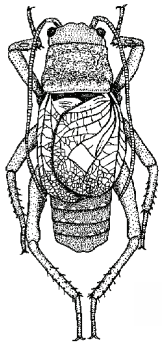

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TAXONOMY OF THE KATYDIDS (ORTHOPTERA: TETTIGONIIDAE) FROM EAST ASIA AND ADJACENT ISLANDS. COMMUNICATION 15

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Summary. The new material on the following genera of the subfamily Meconematinae is considered: *Subtilodecma* **gen. n.**; *Xizicus* Gor.; *Xiphidiopsis* Redt.; *Rhinoteratura* Gor., **stat. n.**; *Borneratura* Gor.; *Odonturisca* Gor. The genus *Xiphidiopsis* is here understood to contain four subgenera at least: nominotypical one; *Euxiphidiopsis* Gor., **stat. resurr.**; *Paraxiphidiopsis* Gor., **subgen. resurr.**; *Dinoxiphidiopsis* Gor. The replacement generic name *Caprixizicus* **nom. n.** is proposed for *Paraxizicus* Gor. et Kang (a junior homonym of *Paraxizicus* Liu) which is also restored from synonyms of *Euxiphidiopsis* and *Paraxiphidiopsis*. The generic name *Leptoteratura* Yam., **syn. n.** and the name of its type species (*Meconema? albicorne* Motsch., **syn. n.**) are synonymized on the base of the type material with *Meloimorpha* Walk. (Gryllidae) and *M. japonica japonica* (Haan), respectively. Fifteen new species and subspecies are described: *S. unilobata* **sp. n.** and *S. bilobata* **sp. n.** (Borneo); *Xizicus* (*Eoxizicus*) *robustocercus* **sp. n.** (Vietnam); *X.* (*E.*) *bothrocercus* **sp. n.** (China); *X.* (*E.*) *reductus* **sp. n.** (Vietnam); *X.* (*Axizicus*?) *incisus laticercus* **subsp. n.** (China); *X.* (*Paraxizicus*) *anisyutkini* **sp. n.** and *Xiphidiopsis* (*Xiphidiopsis*) *beybienkoi adjacens* **subsp. n.** (Vietnam); *X.* (*X.*) *b. namlik* **subsp. n.** and *X.? laosi* **sp. n.** (Laos); *X.*? *lampungi* **sp. n.** and *Rh. ketambe* **sp. n.** (Sumatra); *Rh. pseudocapreola* **sp. n.** (Java); *B. kinabalu* **sp. n.** and *O. dentata* **sp. n.** (Borneo).

A previously unknown male of *Rh. uniformis* (Gor.), **comb. n.** (Borneo) is also described. Lectotype for *Rh. capreola* (Redt.), **comb. n.** is designated. The generic and subgeneric position of several species, erroneously attributed to the "genus" *Euxiphidiopsis* and some other genera and subgenera, are clarified. Some new data on species distribution are provided.

Key words: Orthoptera, Tettigoniidae, Meconematinae, Meconematini, new taxa, South-East Asia.

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Резюме. Рассмотрен новый материал по следующим родам подсемейства Meconematinae: *Subtilodecma* **gen. n.**; *Xizicus* Gor.; *Xiphidiopsis* Redt.; *Rhinoteratura* Gor., **stat. n.**; *Borneratura* Gor.; *Odonturisca* Gor. Род *Xiphidiopsis* понимается как содержащий по крайней мере четыре подрода: номинативный; *Euxiphidiopsis* Gor., **stat. resurr.**; *Paraxiphidiopsis* Gor., **subgen. resurr.**; *Dinoxiphidiopsis* Gor. Замещающее родовое название *Caprixizicus* **nom. n.** предложено для *Paraxizicus* Gor. et Kang (младший гомоним *Paraxizicus* Liu), который также восстановлен из синонимов *Euxiphidiopsis* и *Paraxiphidiopsis*. Родовое название *Leptoteratura* Yam., **syn. n.** и название его типового вида (*Meconema? albicorne* Motsch., **syn. n.**) синонимизированы на основании типового материала с *Meloimorpha* Walk. (Gryllidae) и *M. japonica japonica* (Haan) соответственно. Описаны 15 новых видов и подвидов: *S. unilobata* **sp. n.** и *S. bilobata* **sp. n.** (Борнео); *Xizicus* (*Eoxizicus*) *robustocercus* **sp. n.** (Вьетнам); *X.* (*E.*) *bothrocercus* **sp. n.** (Китай); *X.* (*E.*) *reductus* **sp. n.** (Вьетнам); *X.* (*Axizicus*?) *incisus laticercus* **subsp. n.** (Китай); *X.* (*Paraxizicus*) *anisyutkini* **sp. n.** и *Xiphidiopsis* (*Xiphidiopsis*) *beybienkoi adjacens* **subsp. n.** (Вьетнам); *X.* (*X.*) *b. namlik* **subsp. n.** and *X.*? *laosi* **sp. n.** (Лаос); *X.*? *lampungi* **sp. n.** и *Rh. ketambe* **sp. n.** (Суматра); *Rh. pseudocapreola* **sp. n.** (Ява); *B. kinabalu* **sp. n.** и *O. dentata* **sp. n.** (Борнео). Описан также ранее неизвестный самец *Rh. uniformis* (Gor.), **comb. n.** (Борнео). Для *Rh. capreola* (Redt.), **comb. n.** обозначен лектотип. Уточнено систематическое положение нескольких видов, ошибочно отнесенных к "роду" *Euxiphidiopsis* и некоторым другим родам и подродам. Приведены новые данные по распространению ряда видов.

INTRODUCTION

This paper is the fifteenth communication in a series of my papers on Indo-Malayan and Papuan Tettigoniidae. It is devoted to a few genera from the subtribe Meconematina of the tribe Meconematini (Meconematinae). The study is based on the material (including types of new taxa) deposited at the Zoological Institute of the Russian Academy of Sciences, Saint Petersburg (ZIN). This material is dry and pinned; it was collected mainly by the Russian zoologists in different countries of South-East Asia and nearest islands. The internet catalogue Orthoptera Species File is here cited as OSF (Cigliano *et al*., 2022).

NEW DATA ON TAXONOMY AND DISTRIBUTION

Subfamily Meconematinae
Tribe Meconematini
Subtribe Meconematina

Genus *Subtilodecma* Gorochov, gen. n.

https://zoobank.org/NomenclaturalActs/468FB159-8EC4-45CB-B040-37625214361E

Type species: *Subtilodecma unilobata* sp. n.

DIAGNOSIS. Body small and slender. Head short, with moderately flattened and almost not oblique anterior surface; rostrum with short and angular or finger-like upper tubercle reaching only basal part of scape and having more or less distinct dorsomedian groove; eyes rather large, almost round; ocelli indistinct; scape approximately twice as wide as space between antennal cavities; maxillary palpus moderately long and thin, with apical segment slightly shorter than longest subapical one (Figs 1, 2, 8, 9). Pronotum much longer than head, low, with anterior edge of disc barely convex, its posterior edge rounded, all ventral edges somewhat arcuate, lateral lobes practically vertical, and hind lobe long in male (reaching middle of tegminal stridulatory apparatus) and slightly shorter in female as well as practically not separated from rest of pronotum in both sexes (Figs 1, 2, 8, 9). Legs rather long and thin; all femora without spines and spinules on both apical lobules; fore leg with very short coxal spine or almost without it, and with a pair of large and oval tympana which almost equal to each other in size and located on a pair of rather long and slightly concave tibial areas; hind leg with femur somewhat thickened in proximal half, i.e. clearly adapted to jumps. Tegmina shortened, reaching middle part of abdomen, with widely rounded apices, and with well developed stridulatory apparatus in male (Figs 1, 2, 8, 9); hind wings not exposed behind tegmina. Last tergite rather simple in both sexes, with almost truncate (slightly sinuate) posterior edge; male cercus not large but significantly elongate (distinctly longer than female cercus which typical of this tribe in shape), with almost lamellar and lobule-like or shortly bilobate distal part somewhat curved medially; epiproct small, rounded or roundly angular distally and almost equal to rounded paraprocts in length; genital plate rather long, strongly narrowed in distal half, with even narrower apical part and thin styles around it (Figs 3–5, 10–13); genitalia membranous.

INCLUDED SPECIES. Type species; *S. bilobata* sp. n.

COMPARISON. The new genus is somewhat similar to the genera *Cecidophagula* Uvarov, 1939 and *Thaumaspis* Bolivar, 1900 in the general appearance (including the tegminal structure) but distinguished by the following combination of features: the pronotum is with a distinctly longer anterior lobe than in *Cecidophagula*, and with the lateral lobes situated in clearly vertical position (in *Thaumaspis*, these lobes are in somewhat oblique position, i.e. they are directed downwards/laterally but not only downwards); the male last tergite lacks distinct specializations; the male cerci are rather simple (without distinct processes or lobes, except for small apical lobules); the male genital plate is characteristically narrowed in the distal half having a very narrow apical part between the styles. From the other similar genera, *Subtilodecma* gen. n. differs in the same combination of characters as well as a moderately long apical segment of the maxillary palpus or the absence of spines on the apical femoral lobules.

ETYMOLOGY. This generic name originates from the Latin word “subtilis” (subtle, thin) and the generic name *Decma*.

Subtilodecma unilobata Gorochov, sp. n.

https://zoobank.org/NomenclaturalActs/08D22B40-253C-4BC4-9868-2CD39F6CEFD2

Figs 1–7

MATERIAL. Holotype – ♂, **Malaysia**: Sabah State, Manukan I. very near Borneo I. (~5 km NNW of Kota-Kinabalu City), ~sea level, secondary forest, on leaf of small tree at night, 24–25.IV.2013, A. Gorochov, M. Berezin, V. Gorochova, E. Tkatsheva (ZIN). Paratypes: 1 ♂, 3 ♀, same data as for holotype (ZIN); 1 ♂, 3 ♀, same state, Borneo I., Southern part of Kinabalu National Park, 1500–2000 m, primary forest, on leaves of bushes at night, 26.IV–1.V.2013, A. Gorochov, M. Berezin, V. Gorochova, E. Tkatsheva (ZIN).

DESCRIPTION. *Male* (holotype). Body uniformly light greenish with poorly distinct and sparse darkish dots on antennal flagellum (Figs 1, 2). Rostrum with upper tubercle almost finger-like (Fig. 2); pronotum with hind lobe practically equal in length to more anterior pronotal part (Figs 1, 2); spine of fore coxa about 0.1 mm in length; tegmina reaching middle part of sixth abdominal tergite, with exposed part of stridulatory apparatus almost equal to half of more distal tegminal part (Fig. 2); cercus almost angularly curved, with distal portion dorsoventrally flattened and lobe-like as well as directed partly medially (i.e. this portion unilobate and directed more medially than proximal portion; Figs 3, 5); genital plate with proximal portion almost 2.5 times as wide as most widened part of distal portion, with narrow (low) lateral sides of this distal portion directed mainly upwards but upwards/laterally in one place, and with apical part much narrower than above-mentioned distal portion (Figs 4, 5).

Variations. Two other males with spine of fore coxa about 0.1 or 0.15 mm in length, with tegmina reaching middle or posterior parts of sixth abdominal tergite, with exposed part of tegminal stridulatory apparatus slightly longer than half of more distal tegminal part, and with genital plate curved upwards more strongly or less strongly than in holotype.

Female. Coloration and structure of body similar to those of males, but dots on antennal flagellum somewhat more distinct, pronotum with hind lobe slightly shorter (insignificantly shorter than more anterior pronotal part), tegmina without stridulatory apparatus and reaching middle or posterior parts of fifth abdominal tergite, and genital plate short (clearly transverse) and almost trapezoidal as well as with widely truncate (barely concave or barely sinuate) posterior edge (Fig. 6); ovipositor as in Fig. 7.

MEASUREMENTS. Length (in mm). Body: ♂ 8–8.5, ♀ 6.5–8.5; pronotum: ♂ 3.2–3.4, ♀ 2.7–2.9; visible parts of tegmina: ♂ 3.7–4, ♀ 2.7–3.2; hind femora: ♂ 8.5–9, ♀ 9–9.7; ovipositor 5.5–6.

ETYMOLOGY. The new species name is the Latin word “unilobata” (unilobate, with one lobe) due to the shape of the male cercal apex.

Subtilodecma bilobata Gorochov, sp. n.

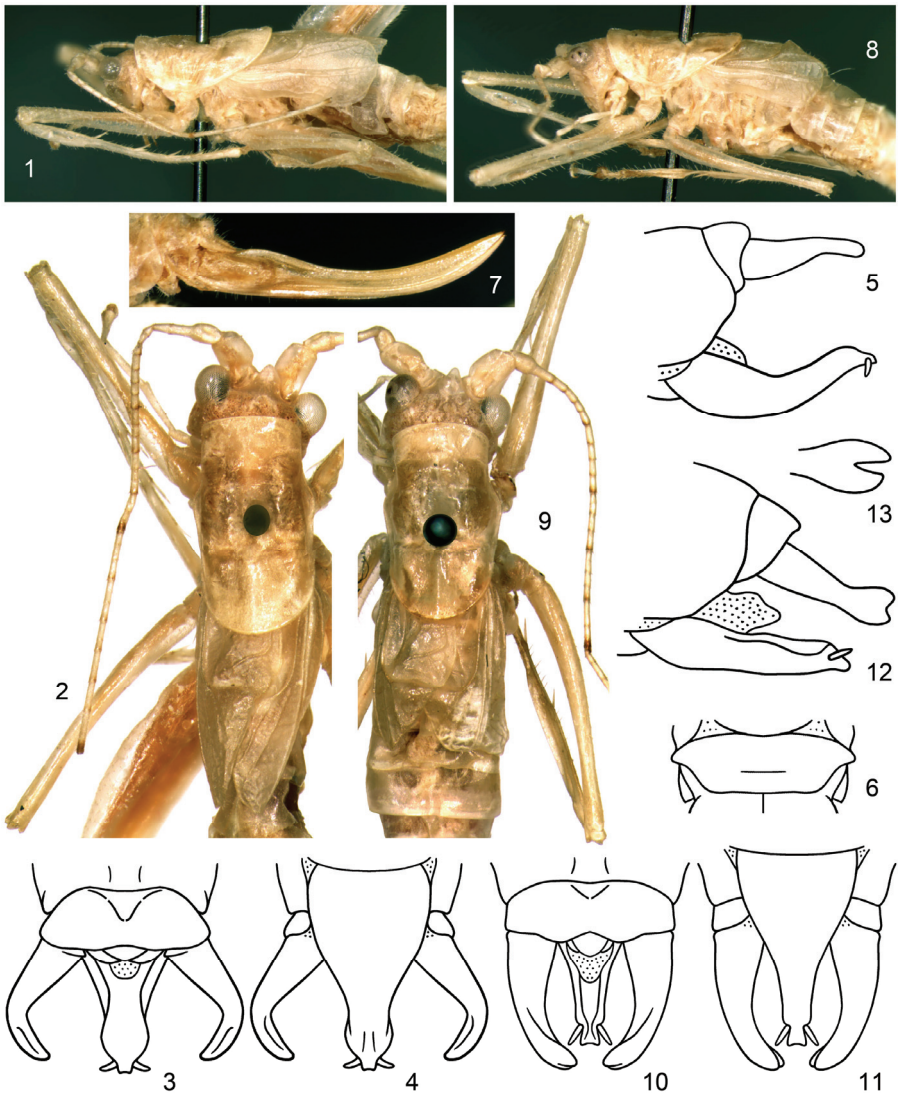
https://zoobank.org/NomenclaturalActs/1FB21498-4505-4A8C-8EA3-78F0A5A140AA

Figs 8–13

MATERIAL. Holotype – ♂, **Malaysia**: Sabah State, Borneo I., Southern part of Kinabalu National Park, 1500–2000 m, primary forest, on leaves of bushes at night, 26.IV–1.V.2013, A. Gorochov, M. Berezin, V. Gorochova, E. Tkatsheva (ZIN). Paratypes: 2 ♂, same data as for holotype (ZIN).

DESCRIPTION. *Male* (holotype). Coloration and structure of body similar to those of *S. unilobata* sp. n. but with following differences: upper tubercle of rostrum almost conical

(Figs 8, 9); spine of fore tibia about 0.15 mm in length; tegmina reaching posterior part of fifth abdominal tergite, with exposed part of stridulatory apparatus almost equal to more distal tegminal part in length (Fig. 9); cercus somewhat arcuate (i.e. slightly curved medially), with distal portion slightly narrower before apical widening which almost round in profile



Figs 1–13. *Subtilodecma* gen. n.: 1–7 – *S. unilobata* sp. n.; 8–13 – *S. bilobata* sp. n. Male body without posterior part: from side (1, 8); from above and additionally without right or left legs (2, 9). Male abdominal apex from above (3, 10), from below (4, 11) and from side (5, 12); apical part of left male cercus from side and slightly behind (13). Female genital plate from below (6); ovipositor from side (7).

but compressed laterally and divided into two lobules by deep and narrow notch (Figs 10, 12, 13); genital plate with proximal portion almost four times as wide as distal portion, with lateral sides of this distal portion barely higher than in *S. unilobata* sp. n. but having very narrow dorsolateral borders curved downwards/laterally, and with apical part clearly but not strongly narrower than other parts of above-mentioned distal portion (Figs 10–12).

Variations. Two other males with spine of fore coxa about 0.1 mm in length or almost without it, with tegmina reaching sixth or seventh abdominal tergites (but their abdomen somewhat deformed), and with exposed part of tegminal stridulatory apparatus insignificantly shorter than more distal tegminal part.

Female unknown.

MEASUREMENTS. Length (in mm). Body 7.5–8.5; pronotum 2.9–3.1; visible parts of tegmina 3–3.3; hind femora 8.8–9.2.

COMPARISON. The new species is distinguished from *S. unilobata* sp. n. in the distal parts of the male tegmina (located behind the tegminal stridulatory apparatus) somewhat shorter, the male cerci bilobate but not unilobate apically, the distal portion of the male genital plate narrower, and the difference between the latter portion and the apical part of this portion in width less significant.

ETYMOLOGY. The new species name is the Latin word “bilobata” (bilobate, with two lobes) due to the shape of the male cercal apex.

Genus *Xizicus* Gorochov, 1993

NOTE. This genus was originally divided into two subgenera: *Xizicus* s. str. and *Eoxizicus* Gorochov, 1993 (Gorochov, 1993). Later, *Eoxizicus* was treated as a separate genus and synonymized with the former genus *Axizicus* Gorochov, 1998 (Liu & Zhang, 2000). Gorochov et al. (2005) did not agree with the generic status of *Eoxizicus* and restored *Axizicus* as a subgenus of *Xizicus* s. l. Further, *Eoxizicus* was considered by different authors either as a genus or as a subgenus of the genus *Xizicus* (OSF). In addition, four other subgenera were described: *Furcixizicus* Gorochov, 2002, *Paraxizicus* Liu, 2004, *Haploxizicus* Wang, Jing, Liu et Li, 2014 and *Zangxizicus* Wang, Jing, Liu et Li, 2014 (Gorochov, 2002; Liu & Yin, 2004; Wang et al., 2014). These actions led the question about the volume of *Xizicus* s. l. in a very uncertain position, because all the above-mentioned taxa have some general characters but do not provide clear differences between most of them. For example, Gorochov (2019) suggested that the subgenera *Paraxizicus* and *Haploxizicus* may be synonyms of *Furcixizicus* and *Axizicus*, respectively. However, the new material, described below, allows me to consider *Paraxizicus* as an additional subgenus of this genus.

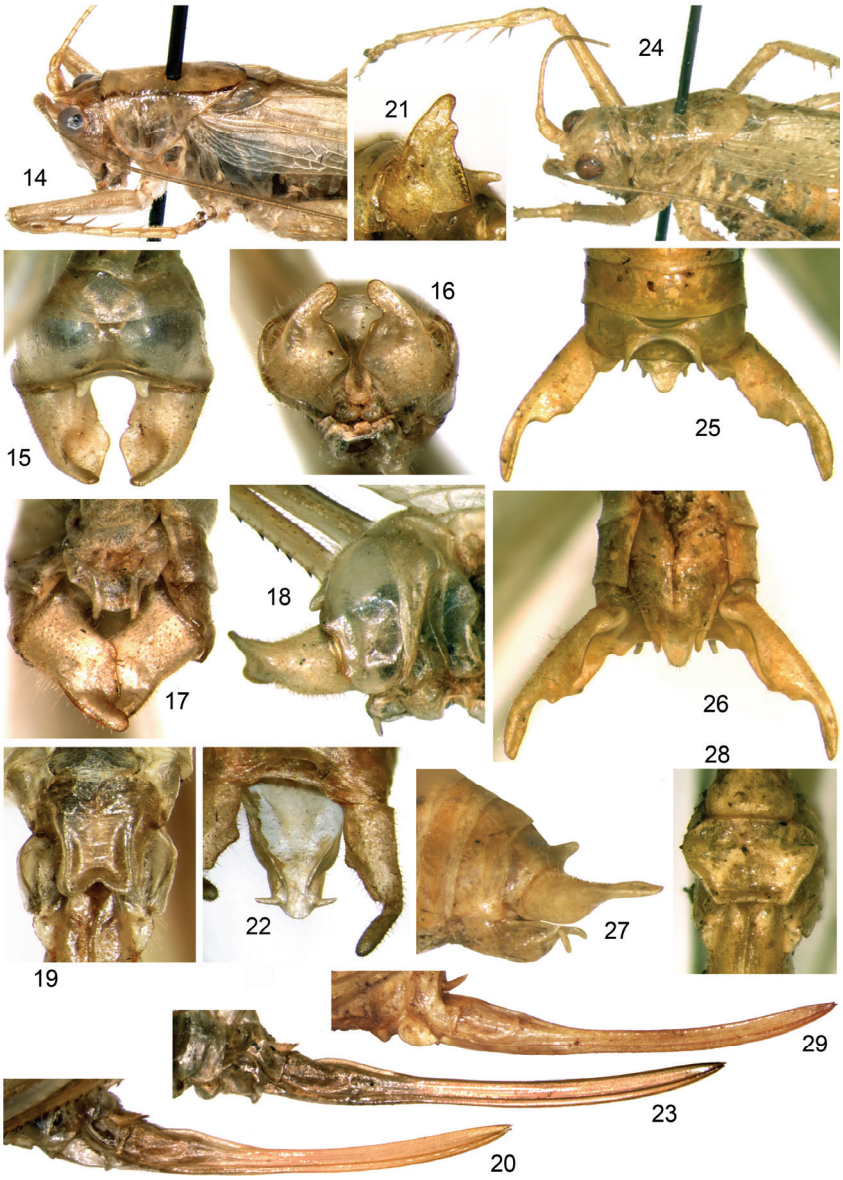
Xizicus (Eoxizicus) robustocercus Gorochov, sp. n.

https://zoobank.org/NomenclaturalActs/690FBD3C-8CED-4727-9681-245C0FE8AA49

Figs 14–20

MATERIAL. Holotype – ♂, **Vietnam**: Kon Tum Prov., Kon Plong Distr., Kon Plinh Commune (near Xa Hien Vill.), 14º36.190′N, 108º28.885′E, 950 m, forest, 15–23.VI.2014, N. Orlov, L. Iogansen (ZIN). Paratypes: 1 ♂, 2 ♀, same data as for holotype (ZIN).

DESCRIPTION. *Male* (holotype). General appearance typical of this subgenus. Body coloration light greenish with greyish eyes, a pair of narrow light brown stripes along lateral edges of pronotal disc (in apical part of this disc, these stripes located very near each other), yellowish to light brown spines and spurs of fore and middle tibiae, brown to dark brown spines



Figs 14–29. *Xizicus* spp.: 14–20 – *X. (Eoxizicus) robustocercus* sp. n.; 21 – *X. (E.) ?hue* Gor.; 22, 23 – *X. (E.) orlovi* Gor.; 24–29 – *X. (E.) bothrocercus* sp. n. Anterior half of male body from side and slightly above (14, 24). Male abdominal apex from above and slightly behind (15), from above (25), from behind (16), from below (17, 26) and from side (18, 27); right male cercus from behind (21); part of male genital plate visible from above (22). Female genital plate from below (19, 28); ovipositor from side (20, 23, 29).

and spurs of hind tibia, light brown to brown areas on subapical tarsal segments, and yellowish cerci and epiproct (Figs 14–18). Upper rostral tubercle gradually narrowing to narrowly rounded apex and with slight dorsomedian groove; shape of pronotum as in Fig. 14. Spine of fore coxa about 0.35 mm in length; both tympana (outer and inner) oval and rather large, almost equal in size (Fig. 14); fore tibia with four pairs of ventral spines and one outer subapical spine (latter spine clearly shorter than previous spines; Fig. 14). Tegmina reaching subapical parts of hind tibiae and with normal stridulatory apparatus (Fig. 14); hind wings clearly protruding beyond tegminal apices (their exposed distal parts ~1.8 mm in length). Last abdominal tergite (Fig. 15) with wide, short and rounded notch dorsally; a pair of rather small and rounded (almost finger-like but short) lobules located between posterior edge of above-mentioned tergite and epiporoct (space between these lobules moderately wide; Figs 15, 18); cerci (Figs 15, 16, 18) moderately large but rather short, stout, slightly curved upwards, with thick cylindrical proximal part, almost lamellar and elongate but comparatively short distomedial lobe (this lobe with almost straight but obliquely situated distomedial edge), and distinctly narrower and also almost lamellar distolateral lobule (this lobule curved medially and slightly upwards); genital plate moderately small, clearly shorter than cercus, more or less wide in proximal half, distinctly narrowing to almost truncate apex in distal half (this half with concave lateral edges), and with a pair of small styles around above-mentioned apex (approximately as in Fig. 17); genitalia membranous.

Variations. Second male with darkish stripes along lateral edges of pronotal disc shortly interrupted, lobules between last tergite and epiproct yellowish, exposed distal parts of hind wings about 0.9 mm in length, and genital plate having slightly convex apical edge between styles (Fig. 17).

Female. Structure and coloration of body as in males, but: tegmina without stridulatory apparatus; last tergite yellowish, somewhat narrower, divided into two halves by angular posteromedian notch and by distinct dorsomedian groove before this notch, and without lobules near epiproct; cerci small and rather thin, cylindrical but with very thin apical parts (cerci slightly longer than width of space between their bases); epiproct small and oval, i.e. slightly elongate but not longer than visible parts of last tergite; genital plate longer than wide, with lateral parts vertical and forming almost keel-like structures along lateral edges of ventral part, and with this ventral part more or less flattened and barely widening to distinct roundly angular posteromedian notch (this ventral part also with rather deep fold along edge of this notch; Figs 19, 20); ovipositor normal for this genus, long, rather thin, barely curved upwards and with apex as in Fig. 20.

MEASUREMENTS. Length (in mm). Body: ♂ 12.5–13, ♀ 11–12; body with wings: ♂ 25–26, ♀ 25.5–26.5; pronotum: ♂ 3.9–4.2, ♀ 3.7–3.9; tegmina: ♂ 19.8–20.5, ♀ 20.3– 21; hind femora: ♂ 10.5, ♀ 10.5–11; ovipositor 10.3–10.7.

COMPARISON. The new species is somewhat similar to *X.* (*E.*) *dao* Gorochov, 1998, *X.* (*E.*) *duplum* Gorochov, 1998, *X.* (*E.*) *orlovi* Gorochov, 2005 and *X.* (*E.*) *ryabovi* Gorochov, 2005 from Vietnam as well as to *X.* (*E.*) *kulingensis* (Tinkham, 1943), *X.* (*E.*) *tuberculatus* (Liu et Zhang, 2000), and *X.* (*E.*) *hainani* Gorochov et Kang, 2005 from China in the shape of the male cerci. But *X. robustocercus* sp. n. is distinguished from all these congeners by the distolateral lobules of the male cerci distinctly shorter; additionally, it differs from *X. dao* and *X. duplum* in the male genital plate shorter and wider, from *X. kulingensis* and *X. ryabovi* in the distomedial lobes of these cerci with less distinct projections, and from *X. orlovi* in the proximal part of these cerci without additional dorsomedial keels. From Vietnamese *X.* (*E.*) *danangi* Gorochov, 1998 and *X.* (*E.*) *hue* Gorochov, 2005 with unknown males, the new species differs in the structure of the female genital plate: in *X. danangi*, the distal portion of this plate less high and with the apical part widely truncate (not clearly notched); in *X. hue*, this plate with distinctly more concave lateral parts and a clearly less deep posteromedian notch.

However, the male with very similar cerci was later attributed to *X. hue* (Gorochov, 2011: figs 30–32), but this attribution is somewhat problematic, and the cercus of this male is distinguished from that of *X. robustocercus* sp. n. by the distomedial lobe larger, its ventroproximal corner more projected backwards, its dorsodistal corner almost lobule-like and located more near the distolateral cercal lobule, and the notch near the latter lobule clearly smaller (compare Figs 16 and 21).

ETYMOLOGY. This species name originates from the Latin word "robustus" (robust, stout) and the Latinized Greek morphological term "cercus" due to the shape of the male cercus.

Xizicus (Eoxizicus) orlovi Gorochov, 2005

Figs 22, 23

MATERIAL. **Vietnam**: 1 ♂, Quang Nam Prov., 8 км SW of La Dee, Song Thanh Nature Reserve, 15º33′48″N, 107º23′23″E, 1070 m, 24.IV–11.V.2019, A. Abramov (ZIN); 1 ♀, Kon Tum Prov., Kon Plong Distr., Kon Plinh Commune (near Xa Hien Vill.), 14º36.190′N, 108º28.885′E, 950 m, forest, 15–23.VI.2014, N. Orlov, L. Iogansen (ZIN).

NOTE. The above-mentioned male and female are almost identical to the type material of this species collected in another locality of the Kon Tum Province of Vietnam, but the genital plate of this male is with a slightly longer or less deformed apical part (Fig. 22), and the ovipositor of this female is barely more straight (and somewhat longer than in *X. (E.) robustocercus* sp. n.; compare Figs 20 and 23). Thus, *X. (E.) orlovi* is here recorded from some other Vietnamese localities.

Xizicus (Eoxizicus) bothrocercus Gorochov, sp. n.

https://zoobank.org/NomenclaturalActs/7FD54CCF-EA6B-4E92-B7AB-21FA2EE24509

Figs 24–29

MATERIAL. Holotype – ♂, **China**: Hunan Prov., "Jiucai Ling", 25º32′N, 111º22′E, ~1300 m, VII.2006, V. Sinyaev, S. Sinyaeva (ZIN). Paratypes: 2 ♂, 1 ♀, same data as for holotype (ZIN).

DESCRIPTION. *Male* (holotype). General appearance and body structure similar to those of *X. (E.) robustocercus* sp. n. but with following characteristic features: body coloration uniformly light greenish (i.e. without darkened stripes on pronotum; Fig. 24) with brown to dark brown eyes, light brown to brown areas on third segment of all tarsi and almost dark brown distal halves of spines and spurs on dorsal part of hind tibia; spine of fore coxa about 0.4 mm in length; tegmina slightly shorter than in this species, reaching distal thirds of hind tibiae; hind wings barely protruding beyond tegminal apices (their exposed distal parts ~0.6 mm in length); last tergite with a pair of slightly longer and almost lamellar (laterally compressed) lobules moved somewhat anteriorly and dorsally from almost straight posterior edge of this tergite (Fig. 25, 27); each cercus dorsally thinner and more elongate than in *X. (E.) robustocercus* sp. n., with rather long and dorsoventrally depressed but moderately thin distal lobule curved somewhat medially, with moderately thickened proximal half having elongate medial concavity which outlined by distinct keels (Figs 25–27); genital plate elongately oval and moderately high (cup-like) but with small and dorsoventrally lamellar apical lobule located in upper part of this plate (ventral edge of genital plate in profile strongly S-shaped in region of base of this lobule); styles of genital plate small and situated around base of its apical lobule (Figs 26, 27).

Variations. In one of other males, hind wings practically not protruding beyond tegminal apices, and lobules of last tergite located slightly more near each other than in holotype. Third male with left tegmen having distinct light brown stripe along anal edge after stridulatory apparatus.

Female. General appearance similar to that of holotype but with following differences: pronotum with slight traces of a pair of darkish stripes on disc (these stripes poorly visible only on anterior and posterior thirds of disc); spine of fore coxa approximately 0.3 mm in length; tegmina and abdominal apex more similar to those of female of *X.* (*E.*) *robustocercus* sp. n., but length of exposed distal parts of hind wings almost 1.9 mm, and genital plate transversally trapezoidal (not elongate) and without distinct posteromedian notch as well as with almost flat ventral surface and strong and slightly sinuate lateral keels between ventral and lateral surfaces of this plate (Fig. 28); ovipositor as in Fig. 29.

MEASUREMENTS. Length (in mm). Body: ♂ 12.5–13, ♀ 15.5; body with wings: ♂ 21–23, ♀ 28; pronotum: ♂ 3.9–4.1, ♀ 4.4; tegmina: ♂ 16.5–18, ♀ 22.5; hind femora: ♂ 10–10.8, ♀ 11; ovipositor 10.

COMPARISON. The new species is most similar to *Xizicus* (*Eoxizicus*) *cheni* (Bey-Bienko, 1955), comb. n. from China in the shape of the male cerci (including the presence of a characteristic medial concavity in the proximal half of each cercus which is outlined by distinct keels) but differs from it in the somewhat longer posterior lobules of the male last tergite, in the presence of two short obtuse-angled projections (instead one almost acute-angled projection) on the dorsomedial edge near the middle of the male cercus, and in the distal part of this cercus more curved medially. The male cerci of the new species are also more or less similar to *X.* (*E.*) *dao*, *X.* (*E.*) *duplum* and *X.* (*E.*) *orlovi* from Vietnam as well as to *X.* (*E.*) *tuberculatus* and *X.* (*E.*) *hainani* from China. However, *X.* (*E.*) *bothrocercus* sp. n. is distinguished from all them by the presence of the above-mentioned concavity in the proximal half of the male cercus. Additionally, this new species differs from them in the following characters: from *X. dao* and *X. duplum*, in the widened proximal part of the male cercus shorter, and in the male genital plate with its apex rounded and lobule-like (but not truncate or notched); from *X. orlovi*, in the lobules of the male last tergite larger, and in the male cercus with its distal part clearly flattened (not almost cylindrical) and less curved medially; from *X. tuberculatus*, in the male cercus less curved upwards and with a much higher (wider in profile) proximal half, as well as in the apex of the male genital plate without any notch; and from *X. hainani* in the lobules of the male last tergite distinctly larger, and in the male cercus clearly higher in its proximal half. From some species with unknown male, the new species differs in a characteristic shape of the female genital plate: this plate is transverse, trapezoidal, with a flat venter and strong lateral keels between this venter and the lateral surfaces of this plate.

ETYMOLOGY. This species name originates from the Latinized Greek prefix “bothro-“ (with concavity) and the Latinized Greek morphological term “cercus” due to the presence of a characteristic medial concavity on the proximal half of the male cercus.

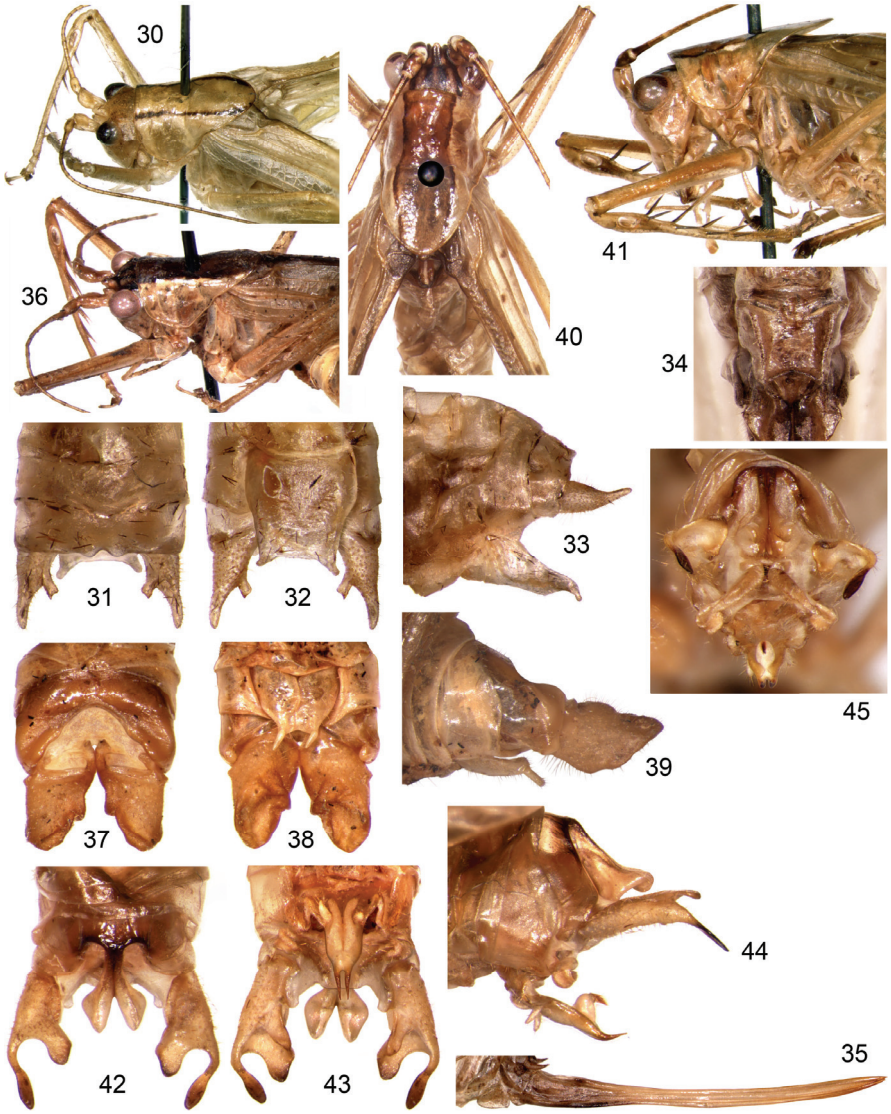
Xizicus (Eoxizicus) reductus Gorochov, sp. n.

https://zoobank.org/NomenclaturalActs/F3723DE7-B2D3-4DA1-9C97-6A35433131B8

Figs 30–35

MATERIAL. Holotype – ♂, **Vietnam**: Tuyen Quang Prov., Na Hang Distr., Na Hang Protected Area near Na Hang Town, ~600 m, forest, 16–22.VI.2019, N. Orlov, L. Iogansen (ZIN). Paratype – 1 ♀, same data as for holotype (ZIN).

DESCRIPTION. Male (holotype). General appearance (including body coloration) and structure of genitalia similar to those of *X. (E.) robustocercus* sp. n. and *X. (E.) bothrocercus* sp. n. but with following characteristic features: a pair of longitudinal stripes on pronotal disc



Figs 30–45. *Xizicus* spp.: 30–35 – *X. (Eoxizicus) reductus* sp. n.; 36–39 – *X. (Axizicus?) incisus laticercus* subsp. n.; 40–45 – *X. (Paraxizicus) anisyutkini* sp. n. Anterior half of male body from side and slightly above (30, 36), from above (40) and from side (41). Male abdominal apex from above (31, 37, 42), from below (32, 38, 43), from side (33, 39, 44) and from behind (45). Female genital plate from below (34); ovipositor from side (35).

brown and not interrupted; spines and ventral spurs of fore and middle tibiae as well as all spines and spurs of hind tibia brown to dark brown (Fig. 30); spine of fore coxa approximately 0.35 mm in length; tegmina almost reaching apical parts of hind tibiae; exposed distal parts of hind wings about 2 mm in length; last tergite with more or less straight posterior edge having a pair of very small and tubercle-like lobules located on median part of this edge near each other (Fig. 31); cercus rather small for this subgenus, elongate, gradually narrowing to almost spine-like distal part and having small medial process near cercal middle; latter cercal process narrow (not wider than long), slightly depressed dorsoventrally and with two very small apical denticles (medial denticle very short and almost rounded, and lateral denticle acute and barely longer than previous one; Figs 31–33); genital plate moderately elongate and almost rectangular but with distal half slightly narrowing to widely truncated (barely convex) posterior edge, and with a pair of small and angular posterolateral lobules which possibly fused with very small styles (Figs 32, 33).

Female. Coloration and structure of body similar to those of male, but tegmina and abdominal apex more similar to those of female of *X.* (*E.*) *robustocercus* sp. n., *X.* (*E.*) *orlovi* and *X.* (*E.*) *bothrocercus* sp. n. with some differences in shape of genital plate (this plate almost as in *X. robustocercus* sp. n. but clearly narrowing to apex, with more keel-like lateral edges between ventral and lateral surfaces, and with insignificantly less deep posteromedian notch; Fig. 34); ovipositor almost as in *X. orlovi* (Fig. 35).

MEASUREMENTS. Length (in mm). Body: ♂ 11.5, ♀ 16; body with wings: ♂ 26, ♀ 32; pronotum: ♂ 3.9, ♀ 4.8; tegmina: ♂ 20, ♀ 26; hind femora, ♂ 13.5 (hind legs of female missing); ovipositor 14.

COMPARISON. The new species is most similar to *X. (E.) parallelus* (Liu et Zhang, 2000) from China in the male cercus having only one rather narrow (shortly longitudinal) medial process, but it is distinguished from the latter species by the posterior lobules of the male last tergite distinctly shorter, the male cerci much shorter and with their distal parts thinner and not curved medially, and the medial cercal process clearly narrower. The female genital plate of *X.* (*E.*) *reductus* sp. n. is similar to that of *X.* (*E.*) *dao* and *X.* (*E.*) *duplum* but with some differences: in *X. dao,* this plate has the lateral keels between its ventral and lateral surfaces stronger, more convex in profile and more concave in ventral view; and in *X. duplum*, this plate is shorter (clearly transverse).

ETYMOLOGY. This species name is the Latin word “reductus” (reduced, diminished) due to the size of the male cerci which are distinctly smaller than in all other species of this subgenus.

Xizicus (Axizicus?) incisus laticercus Gorochov, subsp. n.

https://zoobank.org/NomenclaturalActs/B685B546-B166-4580-96AA-463D3869E4D7

Figs 36–39

MATERIAL. Holotype – ♂, **China**: Hunan Prov., “Jiucai Ling”, 25º32′N, 111º22′E, ~1300 m, VII.2006, V. Sinyaev, S. Sinyaeva (ZIN). Paratype – 1 ♂, same data as for holotype.

DESCRIPTION. *Male* (holotype). Coloration and structure of body very similar to those of nominotypical subspecies (Xia & Liu, 1988: figs 1–3) but with following characteristic features: body yellowish with dark brown both large dorsal area on head behind lateral ocelli (this area also with narrow dark median stripe running almost to rostral apex, and with three longitudinal greyish brown spots between eyes) and wide median band on pronotal disc, with brown small and sparse spots on tegmen along median line and along costal edge, with light

greyish brown stripe along anal tegminal edge, and with very light brown last tergite and cerci (Figs 36–39); last tergite with large posteromedian notch which slightly deeper and less widely rounded in its anterior part than in *X.* (*A.*?) *i. incisus* Xia et Liu, 1988; cerci somewhat longer and clearly wider than in latter subspecies (they longer than visible lateral part of last tergite, and their proximal parts in contact with each other, if cerci directed backwards or backwards/medially; *vs*. they shorter than lateral part of last tergite, and their proximal parts clearly not contacting with each other in such cercal position) as well as without distinct lateral notch near apical part (Figs 37–39); genital plate as in Figs 38, 39.

Variations. Second male without distinct light greyish brown stripe along anal tegminal edge and with almost straight posterior edge of genital plate between styles.

Female unknown.

MEASUREMENTS. Length (in mm). Body 10; body with wings 20–21; pronotum 3.5–3.7; tegmina 16–16.8; hind femora 10–10.5.

COMPARISON. The new subspecies differs from nominotypical one in the characters of the male last tergite and of the male cerci listed above.

ETYMOLOGY. This subspecies name originates from the Latin prefix “lati-” (wide) and the Latinized Greek morphological term “cercus” due to the shape of the male cerci.

Xizicus (Paraxizicus) anisyutkini Gorochov, sp. n.

https://zoobank.org/NomenclaturalActs/10A22FF0-1C58-4F0E-B9F5-EDEF1A70177B

Figs 40–45

MATERIAL. Holotype – ♂, **Vietnam**: Cao Bang Prov., Phia Oac – Phia Den National Park, 22º37′41.8″N, 105º54′41.5″E, ~900 m, 3–15.VI.2019, L. Anisyutkin (ZIN).

DESCRIPTION. *Male* (holotype). Coloration yellowish with following marks: head with dorsal pattern similar to that of *X. (Axizicus?) incisus laticercus* subsp. n., and with each antenna light brown but having brown pedicel and base of flagellum as well as medial half of scape; pronotum with a pair of dark brown longitudinal stripes on disc and light brown area between them; tegmina with greenish tinge as well as light brown both moderately short stripe along each anal edge and several small spots on other areas (except for almost transparent stridulatory membranes); legs with brown ventral spines of fore and middle tibiae, dark brown dots on both apical lobules of hind femur, greyish brown distal part of hind tibia and light brown area on third segment of all tarsi; region of base of posteromedian process of last tergite and distal half of distolateral lobe of cercus darkened (Figs 40–45). Upper tubercle of head rostrum narrowly conical, with rounded apex and thin median groove dorsally (Fig. 40); shape of pronotum as in Figs 40, 41; spine of fore coxa about 0.3 mm in length; fore and middle tibiae with four pairs of rather long ventral spines on each of them, one clearly shorter ventral spine on outer side of subapical part of fore tibia and a pair of similar subapical spines on middle tibia; tegmina typical of this genus, i.e. long (reaching distal parts of hind tibiae) and with normally developed stridulatory apparatus; exposed parts of hind wings (visible behind tegminal apices) about 1.4 mm in length. Last tergite deeply and rather narrowly notched; its posteromedian process with base located in middle of this notch, with proximal half narrow and having distinct median groove posterodorsally, and with a pair of clearly inflated and rather large distal lobules having apical parts somewhat oblique truncated and even slightly concave ventrally (Figs 42, 44, 45); epiproct very small, lobular and almost completely covered with this process; each paraproct roundly triangular but with oblique ventrolateral projection having distinct lamellar hook apically (Figs 43–45); cercus moderately short and somewhat depressed dorsoventrally in proximal half, with distomedial lobe lamellar and rather wide as well as having posterior part rounded and anterior part clearly

curved downwards, with distolateral lobe longer and much thinner but with lamellar lancet-like widening in its distal half, and with rather small but somewhat inflated medial tubercle in cercal proximal portion (Figs 42–45); genital plate narrow but not very long, with deep ventromedian groove and a pair of acute spines at apex as well as hook-like dorsal process (apex of this process with group of distinct setae forming almost hooked structure) and distinct styles located near basal part of this plate (this basal part with a pair of rather small rounded notches visible laterally and outlined by small but distinct folds; Figs 43–45); genitalia membranous.

Female unknown.

MEASUREMENTS. Length (in mm). Body 9; body with wings 23; pronotum 3.8; tegmina 18.5; hind femora 11.

COMPARISON. The new species is most similar to *X.* (*P.*) *anisocercus* Liu, 2004 in the posteromedian process of the male last tergite having a pair of inflated lobes in its distal half, but it is distinguished from the latter species by these inflated lobes clearly larger, and the male genital plate somewhat wider and with longer and thinner apical spines as well as with the styles located in the basal (but not in middle) part of this plate. From *X.* (*P.*) *furcistylus* Feng, Chang et Shi, 2016 and *X.* (*P.*) *biprocerus* (Shi et Zheng, 1996), the new species differs in the posteromedian process of the male last tergite clearly less deeply divided into a pair of more inflated lobes; additionally it differs from *X. furcistylus* in more hooked projections of the male paraprocts and distinctly longer apical spines of the male genital plate, and from *X. biprocerus* in a clearly longer posteromedian process of the male last tergite and the presence of a pair of acute spines at the male genital plate apex (*vs*. this apex with four apical lobules: medial ones rather long and obtuse, lateral ones shorter and acute-angled).

ETYMOLOGY. This species is named after its collector.

REMARKS. It is necessary to mention that this subgenus is more or less similar to *Furcixizicus* and *Xizicus* s. str. and may be confused with these subgenera; for example: *Xizicus fallax* Wang, Jing, Liu et Li, 2014 was included in the subgenus *Paraxizicus* (Wang *et al*., 2014; Feng *et al*., 2016) but later transferred to *Furcixizicus* in doubt (Gorochov, 2019). However, *Paraxizicus* is distinguished from them by the process (processes) of the male last tergite larger and usually inflated, or not hooked, and by the male genital plate more specialized.

Genus *Xiphidiopsis* Redtenbacher, 1891

NOTE. This genus was divided by Gorochov (1993) into five subgenera: nominotypical one; *Euxiphidiopsis* Gorochov, 1993; *Paraxiphidiopsis* Gorochov, 1993; *Dinoxiphidiopsis* Gorochov, 1993; *Zaxiphidiopsis* Gorochov, 1993. Later, *Zaxiphidiopsis* (Gorochov, 1998) and *Euxiphidiopsis* (Liu & Zhang, 2000) were erected as separate genera, and in the latter paper, *Paraxiphidiopsis* was erroneously synonymized with *Euxiphidiopsis*. Moreover, Liu et al. (2010) also erroneously synonymized the generic name *Paraxizicus* Gorochov et Kang, 2005 with *Euxiphidiopsis*. Thus, the "genus" *Euxiphidiopsis* now contains 22 very different species (OSF), really belonging to a few unrelated genera. Here I consider *Euxiphidiopsis* stat. resurr. as a subgenus of *Xiphidiopsis* s. l. again, restore *Paraxiphidiopsis* subgen. resurr. as a distinct subgenus of the latter genus, and propose a new generic replacement name (*Caprixizicus* Gorochov, nom. n. originating from the species name "*capricercus*" and the generic name "*Xizicus*") for *Paraxizicus* (Gorochov *et al*., 2005); the latter name, restored here from synonyms of *Euxiphidiopsis* and *Paraxiphidiopsis*, is a junior homonym of *Paraxizicus* Liu, 2004 proposed for a subgenus of *Xizicus* s. l.

The above-mentioned representatives, attributed to the "genus" *Euxiphidiopsis* in OSF, belong to the following genera and subgenera: *Xiphidiopsis* (*Paraxiphidiopsis*) *zubovskyi* Gorochov, 1993 belongs to the same genus and subgenus as in its original description; *Xizicus* (*Eoxizicus*) *hainani* Gorochov et Kang, 2005 and possibly *Euxiphidiopsis quadridentata* Liu et Zhang, 2000 belong to the subgenus *Eoxizicus* of the genus *Xizicus*; *Xiphidiopsis forcipa* Shi et Chen, 2002 and *Paraxizicus singulus* Shi, Bian et Chang, 2011 belong to the subgenus *Furcixizicus* of *Xizicus* s. l.; *Xiphidiopsis capricercus* Tinkham, 1943 and *Paraxizicus brevicercus* Gorochov et Kang, 2005 belong to the genus *Caprixizicus* nom. n.; *Xiphidiopsis gurneyi* Tinkham, 1944, *X. lacusicercus* Shi, Zheng et Jiang, 1995, *Paraxizicus spathulatus* Mao et Shi, 2007 and *P. trilobus* Shi, Bian et Chang, 2011 belong to different and possibly undescribed genera of the subtribe Meconematina; *X. sinensis* Tinkham, 1944 and *X. impressa* Bey-Bienko, 1962 are described from females only, and their generic position is unclear, but the male, attributed to the first species by Mao & Shi (2007), may belong to the genus *Decma* Gorochov, 1993 or to an undescribed genus of Meconematina.

The following species are true or possible members of *Euxiphidiopsis* s. str. (only four of them were included in the "genus" *Euxiphidiopsis* in OSF) which is characterized by the posteromedian process of the male last tergite long and with a distinct inflation in the distal or middle parts, as well as by the male cercus rather simple (i.e. having two large distal lobes and often a small proximedial tubercle): *Xiphidiopsis* (*E.*) *motshulskyi* Gorochov, 1993 is type species of *Euxiphidiopsis*; *X. platycerca* Bey-Bienko, 1962 was included in *Euxiphidiopsis* s. str. by Gorochov (1998); *X. altiterga* Sänger et Helfert, 1998; *X. tonicosa* Shi et Chen, 2002; *X. compacta* Sänger et Helfert, 2004 and *Alloxiphidiopsis ovalis* Liu et Zhang, 2007 are here included in *Euxiphidiopsis* s. str. for the first time; *X. (E.?) eversmanni* Gorochov, 1993, *X.* (*E.*?) *haudlata* Gorochov, 1994 and *X. nigrovittata* Bey-Bienko, 1962, described from females only, possibly belong to the same subgenus. Also it is useful to indicate that the two species, included in the genus *Alloxiphidiopsis* Liu et Zhang, 2007 (OSF), really belong to the nominotypical subgenus of *Xiphidiopsis* s. l.: *X.* (*X.*) *irregularis* Bey-Bienko, 1962, comb. resurr. and *X.* (*X.*) *longicauda* (Liu et Zhang, 2007), comb. n. The first of them has the posterior process of the male last tergite long and insignificantly inflated but asymmetrical (i.e. almost intermediate between those of *Euxiphidiopsis* and *Xiphidiopsis* s. str.).

Xiphidiopsis (Xiphidiopsis) beybienkoi adjacens Gorochov, subsp. n.

https://zoobank.org/NomenclaturalActs/E58B37FB-86F3-450A-944A-390A9BFC4FDF

Figs 46–49

MATERIAL. Holotype – ♂, **Vietnam**: Quang Binh Prov., "Dong Chan – Khe Minh", ~1000 m, forest station, N. Orlov, L. Iogansen (ZIN).

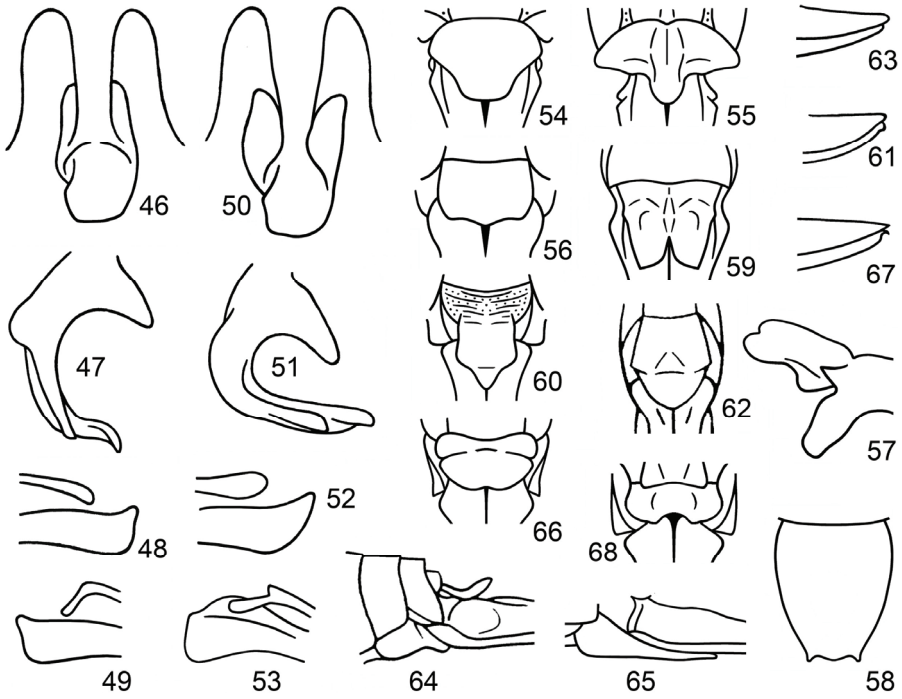
DESCRIPTION. *Male* (holotype). Coloration and structure of body very similar to those of nominotypical subspecies but with a few small differences in some details of abdominal apex: last tergite with posteromedian process having more parallel lateral edges in proximal two thirds and less developed lateral lobe-like folds in more distal portion (proximal parts of these folds distinctly separated from median part of this process, but their distal parts not separated from it; *vs*. all parts of these folds clearly separated from median part of this process; compare Figs 46 and 50); both cerci with less strongly curved lateral branch and distinct lobe-like lateral projection near base of this branch (see Figs 47 and 51), but left cercus with thinner upper distal lobule and S-shaped posterior (apical) edge of lower distal lobule (Figs 48

and 52), and right cercus without distinct dorsal denticle in subapical part of upper distal lobule and with lower lobule almost as in left cercus (but in nominotypical subspecies, latter lobule distally wider than in left cercus and different in shape) (Figs 49 and 53).

Female unknown.

MEASUREMENTS. Length (in mm). Body 11; body with wings 22.5; pronotum 3.9; tegmina 18.5; hind femora 10.5.

COMPARISON. The new subspecies was collected in a more northern province of Vietnam than *X.* (*X.*) *b. beybienkoi* Gorochov, 1993; it differs from the latter subspecies in the characters listed above. Differences of *X.* (*X.*) *b. adjacens* subsp. n. from *X.* (*X.*) *b. thaica* Gorochov, 2016, described from only female, are unclear, but *X. b. thaica* is distributed farther south than the new subspecies and much farther west than the latter subspecies and *X. b. beybienkoi*.



Figs 46–68. Meconematina: 46–49 – *Xiphidiopsis (Xiphidiopsis) beybienkoi adjacens* subsp. n.; 50–53 – *X. (X.) b. beybienkoi* Gor.; 54 – *X.? laosi* sp. n.; 55 – *X.? lampungi* sp. n.; 56–58 – *Rhinoteratura uniformis* (Gor.); 59 – *Rh. ketambe* sp. n.; 60, 61 – *Rh. raoani* (Gor.); 62–64 – *Rh. pseudocapreola* sp. n.; 65 – *Rh.? capreola* (Redt.), lectotype; 66, 67 – *Borneratura atromacula* sp. n.; 68 – *Odonturisca dentata* sp. n. Posteromedian process of male last tergite from above/behind (46, 50); male left cercus from above (47, 51); two distal lobules of left (48, 52) and right (49, 53) cerci in male from side/behind. Female genital plate from below (54–56, 59, 60, 62, 66, 68) and from side (64 – with other parts of abdominal apex including ovipositor base, 65 – with only ovipositor base). Distal half of male left cercus, medial view (57); male genital plate from below (58). Ovipositor apex from side (61, 63, 67). [61–64, after Gorochov (2008); 65, after photograph in OSF.]

ETYMOLOGY. This subspecies name is the Latin word “adjacens” (adjacent, neighboring) due to the type locality of the new subspecies situated not far from the area of the nominotypical one.

Xiphidiopsis (Xiphidiopsis) beybienkoi beybienkoi Gorochov, 1993

Figs 50–53

MATERIAL. **Vietnam**: 1 ♂, Quang Nam Prov., 8 km SW of La Dee, Song Thanh Nature Reserve, 15º33′48″N, 107º23′23″E, 1070 m, 24.IV–11.V.2019, A. Abramov (ZIN).

NOTE. This specimen is practically identical to the males of this subspecies previously known only from Gia Lai Province of Vietnam. It has one very slight difference from the latter males: the apical lobule of the last tergite posteromedian process has the left edge of this lobule and the fold in its left part located at an obtuse angle to each other (Fig. 50), but in the other males, these edge and fold form an almost straight line (geographic variability ?).

Xiphidiopsis (Xiphidiopsis) beybienkoi namlik Gorochov, subsp. n.

https://zoobank.org/NomenclaturalActs/FE76663A-97E0-4F86-A22B-9387AC05D80E

Fig. 88

MATERIAL. Holotype – ♀, **Laos**: Vientiane Prov., ~70 km NNW of Vientiane City, Nam Lik Ecovillage on Nam Lik River, 18.621469ºN, 102.40847ºE, ~200 m, at light, 10–30.VI.2017, A. Gorochov, M. Omelko (ZIN). Paratypes: 2 ♀, same data as for holotype (ZIN).

DESCRIPTION. *Female* (holotype). Coloration and structure of body very similar to those of nominotypical subspecies but with some differences: body distinctly smaller; sixth abdominal sternite distinctly larger and with wide (not more or less narrowed) posterior part, i.e. this sternite approximately as in *X. (X.) b. thaica*; seventh abdominal sternite clearly less short in median part than in *X. (X.) b. thaica* and with barely distinct median convexity (in *X. b. beybienkoi*, this sternite with very distinct median concavity); genital plate with ventroproximal transverse fold having slight angular median projection (Fig. 88) which visible almost as denticle only from side (in *X. b. beybienkoi*, this fold indistinct, but ventroproximal median denticle well developed, i.e. visible as denticle from both positions: from side and from behind), and with distinct median keel on more distal part of this plate (this keel indistinct in *X. b. beybienkoi*).

Variations. One paratype with sparse darkish dots on lateral tegminal field (as in holotype of this subspecies, *X. b. beybienkoi* and *X. b. adjacens* subsp. n.), but second one almost without such dots.

Male unknown.

MEASUREMENTS. Length (in mm). Body 9–10; body with wings 19–20; pronotum 2.9–3.2; tegmina 15–16.5; hind femora 9.2–9.7; ovipositor 6.8–7.2.

COMPARISON. The new subspecies differs from the nominotypical one in the characters listed above; from *X.* (*X.*) *thaica*, in the distinctly longer median part of the seventh abdominal sternite in female and in the same features of the female genital plate as from the previous subspecies; and from *X.* (*X.*) *adjacens* subsp. n., mainly in the clearly smaller body. From *X.* (*X.*) *bituberculata* Ebner, 1939 (China) with the similar female genital plate, the new subspecies is distinguished by the absence of a pair of characteristic tubercles on the female last abdominal sternite.

ETYMOLOGY. This subspecies is named after its type locality.

Xiphidiopsis? laosi Gorochov, sp. n.

https://zoobank.org/NomenclaturalActs/653E0E69-1737-4D25-870F-8655AB79DB38

Figs 54, 86

MATERIAL. Holotype - ♀, **Laos**: Vientiane Prov., ~70 km NNW of Vientiane City, Nam Lik Eco Village on Nam Lik River, 18.61469ºN, 102.40847ºE, ~200 m, at light, 10–30.VI.2017, A. Gorochov, M. Omelko (ZIN). Paratypes: 2 ♀, same data as for holotype (ZIN).

DESCRIPTION. *Female* (holotype). General appearance more or less similar to *X. (X.) beybienkoi* but with following characteristic features: body completely light greenish with only rose eyes and small light brown marks on tarsi and apex of ovipositor; upper rostral tubercle conical with narrowly rounded apex and rather short and very thin median groove on dorsal surface; ventral spines of fore and middle tibiae shorter (longest ones about 0.7 mm in length; *vs*. about 1 mm in length); spine of fore coxa about 0.4 mm in length; tegmina long, reaching distal thirds of hind tibiae; exposed parts of hind wings, visible behind tegminal apices, almost 3.2 mm in length; cerci fusiform, moderately short (0.9 mm in length); genital plate low, with rather wide proximal half and moderately narrowed distal half having roundly truncate apex and clearly concave lateral edges (Fig. 54); ovipositor insignificantly curved upwards in distal third, without denticles, and with acute apices of upper valves and very small hook at apex of each lower valve (Fig. 86).

Variations. One of paratypes with indistinct groove on dorsum of upper rostral tubercle; other paratype with a pair of more or less distinct yellowish longitudinal stripes on pronotal disc.

Male unknown.

MEASUREMENTS. Length (in mm). Body 9.5–11.5; body with wings 24–25.5; pronotum 3.7–3.9; tegmina 17.5–18.5; hind femora 10.5–11; ovipositor 7.6–7.9.

COMPARISON. The new species is most similar in the pronotal coloration to the genera *Decma* Gorochov, 1993 and *Chandozhinskia* Gorochov, 1993 as well as in the shape of the female genital plate to the representatives of *Xiphidiopsis* s. str., but it differs from them in this plate short and distinctly narrowed in its distal portion but with the widely truncated apical part.

ETYMOLOGY. This species is named after the country where it was collected.

Xiphidiopsis? lampungi Gorochov, sp. n.

https://zoobank.org/NomenclaturalActs/B81DC20A-4F7F-4573-92AC-5A21E235F795

Figs 55, 87

MATERIAL. Holotype – ♀, **Indonesia**: Sumatra I., Lampung Prov., ~60 km NE of Tanjung Karang Town, Wai Kambas National Park, Way Kenam Camp, 05º01.678′S, 105º46.572′E, 20–30 m, at light, 13–14.IV.2009, A. Gorochov, M. Berezin, E. Tkatsheva (ZIN).

DESCRIPTION. *Female* (holotype). General appearance similar to that of *X.? laosi* sp. n. but distinguished by following characters: body without traces of yellowish stripes on light greenish pronotum; rather short groove on dorsum of upper rostral tubercle distinct; exposed parts of hind wings, visible behind tegminal apices, approximately 2.8 mm in length; genital plate with more oblique proxilateral parts of proximal half, distinctly narrower distal part and almost angular lateral edges between this distal part and most widened part of this plate (Fig. 55); ovipositor almost identical to that of this species (Fig. 87).

Male unknown.

MEASUREMENTS. Length (in mm). Body 12.5; body with wings 25.5; pronotum 3.9; tegmina 18.5; hind femora 11; ovipositor 8.

COMPARISON. The new species is somewhat similar to *X.* (*X.*) *trusmadi* Gorochov, 2008, *X.* (*X.*) *sabahi* Gorochov, 2008 and *Epiproctopsis silvamontana* Gorochov, 2016 in the strongly narrowed posterior part of the female genital plate, but it is distinguished from them by the widened part of this plate clearly shorter. Differences from *X.*? *laosi* sp. n., which is also more or less similar to *X.*? *lampungi* sp. n., are listed in the latter species description.

ETYMOLOGY. This species is named after the province where it was collected.

Genus *Rhinoteratura* Gorochov, 1993, stat. n.

NOTE. Yamasaki (1982) described the genus *Leptoteratura* Yamasaki, 1982 for a few specimens of this genus from Japan determined by him as *Meconema*? *albicorne* Motschulsky, 1866. However, the original description of this species contains the following words: "Elongato-ovatum, depressum, fusco-subtestaceum, … antennis albidis; thorace transverso, … hemielytris [tegmina] postice reticulatis" (Motschoulsky, 1866). The latter description does not in accordance to the body structure of the above-mentioned specimens and to their coloration (these specimens have their body thin, not depressed, light greenish including antennae, with elongate thorax and not reticulate distal tegminal parts) but quite in accordance to the type specimen of *M.? albicorne* which is a male of the genus *Meloimorpha* Walker, 1870 (Gryllidae) deposited in the Zoological Museum of Moscow University (OSF). The male body (with tegmina) of this cricket is really elongately oval, dorsoventrally depressed, somewhat darkened (greyish brown) as well as with a transverse thorax and reticulate apical tegminal areas. Thus, the name *Leptoteratura* syn. n. is a junior synonym of *Meloimorpha*; *Meconema*? *albicorne* syn. n. is most probably a junior synonym of *Meloimorpha japonica japonica* (Haan, 1844) having whitish antennae; the former subgeneric name *Rhinoteratura* Gorochov, 1993 is a valid name for the genus previously known under the erroneous name *Leptoteratura*; and the species, determined by Yamasaki (1982) as *M.*? *albicorne*, may have the name *Rh. omeiensis* (Tinkham, 1956), sp. resurr. et comb. n. described from China (Sichuan) and synonymized with *L. albicornis* sensu Yamasaki by Jin & Yamasaki (1995). However, the latter identification needs to be checked, because the areas of these specimens (Japan and Sichuan in China) are very distant.

Rhinoteratura uniformis (Gorochov, 2008), comb. n.

Figs 56–58, 69–74

MATERIAL. **Malaysia**: 2 ♂, 1 ♀, Borneo I., Sabah State, Crocker Range National Park, at light, 15–26.III.2018, M. Omelko (ZIN).

DESCRIPTION. *Male* (nov.). Coloration and structure of body very similar to those of holotype (female) of this species: body light greenish with light brown to almost rose eyes, yellowish areas on epicranium behind eyes and a pair of stripes along lateral edges of disc, transparent stridulatory areas of tegmina and very light brown stripe along each tegminal anal edge behind stridulatory apparatus; head opistognathous; upper rostral tubercle dorsoventrally lamellar and gradually narrowing to almost narrowly rounded apex (this apex barely wider than in holotype, as in Fig. 69); eyes large, strongly comvex, longitudinally oval; epicranium with anterior surface under upper rostral tubercle transversally concave but with distinct transverse convexity under this concavity; apical segment of maxillary palpus

hardly shorter than subapical one; pronotum with more or less flat disc which somewhat wider than height of lateral lobes and with almost keel-like lateral edges; lateral lobes of pronotum as in Fig. 70; spine of fore coxa about 0.3 mm in length; tegmina approximately reaching apical parts of hind tibiae; exposed parts of hind wings, visible behind tegminal apices, about 0.5–1 mm in length; last tergite rather large and convex, with slightly but almost angularly notched posterior edge; epiproct small (short), lobe-like, semimembranous, directed downwards; paraprocts more or less similar to it in size and shape; cercus not long and somewhat curved medially as well as having a pair of distal lobes (dorsolateral lobe elongate, slightly widened, almost lamellar, located in vertical plane, and with small dorsal subapical notch and longer subbasal concavity of ventral edge; ventromedial lobe somewhat smaller, more simple in shape and not lamellar) and two small inner tubercles at base of these lobes and before this base (Figs 57, 71–73); genital plate oval, with moderately narrow apical part having a pair of small angular lobules (styles fused with this plate) and convex posterior edge between them (Fig. 58); genitalia membranous.

Female. Above-mentioned female almost identical to holotype, but its rostrum as in males (Fig. 69), and genital plate with slightly longer posteromedian (angular) projection (Fig. 56); ovipositor apex in both females with very narrowly rounded (almost acute angular) apices of all valves (Fig. 74), i.e. without denticles or apical hooks (almost as in Fig. 63).

MEASUREMENTS. Length (in mm). Body: ♂ 9–9.5, ♀ 9.2; body with wings: ♂ 18–19, ♀ 20.5; pronotum: ♂ 3.2–3.3, ♀ 3.3; tegmina: ♂ 15–15.5, ♀ 16.5; hind femora: ♂ 7–7.3, ♀ 7.8; ovipositor 4.7.

REMARKS. These specimens are collected in another mountain range than the type material (two females) from Trus Madi Mont situated not far from this range. Thus, *R. uniformis* is here recorded from another locality. However, it is possible that the above-mentioned specimens belong to another subspecies, because the genital plate of their female is with a slightly longer posteromedian projection (in the females from Trus Madi Mt, this projection is slightly shorter, or this plate is almost truncated posteriorly; Gorochov, 2008).

Rhinoteratura ketambe **Gorochov, sp. n.**

https://zoobank.org/NomenclaturalActs/F7223E5F-4213-45BD-8D85-1AB1C7274209

Figs 59, 75, 76

MATERIAL. Holotype – ♀, **Indonesia**: Sumatra I., Aceh Prov. near border with North Sumatra Prov., environs of Ketambe Vill. on Alas River (near Gunung Leuser National Park), 3º41–42′N, 97º38–39′E, 300–500 m, primary forest, at light, 15–24.IV.2018, A. Gorochov, M. Berezin, I. Kamskov, E. Tkatsheva (ZIN). Paratype – 1 ♀, same data as for holotype (ZIN).

DESCRIPTION. *Female* (holotype). Coloration and structure of body similar to those of *Rh. uniformis* but with following differences: yellowish stripes on pronotal disc with slightly darker (intensively yellow to almost orange) inner halves; dorsal tegminal field light brown with somewhat darker (brown) proximal half; light brown stripe along rest part of anal tegminal edge also slightly more distinct than in *Rh. uniformis* (for comparison see Figs 69 and 75); apex of upper rostral tubercle somewhat narrower and almost angular in dorsal view (Fig. 75); spine of fore coxa about 0.25 mm in length; exposed parts of hind wings, visible behind tegminal apices, almost 1 mm in length; genital plate different, i.e. clearly longer and with narrow and moderately deep posteromedin notch (Fig. 59); ovipositor (Fig. 76) similar to that of *Rh. uniformis* (its apex also almost as in Fig. 63).

Variations. Second female with apex of upper rostral tubercle barely more rounded, and exposed parts of hind wings, visible behind tegminal apices, almost 0.6 mm in length.

Figs 69–88. Meconematina: 69–74 – *Rhinoteratura uniformis* (Gor.); 75, 76 – *Rh. ketambe* sp. n.; 77, 78 – *Rh. raoani* (Gor.); 79, 80 – *Rh. pseudocapreola* sp. n.; 81 – *Rh. cemande* (Gor.); 82, 83 – *Borneratura atromacula* sp. n.; 84, 85 – *Odonturisca dentata* sp. n.; 86 – *Xiphidiopsis? laosi* sp. n.; 87 – *X.? lampungi* sp. n.; 88 – *X. (Xiphidiopsis) beybienkoi namlik* subsp. n. Head, pronotum and bases of wings from above, female (69, 75, 77, 79, 82, 84); same body parts with left fore leg from side/above, male (70). Male abdominal apex from above (71), from below (72) and from side (73). Ovipositor from side (74, 76, 78, 80, 81, 83, 85–87); sixth and seventh abdominal sternites as well as genital plate from below, female (88).

Male unknown.

MEASUREMENTS. Length (in mm). Body 10.5–11; body with wings 19–21; pronotum 3.3–3.5; tegmina 15.5–17; hind femora 8–8.5; ovipositor 4.2–4.6.

COMPARISON. The new species differs from all other congeners in the darker dorsal tegminal field in female in combination with the distinctly and narrowly notched female genital plate and the absence of denticles or apical hooks on the ovipositor.

ETYMOLOGY. This species is named after its type locality.

Rhinoteratura raoani (Gorochov, 2008)

Figs 60, 61, 77, 78

MATERIAL. **Vietnam**: 1 ♀, Cao Bang Prov., Phia Oac – Phia Den National Park, 22º37′41.8″N, 105º54′41.5″E, 900 m, 3–15.VI.2019, L. Anisyutkin (ZIN).

NOTE. This specimen (Fig. 77) is almost identical to the holotype (female) of this species from another locality (Ha Tinh Prov. of North Vietnam) located rather far from Cao Bang Province near the border with China. Their ovipositor has a very small apical denticle on each lower valve (Figs 61, 78), but the genital plate of the female from Cao Bang Province is slightly narrower near the base and with the less wrinkled distal half (Fig. 60), and this species, recorded here from a new locality, may have two subspecies in these provinces of Vietnam.

Rhinoteratura pseudocapreola Gorochov, sp. n.

https://zoobank.org/NomenclaturalActs/718AF146-0717-417F-821F-5B6C5D438A89

Figs 62–64, 79, 80

MATERIAL. Holotype – ♀, **Indonesia**: Java I., "Java or. [orientalis = eastern]" (ZIN). Paratype – 1 ♀, same island, "Java" (ZIN).

DESCRIPTION. Female (holotype). General appearance similar to that of females of *Rh. uniformis* and *Rh. ketambe* sp. n., but coloration more uniformly greenish (with only light brown eyes, a pair of yellowish stripes along lateral edges of pronotal disc and without brown or light brown marks on tegmina), upper rostral tubercle with apex almost as in *Rh. uniformis* (Fig. 79), spine of fore coxa about 0.2 mm in length, tegmina reaching distal thirds of hind tibiae, hind wings with exposed apical parts about 1.5 mm in length, genital plate almost elongately oval but not long and with a pair of short lateral subtransverse folds in middle part (Fig. 62), and ovipositor rather short (shorter than in these species; Fig. 80) and with apex as in Fig. 63.

Variations. Paratype with upper rostral tubercle having narrowly truncate apex, and with ovipositor barely more curved upwards.

Male unknown.

MEASUREMENTS. Length (in mm). Body 10.5–11.5; body with wings 18.5–20; pronotum 2.9–3; tegmina 15–16; hind femora 7.5–7.8; ovipositor 4–4.3.

COMPARISON. The new species differs from *Xiphidiopsis capreola* Redtenbacher, 1891 (Java), erroneously included in the genus *Leptoteratura* (Gorochov, 1993), in the head more opistognathous (*vs*. almost hypognathous), and in the female genital plate much shorter (compare Figs 64 and 65). From another Javanese species, *Rh. cemande* (Gorochov, 2008), **c**omb. n., *Ph. pseudocapreola* sp. n. differs in the female genital plate less widened in its proximal half and with a different ventral relief, as well as in the ovipositor shorter and with

the higher proximal half (compare Figs 80 and 81); and from all other congeners, in the more uniform coloration in combination with the female genital plate shape and the ovipositor rather short as well as lacking denticles and apical hooks.

ETYMOLOGY. This species name consists of the Latinized Greek prefix "pseudo-" and the species name "*capreola*" due to the similarity of the new species with *Rh. capreola* (Redtenbacher, 1891), comb. n. in their general appearance.

REMARKS. The holotype of *Rh. pseudocapreola* sp. n. is with the label "*Phlugiopsis* g. n. *capreola* Rdt. Bey-Bienko det. 1971" (probably Bey-Bienko intended to describe a new genus for this species but did not describe it) and was previously considered by Gorochov (1993, 2008) as this Rebtenbacher's species, but one of the syntypes of the latter species from the Geneve Natural History Museum (see its photograph in OSF) has the female genital plate very different from that of the above-mentioned holotype and is here designated as lectotype of *Rh. capreola*.

Genus *Borneratura* Gorochov, 2008

NOTE. This genus originally included the following true or possible Bornean species: *B. modesta* Gorochov, 2008 (type species), *B. lobata* Gorochov, 2008 and *B. sinuata* Gorochov, 2008 from Trus Madi Mont of Sabah; *B.? mjobergi* (Karny, 1925) and *B.*? *borneensis* (Karny, 1925) from Sarawak. Later, the latter species was returned to the genus *Xiphidiopsis*, and *B. kinabaluana* (Bey-Bienko, 1971) was transferred from the latter genus to *Borneratura* (OSF). Here I support the reasonability of assigning *B. mjobergi* and *B. kinabaluana* to *Borneratura* and transfer in this genus an additional species, *B. sarawaca* (Bey-Bienko, 1971), comb. n. (from *Xiphidiopsis* s. l.). However, *B.? borneensis* does not belong to *Xiphidiopsis* s. l. exactly, and it must be compared with *Rhinoteratura* species.

Borneratura atromacula Gorochov, sp. n.

https://zoobank.org/NomenclaturalActs/CBCC2F25-6C4E-44F5-A507-1E9EC87835DD

Figs 66, 67, 82, 83

MATERIAL. Holotype – ♀, **Malaysia**: Borneo I., Sabah State, southern part of Kinabalu National Park, 1500–2000 m, at light, 26.IV–1.V.2013, A. Gorochov, M. Berezin, V. Gorochova, E. Tkatsheva (ZIN).

DESCRIPTION. *Female* (holotype). General appearance somewhat similar to previous species of *Rhinoteratura*, considered here, but with some important differences: coloration yellowish with brownish tinge, dark brown spots on eyes, brown small area on posterior part of pronotal disc and several dots on tegmina near distal two thirds of their anal edges, and light brown stripes along these edges (Fig. 82); head less opistognathous (almost hypognathous) than in these species but with similar transverse convexity and concavity under upper rostral tubercle; this tubercle not lamellar, with flat dorsal suface having very slight median concavity, and with clearly convex ventral part (this part narrowly rounded at apex; Fig. 82); pronotum moderately low, almost 2.7 times as long as high; spine of fore coxa almost 0.2 mm in length; tegmina reaching distal parts of hind tibiae; exposed apical parts of hind wings about 0.5 mm in length; genital plate short (transverse), with transverse groove (fold) divided it into shortly bilobate anterior portion and somewhat longer posterior portion (latter portion roundly narrowing to barely notched apical part; Fig. 66); ovipositor moderately long, lacking denticles, with upper valve almost acute at apex, and with lower valve having thin but very distinct apical hook (Figs 67, 83).

Male unknown.

MEASUREMENTS. Length (in mm). Body 8.5; body with wings 20.5; pronotum 3; tegmina 17; hind femora 8.7; ovipositor 5.3.

COMPARISON. The new species is distinguished from all the other congeners by the pronotal disc with a darkened area on its posterior part. However, it is similar to *B. sarawaca* and *B. modesta* in the shape of the female genital plate but differs from them in the bilobate anterior portion of the female genital plate (*vs*. this portion is with the anterior and posterior edges almost parallel; besides, the posterior portion of this plate in *B. sarawaca* is distinctly more transverse than in the new species and *B. modesta*), and from only *B. modesta*, in the tegmina with darkened dots (*vs*. without such dots). From *B. kinabaluana*, *B. atromacula* sp. n. differs in the anterior portion of the female genital plate much narrower in its median part, and in the ovipositor slightly less slender; from *B. mjobergi*, in the less high pronotum which is almost 2.7 times as long as high (in *B. mjobergi*, it is approximately twice as long as high); from *B. lobata*, in the very different structure of the female genital plate; and from *B.? borneensis*, in the absence of yellowish stripes along the lateral edges of pronotal disc. Additional differences between the new species and *B. sinuata* with only known male are unclear.

ETYMOLOGY. This species name consists of the Latin prefix “atro-” (dark) and the Latin word “macula” (spot) due to the pronotal disc coloration.

Genus *Odonturisca* Gorochov, 2008

NOTE. Originally, this genus contained two species: *O. serricauda* (Karny, 1924) and *O. grigoriji* Gorochov, 2008 (type species) from Sumatra and Borneo (Trus Madi Mt), respectively. These species are characterized by the male genitalia with an almost cruciform sclerite, and the ovipositor with numerous denticles on the upper and lower valves. Besides, the two other species, for which only males are known, have a similar genital sclerite and were originally attributed either to this genus in doubt (*O.? epiproctalis* Gorochov, 2008 from Trus Madi Mt) or to the genus *Breviratura* Gorochov, 2007 (*B. brevis* Gorochov, 2008 from the same mountain); the latter genus is very different from all other true or probable *Odonturisca* representatives in its external structure, and these genera may be two subgenera of the same genus.

Odonturisca dentata Gorochov, sp. n.

https://zoobank.org/NomenclaturalActs/1B814809-7769-4968-9D7C-E87A787C2082

Figs 68, 84, 85

MATERIAL. Holotype – ♀, **Malaysia**: Borneo I., Sabah State, southern part of Kinabalu National Park, 1500–2000 m, at light, 26.IV–1.V.2013, A. Gorochov, M. Berezin, V. Gorochova, E. Tkatsheva (ZIN).

DESCRIPTION. *Female* (holotype). General appearance similar to that of *B. atromacula* sp. n. but with following characteristic features: body uniformly yellowish but with light greyish brown eyes as well as poorly distinct and very light brown stripe on tegmina along anal edges; upper rostral tubercle with more or less truncate apex and more distinct median concavity on dorsal surface (Fig. 84); pronotum slightly lower than in this species, almost 3.1 times as long as high; spine of fore coxa about 0.25 mm in length; tegmina reaching apical parts of hind tibiae; hind wings completely covered with tegmina (distal parts of tegmina, projected behind apices of hind wings, almost 0.4 mm in length); genital plate strongly

transverse, with posteromedian notch very short, rounded and moderately wide (Fig. 68); ovipositor rather long, gradually narrowing to apex, with several denticles on dorsal edge of distal portion of each upper valve and on ventral edge of same portion of each lower valve (including small apical hook on this valve; Fig. 85).

Male unknown.

MEASUREMENTS. Length (in mm). Body 9; body with wings 17; pronotum 3.6; tegmina 13.5; hind femora 7.5; ovipositor 5.7.

COMPARISON. The new species is distinguished from all the other congeners by the humeral notches of the pronotum less distinct (low and rounded, i.e. almost as in *Borneratura* species; but in the other species of *Odonturisca*, these notches are somewhat deeper and obtuse-angled). Additionally it differs from *O. grigoriji* by the female genital plate clearly more transverse as well as with the rather widely, shortly and roundly notched posterior part (*vs*. this part has a narrowly angular but very small apical notch); from *O. serricauda*, by the much less deeply notched female genital plate; but additional differences between *O. dentata* **sp. n.** and *O.? epiproctalis* (its female is unknown) are unclear.

ETYMOLOGY. This species name is the Latin word "dentata" (with teeth) due to the ovipositor denticulate.

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