Eyes relatively small and moderately convex. Antennae submoniliform.

Pronotum. Strongly convex, outline regularly, strongly rounded; slightly attenuated anteriorly; 1.00 times as wide as long, 1.44 times as wide as head; widest in posterior third. Anterior angles blunt, posterior ones moderately rounded. Anterior transverse impression distinct with rough, broad and sparse cross striae; median line very broadly and very deeply



Figs. 1–5. Habitus of holotypes. 1 – *Dyschiriodes sabahensis* sp. nov. (3.15 mm); 2 – *D. hajeki* sp. nov. (3.75 mm); 3 – *D. ruthmuelleræ* sp. nov. (3.70 mm); 4 – *D. kadleci* sp. nov. (3.45 mm); 5 – *D. facchinii* sp. nov. (3.70 mm).



Figs. 6–7. Habitus of holotypes. 6 – *D. jelineki* sp. nov. (3.70 mm); 7 – *D. genieri* sp. nov. (3.05 mm).

impressed in anterior sixth, then abruptly finer on disc and slightly deeper posteriorly; lateral channel moderately broad, reflexed lateral margin extended slightly beyond posterior setiferous puncture. Surface mirror-like, shiny, with very fine micropunctures.

Elytra. Strongly convex, subparallel, 2.00 times as long as wide, 1.13 times as wide as pronotum; humeri moderately protruding, without humeral teeth; base distinctly sloping; outline in basal half very slightly broadened on sides, broadest slightly below anterior third, long attenuated towards apex and very slightly towards humeri; suture not depressed at base. Base without basal border and tubercles; BSP distinctly connected with stria 1. Stria 1 deep and complete; striae 2–8 gradually finer, striae 2–3 deep on disc, 4–5 finer, 6–7 much finer and irregularly impressed; stria 8 very fine, recognisable in its middle third as a row of very fine punctures. Striae 1–7 finely and irregularly punctate in basal third. Striae 2–3 (or rarely 2–4) and 6–8 nearly obsolete at base, stria 5 slightly deeper; all striae disappearing in apical third; apex with barely recognisable traces of striae. Interval 1 raised and convex on disc,

other intervals slightly raised. Three PHSP, two DSP (anterior and posterior one in/near stria 3, middle one missing) and two ASP (in moderately deep apical stria).

Protibia. Apical spine moderately curved backwards but not inwards, as long as apical spur, the latter slightly curved; distal marginal tooth large, not sharp, proximal one small, very blunt.

Differential diagnosis. *Dyschiriodes hajeki* sp. nov. belongs to the *D. substriatus* group (sensu FEDORENKO 1996, 1997a) and can be placed in the *D. substriatus* subgroup. It can be distinguished from the most similar *D. (Paradyschirius) pfefferi* (Kult, 1949) by a larger body (3.75 mm in *D. hajeki* sp. nov., 3.40 mm in *D. pfefferi*), two very blunt but distinct paramedian teeth on the anterior margin of clypeus (indistinct in *D. pfefferi*), different structure of clypeus and vertex (T-shaped carina on clypeus and impunctate vertex in *D. pfefferi*), two DSP (a single anterior DSP in *D. pfefferi*) and basally deep stria 1 that is connected with BSP (stria 1 basally obsolete in *D. pfefferi*). The new species differs from *D. (P.) kabakovi* Fedorenko, 1997 by a sparsely and much more finely punctate vertex, less rounded outline of the pronotum, apically strongly weakened elytral striae, basally much deeper stria 1, three PHSP (one PHSP in *D. kabakovi*) and missing middle DSP (anterior DSP missing in *D. kabakovi*). Finally, some characters in *D. hajeki* sp. nov. (such as the shape of the elytra) resemble *D. sjoestedti* (Müller, 1936) from Sichuan, the only species of this group unknown to me; *D. hajeki* sp. nov. can be distinguished from the latter species by its much larger size (3.75 mm in *D. hajeki* sp. nov., 3.00 mm in *D. sjoestedti*), different colouration, structure of clypeus (clypeus almost smooth in *D. sjoestedti*), basally deeper elytral stria 1 and different number of PHSP (two in *D. sjoestedti*) and DSP (three in *D. sjoestedti*).

Etymology. Dedicated to its collector, Jiří Hájek (NMPC, Praha), a specialist in Dytiscidae.

Distribution. China (Yunnan).

Dyschiriodes (Paradyschirius) ruthmuelleriae sp. nov.

(Figs. 3, 9, 15)

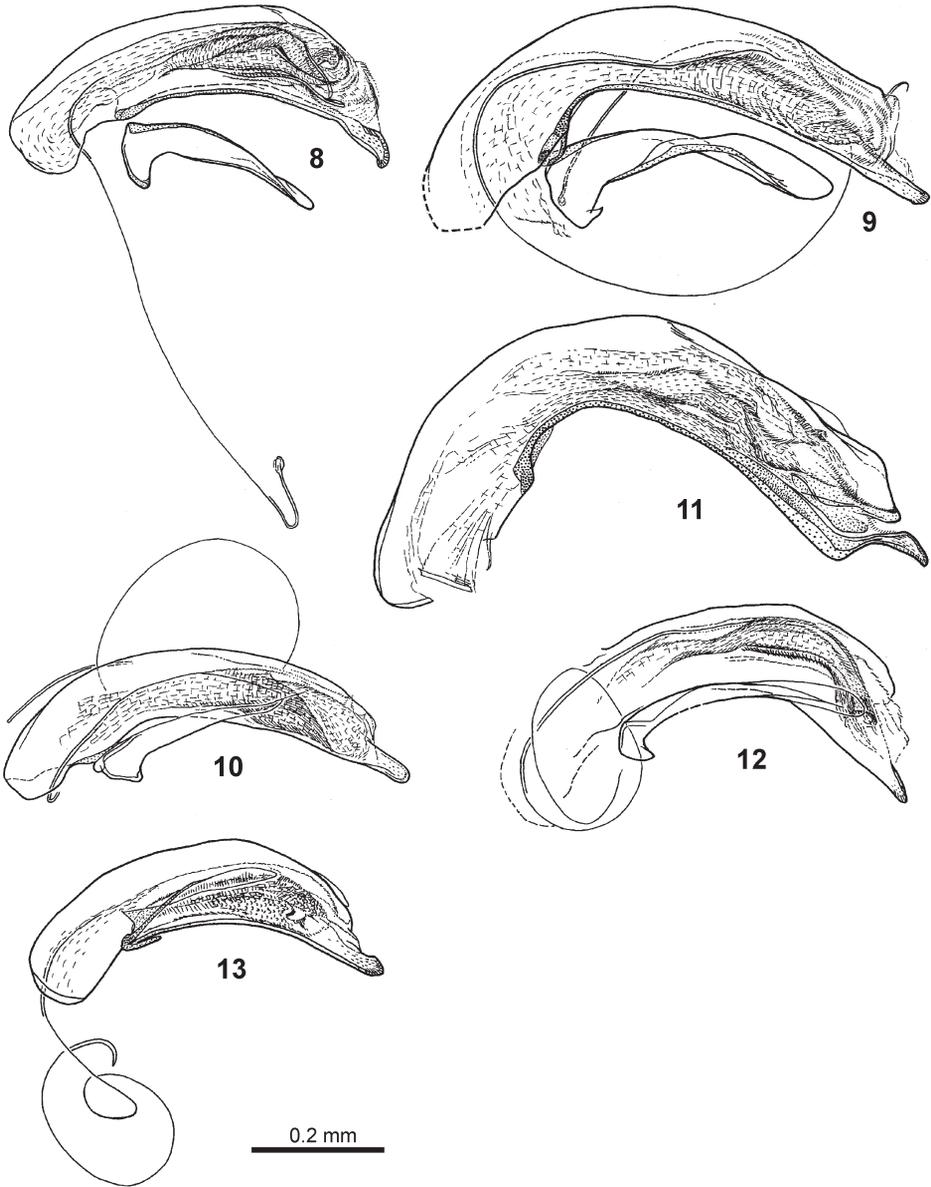
Type locality. Namibia, Caprivi, 20 km SE of Divundu, 1000 m a.s.l.

Type material. HOLOTYPE: ♂, 'NAMIBIA; CAPRIVI 1000m / 20 km SE Divundu / 18.06 S – 21.40 E // 17.iii.2006; E-Y: 3726 / light trap / leg. R. Müller' (TMSA).

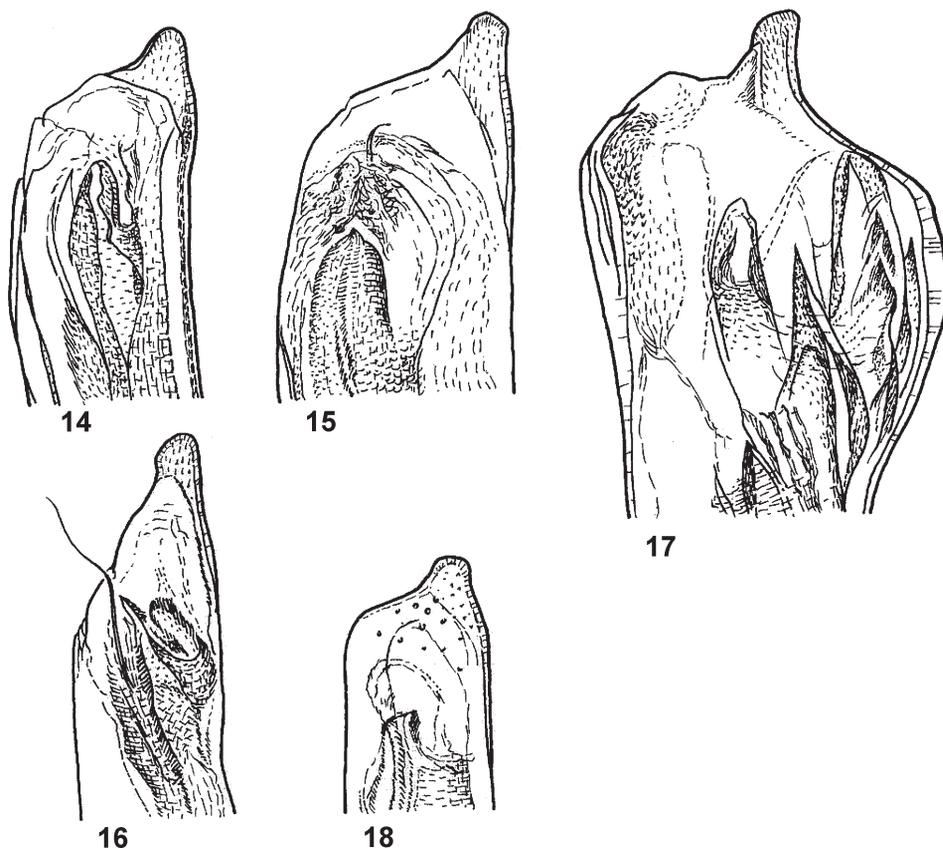
Description. Habitus as in Fig. 3; length 3.70 mm. Colouration dark rusty-brown, surface without metallic lustre, elytra in basal two thirds slightly darker; legs rusty red, antennomeres and mouth-parts rusty yellow.

Head. Anterior margin of clypeus with sharp, distinctly protruding lateral lobes, between them slightly emarginate; clypeofrontal area with two distinct and parallel transverse ridges, connected at their midlength by equally distinct longitudinal ridge (forming together a letter H turned sideways); facial furrows deep, moderately long, parallel anteriorly and slightly divergent in posterior third, distance between them slightly larger than eye length. Surface vaulted, even, smooth, with very fine and sparse micropunctures. Eyes moderately large, convex. Antennae submoniliform.

Pronotum. Strongly convex, outline moderately rounded in posterior half and almost straight in anterior half; moderately attenuated anteriorly; 1.00 times as wide as long, 1.41 times



Figs. 8–13. Aedeagus, right lateral view. 8 – *Dyschiriodes sabahensis* sp. nov.; 9 – *D. ruthmuellerae* sp. nov.; 10 – *D. kadleci* sp. nov.; 11 – *D. facchinii* sp. nov.; 12 – *D. jelineki* sp. nov.; 13 – *D. genieri* sp. nov. (all holotypes).



Figs. 14–18. Apex of aedeagus, ventral view. 14 – *Dyschiriodes sabahensis* sp. nov.; 15 – *D. ruthmuellerae* sp. nov.; 16 – *D. kadleci* sp. nov.; 17 – *D. facchinii* sp. nov.; 18 – *D. genieri* sp. nov. (all holotypes).

as wide as head; widest just before posterior setiferous punctures. Anterior angles obtuse, posterior ones moderately rounded. Anterior transverse impression deep, impunctate, with very sparse and fine cross striae; median line moderately deep, slightly deeper posteriorly; lateral channel distinct, reflexed lateral margin extended markedly beyond posterior setiferous puncture. Surface mirror-like, shiny, with very fine micropunctures.

Elytra. Strongly convex, long-ovate, 1.77 times as long as wide, 1.16 times as wide as pronotum; humeri moderately protruded, each elytron with indistinct humeral tooth; base slightly sloping; outline slightly broadened on sides, broadest at about midlength; suture not depressed at base. Base without basal border and tubercles; BSP large, distinctly connected with stria 1. Striae 1–7 equally deep, striae 2–6 slightly finer just before apex, striae 2–3 finer basally, striae 4–5 deeper basally; striae moderately deeply punctate in anterior half

(striae 1–4) to two fifths (striae 5–7); stria 8 superficial, finely punctate in second third and barely recognisable apically; intervals moderately vaulted on disc. Three PHSP, three DSP (anterior one near interval 3, middle and posterior ones in interval 3) and two ASP (in deep apical stria).

Protibia. Apical spine distinctly curved downwards but not inwards, longer than apical spur; the latter uncinately before apex; distal marginal tooth large, sharp, proximal one indistinct, very blunt.

Aedeagus. Shape as in Figs. 9, 15; 0.69 mm long in HT (base of median lobe cracked, full length probably about 0.74 mm), lower margin of median lobe in apical half straight. Apical lamella as in Fig. 15; moderately long, asymmetric, narrowly rounded. Paramere not setose.

Differential diagnosis. *Dyschiriodes ruthmullerae* sp. nov. belongs to the *D. verticalis* subgroup of the *D. substriatus* group (sensu FEDORENKO 1996, 1997a). It can be distinguished from the West African *D. (Paradyschirius) devroeyanus* (Burgeon, 1935), the only known Afrotropical species of this (sub)group, by its much larger size (3.70 mm in *D. ruthmullerae* sp. nov., 2.70–2.90 mm in *D. devroeyanus*), H-shaped carina on the head (T-shaped in *D. devroeyanus*), slightly narrower pronotum (ratio width/length equal to 1.00 in *D. ruthmullerae* sp. nov. and 1.03–1.07 in *D. devroeyanus*), with almost no cross striae on the transverse impression of the frons, slightly longer elytra (ratio length/width equal to 1.77 in *D. ruthmullerae* sp. nov. and 1.69–1.74 in *D. devroeyanus*) and much finer and in basal half finely punctate elytral striae. *Dyschirioides (P.) dispar* (Péringuey, 1896), the second Afrotropical representative of the subgenus *Paradyschirius* Fedorenko, 1996 known to date, belongs to the monospecific and very different *D. dispar* group (sensu FEDORENKO 1996) characterized by transverse furrows but no keel on the head, a longer and subparallel pronotum and elytra, slightly bordered elytral base and reduced number of elytral setiferous punctures (one PHSP, one DSP and one ASP).

Etymology. Dedicated to the discoverer of the new species, Ruth Müller (TMSA, Pretoria, South Africa).

Distribution. Namibia (Caprivi).

Subgenus *Eudyschirius* Fedorenko, 1996

The subgenus was established and partially revised by FEDORENKO (1996, 1997b, 1999a). It contains about 80 widely distributed species and can be divided into at least 11 species groups.

Dyschiriodes (Eudyschirius) kadleci sp. nov.

(Figs. 4, 10, 16)

Type locality. India, W Maharashtra state, Bushi Dam env., 4 km S of Lonavala, 500 m a.s.l.

Type material. HOLOTYPE: ♂, 'INDIA W MAHARASHTRA / st., Bushi Dam env. / 4 km S of Lonavala / 500 m, 12.–15.x.2005 // *Dyschiriodes (Eudyschirius) / sp. n. / det. D. Fedorenko 2006*' (NMPC). PARATYPE: **INDIA:** MAHARASHTRA: ♀, 'INDIA W MAHARASHTRA / st., Mulshi env. / 40 km W of Pune / 7.–11.x.2005' (PBPC).

Description. Habitus as in Fig. 4; HT and PT 3.45 mm long. Coloration dark fuliginous, surface with green-bronze lustre; head anteriorly and elytral base slightly lighter, latero-apical area of

each elytron with yellowish macula; legs rusty red, antennomere 1 and mouth-parts lighter.

Head. Anterior margin of clypeus with sharp, distinctly protruded lateral lobes, between them almost straight with two very blunt, barely recognisable projections; clypeofrontal area with moderately impressed, short transverse furrow at the level of anterior margin of eyes and with additional irregular and very fine, barely recognisable transverse furrow at the level of posterior half of eye length; facial furrows deep and broad, regularly divergent posteriorly; distance between them narrower than eye length. Surface vaulted, even, smooth, with very fine and sparse micropunctures. Eyes moderately large, strongly convex. Antennae submoniliform.

Pronotum. Strongly convex, outline regularly rounded, not attenuated anteriorly; in HT 1.11 times and in PT 1.05 times as wide as long, in HT 1.34 times and in PT 1.35 times as wide as head; widest in anterior two thirds of its length. Anterior angles very blunt, posterior ones moderately broadly rounded. Anterior transverse impression deep, roughly and sparsely punctate, without cross striae; median line moderately deep apically, much finer on disc; lateral channel moderately broad, reflexed lateral margin extended markedly beyond posterior setiferous puncture. Surface mirror-like, shiny, with very fine micropunctures.

Elytra. Convex, slightly ovate, in HT 1.70 times and in PT 1.67 times as long as wide, in both HT and PT 1.25 times as wide as pronotum; humeri moderately protruded without humeral teeth; base moderately sloping; outline regularly broadened on sides, broadest slightly behind anterior third; suture not depressed at base. Base without basal border and tubercles; BSP large, deeply connected with stria 1 and indistinctly with stria 2. Striae 1–7 deep along entire length, densely and finely punctate in anterior part; punctation gradually disappearing latero-apically, stria 8 much finer, consisting of 3–5 fine punctures in second third. Intervals distinctly vaulted. Three PHSP, three DSP (in middle of interval 3) and two ASP (in deep apical stria).

Protibia. Apical spine slightly curved downwards but not inwards, as long as apical spur; the latter thin, almost direct; distal marginal tooth large, sharp, proximal one small, very blunt.

Aedeagus. Length 0.61 mm in HT, lower margin of median lobe almost straight (Figs. 10 and 16). Apical lamella long, narrow, asymmetric (Fig. 16). Paramere with one seta.

Differential diagnosis. *Dyschiriodes kadleci* sp. nov. belongs to the *D. orientalis* group (sensu FEDORENKO 1996, 1997b). It can be distinguished from the most similar *D. (Eudyschirius) nitens* (Putzeys, 1878), to date the only known species of the group with elytral striae not shortened apically, by its much larger size (3.45 mm in *D. kadleci* sp. nov., 2.40–2.80 mm in *D. nitens*), less infusate apices of the antennae, more sloping elytral base, finer elytral striae with interval 5 slightly broader than punctures (interval distinctly narrower in *D. nitens*), very fine stria 8 (very deep in *D. nitens*) and different shape of the median lobe of the aedeagus (compare Figs. 2.3 and 3.1 in FEDORENKO (1997b) for *D. nitens*). It is easily distinguished from the remaining members of the *D. orientalis* group by the equally impressed elytral striae, which become shallower apically in the other species.

Etymology. Named in commemoration of my late friend Stanislav Kadlec, a specialist in Cerambycidae, who passed away recently in 2008.

Distribution. India (western Maharashtra).

***Dyschiriodes (Eudyschirius) facchinii* sp. nov.**

(Figs. 5, 11, 17)

Type locality. Thailand, 3 km W of Ban Rai, 170 km NW of Bangkok.**Type material.** HOLOTYPE: ♂, 'THAILAND / 3 km w. Ban Rai / 170 km nw Bangkok / xii.1991, leg. Thielen // *Dyschirius / disjunctus* / Andr. / det M. Baehr '02 // *Dyschiriodes / (Eudyschirius) / disjunctus* ?ab. / (Andr.) / det. D. Fedorenko, 2005' (ZSM). PARATYPES: **THAILAND:** 1 ♀ with the same locality data as HT (PBPC); 1 ♀, 'THAILAND, NAN prov. / Ban Huay Kon env. / 27.v.–10.vi.2002 / P. Průdek & M. Obořil leg.' (PBCP).**Description.** Habitus as in Fig. 5; HT 3.70 mm long, PTs 3.60 mm and 3.80 mm long. Fuliginous, anterior part of head and elytral base lighter; surface with green-bronze lustre; legs rusty red, antennae and mouth-parts slightly lighter.

Head. Anterior margin of clypeus with moderately sharp, distinctly protruded lateral lobes, straight between them, clypeofrontal suture deep, transverse; facial furrows deep, parallel in anterior half, strongly divergent posteriorly; distance between them about equal to eye length. Surface vaulted and smooth, with fine and sparse micropunctures. Eyes moderately large and convex. Antennae submoniliform.

Pronotum. Strongly convex, outline moderately and evenly rounded, distinctly attenuated anteriorly; in HT 0.99 times and in PTs 1.01 and 0.99 times as wide as long, in HT 1.45 times and in PTs 1.42 and 1.43 times as wide as head; widest in posterior fourth. Anterior angles blunt and rounded, posterior ones broadly rounded. Anterior transverse impression deep, without punctures and cross striae; median line superficial, very fine on disc; reflexed lateral margin strongly shortened, extended slightly below anterior setiferous puncture. Surface mirror-like, shiny, with very fine micropunctures.

Elytra. Strongly convex, ovate, in HT 1.58 times and in PTs 1.60 and 1.59 times as long as wide, in HT 1.26 times and in PT 1.22 and 1.25 times as wide as pronotum; humeri moderately protruded without humeral teeth; base moderately sloping; outline distinctly and regularly broadened on sides, broadest slightly behind midlength; suture indistinctly depressed at base. Base without basal border and tubercles; BSP large, indistinctly connected with first stria. Striae 1–7 moderately deep in basal three fifths (inner striae) to basal half (outer striae), striae 2–7 strongly weakened apically; densely and moderately roughly punctate in anterior half; punctation gradually disappearing latero-apically; stria 7 deeper just before apex, stria 8 much finer, consisting of 3–5 very fine punctures in second third; intervals moderately vaulted in basal half, flattened latero-apically. Three PHSP, two DSP (anterior one in the middle of interval 3, middle one near to stria 2, posterior one missing) and two ASP (in deep apical stria).

Protibia. Apical spine thin, slightly curved downwards but not inwards, slightly longer than apical spur; the latter slightly curved; distal marginal tooth small, blunt, proximal one indistinct.

Aedeagus. Length 0.84 mm in HT; from ventral view very characteristic and unique, very broad, with asymmetric and large bulges on both sides before apex and broad excision on both sides of apical lamella (Figs. 11, 17). Apical lamella very small, rounded, slightly narrowed apically (Fig. 17). Paramere unisetose, not figured.

Differential diagnosis. *Dyschiriodes facchinii* sp. nov. belongs to the *D. gracilis* group and subgroup (named *D. lafertei* group in FEDORENKO (1996, 1997b)). It can be distinguished from its sibling species *D. (Eudyschirius) disjunctus* (Andrewes, 1929), to date the only

known species of this group from the Oriental Region, by strongly apically weakened elytral striae (at most slightly weakened in *D. disjunctus*), very different apex of the median lobe of the aedeagus (apical part 'trefoil-like' in *D. disjunctus*, with much larger and broader apical lamella) and slightly narrower pronotum (width of elytra/pronotum ratio equal to 1.22–1.26 in *D. facchinii* sp. nov. and 1.17–1.20 in *D. disjunctus*, pronotum width/length ratio equal to 0.99–1.01 in *D. facchinii* sp. nov. and 1.01–1.04 in *D. disjunctus*, and width of pronotum/head ratio equal to 1.42–1.45 in *D. facchinii* sp. nov. and 1.48–1.52 in *D. disjunctus*) and narrower elytra (length/width ratio equal to 1.58–1.60 in *D. facchinii* sp. nov. and 1.54–1.59 in *D. disjunctus*).

Etymology. Patronymic, in honour of Sergio Facchini (Piacenza, Italy), specialist in Afrotropical Harpalinae and other Carabidae.

Distribution. Thailand.

Comment. I have seen and measured eight specimens of both species (three of *D. facchinii* sp. nov. and five of *D. disjunctus*), which is not sufficient to prove that the new species is indeed narrower than *D. disjunctus*. Due to the similarity of both species, D. Fedorenko (Moscow, Russia) and I treated this new species first as a form of *D. disjunctus* with obsolete striae at the elytral apex. However, the examination of the aedeagi of both taxa demonstrated that they are distinct species.

Dyschiriodes (Eudyschirius) disjunctus (Andrewes, 1929)

Dyschirius disjunctus Andrewes, 1929: 411

Dyschiroides (Eudyschirius) disjunctus: FEDORENKO (1996): revised generic placement

Type material examined. HOLOTYPE: ♂, 'TYPE (red circle) // W. Almora, / Kumaon, / INDIA H.G.C. // B.M. 1927–92 / G.C.Champion // Dyschirius / disjunctus / Type Andr. / H.E.Andrewes // Syntype (blue circle)' (BMNH).

Additional material examined. INDIA: UTTARAKHAND: 2 ♀♀, 'N-INDIA UTTARANCHAL state, / ca 13 km NW of Nainital / Khairna Bridge, at light / near river, 900m, 13.–17.vii.2003 / Z. Kejval & M. Trýzna lgt.' NEPAL: 1 ♀, 'C-NEPAL, 21–27.vii.2000 / Chitwan (Roy. Nat. Park) / Sauraha vill. 166 m / 7.35 N 84.30 E (GPS) env. / Jan Schneider lgt. // Nepal Expedition / Jan Farkač, David Král / & Jan Schneider // *Dyschiriodes / disjunctus* (Andr.) / det. D. Fedorenko 2001'. CHINA: YUNNAN: 1 ♂, 'CHINA YUNNAN, 6–10.vii.1992 / Ninlang env. / 27.19 N 100.55 E / lgt. S. Bečvář' (all PBPC).

Distribution. Northern India, southern Nepal, China (Yunnan). New species for China.

Comment. This species was described in detail by ANDREWES (1929). All above-cited specimens correspond with the holotype and the original description; only the single male from Yunnan has slightly finer elytral striae, whereas the striae are slightly deeper in the female from Chitwan than in the holotype. The shape of the median lobe of the aedeagus of the male from Yunnan perfectly agrees with that of the holotype (apex trefoil-like in ventral view). Three specimens from Thailand, formerly identified as aberrant specimens of *D. disjunctus*, are described above as *D. facchinii* sp. nov.

Subgenus *Dyschiriodes* Jeannel, 1959

The subgenus was established and partially revised by FEDORENKO (1994, 1996, 1999b, 2000). It contains about 120 species, widely distributed in the Old World and Americas, and is divided into eight species groups.

Dyschiriodes (Dyschiriodes) jelineki sp. nov.

(Figs. 6, 12)

Type locality. Southern Iran, 15 km NE of Bandar Lengeh.**Type material.** HOLOTYPE: ♂, 'S. IRAN, 15 km NE / Bandar Lengeh / 25.–26.iv.1977 // Loc. No. 313 / Exped. Nat. Mus. / Praha // *Dyschiriodes* / sp. n. / det. D Fedorenko 2006' (NMPC). PARATYPE: **IRAN**: 1 spec. with the same locality data as HT (PBPC).**Description.** Habitus as in Fig. 6; both HT and PT 3.70 mm long; HT moderately immature, fuliginous, anterior part of head, elytral base and apex lighter; surface of head and pronotum with distinct bronze lustre, surface of elytra with slight bronze lustre; legs rusty red, antennae and mouth-parts slightly lighter; PT very immature, rusty brown, head and pronotum with indistinct bronze lustre.

Head. Anterior margin of clypeus with sharp, moderately protruded lateral lobes, between them straight, clypeofrontal area with 4–6 dense and irregular transverse furrows; facial furrows deep, long, parallel in anterior half, moderately divergent posteriorly; distance between them shorter than eye length. Surface vaulted, smooth, with fine and sparse micropunctures. Eyes large and moderately convex. Antennae submoniliform.

Pronotum. Moderately convex; outline moderately and evenly rounded in posterior half, slightly rounded in anterior half; attenuated anteriorly; in HT 1.03 times and in PT 1.04 times as wide as long, in HT 1.44 times and in PT 1.41 times as wide as head; widest in posterior fourth. Anterior angles blunt, not rounded, posterior ones broadly rounded. Anterior transverse impression deep, without punctures and cross striae; median line deep, narrow; lateral channel distinct, reflexed lateral margin extended slightly below posterior setiferous puncture. Surface mirror-like, shiny, with very fine micropunctures.

Elytra. Laterally slightly flattened, ovate; HT 1.64 (HT) to 1.65 (PT) times as long as wide, 1.24 times as wide as pronotum; humeri strongly protruded, each elytron with blunt humeral tooth; base slightly sloping; outline slightly and regularly broadened on sides, broadest just before midlength; suture slightly depressed at base. Base without basal border and tubercles; BSP small, deeply connected with stria 1. Striae 1–7 very deep in basal three fourth (inner ones) or basal two thirds (outer ones), slightly weakened apically; striae densely and moderately roughly punctate anteriorly; punctures gradually disappearing apically, striae in latero-apical area impunctate; stria 7 deeper before apex; stria 8 very fine, consisting of a row of minute punctures in second third of length, just recognisable in posterior third before apical stria; intervals strongly vaulted in basal two thirds, slightly flattened latero-apically. Three PHSP, three DSP (anterior one in interval 3, middle and posterior ones near stria 3) and two ASP (in deep apical stria).

Protibia. Apical spine thin, moderately curved downwards and slightly inwards, as long as apical spur; the latter slightly curved; distal marginal tooth large, sharp, proximal one much smaller, blunt.

Aedeagus. Crumpled due to immaturity, ca. 0.58 mm long in HT. Apical lamella narrowed apically in lateral view (Fig. 12). Paramere asetose.

Differential diagnosis. *Dyschiriodes jelineki* sp. nov. belongs to the *D. chalybeus* group sensu FEDORENKO (2000) (= *D. bengalensis* group sensu FEDORENKO (1994, 1996)). It can be distinguished from the most similar *D. (D.) mortchaensis* (Bruneau de Miré, 1952), known from Tchad and Arabian Peninsula, by several transverse, more or less parallel furrows on the head (indistinct oblique furrow and irregular rugosity below it in *D. mortchaensis*), absence

of cross-striated or roughly punctate anterior transverse impression on the pronotum and especially by the much shorter elytra (length/width ratio equal to 1.64–1.65 in *D. jelineki* sp. nov. and 1.73–1.82 in *D. mortchaensis*) with deeper and much more roughly punctate striae. The structure of head and stria 8 is similar to *D. (D.) chalybeus resli* (Bulirsch, 1996), known from the Eastern Mediterranean. *Dyschiriodes jelineki* sp. nov. can be distinguished from the latter subspecies by much larger body (3.70 mm in *D. jelineki* sp. nov., 2.65–3.45 mm in *D. chalybeus resli*); no cross striae in the anterior transverse impression of the pronotum, laterally more flattened elytra without basal tubercle and more densely and roughly punctate elytral striae. Finally, *D. jelineki* sp. nov. can be distinguished from most of the Afrotropical and Oriental species of the *D. chalybeus* group sensu FEDORENKO (2000) (= *D. bengalensis* group sensu FEDORENKO (1994, 1996)) by having stria 8 strongly weakened at elytral apex.

Etymology. Dedicated to Dr. Josef Jelínek (NMPC, Praha), specialist in Nitidulidae, on the occasion of his 70th birthday.

Distribution. Southern Iran.

Dyschiriodes (Dyschiriodes) genieri sp. nov.

(Figs. 7, 13, 18)

Type locality. Burkina Faso, Sanguié, Forêt de Sorobouli, 11°47'44"N, 02°53'25"W; 270 m a.s.l.

Type material. HOLOTYPE: ♂ 'BURKINA FASO: SANGUIÉ / Forêt de Sorobouli, 270 m / 11°47'44"N, 002°53'25"O [= west] / 13.viii.2005, F. Génier (leg.) / zone soudanienne sud / piège lumineux, 2005–15' (NMPC). PARATYPES (72 specimens): **BURKINA FASO:** 2 spec. with the same data as HT (FGGC); 6 spec. 'BURKINA FASO: LOROUM / Touffé, 300 m / 13°53'43"N, 001°52'25"O / 15.vii.2006, zone sahélienne / steppe arborée, piège lumineux / F. & S. Génier (leg.), 2006-37' (FGGC, PBPC); 6 spec. 'BURKINA FASO: NAHOURI / Forêt de Nazinga, Boulieselo / 310 m, 11°11'50"N, 001°35'09"O / 27.vii.2006, zone soudanienne / savane boisée, piège lumineux / F. & S. Génier (leg.), 2006-82' (FGGC, PBPC); 26 spec. 'BURKINA FASO, BOROMO / 264 m, 11°47'44 N, 2°53'25 W / Sopobouli Fst 10.–15.viii.(20)05 / Philippe Moretto leg.' (PSHG, PBPC); 22 spec. 'BURKINA FASO, BOROMO / Forêt de Sorobouli 264 m / 11°47'44"N, 2°53'25"W / 12.viii.2005 Leg. Moretto' (SFPI, PBPC); 6 spec. 'BURKINA FASO: Sanguie / Boromo Forêt de Sorobouli, / 270 m / 11°47'44"N, 2°53'25"O / 10–14.viii.2005, P. Moretto leg.' (PBPC). **GHANA:** 1 spec. 'West Africa, GHANA / NORTHERN REGION, / Mole Game Reservat / 11 km N von Larabanga / leg. Dr. S. Endrödy // No. 45 / am Licht des Resthauses / 13–14.viii.1970' (HNHM); 1 spec. 'GHANA / NORTHERN REGION / Banda-Nkwanta / 150 m, N 8 22–W 2 08 / Dr. S. Endrödy-Younga / Nr. 58 / light trap / 19–22.viii.1965' (HNHM); 2 spec. 'GHANA: NORTHERN REGION / Banda-Nkwanta / 150 m, N 8 22–W 2 08 / Dr. S. Endrödy-Younga / Nr. 20 / light trap / 1–7.vii.1965' (HNHM, PBPC).

Description. Habitus as in Fig. 7; length 3.00–3.30 mm, exceptionally as small as 2.80 mm (mean 3.14 mm, n = 30; HT 3.05 mm). Head and pronotum dark fuliginous to almost black, with indistinct bronze lustre; elytra fuliginous with base and apex lighter; legs rusty red, antennomeres and mouth-parts slightly lighter.

Head. Anterior margin of clypeus with slightly rounded, distinctly protruded lateral lobes, margin between them very slightly to moderately convex, without distinct tooth; clypeofrontal area with slightly to moderately oblique transverse furrow and with additional, 1–2 or exceptionally three more or less regular transverse furrows; facial furrows deep, moderately long, parallel anteriorly and strongly divergent in posterior half; distance between them about equal to eye length. Surface strongly vaulted, even, smooth, with very fine and sparse micropunctures. Eyes moderately large, convex. Antennae submoniliform.

Pronotum. Strongly convex, outline strongly and regularly rounded, not attenuated anteriorly; 1.04–1.12 (mean 1.09; HT 1.07) times as wide as long, 1.35–1.42 (mean 1.39; HT 1.37) times as wide as head; widest slightly below midlength. Anterior angles blunt, narrowly

rounded, posterior ones broadly rounded. Anterior transverse impression distinct, not punctate, with sparse and rough cross striae; median line deep, deeper and broader posteriorly; lateral channel moderately broad, reflexed lateral margin extended slightly beyond posterior setiferous puncture. Surface mirror-like, shiny, with very fine micropunctures.

Elytra. Convex, long-ovate, dorsal surface slightly concave in anterior fifth in lateral view; 1.63–1.71 (mean 1.68; HT 1.66) times as long as wide, 1.16–1.26 (mean 1.20; HT 1.19) times as wide as pronotum; humeri protruded, each elytron with small and blunt humeral tooth; base slightly sloping; outline slightly, regularly broadened, broadest distinctly below anterior third; suture broadly and moderately deeply depressed at base. Base without basal border and tubercles; BSP moderately large, distinctly connected with stria 1. Striae 1–6 moderately deep, densely punctate in anterior two thirds, much more finely punctate apically, striae 7 with slightly finer and stria 8 with distinctly finer punctures. Striae slightly to distinctly finer in latero-apical area, stria 8 from fine to very fine in apical third. Intervals slightly vaulted in anterior two thirds, flattened latero-apically. Three PHSP, three DSP (all in interval 3 near stria 3) and two ASP (in deep apical stria).

Protibia. Apical spine moderately curved downwards and slightly inwards, as long as apical spur; the latter slightly curved apically; distal marginal tooth large, sharp, proximal one much smaller, blunt.

Aedeagus. Length 0.53 mm in HT, lower margin of median lobe slightly emarginate (Figs. 13, 18). Apical lamella small and short, asymmetric, rounded, strongly narrowed apically (Fig. 18). Paramere asetose.

Differential diagnosis. *Dyschiriodes genieri* sp. nov. belongs to the *D. chalybeus* group sensu FEDORENKO (2000) (= *D. bengalensis* group sensu FEDORENKO (1994, 1996)). It can be distinguished from the most similar *D. (D.) mortchaensis* by its darker and smaller body (2.80–3.30 mm in *D. genieri* sp. nov., 3.60–4.00 mm in *D. mortchaensis*), shorter elytra (ratio length/width equal to 1.63–1.71 in *D. genieri* sp. nov. and 1.73–1.82 in *D. mortchaensis*) with distinctly more broadened outline and more sloping base, and different lamella of the median lobe. *Dyschiriodes genieri* sp. nov. can be distinguished from *D. (D.) bengalensis* (Andrewes, 1929), known from India (Bengal) to West Africa, by paler elytra without metallic lustre, different structure of clypeus and longer, more parallel-sided elytra with much finer striae, especially at apex and (only stria 1) at base. Finally, the new species differs from *D. (D.) jelineki* sp. nov. by much smaller size (2.80–3.30 mm in *D. genieri* sp. nov. and 3.70 mm in *D. jelineki* sp. nov.), different structure of the clypeus, more convex outline of the pronotum that is not attenuated anteriorly, and less broadened elytra.

Etymology. Dedicated to François Genier (Gatineau, Canada), collector of the major part of the type series.

Distribution. Burkina Faso, Ghana.

Comment. A single male labelled 'Zaire (= P.D.R. Congo), Haut Uele / Umg. Doruma / 20.iv.–10.v.1986 / leg G. Wewalka' (ADVA) is not included in the type series. It is probably conspecific with *D. genieri* sp. nov. but differs slightly from the type series, especially in some morphometric characters (e.g., length of body 2.80 mm, ratio of length/width of elytra 1.62). It probably represents a separate subspecies but the material is not sufficient for its description.

Dyschiriodes (Dyschiriodes) cariniceps (Baudi di Selve, 1864)

Dyschirius cariniceps Baudi di Selve, 1864: 201

Dyschiriodes (s. str.) *cariniceps*: FEDORENKO (1996): revised generic placement

Dyschirius kalalae Mařan, 1935: 211. **Synonymy confirmed**

Dyschiriodes (s. str.) *cariniceps* (?ab. *kalalae*): FEDORENKO (1996): revised generic placement, new synonymy proposed

Type material examined. *Dyschirius kalalae*: HOLOTYPE: 'IRAK [= Iraq], Bagdad [= Baghdad] / Coll. Káralová // Typus // Dyschirius / Kalalae m. / det. Mařan, 1935' (NMPC).

Additional material examined. **IRAQ:** 4 spec. 'IRAQ, 80 km SW / Baghdad, Shi ta tha / oaza, koryto potoka [oasis, stream-bed] / 21.v.1989 / J. Boháč (lgt.)' (NMPC, PBPC); 1 spec. 'IRAQ / Mosul / 28.vii.1956'. **IRAN:** 2 spec. 'S IRAN, 30.iii.1999 / 21km E of Bandar-e-Abbas / prov. HORMOZGAN / S. Kadlec leg.'; 1 spec. 'IRAN mer. occ. / Bandar-e Ganave / 11.v.1999 / L. Klíma leg.'; 2 spec. 'IRAN mer. oc. 9.v.1999 / Siraaz env. / Dary Ače-ye [=Daryacheh-ye] Maharlu / L. Klíma leg.'; 1 spec. 'IRAN mer. / Kúhha Ye, Zágros mts. / Daryače-ye [=Daryacheh-ye] Maharlu / 1400 m, 9.v.1999 / Václav Kocourek lgt.' (all PBPC). In addition I saw several hundreds of specimens from the western part of the distribution area of this species: Turkey, Cyprus, Syria, Israel, Jordan to Greece, Italy (Sardinia, Sicily), Tunisia, Libya, Algeria and Egypt (all PBPC).

Comment. *Dyschiriodes kalalae* (Mařan, 1935) was described from a single specimen which differs from typical *D. cariniceps* (Baudi di Selve, 1864) only by a slightly shorter reflexed lateral margin of the pronotum, i.e., the margin disappears before the posterior setiferous puncture. FEDORENKO (1996) studied the holotype of *D. kalalae* and treated it as an 'abberant specimen' of *D. cariniceps*. The study of five additional specimens from Iraq (see above), collected mostly near the type locality, showed that three of them are fully consistent with the holotype of *D. kalalae* whereas two are typical *D. cariniceps*. Also among six specimens from south-western Iran, two have shortened and four have complete pronotal reflexed lateral margin. Specimens from Iraq and south-western Iran vary in the length of the pronotal margin from slightly shortened to complete, whereas in all specimens from other areas the margin always reaches the posterior setiferous puncture. Both populations from Iraq and south-western Iran are otherwise identical in other characters (such as measurements, habitus, aedeagus) and the single distinguishing character is not sufficient to separate both taxa. For this reason, I treat *D. kalalae* as a junior synonym to *D. cariniceps*.

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