



Phylogeny and reclassification of *Distictus* Townes (Hymenoptera, Ichneumonidae, Cryptinae), with description of a new species

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Abstract

Distictus aurantium **new species**, from the Brazilian Atlantic Forest, is described and illustrated. The validity of *Distictus* Townes was cladistically tested against 19 species and 60 informative characters, both with implied weighting and unweighted analyses. All cladograms recovered *Distictus* as monophyletic, while suggesting that it might be the sister group of the clade *Lagarosoma* Gupta + *Prosthopor* Porter + *Trypha* Townes. *Fenixia* Aguiar is proposed as a new junior synonym of *Distictus* Townes, and the valid genus is transferred from Cryptina (=Ischnina) to Gabuniina. New distribution records expand the known range of *D. tibialis* to 17°48' latitude degrees, from Rio Grande do Sul to Goiás (Brazil).

Key words: *Fenixia*, Ischnina, Gabuniina, Cryptini, Phygadeuontinae, Atlantic Forest

Introduction

Townes (1966) proposed and described *Distictus* as a Neotropical genus, occurring from Panama to northern Argentina. The only named species, of five mentioned by Townes (*op. cit.*) was *D. tibialis*, a recombination of *Mesostenus tibialis* Brullé, recorded only from the Brazilian province of Guaratuba, presently State of Paraná. The genus was first placed in the Mesostenina (Townes 1966) and later transferred to Cryptina (=Ischnina) (Townes 1970). Interestingly, however, the possibility of a relationship with Gabuniina has never been proposed for the genus, even though it shows many typical features of that subtribe, such as a subcylindric body, swollen female fore tibia, spiracle of first metasomal segment at the middle, and a stout compressed ovipositor.

In a separate investigation, Aguiar (2005) described *Fenixia* as a new gabuniine genus from the Brazilian Atlantic Forest, providing, as main diagnostic features, the teeth of mandible of equal size, epomia short and weak, and cell 1+2Rs (areolet) pentagonal, distinctly higher than wide, with crossveins 2r-m and 3r-m convergent. A single species was described, *F. curta*, from southern and southeastern Brazil. A cladistic analysis, in the same work, pointed *Fenixia* as closest related to *Lagarosoma* Gupta.

Morphological (Aguiar 2005) and molecular (Laurenne *et al.* 2003, 2006) cladistic analyses have recovered most of the gabuniine genera as a monophyletic group, and suggest that other genera with related features should also be incorporated into the subtribe. In fact, the subtribal arrangement of cryptine genera proposed by Townes is highly subjective, and underwent many changes (Townes 1962, 1966, 1970). Gabuniina was first called Echthrina (Townes 1962), and included some genera placed in other groups in later classifications (Townes 1966, 1970), such as *Xylophrurus* Förster and *Echthrus* Gravenhorst.

Aguiar (*op. cit.*) did not include a representative of *Distictus* among the 78 species of the analysis used to

define *Fenixia* because there were neither published nor informal speculations that *Distictus* could be somehow related to Gabuniina. The synonymy of these two genera was first suspected when a specimen of *D. tibialis*, determined by Henry Townes, was retrieved by the authors at CNCI. This work aims to propose a synonymy and a new species, and to test the monophyly, the taxonomic validity, to review the classification, and to redefine the genus.

Material and methods

The studied specimens were acquired mostly through (1) two extensive, 15-days surveys in the Reserva Biológica de Duas Bocas (Brazil, 20°16'21"S, 40°28'40"W), with Mörücke and Malaise traps, between March and April 2005, (2) 7-days collecting trips at 11 different localities in the state of Espírito Santo, southeastern Brazil, mostly with Malaise Traps, between 2004-2006, and (3) extensive sorting of all Neotropical Cryptini specimens of the Canadian National Collection of Insects (CNCI), including pinned, papered and alcohol material. Pictures of the female were taken with a regular 8.3 MegaPixel digital camera attached to an Olympus SZ40 stereomicroscope, and processed with AutoMontage software (Syncroscopy, Frederick, Maryland) and Corel PHOTO-PAINT v12; the male was photographed with the EntoVision system (GTVision, Hagerstown, Maryland). When potentially ambiguous, color names are followed by their RGB formula, in the format (XXX,XXX,XXX), determined from digital pictures of the studied specimens, according to the procedures described by Aguiar (2005b). Where different, RGB formulas and color patterns refer preferably to the holotype. Morphological terminology follows Gauld *et al.* (1997), except that face and frons are called supra-clypeal area and supra-antennal area, respectively; wing venation was interpreted as in Sharkey & Wharton (1997). Surface sculpture terminology follows Harris (1979). Acronyms for collections follow Arnett *et al.* (1993).

Cladistic analyses were performed to provide an evaluation of the validity and relationships of *Distictus*, and fit this aim only; results were not explored for the internal phylogeny at subtribal level. The final matrix includes six genera which were related to the *Lagarosoma/Fenixia* clade in the extensive analyses performed for the work of Aguiar (2005) but not fully published, plus representatives of all other Neotropical genera of Gabuniina (10 species and 8 genera); the cryptini *Xiphonychidion* (= *Trachysphyrus*) *cyanipenne* Brullé was used as outgroup. The character set incorporates the matrix of Aguiar (2005), except for characters 29, 44, 46, 49 and 50, which would be non-informative; it also adds 14 new characters, resulting in 60 informative morphological characters. Most of them were coded from specimens available at UFES, determined by the authors, or specimens from CNCI, determined by Henry Townes and William Mason. In a few cases, characters were coded directly from the literature, both from illustrations and descriptions.

Tree searching was performed with heuristic analyses in TNT 1.1 (Goloboff *et al.* 2003), aided by Ratchet, with 3000 iterations each run. Both simple parsimony and implied weighting were used and all *K* values (no decimals) were tested. Tree analysis and graphic manipulation were performed with Winclada version 1.00.08 (Nixon 1999) and CorelDraw v12.

Results and discussion

Synonymy and reclassification. Direct comparison revealed that *Fenixia curta* is a clear synonym of *D. tibialis*, the two taxa corresponding exactly to the same species. Therefore, the analysis performed by Aguiar (2005) can be fully used to support inferences about the classification of *Distictus*. In that analysis, with 72 species of 63 genera and 10 subtribes (including 6 genera and 9 species of Cryptina), *Fenixia* **n. syn.** was always recovered as part of the Gabuniina clade. In fact, the presence of typical features, such as the spir-

acle of first metasomal tergite in the middle, fore tibia swollen and ventral valve of ovipositor overlapping the dorsal valve, undoubtedly demonstrate that the correct taxonomic placement of *Distictus* must be within Gabuniina. This is reinforced by the present analysis.

Table 1 shows the character list and character state coding, and Table 2 presents the respective character matrix. Non-weighted searches with TNT/Ratchet found one most parsimonious tree of 224 steps, Ci 0.29, Ri 0.615. With implied weighting, all K values except $K=1$ yielded only one most parsimonious tree (two for $K=1$). Table 3 lists the number of rearrangements tried, values of Fit, Ci and Ri and number of most parsimonious trees retained for all K values. All searches recovered *Distictus tibialis* and *D. aurantium* n. sp. as a monophyletic group, in a clade supported by 3–8 homoplasious synapomorphies (Ci 0.16–0.50; Ri 0.20–0.75). One of such synapomorphies appears in all trees (41:1, first metasomal tergite with dorsolateral carina partially developed), and two are absent in only one tree (15:1, fore wing crossvein 1cu-a very close to 1M+Rs; 47:0, ventral valve of ovipositor with distinct preapical notch). Figures 1–5 show the clades containing both species of *Distictus* in all analyses. For $K=2$, the sister group of *Distictus* was the clade (*Hadrocryptus multimaculatus* Gupta (*Schreineria cingulipes* Förster + *Arhytis masculiscutis* Cameron)), none of them Neotropical genera. All other K values and non-weighted analyses recovered a sister group including both species of *Lagarosoma* Gupta, *Prosthoporos nigrifemur* Gupta and (except in $K=1$ and $K=6$) *Trypha atriceps* Townes, in clades with slightly different topologies. The clade *Distictus* + sister group was supported by 1–2 synapomorphies; a non-homoplasious synapomorphy (64:0, hind wing vein Cub straight) supported this clade only with $K=1$ and $K=6$.

TABLE 1. Coding for 14 new characters added to 46 informative characters used from Aguiar (2005).

No.	Description
47	Ovipositor stout and distinctly taller than wide (0); slender, linear (1)
48	Apical margin of clypeus straight or concave (0); broadly convex (1)
49	Notaulus weak, distinct on anterior 0.4 of mesoscutum (0); strongly impressed, reaching at or beyond center of mesoscutum (1)
50	Epicnemial carina complete or almost so (0); incomplete, reaching only 0.6–0.7 of the mesopleuron (1)
51	Justacoxal carina present, even if incomplete (0); absent (1)
52	Lateral carina of scutellum present, reaching up to 0.4 of its length (0); completely absent (1)
53	Supra-antennal area with a median longitudinal carina (0); longitudinal carina absent (1)
54	Greatest swelling on fore tibia at median portion, tibia fusiform (0); greatest swelling at subapical portion, or uniformly swollen (1)
55	Subalar prominence and at least part of pronotal collar yellow (0); black (1); orange or reddish (2)
56	Area between hind margin of metanotum and anterior margin of propodeum forming a transverse furrow which is very deep to moderately shallow (0); this are very wide and shallow, not forming a transverse furrow (1)
57	Base of clypeus much narrower than its apex, clypeus triangular (0); clypeus base wide, 0.6 or more width of apex, clypeus rectangular or trapezoidal (1)
58	Occiptal carina meeting hypostomal carina (0); distinctly not meeting hypostomal carina (1)
59	Hind wing vein Cu1 concave, straight or only slightly convex (0); distinctly convex on apical 0.5, even if sinuous (1)
60	Temple and gena enlarged, head in frontal view subspherical (0); normal-sized, head in frontal view somewhat triangular (1)

In spite of many morphological divergences between the two species of *Distictus* (see description of *D. aurantium*, below), particularly the presence/absence of a sub-basal tooth in the first metasomal tergite, the recovery of a clade containing both species in all analyses represents reasonable evidence of the validity of

the genus. The description of *Fenixia* (Aguiar 2005) must be preferred to that of *Distictus* by Townes (1966), but needs to be expanded and consolidated as follows.

TABLE 2. Data matrix for gabuniine species and outgroup taxon (*X. cyanipenne*) used in the analyses (Figs 1–5). Characters 1–46 revised and corrected from Aguilar (2005); characters 47–60 as in Table 1. Polymorphisms: *a*, 01; *b*, 12; *c*, 03.

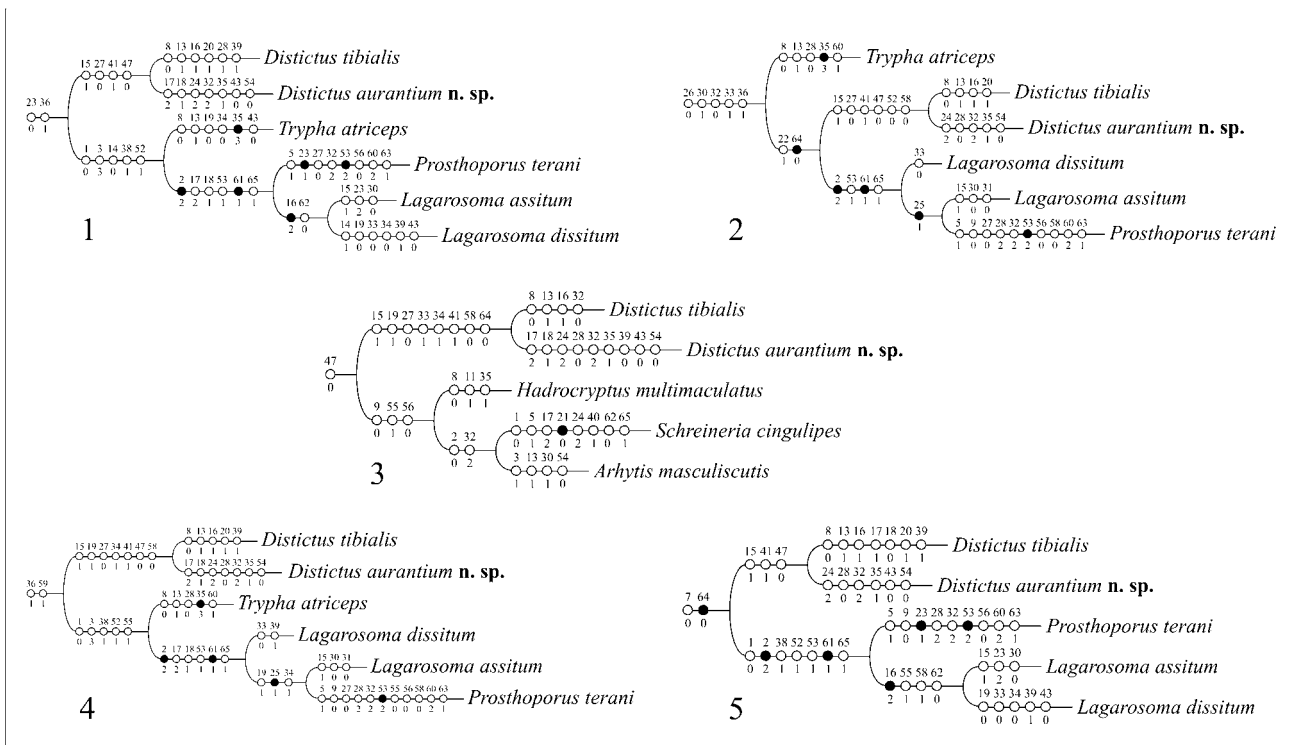
Species	1	10	20	30	40	50	60
<i>Agonocryptus chichimecus</i>	10?1001100	1001001000	1021001011	01a0010000	1101100010	1?11?01110	
<i>Agonocryptus varus</i>	1011101110	1001002110	1000001100	00101-0000	1101100010	1200000110	
<i>Amrapalia multimaculata</i>	10010000-?	0010001100	1100011100	20??01010b	1101100010	0111001011	
<i>Arhytis maculiscutis</i>	1011000100	0011001001	1001011b11	2a001-010a	1100100001	01110a1010	
<i>Cestrus calidus</i>	1111011010	0000010001	1201001110	0001000100	1100110110	1?11?01?10	
<i>Dagathia philippina</i>	1111a001-0	0000001011	1020011101	100002010a	1101101010	a11?a000??	
<i>Digonocryptus crassipes</i>	bacl0110-0	0011101101	1001001101	010100010a	1101100010	1100001010	
<i>Dineotropica lissa</i>	000101?1-0	0011101010	1021011011	1010001000	110?110010	0110201010	
<i>Distictus tibialis</i>	11010000-0	0011111011	11010001a1	0110a20101	1100100010	1101001000	
<i>Distictus aurantium n. sp.</i>	1101000110	0001102110	1-02000011	21111-0001	1000100000	1101001000	
<i>Hadrocryptus multimaculatus</i>	a10100?000	1001001001	1001011101	1001020100	1100100011	0?10001a10	
<i>Lagarosoma assitum</i>	0231000110	0000122110	1121101100	01101-1000	1101101111	1111010001	
<i>Lagarosoma dissitum</i>	0231000110	0001022100	110100111a	00001-1100	1001101111	1111010001	
<i>Nesolinoceras ornatipennis</i>	100100?0-1	0010010002	1201001010	01001-0000	1101100000	1?10?01?11	
<i>Prosthoporus nigrifemur</i>	0231100100	0000002110	1111100211	21101-1000	1101101210	0101211101	
<i>Schreineria cingulipes</i>	00c1100100	0001002000	000201120a	20001-0110	110?100011	0?10?00011	
<i>Spathacantha apicalis</i>	113101?110	0001002101	1120001200	0a001-0112	1100100010	1?10100?11	
<i>Trypha atriceps</i>	01310000-0	0010001000	1001001011	01031-1000	1001a01011	1?a1101?10	
<i>Xiphonychidion cyanipenne</i>	01?00?1022	1100110012	1000001a1a	1001030001	0011001010	1?2-101?11	

TABLE 3. Numerical data of the performed cladistic analyses. Rearrangements tried (R) in millions (M); fit, Ci, and Ri values, and number of most parsimonious trees (Trees) retained.

-	Unweighted	K=1	K=2	K=3	K=4	K=5	K=6
R	81.6 M	78.8 M	75.4 M	74.8	64.6	75.6 M	73.9 M
Fit	-	34.3881	27.74524	23.31429	20.04603	17.59885	15.68225
Ci/Ri	34/42	33/37	33/37	34/41	34/41	34/41	34/41
Trees	1	2	1	1	1	1	1

Distictus Townes

Distictus Townes, 1966:325. Description, figure. Type species: *Mesostenus tibialis* Brullé 1846
Fenixia Aguilar, 2005:126–127, **n. syn.**



FIGURES 1–5. Summary of clades containing the species of *Distictus* and closely related taxa, according to results obtained with unweighted and implied weighting searches. 1, Unweighted searches. 2, Consensus of two trees obtained with $K=1$ (character 36 does not support basal clade for one of such trees). 3, Single tree obtained with $K=2$. 4, $K=3-5$ (all trees identical, except for synapomorphy 15:1, not recovered with $K=3$). 5, $K=6$. Black circles represent non-homoplasy synapomorphies.

Redefinition. *Head.* Supra-antennal area with short median carina developed near anterior ocellus, sometimes reaching almost full length of supra-clypeal area; mandible 1.0–1.5 as long as basal width; both gena and temple swollen, giving head spherical shape. *Mesosoma.* Epomia short and weak, sometimes indistinct from rugulosity of collar; mesoscutum ovoid, distinctly longer than wide; notauli moderately to strongly impressed, parallel or subparallel; sternaulus sinuous, strongly to weakly impressed, reaching mid coxa. *Propodeum.* Area in front of anterior transverse carina varying from alutaceous punctures to very strong rugulosity; spiracle weakly oval; anterior transverse carina complete, low, centrally weakly to moderately curved forward, placed approximately on mid-length of propodeum. *Wings.* Fore wing cell 1+2Rs 0.8–1.3 as long as width of pterostigma, same height or a little higher than its own width; crossveins 2r-m and 3r-m weakly to distinctly convergent. Hind wing vein 1-Cu 1.2–1.5 length of crossvein cu-a. *Metasoma.* First tegite basally with or without lateral tooth; dorsolateral carina suggested only as blunt ridge in basal or apical portions.

Comments. In the couplet of the key to Neotropical Gabuniina that leads to *Nesolinoceras* Ashmead, Aguiar (2005) mentions “fore wings hyaline or infusate but never with dark bands”. Although *D. aurantium* has a weak dark band on the apex of the fore wing, it could hardly be mistaken with the pattern of three dark bands exhibited by *Nesolinoceras*; in the following couplet, however, the distinction between *D. aurantium* (= *Fenixia*) and some species of *Agonocryptus* Cushman can be misleading, because of the features “fore wing crossveins 2r-m and 3r-m distinctly convergent towards anterior margin of wing” and “hind wing vein 1-Cu about twice as long as crossvein cu-a”; in this case, the correct determination of *Distictus* must consider the generic redefinition provided above.

Relationships. The relationships recovered here are basically similar to that proposed by Aguiar (2005), in which *Distictus* (*Fenixia curta*) appears most related to *Lagarosoma assitum* Gupta. Current results also show that *Prosthoporos* always formed a clade with both species of *Lagarosoma*, while *Trypha atriceps* fre-

quently appears as the sister group, or close to *Lagarosoma*+*Prosthoporus*. All of these are Neotropical groups predominantly known from the Brazilian Atlantic Forest; only *Prosthoporus* is recorded from other parts of South America. These groups also appear to be rare or uncommon. The relationships of *Prosthoporus* were not discussed by Aguiar (*op. cit.*), but it is relevant to mention that for the present work five specimens of *P. terani* could be studied, allowing the codification of 20 characters which could not be examined by that author, as well as all the additional 14 characters used here to expand the original matrix. The relationships of *Prosthoporus* and *Lagarosoma* will be further discussed elsewhere.

Distictus tibialis Townes

Mesostenus tibialis Brullé 1846:241–242.

Distictus tibialis Townes 1966:325; 1970:172

Fenixia curta Aguiar 2005:127–132. **n. syn.**

New records. The original description of *D. tibialis* (as *Mesostenus tibialis* Brullé) recorded the species from Guaratuba, southern Paraná, Brazil. The description of *Fenixia curta* added new records to southern and southeastern Brazil. This work adds new records to Espírito Santo, Brazil, as follows: Domingos Martins, Mata Pico do Eldorado (20°22'17"S 40°39'29"W) - 1 ♀, 4 ♂; Cariacica, Reserva Biológica de Duas Bocas, Pau Amarelo (Alto Alegre) 1 ♂; Conceição do Castelo, Distrito Ribeirão do Meio, 1 ♀, 1 ♂. It adds also records for four localities at Rio Grande do Sul, Brazil, with one female specimen each: Arroio Grande (29°39'60"S 52°40'00"W), Morro Redondo (31°40'22"S 52°35'30"W), Pelotas (31°44'39"S 52°13'22"W) and Capão do Leão (31°48'16"S 52°24'13"W). Records of single female specimens were also found from Parque Nacional da Chapada dos Veadeiros, Goiás, Brazil (14°00'20"S 47°41'04"W); Coroico, Nor Yungas, Bolivia (16°11'22" S 67°43'11"W) and Dos de Mayo, Misiones, Argentina (27°02'00"S 54°39'00"W). Figure 6 shows two maps with all known distribution records for both species of *Distictus*. The records suggest that *D. tibialis* is more often found in highlands, and that it may also be more common than initially thought; *Distictus* was the third gabuniine genus in number of specimens among the examined material. They also indicate that the species is not endemic of the Brazilian Atlantic Forest, although it appears to be most common in this biome.

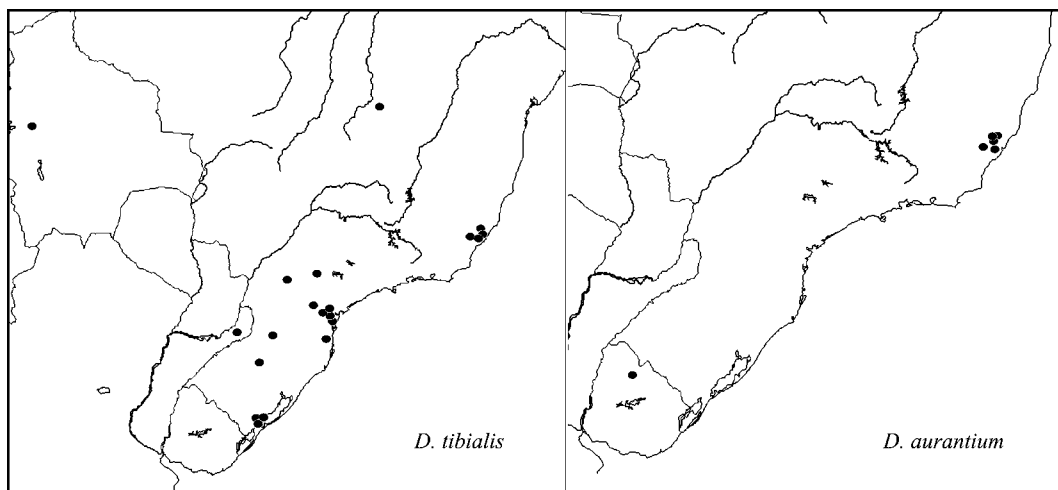
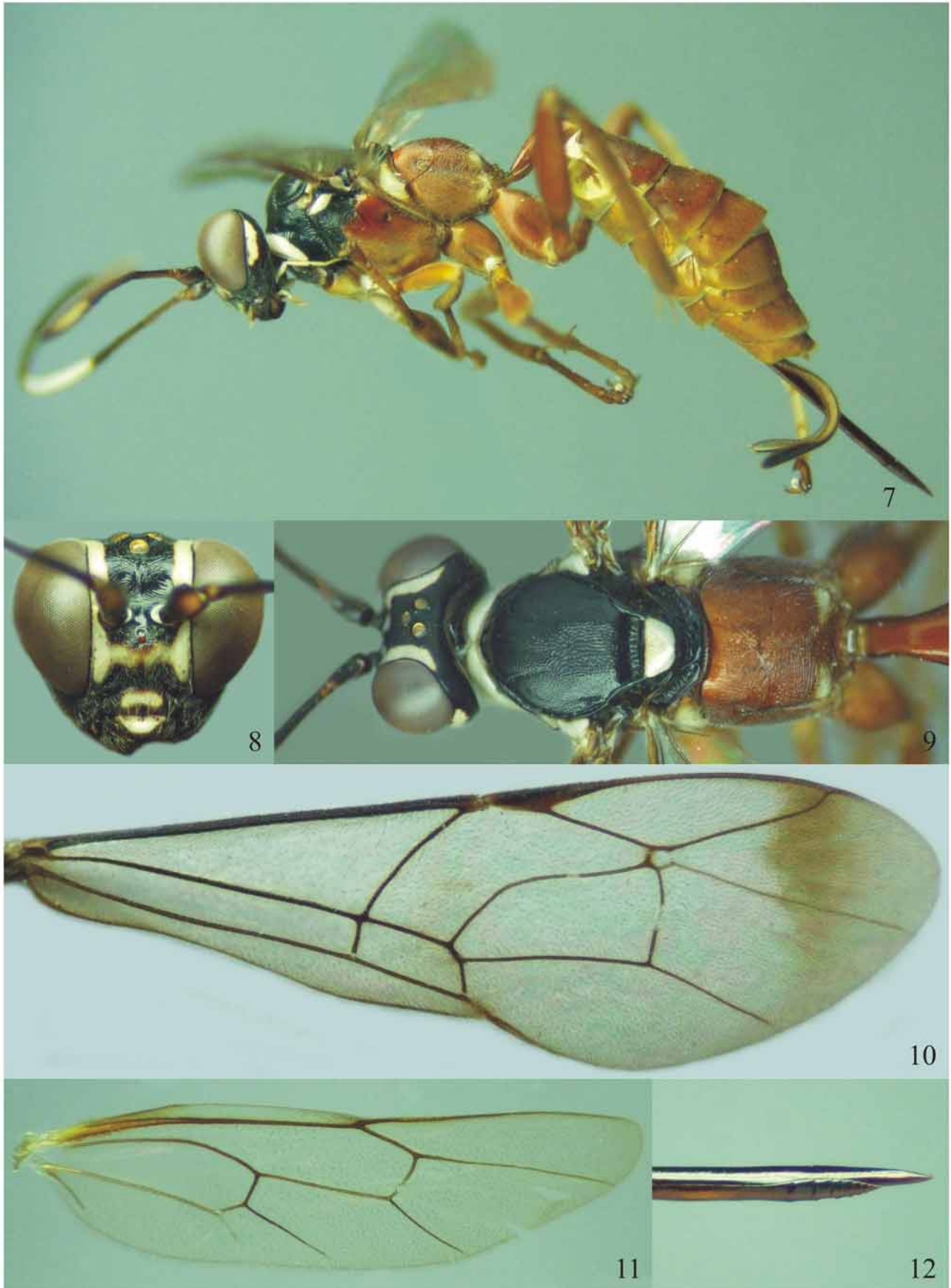


FIGURE 6. Maps with all known distribution records for species of *Distictus*. Left map, *D. tibialis*; right map, *D. aurantium*.



FIGURES 7–12. *Distictus aurantium*, new species. Holotype ♀. 7, Habitus, left. 8, Head, frontal. 9, Head, mesosoma and base of petiole, dorsal. 10, Right fore wing, dorsal. 11, Right hind wing, dorsal. 12, Ovipositor apex, left side.



FIGURE 13. *Distictus aurantium*, new species. Paratype ♂ from Conceição do Castelo (Brazil). Head, mesosoma and metasoma, dorsal.

***Distictus aurantium* Santos & Aguiar, n. sp.**

(Figs 7–12)

Etymology. From the New Latin *aurantium*, meaning orange; in reference to the mostly orange mesopleuron and propodeum.

Description. Length of fore wing 7.6–9.2 mm. *Head* (Figs 7–9): Antennae with 24–25 flagellomeres; clypeus small, 1.8 as wide as high; supra-clypeal area, mandible, and malar space near mandible, densely pilose; mandible length 1.0 as long as basal width, teeth of equal length; supra-antennal area ventrally concave, near ocelli convex, densely microsculptured; a short median carina from near ocelli to almost full length of supra-clypeal area, getting lower and wider between antennae, narrowing again on supra-clypeal area. *Mesosoma* (Figs 7, 9): Pronotum strongly striate around collar and near intersection with mesopleuron; epomia very weak, sometimes indistinct from rugulosities near collar; mesoscutum scarcely pilose, punctulate, central lobe on posterior half longitudinally rugulose, some punctate; notauli moderately impressed, parallel, reaching 0.4–0.5 of mesoscutum; scutellum as wide as long, shiny, impunctate or with very few and fine punctures; mesopleuron shiny, glabrous to moderately pilose, densely punctate except speculum, with strong striation below subalar prominence and weaker striation irregularly distributed on ventral portion; epicnemial carina complete, uniformly arched forward; sternaulus sinuous, very weakly impressed; mesopleural fovea a very deep pit; upper division of metapleuron impunctate, with very weak striation on borders, densely pilose; lateral division (below propodeum) densely punctate and rugulose, ventrally scarcely to moderately pilose. *Propodeum* (Fig. 9): in dorsal view, about as long as wide; moderately pilose; area anterior to anterior transverse carina with very strong rugulosity, changing from centrally concentric to laterally reticulate; behind anterior transverse carina, reticulate rugulosity becoming progressively transversal towards apex; spiracle weakly oval, about 1.3 as wide as long; anterior transverse carina centrally curved forward, placed approximately on mid-length of propodeum; propodeal apodeme distinct only on lateral view, or entirely absent. *Wings* (Figs 10, 11): Fore wing vein 1-Rs+M slightly sinuous, bulla placed centrally; crossvein 1m-cu nearly straight, limit between the two veins distinct; ramellus absent; crossvein 1cu-a forming straight angle with vein M+Cu, ending basad of vein 1M+Rs; crossvein 2cu-a distinctly longer than vein 2-Cu, the two veins angled; vein 4-Rs straight, somewhat irregular, apical portion upcurved; bulla of crossvein 2m-cu placed centrally; cell 1+2Rs (areolet) of moderate size, about 0.8–0.9 as high as maximum width of pterostigma, pentagonal, as wide as high, open, with crossvein 3r-m not differentiated; veins 3-M and 4-M weak, almost spectral,

4-M distinctly longer than 4-Rs. Hind wing (Fig. 11) vein 2-1A weak, reaching 0.7 of the distance to posterior margin; vein 1-Cu of same length as crossvein 1cu-a; vein 2-Rs entirely tubular; crossvein 1r-m with bulla on ventral portion; apical part of vein M+Cu moderately convex; vein Cub straight, ending close to wing margin. *Metasoma* (Figs 7, 9): first tergite stout, in dorsal view approximately 1.75 as long as maximum width, triangular, apex 2.6 times the width of base, almost impunctate, shiny, without basal tooth; spiracle at the middle, not prominent; without longitudinal carinae except traces of dorsolateral carina; tergite 2 with coarse punctures, scarcely pilose, apex 2.1 as wide as base, thyridium as wide as long; tergites 3–4 finely microsculptured; then gradually changing from alutaceous on T5 to almost polished smooth on T8; tergites 5–6 approximately the same size of tergites 7–8; ovipositor sheath dilated and spoon-shaped on its apical 0.3; ovipositor thick, straight, its tip without nodus, with preapical notch, ventral valve with 8 apical teeth.

Color (Figs 7–9): Head black; mesosoma and metasoma mostly reddish orange; scape and pedicel ventrally dark brown, with ventral apex dark ferruginous (168,115,045), dorsally black; flagellomeres 1–3, and basal 0.4 of 4th, dark brown; apex of 4th and 5–10 dorsally white, ventrally dark brown; 11th dark brown with dorsal triangular white mark; 12–24 ventrally dark brown, dorsally black; center of clypeus, labrum, labial and maxillary palpi except for ferruginous apical article, orbital band from inner top of the eye to near lower end of supra-clypeal area, and in about 0.6 of extension of temple pale yellow (208,223,168); supra-clypeal area black with yellow transverse marks extending from orbital band to center, covering 0.3–0.6 of its surface. Mesosoma and propodeum reddish orange (132,089,055); prothorax, mesoscutum, postscutellum, metanotum, upper 0.25 of anterior portion of mesopleuron and all mesopleuron anteriorly of epicnemial carina black, except yellow bands on collar, tegula, subalar proeminence and above fore coxa; scutellum, upper division of metapleuron and subtriangular spot at the area of propodeal apodemes yellow. Legs: fore and mid legs ferruginous (114,084,050), except fore coxa laterally and fore trochanters whitish, outer side of fore tibia darker; hind leg dark orange (156,100,051). Wings hyaline (Figs 10, 11), except fore wing with transverse, diffuse, subapical brown stripe (Fig. 10). *Metasoma* (Fig. 7): reddish orange (151,084,039), basal segments darker than apical ones, with very narrow yellow stripes at apex of T1–3 and T7–8, sternites lighter than tergites. Ovipositor dark brown, dorsal valve darker than ventral; sheaths dark brown, inner face light brown to yellowish.

Variability. The only female paratype has body generally more pilose than the holotype; fore wing crossvein 1cu-a ending more basad of base of crossvein 1M+Rs, about 0.3 of its own length; also generally with darker tones of reddish and yellow; ventral side of flagellum and fore tibia very lightly colored; yellow orbital band on temple much longer, extending to base of mandible.

Male. General morphology and color similar to female (Fig. 13), except for having antenna with 26 flagellomeres, without white band; carina at supra-antennal area weak, not reaching supra-clypeal area; clypeus, face except black mark around lateral margin of clypeus, most or all gena and temple, prosternum and fore coxa pale yellow; basal 0.6 of mandible dark yellow to ferruginous; dorsal 0.4 of mesopleuron black; overall orange tones of mesosoma varying from bright (118,129,046) to dark (148,124,049); fore wing cell 1+2Rs higher than wide, crossveins 2r-m and 3r-m distinctly convergent; first metasomal tergite with yellowish stripe at apical 0.25; T2-4 black with pale yellow stripes at apical 0.3-0.4; T5-6 basally black, apical 0.5 dark orange to dark brown; T7 dark brown, apical 0.5 white.

Host. Unknown.

Comments. Female and male are readily differentiated from *D. tibialis* by having the mesosoma and propodeum mostly orange (vs. black with yellow marks); many characters of general morphology are also divergent (see description), particularly the absence of basolateral tooth at first metasomal segment (vs. present), and wing venation. Veins 2r-m and 3r-m of *D. aurantium* are less convergent than in *D. tibialis*, a difference which seems even more evident because cell 1+2Rs (areolet) is wider in *D. aurantium*.

Material examined. Two females, eight males. Holotype female (UFES) BRASIL: Espírito Santo, Santa Maria de Jetibá: Fazenda Clarindo Kruger, 29.XI–06.XII.2002, Malaise trap, M. T. Tavares, C. O. Azevedo *et*

al. Mounted on triangle point; hind left tarsomeres missing; left fore wing with a hole on cell 1+2R1, otherwise in good shape. Paratypes (UFES) 1 ♂; same data as holotype except “Faz. Paulo Seick-Área 1”; 1 ♀; same data except “Domingos Martins, Mata Pico do Eldorado, 03-10.XII.2004, M. T. Tavares”; 2 ♂ same data except “Conceição do Castelo, Ribeirão do Meio, 17-24.III.2007, A. P. Aguiar *et al.*”; 2 ♂ same data except “Santa Teresa, Estação Biológica Santa Lúcia, 09-13.V.2006, M. T. Tavares, C. O. Azevedo *et al.*”. URUGUAY: 2 ♂ (AMNH) Depto Tacuarembó, 40 km NW Tacuarembó, 2-9.II.1963, J. K. Bouseman.

Distribution records. Known from five close localities in the highlands of Espírito Santo, southeastern Brazil, and one locality in northern Uruguay (Fig. 6).

Acknowledgments

Research funding was provided by PIBIC/Petrobras (BFS), FAPES (Process 36263290/07) and FACITEC (Process 027/2007) (APA). Celso O. Azevedo and Marcelo T. Tavares (UFES) kindly handled to the authors many cryptine specimens collected by them in several Espírito Santo localities. James Carpenter (AMNH) helped with an important loan. Lubomir Masner and Andrew Bennett invited us to the CNCI and approved a generous CanaColl grant that allowed both authors to search the CNCI's rich Neotropical collection for specimens of Cryptini; they both also helped in many other important ways during the authors' stay in Ottawa. Berthil B. Longo (UFES) photographed the male specimen. A careful reviewer contributed with important corrections.

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