

Notes on the genera *Dischissus* and *Microcosmodes*
(Coleoptera, Carabidae, Panagaeini) from the Oriental Region,
with description of a new genus and a new species

О родах *Dischissus* and *Microcosmodes*
(Coleoptera, Carabidae, Panagaeini) из Ориентальной области
с описанием новых рода и вида

D.N. Fedorenko
Д.Н. Федоренко

A.N. Severtsov Institute of Ecology and Evolution, Leninsky pr. 33, Moscow 119071, Russia. E-mail: dmitri-fedorenko@yandex.ru
Институт проблем экологии и эволюции им. А.Н. Северцова, Российская Академия Наук, Ленинский пр-т, Москва 119071, Россия.

KEY WORDS: Coleoptera, Carabidae, *Craspedophorus*, *Dischissus*, *Microcosmodes*, new genus, new species, Oriental Region, Vietnam.

КЛЮЧЕВЫЕ СЛОВА: Coleoptera, Carabidae, *Craspedophorus*, *Dischissus*, *Microcosmodes*, новый род, новый вид, Ориентальная область, Вьетнам

ABSTRACT. The genus *Dischissus* Bates, 1873 is rendered monobasic by moving the *D. notulatus* species group to *Adischissus* **gen.n.** and transferring the remaining *Dischissus* species except *D. mirandus* Bates, 1873 to the *microspilotus* species group of *Craspedophorus* Hope, 1838. *Adischissus quadrinotatus* Motschulsky, 1865, **sp. bon.**, is resurrected from synonymy with *Dischissus notulatus* (Fabricius, 1801). *Microcosmodes pallipes* **sp.n.** from Vietnam is described. Two species, *M. elegans* (Dejean, 1826), **comb.n.** and *M. laticornis* (Kirschenhofer, 2000), **comb.n.**, are transferred from *Craspedophorus* to *Microcosmodes*. The name *M. barkeri*, **nom.n.**, is proposed for the secondary junior homonym *M. elegans* (Barker, 1922), **n.praeocc.**

РЕЗЮМЕ. Род *Dischissus* Bates, 1873 сужен до монотипического. Видовая группа *D. notulatus* повышена в ранге до самостоятельного рода *Adischissus* **gen.n.**, а остальные представители переведены в группу видов *microspilotus* рода *Craspedophorus* Hope, 1838. Восстановлена валидность *Adischissus quadrinotatus* Motschulsky, 1865, **sp. bon.** *Microcosmodes pallipes* **sp.n.** описан Из Вьетнама. Ещё 2 вида, *M. elegans* (Dejean, 1826), **comb.n.** и *M. laticornis* (Kirschenhofer, 2000), **comb.n.**, переведены в род *Microcosmodes* из рода *Craspedophorus*. Вторичный младший омоним *M. elegans* (Barker, 1922), **n.praeocc.**, замещён новым названием *M. barkeri*, **nom.n.**

Introduction

The Oriental Region harbours a rich fauna of the Panagaeini. Members of this tribe are medium- to large-sized, macropterous or apterous mesophiles. The adults

are easily recognizable in the field because of the distinctive appearance. The genera *Craspedophorus* Hope, 1838, *Dischissus* Bates, 1873 and *Microcosmodes* Strand, 1936, with their characteristic elytral pattern of four pale maculae, constitute the bulk of the fauna.

The genus *Dischissus* was originally erected for a species from Japan based on fourth tarsomere very deeply emarginate apically (vs. slightly emarginate in *Craspedophorus*); subsequently, other species were added to *Dischissus*. Kirschenhofer [2000] outlined the *mirandus*-group, the *notulatus*-group, and the *sapaensis*-group within the genus, leaving many species unassigned. These species were then divided between two species groups, the Afrotropical group and the Indo-Australian group [Häckel, Farkač, 2012]; the latter group was then renamed *guttiferus*-group [Häckel, Kirschenhofer, 2014a], whereas the *sapaensis*-group was transferred to *Craspedophorus* after one of its three species was moved to the *guttiferus*-group.

Microcosmodes includes two dozen rather small-sized species distributed in Africa and just two in the Oriental Region to Australia.

Initially, the purpose of this paper was to describe new Oriental species, mainly from Vietnam. Yet a closer look at the Oriental panagaeines convinced me that a new genus is needed.

The material has been collected during several expeditions to various areas of Vietnam sponsored by the Joint Russia-Vietnam Tropical Center. Holotypes and some paratypes are deposited in the Zoological Museum of the Moscow State University (ZMMU) and Zoological Institute, Russian Academy of Sciences, St. Petersburg (ZISP), with the remaining paratypes in the author's reference collection at A.N. Severtsov

Institute of Ecology & Evolution, Moscow (SIEE). Additional material has also been studied loaned from Museo Civico di Storia Naturale “Giacomo Doria,” Genova, Italy (MSNG), the Siberian Zoological Museum at the Institute of Animal Systematics & Ecology, Novosibirsk (SZMN) and D.W. Wrase Collection, Berlin (CW).

All the labels are printed, unless marked ‘[hw]’ (= handwritten). Data on labels of type specimens are in quotes, each line separated with a slash.

The following parameters were analyzed:

- AnL, lengths of antennomeres 1 to 4 (n=1, 2, 3, 4); used in the antennal ratio (AR = A1L/A3L : A2L/A3L : A4L/A3L);
- BL, maximum body length measured between apices of closed mandibles and elytra;
- EL, maximum length of elytron;
- ES3L, length of metepisternum along outer margin;
- ES3W, width of metepisternum along anterior margin;
- EW, maximum width of elytra;
- HW, maximum width of head across eyes;
- OL, length of eye tubercle (eye and gena combined) measured from middle of preocular concavity to the neck in dorsal view;
- PL, length of pronotum along mid-line;
- PLw, distance between level of maximum width and apex of pronotum, measured along mid-line;
- PW, maximum width of pronotum;
- PWb, width of pronotum at base (between basal angles);
- PWa, width of pronotum at apex (between apical angles);
- LL, length of greater apical lobe of respective tarsomere 4 in proportion to
- LnT4, lengths of pro- or metatarsomere 4 (n=1 and 3, respectively).

Measurements were taken using an eyepiece micrometer, to two decimal places. Unless otherwise indicated, the number of specimens measured (n) is only given for the first ratio in the description.

Results

Within this group of genera, the apical lobes of the fourth tarsomere are known to vary considerably in length. In many *Craspedophorus* those are very short and never exceed 2/5 length of the tarsomere (Tab. 1). Members of the *sublaevis*-group have the longest lobes within the genus (longer than in some *Dischissus*). Other differences between *Dischissus* (sensu auct.) and *Craspedophorus* are quantitative and otherwise polythetic. Specifically, *Dischissus* species are always macropterous, with slender body and longer, denser ventral vestiture of the tarsi. In most of them, the ventrites are crenate basally, the penultimate labial palpomere subcylindric and bisetose at inner margin, and the labrum with medial setae attached close to apex; body varies considerably in size. Otherwise, the three species groups of *Dischissus* differ considerably between them.

The *notulatus*-group includes small species with subtruncate labrum, and sides of the pronotum and legs, or at least femora, pale. This color pattern, combined with a very gently emarginate labrum, is also characteristic of *Microcosmodes*. Besides, the two taxa share rather wide tarsi, with a very dense ventral pubescence. Both also tend to have antennomere 3 rather short relative to the scape: it ranges between 1.08 and 1.16 (mean 1.12) in *D. notulatus*, which is close to the A1L/A3L values shown by two *Microcosmodes* species (0.93–1.07), but is much higher than in other examined species of *Dischissus* (0.80–0.91) and *Craspedophorus* (0.72–1.05).

The *guttiferus*-group includes much larger species with no pale parts other than the four elytral maculae. They look very much like members of the *Craspedophorus microspilotus* species group; this similarity is quite striking if one compares *C. (Microspilotus) formosanus* Jedlička, 1939 and *D. hajeki* Häckel et Kirschhofer, 2014 or *D. vietnamensis* Häckel et Kirschhofer, 2014. These species are very similar in all respects, including body shape and proportions, elytral pattern, and male genitalia. The differences seem to be at best of species level, suggesting close kinship between the *guttiferus*-group and *C. formosanus*.

The type species, *Dischissus mirandus* Bates, 1873, is the most distinctive member of the genus; it is large (17–19 mm in length), with ventrites smooth at bases, the penultimate labial palpomere dilated apicad and plurisetose at inner margin, and the labral medial setae at a distance from apical margin. This character combination is only seen in some *Craspedophorus*, primarily among the *sublaevis*-group, while the features of the mouthparts are shared with some other *Craspedophorus* spp., such as *C. mouhotii*, *C. angulatus*, and *C. mandarinus*. However, the internal sac of aedeagus of

Table 1. Length ratio of apical lobes of tarsomere 4 to the total length of tarsomere 4.
Таблица 1. Соотношение длин вершинных лопастей 4-го членика лапки и самого членика.

Species	n	LL/L1T4	LL/L3T4
<i>Craspedophorus mouhotii</i>	3	0.34–0.39	0.26–0.28
<i>C. angulatus</i>	3	0.40	0.30
<i>C. sapaensis</i>	3	0.38–0.41	0.34–0.39
<i>C. laticornis</i>	3♂♂	0.38–0.44	0.27
<i>Microcosmodes pallipes</i> sp.n.	3♂♂	0.45–0.50	0.25–0.31
<i>Dischissus mirandus</i>	♂	0.46	0.46
<i>D. alaticollis</i>	♂	0.50	0.46
<i>Craspedophorus (sublaevis) laevipennis</i>	3	0.52–0.54	0.44–0.55
<i>Dischissus hajeki</i>	3	0.55–0.60	0.52–0.53
<i>D. notulatus sumatranus</i>	3	0.56–0.68	0.56–0.66

D. mirandus is quite unlike that of the other mentioned species, due mainly to the apical sclerite being much smaller, poorly sclerotized, and differently shaped.

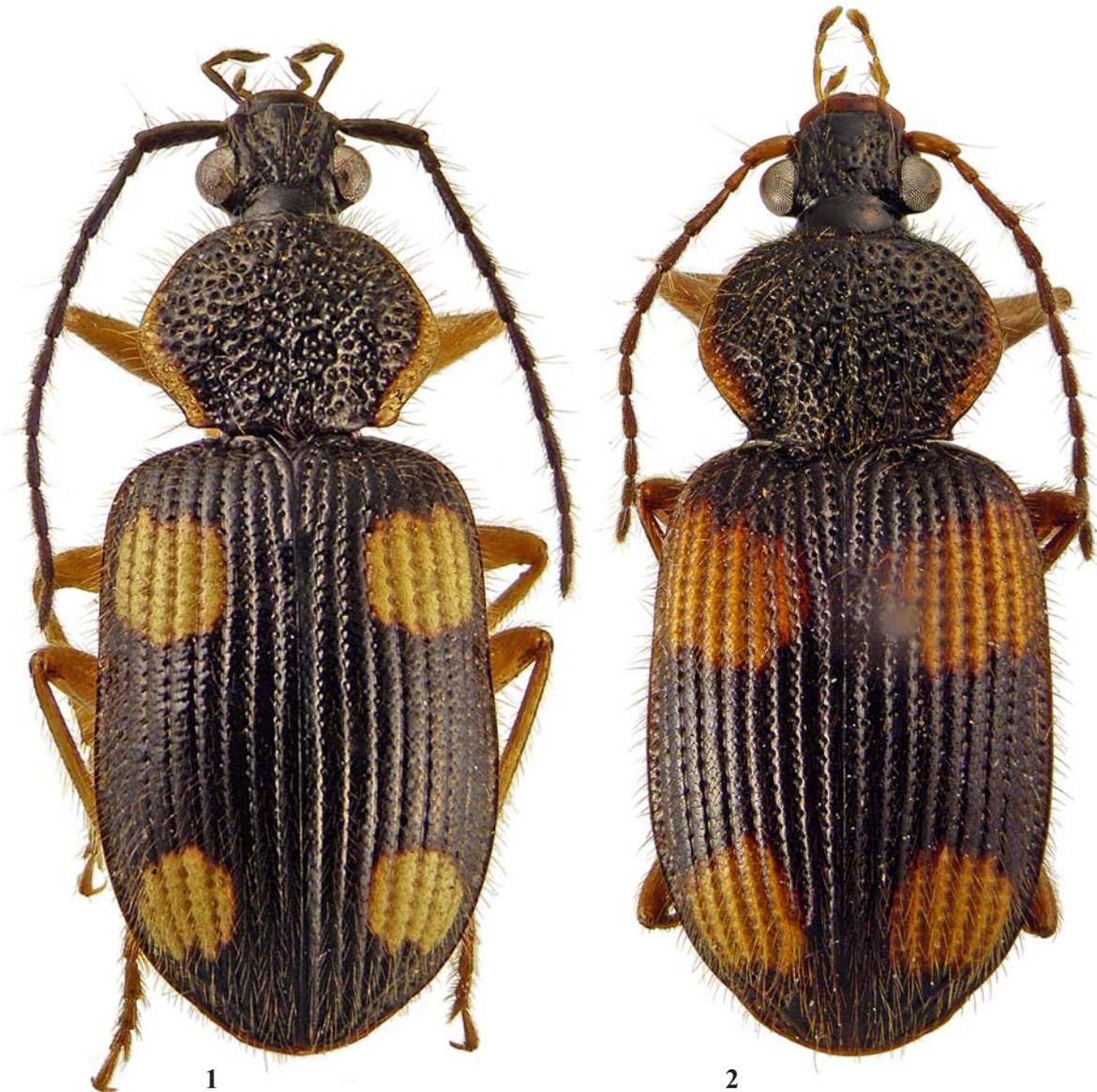
For the above reasons, I erect a new genus for the *notulatus*-group; transfer the *guttiferus*-group to *Craspedophorus*, merge it with the *sapaensis*-group, and downgrade the latter to a subgroup of the *microspilotus* species group. As a result, *Dischissus* (sensu nov.) is rendered monobasic.

***Adischissus* Fedorenko, gen.n.**

Type species: *Carabus notulatus* Fabricius, 1801.

DESCRIPTION. Body (Fig. 1) macropterous, small-sized, slender, and pubescent. Coloration black, explanate lateral margins of pronotum, two spots on each elytron and femora or entire legs reddish-yellow. Dorsum glossy; microsculpture

superficial yet distinct on labrum, very superficial to obliterate on elytra, absent on head and pronotum. Head and pronotum very densely to confluent punctate, clypeus and neck smooth and glabrous. Antennae long, scape clearly (one-fourth to one-third) longer than eye tubercle and slightly longer than antennomere 3. Labrum with apical margin subtruncate and medial setae inserted just before middle. Penultimate labial palpomere subcylindrical and bisetose at inner margin. Three apical maxillary palpomeres pubescent. Apical labial palpomere securiform, conspicuously wider in male, with apex less oblique and outer (terminal) angle more rounded than in female. Apical maxillary palpomere securiform in female, with outer angle acute and sharp while inner angle very obtuse to rounded; rhomboidal in male, due to the tip being subacutangular (but rounded), so that the sides of this angle running parallel to the contralateral margins of the palpomere, and both outer and inner angles obtuse. Pronotal lateral margins rather widely



Figs 1–2. Dorsal habitus: 1 — *Adischissus quadrinotatus*, a female from Karnataka, India; 2 — *Microcosmodes pallipes* sp.n., paratype, ♀.
Рис. 1–2. Габитус сверху: 1 — *Adischissus quadrinotatus*, самка из Индии (Карнатака); 2 — *Microcosmodes pallipes* sp.n., паратип, ♀.

explanate and reflexed in basal half, basal angles each with a small tooth. Elytral interval 3 with discal setigerous pores lacking or inconspicuous. Movable abdominal sterna with a dense row of large punctures along bases; sterna IV–VI each

with one pair of ambulatory setae, apical sternite (VII) usually with a group of 2 or 3 setigerous pores at each side close to apex. Tarsomere 4 bilobed, with lobes subequal in protarsus; the outer lobe being somewhat shorter in mesotarsus and



Figs 3–5. Median lobe of aedeagus, left lateral aspect: 3 — *Adischissus notulatus sumatranus*; 4 — *Microcosmodes laticornis*; 5 — *M. pallipes* sp.n. Scale bar 0.5 mm.

Рис. 3–5. Средняя доля эдеагуса, вид слева: 3 — *Adischissus notulatus sumatranus*; 4 — *Microcosmodes laticornis*; 5 — *M. pallipes* sp.n. Масштаб 0.5 мм.

clearly shorter (often also narrower) than the inner lobe in metatarsus. Protarsi similar in both sexes, not dilated in male.

Aedeagus (Figs 3, 6) with apical lamella short and truncate in ventral view; internal sac with a large sclerite that appear divided into two apical sclerites when internal sac is everted. Right paramere longer than the left one (Fig. 9).

DIAGNOSIS. The genus is distinguished from the other Panagaeini with four pale maculae on dark elytra mainly in having the fourth tarsomere bilobed, combined with the winged condition, small, fairly slender body, and pale explanate pronotal margins and usually the entire legs or at least femora. *Adischissus* **gen.n.** also differs from *Microcosmodes* in having the scape clearly longer than eye tubercle.

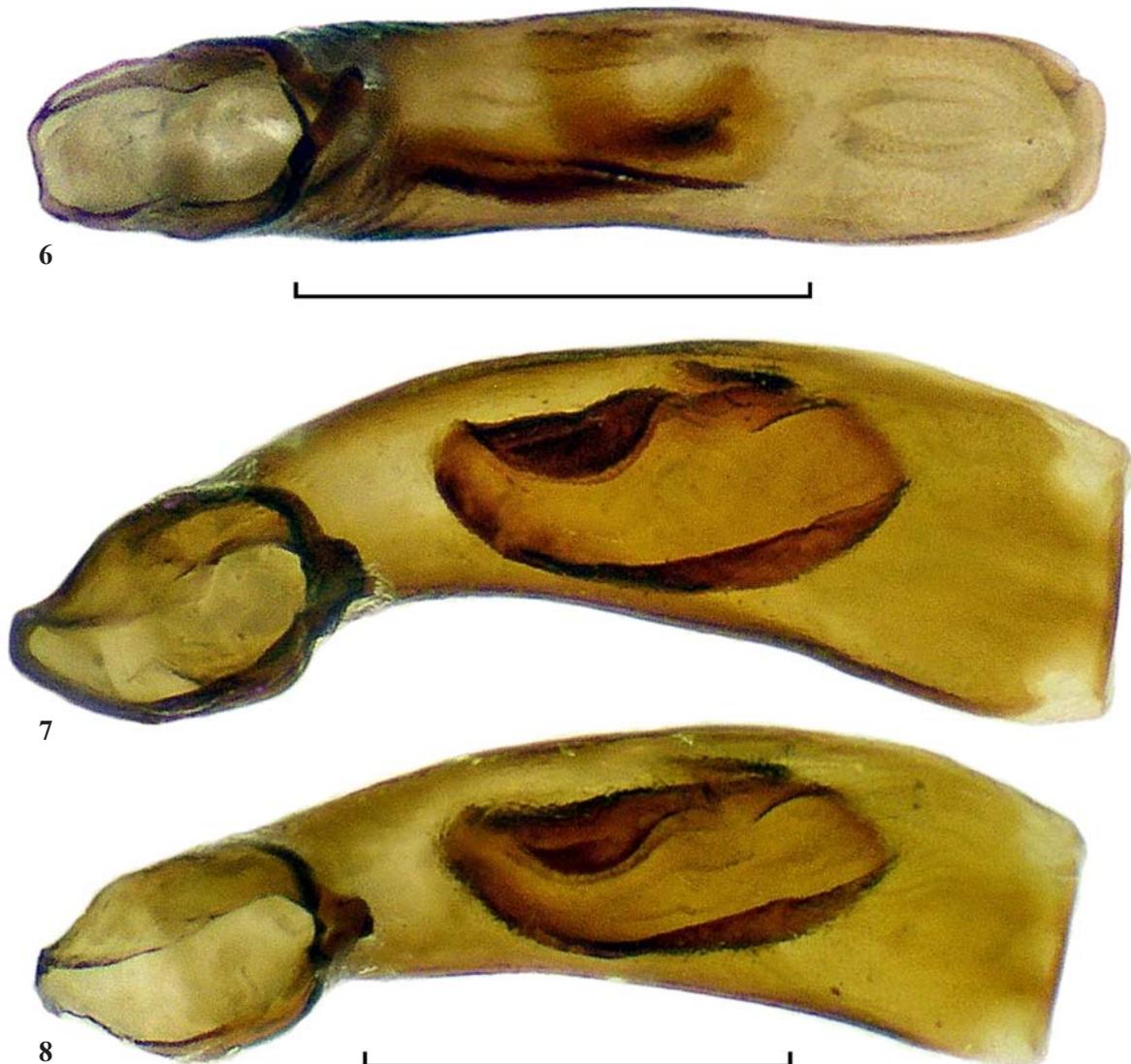
NAME. Combination of Greek prefix 'a-' and the generic name *Dischissus*.

COMMENTS. *Peronomus* Motschoulsky, 1865, being a mere misspelling of *Peronomerus* and thus unavailable, would

otherwise be applicable to this genus. Motschulsky [1865] marked all the genera described as new by 'n. g.' (new genus), but *Peronomus* was not so marked, neither did Motschulsky provide any description or diagnosis other than comparison of *Peronomus quadrinotatus* with '*Peronom[erus]. fumatus*'. Chaudoir [1879] emended this *lapsus calami* by referring to '*Disch. quadrinotatus* Motschulski (*Peronomerus*)'.

Adischissus **gen.n.** is erected here for the former *Dischissus notulatus* species-group, that includes seven species listed below, including *D. notulatooides* Xie et Yu, 1991 from China and probably the obscure *D. borneensis* J. Frivaldsky, 1883. I have not seen specimens of the latter two.

Based on the descriptions, I provisionally place in *Adischissus* **gen.n.** all five African species of *Dischissus*. Furthermore, I have not seen the type of *Microcosmodes quadrimaculatus* (Csiki, 1907) but one female from the Philippines



Figs 6–8. Aedeagus, median lobe, ventral aspect: 6 — *Adischissus notulatus sumatranus*; 7 — *Microcosmodes laticornis*; 8 — *M. pallipes* **sp.n.** Scale bars 0.5 mm.

Рис. 6–8. Средняя доля эдеагуса вентрально: 6 — *Adischissus notulatus sumatranus*; 7 — *Microcosmodes laticornis*; 8 — *M. pallipes* **sp.n.** Масштаб 0.5 мм.

matches well both the original description, the additional characters cited by Darlington [1961], and, surprisingly, shows all the characteristic features of *Adischissus* **gen.n.**, including the bilobed tarsomere 4 and the antennal ratio almost identical to that of *A. notulatus sumatranus*. Therefore I provisionally treat *M. quadrimaculatus* as a member of *Adischissus* **gen.n.**

The fact that *Adischissus* **gen.n.** and *Microcosmodes* are very similar in body size and colour pattern suggests their affinity. The shape of tarsomere 4 is not a good character to separate genus-group taxa in the Panagaeini, so *Adischissus* **gen.n.** might be a subgenus of *Microcosmodes* rather than a separate genus; moreover, the differences between the two are hardly stronger than those between the Asian species of *Microcosmodes*, which are quite diverse in body proportions, in the A1L/OL ratio, and in AR.

Asian species of *Adischissus* **gen.n.**

- A. japonicus* Andrewes, 1933b, **comb.n.**
 = *Dischissus quadrinotatus*: Bates, 1873
 = *Dischissus quadrinotatus*: Chaudoir, 1879
- A. notulatus* Fabricius, 1801 (*Carabus*), **comb.n.**
 = *Craspedophorus longicornis* Schaum, 1863
 ssp. *sumatranus* Dohrn, 1891 (*Panagaeus*), **comb.n.**
 = *Dischissus longicornis*: Chaudoir, 1879
 = *Dischissus notulatus* var. *tibialis* Andrewes, 1933b
 = *Dischissus tibialis*: Habu, 1961
 = *Dischissus phuongensis* Kirschenhofer, 1994, **syn.n.**
- A. pantarensis* Häckel et Kirschenhofer, 2014a (*Dischissus notulatus* ssp.), **stat.n.**, **comb.n.**
- A. queenslandicus* Häckel et Kirschenhofer, 2014a (*Dischissus notulatus* ssp.), **stat.n.**, **comb.n.**
- A. quadrinotatus* Motschulsky, 1865 (*Peronom[er]us*), **stat.n.**, **comb.n.**
 = *Dischissus notulatus*: Andrewes, 1933b (part.)
 = *Dischissus quadrinotatus*: Habu, 1961
- A. indragiriensis* Häckel et Kirschenhofer, 2014a
- A. notulatoides* Xie et Yu, 1991 (*Dischissus*), **comb.n.**

COMMENTS. Historically, Chaudoir [1879] synonymized *Carabus notulatus* Fabricius, 1801 with *Epicosmus elegans* Dejean, 1826, thus recognizing just two smaller Oriental species of *Dischissus*, *D. quadrinotatus* sensu

Bates [1873] and *D. longicornis* sensu Chaudoir. Andrewes [1921, 1922, 1927] examined several types and demonstrated that the above synonymy was wrong because Fabricius' species did belong in *Dischissus*, being conspecific with *D. longicornis* and *Panagaeus sumatranus*. Subsequently Andrewes [1933b] erroneously added *Peronomus quadrinotatus* to the list of synonyms while discussing differences between *D. japonicus* and *D. notulatus* var. *tibialis*. He recorded '*D. notulatus* (= *longicornis* Schaum, = *sumatranus* Dohrn)' in the Philippines [Andrewes, 1926] and Sumatra [Andrewes, 1933a] and reported both *D. notulatus* and *D. n.* var. *tibialis* as being common in Burma (Myanmar) [Andrewes, 1946]. In short, he only recognized two species, *D. notulatus*, with its var. *tibialis*, and *D. japonicus*.

His concept was followed by Jedlička [1965], even though Habu [1961] had already demonstrated the existence of three species, *D. japonicus*, *D. tibialis*, and *D. quadrinotatus*. Darlington [1961] recorded *D. notulatus* in Papua and described its range outside New Guinea as 'SE-Asia, Sumatra, Java and presumably also other islands between Asia and New Guinea'. Habu [1978] reported *D. tibialis* from Taiwan and the Ryukyus, Japan. Finally, Kirschenhofer [1994] described *D. phuongensis* and keyed all the members of the group twice [Kirschenhofer, 1994, 2000]. Unfortunately, his key separates *D. phuongensis* from *D. notulatus* (including its var. *tibialis*) by distribution only: 'Vietnam' vs 'Philippines, Burma, S-China, India, Taiwan'. Notably, *D. notulatus* sensu Kirschenhofer [Kirschenhofer, 2000; Häckel, Kirschenhofer, 2014a] is very small, 6–7.2 mm. Recently Häckel & Kirschenhofer [2014a] described *D. indragiriensis* from Sumatra, as well as *D. notulatus pantarensis* and *D. n. queenslandicus*, each from a single female, and changed var. *tibialis* into ab. *tibialis* without explanation and proclaimed it *nomen nudum*, certainly in error (see MCZN 45.6.4., especially, 45.6.4.1.).

All the listed *Adischissus* species are rather similar but show subtle differences in body proportions and shape of pronotum (Tab. 2). In particular, *A. quadrinotatus* and *A. pantarensis* are distinctive in having the elytral spots well separated from lateral margins. Similarly, infusate tibiae separate *A. n. sumatranus* and *A. pantarensis* from the other species. In *A. notulatus*, the pronotal basal angles vary only slightly between individuals and between local popu-



Figs 9–11. Parameres: 9–10 — *Adischissus notulatus sumatranus*; 11–12 — *Microcosmodes laticornis*; 13–14 — *M. pallipes* **sp.n.**; 9, 11, 13 — right parameres; 10, 12, 14 — left parameres. Scale bars 0.5 mm.

Рис. 9–11. Парамеры: 9–10 — *Adischissus notulatus sumatranus*; 11–12 — *Microcosmodes laticornis*; 13–14 — *M. pallipes*, **sp.n.**; 9, 11, 13 — правая парамера; 10, 12, 14 — левая парамера. Масштаб 0.5 мм.

Table 2. Selected morphometric ratios in four *Adischissus* species.
Таблица 2. Пропорции тела четырёх видов *Adischissus*.

species	n	PW/HW	mean	PW/PL	mean	PBA/A	mean	EW/PW	mean
<i>japonicus</i>	5	1.64–1.80	1.73	1.24–1.33	1.28	1.78–1.85	1.83	1.26–1.36	1.31
<i>n. notulatus</i>	3	1.65–1.71	1.68	1.29–1.34	1.31	1.81–1.84	1.82	1.31–1.34	1.32
<i>n. sumatranus</i>	5	1.60–1.65	1.63	1.24–1.30	1.26	1.69–1.83	1.78	1.28–1.32	1.30
<i>quadrinotatus</i>	2	1.69–1.80	1.75	1.40	1.40	1.65–1.72	1.69	1.31–1.34	1.33
<i>indragiriensis</i>	2	1.58–1.64	1.61	1.27–1.28	1.28	1.61–1.63	1.62	1.37–1.39	1.38

lations. Usually the denticle is subrectangular to very slightly obtuse and blunted, sometimes obtuse and rounded or, conversely, acute and pointed.

The EL/EW and PLW/PL values are very consistent, so that the elytra are ~1.6 times as long as wide and the maximum width of the pronotum is at 2/5 from the base. The other ratios are nearly the same in *A. japonicus* and the subspecies of *A. notulatus*, but the head is slightly wider relative to the pronotum in *A. n. sumatranus* than in *A. n. notulatus* or *A. japonicus*. Only *A. n. quadrinotatus* is somewhat more distinctive in having a rather short pronotum in addition to conspicuously shorter elytra (EL/EW 1.52–1.54).

Adischissus notulatus (Fabricius, 1801)

Figs 3, 6, 9–10.

MATERIAL. Photographed holotype (NHMD, Natural History Museum of Denmark, Copenhagen).

Additional material. ♀ (ZISP), India, S Goa, env. Margo, 1–8.XI.2012, Korobkov leg.; ♂ (SZMN), N Goa, Calangut, nr. Hotel Village Royale, carrion traps, h=10 m, 15.54°N, 73.77° E, at light, 2–3.II.2013, V.K. Zinchenko leg.

Ssp. *sumatranus*: 26 ex., including 17 ex. (SIEE), ♂♂, ♀♀, South Vietnam, Dongnai Province, Nam Cat Tien National Park, 11°25'18"N 107°25'44"E, Expedition of the Joint Russian-Vietnamese Tropical Center, at light HQL-450, various dates between 18.X. and 4.XII.2004, and between 21.V. and 19.VI.2005, D. Fedorenko leg.; ♂ (SIEE), 90 km NW of Ho Chi Minh, La Nga, 16–18.X.1990, N. Belyaeva leg.; ♂ (SIEE), Lam Dong Prov., 35 km NW of Bao Loc, Loc Bao env., h=650 m [asl], 11°50'12"N 107°38'25"E, at light, 17–22.IV.2012, D. Fedorenko leg.; ♂ (MPSU), Song Be [now Binh Duong] Prov., ca. 60 km N of Ho Chi Minh, env. Phu Giao [now Phuoc Vinh], 3–13.X.1994, A. Napolov & D. Volkov leg.; ♂ (MPSU), Tay Ninh Prov., Tam Binh vill., 31.X.2001 (A. Borisenko); ♂ (MPSU), Central Vietnam, Prov. Quang Binh, Minh Hoa Distr., Ke Bang, env. Yen Hop, at light, 12–13.IV.1999, S. Kruskop leg.; 2 ex. (ZISP), 'Annam, Phuc-Son [? Phuc Son, 80 km NW Vinh, Nghe An Prov.], Nov.-Dez., H. Fruhstorfer'; ♀ (SIEE), W Java, Bosor, Parung Churuk, at light, 17.VI.–15.VII.2005, S. Alekseev leg.; 1 ex. (ZISP), China, Foochow, Kushan, 22.VIII.95, M.S. Yang leg.

COMMENTS. Häckel & Kirschenhofer [2014a] recognized five subspecies of *A. notulatus*, three of which, namely, *A. n. phuongensis*, *A. n. pantarensis*, and *A. n. queenslandicus*, described from a single female specimen each. The authors remark that *A. n. phuongensis* is hardly different from the nominate subspecies and do not discuss the fact that the legs are differently coloured: entirely pale in *A. n. notulatus* vs. with tibiae infusate in *A. n. phuongensis*.

For that reason I treat *A. n. pantarensis* and *A. n. queenslandicus* as separate species until proven otherwise. I have failed to find any consistent differences between *A. n. phuongensis* and *A. n. sumatranus*, so I consider the two consubspecific and only recognize two subspecies within *A. notulatus*. Moreover, the female specimen referred to in that paper as 'paratype' of *A. n. phuongensis* should be excluded from the type series, as the subspecies was based on the holotype

only. Finally, my own measurements of the photographed holotype have resulted in PW/HW 1.62 and PW/PL 1.33 vs. 1.80 and 1.35 cited in Kirschenhofer [1994] or 1.88 and 1.42 in Häckel & Kirschenhofer [2014a], respectively.

Häckel et Kirschenhofer [2014a, p.61] indicate that *A. n. notulatus* is 6–7.2 mm in length, then [*ibid.*, p. 62] that it is equal to *A. n. phuongensis* in size, even though the latter subspecies ranges 7.5–8.5 mm in size (or 7.1–7.9 mm, as specified for *A. n. sumatranus*). The subspecies's range is described as 'India, Sri Lanka, southern China and Taiwan,' with no mention of the Malay Peninsula, although a female specimen from 'Perak' is listed in that paper.

That distribution is clearly disjunct, and the authors report five specimens from Thailand, Cambodia, and Laos that show a 'tendency toward variation in color and differences in exoskeleton and shape of the pronotum' transitional between the western and eastern populations of *A. n. notulatus*. Given the distribution, the records of *A. n. notulatus* in 'southern Vietnam' [*ibid.*, p. 61] and *A. n. phuongensis* in 'S Vietnam, Nam Cat Tien NP...' [*ibid.*, p. 62] seem contradictory.

According to my data, in *A. notulatus* populations from India and Indochina BL is 7.2–8.3 mm. The nominate subspecies is distinctive in having legs entirely pale and the head slightly narrower relative to the pronotum. It populates the western part of the species range. The records of *A. notulatus* in Indochina, including Vietnam, certainly refer to *A. n. sumatranus*, whose range extends south to Java and north to Southern China, Taiwan, and the Ryukyu Islands. The fact that both *A. n. sumatranus* [Habu, 1978] and *A. n. notulatus* [Häckel, Kirschenhofer, 2014a] have been reported from Taiwan and/or southern China needs clarification. I have seen no specimen of the nominate subspecies from these latter areas.

Adischissus quadrinotatus (Motschulsky, 1865),

sp. bon., comb.n.

Fig. 1.

Motschulsky, 1865: 333 (*Peronom[er]us*; Ind[es]. or[jentales].); Andrewes, 1933: 5; Habu, 1961: 293.

MATERIAL. 1 specimen (ZMMU) labelled: '*Peronomus / quadrinotatus / Motsch. / Ind. or.*' [hw], '*Ind. or.*' [hw], '*P. 4-notatus* Motch. / = *Dischissus notulatus* F. [hw] / H.E. Andrewes det. [p]'; designated here as lectotype.

Additional material. ♀ (SIEE), S-India, Karnataka, Shimoga Distr., Sringeri Town, 13°25.707'N 075°15.343'E, h=661 m asl, at light, 6.XI.2013 S. Saluk.

A. indragiriensis: ♀ (MSNG): 'Tenasserim / Kawkaareet' / Fea.Gen.Febbr.1887', '*Dischissus / longicornis / Schaum*', 'det. H. Bates, 1892', 'Museo Civico di Genova'.

RE-DESCRIPTION. Because of the great similarity between this species, *A. n. notulatus*, and *A. indragiriensis*, we only cite here the following diagnostic characters.

Body (Fig. 1) 7.3–7.6 mm in length and black; legs entirely pale, antennae black or pitch-brown; palps nearly

black, with articulations and apices pale. Anterior and posterior elytral spots subquadrate, rounded, on intervals 4–8. Microsculpture absent.

Pronotum rather wide, 1.40 times as wide as long, 1.69–1.80 times as wide as head, broadest between half and apical three fifths (0.55–0.57 times), with base 1.65–1.72 times as wide as apex, sides gently yet clearly rounded in front; denticle at basal angles small, rounded at tip; median line fairly shallow. Elytra fairly short, 1.52–1.54 times as long as wide, broadest at 3/5 from base; each interval with fine setigerous punctures arranged into 3 irregular rows.

DIAGNOSIS. Very similar to *A. indragiriensis*, but elytra and pronotum more elongate. *A. indragiriensis* is further different in having pronotum with sides nearly straight in anterior half and much less rounded behind apical angles; a deeper median line; and the elytral pubescence a bit sparser.

COMMENTS. Great similarity between the allopatric *A. quadrimaculatus* and *A. indragiriensis* suggests that they might be subspecies of the same species.

Microcosmodes Strand, 1936

This Palaeotropical genus is especially species-rich in the Afrotropical Region. Only two species have hitherto been recorded outside Africa: *M. flavopilosus* (LaFerté-Sénéctère, 1851) widespread from India to China, Japan and the Sunda Isles, and *M. quadrimaculatus* (Csiki, 1907) from New Guinea and Australia.

Here we add three more Oriental species to the genus: one new and the other two, *M. elegans* (Dejean, 1826), **comb.n.** and *M. laticornis* (Kirschenhofer, 2000), **comb.n.**, transferred from the *elegans*-group of *Craspedophorus* [Häckel, Kirschenhofer, 2014b]. The transfer of *Craspedophorus elegans* (Dejean, 1826) makes *M. elegans* (Barker, 1922) a secondary junior homonym for which the replacement name *M. barkeri*, **nom.n.**, is here proposed. We treat *M. quadrimaculatus* as a members of *Adischissus* **gen.n.** (see above).

The members of *Microcosmodes* are small macropterous panagaeines, with the pronotal lateral margin, legs (entirely or at least femora) and often also mouthparts and antennae pale. The metepisterna are conspicuously longer than wide. Protarsomeres 1–4 are slightly to indistinctly dilated in the male, which is the main character historically used to separate *Microcosmodes* from *Craspedophorus*. However, this character varies from species to species, as do some other characters, including the shape of the terminal maxillary and labial palpomeres, the antennal ratio, and AL1/OL (Table 3). The tarsi are slightly yet clearly dilated in males of *M. laticornis* and *M. pallipes* sp.n., but hardly, if at all, dilated in two other Oriental species. The fourth tarsomere also varies in shape from barely emarginate on all legs in *M. flavopilosus* to conspicuously bilobed in fore legs in *M. pallipes* (LL/L1T4 up to 0.50).

Microcosmodes pallipes Fedorenko, sp.n.

Figs 2, 5, 8, 13–14.

MATERIAL. Holotype ♂ (ZMMU) labelled: ‘S[outh] Vietnam, N[orther part of] Dongnai Pr[ovince]. / Nam Cat Tien Nat[ional]. Park / Exped[ition of the Joint]. Russ[ian].-Vietnamese / Tropical Centre / at light HQL-450 25. / leg. D.Fedorenko X.2004’. Paratypes, 3 ♂♂, 3 ♀♀, same data, but various dates between 21.X. and 26.XI.2004, and between 30.V. and 17.VI.2005.

DESCRIPTION. BL 7.6–8 mm. Body (Fig. 2) black, antennae pale brown; explanate lateral margins of pronotum, two spots on each elytron, mouthparts, labrum, antennomeres 1, 2 and base of 3, legs and often also apical antennomeres, testaceous. Elytral spots medium-sized; anterior spot transverse, slightly oblique inwards, extended from stria 1 or 2 to lateral margin, with anterior and posterior margins subparallel, straight to subsinuate, notched at interval 6 anteriorly and projecting on 6 and 8 posteriorly; posterior spot on intervals 3– or 4–8, notched posteriorly at interval 6. Dorsum glossy, with a fairly long, moderately dense yellowish pubescence; isodiametric microsculpture (faint) on elytra only. Secondary pubescence rather dense and long on antennomeres 1–3.

Eyes large and protruding; genae indistinct, meeting neck at an acute angle. Frontal grooves rather shallow yet long, running parallel to each other from clypeal seta to neck, slightly converging just in front of it to form a slightly raised U-shaped area; neck constriction moderately deep, uneven and slightly convex anterad. Frons and vertex coarsely and densely punctate, frontal grooves closely to confluent punctate; clypeus and neck smooth and glabrous; neck slightly uneven just behind constriction, with a few fine transverse rugae or scattered large punctures. Clypeus convex, frontoclypeal suture concave and fine yet distinct. Labrum barely sinuate, with setae just before middle; apical margin strongly but evenly rolled down. Mandibles nearly straight along outer margins. Terminal labial palpomere and the last two maxillary palpomeres pubescent; terminal labial and maxillary palpomeres slightly dilated in both sexes, less so in female, with apical margin about half as long as inner margin in labials and only a third as long in maxillaries of male. Antennae long, reaching beyond pronotal base by about 3½ segments. AR 1.0–1.05 (1.03, n=3) : 0.47–0.48 (0.48) : 0.75–0.80 (0.78), scape 0.95–1.0 (1.08) times as long as eye.

Pronotum transverse, 1.59–1.68 (1.64, n=5) times as wide as head, 1.40–1.48 (1.44) times as wide as long, strongly and subequally narrowing both basad and apicad, broadest just behind middle; base straight, slightly oblique laterally; sides well rounded medially, straight or subconvex apicad and basad; anterior and posterior angles rounded off, but the latter with distinctive subacute denticle; median line moderately deep, not quite reaching apex, basal foveae as longitudinal parallel impressions reaching mid-length of pronotum; lateral margin explanate in basal ¾ to 4/5, narrow and finely beaded in apical half, wide and slightly reflexed behind middle, a little more reflexed at hind angles. Disc densely to confluent

Table 3. Selected morphometric ratios in several species of *Microcosmodes* and *Adischissus* **gen.n.**
Таблица 3. Соотношение длин глаза и четырёх базальных члеников усика у некоторых *Microcosmodes* and *Adischissus* **gen.n.**

Species	n	AL1/OL	AL1/3	AL2/3	AL4/3
<i>M. flavopilosus</i>	3	0.77–0.83 (0.80)	0.97–1.07 (1.01)	0.56–0.60 (0.57)	0.83–0.90 (0.87)
<i>M. pallipes</i> sp.n.	3	0.95–1.00 (0.98)	1.00–1.05 (1.03)	0.47–0.48 (0.48)	0.75–0.80 (0.78)
<i>M. laticornis</i>	3	1.02–1.07 (1.05)	0.93–1.04 (0.99)	0.45–0.47 (0.46)	0.77–0.80 (0.78)
<i>A. n. sumatranus</i>	3	1.25–1.32 (1.29)	1.08–1.16 (1.12)	0.35–0.42 (0.39)	0.65–0.74 (0.70)

punctate. Lateral margin with one (posterolateral) seta in basal angle and up to six (anterolateral) setae in apical $\frac{3}{5}$.

Elytra nearly parallel-sided, 1.32–1.33 (1.32) times as wide as pronotum, 1.50–1.54 (1.52) times as wide as long, with nearly straight base and widely rounded shoulders. Striae deep, coarsely punctate, intervals convex, each with 3–4 irregular rows of setiferous punctures.

Abdominal sterna V–VII each with a row of large dense punctures along base. Venter very coarsely, densely, somewhat confluent punctate; ventrites moderately coarsely, densely and irregularly punctate.

Tarsomere 4 with apical lobes decreasing in length from almost bilobed in protarsi to very slightly emarginate in metatarsi, being longer in male than in female, LL/L1T4 = 0.45–0.50 (0.48, n=3) vs. 0.37–0.43 (0.41), respectively. Protarsomeres 1–4 in male are conspicuously dilated, with ventral pubescence longer and denser than in female.

Median lobe of aedeagus (Figs 5, 8) with apical lamella very short, wide, truncate in ventral view; internal sac with a large apical sclerite. Parameres (Figs 13–14): right paramere parallel-sided at apex, rather short and wide, with apex rounded and glabrous.

DIAGNOSIS. Very similar to *M. laticornis* in many respects, but a little stouter, smaller in average, with appendages pale, somewhat larger elytral spots, barely visible elytral microsculpture, and fourth tarsomere appearing shorter due to shorter legs. Aedeagi nearly identical (compare Figs 5, 8 vs. Figs 4, 7); right paramere apically slightly shorter, wider and glabrous vs. sparsely pubescent (Fig. 13), perhaps due to variability.

DISTRIBUTION. Known from type locality only, but the adults are good fliers, which suggests a wider range.

HABITATS AND HABITS. The type series has been collected at light at the edge of a tropical monsoon semideciduous broadleaf forest near the Dongnai River.

Microcosmodes laticornis (Kirschenhofer, 2000),

comb.n.

Figs 4, 7, 11–12.

Kirschenhofer, 2000: 351 (*Craspedophorus*; Thailand). — *kachinensis* Kirschenhofer, 2011b: 62 (*Craspedophorus*; Myanmar); Häckel, Kirschenhofer, 2014b: 285.

MATERIAL. Holotype of *M. kachinensis* ♂ (CW): 'MYANMAR, (Kachin State)/ road Bhamo to Shwegu/ Irrawaddy river/ 157 m (light)/ 24°07'38''N 097°01'57''E/ 5.VI.2006 M.Langer, S.Naumann & S.Löffler', 'Holotypus/ *Craspedophorus kachinensis* sp.n./ des. Kirschenhofer 2010', 'COLL. WRASE/ BERLIN'.

Additional material (SIEE). ♂, N Thailand, Mae Hong Son Prov., env. Pai, 19°21'48''N / 98°27'57''E, h=600 m, at light, 2–9.V.2013, I. Melnik leg.; ♀, Chiang Mai Prov., Doi Fah Hom Pok Natn. Park, 19°58'06''N / 99°09'13''E – 19°57'18''N / 99°09'51''E, 16–20.V.2013, I. Melnik leg.

DISTRIBUTION. Myanmar and Thailand.

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