

## Clarification of three species of *Discocyrtus* Holmberg, 1878 with convoluted taxonomic histories (Opiliones: Laniatores: Gonyleptidae: Pachylinae)

Adriano B. Kury<sup>1</sup>, Ricardo Pinto-da-Rocha<sup>2</sup>, Jürgen Gruber<sup>3</sup> and Rafael N. Carvalho<sup>1</sup>: <sup>1</sup>Departamento de Invertebrados, Museu Nacional (UFRJ), 20.940-040, Rio de Janeiro, Rio de Janeiro, Brazil; E-mail: adrianok@gmail.com; <sup>2</sup>Departamento de Zoologia, Instituto de Biociências, Universidade de São Paulo (USP), 05422-970 São Paulo, São Paulo, Brazil; <sup>3</sup>Naturhistorisches Museum, <sup>3</sup>Zoologische Abteilung, P.O.B. 417, Burgring 7, A-1010, Wien, Austria.

**Abstract.** *Gonyleptes curvipes* Kollar, in C.L. Koch, 1839 has taxonomic problems: it is a primary junior homonym of *Gonyleptes curvipes* Guérin-Méneville, 1837; the holotype of *G. curvipes* Kollar was cited twice by Roewer (1913) under two genera, one being a misidentification of an undescribed species and a new combination under *Discocyrtus* Holmberg, 1878; Koch labeled another unreported specimen as *Gonyleptes curvipes*. However, this specimen belongs to a species described later by Roewer as *D. crenulatus* Roewer, 1913. In 2003, Kury transferred *G. curvipes* sensu Roewer to *Discocyrtus* and, to avoid homonymic collision with *D. curvipes* sensu Roewer, proposed the new name *D. confusus* as a replacement name. *Discocyrtus confusus* was later considered an invalid replacement name and was used to newly describe the species named by Kollar and Koch. *Discocyrtus flavigranulatus* B. Soares, 1944 is here considered a new junior subjective synonym of *G. curvipes* Kollar, but which is the next oldest available synonym. *Discocyrtus confusus* thus also becomes a junior synonym of *D. flavigranulatus*. Here we discuss the history and identity of three species of *Discocyrtus*: *D. flavigranulatus* B. Soares, 1944; *D. crenulatus* Roewer, 1913; and *D. fenax* sp. nov. from Santa Catarina state, Brazil (misidentified by Roewer as *D. curvipes*).

**Keywords:** Arachnida; harvestmen; Grassatores; Neotropics; Brazil.

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The Neotropical harvestmen genus *Discocyrtus* Holmberg, 1878 is the most diverse of the Gonyleptidae, and is among the top ten most diverse genera of Opiliones in the world (Kury 2002+), with ca. 70 valid species (Kury 2003; Kury & Carvalho 2016). This accounts for 10% of the valid Gonyleptidae and is caused by real diversity and also by generalized use of meristic formulas in Laniatores (the so-called Roewerian system), which has been widely favored by subsequent authors. Due to this diversity and lack of taxonomic resolution, already in the 1940s Mello-Leitão (pers. comm. to H. Soares, reported to A. Kury in the 1990s) had given up identifying *Discocyrtus* to species, leaving most as “*Discocyrtus* sp.”, while B. and H. Soares also avoided a direct confrontation with the subject. Modern expeditions to all parts of the Brazilian Atlantic Forest often retrieve many specimens with different morphotypes, which mostly remain as identified as “*Discocyrtus* sp.” More recently, some distinct groups are being little by little removed from *Discocyrtus* and given generic status (e.g., Kury & Carvalho 2016; Carvalho & Kury 2018).

Three *Discocyrtus* species are remarkably entangled in the literature – involving, among others, the names *D. curvipes* Kollar, 1839, *D. crenulatus* Roewer, 1913, *D. flavigranulatus* B. Soares, 1944, *D. confusus* Kury, 2011 and one as yet undescribed species. In the present work, an extensive study of the material used to describe the species associated with these names is made and we present new diagnoses of two valid species, while a third one is formally described.

### METHODS

Descriptions of colors use the standard names of the 267 Color Centroids of the NBS/IBCC Color System (Jaffer

2001+) as described in Kury & Orrico (2006). Scanning Electron Microscopy was carried out with a JEOL JSM-6390LV at the Center for Scanning Electron Microscopy of Museu Nacional/Universidade Federal do Rio de Janeiro (UFRJ). All measurements are in mm.

The diagnoses given here are comparative among the three relevant species, but they are not especially similar to one another. Additionally, we have compared them with the type species, *D. testudineus* (Holmberg, 1876). The confusion of those three species with one another is merely an historical artifact. The two questions: (1) “Are any of these species more similar to other species not included in the manuscript?” and (2) “Are there sympatric species that could be confused with any of these three?” are not addressed here, but rather in ongoing reviews of several species groups.

The answers to the questions in the preceding paragraph have significance for the diagnoses the authors use for each species. It would be odd to diagnose the mutual differences among three random, allopatric species when species that are more similar and perhaps sympatric are simply ignored. Diagnoses should be applicable to identification among all relevant species, especially sympatric or potentially sympatric ones, not simply which happen to share a peculiar nomenclatural past.

Abbreviations of the repositories cited are: IBSP (Instituto Butantan, São Paulo), MNRJ-HS (Private Collection Helia Soares, presently in MNRJ), IRSNB (Institut Royal des Sciences Naturelles de Belgique, Brussels), MNRJ (Museu Nacional, Rio de Janeiro), MZSP (Museu de Zoologia da Universidade de São Paulo, São Paulo), NHMW (Naturhistorisches Museum Wien, Vienna), SMF (Senckenberg Naturmuseum und Forschungsinstitut, Frankfurt). Other abbrevi-

ations used: DS = dorsal scutum, CL = carapace length, CW = carapace width, AL = abdominal scutum length, AW = abdominal scutum width, Ch = chelicera, Pp = pedipalpus, Cx = coxa, Tr = trochanter, Fe = femur, Pa = patella, Ti = tibia, Mt = metatarsus, Ta = tarsus, MS = macrosetae.

Tarsal formula: numbers of tarsomeres in tarsus I to IV, when an individual count is given, order is from left to right side (figures in parentheses denote number of tarsomeres only in the distitarsus I–II).

## HISTORICAL TAXONOMIC BACKGROUND

Guérin-Méneville (1837) described the species *Gonyleptes curvipes* from Chile; a few years later (Gervais 1844: 101) it was synonymized with *G. chilensis* Gray, 1833 (currently *Pachylus chilensis*). Guérin-Méneville's work *Iconographie du Règne Animal* appeared in separate parts over many years. Based on Cowan (1971), we can establish that the first publication of *G. curvipes* was in Planche 4, Livraison 45 (December 1837), although the corresponding complete text only appeared on September 7, 1844.

Sometime between 1818 and 1824, Johann Natterer collected arachnids in several localities in eastern Brazil. The specimens (pinned and dry) arrived in Vienna by at least 1836, but probably earlier.

In the 1830s, the Austrian biologist Vinzenz Kollar planned to publish descriptions of Natterer material (in 1833, he presented the Monograph of mainly Austrian phalangids – also remaining unpublished), then at some time the material was sent to German arachnologist Carl Ludwig Koch in Regensburg, for further description and preparing hand-coloured figures, before being returned to Vienna. There must have been accompanying documentation (labels, preliminary descriptions by Kollar) but seemingly no precise locality data. As currently known, nothing remains of this presumed documentation.

C.L. Koch (1839a) examined a male among the NHMW harvestman material previously studied by Kollar, and described the then new species *G. curvipes* (C.L. Koch 1839a, pp. 36–38, plate CCXXIV [= 224], fig. 555). He provided a Latin diagnosis by Kollar with his German translation, a longer German description, and a mock life-like colored illustration (Fig. 1A). The type locality of the specimen is reported only as “Brasilien”. His illustration allows recognition of what is today called a typical Atlantic *Discocyrtus* with features of a species still recognizable. Although not reported in the description, the accession number of this specimen is 1847.II.49 (therefore given 8 years later) and currently (during a 1965 inventory by J. Gruber) renumbered NHMW 3127 (Figs. 1D–E, 2). There are no original labels associated with the specimen remaining in NHMW, which may have been discarded by the “Korrespondent” (that is, a voluntary coworker) E. Reimoser in early 20th century. This specimen was originally pinned and conserved dry, but later transferred to ethanol (see below).

C.L. Koch (1839b: 13) repeated the diagnosis of *G. curvipes* in a synopsis of Opiliones.

Kollar entered in the accession book of NHMW sub 1847. Februar, II., numbers 1. and 2. two samples of Crustacea from Brazil. On the same page further below we find a “Nachtrag” (addendum) (and, curiously, “Arachnoidea” stricken out!) – a

list of Brazilian Arachnida numbered consecutively (!) “3 – 63.”, clearly written by another person about 50 years later (as evidenced by the names of authors Ausserer and W[illiam] S[ørensen]). Present in this list are the names “47 *Discocyrtus crenulatus* W.S.” and “49 *Gonyleptes curvipes* Kllr”.

Bertkau (1880) synonymized *G. curvipes* Kollar, in C.L. Koch, 1839 with *G. horridus* Kirby, 1819, which was refuted by all subsequent authors.

W. Sørensen (1884: 603), commenting on some species of *Gonyleptes*, stated [our translation]: “*G. curvipes* does not match *G. horridus*. But *G. horridus* (of Kirby), *Phalangium acanthopus* Quoy & Gaimard [1824] and *G. horridus* (sensu Koch 1839b), all appear to be the same species.” At that time, he had not examined any material from Vienna, including the type of *G. curvipes*.

Around 1891 (as evidenced by the annual report of curator Karl Koebel in Hauer 1892: 40), Sørensen studied material lodged in NHMW. Besides studying the holotype of *G. curvipes* (NHMW 3127) (Figs. 1D–E, 2), he studied another male specimen, numbered 1847.II.47 (currently NHMW 3126) (Figs. 3A–B). He assigned both specimens to the genus *Discocyrtus*, labeling NHMW 3126 as *D. crenulatus* W.S. [in schedula] and NHMW 3127 as *D. curvipes*. Sørensen never published these data (he died in 1916).

In the late 1890s, T. Adensamer and A. Penther, the NHMW curators, prepared a card index for arachnids which now serves as a surrogate for the lost original labels. These cards are shown here for *D. crenulatus* W.S. [in schedula] (Figs. 3C–D) and *D. curvipes* (Figs. 1B–C).

About twenty years after Sørensen, C.-F. Roewer (1913) studied both NHMW specimens along with new material from his own collection. (The annual reports of NHMW from 1910 and following years mention loans to Roewer). Roewer names were incorporated in the newer catalogue version by Penther (and later Reimoser) and written on “Reimoser format” specimen labels – any older (original?) labels were lost in this era.

Under the heading *Discocyrtus curvipes* [then a new combination] Roewer (1913: 107, fig. 49) provided a redescription and a new illustration (Fig. 4A). In the “material examined” section he listed two lots belonging to two different species – “1 ♂ (verstümmelt) – (Type Koch's im Mus. Wien – durch Soerenen mit: “*Discocyrtus curvipes*” beschriftet – gesehen!) [1 ♂ (Vienna Museum, broken), Koch's type, determined as *Discocyrtus curvipes* by Sørensen]” [that is NHMW 3127, see index card based on Sørensen's identification in Figs. 1B–C] and 1 ♂ (Roewer's collection, “Brasilien – S. Paulo”, no number reported – currently this specimen is SMF RI 812), but both the description and his illustration fig. 49 are only based on SMF RI 812 (Fig. 4A).

A few pages below (Roewer 1913: 112, fig. 51) described a new species, *D. crenulatus*, using Sørensen's unpublished name (Fig. 4B). Roewer based his description on: 1 ♂ (broken) which is NHMW 3126 (Figs. 3A–B), plus “many ♂ and ♀ in my collection, from Brasilien: S. Paulo”, which would be the 6 ♂ (SMF RI 764), labeled by Roewer as “*D. crenulatus*: Type” (Figs. 8A–D). Some of these are beta males, which probably were thought to be females by Roewer. However, the locality label states “Brasilien: Petropolis” (Fig. 8D), which is



Figure 1.—*Discocyrtus flavigranulatus* B. Soares, 1944, male holotype of synonym *Discocyrtus curvipes* (Kollar in C.L. Koch, 1839), from “Brazil” (NHMW 1847.II.49, currently NHMW 3127): A. Original illustration by C.L. Koch; B. Old catalogue index card after Sørensen with the transfer from *Gonyleptes* to *Discocyrtus*; C. Cross-reference old catalogue index card after Sørensen; D. Specimen, dorsal scutum, dorsal view; E. Same, dorso-posterior view.

consistent with what is now known for this species. The illustration provided is clearly based on one of SMF RI 764 specimens. The NHMW specimen has only minor differences with the material in SMF, which will be addressed below.

Roewer (1913: 113) also wrote that while Koch mentioned only one male of *G. curvipes*, there were two specimens in NHMW, and that he found that one was the type of *D. curvipes*, the other was a specimen of *D. crenulatus*.

Roewer (1913: 231) apparently forgot he had described a *Discocyrtus curvipes* and described once again the same NHMW 3127 (Figs. 1D–E, 2) material as *Gonyleptes curvipes*, using Koch’s name, but this time combined in the genus *Gonyleptes* as Koch had done. His illustration is unfaithful, but even so it is possible to recognize NHMW 3127 (Fig. 4C). Apart from NHMW 3127, he also cited a syntype male in IRSNB (Bertkau’s material).

The Brazilian arachnologist Benedicto Soares—reporting the study of many spiders from Monte Alegre (Soares 1944)—in the last pages described the new species of harvestman *D.*

*flavigranulatus* B. Soares, 1944, based on a male and a female MZSP 569 (Fig. 5), and providing an artistic rendering of the habitus in dorsal view.

Around 1965, Gruber transferred some pinned and dry specimens of NHMW into ethanol and wrote new museum labels based on information contained in “Reimoser labels,” the Penther catalogue, the old card index, and the accession ledger’s entries (“entered afterwards”).

Acosta (1996) published on Roewer’s types of Pachylinae and mentioned NHMW 3126 (Figs. 3A–B) as a syntype of *D. crenulatus*.

Kury (2003) noted that Roewer’s *G. curvipes* Kollar, 1839 [*G. curvipes* sensu Roewer] (Figs. 1D–E, 2) should be assigned to *Discocyrtus* and made this combination, but this created a homonymy with the same *Discocyrtus curvipes* (Fig. 4A), treated by Roewer (1913) as a different species in the same paper. Kury then proposed the replacement name *Discocyrtus confusus* for the junior homonym.

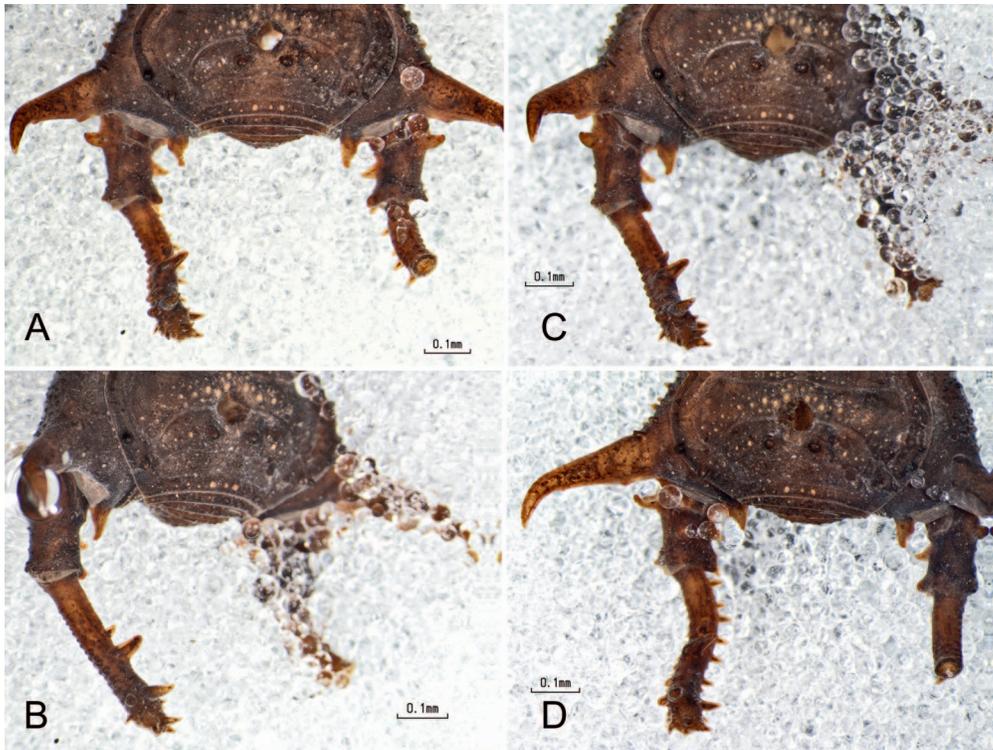


Figure 2.—*Discocyrtus flavigranulatus* B. Soares, 1944, male holotype of synonym *Discocyrtus curvipes* (Kollar in C.L. Koch, 1839), from “Brazil” (NHMW 1847.II.49, currently NHMW 3127), posterior part of dorsal scutum and leg IV up to femur: A. Dorsal flat; B. Oblique, prolateral/dorsal; C. Same, with less rotation; D. Prolateral-dorsal.

Kury & Alonso-Zarazaga (2011) explained that *D. confusus* Kury, 2003 is unavailable, because *Gonyleptes curvipes* sensu Roewer, 1913 is a misidentification, and replacement names can only be proposed for available names (Art. 13.1.3). So, they formally described *Discocyrtus confusus* as a new species, with the authority attributed to Kury only.

#### SYSTEMATICS

##### Genus *Discocyrtus* Holmberg, 1878

*Discocyrtus* Holmberg 1878: 74; Kury 2003: 159 (see extensive synonymy therein).

**Type species.**—*Gonyleptes testudineus* Holmberg, 1876, by monotypy.

##### *Discocyrtus flavigranulatus* B. Soares, 1944

(Figs. 1, 2, 4C, 5, 6, 7, 12)

*Gonyleptes curvipes* Kollar, in C.L. Koch 1839: 36, pl. 224, fig. 555; Roewer 1913: 231, fig. 96 [junior primary homonym of *Gonyleptes curvipes* Guérin-Ménéville, 1837, first detected here].

*Discocyrtus flavigranulatus* B. Soares 1944: 165, fig 11.

*Discocyrtus confusus* Kury 2003: 161 [unavailable replacement name for *Gonyleptes curvipes*, thought to have been based on other type material].

*Discocyrtus confusus* Kury, in Kury & Alonso-Zarazaga 2011: 56 [first valid description]. **Syn. nov.**

**Type material.**—*Discocyrtus flavigranulatus*: Holotype male:

Monte Alegre do Sul, São Paulo, Brazil, 27 September 1942, F. Lane (MZSP 569, examined). Paratype: 1 female: same data (MZSP 569, examined).

*Discocyrtus confusus*: Holotype male: Brazil, without further locality data (NHMW 3127 = 1847.II.49, examined) – determined by Sørensen as *Discocyrtus curvipes*, recognized by Roewer as syntype of *Gonyleptes curvipes*.

**Other material cited in literature.**—1 ♂ (IRSNB, not examined) Rio de Janeiro, Tijuca. Conspecificity unknown.

**Material examined.**—BRAZIL: *Minas Gerais*: 1 ♂, 1 ♀, Lavras, Cachoeira de Farias, 18 February 1993, R. L. C. Baptista (MNRJ 2401); 4 ♂, 3 ♀, Lavras, Reserva Municipal Poço Bonito, 12 May 1992, R. L. C. Baptista (MNRJ 6754); 6 ♂, 4 ♀, Poços de Caldas, 22 February 1967, I. Becker (MNRJ 9269); 1 ♂, Poços de Caldas, Morro São Domingos, 19 July 1967, I. Becker (MNRJ 0032); 1 ♂, 1 ♀, Poços de Caldas, Morro São Domingos, 18 January 1968, I. Becker (MNRJ 9271); 1 ♂, Poços de Caldas, Morro São Domingos, 18 January 1968, I. Becker (MNRJ 9279); 1 ♂, Poços de Caldas, Recanto Japonês, 1200 m, 11–13 March 2001, A.B. Kury (MNRJ 4503); 1 ♂, 4 ♀, Poços de Caldas, Santana, 31 July 1967, I. Becker, O. Roppa & O. Leoncini (MNRJ 0035); *São Paulo*: 2 ♂, Serra Negra, Cachoeira dos Sonhos, 15–16 March 2001, A. B. Kury (MNRJ 4505).

**Distribution.**—BRAZIL: Minas Gerais, Lavras; Poços de Caldas; São Paulo, Serra Negra.

**Diagnosis.**—Mesotergum with prominent granules forming a cross pattern (*D. crenulatus* with mesotergum practically all covered by the prominent granules, *D. testudineus* and *D. fenax* sp. nov. without prominent granules on mesotergum).

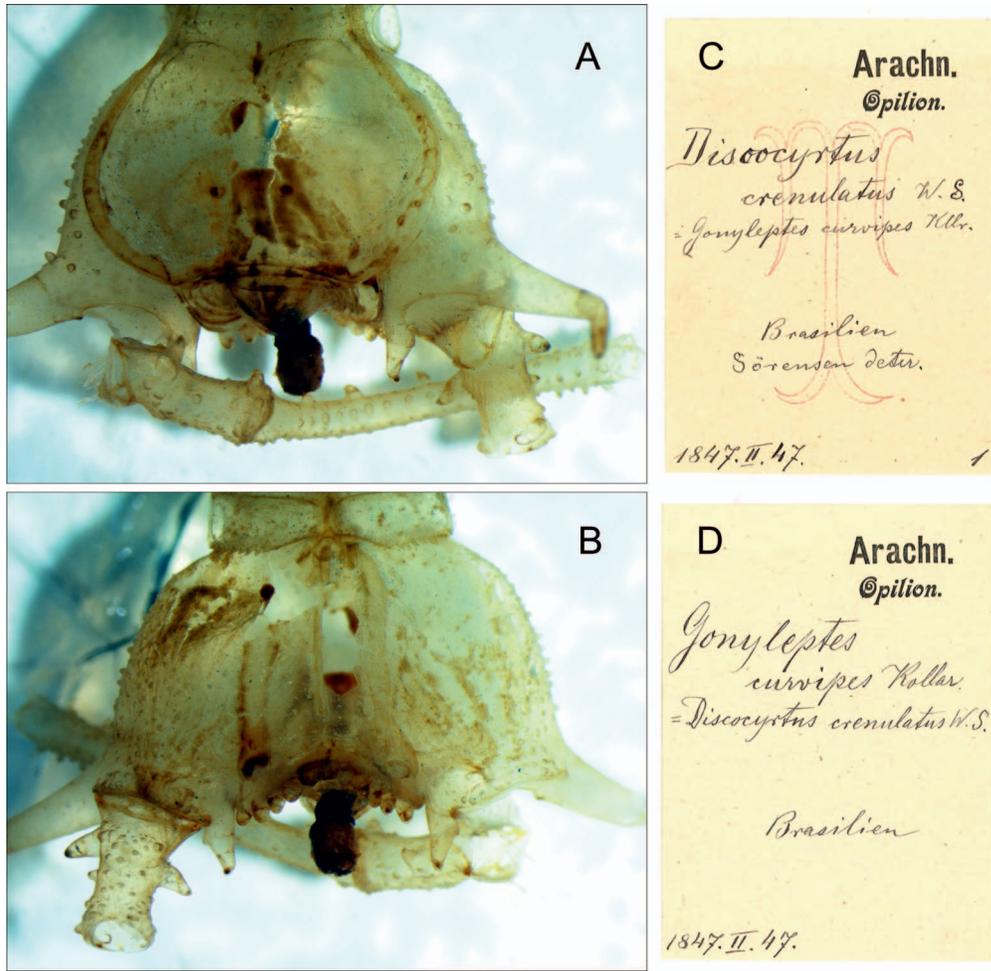


Figure 3.—*Discocyrtus crenulatus* Roewer, 1913, male, second specimen of *Gonyleptes curvipes* of Koch from “Brazil” (NHMW 1847.II.47, currently NHMW 3126), not used in the description, but regarded as a syntype of *D. crenulatus* by Roewer: A. Dorsal scutum, partial, and basal legs, dorsal view; B. Coxa IV, stigmatic area and basal leg IV, ventral view; C. Old catalogue index card after Sørensen with the indication of the new species in *Discocyrtus crenulatus*; D. Cross-reference old catalogue index card after Sørensen.

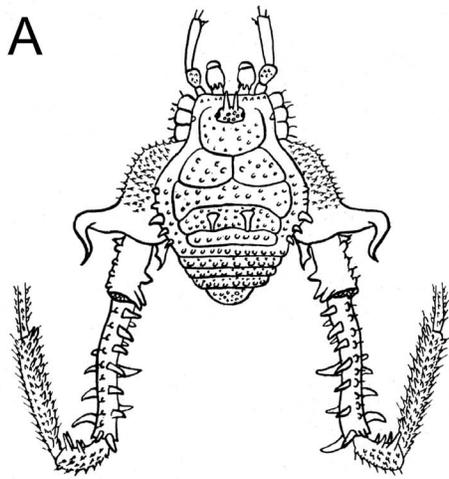


Fig. 544. *Discocyrtus curvipes* ♂. Körper dorsal mit 4. Bein bis zur Tibia.

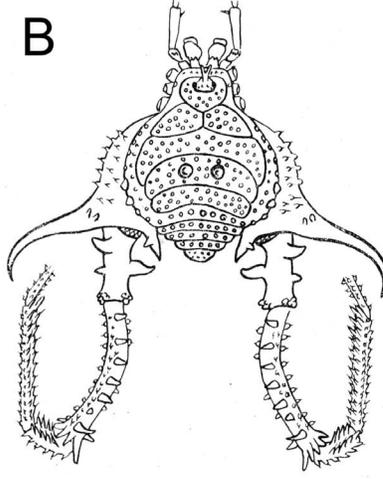


Fig. 546. *Discocyrtus crenulatus* ♂. Körper dorsal mit 4. Bein bis zur Tibia.

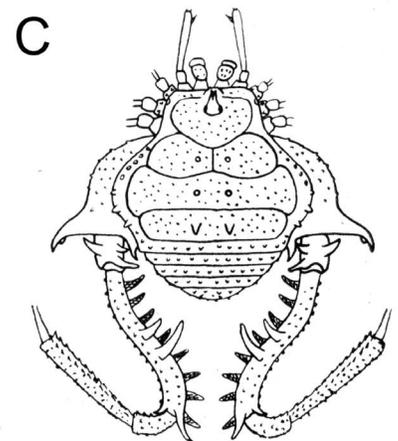


Fig. 610. *Gonyleptes curvipes* ♂. Körper dorsal mit 4. Bein bis zur Tibia. (Nach Typ.)

Figure 4.—Illustrations of the three species involved with the names as given by Roewer (1913/1923): A. *Discocyrtus curvipes* (“Koch”), based on SMF RI 812 [here called *D. fenax*]; B. *Discocyrtus crenulatus* Roewer, based on SMF RI 764; C. *Gonyleptes curvipes* “Kollar MS”, based on NHMW 3127 [here called *D. flavigranulatus*].

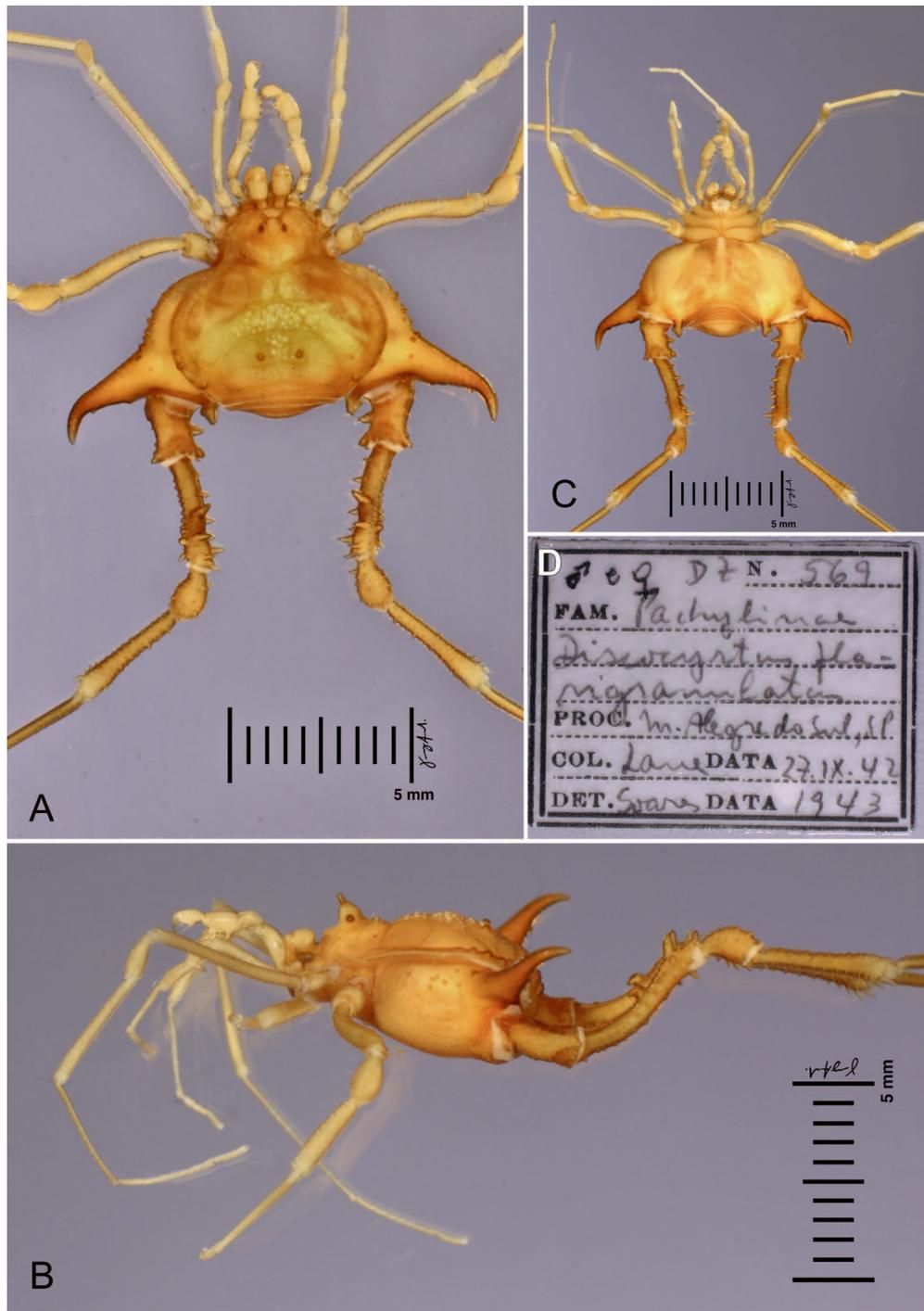


Figure 5.—*Discocyrtus flavigranulatus* B. Soares, 1944, male holotype from Monte Alegre do Sul (MZSP 569): A. Habitus, dorsal view; B. Same, lateral view; C. Same, ventral view; D. Original label by Soares. Scale bars = 5 mm. Photo: Enriquer Leopardi.

Paramedian tubercles of area III dome-shaped (the same in *D. crenulatus*, conical with non-acuminate apex in *D. testudineus*, conical acuminate with distal curvature to the posterior region in *D. fenax*). Apophysis of Cx IV with a swollen basal-medial branch, forming an angle of almost 90° with the axis of the body, with a backward curvature at the apex (*D. testudineus* with a swollen apophysis forming a 135° angle with the axis of the body, *D. crenulatus* with elongate and non-swollen

apophysis, *D. fenax* with sigmoid medial-distal portion). Tr IV square (rectangular in *D. testudineus*, *D. crenulatus* and *D. fenax*). Fe IV dorsally with medial-distal armature of two spines curved to retrolateral (spines not curved in *D. crenulatus*, spines not present in *D. testudineus* and *D. fenax*).

**Redescription.**—*Male holotype* (MZSP 569), also MNRJ 4603 (some photographs) and MNRJ 9279 (genitalic illustrations): DS measurements: CW 3.0, CL 2.0; AW 6.5, AL 3.6.

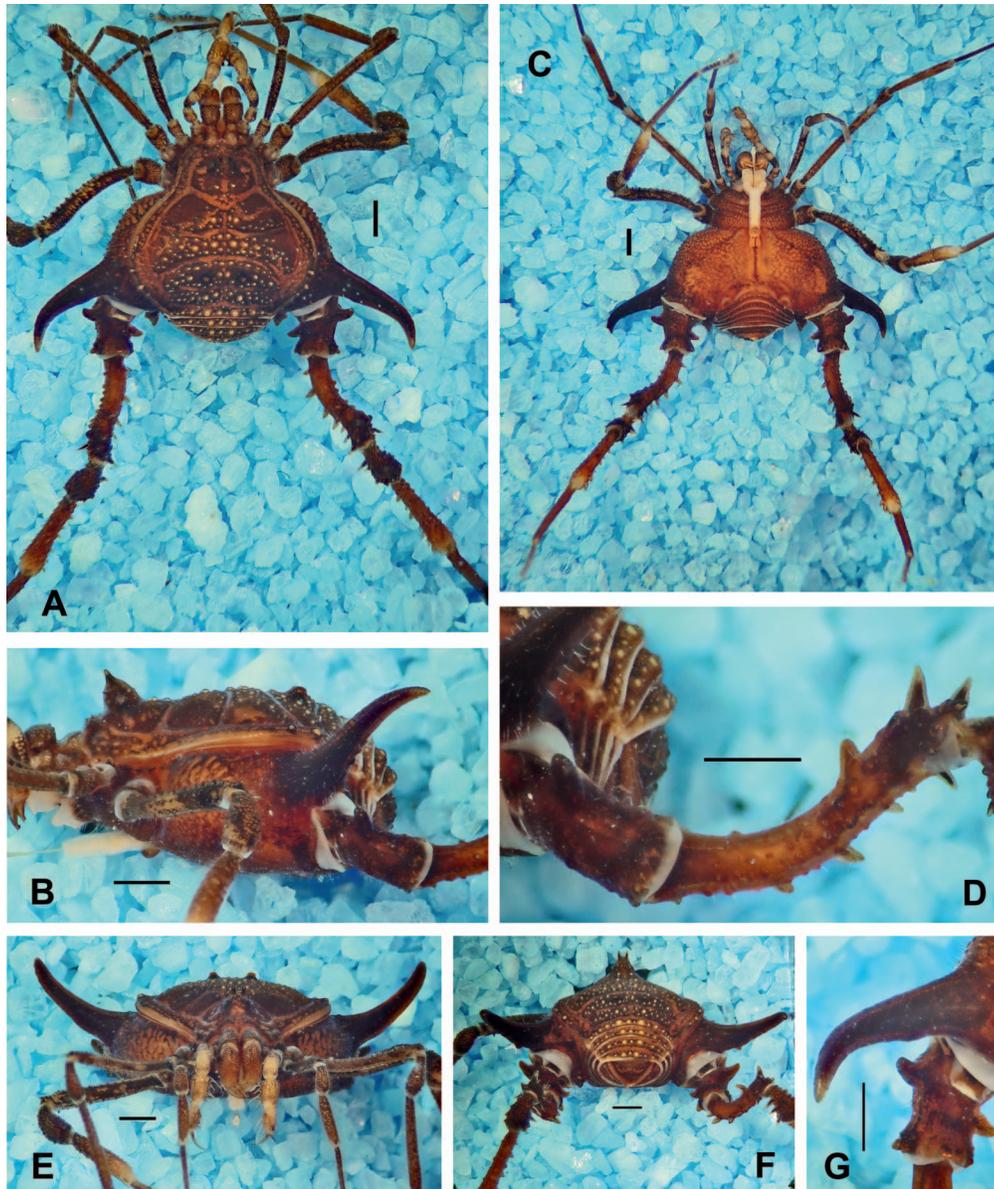


Figure 6.—*Discocyrtus flavigranulatus* B. Soares, 1944, male from Poços de Caldas (MNRJ 4503): A. Habitus, dorsal view; B. Same, lateral view; C. Same, ventral view; D. Tr and Fe IV, prolateral view; E. Habitus, anterior view; F. Same, posterior view; G. Cx IV, prodorsal distal apophysis. Scale bars = 1 mm.

Fe measurements: I = 2.2, II = 4.8, III = 3.9, IV = 3.6. Right / left tarsal (distitarsal) counts, ♂ holotype: 6(3) / 6(3) - 9(3) / 10(3) - 7 / 7 - 7 / 7; ♀ paratype - / 6(3) - - / 8(3) - 7 / 7 - 7 / 7.

Dorsum: Dorsal scutum almost as long as wide, abdominal scutum with lateral margins strongly convex (Fig. 6A), widest and highest at area II (Fig. 6B). Carapace with few tubercles on posterior region, with a pair of paramedian higher tubercles (Fig. 6A). Cheliceral sockets shallow, with a small apophysis in the center. Eye mound elliptical, high, slightly inclined frontwards, placed in the middle of the carapace, armed with a pair of divergent high spines fused at baseline and inclined frontwards (Figs. 6A–B, E–F). Mesotergum divided into four clearly defined areas. Areas I and IV divided into left and right halves by median groove. Area II anterior

lateral border invading space of area I and posterior lateral border invading the space of area III. AS lateral borders with ordinary tubercles from area I backwards (Fig. 6A). All areas with many tubercles, area I with three pairs of paramedian tubercles higher than the others. Area II with six paramedian tubercles higher than the others (two at anterior portion and four at posterior portion) (Fig. 6A). Area III with a pair of paramedian rounded higher tubercles (Figs. 6A–B, E–F). Posterior border of dorsal scutum and free tergites with a horizontal row of ordinary tubercles, with a paramedian pair of highlighted tubercles (Figs. 6A–B, D, F).

Venter: Cx I–III parallel to each other; each with ventral transverse rows of 7–11 setiferous tubercles (Cx I rows with higher and sharper tubercles). Cx II retroventral distal with a

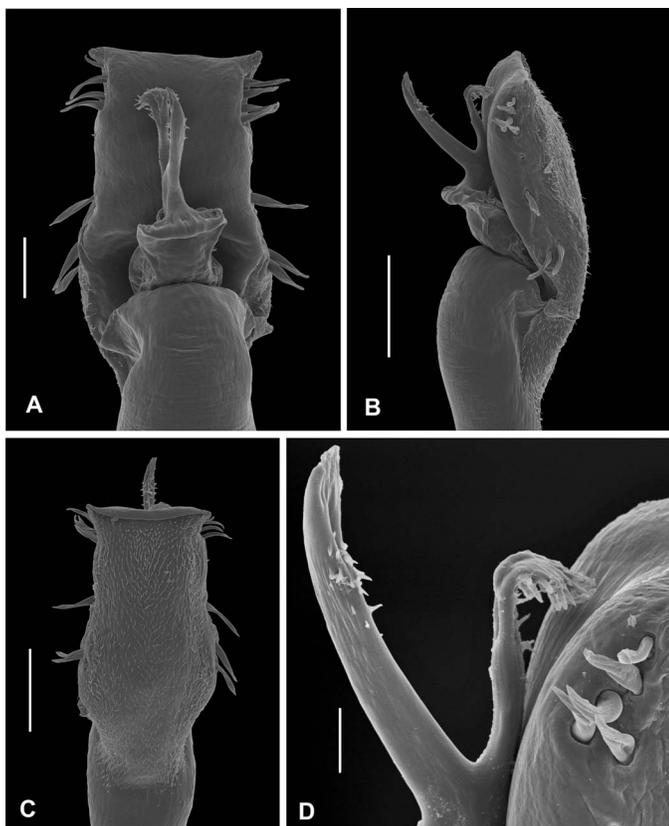


Figure 7.—*Discocyrtus flavigranulatus* B. Soares, 1944, male from Poços de Caldas (MNRJ 9279), penis, distal part: A. Dorsal view; B. Lateral view; C. Ventral view; D. Detail of stylus and ventral process, lateral view. Scale bars = 50  $\mu\text{m}$  (A); 100  $\mu\text{m}$  (B, C); 20  $\mu\text{m}$  (D).

row of two acuminate tubercles. Cx III retroventral distal with a row of seven acuminate tubercles. Cx IV much larger than the others, directed obliquely (Fig. 6C). Stigmatic area Y-shaped, clearly sunken relative to distal part of coxa IV. Intercoxal bridges well marked. Stigmata clearly visible. Free sternites and anal operculum each with one transverse row of tubercles (Figs. 6B–D).

Chelicera: Basichelicerite elongate, bulla well marked (Figs. 6A–B), with marginal setiferous tubercles—two ectal, one posterior, two mesal; hand not swollen.

Pedipalpus (Figs. 6A, C, E): Tr with two geminate ventral setiferous tubercles. Fe with a prolateral apical setiferous tubercle and one ventral basal setiferous tubercle. Pa unarmed. Ti with two rows of setiferous tubercles; four (iiIi) ventro-mesal and (IiIi) ventro-ectal. Ta with two rows of setiferous tubercles; three (IiI) ventro-mesal and four (IIIi) ventro-ectal.

Legs: Tr I–III each with several ventral tubercles. Fe I–II straight (Figs. 6A, C). Fe and Ti I–II with two rows (proventral and retroventral) of small tubercles. Leg III sub-straight (Figs. 6A, C). Fe III and Ti III with two rows (proventral and retroventral) of acuminate tubercles. Fe III with a developed prodorsal and retrodorsal distal spine (Figs. 6A, C, E). Cx IV ending distally at area IV of dorsal scutum (Fig. 6A). Cx IV with 1) a prolateral apophysis thick, with distal curvature on the apical portion and 2) a retroventral spiniform apophysis with secondary branch (Figs. 6A–C, E–

G). Cx IV prodorsal, prolateral, proventral and ventral with rows of acuminate tubercles (Figs. 6A–C, E). Tr IV apophysis retrolateral proximal and distal (geminate). Tr IV apophysis prolateral distal (Figs. 6A, G). Tr IV ventrally covered by tubercles along its entire length. Fe IV sinuous, curved from the proximal-distal region toward dorsal (Figs. 6A, C–D, F). Fe IV proventral and retrolateral with row of small tubercles (Fig. 6C). Fe IV dorsal–prodorsal medial distal with three spines (Iii) curved toward retrolateral portion (Fig. 6A). Fe IV prolateral with a row of tubercles, which grow in size towards the distal portion, terminated with a small spur (Figs. 6A, C). Fe IV retrolateral with row of six equidistant spines (IiiIII) (Figs. 6A, C). Pa IV proventral and retroventral with row of five and three spines, respectively (Fig. 6C). Pa IV retrolateral proximal with a spine (Figs. 6A, C). Ti IV prodorsal, proventral, retrodorsal, retrolateral and retroventral with row of acuminate tubercles (Figs. 6A, C). Mt IV proventral and retroventral distal with spur.

Color (in ethanol): Dorsal scutum background Moderate Brown (58), with grooves and reticles Moderate Orange (53). Granules of scutum and free tergites Brilliant Orange Yellow (67). All legs background Moderate Brown (58) with Brownish Black (65) reticle. Ch and Pp background Moderate Greenish Yellow (102), with honeycombed Deep Brown (56) reticle.

Male genitalia (MNRJ 9279): VP subrectangular, distal half with parallel sides, with basal half quite convex, distal border substraight (Figs. 7A, C). Ventral surface with entire field of microsetae (Fig. 7C). Truncus slender (thinner than podium plus VP) (Fig. 7A). Macrosetae C1–C3 cylindrical with apex beveled, forming longitudinal row, unequally spaced, subapical on laterals of VP (Figs. 7A–D). Macrosetae A1–A3 forming triangle, with one more dorso-distal than the other two (Figs. 7A–C). MS B inserted ventrally, proximal to A2 (Figs. 7B–C). MS D very short, inserted on lateral border of VP, close to C1–C3 (Figs. 7A–B). MS E1–E2 extremely reduced, located on latero-distal flange of VP (Figs. 7B–C). Stylus and the axis of its ventral process fused basally (forming long pedestal) at an acute angle (V-shaped) (Figs. 7A–B, D). Ventral process of stylus shorter than it, *in situ* not reaching distal border of VP (Figs. 7A–B, D). Stylus straight, without clearly defined head, armed with a few small sub-distal setae (Figs. 7A–D). Flabellum curved proximally, fan-shaped, occupying about 40% length of free portion of process (Figs. 7A–B, D).

**Variation.**—Specimen MZSP 569 (Fig. 5) has a callus instead of prolateral basal apophysis on Tr IV.

**Female.**—*Paratype of D. flavigranulatus (MZSP 569)*: CW 2.5, CL 1.7; AW 4.9, AL 3.2. Cx IV with much weaker armature, prodorsal apophysis reduced to a simple spine and retroventral absent. Fe IV thinner and less curved when compared to male. Fe IV with fewer spines on distal retrolateral axis and a retrolateral distal spur.

*Discocyrtus crenulatus* Roewer, 1913  
(Figs. 3, 4B, 8, 9, 12)

*Discocyrtus crenulatus* Roewer 1913: 111, fig. 51.

**Type material.**—*Lectotype male*: Petrópolis, Rio de Janeiro, Brazil (SMF RI 764, examined).



Figure 8.—*Discocyrtus crenulatus* Roewer, 1913, male syntype from Petrópolis (SMF RI 764): A. Habitus, dorsal view; B. Same, dorso-lateral view; C. Same, ventral view; D. Original label by Roewer.

*Paralectotypes*: 5 males, collected with lectotype (SMF RI 764, examined; incorrectly reported as ♂ and ♀ in original description); 1 male, from Brazil, without further locality data (NHMW 3126 = 1847.II.47, examined; identified as “*G. curvipes* = *D. crenulatus*” by Sørensen, syntype of *D. crenulatus*).

**Other material examined.**—BRAZIL: *Rio de Janeiro*: 4 ♂, 6 ♀, Nova Friburgo, Três Picos, 16 November 1991, R. L. C. Baptista (MNRJ 6736); 5 ♂, 3 ♀, Nova Friburgo, Campo do Coelho, Três Picos, -22.368°, -42.678°, 1150 m, 11 April 2015,

A. Garcia, A. Kury, M. Medrano & A. Pinto (MNRJ 8635); 1 ♂, 1 ♀, Nova Friburgo, Mury, Debossan, 950 m, 30 July 1996, R.S. Bérnils (MZSP 15252); 1 ♂, same county (Rio Bengalas), 21–23 August 1996, R. S. Bérnils (MZSP 15122); 1 ♂, Teresópolis, Parque Nacional da Serra dos Órgãos (MNRJ 0193); 13 ♂, 5 ♀, Teresópolis, Parque Nacional da Serra dos Órgãos, Trilhas Rancho Frio e Pedra do Sino, 20–23 October 2006, Expedição Arachné (MNRJ 18711); 2 ♂, Teresópolis, Subaio, antigo Hotel Sayonara, 20–22 April 1995, R. L. C. Baptista & M. I. Landim (MNRJ 5380).

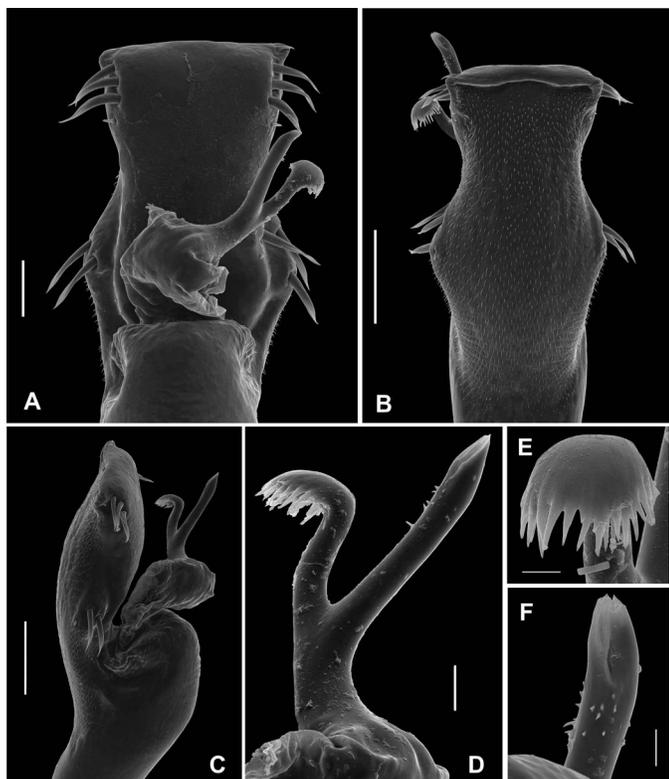


Figure 9.—*Discocyrtus crenulatus* Roewer, 1913, male from Teresópolis (MNRJ 5380), penis, distal part: A. Dorsal view; B. Ventral view; C. Lateral view; D. Detail of stylus and ventral process, lateral view; E. Flabellum, apico-ventral view; F. Stylus, apico-ventral view. Scale bars = 50  $\mu$ m (A); 100  $\mu$ m (B, C); 20  $\mu$ m (D); 10  $\mu$ m (E, F).

**Distribution.**—BRAZIL: Rio de Janeiro, Nova Friburgo; Teresópolis.

**Diagnosis.**—Mesotergum with prominent granules covering practically all its extension (mesotergum of *D. flavigranulatus* with prominent granules in cross pattern, *D. testudineus* and *D. fenax* without prominent granules on mesotergum). Paramedian tubercles of area III dome-shaped (the same in *D. flavigranulatus*, conical with non-acuminate apex in *D. testudineus*, conical acuminate with distal curvature to the posterior region in *D. fenax*). Apophysis of the Cx IV with basal-medial branches forming an angle of 135° in relation to the axis of the body, elongated, with apex longitudinally exceeding the height of Tr IV (*D. testudineus* and *D. flavigranulatus* with swollen basal-medial branch, *D. fenax* with medial-distal portion sigmoid, all three with apex not exceeding longitudinally the height of Tr IV). Fe dorsal IV armed with four equidistant spines (*D. flavigranulatus* with two spines in the medial-distal portion, curved to retrolateral; *D. fenax* with six spines in the proximal-medial portion, curved to retrolateral, spines not present in *D. testudineus*).

**Description.**—Male lectotype (SMF RI 764), except for color in vivo and genitalia): DS measurements: CW 3.7, CL 2.5; AW 6.9, AL 4.0. Fe measurements: I = 3.2, II = 6.9, III = 5.1, IV = 6.1. Right / Left tarsal (distitarsal) counts, ♂ lectotype: 6(3) / 6(3) - 9(3) / 10(3) - - / 7 - 7 / 7.

**Dorsum:** Dorsal scutum almost as long as wide, abdominal scutum with lateral margins strongly convex (Fig. 8A), widest and highest at area III. AS posterior margin strongly concave (Figs. 8A–B). Carapace with few tubercles on posterior region, with two pairs of paramedian higher tubercles (Figs. 8A–B). Cheliceral sockets shallow, with a small apophysis in the center. Eye mound elliptical, high, slightly inclined frontwards, placed in the middle of the carapace, armed with a pair of divergent high spines fused at baseline and inclined frontwards (Figs. 8A–B). Mesotergum divided into four clearly defined areas (Figs. 8A–B). Areas I and IV divided into left and right halves by median groove. Area II posterior lateral border strongly invading the space of area III. AS lateral borders with ordinary tubercles from area I frontwards. All areas with many tubercles (Figs. 8A–B). Area I with pair of paramedian tubercles higher than the others. Area II with row of tubercles on posterior portion. Area III with a pair of paramedian rounded higher tubercles (Figs. 8A–B). Posterior border of dorsal scutum and free tergites with a horizontal row of ordinary tubercles, with a paramedian pair of highlighted tubercles (Fig. 8A).

**Venter:** Cx I–III parallel to each other; each with ventral transverse rows of 9–12 setiferous tubercles (Cx I two rows with higher and sharper tubercles). Cx II retroventral distal with a row of three acuminate tubercles. Cx III retroventral distal with a row of seven acuminate tubercles. Cx IV much larger than the others, directed obliquely (Fig. 8C). Stigmatic area Y-shaped, clearly sunken relative to distal part of coxa IV. Intercostal bridges well marked. Stigmata clearly visible. Stigmatic area posterior portion with row of 11 tubercles that stand out. Free sternites and anal operculum each with one transverse row of tubercles (Fig. 8C).

**Chelicera:** Basichelicerite elongate, bulla well marked (Fig. 8A), with marginal setiferous tubercles—three ectal, two posterior, one mesal; hand not swollen.

**Pedipalpus:** Fe with two geminate ventral setiferous tubercles. Fe with a prolateral apical setiferous tubercle and one ventral basal setiferous tubercle. Pa unarmed. Ti with two rows of setiferous tubercles; four (IiIi) ventro-mesal and ventro-ectal. Ta with two rows of setiferous tubercles; three (III) ventro-mesal and five (IiIii) ventro-ectal.

**Legs:** Tr I–III each with several ventral tubercles (Fig. 8C). Fe I–II straight (Figs. 8A–C). Fe and Ti I–II with all axis containing rows of small tubercles. Leg III sub-straight (Figs. 8A–C). Fe III with two rows (proventral and retroventral) of acuminate tubercles. Fe III with a developed prodorsal and retrodorsal distal spore (Figs. 8A–B). Cx IV ending distally posterior to the border of the dorsal scutum (Fig. 8A). Cx IV with (1) a long prolateral apophysis (forming an obtuse angle in relation to Cx) with medial-distal curvature to posterior on the apical portion, and (2) a spiniform retroventral apophysis with secondary branch (Figs. 8A–C). Cx IV prodorsal, prolateral, proventral and ventral with rows of acuminate tubercles (Figs. 8A–C). Tr IV with conical proximal retrolateral apophysis (Figs. 8A–C). Tr IV with conical proximal retrolateral apophysis (proximal 3x larger than the others) (Figs. 8A, C). Tr IV prodorsal distal apophysis shaped as a screwdriver apex (Figs. 8A–B). Tr IV ventrally covered by tubercles along its entire length (Fig. 8C). Fe IV C-shaped, retrolateral convex (Figs. 8A–C). Fe IV prodorsal, prolateral, proventral, retroventral and retrodorsal with row of small



Figure 10.—*Discocyrtus fenax* sp. nov., male holotype from Itajaí (MZSP 18158): A. Habitus, dorsal view; B. Same, ventral view; C. Same, lateral view; D. Same, dorso-lateral view; E. Tr and Fe IV, prodorsal view; F. Same, proventral view; G. Same, retroventral view; H. Same, retrolateral view. Scale bars = 2 mm.

tubercles (Figs. 8A–C). Fe IV dorsal with six equidistant spines (iIiIi) (Figs. 8A–B). Fe IV retrolateral distal with four spines (IiII) (Fig. 8C). Fe IV proventral and retrolateral distal with a spine (Fig. 8C). Fe IV prodorsal distal with a spur (Figs. 8A–B). Pa IV proventral and retroventral with row of four and three spines, respectively (Fig. 8C). Pa IV in dorsal view covered by spines (Figs. 8A–B). Ti IV prodorsal, proventral, retrodorsal, retrolateral and retroventral with

row of acuminate tubercles (Figs. 8A–C). Mt IV proventral and retroventral distal with spur.

Color (*in vivo*): Mesotergum background Dark Greenish Yellowish Green (151) with granules Moderate Yellow Green (120). Leg IV, carapace and rim of abdominal scutum Deep Yellowish Brown (75). Legs I–III Dark Greenish Gray (156). Pp and Ch background Light Olive (106) with dense reticle Dark Olive Green (126).

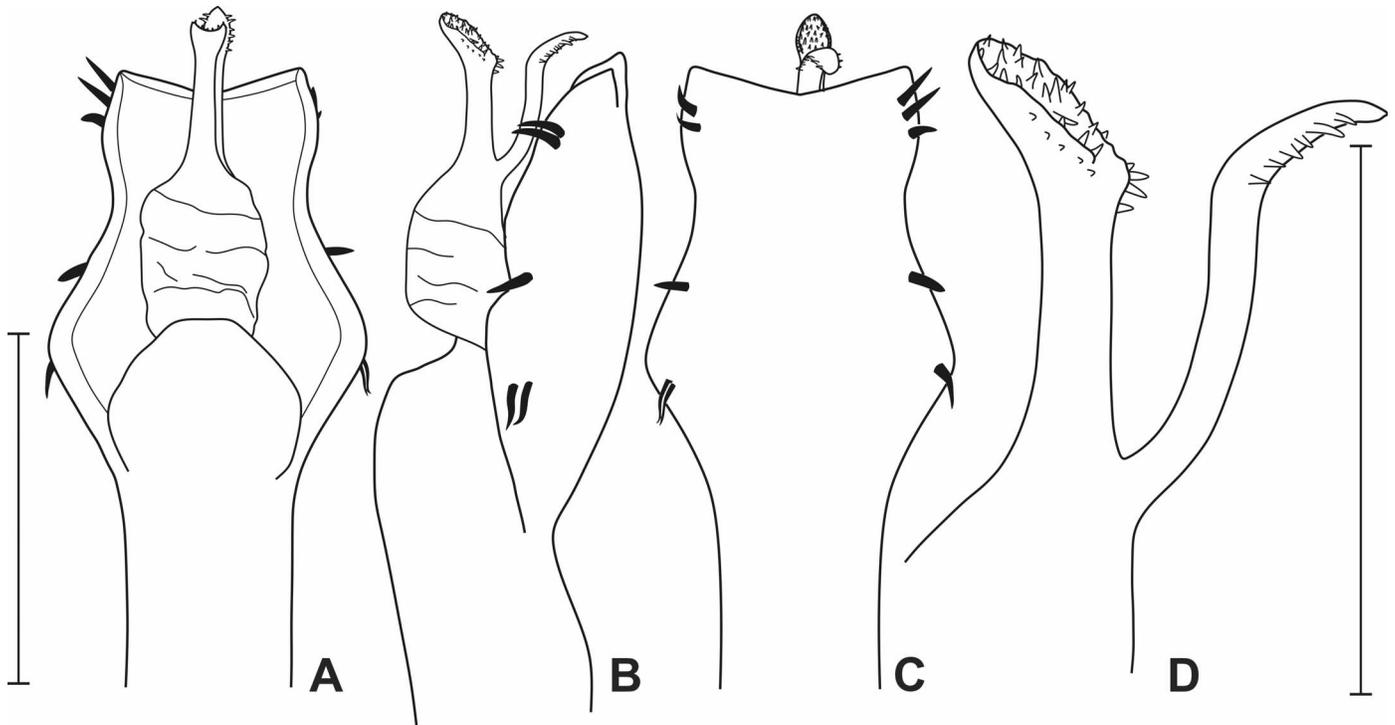


Figure 11.—*Discocyrtus fenax* sp. nov., male paratype from Joinville (SMF RI 812), distal part of penis: A. Dorsal view; B. Lateral view; C. Ventral view; D. Detail of glans and stylus. Scale bars = 100  $\mu$ m (A, B, C); 50  $\mu$ m (D).

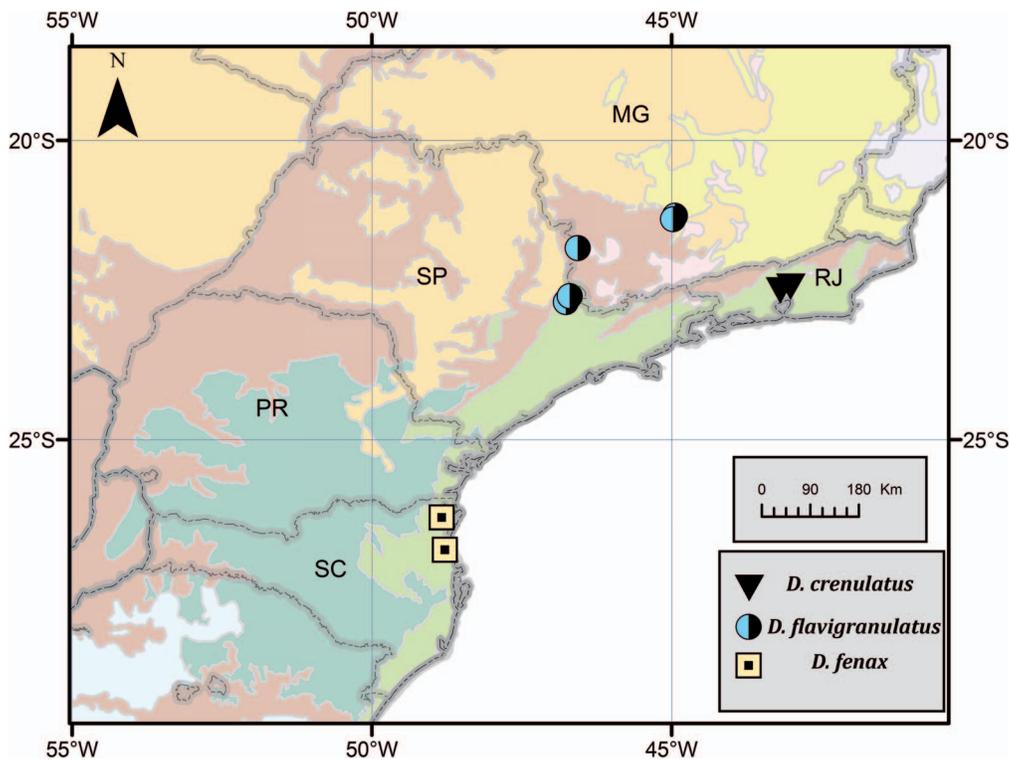


Figure 12.—South-southeastern Brazil showing distribution of the three *Discocyrtus* species treated here. Standard abbreviations of the relevant Brazilian states are: MG (Minas Gerais), PR (Paraná), RJ (Rio de Janeiro), SC (Santa Catarina), SP (São Paulo). Shaded areas on the background are WWF terrestrial eco-regions.

Color (in ethanol): Body and appendages background uniform Light Brown (57) with mesotergal granules Moderate Yellow Green (120). Pp, Ch and legs I–III Deep Greenish Yellow (100).

Genitalia (MNRJ 6380): VP subrectangular, distal half with parallel sides, with basal half quite convex, distal border substraight (Figs. 9A–B). Ventral surface with entire field of microsetae (Figs. 9B). Truncus slender (thinner than podium plus VP) (Figs. 9A, C). Macrosetae C1–C3 cylindrical with apex beveled, forming longitudinal row, equally spaced, subapical on laterals of VP (Figs. 9A–C). Macrosetae A1–A3 forming triangle, with one more dorso-distal than the other two (sides asymmetrical in this specimen) (Figs. 9A–C). MS B much reduced, clustered with A (Figs. 9B–C). MS D very short, inserted on lateral border of VP, extremely close to C1–C3 (Figs. 9B–C). MS E1–E2 extremely reduced, located on latero-distal flange of VP (Figs. 9B–C). Stylus and the axis of its ventral process fused basally (forming long pedestal) at an acute angle (V-shaped) (Figs. 9A, C–D). Ventral process of stylus shorter than it, *in situ* not reaching distal border of VP (Figs. 9A, C). Stylus straight, without clearly defined head, armed with a few small subdistal setae (Figs. 9A, C–D, F). Flabellum curved proximally, fan-shaped, occupying about 40% length of free portion of process (Figs. 9A–E).

**Female.**—(MNRJ 6736): CW 3.3, CL 2.4; AW 6.0, AL 3.8. AS widest at area II. Area III with the median region elevated, with apex bringing a pair of large conical spines. Cx IV with much weaker armature and prodorsal apophysis reduced to a simple spine. Fe IV straight. Fe IV retrolateral with row of six spines. Tr IV apophysis retrolateral proximal absent.

**Remarks.**—The designation of a lectotype, as explained in ICZN, fixes the status of the specimen as the sole name-bearing type of that nominal taxon. The type series is composed of alpha and beta males (so that Roewer even mistakenly reported males and females). The specimen illustrated by Roewer was clearly an alpha male, and in a group with such plasticity (and convoluted taxonomy) as *Discocyrtus*, it is important not to leave the slightest margin of chance for further confusion.

*Discocyrtus fenax* Kury, Pinto-da-Rocha & Carvalho sp. nov.  
(Figs. 4A, 10, 11, 12)

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*Discocyrtus curvipes* Kollar: Roewer 1913: 107, fig. 49 [non Kollar, 1839 – misidentification of *D. fenax*]; Kury 2003: 162.

**Type material.**—*Holotype male*: close to road BR470, near Itajaí, Santa Catarina, Brazil, 10 March 1999, A. Kury, R. Pinto-da-Rocha, A. Giupponi (MZSP 18158). *Paratype*: 1 ♂, Joinville, Santa Catarina, Brazil (SMF RI 812).

**Distribution.**—BRAZIL: Santa Catarina, Itajaí; Joinville.

**Etymology.**—Species name is a masculine noun in apposition, from Greek φένας, κος (impostor).

**Diagnosis.**—Mesotergum without granules (the same in *D. testudineus*, in *D. flavigranulatus* prominent granules forming a cross pattern, *D. crenulatus* with mesotergum nearly all covered by the prominent granules). Paramedian tubercles of area III conical and acuminate with distal curvature back-

wards (dome-shaped in *D. crenulatus* and *D. flavigranulatus*, conical with blunt apex in *D. testudineus*). Distal region of the apophysis of Cx IV sigmoid (with slight curvature for the posterior region in *D. crenulatus*, *D. flavigranulatus* and *D. testudineus*). Dorsum of Fe IV with six spines on proximal to medial portion, curved to retrolateral (*D. crenulatus* armed with four equidistant spines, *D. flavigranulatus* with two spines in the medial-distal portion, curved to retrolateral, spines not present in *D. testudineus*). Ventral process of the stylus thinner than the stylus itself (both with basically the same diameter in *D. crenulatus*, *D. flavigranulatus* and *D. testudineus*).

**Description.**—*Male holotype*: DS measurements. CW 3.1, CL 2.3; AW 6.0, AL 3.3. Fe measurements: I = 2.7, II = 5.1, III = 3.1, IV = 4.6. Tarsal (distitarsal, right side) counts, ♂ holotype: 6(3) - 11(3) - 7 - 7.

Dorsum: Dorsal scutum almost as long as wide, abdominal scutum with lateral margins strongly convex, widest and highest at area III (Figs. 10A, C–D). Anterior margin with 4 tubercles each side (Figs. 10A, C–D). Carapace with few tubercles on posterior region, with a pair of paramedian higher tubercles (Figs. 10A, C–D). Cheliceral sockets shallow, with a small apophysis in the center (Fig. 10A). Eye mound elliptical, high, slightly inclined frontwards, placed in the middle of the carapace, armed with a pair of divergent high spines inclined frontwards (Figs. 10A, C–D). Mesotergum divided into four clearly defined areas (Fig. 10A). Area I divided into left and right halves by median groove. Area II and posterior lateral border strongly invading the space of area III. AS lateral borders with ordinary tubercles from area I backwards. All areas with many tubercles. Area III with a pair of paramedian conical higher tubercles, curved backwards, with a rounded apex (Figs. 10A, C–D). Posterior border of dorsal scutum and free tergites with a horizontal row of ordinary tubercles (Figs. 10A, D).

Venter: Cx I–III parallel to each other; each with ventral transverse rows of 8–12 setiferous tubercles (Cx I two rows with higher and sharper tubercles). Cx II retroventral distal with a row of eight acuminate tubercles. Cx III retroventral distal with a row of seven acuminate tubercles (Fig. 10B). Cx IV much larger than the others, directed obliquely. Stigmatic area Y-shaped, clearly sunken relative to distal part of coxa IV. Intercostal bridges well marked. Stigmata clearly visible. Free sternites and anal operculum each with one transverse row of tubercles (Fig. 10B).

Chelicera: Basichelicerite elongate, bulla well marked, with marginal setiferous tubercles—three ectal, three posterior, one mesal; hand not swollen (Fig. 10A).

Pedipalpus (Figs. 10A–B): Tr with two geminate ventral setiferous tubercles. Fe with a prolateral apical setiferous tubercle and one ventral basal setiferous tubercle (Fig. 10B). Pa unarmed (Figs. 10A–B). Ti with two rows of setiferous tubercles; four (IiIi) ventro-mesal and ventro-ectal. Ta with two rows of setiferous tubercles; three (Iii) ventro-mesal and ventro-ectal.

Legs: Cx I–III each with ventral transverse rows of 8–12 setiferous tubercles. Tr I–III each with several ventral tubercles (Fig. 10B). Fe I–II straight (Figs. 10A–B). Fe and Ti I–II with two rows (proventral and retroventral) of small tubercles (Fig. 10B). Leg III sub-straight (Fig. 10B). Fe III and Ti III with two rows (proventral and retroventral) of acuminate tubercles (Fig. 10B). Cx IV ending distally at

posterior border of dorsal scutum (Fig. 10A). Cx IV with 1) a prodorsal apophysis conical, with curvature on the medial portion and distal portion sigmoid and 2) a retroventral spiniform apophysis with secondary branch (Figs. 10A–D). Cx IV prodorsal, prolateral, proventral and ventral with rows of acuminate tubercles (Figs. 10A–D). Tr IV with retrolateral and prolateral proximal apophysis (Figs. 10A–D). Tr IV distal prolateral border posterior covered by conical tubercles (Fig. 10A). Tr IV ventrally covered by tubercles along its entire length (Figs. 10B–D, F–G). Fe IV sinuous, curved from the proximal-distal region toward dorsal and medial-distal toward prolateral (Figs. 10A–B, E, G). Fe IV proventral and retroventral with row of acuminate tubercles (retroventral twice the size of the proventral) (Figs. 10B, G). Fe IV dorsal-medial with six spines (iiIII) curved toward retrolateral portion (Figs. 10A, D, F–G). Fe IV prolateral with a row of tubercles, which increase in size towards the medial portion and decreasing to distal (Figs. 10A–F). Fe IV retrolateral proximal-medial with row of six spines (iiiIII), which the last three are curved toward dorsal portion (Figs. 10A–B, G–H). Pa IV proventral and retroventral with row of five and two spines, respectively (Figs. 10E–H). Pa IV covered by acuminate spines in dorsal view (Fig. 10C). Ti IV prodorsal, proventral, retrodorsal, retrolateral and retroventral with row of acuminate tubercles (Figs. 10E–H). Mt IV proventral and retroventral distal with spur.

Color (in ethanol): Dorsal scutum and legs I–III (except Tr) background Grayish Olive (110), with grooves, areoles and reticulation Grayish Yellow (90). Pp, Ch, Tr I–III background Pale Greenish Yellow (104) with reticle Dark Grayish Olive (111). Leg IV background Grayish Olive (110), with varied mottling and apex of apophyses Dark Grayish Brown (62).

Male genitalia (SMF RI 812, paratype): VP subrectangular, distal half with convex sides, with basal half angular, distal border concave (Figs. 11A, C). Truncus thick (as thick as podium plus VP) (Fig. 11). Macrosetae C1–C3 cylindrical with apex beveled, forming longitudinal row, unequally spaced, subapical on laterals of VP (Fig. 11). Macrosetae A1–A3 forming triangle, with one more dorso-distal than the other two (Figs. 11A, C). MS B not visible. MS D very short, inserted on lateral border of VP, close to C1–C3 (Fig. 11A). MS E1–E2 extremely reduced, located on latero-distal flange of VP (Fig. 11C). Stylus and the axis of its ventral process fused basally (forming short pedestal) at an acute angle (V-shaped) (Fig. 11B). Ventral process of stylus is slightly sinuous, thinner and as long as the stylus, *in situ* reaching distal border of VP (Fig. 11B). Stylus straight, but distal third abruptly angled, defining a head densely covered (lateral and ventral) with small setae (Fig. 11). Flabellum very narrow, only slightly curved proximally, provided with short serrulations, and occupying less than 30% of length of free portion of process (Figs. 11B–C).

*Female*: unknown.

**Remarks.**—The male paratype from Joinville was used by Roewer to base his description of *Discocyrtus curvipes*. Roewer's inclusion of NHMW 3127 is mistaken, as that material belongs to *D. curvipes*.

## DISCUSSION

**Roewer's procedure.**—When splitting a species into two others in different genera, Roewer had the complicating habit

of baptizing the second one with the same specific epithet and the authority wrongly ascribed to the original author, or later even to himself with the wrong date. This procedure was never explained, and was not immediately obvious to subsequent reviewers, who were plunged into a hopeless tangle of synonymies. This is prone to cause confusion, especially with subsequent citations. We may cite four cases where Roewer split an original species keeping the same name: *Metascotolemon jaqueti* (Corti, 1905) X *Scotolemon jaqueti* Roewer, 1915; *Ibalonius impudens* Loman, 1906 X *Ibalonianus impudens* Roewer, 1923; *Pseudobiantes japonicus* Hirst, 1911 X *Ataminus japonicus* Roewer, 1938; and *Algidia nigriflava* (Loman, 1902) X *Nuncia (Corinuncia) nigriflava nigriflava* Roewer, 1923. In all of them, Roewer applied the incorrect authority.

However, it is clear that the present case is different from the others: There was some dispute among the authors and colleagues over three contrasting courses of action: the characterization of *D. curvipes* by Roewer (1913) could be considered (1) a valid species description, by using the same name as Koch (similarly to the four cases related above), (2) a misidentification, or (3) Roewer never intended to recognize a second morphospecies, he just forgot that he had mentioned Koch's species before. We support the third alternative and accordingly, we have described *Discocyrtus fenax* as a distinct new species.

**The holotype of *G. curvipes*.**—Roewer studied the holotype of *G. curvipes* twice, including it in two different genera in two separate subfamilies: as a secondary material of his *Discocyrtus curvipes* (while illustrating the other specimen); and as the primary illustrative material of *Gonyleptes curvipes*. This occurred because of the ambiguity of the scutal area count and its critical role in determining subfamilies in Roewer's system. This problem has been already abundantly commented in literature (e.g., Kury 1990).

**Homogeneity of typical *D. crenulatus*.**—The male specimen in vial NHMW 3126 exhibits a few differences with respect to other typical *D. crenulatus*: the apophyses of the stigmatic area are large (as opposed to small; Figs. 3B, 8C); the basal prolateral apophysis of Tr IV is large and pointed posteriorly (as opposed to smaller and pointed anteriorly; Figs. 3B, 8A); and the prodorsal apical apophysis of coxa IV is shorter, sharply bent in a straight angle and with a well-developed flange (as opposed to extremely elongate, gently curved, and small flanged; Figs. 3A, 8A). All of these three features fall within the variation found in the material examined of this species. Therefore, it is possible to determine that this male specimen is conspecific with the other *D. crenulatus* in Frankfurt.

## CONCLUSIONS

Kollar and C.L. Koch studied two specimens in Vienna belonging to two species, A (NHMW 3127) (Figs. 1, 2) and B (NHMW 3126) (Fig. 3) of what is now called *Discocyrtus*. Species A has been described and illustrated by C.L. Koch (1839, assigning the authorship to Kollar) as *Gonyleptes curvipes*. Species B was not described by Koch but was also labeled *G. curvipes*.

The same name *G. curvipes* had been used two years before (Guérin-Ménéville 1837), and even though the species had been since long synonymized with *Pachylus chilensis* (Gray,

1833) (species D), *G. curvipes* is an invalid name due to homonymy.

Roewer (1913) called species A *G. curvipes* Kollar and illustrated the holotype (NHMW 3127).

Roewer (1913) also included NHMW 3127 (the holotype of *G. curvipes*) as part of the material of his *D. curvipes* (mixed with undescribed species C, Fig. 4A), otherwise described and illustrated upon SMF RI 812. It might be regarded either as a misidentification of *G. curvipes* Kollar or as a new species named *D. curvipes* described by Roewer with the authority wrongly ascribed to Kollar.

Roewer (1913) described *D. crenulatus* (species B) partly based on NHMW 3126 (not illustrated), but actually described upon material SMF RI 764.

Kury (2003) transferred species A to *Discocyrtus*, which caused species C to become a secondary homonym of species A, proposing a replacement name.

Kury & Alonso-Zarazaga (2011) wrongly assumed NHMW 3126 was Kollar's type of *G. curvipes* and described the real holotype of *G. curvipes* (NHMW 3127) as *D. confusus*.

The following synonymies are in order:

Species A is *D. curvipes* (Kollar, in Koch, 1839), a name invalid by homonymy; *Discocyrtus flavigranulatus* B. Soares, 1944, is a junior subjective synonym which is taken here as the most senior synonym and *D. confusus* Kury, 2011 is a junior objective synonym.

Species B is *D. crenulatus* Roewer, 1913. The syntype male (NHMW 3126) matches the hitherto known morphological variation of *D. crenulatus*. The lectotype herein chosen for this species is taken from SMF RI 764.

Species C is *D. fenax* sp. nov., which had been previously confused with *D. curvipes* sensu Roewer (misidentification).

Species D is *Pachylus chilensis* (Gray, 1833) which contains in its synonymy a *Gonyleptes curvipes* Guérin-Méneville 1837, long removed from *Gonyleptes* but which still competes for homonymy with *Gonyleptes curvipes* Kollar, in Koch, 1839.

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