

A new genus of the subfamily Nemobiinae (Orthoptera: Gryllidae) with unclear tribal position for a new species from Madagascar

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Abstract

The genus *Storozhenkoa* **gen. nov.** and its type species *S. sergeyi* **sp. nov.** are described from Madagascar. This monotypic genus belongs to the subfamily Nemobiinae, but its tribal position is unclear. The new genus is characterized by a spotted body coloration, rather long legs with only inner tympana, short dorsal spines of the hind tibia, the absence of one of apical spurs on this tibia, well developed but shortened male tegmina with a characteristic structure of their stridulatory apparatus, the male genitalia with long endoparameral apodemes, and a long ovipositor with a simple and acute apical part.

Key words: Crickets, new taxa, *Storozhenkoa sergeyi*, Toamasina Province

Introduction

According to the Orthoptera Species File (Cigliano *et al.* 2025), only one tribe of the subfamily Nemobiinae (Pteronemobiini) is known from Madagascar up to now. Here, another group of Nemobiinae is firstly recorded from this island. However, its belonging to any concrete tribe of this subfamily is problematic, because its hind tibiae lack inner ventral apical spurs (as this has place in the tribes Marinemobiini and Burcini), its male tegmina are well developed (absent in Marinemobiini), and its male genitalia have long endoparameral apodemes (absent in Burcini). Possibly this group of Nemobiinae with a single genus (*Storozhenkoa* **gen. nov.**) is a primitive branch of Marinemobiini retaining tegmina and tympana but living in very different conditions: on the bark of trees in forests with oviposition in the soil (although other genera of Marinemobiini live on sandy sea banks or on soil in mangrove swamps; Gorochov *et al.* 2018). The new genus and the Indo-Malayan genus *Lissotrachellus* Brunner-Wattenwyl, 1893 from the tribe Lissotrachelini are probably the only two known representatives of Nemobiinae with such habits, but the latter genus is common on or under the bark of dead trees.

Materials and methods

The material studied was collected during the field work organized by the environmental protection organization “Mitsinjo Association” (Madagascar, Andasibe) and its members: Dr. Rainer Dolch (the coordinator of this association) and Mr. Tianasoa Ratolojanahary. This material is deposited at the Zoological Institute, Russian Academy of Sciences, Saint Petersburg (ZIN). All the specimens are dry and pinned. The photographs of their morphological structures were made with Leica MZ 16 and Nikon SMZ 1270 stereomicroscopes.

Taxonomy

Family Gryllidae

Subfamily Nemobiinae

Genus *Storozhenkoa* Gorochov, gen. nov.

Type species: *Storozhenkoa sergeyi* Gorochov, **sp. nov.**, designated here.

Diagnosis. Rather small crickets with general appearance typical of this subfamily, but also with distinctly spotted coloration, moderately long legs (Figs 1–3) and some characteristic features listed below. Head roundly triangular in front; rostrum between antennal cavities approximately as wide as scape; eyes very large, slightly higher than long, moderately convex; ocelli developed but very small and located in corners of transverse triangle; apical segment of maxillary palpus clearly widening towards apex, distinctly longer than subapical one, and almost equal to third segment of this palpus in length (Figs 1–3, 4). Pronotum almost as wide as head; its anterior and posterior parts slightly narrower; anterior and posterior edges of disc almost straight; lower lobes moderately low, roundly turning into disc and with slightly concave ventral edges (Figs 1–3). Fore tibia with only oval inner tympanum; fore and middle tibiae also with a pair of ventral apical spurs on each; hind femur distinctly widened, well adapted to jumps; hind tibia with rather short dorsal spines having short and not very dense hairs, and with only five apical spurs (ventral inner apical spur absent) which more or less similar to above-mentioned spines (but dorsal inner and middle inner spurs longer and with denser hairs); hind basitarsus with only a pair of small dorsal subapical spines near a pair of longer apical spurs. Male tegmina distinctly shortened, with developed stridulatory apparatus in dorsal fields and a few longitudinal and almost parallel *Sc* branches in lateral fields; aforementioned apparatus almost without mirror as well as with long and distinctly S-shaped oblique vein (Figs 1, 2, 5); female tegmina extremely small, lobule-like (Figs 3, 11); hind wings absent in both sexes. Metanotal gland absent; abdominal tergites and sternites as well as paraprocts and cerci also without specializations, but last sternite of female somewhat enlarged (longer than previous abdominal sternites; Fig. 12); anal plate in both sexes lobe-like, with thin transverse fold in middle part of dorsum and with almost lamellar and rounded distal part directed more or less downwards (Fig. 6); male genital plate approximately as long as wide but distinctly longer than anal plate, with almost truncated posterior part (Fig. 7); female genital plate much shorter, slightly wider than long, with rather wide but not deep and more or less angular posteromedian notch as well as with short and almost rounded posterolateral lobules (Fig. 12). Male genitalia (Figs 8–10) rather short and wide; epiphallus somewhat semitubular, slightly flattened dorsally, almost rectangular from above but with large angular anteromedian notch and a pair of rather wide anterolateral lobes (Figs 8, 10); rami indistinct (fused with these lobes or even including in their bodies); ectoparameres large, well separated from epiphallus, stick-like but with widened proximial parts which divided by carinae into medially vertical and laterally horizontal plates (Figs 9, 10); rachis very wide, short and membranous, slightly projecting behind epiphallus, and with a pair of short longitudinal sclerotized stripes on ventromedian surface (Figs 8, 10); endoparameres also rather short and articulated with these stripes but having long and thin endoparameral apodemes (Figs 8, 9); formula located near bodies of endoparameres, consisting of a pair of rather large semimembranous plates (Fig. 9). Ovipositor very long for this subfamily, thin and almost straight, with narrow and acute apical parts of valves lacking denticles and other relief (Fig. 13).

Included species. Only type species.

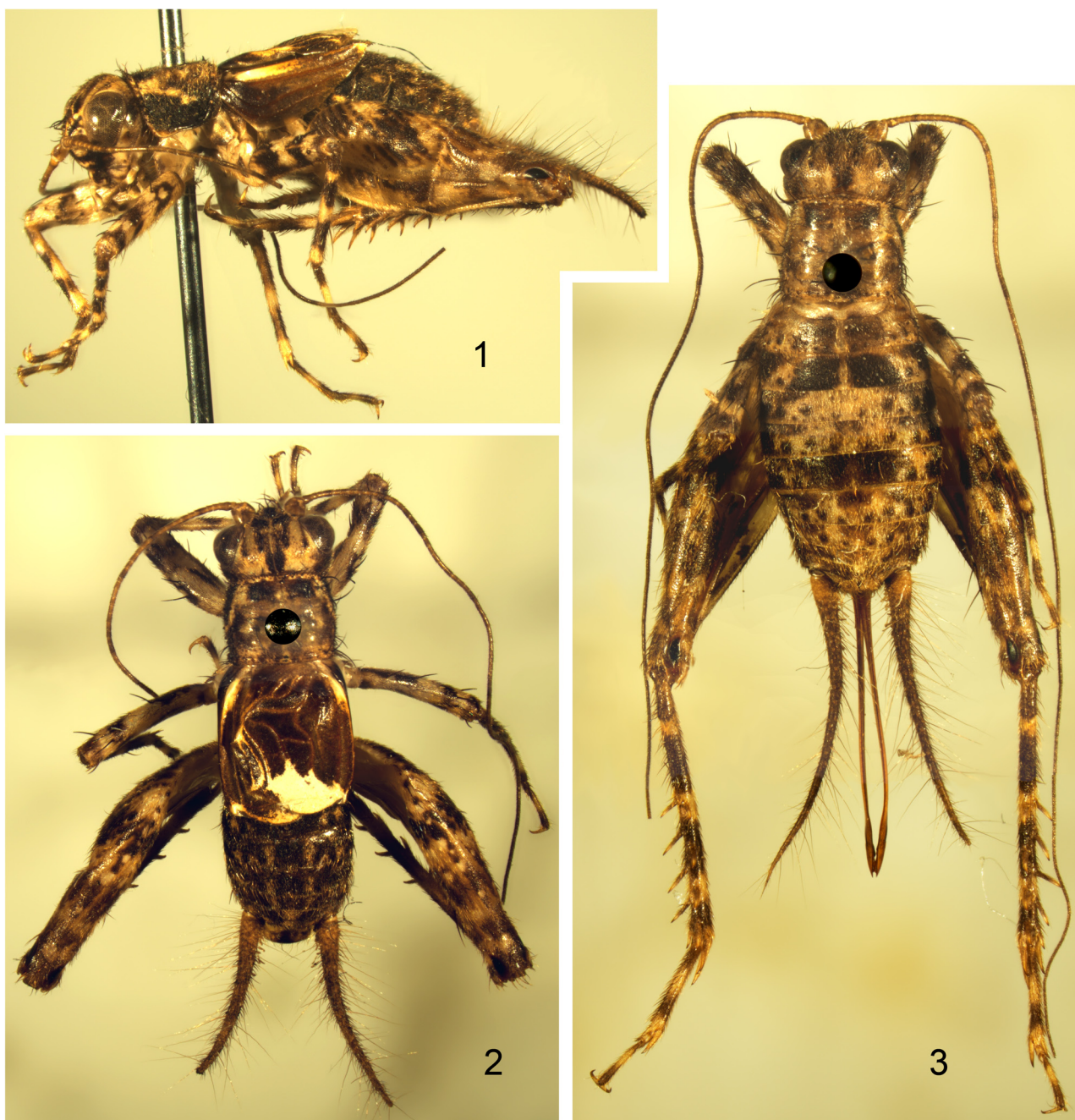
Comparison. This genus is more or less similar to representatives of the tribe Marinemobiini, as it lacks an inner ventral apical spur of the hind tibia and has long endoparameral apodemes in the male genitalia, but it is distinguished from Marinemobiini by the presence of tegmina in male and at least of one tympanum on the fore tibia. From the tribe Burcini, also having similar structure of the hind tibia, the new genus differs in the male genitalia having long endoparameral apodemes (these apodemes are absent in Burcini). From the tribe Pteronemobiini, *Storozhenkoa* **gen. nov.** differs in the absence of glandular spine (spines) on the hind male tibia; from the tribe Lissotrachelini, in the presence of an oblique vein (absent in Lissotrachelini) in the male tegminal stridulatory apparatus and of distinct sclerotized ectoparameres in the male genitalia, as well as in the absence of inner ventral apical spur in the hind tibia and of all dorsal spines (except for a pair of apical spurs) on the hind basitarsus; and from the tribes Nemobiini and Grylliscini as well as from some other genera with unclear tribal position, in the loss of one of the apical spurs in the hind tibia, short and weakly pubescent spines and spurs of this tibia, a characteristic shape of the oblique vein in the male tegmen, a longer ovipositor without denticles in the distal part, and/or the above-mentioned details of the male genitalia.

Etymology. This genus is named after the family name of the well-known Russian orthopterist S. Yu. Storozhenko in honor of his seventieth birthday.

***Storozhenkoa sergeyi* Gorochoy, sp. nov.**
(Figs 1–13)

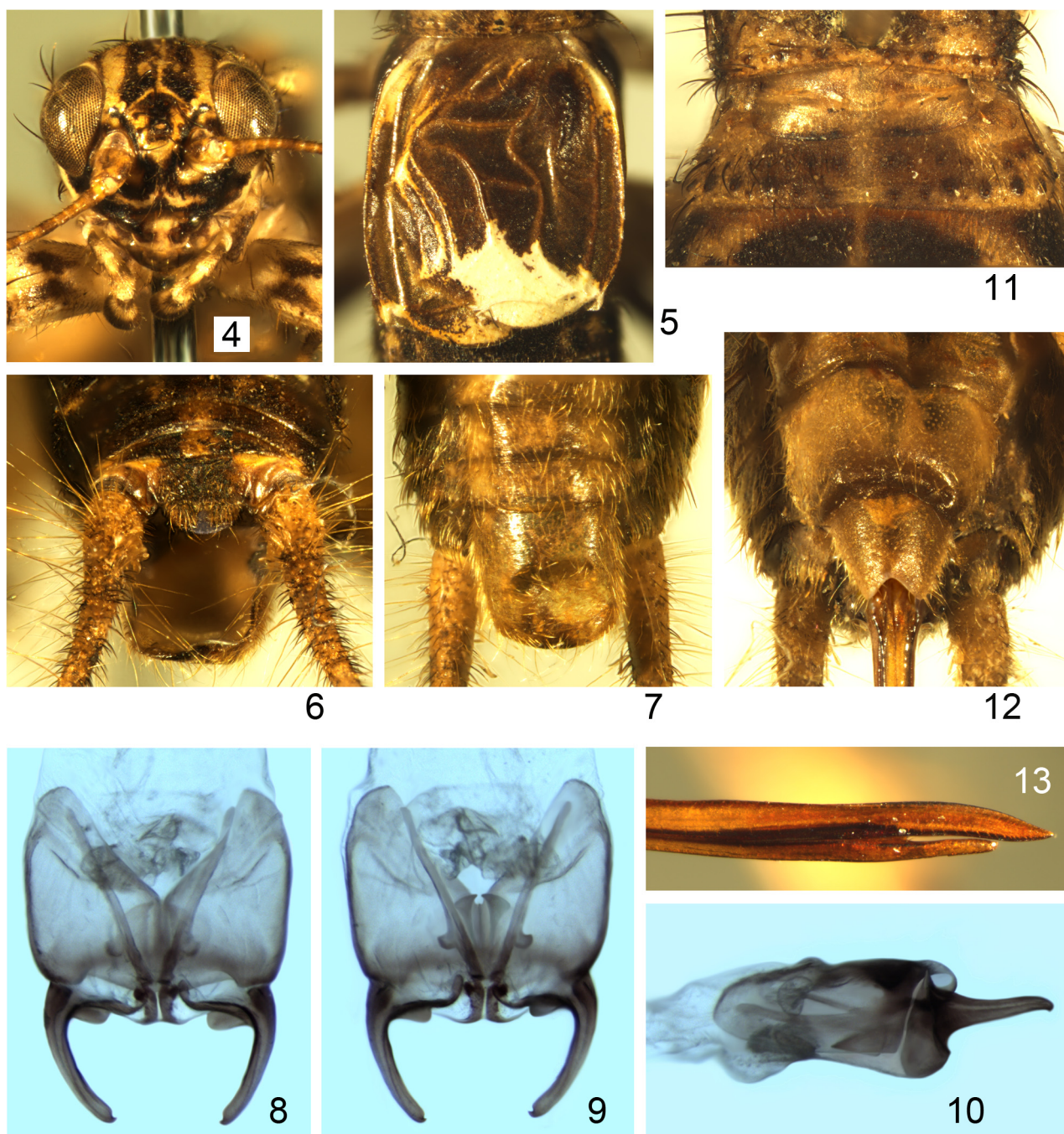
Type material. Holotype—male: Madagascar, Toamasina Prov., Moramanga Distr., Analamazaotra Forest Station near Andasibe Vill., 18°56' S, 48°25' E, about 900 m above sea level, primary/secondary forest, on bark of living tree at night, 1–7.III.2013, A. Gorochoy, L. Anisyutkin (ZIN). Paratypes: 2 males, 4 females, same data as for holotype (ZIN); 3 males, 2 females, same province and district, about 10 km NW of Andasibe Vill, Torotorofotsy Reserve, about 1000 m above sea level, primary forest, under same conditions as holotype, 22.II–11.III.2013, A. Gorochoy (ZIN).

Description. Male (holotype). Body coloration following: head and pronotum dark brown with large yellowish ornament on head dorsum between eyes and on pronotal disc (Fig. 2), smaller yellowish ornament on anterior part of epicranium (Fig. 4), greyish eyes, yellowish genae and mouthparts (but labrum and parts of mandibles greyish, maxillary palpus with four light brown transverse bands, and labial one with one such band on apical segment),



FIGURES 1–3. *Storozhenkoa sergeyi* gen. et sp. nov., body of male holotype (1, 2) and of female paratype (3); 1—from side; 2, 3—from above.

yellowish to greyish proximal parts of antennae (these parts with poorly distinct brownish marks), light brown to brown more distal antennal parts, and small yellowish marks on pronotal lateral lobes (Fig. 1); legs distinctly spotted (Figs 1, 2); tegmina brown to dark brown, with yellowish to whitish distal area of each dorsal field and short humeral marks as well as small marks near plectrum and on chords (Figs 1, 2, 5); abdominal tergites, anal plate and paraprocts almost dark brown with small and sparse lightish marks; sternites from almost yellowish to light greyish brown; cerci and genital plate barely darker than sternites (Figs 1, 2, 6, 7). Shape of head, of pronotum and of legs as in Figs 1, 2, 4; tegmina reaching middle of fourth abdominal tergite, with four branches of *Sc* in lateral field (Figs 1, 2), without visible venation in light apical part of dorsal field, and with other venation of this field as in Fig. 5 (left tegmen with dorsal field partly semitransparent and covered by dorsal field of right tegmen in rest position); hind tibia with four inner and four outer dorsal spines as well as with middle outer apical spur approximately as



FIGURES 4–13. *Storozhenkoa sergeyi* **gen. et sp. nov.**, details of structure in male holotype (4–10) and in female paratype (11–13); 4–head in front; 5–dorsal field of right (upper) tegmen from above; 6–abdominal apex from above/behind; 7, 12–abdominal apex from below; 8–10–genitalia from above (8), from below (9) and from side (10); 11–mesonotum and metanotum with scale-like lateral tegmina from above; 13–distal part of ovipositor from side.

long as dorsal spines but somewhat longer than dorsal and ventral outer apical spurs; abdominal apex and genitalia as in Figs 6–10.

Variations. Some males with light marks hardly darker or almost without light marks in proximal half of dorsal tegminal field; one male paratype with light apical part of dorsal tegminal field almost brown but having whitish borders, and with abdominal tergites having wide whitish longitudinal median band on dorsum; crossvein between diagonal and oblique veins in middle part of tegminal dorsal field often undeveloped; number of Sc branches in lateral tegminal field varied from four to five.

Female. Coloration and structure of body similar to those of males, but tegmina lateral (scale-like) and barely visible near posterior edge of pronotum (their venation indistinct; Fig. 11); tergites of pterothorax and of abdomen more spotted (Fig. 3), last abdominal sternite and genital plate as in Fig. 12; ovipositor almost 1.5 times as short as hind femur, with distal part as in Fig. 13.

Length in mm. Body: male 7–7.5, female 6.5–7; pronotum: male 1.4–1.6, female 1.6–1.8; tegmina: male 2.3–2.5, female 0.1–0.3; hind femora: male 5–5.4, female 5.3–5.6; ovipositor 4.9–5.2.

Comparison. This species is alone in the genus, and its differences from all other known taxa of Nemobiinae are given in the diagnosis for its genus.

Etymology. The new species is named after the first name of the same birthday hero (Sergey Yu. Storozhenko).

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