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New genus and species of the tribe Gryllini (Orthoptera: Gryllidae: Gryllinae) from Peru

A.V. Gorochov

Zoological Institute of the Russian Academy of Sciences, Universitetskaya Emb. 1, 199034 Saint Petersburg, Russia; e-mail: orthopt@zin.ru

ABSTRACT

A new genus with a new species (*Itarogryllus proprius* gen. et sp. nov.) from the tribe Gryllini are described from Peru. Possible belonging of this genus to the subtribe Brachytrupina is discussed. The genus is similar to Brachytrupina in the structure of its male ectoparameres but differs from all other genera of this subtribe in its small body size in combination with the following characters: male tegmen wide and having a wide mirror; epiphallus characteristic, having a pair of arcuate posterior lobes; ectoparamere with a complete fusion of the apical and proximal parts, with a developed but very narrow and completely isolated mesal lobe, and with poserodorsal sclerite having a very short and rounded "spine-like process" at the apex.

Key words: Gryllidae, Gryllinae, Gryllini, new genus and species, Peru, taxonomic position

Новые род и вид сверчков трибы Gryllini (Orthoptera: Gryllidae: Gryllinae) из Перу

А.В. Горохов

Зоологический институт Российской академии наук, Университетская наб. 1, 199034 Санкт-Петербург, Россия; e-mail: orthopt@zin.ru

РЕЗЮМЕ

Из Перу описаны новый род и новый вид сверчков (*Itarogryllus proprius* gen. et sp. nov.) из трибы Gryllini. Обсуждается возможная принадлежность этого рода к подтрибе Brachytrupina. Рассматриваемый род сходен с Brachytrupina по строению эктопарамеров его самца, но он отличается от всех других родов этой подтрибы меньшей величиной тела в сочетании со следующими признаками: широким надкрыльем самца, снабженным широким зеркалом; характерным эпифаллусом с парой дуговидных задних лопастей; эктопарамером со слившимися вершинной и проксимальной частями, с развитой (но очень узкой и полностью изолированной) срединной лопастью и с постеродорсальным склеритом, несущим очень короткий и округленный «шиповидный вырост» на вершине.

Key words: Gryllidae, Gryllinae, Gryllini, новые род и вид, Перу, систематическое положение

INTRODUCTION

Recently, an important paper on the history of the subfamily Gryllnae in America has been published (Gorochov 2019). In this paper, the American Gryllinae was divided into three subtribes of the tribe Gryllini (Gryllina, Anurogryllina and Brachytrupina), as well as some diagnostic characters of these subtribes and their American genera were discussed. But after this publication, a new enigmatic genus of Gryllini (Figs 1–8) was discovered among the Peruvian material collected by Russian investigators in the Junin Department. This genus possibly belongs to the subtribe Brachytrupina, because its male genitalia have the ectoparamere with a distinct posterodorsal sclerite (Fig. 8) which is characteristic

for Brachytrupina. However, the main body of ectoparamere in this genus (Fig. 8) is not divided by any membranous area into separate apical and proximal parts (such division is usual for the American Brachytrupina but lost or partly lost in *Miogryllus* Saussure, 1977), and the apical part of its posterodorsal ectoparameral process (Fig. 8) is almost without spine-like process which is developed at the apex of this sclerite or at the apex of the mesal ectoparameral lobe (or at the place of fusion of these apices) in many of the true Brachytrupina genera (including all the American representatives). Possibly, the new genus is related to *Miogryllus* but lost traces of the division of the ectoparamere into the apical and proximal parts, or it is from a more primitive branch of Brachytrupina which has an initially undivided ectoparamere and could independently penetrate America.

MATERIAL AND METHODS

The holotype of a new species is deposited at the Zoological Institute, Russian Academy of Sciences, Saint Petersburg. It is dry and pinned. The photographs of this specimen and its morphological structures were made with a Leica MZ 16 stereomicroscope. This work was carried out within the framework of a large project on the invertebrate fauna of the Ene and Tambo river basins (Proyecto de Conservación de la Biodiversidad de la Selva Amazónica: Identificación taxonómica de la fauna invertebrada en la cuenca del Río Ene y Río Tambo) under the supervision of the Peruvian and Ukrainian entomologist Volodymyr Izerskyy (Asociación para el desarrollo y conservación de los recursos naturales del Perú – ACRENAP, Satipo). This project is founded by the National Service of Natural Areas Protected by the State (Servicio Nacional de Áreas Naturales Protegidas por el Estado – SERNANP) of the Environment Ministry of Peru.

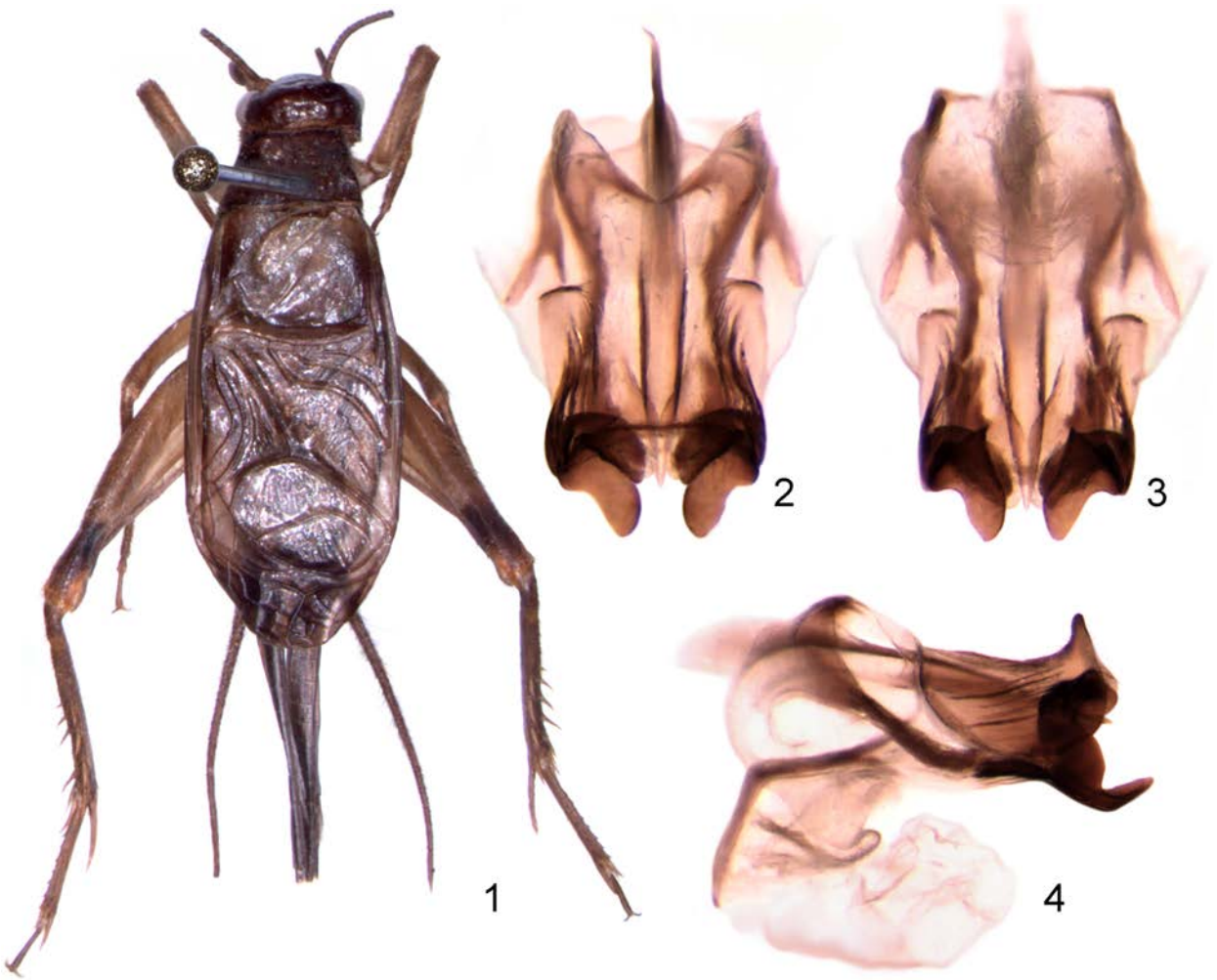
SYSTEMATICS

Genus *Itarogryllus* gen. nov.

Type species: *Itarogryllus proprius* sp. nov.

Etymology. The generic name consists of two generic names of crickets (*Itara* and *Gryllus*), because this genus is similar in the general appearance to *Itara* but more related to *Gryllus*.

Diagnosis. Body rather small for this tribe. Head almost semiglobular but slightly shortened, and its height somewhat greater than its width; rostrum between antennal cavities approximately equal to scape in width; eyes large, rounded, located very near subgenae; ocelli distinct, located in corners of transverse triangle (lateral ocelli almost round, but median one in shape of narrow transverse stripe approximately equal to lateral ocellus in width); maxillary palpus moderately short, with apical segment longest (slightly longer than third segment and distinctly longer than fourth segment). Pronotum clearly transverse, distinctly narrowing to head, with anterior edge slightly concave as well as posterior and ventral edges almost straight. Tegmina well developed, rather wide in male; their stridulatory apparatus with rather long (transverse) and slightly arcuate stridulatory vein, three sinuate oblique veins, distinct (normal) chords and diagonal vein, and wide (transverse) mirror having one curved dividing vein (Fig. 1). Legs moderately long and thin, but hind femur moderately widened in proximal half (moderately adapted to jumps); fore tibia with large (long) and oval outer tympanum as well as with much smaller (but also long and oval) inner tympanum; hind tibia with a few moderately short dorsal spines in distal two thirds and six apical spurs (dorsal outer and both ventral spurs not longer than dorsal spines, dorsal and middle inner spurs distinctly longer, and middle outer spur intermediate between these spurs in length); hind basitarsus with a pair of dorsal rows of small denticles (Fig. 1). Male anal plate moderately small and simple (more or less triangular); male genital plate distinctly larger than previous plate, slightly longer than wide, and with widely rounded distal part. Male genitalia very characteristic (Figs 2–4): epiphallus weakly sclerotized and almost rectangular, with deep and wide anterior notch, with median part of posterior epiphallic edge erected upwards, and with a pair of heavily sclerotized and arcuate apical lobes (*el*, *et*) running approximately along posterior edge of epiphallus and slightly protruding behind it medially (Figs 5, 7, 8); each ectoparamere (Fig. 8) with apical part (*as*) fused with proximal part (*ps*) and having rather large posteromedial (posteroventral) lobe protruding beyond other genital parts (Figs 5–7), with posterodorsal sclerite (*pds*) parallel to above-mentioned epiphallic lobe (*el*, *et*) and having very short and rounded "spine-like process" (*spl*) at apex (*spl* slightly projecting behind apex of *el*; Figs

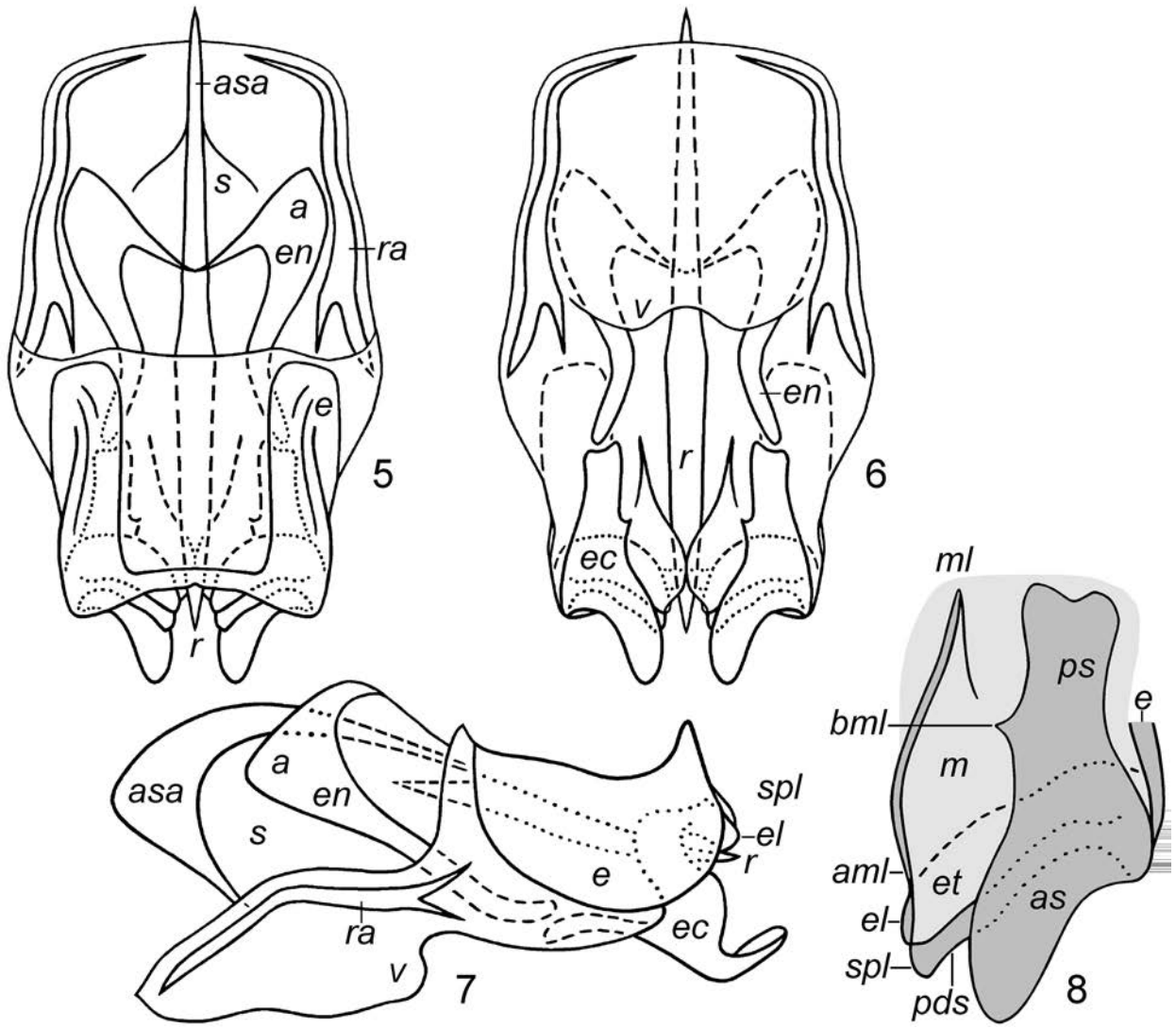


Figs 1–4. *Itarogryllus proprius* sp. nov., male: *1* – general view from above; 2–4 – genitalia from above (2), from below (3) and from side (4).

5, 8), and with narrowly ribbon-like (partly reduced) mesal lobe (Figs 6, 8) lost sclerotized connections with its base (*bml*) and "spine-like process" (*spl*); endoparameres long and moderately thin, with very narrow (strongly reduced) medial parts in place of their fusion and very large (wide and rather long) apodemes in their anterolateral parts (5–7); rachis large (long and rather wide) but in distal part gradually narrowing to acute apex (Figs 6, 7); sacculus medium-sized, with very large apodeme more or less reaching anterior parts of rami but projecting before other genital structures (Figs 5, 7); rami rather narrow and with bifurcate posterior parts (Figs 5–7); valves completely membranous (Figs 6, 7).

Included species. Type species only.

Comparison. This genus possibly belongs to the subtribe Brachytrupina in the structure of its male ectoparameres but differs from all other genera of this subtribe in its small body size in combination with the following characters: male tegmen wide and having a wide mirror; epiphallus characteristic, having a pair of arcuate posterior lobes; ectoparamere with a complete fusion of the apical and proximal parts, with a developed but very narrow and completely isolated mesal lobe and with poserodorsal sclerite having a very short and rounded "spine-like process" at the apex. But it is necessary to note that the male genitalia in some American genera probably belonging to Brachytrupina (*Gryllita* Hebard, 1935; *Rubrogryllus* Vickery, 1993; *Laureopsis* Jaiswara, 2017; *Perugryllus*



Figs 5–8. *Itarogryllus proprius* sp. nov., male (schematically): 5–7 – genitalia from above (5), from below (6) and from side (7); 8 – ectoparamere from below and slightly medially. Abbreviations: *a* – apodeme of endoparamere; *aml* – apex of mesal lobe; *as* – apical part of ectoparamere; *asa* – apodeme of sacculus; *bml* – base of mesal lobe; *e* – epiphallus; *ec* – ectoparamere; *el* – epiphallic lobe; *en* – endoparamere; *et* – epiphallic lobe visible through membrane; *m* – membrane between mesal lobe and posterodorsal sclerite; *ml* – mesal lobe; *pds* – posterodorsal sclerite of ectoparamere; *ps* – proximal part of ectoparamere; *r* – rachis; *ra* – ramus; *s* – sacculus; *spl* – spine-like process at apex of *ml* and/or of *pds*; *v* – valve.

Jaiswara, 2017) is unstudied or insufficiently studied; these genera may be synonymous to *Miogryllus* or *Geogryllus* Otte et Perez-Gelabert, 2009 (Gorochov 2019; Gorochov and Izerskiy 2019) and differ from the new genus in the following characters: the type species of *Gryllita* has its male tegmen with a narrower mirror and less sinuous oblique veins (Hebard 1935); the Mexican species of this genus and *Rubrogryllus* have the same characters as well as the male genitalia with a deeply bifurcate posterior epiphallic part (Vickery 1993, 1997); *Laureopsis* and *Perugryllus* also have the same characters, but *Perugryllus* additionally has a more strongly reduced male tegminal stridulatory apparatus (Jaiswara and Desutter-Grandcolas 2017). From the other subtribes of Gryllini, the new genus is distiunguished by a rather complicate structure of the ectoparameres having a characteristic posterodorsal sclerite.

***Itarogryllus proprius* sp. nov.**
(Figs 1–8)

Etymology. This species name is the Latin word "proprius" (peculiar, especial), because this species is distinctly dissimilar in the male genitalia to all the other representatives of Gryllini.

Type material. *Holotype* – male, PERU: Junin Department, Satipo Prov., 18 km N of Satipo Town, forest in environs of waterfall "Cinco Cascadas" near Paratushali Vill., ~800 m, at light, 4–5 November 2008, A. Gorochov, M. Berezin, L. Anisyutkin, E. Tkatsheva, V. Izerskyy.

Description. *Male.* Body coloration almost uniformly darkish: head and pronotum dark brown and shining but with grey eyes, whitish ocelli, greyish brown antennae and mouthparts; tegmina also greyish brown and shining, with some veins and apical area slightly darker; visible (distal) parts of hind wings in rest position greyish brown with slightly darker apical parts; legs and venter of body light greyish brown with greyish brown tibiae, tarsi and distal parts of femora, but hind femur with distal part almost dark brown and having light brown apical lobules (spines and spurs of legs also more or less light brown); cerci greyish brown with somewhat lighter basal parts (Fig. 1). Tegmina distinctly protruding beyond abdominal apex, with mirror approximately 1.4 times as wide as long, with developed apical area (mirror almost 1.5 times as long as this area), and with 7–8 longitudinal veins in lateral field (crossveins between these veins not very numerous); hind wings long, significantly protruding beyond tegminal apices (Fig. 1). Legs with outer tympanum almost twice as long as inner one, with five outer and four inner dorsal spines of hind tibia, with longest apical spur of this tibia slightly extending beyond middle of hind basitarsus, and with 7–8 outer and 4–5 inner dorsal denticles on hind basitarsus. Genitalia as in Figs 2–8.

Female unknown.

Length (mm). Body 9.4; body with wings 14.6; pronotum 1.5; tegmina 7.8; hind femora 5.9.

Comparison. This species is one in this genus and differs from all the other similar species in the same characters as *Itarogryllus* gen. nov.

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