

**Notes on Oriental Panagaeini. *Craspedophorus cereus* (MacLeay, 1825)  
and *Dischissus chaudiroidi* Andrewes, 1919, and new status  
of *Craspedophorus austronesiensis* Häckel et Kirschenhofer, 2014  
(Coleoptera: Carabidae)**

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**Abstract.** Types of *Craspedophorus cereus* MacLeay, 1825 deposited at BMNH and *Dischissus chaudiroidi* Andrewes, 1919 deposited at MNHN, both of uncertain taxonomic position were studied. Comparison of these types with types of other Indonesian species of *Craspedophorus* Hope, 1838 permits to place these two species in the system of groups sensu Häckel et Kirschenhofer 2014a and 2014b. The *Dischissus borneensis* group is proposed for three species inhabiting Java, Borneo and the Malaysian part of Borneo. *Craspedophorus cereus* MacLeay, 1825 is assigned to the *C. microspilotus* Kirschenhofer, 2000 group and a new subgroup of the same name, and its distributional limits are redefined. *Craspedophorus austronesiensis* Häckel et Kirschenhofer, 2014b is demoted to a subspecies of *C. cereus* MacLeay, 1825.

## INTRODUCTION

The study of these two species has been confused due to erroneous interpretations of taxonomic and geographic data presented by previous authors. Much of the confusion was cleared by Andrewes (1919), who split the species into two genera, designated lectotypes and provided their redescriptions. Andrewes' revision was part of a study of types deposited in British museums, for which reason he did not comment much on faunistic data and on opinions or errors made by previous authors concerning the geographic distributions of the two newly defined species. This is why compiling a catalogue of the Panagaeini, Häckel et Farkač (2012) entered Andrewes' correct taxonomic data, but also Chaudiroid's incorrect geographic data on the two species. At the time of the compilation, without seeing all the types, species also could not be divided into working groups based on morphological similarity and geographic proximity. Another reason for the limited understanding of the two species was their obtainability, which due to changing conditions in Java, made specimens very scarce. It has to do mainly with devastation of many traditional localities due to urbanization after the rise of independent Indonesia and dynamic industrialization after the fall of the Suharto's regime. Attempts to keep track of recent collections made in Indonesia led to descriptions of a number of new species (Häckel et Kirschenhofer 2014a, b), but I have not noticed any recent records of the two Javanese species. Only after comparing the two Andrewes' lectotypes with the types of recently described species from other Indonesian islands I was able to correct the erroneous data in the 2012 and 2014 catalogues, place the

two species in proper groups, and propose a new taxonomic position for the much cited but still inadequately known MacLeay's *Craspedophorus cereus*.

## MATERIAL AND METHODS

### Repositories:

BMNH The Natural History Museum, London, United Kingdom (B. Garner, M. Barclay);  
MNHN Muséum national d'Histoire naturelle, Paris, France (Th. Deuve);  
cMH private collection of M. Häckel, Praha, Czech Republic.

## SYSTEMATIC PART

### *Craspedophorus* Hope, 1838

*Craspedophorus* Hope, 1838: 165; type species: *Carabus reflexus* Fabricius, 1781 (nec 1801): 302 [= *Craspedophorus reflexus* (Fabricius, 1781)]

*Eudema* Laporte, 1840: 137; type species *Panagaeus regalis* Gory, 1833

*Isotarsus* LaFerté-Sénectere, 1851: 217; type species *Panagaeus regalis* Gory, 1833

*Epicosmus* Chaudoir, 1846: 512; type species *Panagaeus tomentosus* Vigors, 1825 [= *Craspedophorus angulatus* (Fabricius, 1781)]

*Brachyonychus* Chaudoir, 1878: 85; type species *Epicosmus sublaevis* Chaudoir, 1869

*Acanthocosmus* Jeannel, 1949: 855 (Subgenus); type species *Eudema nigrita* Künckel d'Herculeis, 1891

*Brachyocosmus* Jeannel, 1949: 857 (Subgenus); type species *Panagaeus festivus* Klug, 1833

### *Craspedophorus cereus* (MacLeay, 1825)

(Figs. 1, 4a)

*Panagaeus cereus* W. S. MacLeay, 1825: 12 (nec Chaudoir, 1879: 150, type loc. "Java"). *Craspedophorus cereus* Andrewes 1919: 135. 1930: 134. Kirschenhofer 2000: 323, Häckel & Farkač 2012: 80 [erroneous type locality], Häckel et Kirschenhofer 2014a: 73.

**Type material.** Lectotype (♀), established by Andrewes (1919: 126): "Java. / Horsfield. / 60-15. RC. [printed white label] // Type / H.T. [printed white, round label] // *Epicosmus / cereus / Macleay* [handwritten] / H. E. Andrewes det. [printed white label] /// Lectotypus / *Craspedophorus / cereus* (Mac Leay) / sign. Kirschenhofer 2005 [printed red label]" (Figs 1, 4a, BMNH).

### *Craspedophorus cereus austronesiensis* Häckel et Kirschenhofer, 2014b status nov.

(Fig. 4b)

*Craspedophorus austronesiensis* Häckel et Kirschenhofer, 2014b: 293.

**Type material.** Holotype (♂) labelled: "SE Asia S-Indonesia East / Nusa Tenggara: W Timor Is. / 50 km S of Kupang: Buraen / I - 2006 lgt. S. Ják!'", (cMH). Paratypes: (1 ♀): same data as holotype (Fig. 4b, cMH); (1 ♀): "Indoaustr. E-Indonesia / Tanimbar isl. Yamdena is. / 20 km NE Saumlaki: Lorulum / 150m, XII-2006, lgt. S. Ják!" (cMH).

## *Dischissus* Bates, 1873

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

### *Dischissus chaudiroidi* Andrewes, 1919

(Figs. 2, 3, 4d, e)

*Dischissus cereus* Chaudoir, 1869: 116 (type loc. "Java"). Chaudoir 1879: 150. Moulton 1912: 250. *Dischissus chaudiroidi* Andrewes, 1919: 135. Andrewes 1933: 345; Csiki 1929: 364; Häckel et Farkač 2012: 84.

*Panagaeus versutus* Laporte, 1835: 155. Chaudoir 1879: 150, **syn. nov.**

**Type material.** Holotype (♀): "versutus ? / Laporte [handwritten white label in box of The Chaudoir's Collection] // *Dischissus* / *Chaudiroidi* / Andr. / det. Andrewes [handwritten white pinned label]" (Figs 2, 4a, MNHN).

**Other material examined.** 1 ♀ labelled: "Java Occ. / Toegoë / 1902 [printed white label]" (Figs. 3, 4b, MNHN).

## DISCUSSION

W. S. MacLeay (1825: 12) described a female ex Horsfield's Javanese collection as *Panagaeus cereus* (Figs 1, 4a). Chaudoir (1869: 116) thought that a specimen he found in Jeakes' collection belongs to the same species (Figs 2, 4d) "Je crois avoir reconnu le *Panagaeus cereus*, Mac Leay, dans un insecte de Java voisin de [*Craspedophorus*] *oxygonus*, mais dont le corselet est presque arrondi, plus étroit, ... J'ai acheté l'individu que je possède à la vente de la collection Jeakes. Je ne serais pas éloigné de croire que le *P. versutus*, Laporte [Étude ent., 1834, p. 155, 2], ne fût le même insecte indiqué par erreur comme venant du Sénégal. Je n'ai, il est vrai, pas vu le type, mais on sait que la collection Buquet renfermait de fort belles espèces de Java, et que le *versutus* pourrait bien en venir aussi". However, in that specimen he found a split in the fourth protarsomere (Fig. 2e) and in his Monograph (1879: 150) he thus has this species in the genus *Dischissus* Bates, 1873 and concludes (p. 151) that "The specimen I have is from Jeakes' collection and comes from Java. Mr. de Castelnau states clearly that his *Panagaeus versutus* occurs in Senegal, but the description of the type fits very well the species from Java and, as in the described specimen, according to the order of placement in Buquet's collection that contains many carabids from that island, it can be assumed that its provenance is stated incorrectly. Equally likely is the assumption that [*Craspedophorus*] *transversalis* [Laporte de Castelnau] is from Senegal, although its provenance is given as Java, due to its overall appearance, so probably in this species the situation is reversed [than in *P. versutus*]" [translated from French]. In light of other studies (Andrewes, Kirschenhofer, Lorenz, Häckel), both Chaudoir's speculations prove faulty. Nevertheless, until 1919 species of similar appearance were identified as *Dischissus cereus* (MacLeay). For instance Moulton (1912: 250) lists a find of a species so identified from northern Borneo, then the British Sarawak. To cite that occurrence is probably pointless, because assigning it to a species or even a genus is today impossible. It is mentioned only as an example of an unverifiable occurrence that is sometimes blindly copied and may appear even in relatively recent publications (Stork 1986: 13, 21).

MacLeay's species was redescribed by Andrewes (1919: 135), who differentiated it

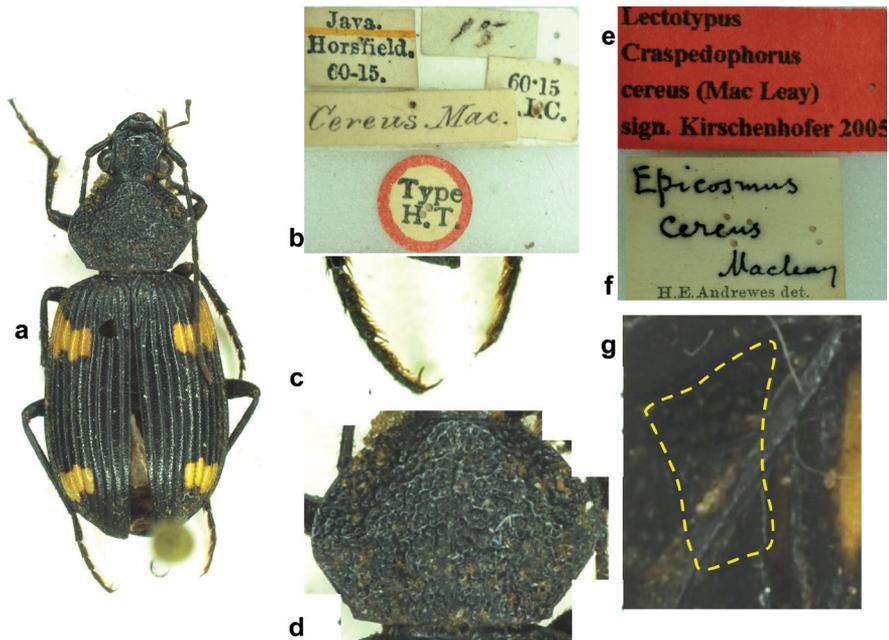


Fig. 1. *Craspedophorus cereus* (MacLeay, 1825) HT (♀), BMNH: a- dorsal habitus; b- original labels in BMNH; c- metatarsi, dorsal view, detail of 4<sup>th</sup> tarsomere; d- pronotum, dorsal view; e- Kirschenhofer's label (2005); f- Andrewes' label (1919); g- detail with left metepisternum outlined in yellow.

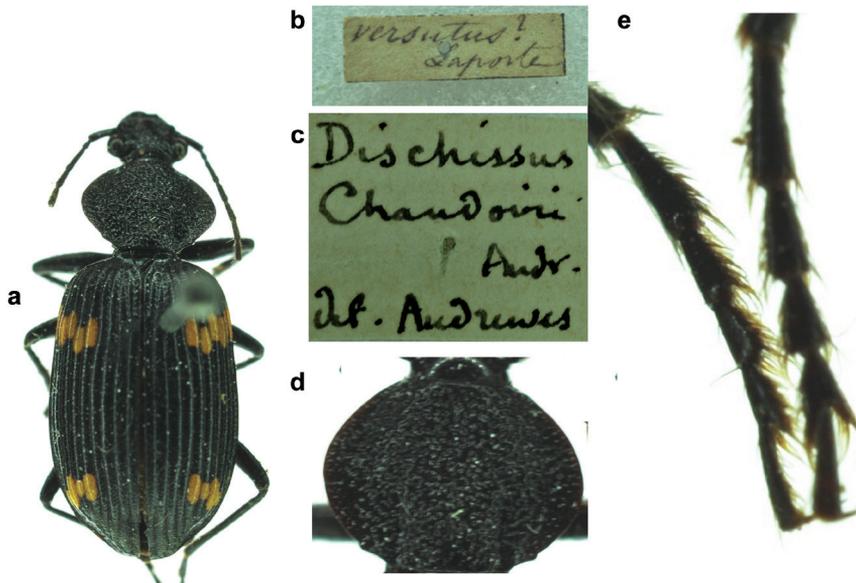


Fig. 2. *Dischissus chaudiroidi* Andrewes, 1919 HT (♂), MNHN (Chaudoir Collection): a- dorsal habitus; b- original Chaudoir's label in box; c- Andrewes' label (1919); d- pronotum, dorsal view; e- metatarsi, dorsal view, detail of 4<sup>th</sup> tarsomere.

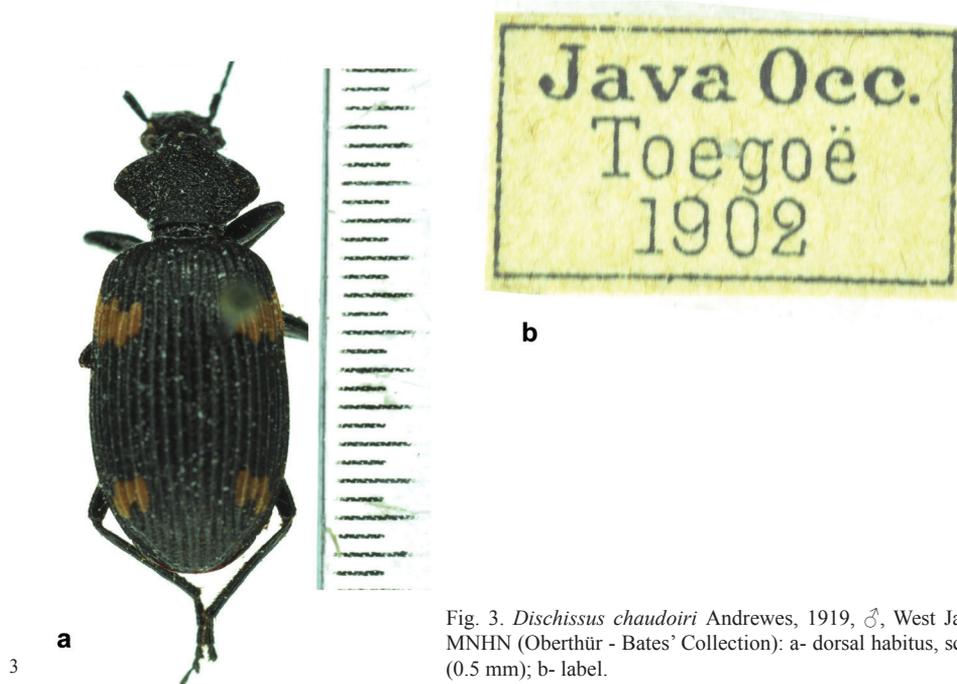
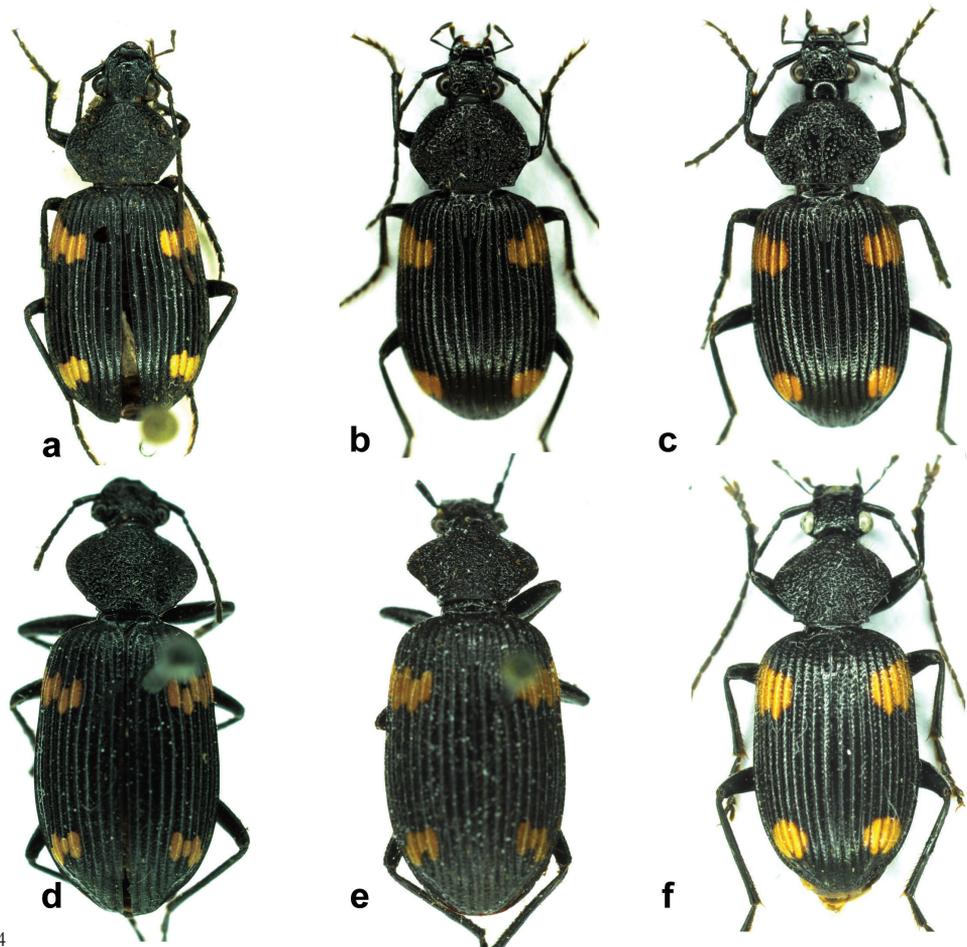


Fig. 3. *Dischissus chaudiroides* Andrewes, 1919, ♂, West Java, MNHN (Oberthür - Bates' Collection): a- dorsal habitus, scale (0.5 mm); b- label.

from another specimen labelled “Java”, considered conspecific with MacLeay’s *Panagaeus cereus* by Chaudoir (1879: 150), and placed by him in another genus, as *Dischissus cereus* (MacLeay), because of the cleft in the fourth protarsomere (Fig. 2e). Andrewes (1919) renamed Chaudoir’s specimen, certainly collected in Java, to *Dischissus chaudiroides*. The original MacLeay’s type was transferred by him to the genus *Craspedophorus*, because of the absence of a cleft in the fourth protarsomere (Fig. 1c). Andrewes (1919: 135) noted: “The type is unique. No mention of the species seems to have been made until Chaudoir (1869: 116) believed that he recognised it in a Javan specimen he had lately purchased. Nine years later, ... (1879: 150) all doubt had been resolved, and we find it figuring without query as “*Dischissus cereus* MacL.” The fourth tarsal joint of Macleay’s insect, however, is entire, and the genus to which it belongs is *Craspedophorus*. To prevent further confusion I suggest for Chaudoir’s species the name of *D. chaudiroides*.”

Andrewes (1919) redescribed the MacLeay’s type (Figs 1, 4a), assigned it to the correct genus (*Craspedophorus*), and neither he nor another author unfortunately has not returned to it for a long time. Eleven years later Andrewes (1930b: 194) described seven specimens from Sumatra as *Craspedophorus mannae* (Fig. 4c), but despite its similarity with MacLeay’s type from neighboring Java he only compared it to and differentiated it from the sympatrically occurring *C. sundaicus* (Oberthür, 1883), which indeed differs from *C. mannae* in the details presented by Andrewes [1930: 194 – “Allied to *sundaicus* Oberth., and similar in size, but the elytral spots are both smaller and darker; prothorax widest at a point rather nearer base, the sides less reflexed and very hardly a trace of sinuation behind, the striae of elytra not so deep



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 Fig. 4. Dorsal habitus: a- *Craspedophorus cereus cereus* (MacLeay, 1825) HT (♀); b- *Craspedophorus cereus austronesiensis* Häckel & Kirschenhofer, 2014b; PT ♀, Timor Is.; c- *Craspedophorus m. mannae* Andrewes, 1930; ♂, Mentawai Isl.; d- *Dischissus chaudiroidi* Andrewes, 1919; HT (♂); e- *Dischissus chaudiroidi* Andrewes, 1919; ♀, West Java; f- *Dischissus hesperos* Häckel et Kirschenhofer, 2014a; HT (♂).

and the individuals less convex”], but more significant characters of *C. mannae*, such as less transverse and differently shaped pronotum, are not mentioned.

This curious omission has been repeated by subsequent authors. Kirschenhofer (2000: 339) described a female from the continent as *C. vietnamensis*, which is also very similar to the types of *C. cereus* and *C. mannae*. In that work he established the *C. microspilotus* group to which he assigned the new *C. vietnamensis* and other much less similar species. Curiously, that group did not include either *C. mannae* Andrewes, 1940 or *C. cereus* (MacLeay, 1825), although they both were listed in the catalogue at the beginning of the paper (pp. 323, 324), but not among the species of the *C. microspilotus* group on the same page, which included

only *C. vietnamensis*. It can thus be assumed that at that time the author did not see the type of either species (that of *C. cereus* is in London and that of *C. mannae* is in Leyden). He saw the London type in 2005 when he appended his label to it (Fig. 1e), but never published a comment on the type or considered placing it near the species of the *C. microspilotus* group.

When compiling the catalogue of Panagaeini, Häckel et Farkač (2012) worked only with literary data. Based on the description, they provisionally assigned *C. mannae* Andrewes, 1940 to Kirshenhofer's *C. microspilotus* group, which was subsequently accepted by Kirshenhofer (Häckel et Kirshenhofer 2014b: 313), but they did not assign *C. cereus* (MacLeay, 1825) to that group because they believed the type locality (Java) to be in doubt. They mistakenly thought that the species was from Senegal (because Chaudoir synonymized Laporte's African *Panagaeus versutus* to it) and that only *Dischissus chaudiroidi* Andrewes, 1919 was from Java. For that reason *C. cereus* is in the catalogue erroneously listed among Afrotropical species and bears the type locality "Senegal" (Häckel et Farkač 2012: 80). The correct locality must also here be Java (Fig. 1b). For *C. mannae* the catalogue also repeats faulty distribution in Java and Krakatau, the specimens from those islands must belong to *C. cereus*. The two species are very similar but can be separated by the aedeagi (the type of *C. cereus* is a female, male from Java has yet to be found). However, presently I do not consider synonymization of the two species necessary. Conversely, the recently described *C. austronesiensis* Häckel et Kirshenhofer, 2014b from Timor Islands (Lesser Sunda) and Yamdena (Moluccas, Tanimbar Isl.) with nearly identical-looking females (Fig. 4b) must be considered conspecific with *C. cereus* and eventual slight differences between the females accepted only as subspecific. The insular taxa of this subgroup in my opinion belong to two closely related species, one so far known from Java, Lesser Sunda and Moluccas, and the other from Sumatra, Mentaway archipelago and Sulawesi. As mentioned in the Introduction, reports from Borneo (Stork 1986: 13) should be regarded as doubtful. The subgroup includes also two continental species, the larger *C. vietnamensis* Kirshenhofer, 2000 from northern Vietnam and adjacent Chinese provinces (Guangdong), and the smaller *C. freudeellus* Häckel et Kirshenhofer, 2014b from southern Vietnam and Laos. Another probably constituent species from India and Sri Lanka is presently under study.

Examination of the lectotype of *Dischissus chaudiroidi* Andrewes, 1919, residing as "*Dischissus cereus*" under the label ?*versutus* Laporte in a box (Fig. 2b) containing only species from the restored Chaudoir's collection, shows it to come in all likelihood also from Java. The rest of Oberthür's collection, which remains after removal of the original Chaudoir's collection during its restoration by MNHN curators in the mid-20<sup>th</sup> century and which contains also a number of Bates' types (often unmarked), I found another specimen (female) of *Dischissus chaudiroidi* with the original label "Toegoë, Java, 1902" (Fig. 3). Tugu is the name of a village and also of an historical cultural style in western Java (Jawa Barat), today an area of northern Jakarta so urbanized that the original biotope is practically non-existent. Comparison of the two MNHN specimens of *D. chaudiroidi* (Figs 4d, e) with the recently described *D. hesperos* Häckel et Kirshenhofer, 2014a from Sumatra (Fig. 4f) shows the great similarity of the two species, which were hitherto placed in groups only provisionally, on the basis of descriptions. *Dischissus chaudiroidi* was left in the collective *D. guttiferus* group sensu Häckel et Kirshenhofer (2014a: 70), and *D. hesperos* Häckel et

Kirschenhofer, 2014a: 77 was left outside of the three groups proposed for the genus. Here I propose a fourth group of Oriental species of *Dischissus* Bates, 1873, the *D. chaudiroidi* group (nov.). It contains the two species and provisionally (based on description) also *D. borneensis* Frivaldszky, 1883, whose holotype I so far have not been able to study but which corresponds to the newly proposed group much better than to that in which it has hitherto been placed (*Dischissus notulatus* group sensu Häckel et Kirschenhofer 2014a: 57). The name *Panagaetus versutus* Laporte cannot in my opinion be assigned to any valid taxon and should be regarded as *nomen dubium* without a preserved type, without the possibility to designate lectotype, with a doubtful locality and an inadequate, brief description. In conclusion I attach the presently held concept of groups, assigned species and their distributions.

*Craspedophorus microspilotus* Kirschenhofer (2000: 329) group, redefined by Häckel et Kirschenhofer (2014b: 291)

*Craspedophorus cereus* subgroup (new, redefined from *C. mannae* complex after Häckel et Kirschenhofer (2014b: 293)

<i>C. cereus cereus</i> (MacLeay, 1825).	Indonesia: Java Is., Krakatau Isl.
<i>C. cereus austronesiensis</i> Häckel et Kirschenhofer, 2014b.	Indonesia: Timor Is., Yamdena Isl.
<i>C. mannae mannae</i> Andrewes, 1930.	Indonesia: Sumatra Is.
<i>C. mannae sulawesiensis</i> Häckel et Kirschenhofer, 2014b.	Indonesia: Sulawesi Is.
<i>C. vietnamensis</i> Kirschenhofer, 2000.	China, Vietnam.
<i>C. freudeellus</i> Häckel et Kirschenhofer, 2014b.	Laos, Thailand.
<i>C. sp.</i>	India, Sri Lanka.

#### *Dischissus chaudiroidi* group

<i>D. chaudiroidi</i> Andrewes, 1919.	Indonesia: Java Is.
<i>D. hesperos</i> Häckel et Kirschenhofer, 2014a.	Indonesia: Sumatra Is.
<i>D. borneensis</i> Frivaldszky, 1883.	Malaysia: Borneo Is.: Sarawak

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