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## ***Zebragryllus* Desutter-Grandcolas & Cadena-Casteñada, n.gen. a new Gryllinae genus from Eastern and Western Amazonia, South America (Orthoptera, Grylloidea, Gryllidae)**

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### **Abstract**

We describe a new genus of grylline cricket, *Zebragryllus* Desutter-Grandcolas & Cadena-Casteñada **n. gen.**, from the Neotropical Region, using characters of morphology and male genitalia; genitalic characters clearly show that *Zebragryllus* **n. gen.** is closely related to *Anurogryllus* Saussure, 1878. Six species are described as new to science, originating from western (Peru, Colombia) and eastern (French Guiana) Amazonia: *Zebragryllus fuscus* Desutter-Grandcolas, **n. sp.**, *Z. guianensis* Desutter-Grandcolas, **n. sp.**, *Z. intermedius* Desutter-Grandcolas, **n. sp.**, *Zebragryllus nauta* Desutter-Grandcolas, **n. sp.**, *Zebragryllus nouragui* Desutter-Grandcolas, **n. sp.**, and *Zebragryllus wittoto* Desutter-Grandcolas and Cadena-Casteñada, **n. sp.**, type species of the genus. They are characterized by their size, coloration (shining black, most often with white patterns of coloration, hence the genus name), and male and female genitalia. The calling songs of *Z. guianensis* Desutter-Grandcolas, **n. sp.**, *Z. intermedius* Desutter-Grandcolas, **n. sp.**, *Z. nouragui* Desutter-Grandcolas, **n. sp.**, and *Z. wittoto* Desutter-Grandcolas and Cadena-Casteñada, **n. sp.** are described. An identification key is proposed for both males and females.

**Key words:** Systematics, New species, Neotropics, Peru, Colombia, French Guiana, Bioacoustics

### **Résumé**

Nous décrivons un nouveau genre de grillons de la sous-famille des Gryllinae, *Zebragryllus* Desutter-Grandcolas & Cadena-Casteñada **n. gen.**, originaire de la Région néotropicale, sur la base des caractères de morphologie et des genitalia mâles; les genitalia montrent clairement que *Zebragryllus* **n. gen.** est étroitement apparenté à *Anurogryllus* Saussure, 1878. Six espèces nouvelles pour la science sont décrites, originaires d'Amazonie occidentale (Pérou, Colombie) et orientale (Guyane française): *Zebragryllus fuscus* Desutter-Grandcolas, **n. sp.**, *Z. guianensis* Desutter-Grandcolas, **n. sp.**, *Z. intermedius* Desutter-Grandcolas, **n. sp.**, *Zebragryllus nauta* Desutter-Grandcolas, **n. sp.**, *Zebragryllus nouragui* Desutter-Grandcolas, **n. sp.**, et *Zebragryllus wittoto* Desutter-Grandcolas et Cadena-Casteñada, **n. sp.**, espèce type du genre. Elles sont caractérisées par leur taille, leur coloration (noir brillant, avec le plus souvent des bandes blanches spécifiques, d'où le nom du genre), ainsi que les genitalia mâles et femelles. Les chants d'appel de *Z. guianensis* Desutter-Grandcolas, **n. sp.**, *Z. intermedius* Desutter-Grandcolas, **n. sp.**, *Z. nouragui* Desutter-Grandcolas, **n. sp.**, et *Z. wittoto* Desutter-Grandcolas et Cadena-Casteñada, **n. sp.** sont décrits. Une clé d'identification est proposée pour les mâles et les femelles.

**Mots-clés:** Systématique, Espèces nouvelles, Région néotropicale, Pérou, Colombie, Guyane française, Bioacoustique.

**Description.** In addition of the characters of the genus: General coloration shining brown; head dark brown, area above episternal suture, a thin line around the eyes and the area below antennal pits yellow, antennae light brown (no white ring before 70 antennomeres, where antennae are cut in the specimens at hand); maxillary palpi: joints 3 and 4 light brown, joint 5 light brown basally, otherwise black brown with yellowish distal margin; pronotum dark brown; legs light yellowish brown; cerci brown, their bases lighter. Basitarsomeres III with 4–5 (male) and 3 (female) inner, and 5–6 in male and 4–5 in female outer dorsal spines, in addition to apical ones.

**Male.** FWs entirely covering the abdomen, going slightly beyond subgenital plate; coloration light yellowish brown, translucent, with yellowish or brown veins. Mirror wider than long, subdivided into several cells (Fig. 2E); stridulatory file with 65 teeth (n=1). Subgenital plate as on Fig. 2L.

**Male genitalia.** Pseudepiphallic sclerite long and triangular (Fig. 4K, L); median lophi regularly narrowed toward apex; lateral lophi very short and completely dejected ventrally (thus no more visible dorsally, Fig. 4K); pseudepiphallic anterior margin deeply concave, but squared; pseudepiphallic parameres very short, in very anterior location; ectophallic apodemes long, making a kind of half cylinder around the endophallic sclerite; ectophallic fold narrow over its whole length, truncated apically.

**Female.** FWs quite long for the genus, reaching tergite 2 mid length, slightly overlapping (Fig. 5F); venation reticulate; FWs whitish brown, translucent, the lateral part of dorsal field lighter, veins brown. Abdomen brown, tergite 3 yellowish (Fig. 5E). Subgenital plate wider than long; distal margin slightly concave (Fig. 7J–K).

**Female genitalia.** Copulatory papilla having the shape of a thick almost circular sclerite, with a transverse preapical carina on ventral side (Fig. 7L–N); spermathecal duct widened basally.

#### Measurements (in mm).

	Lpron	wpron	LFW	wFW	LFIII	wFIII	LTIII	File
Holotype	1.6	2.5	5.6	3.8	5.7	2,2	3.8	65

  

	Lpron	wpron	LFW	LFIII	wFIII	LTIII	Lovip
Allotype	1.6	2.3	1.2	6	2.2	3.8	3.7

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#### References

- Cadena-Casta neda, O.J. (2011) A new genus of cricket near to *Miogryllus* and *Kazuemba* from the Colombian Atlantic coast and the first report of *Gryllodes sigillatus* from Colombia (Orthoptera: Gryllidae: Gryllinae: Modicogryllini). *Zootaxa*, 3126, 55–61.
- Chopard, L. (1930(1929)) Descriptions de Gryllides am ericains nouveaux. *Revista Chilena de Historia natural*, 33, 522–531.
- Desutter, L. (1987) Structure et  volution du complexe phallique de Gryllidea (Orthopt eres) et classification des genres n otropicaux de Grylloidea. Premi re partie. *Annales de la Soci et  Entomologique de France (N.S.)*, 23 (3), 213–239.
- Desutter, L. (1990) *Etude phylog n tique, biog ographique et  cologique des Grylloidea n otropicaux (Insectes, Orthopt eres)*. Ph.D. Thesis, Univ. Paris, 347 pp.
- Desutter-Grandcolas, L. (2003) Phylogeny and the evolution of acoustic communication in extant Ensifera (Insecta, Ensifera). *Zoologica Scripta*, 32, 525–561.  
<http://dx.doi.org/10.1046/j.1463-6409.2003.00142.x>
- Eades, D.C., Otte, D., Cigliano, M.M. & Braun, H. (2013) Orthoptera Species File. Version 5.0/5.0. Available from: <http://Orthoptera.SpeciesFile.org> (accessed 21 November 2013)
- Fabricius, J.C. (1775) *Systema entomologicae*. Korte, Flensburg and Leipzig, 832 pp.
- Linnaeus, C. (1758) *Systema naturae*. Laur. Salvius, Holmiae [Stockholm], iii + 823 pp.  
<http://dx.doi.org/10.5962/bhl.title.35518>

- Marquier, I., Legendre, F., Robillard, T., Hugel, S., Nel, A., Grandcolas, P., Zuccon, D. & Desutter-Grandcolas, L. (2014) Laying the foundation of a new, phylogenetic classification of crickets (Insecta, Orthoptera): a multilocus phylogenetic approach [submit]
- Mello, F. de (1990) A new genus and species of grylline cricket closely related to *Miogryllus* Saussure, 1877 (Orthoptera, Gryllidae, Gryllinae). *Revista brasileira de Entomologia*, 34, 573–575.
- Mesa, A. & Garcia-Novo, P.C. (1999) *Paramurogryllus*, a new genus of crickets with two new species (Orthoptera, Grylloidea, Gryllidae). *Journal of Orthoptera Research*, 8, 65–72.  
<http://dx.doi.org/10.2307/3503428>
- Otte, D. & Perez-Gelabert, D.E. (2009) *Caribbean crickets*. The Orthopterists' Society, iii + 792 pp.
- Ragge, D.R. & Reynolds, W.J. (1988) *The songs of the grasshoppers and crickets of Western Europe*. Harley Books, Colchester, x + 591 pp (+ 1 CD).
- Robillard, T. & Desutter-Grandcolas, L. (2004) Phylogeny and the modalities of acoustic diversification in extant Eneopterinae (Insecta, Orthoptera, Grylloidea, Eneopteridae). *Cladistics*, 20, 271–293.  
<http://dx.doi.org/10.1111/j.1096-0031.2004.00025.x>
- Saussure, H. de (1874) *Mission scientifique au Mexique et dans l'Amérique centrale. 6ème partie: études sur les Myriapodes et les Insectes*. Imprimerie impériale, Paris, 531 pp.
- Saussure, H. de (1877) Mélanges orthoptérologiques. Vème fascicule. Gryllides (1ère partie). *Mémoires de la Société de Physique et d'Histoire naturelle de Genève*, 25, 1–352, pls. 11–15.  
<http://dx.doi.org/10.5962/bhl.title.8541>
- Specht, R. (2013) Avisoft-SASLab version 5.2.07. Avisoft Bioacoustics, Berlin. Available from: <http://www.avisoft.com> (accessed 10 December 2013)