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RESEARCH ARTICLE

Taxonomy of Podoscirtinae (Orthoptera: Gryllidae). Part 13: new taxa of the subtribe Podoscirtina from Africa

Таксономия подсемейства Podoscirtinae (Orthoptera: Gryllidae). Часть 13: новые таксоны подтрибы Podoscirtina из Африки

A.V. Gorochov

А.В. Горохов

Andrei V. Gorochov, Zoological Institute, Russian Academy of Sciences, 1 Universitetskaya Emb., St Petersburg 199034, Russia. E-mail: orthopt@zin.ru

Abstract. The subtribe Podoscirtina of the tribe Podoscirtini is briefly discussed; it contains 11 Madagascan genera as well as 2–6 African genera, one of which is also known from Madagascar. A subgenus of the genus *Kilimagryllus* Sjöstedt, 1909 is here considered as a separate genus *Brevitrella* Gorochov, 2004, **stat. nov.**, with two species: *B. madagascarica* (Gorochov, 2004), **comb. nov.**, and *B. africana* (Walker, 1869), **comb. nov.** The following new taxa of this subtribe are described from Africa: *Malawitrella sotshivkoi* **gen.** et **sp. nov.** and *Kilimagryllus bilobulatus* **sp. nov.** from Malawi, *K. bilobulatus limpopo* **subsp. nov.**, *Parametrypa pubescens* **sp. nov.**, *P. longispinosa* **sp. nov.** and *P. dentata* **sp. nov.** from the Republic of South Africa. The new data on other African species of Podoscirtina are given: in particular, *Parametrypa spiculata* Saussure, 1878 is restored from synonymy with *P. fortipes* (Walker, 1869) as a subspecies of the latter species (*P. fortipes spiculata,* **stat. nov.**); *P. viettei* Chopard, 1958 is transferred to the predominantly American tribe Paroecanthini, but its generic position remains unclear.

Резюме. Кратко рассмотрена подтриба Podoscirtina из трибы Podoscirtini; она состоит из 11 мадагаскарских и 2–6 африканских родов, один из которых известен также с Мадагаскара. Один подрод рода *Kilimagryllus* Sjöstedt, 1909 повышен в ранге до рода *Brevitrella* Gorochov, 2004, **stat. nov.**; род включает два вида: *B. madagascarica* (Gorochov, 2004), **comb. nov.**, и *B. africana* (Walker, 1869), **comb. nov.** Из Африки описаны следующие новые таксоны этой подтрибы: *Malawitrella sotshivkoi* **gen.** et **sp. nov.** и *Kilimagryllus bilobulatus* **sp. nov.** из Малави, *K. bilobulatus limpopo* **subsp. nov.**, *Parametrypa pubescens* **sp. nov.**, *P. longispinosa* **sp. nov.** и *P. dentata* **sp. nov.** из Южной Африки. Представлены новые данные по другим африканским видам Podoscirtina; в частности, *Parametrypa spiculata* Saussure, 1878 восстановлен из синонимии с *P. fortipes* (Walker, 1869) как подвид последнего вида (*P. fortipes spiculata*, **stat. nov.**), а *P. viettei* Chopard, 1958 перенесен в преимущественно американскую трибу Paroecanthini без установления его родового положения.

Key words: crickets, taxonomy, Africa, Orthoptera, Gryllidae, Podoscirtinae, Podoscirtini, new taxa

Ключевые слова: сверчки, таксономия, Африка, Orthoptera, Gryllidae, Podoscirtinae, Podoscirtini, новые таксоны

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Introduction

This paper is the thirteenth communication in the series of publications on taxonomy of the cricket subfamily Podoscirtinae Saussure, 1878. It continues the third, fourth and twelfth communications, in which the African representatives of the tribe Podoscirtini Saussure, 1878 were considered (Gorochov, 2004, 2005, 2020). In these papers, the Podoscirtini from Africa and Madagascar were divided into two generic groups: (1) the "*Podoscirtus*" generic group with 2–4 African and numerous Madagascan genera, which are the remains of the ancient fauna of this region; (2) the subtribe Truljaliina Gorochov, 2020 including the "*Dolichogryllus*" generic group with eight exclusively African genera as well as the Indo-Malayan genera *Truljalia* Gorochov, 1985 and *Madasumma* Walker, 1869 (this subtribe probably reached Africa much later). Here the "*Podoscirtus*" generic group is considered as the probably holophyletic subtribe Podoscirtina Saussure, 1878, and a few new taxa of this subtribe are described.

Material and methods

The material used in this paper is deposited at the following institutions: Zoological Institute, Russian Academy of Sciences, St Petersburg (ZIN); South African National Collection of Insects, Pretoria (SANC). All the specimens are dry and pinned. Photographs of their morphological structures were taken with a Leica M216 stereomicroscope and a DFC290 camera.

Taxonomic part

Family **Gryllidae** Laicharting, 1781

Subfamily **Podoscirtinae** Saussure, 1878

Tribe **Podoscirtini** Saussure, 1878

Subtribe **Podoscirtina** Saussure, 1878

Type genus: *Podoscirtus* Audinet-Serville, 1839; Madagascar.

Diagnosis. General appearance (Figs 1–13) rather diverse but typical of Podoscirtini; all tympana (if developed) open and oval. Male genitalia primitive in structure (Figs 18–20, 23–25): epiphallus large, usually with a pair of posterior lobes diverse in size and shape (sometimes epiphallic apex with additional lobules; Figs 14–16, 26–28); ectoparameres (Figs 18–20, 23–25) sclerotised, movable, long or moderately long, rather thin (stick- or spine-shaped), with acute or hook-like apices (but sometimes ectoparameres possibly lost; Figs 14–16, 26–28); endoparameral apodemes usually large, elongate, connected with both ectoparameres and rachis; rachis also large, elongate or slightly elongate, partly membranous, movable in relation to epiphallus, diverse in shape and structure; formula and rami normally developed (but possibly sometimes strongly reduced), rather diverse in size and shape; formula anteriorly often with narrow median apodeme or apodeme-like projection and posteriorly sometimes fused or articulated with sclerotised parts of rachis.

Remarks. The epiphallus in this subtribe usually possesses one characteristic small or tiny denticle near each apex of posterior epiphallic lobes (or near each apex of their upper lobules). Possibly, this denticle is a synapomorphy for members of the Podoscirtina (Figs 20 and 25). In some genera of this subtribe, such a denticle is always or sometimes indistinct (possibly reduced or lost; Figs 14 and 28).

Generic composition. Type genus; *Kilimagryllus* Sjöstedt, 1909; *Atruljalia* Gorochov, 1988; *Eupodoscirtus* Gorochov, 2004; *Malgasotrella* Gorochov, 2004; *Spinotrella* Gorochov, 2004; *Ultratrella* Gorochov, 2004; *Zvenellomorpha* Gorochov, 2004; *Neozvenella* Gorochov, 2004; *Brevitrella* Gorochov, 2004, **stat. nov.**; *Stenotrella* Gorochov, 2005; *Ombrotrella* Gorochov, 2006; *Allotrella* Gorochov, 2006; possibly also the following genera: *Parametrypa* Brunner-Wattenwyl, 1873, *Paranaudus* Saussure, 1878, *Paraphasius* Chopard, 1927 and *Malawitrella* **gen. nov.**

Podoscirtus, *Atruljalia*, *Eupodoscirtus*, *Malgasotrella*, *Spinotrella*, *Ultratrella*, *Zvenellomorpha*, *Neozvenella*, *Stenotrella*, *Ombrotrella* and *Allotrella* are known only from Madagascar. The others are African genera, but one species of *Brevitrella* is known from Madagascar, and *Paranaudus* includes only *P. terebrans* (Saussure, 1878) from Zanzibar and *P.? micropterus* Chopard, 1925 from Madagascar (Chopard, 1952). However, the generic position of the latter taxon is doubtful (Gorochov, 2005: 201). *Parametrypa viettei* Chopard, 1958 from Sao Tome Island in Gulf of Guinea was listed in *Parametrypa* by Cigliano et al. (2021),

but actually it does not belong to this genus as well as to the Podoscirtini. This species belongs to the American tribe Paroecanthini Gorochov, 1986, judging by the photographs of ovipositor of the holotype of *P. viettei* (Specimen MNHN-EO-ENSIF6593, 2021). The occurrence of some forest Neotropical genera in West Africa and on the nearest islands is well known (for example, *Paragryllus* Saussure, 1877 from the subfamily Phalangopsinae Blanchard, 1845). The genus *Fryerius* Uvarov, 1940 from Madagascar, the Seychelles and the Comores was placed in the "*Podoscirtus*" generic group (Gorochov, 2004), but here it is not included in the subtribe Podoscirtina, because its inner tympanum is slit-like or almost slit-like, and the male genitalia lack a characteristic small denticle on the epiphallic apical part near each of its upper apices.

Comparison. The subtribe differs from the other taxa of Podoscirtini in the above-mentioned primitive characters of its tympana and male genitalia, and in one possible synapomorphy: the presence of characteristic epiphallic denticles in most of its representatives (see above).

Genus ***Brevitrella*** Gorochov, 2004, **stat. nov. (status promotus)**

Type species: *Brevitrella madagascarica* (Gorochov, 2004), **comb. nov.** [= *Kilimagryllus* (*Brevitrella*) *madagascaricus* Gorochov, 2004]; Madagascar.

Remarks. *Brevitrella* was originally described as a subgenus of the genus *Kilimagryllus*. Here *Brevitrella* is considered as a separate genus, because its male genitalia differ from those of *Kilimagryllus* in a very important character of rachis: the rachis is divided into two elongate processes movable in relation to each other and to the epiphallus (contrary to this, in *Kilimagryllus* the rachis is rather simple and movable only in relation to the epiphallus, i.e. not divided into movable processes).

Included species. Type species and *Brevitrella africana* (Walker, 1869), **comb. nov.**

Brevitrella africana (Walker, 1869), **comb. nov.**

Material examined. **South Africa**: 1 male, "Port Elizabeth 91-69" (ZIN); 1 female, "40 km N Richerds Ban", 20–31.I.2006 (ZIN); 3 males, "Natal, Dukuduku For.[est] Res.[erve]", II.1971, H. Brown, D. Wessels & E. Koster (SANC); 1 female, "Natal, Cape Vidal, St. Lucia", 25.II.1971, H. Brown & E. Koster (SANC); 1 female, "OOS-Londen SE 3327BB", 10.IV.1994, H. Van Vuuren (SANC).

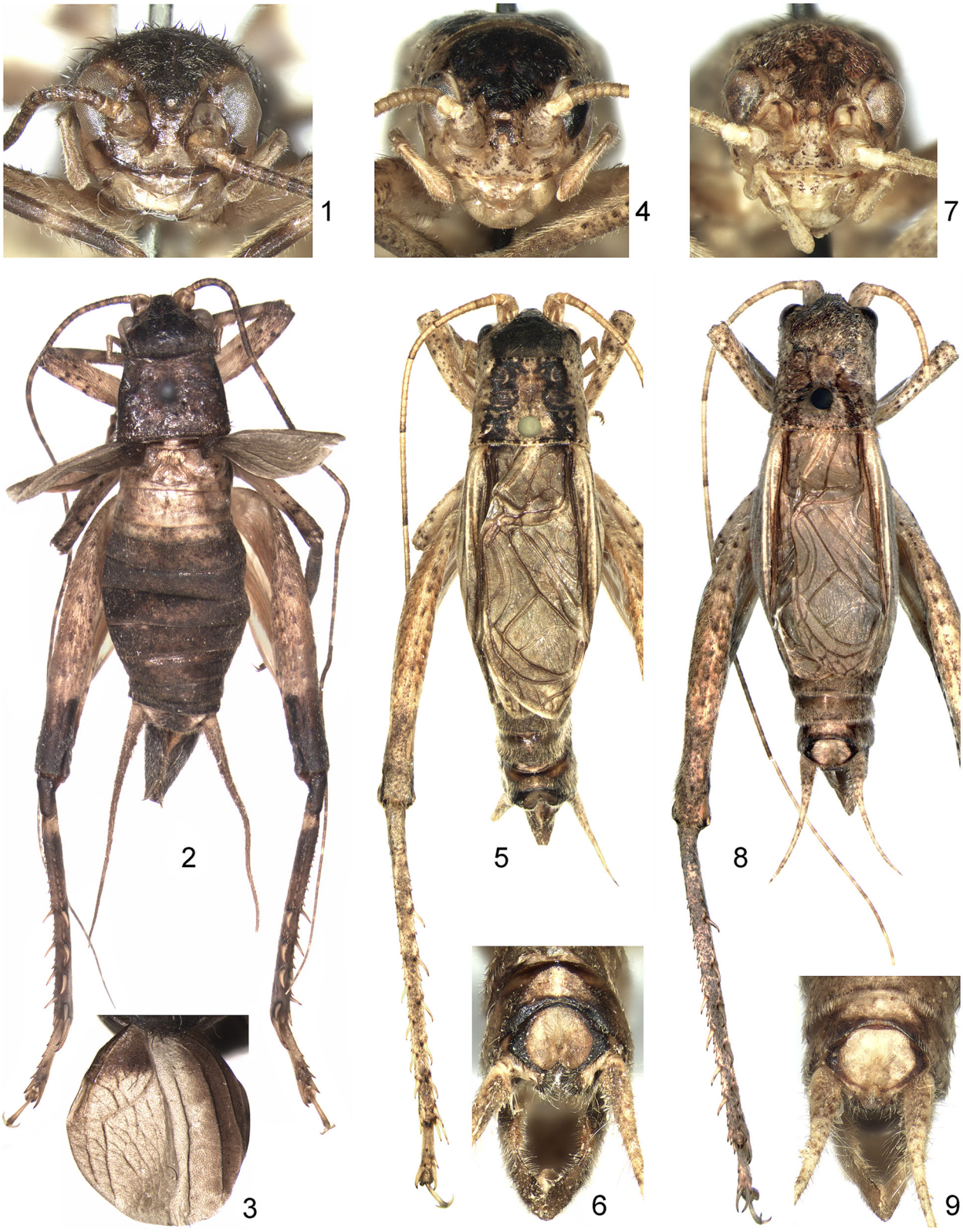
Remarks. This species, described as *Platydactylus africanus* Walker, 1869 from "Pt Natal 55.96" and "Pt Natal 58/13" in South Africa and synonymised with *Platydactylus fuliginosus* Walker, 1869 from "Pt Natal 58/13" (Gorochov, 2004), was included by Chopard (1968) in the genus *Kilimagryllus*. However, this species is very similar and closely related to *B. madagascarica* and undoubtedly belongs to the same genus. Here, *B. africana* is recorded from additional new localities in South Africa.

Genus ***Malawitrella*** **gen. nov.**

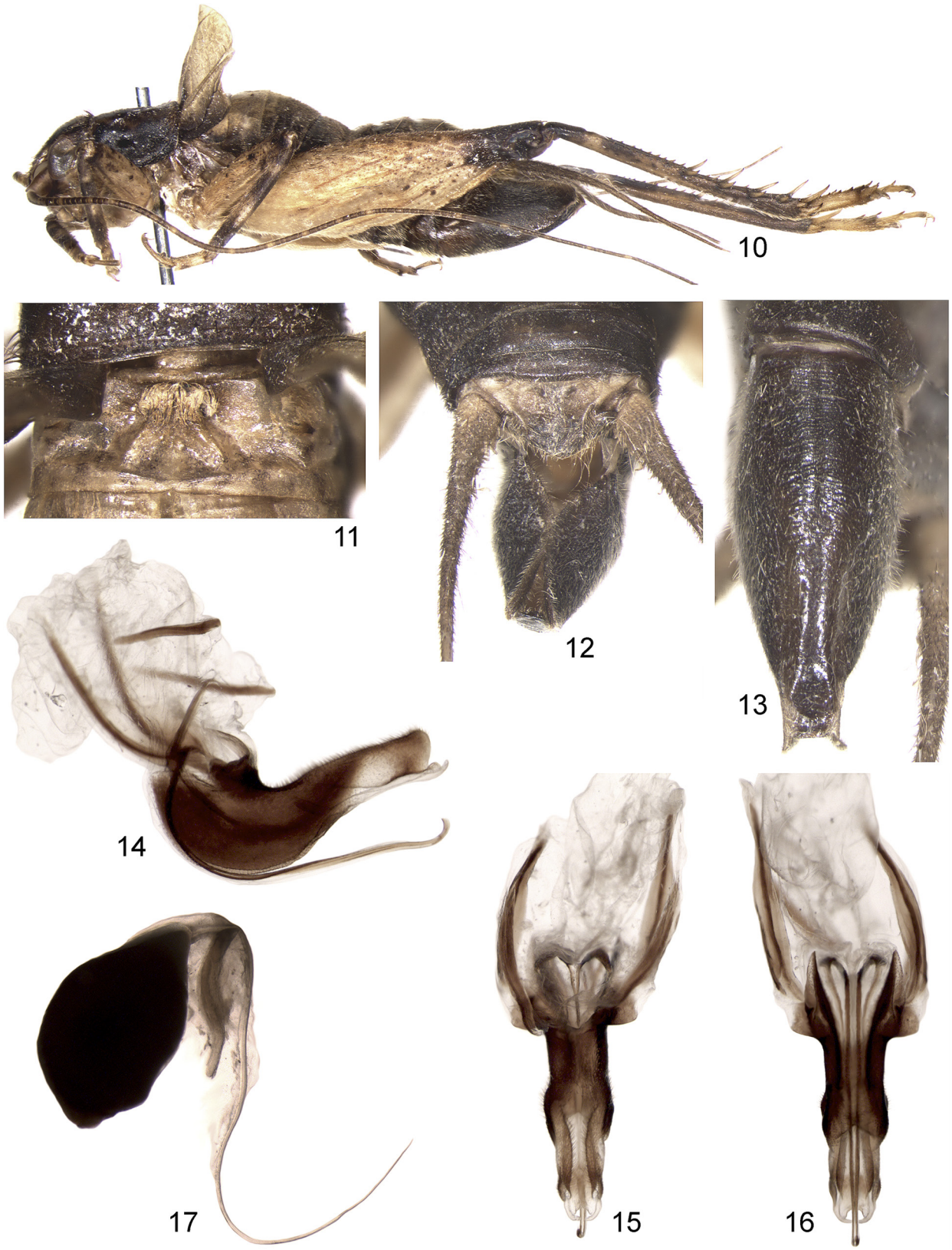
Type species: *Malawitrella sotshivkoi* **sp. nov.**

Diagnosis. Body medium-sized for this subtribe, slightly dorsoventrally depressed and poorly pubescent. Head (Figs 1, 2 and 10) with moderately long rostrum being roundly angular in profile; scape approximately 1.2 times as wide as rostrum between antennal cavities; apical segment of maxillary palpus clearly longer than other segments of this palpus and almost as long as eye. Pronotum (Figs 2 and 10) insignificantly wider than long, barely narrowing to head, with slightly concave anterior and posterior margins of disc, with lateral lobes moderately high and having somewhat oblique ventral margins, and with rounded longitudinal bends between disc and these lobes; metanotal gland in male developed, small (Fig. 11). Male tegmina significantly shortened; however, their dorsal fields widely overlapping and having traces of stridulatory apparatus (including stridulatory vein almost normal in shape but with partly reduced stridulatory teeth), and their lateral fields only with three or four longitudinal veins (Fig. 3). Legs rather short, without tympana, and with spines and denticles (but not apical spurs) located only on dorsal edges of hind tibia and of hind basitarsus; hind femur widened for jumping.

Abdominal tergites simple; anal plate short, distinctly transverse, narrowing to widely rounded apex and without any specialised structures on dorsal surface (Fig. 12); genital plate much longer than anal plate, rather high in proximal half and somewhat lower in distal one, gradually narrowing to



Figs 1–9. *Malawitrella* **gen. nov.** and *Kilimagryllus*, male: **1–3**, *M. sotshivkoi* **sp. nov.**; **4–6**, *K. bilobulatus* **sp. nov.** (holotype); **7–9**, *K. bilobulatus limpopo* **subsp. nov.** Head in front (1, 4, 7); body from above with tegmina directed upwards and aside (2) and with tegmina in rest position (5, 8); right tegmen (3); abdominal apex from above and slightly from behind (6, 9).



Figs 10–17. *Malawitrella sotshivkoi* **sp. nov.**, male: **10**, body from side with tegmina directed upwards and aside; **11**, metanotal gland; **12**, **13**, abdominal apex from above and slightly from behind (12), and from below (13); **14–16**, genitalia from side (14), from above (15) and from below (16); **17**, spermatophore from side.

rather narrow apex having a pair of lamellar lateral lobules (each lobule narrowly rounded apically and arranged in vertical plane) and almost straight posterior margin between them (Fig. 13). Male genitalia very characteristic (Figs 14–16): epiphallus elongate, thinner and partly membranous in distal part, strongly curved upwards in proximal portion, with deep dorsomedian (longitudinal) concavity in distal half, with three small apical lobules (median one located almost under lateral lobules), and with a short anteromedian notch; ectoparameres not developed (lost); rachis long and thin, with a pair of very narrow sclerotised ribbons running along entire rachis and proximally connected with thin and moderately short endoparameral apodemes; bases of these apodemes also with very thin and moderately long sclerotised ribbons running backwards around rachial base; formula very narrow (ribbon-like), moderately short, connected with bases of rachial ribbons in anterior part; rami long, rather high in distal half, with additional thin ramus-like sclerotised structures located above them.

Included species. Only type species.

Comparison. *Malawitrella* **gen. nov.** strongly differs from all the other genera of Podoscirtini in the characteristic shape of the epiphallus, the absence of ectoparameres, a unique structure of the rachis connected with the endoparameres and strongly reduced formula, and the presence of additional ramus-like sclerites near the true rami. Most of these characters are not in complete accordance with the diagnosis of the subtribe Podoscirtina. However, all of them are associated with loss or reduction of some structures (loss of epiphallic denticles and ectoparameres, reduction of formula). For this reason, here I tentatively include *Malawitrella* **gen. nov.** in the subtribe Podoscirtina.

Etymology. The new genus is named after the Republic of Malawi, where its type species was discovered, combined with the second part of the generic name *Brevitrella*. Gender is feminine.

Malawitrella sotshivkoi sp. nov.
(Figs 1–3, 10–17)

Holotype. Male; **Malawi**, northern part, ca. 100 km N of Mzuzu, Uzumara Mt., 10°52′18″S, 34°07′45″E, ca. 1900 m, 20–22.XII.2010, A. Sotshivko (ZIN).

Description. Male (holotype). Coloration of body: upper half of epicranium dark brown with greyish eyes as well as light brown ocelli, apex of rostrum and a pair of narrow longitudinal stripes (these stripes running from rostral apex along lateral edges of rostrum and dorsomedial margins of eyes to posterodorsal parts of eyes); lower half of epicranium light brown with a pair of slightly darker spots near each other under rostral apex, a pair of brown vertical bands under eyes and brown horizontal stripe running along clypeal suture; antenna light brown with numerous small and barely darker spots on flagellum; mouthparts light greyish brown with yellowish labrum (Figs 1 and 2); pronotum with greyish brown disc and dark brown lateral lobes (Figs 2 and 10); tegmina light grey with brown area at base of each dorsal field and brown costal (lower) half of each lateral field (Fig. 3); legs light brown with several darkened dots and dark brown apical area on each femur, with three greyish brown transverse bands on tibiae (but hind tibia with distal bands much longer, partly fused with each other dorsally and widely interrupted ventrally), more or less spotted tarsi and all spines and spurs light brown (Figs 2 and 10); meso- and metanotum as well as two first abdominal tergites light brown (Figs 2 and 11) with dark brown lateral parts (except for mesonotum); remaining abdominal tergites brown with darker lateral parts; anal plate light brown anteriorly and greyish brown posteriorly (Fig. 12); cerci greysh brown with barely lighter bases; sternites brown to dark brown; genital plate dark brown (Figs 12 and 13).

Height of eye greater than its length and width; ocelli small, round, located in corners of slightly transverse triangle. Metanotal gland consisting of flat triangular convexity with lateral edges straight and almost keel-like, posterior edge barely separated from posteromedian part of metanotum, and anterior corner with rather short dense hairs (Fig. 11). Tegmina reaching fourth abdominal tergite, with distal part widely rounded (almost truncate), and venation as in Fig. 3. Hind wings absent. Hind tibia with four pairs of moderately short dorsal spines, numerous denticles located on outer dorsal edge from subbasal tibial part to distal spine and on inner dorsal edge from this subbasal part to subdistal spine, and six apical spurs (inner middle spur longest, reaching middle of basitarsus; inner dorsal spur barely shorter; outer middle spur shorter than both previous spurs;

two outer spurs shortest, almost equal to inner ventral spur in length; in one leg, outer dorsal spur shorter than all others); hind basitarsus with 3–5 outer and 2 inner dorsal denticles as well as with a pair of apical spurs (inner spur almost 1.5 times as long as outer one). Male genitalia and spermatophore: median apical epiphallic lobule somewhat longer than lateral ones, divided into a pair of small membranous hooks (Figs 14–16); lateral apical epiphallic lobules rounded and undivided (Figs 14 and 15); apical part of rachis almost acute and hooked (arcuately curved upwards; Fig. 14); spermatophore with almost pear-shaped ampulla and long strongly S-shaped tube (Fig. 17).

Female unknown.

Length (in mm). Body 16; pronotum 2.6; tegmina 4.5; hind femora 9.2.

Etymology. The new species is named in honour of its collector, A. Sotshivko.

Genus ***Kilimagryllus*** Sjöstedt, 1909

***Kilimagryllus bilobulatus* sp. nov.**
(Figs 4–6, 18–21)

Holotype. Male; **Malawi**, southern part, ca. 70 km NW of Mangochi Town, Lake Malawi National Park, Monkey Bay, 14°03′S, 34°52′E, 540 m, 3.I.2009, A. Sotshivko (ZIN).

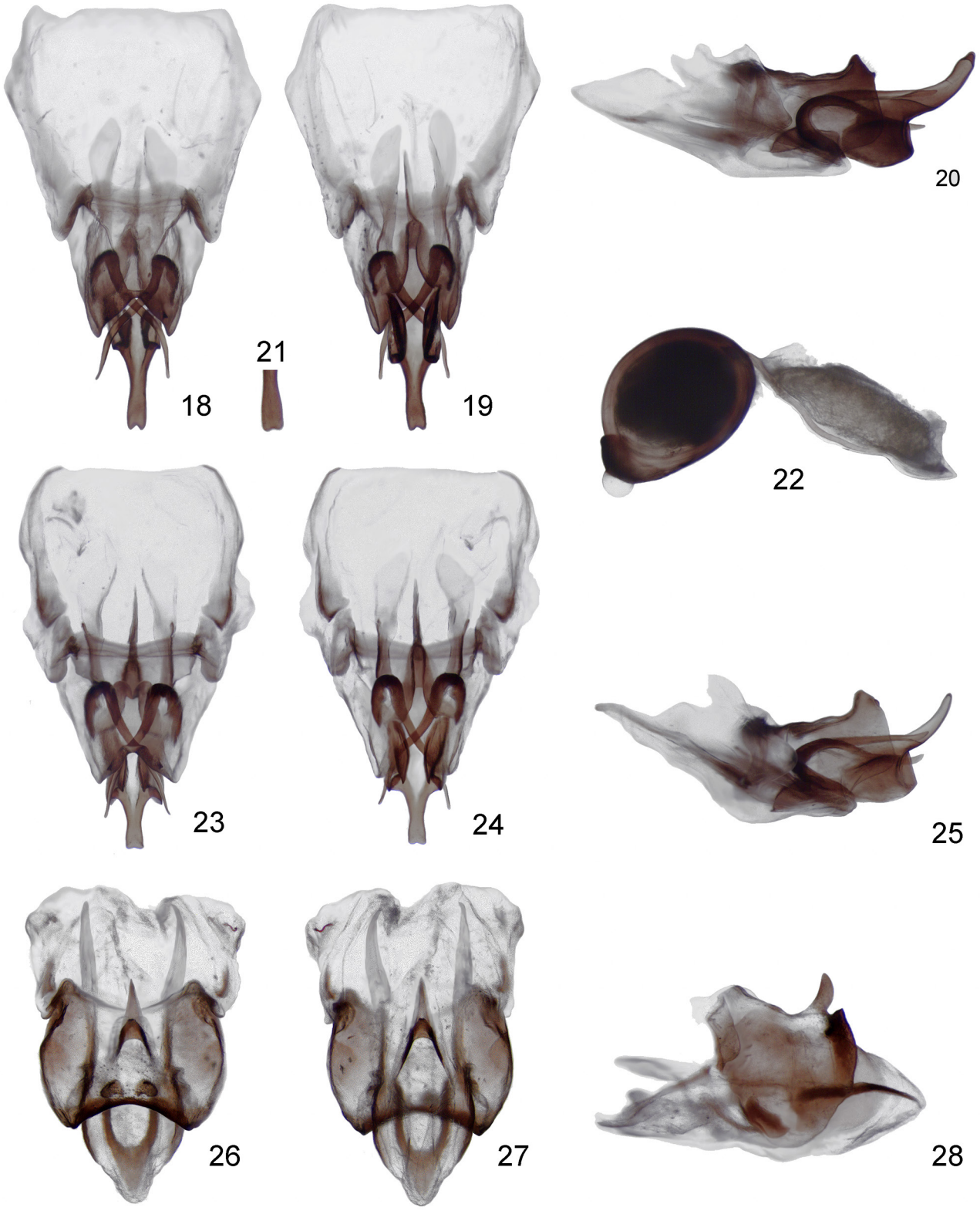
Paratypes. **Malawi**: 1 male, same data as for holotype (ZIN); 1 male, central part, ca. 10 km E of Ntchisi Town, Ntchisi Forest Reserve, 13°22′S, 34°00′E, 480 m, 15.I.2009, A. Sotshivko (ZIN); 1 male, northern part, Chitipa District, Mughesse Forest, 60 km NW of Chitipa, 9°38′S, 33°32′22″E, 1819 m, 28–29. XII.2010, V. Anikin (ZIN).

Description. Male (holotype). General appearance very similar to that of *K. steini* (Saussure, 1878), but body coloration slightly different (Figs 4–6): head yellowish with very large dark brown area on dorsum between eyes, brown V-shaped (reversed) mark on rostral dorsum before median ocellus, rather small darkish area behind each eye, most part of eye nearly dark brown, and small sparse darkish spots on antennal flagellum; pronotum also yellowish with a pair of dark brown lateral longitudinal bands on disc (these bands having small lightish marks) and sparse dark dots between these bands and on lateral lobes; tegmina light yellowish grey with most of veins darkish, humeral stripes dark brown and other parts of lateral field almost yellowish; legs yellowish with dark and darkish dots on fore and middle femora and tibiae, darkish marks on hind femur (numerous oblique lines and less numerous dots), greyish brown ventral stripe on hind tibia (this stripe widened in distal part) and darkish dots at bases of its dorsal spines; abdomen generally light greyish brown, but two apical sternites greyish brown and each of more anterior sternites with a darkish area (thoracic sternites yellowish); anal plate with light brown central area, dark brown ring around this area and brown apical part; genital plate with more or less light lateral parts, brown distal third and dark brown remainder; cerci light yellowish grey.

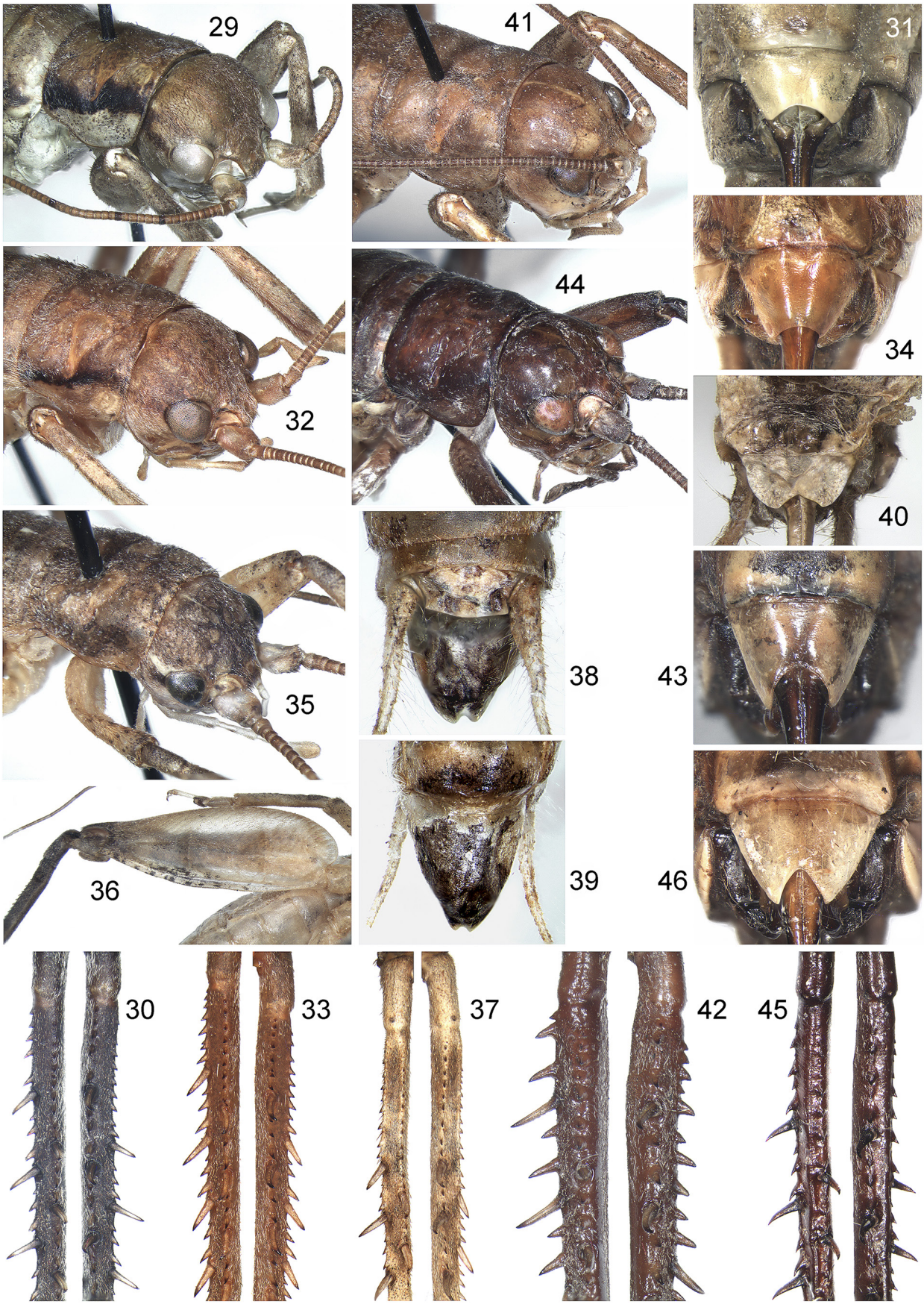
Shape of body somewhat similar to that of *Malawitrella sotshivkoi* **sp. nov.**, but scape almost 1.3 times as wide as rostrum between antennal cavities, apical segment of maxillary palpus barely longer than height of eye, ventral margins of lateral pronotal lobes scarcely oblique, tegmina reaching seventh abdominal tergite, tegminal lateral field having 11 oblique branches of *Sc*, very narrow areas between *Sc* and *Cu* (crossveins in this field virtually absent), and venation of tegminal dorsal field as in Fig. 5. Structure of legs (including presence of only outer oval tympana) as well as anal and genital plates (Figs 5 and 6) almost same as in *K. steini* (see Gorochov, 2004).

Male genitalia similar to those of *K. steini* but distinguished by following details: epiphallus with anterolateral lobes narrower, more curved backwards and not projecting above other epiphallic parts; epiphallic posterior edge almost vertical in profile and with a pair of distinct subapical denticles located somewhat lower than epiphallic dorsal apices (these apices separated from each other by a rather small but distinct notch); rachis somewhat narrower in proximal (widened) part and longer in distal (thin) part (latter part clearly longer than widened proximal part, with apical portion wider and stronger curved upwards as well as distinctly bilobed at apex); formula with a pair of longer lateral areas (located behind undivided anterior area) and with longer anterior apodeme; endoparameral apodemes slightly shorter (Figs 18–20). Spermatophore approximately as in Fig. 22.

Variations. Paratypes with venation slightly darker, hind femur with brown longitudinal median line on outer surface, or rachial apex in genitalia less distinctly bilobed (Fig. 21).



Figs 18–28. *Kilimagryllus* and *Parametrypa*, male: **18–21**, *K. bilobulatus* **sp. nov.** (18–20, holotype; 21, paratype); **22–25**, *K. bilobulatus limpopo* **subsp. nov.**; **26–28**, *P. pubescens* **sp. nov.** Genitalia from above (18, 23, 26), from below (19, 24, 27) and from side (20, 25, 28); apical part of epiphallus from above (21); spermatophore from side (22).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Female unknown.

Length (in mm). Body 13–15; pronotum 2.4–2.6; tegmina 7–7.5; hind femora 8.5–9.

Comparison. The new species differs from *K. steini* (from Guinea) in the male genital characters listed above (in *K. steini*, anterolateral lobes of the epiphallus are projecting above the other epiphallic parts, epiphallic posterior edge is clearly oblique in profile, dorsal epiphallic apex is not divided into two apices by a posteromedian notch, thin distal part of rachis is almost equal to its widened proximal part in length and less curved upwards as well as not bilobate at apex). From *K. gyldenstolpei* Chopard, 1926 (from Zaire), the new species is distinguished by the same character of the epiphallic posterior edge as well as the proximal (widened) part of the rachis shorter than its distal (thin) part (this ratio is opposite in *K. gyldenstolpei*), and from *K. ochraceus* Sjöstedt, 1909 (from Tanzania), by the posterodorsal epiphallic processes distinctly shorter, as well as the rachis and ectoparameres much longer.

Etymology. The species name is adjective referring to the shape of its rachial apex, which has two lobules.

***Kilimagryllus bilobulatus limpopo* subsp. nov.**
(Figs 7–9, 22–25)

Holotype. Male; **South Africa**, *Limpopo Prov.*, XII.2011, V. Anikin (ZIN).

Description. Male (holotype). Size, coloration and structure of body very similar to those of nominotypical subspecies but with following differences (Figs 7–9): eyes and large dorsal area of head clearly lighter, light greyish brown with a pair of brown longitudinal stripes between lateral ocelli and posteriorly, as well as with numerous dense yellowish dots in median part of head dorsum; pronotum with a pair of light brown longitudinal bands on yellowish disc; tegminal veins light brown to almost transparent on dorsal field but yellowish on lateral field; humeral stripes on tegmina light brown; darkened lines on hind femur and dots at bases of spines of hind tibia less distinct and less numerous, respectively; abdominal tergites yellowish with very numerous darkish dots; abdominal sternites with darkened parts lighter (light greyish brown); genital plate light brown to yellowish, without darkened parts; light flat area on anal plate slightly wider, barely transverse (virtually round in nominotypical subspecies).

Tegminal mirror with rounded (not nearly angular) distomedial corner. Genitalia with anterior part of epiphallus wider and possessing dorsal semisclerotised area angularly projected in lateral parts (not gradually narrowing backwards), with proximal part of rachis wider, with its distal (thin) part shorter (almost equal to proximal rachial part in length) and having apical portion clearly narrower in profile and slightly bilobed at apex (Figs 23–25). Spermatophore (Fig. 22) virtually indistinguishable from that of nominotypical subspecies.

Female unknown.

Length (in mm). Body 14.8; pronotum 2.7; tegmina 7.5; hind femora 9.5.

Comparison. All differences of *K. bilobulatus limpopo* **subsp. nov.** from the nominotypical subspecies of *K. bilobulatus* **sp. nov.** are given in the description. From all other congeners, the new subspecies differs in the same characters as the nominotypical subspecies, but the difference in the lengths of the distal and proximal parts of the rachis between *K. bilobulatus limpopo* **subsp. nov.** and *K. gyldenstolpei* is less significant.

Etymology. The new subspecies is named after the Limpopo Province, where it was collected. The subspecies name is a noun.

Genus ***Parametrypa*** Brunner-Wattenwyl, 1873

Parametrypus Saussure, 1878 (unjustified emendation)

Type species: *Nessa fortipes* Walker, 1869; "Natal" in South Africa.

Remarks. The type species of the genus *Nessa* Walker, 1869 as well as *Parametrypa aculeata*

Figs 29–46. *Parametrypa*, female (29–34, 37, 40–46) and male (35, 36, 38, 39): **29–31**, *P. fortipes fortipes*; **32–34**, *P. fortipes spiculata*, **stat. nov.**; **35–40**, *P. pubescens* **sp. nov.**; **41–43**, *P. longispinosa* **sp. nov.**; **44–46**, *P. dentata* **sp. nov.** Head with pronotum, dorsolateral and slightly anterior view (29, 32, 35, 41, 44); proximal half of hind tibia (30, 33, 37, 42, 45), dorsal and slightly inner view (left) as well as dorsal and slightly outer view (right); genital plate from below (31, 34, 40, 43, 46); hind femur, outer view (36); abdominal apex from above (38) and from below (39).

Saussure, 1878 are from South America. They obviously belong to another genus or other genera. At the same time, *P. spiculata* Saussure, 1878, also described from "Natal", belongs to *Parametrypa* and even was synonymised with *P. fortipes* by Kirby (1906), but here it is restored from this synonymy as a subspecies of the latter species. Exclusion of *P. viettei* Chopard, 1958 from the genus *Parametrypa* was grounded above (see the above paragraph about the generic composition of Podoscirtina). Here I describe three new species in this genus.

Diagnosis. Main features of *Parametrypa* are as follows: body from moderately small to moderately large, apterous, without tympana; head (Figs 29, 32, 35, 41, 44) more or less high for this subfamily, with eyes roundly triangular and not large, ocelli from small to indistinct, and palpi similar to previous genera of Podoscirtina considered here; pronotum (Figs 29, 32, 35, 41, 44) almost as wide as long or slightly transverse, with moderately high lateral lobes having horizontal (barely rounded) ventral margins and rounded longitudinal bends between these lobes and disc, and with almost straight or slightly concave anterior and posterior margins of disc; legs moderately long but rather thick, with hind femora more or less adapted to jumping (Fig. 36), 2–3 ventral apical spurs on fore and middle tibiae, as well as large or moderately large dorsal spines and denticles on hind tibia (apical spurs of this tibia usual for Podoscirtina but not long; longest one reaching nearly the middle of hind basitarsus and not longer than its apical spurs); abdominal apex with short anal plate having distal part widely truncate in male (Fig. 38) and rounded in female; genital plate in male barely notched at apex and almost 2.5 times as long as anal plate (Fig. 39), in female distinctly notched and slightly longer or slightly shorter than anal plate (Figs 31, 34, 40, 43, 46); male genitalia with short simple (approximately triangular or quadratic) epiphallus possessing a pair of dorsal lobules at apex (near each other) and shallow gently sloping posterior notch, without ectoparameres (they possibly lost), with wide rachis distinctly protruding beyond epiphallus and narrowing to apex, with long endoparameral apodemes connected with rachis, with simple and not large formula having short anterior apodeme, and with thin or partly reduced rami (Figs 26–28); ovipositor rather long, with narrowly conical apical part possessing small but strong drilling teeth on ventral surfaces of upper valves as well as very small teeth on their lateral surfaces.

Included species. Four species (one of them with two subspecies) considered below.

Parametrypa fortipes fortipes (Walker, 1869)
(Figs 29–31)

Material examined. **South Africa**, *KwaZulu–Natal Prov.*: 2 females, 50–60 km SW of Durban City, Vernon Crookes Nature Reserve, 200–400 m, remnants of forest along small river, on bush leaves at night, 23–26.I.2008, A. Gorochov & A. Sotshivko (ZIN).

Remarks. *Parametrypa fortipes* was described from a wide area without precise locality (see remarks to *Parametrypa* above). Some peculiarities of the body coloration (see the key below) allowed me to identify these two females as *P. fortipes fortipes*.

Parametrypa fortipes spiculata Saussure, 1878, **stat. nov.**
(Figs 32–34)

Material examined. **South Africa**: 1 female, "Natal, Umtentweni", 14–17.X.1969, A. Capener (SANC).

Remarks. This subspecies, described as a new species from a wide area without precise locality and later synonymised with *P. fortipes* (see remarks to *Parametrypa* above), differs from it insignificantly and probably insufficiently for species status (see the key below). These differences apparently correspond to a subspecies rank.

Parametrypa pubescens **sp. nov.**
(Figs 26–28, 35–40)

Holotype. Male; **South Africa**, *KwaZulu–Natal Prov.*, 50–60 km SW of Durban City, Vernon Crookes Nature Reserve, 200–400 m, remnants of forest along small river, on bush leaf at night, 23–26.I.2008, A. Gorochov & A. Sotshivko (ZIN).

Paratype. Female; same data as for holotype (ZIN).

The holotype and paratype were collected as nymphs; the imagines were reared in March 2008.

Description. Male (holotype). Body moderately small, distinctly pubescent. Coloration almost uniformly light yellowish grey but with poorly distinct barely darker greyish pattern on head

dorsum and on tergites, two pairs of small greyish brown stripes behind eyes and under them, darkish spots on scapes and sparse dots on legs, and without any distinct darkened stripes on tergites (Fig. 35); hind leg with partly darkened tibia, tarsus and apical part of femur, as well as with rather large darkish dots on femur located almost only along its ventral edge (Fig. 36).

Lateral ocelli small but larger than median ocellus; hind femur without spines; hind tibia dorsally with 4–5 outer and 5 inner articulated spines (in addition to apical spurs) similar to those of *P. fortipes* in size, and with numerous unarticulated denticles clearly smaller than in this species (Fig. 37); hind basitarsus with two outer and one inner dorsal denticles (in addition to apical spurs); anal and genital plates as in Figs 38 and 39. Genitalia with following features: epiphallus subquadratic, clearly narrower than in *P. fortipes*, possessing wider posterior notch; rachis more strongly protruding beyond epiphallus than in *P. fortipes*; rami partly reduced (Figs 26–28).

Female. General appearance as in male, but hind tibia with five pairs of articulated spines, hind basitarsus with two pairs of dorsal denticles, genital plate with rather short and nearly angular apical notch (Fig. 40); ovipositor approximately 1.1 times as long as hind femur.

Length (in mm). Body: male 18, female 16; pronotum: male 3.2, female 3.5; hind femora: male 10.8, female 11.6 mm; ovipositor 12.8.

Comparison. Differences of *Parametrypa pubescens* **sp. nov.** from its congeners are given in the key below. In addition, the new species probably also differs from the type species of this genus in the male genital characters mentioned in the description above [according to Chopard (1955), the male genitalia of *P. fortipes* have the epiphallus transversally triangular and with a moderately narrow posterior notch, the rachis distinctly but not strongly protruding beyond epiphallus, and the rami well-developed and rather long].

Etymology. The species name is the Latin adjective *pubescens* (pubescent or hairy).

Parametrypa longispinosa sp. nov.
(Figs 41–43)

Holotype. Female; **South Africa**, "Sodwana", 27°31′S, 32°40′E, 21.XI.1988, D. Gouws (SANC).

Description. Female (holotype). Body moderately large, more or less shining. Coloration uniformly light brown but with yellowish ventral part of head and thorax, barely darkened and interrupted stripes along lateral parts of abdomen and along median line of abdominal dorsum, slightly darkened hind tibia, apical part of hind femur and a few spots on cercus, more darkened (brown) ovipositor and several areas on abdominal apex as well as rather small transverse spot on almost each abdominal sternite (Figs 41–43).

Scape almost 1.5 times as wide as rostrum between antennal cavities; lateral ocelli smaller than in *P. pubescens* **sp. nov.**, poorly distinct; median ocellus indistinct; hind femur ventrally without spines or denticles; hind tibia somewhat thickened in middle of its proximal half, dorsally with five pairs of long articulated spines and numerous unarticulated denticles (many of these spines and denticles clearly longer than in all other congeners; denticles spine-like and almost indistinguishable from spines in length; Fig. 42); hind basitarsus without or with one outer denticle, and with one inner dorsal denticles (in addition to apical spurs); genital plate with apical notch roundly angular in median part and clearly longer (deeper) than in *P. pubescens* **sp. nov.** (Fig. 43); hind femur approximately 1.2 times as long as ovipositor.

Male unknown.

Length (in mm). Body 31; pronotum 5.8; hind femora 16; ovipositor 13.5.

Comparison. Parametrypa longispinosa **sp. nov.** is distinguished from its congeners by the characters listed in the key below.

Etymology. The new species name is an adjective composed of the Latin words *longus* (long) and *spinosus* (spiny or supplied with spines).

Parametrypa dentata sp. nov.
(Figs 44–46)

Holotype. Female; **South Africa**, *Northern Prov.*, "Tzaneen, Stylkop", 23°56′S, 30°01′E, 14.II.2003, D. Prentice (SANC).

Description. Female (holotype). Body moderately large, more or less shining. Coloration (Figs 44–46) darker than in *P. longispinosa* **sp. nov.**: uniformly brown with light brown ventral parts, slightly darker and yellowish (almost whitish) lines along posterior margin of almost

each abdominal tergite, more or less dark brown tibiae and apical part of hind femur as well as several areas on abdominal apex (including longitudinal stripe on each lateral edge of ovipositor, but cerci almost uniformly light greyish brown).

Scape approximately 1.3 times as wide as rostrum between antennal cavities; lateral and median ocelli as in *P. longispinosa* **sp. nov.**; hind femur ventrally with 1–2 strong unarticulated denticles (teeth) in distal part; hind tibia not thickened in proximal half, dorsally with five pairs of articulated spines (in addition to apical spurs) and numerous unarticulated denticles (these spines and denticles clearly shorter than in *P. longispinosa* **sp. nov.**; spines almost as in *P. fortipes*, but denticles slightly larger than in latter species; Fig. 45); hind basitarsus with two outer and one inner dorsal denticles (in addition to apical spurs); genital plate similar to that of *P. longispinosa* **sp. nov.** but with apical notch slightly narrower, shallower and more angular in median part (Fig. 46); hind femur approximately 1.2 times as long as ovipositor.

Male unknown.

Length (in mm). Body 27; pronotum 4.9; hind femora 15; ovipositor 12.5.

Comparison. Differences of *Parametrypa dentata* **sp. nov.** from its congeners are mentioned in the key below.

Etymology. The species name is the Latin adjective *dentatus* (possessing teeth).

Key to species and subspecies of *Parametrypa* for females

1. Body medium-sized (length: pronotum 3.8–4.2 mm, hind femora 12.5–14 mm), slightly pubescent. Coloration light brown to yellowish with a pair of dark or darkish longitudinal stripes running along lateral margins of pronotal disc on upper halves of lateral pronotal lobes (Figs 29 and 32) and on lateral parts of some or all pterothoracic and abdominal tergites. Lateral ocelli tiny; median ocellus indistinct. Hind femur without spines; hind tibia dorsally with five pairs of medium-sized articulated spines (in addition to apical spurs) and numerous unarticulated denticles being much shorter than these spines (Figs 30 and 33); hind basitarsus with 1–2 outer and 1 inner dorsal denticles (in addition to apical spurs); hind femur 1.1–1.2 times as long as ovipositor. 2

– Body moderately small (length: pronotum 3.2–3.5 mm, hind femora 10.8–11.6 mm) or moderately large (length: pronotum 4.9–5.8 mm, hind femora 15–16 mm), distinctly pubescent or slightly shining. Coloration more uniform, without distinct darker stripes (Figs 35, 41, 44). Lateral ocelli small or tiny; median ocellus tiny or indistinct. Hind femur with or without spines; hind tibia dorsally with 4–5 outer and 5 inner articulated spines (in addition to apical spurs) as well as numerous unarticulated denticles (these spines and denticles more diverse in length; Figs 37, 42 and 45); hind basitarsus with 0–2 outer and 1–2 inner dorsal denticles (in addition to apical spurs); hind femur approximately 1.2 times as long as ovipositor or barely shorter than ovipositor 3

2. Body light greyish brown dorsally, yellowish ventrally and laterally, with brown narrow longitudinal stripe behind each eye, dark brown wide longitudinal stripe on each lateral surface of thorax and abdomen (Fig. 29), and dark brown to greyish brown median (dorsal) stripe on abdomen (sometimes this stripe divided into a pair of parallel lines located very close to each other). Antenna light brown with sparse tiny darkish spots on flagellum (Fig. 29). Hind tibia (Fig. 30) and two areas on hind femur (in apical and ventral parts) also more or less darkened. Genital plate with distinct (but not deep), rather wide and rounded posterior notch (Fig. 31) . . . . ***P. fortipes fortipes***

– Body very light brown dorsally, yellowish ventrally and laterally, without darkened marks on head, with brown or brownish narrow longitudinal stripe on each lateral surface of thorax and abdomen or on lateral surface of thorax and anterior abdominal tergites (Fig. 32). Antenna uniformly light brown (Fig. 32). Hind tibia (Fig. 33) and apical part of hind femur light brown; hind femur with a darkened spot on ventral side. Genital plate with posterior notch similar to that of nominotypical subspecies but smaller (Fig. 34) . . . . ***P. fortipes spiculata*, stat. nov.**

3. Body moderately small (length: pronotum 3.2–3.5 mm, hind femora 10.8–11.6 mm), distinctly pubescent. Coloration light yellowish grey with following darker elements: poorly distinct barely darker greyish pattern on head dorsum and tergites, two pairs of small greyish brown stripes behind eyes and under them, darkish spots on scapes and sparse dots on legs (hind leg also with partly darkened tibia, tarsus, apical and ventral parts of femur, and with rather large darkish dots on femur located almost only along its ventral edge; Figs 35 and 36). Lateral ocelli small; median ocellus tiny. Hind femur without spines; hind tibia dorsally with 4–5 outer and 5 inner articulated spines similar to those of

P. fortipes in size, and with numerous unarticulated denticles being clearly smaller than in *P. fortipes* (Fig. 37). Genital plate with rather short (not deep) but nearly angular apical notch (Fig. 40). Ovipositor approximately 1.1 times as long as hind femur ..... ***P. pubescens* sp. nov.**

– Body moderately large (length: pronotum 4.9–5.8 mm; hind femora 15–16 mm), more or less shining. Coloration light brown to brown, almost without distinct pattern on head and thoracic tergites (Figs 41 and 44), but tibiae or only hind tibia somewhat darker, and apex of hind femur and abdomen with darkened areas. Lateral ocelli tiny, poorly distinct; median ocellus indistinct. Hind femur with or without spines; hind tibia dorsally with five pairs of articulated spines rather diverse in size and with numerous unarticulated denticles being distinctly larger than in *P. pubescens* **sp. nov.** and even slightly larger than in *P. fortipes* (Figs 42 and 45). Genital plate with apical notch clearly longer (deeper) than in *P. pubescens* **sp. nov.** (Figs 43 and 46). Hind femur approximately 1.2 times as long as ovipositor..... 4

4. Pronotal length about 5.8 mm; length of hind femora about 16 mm. Coloration uniformly light brown but with yellowish ventral part of head and thorax, barely darkened and interrupted stripes along lateral parts of abdomen as well as along median line of abdominal dorsum, slightly darkened hind tibia and apical part of hind femur, and more darkened (brown) small transverse spot on almost each abdominal sternite (Figs 41–43). Hind femur ventrally without spines or denticles; hind tibia somewhat thickened in middle of its proximal half and dorsally with long articulated spines and unarticulated denticles (many of these spines and denticles clearly longer than in all other congeners; denticles spine-like and almost indistinguishable from spines in length; Fig. 42). Genital plate with apical notch rather wide and deep as well as roundly angular in median part (Fig. 43) ..... ***P. longispinosa* sp. nov.**

– Pronotal length about 4.9 mm; length of hind femora about 15 mm. Coloration darker, almost uniformly brown but with light brown ventral parts and nearly dark brown tibiae and apical part of hind femur (Figs 44–46). Hind femur ventrally with 1–2 strong unarticulated denticles (teeth) in distal part; hind tibia not thickened in proximal half and dorsally with articulated spines and unarticulated denticles being clearly shorter than in *P. longispinosa* **sp. nov.** (spines almost as in *P. fortipes*, but denticles slightly larger than in latter species; Fig. 45); genital plate distinguished from that of *P. longispinosa* **sp. nov.** by apical notch slightly narrower and shallower as well as more angular in median part (Fig. 46) ..... ***P. dentata* sp. nov.**

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