

## New and little-known species of the genus *Zhengitettix* (Orthoptera: Tetrigidae: Scelimeninae) from Southeast Asia

## Новые и малоизвестные виды рода *Zhengitettix* (Orthoptera: Tetrigidae: Scelimeninae) из Юго-Восточной Азии

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С.Ю. СТОРОЖЕНКО

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Seven new species of the genus *Zhengitettix* Liang, 1994 are described: *Z. hosticus* sp. nov., *Z. mucronatus* sp. nov. and *Z. spinulentus* sp. nov. from Vietnam; *Z. albitarsus* sp. nov. and *Z. extraneus* sp. nov. from Thailand; *Z. palawanensis* sp. nov. and *Z. taytayensis* sp. nov. from the Philippines. Two species, *Z. curvispinus* Liang, Jiang et Liu, 2007 and *Z. obliquespicula* Zheng et Jiang, 2005 are firstly recorded from Vietnam. An annotated check-list and key to species of the genus *Zhengitettix* are given. Position of *Zhengitettix* within the family Tetrigidae is briefly discussed.

Описано семь новых для науки видов рода *Zhengitettix* Liang, 1994: *Z. hosticus* sp. nov., *Z. mucronatus* sp. nov. и *Z. spinulentus* sp. nov. из Вьетнама; *Z. albitarsus* sp. nov. и *Z. extraneus* sp. nov. из Таиланда; *Z. palawanensis* sp. nov. и *Z. taytayensis* sp. nov. из Филиппин. Два вида (*Z. curvispinus* Liang, Jiang et Liu, 2007 и *Z. obliquespicula* Zheng et Jiang, 2005) впервые указываются для Вьетнама. Приводится определительная таблица и аннотированный список видов рода *Zhengitettix*. Кратко обсуждается положение *Zhengitettix* в семействе Tetrigidae.

**Key words:** pygmy grasshoppers, taxonomy, Vietnam, Thailand, Philippines, Orthoptera, Tetrigidae, Scelimeninae, *Zhengitettix*, new species

**Ключевые слова:** прыгунчики, таксономия, Вьетнам, Таиланд, Филиппины, Orthoptera, Tetrigidae, Scelimeninae, *Zhengitettix*, новые виды

### INTRODUCTION

The monotypic genus *Zhengitettix* Liang, 1994 was established for *Z. hainanensis* Liang, 1994 from Hainan Island in China (Liang, 1994). Up to now this genus includes six species distributed in South China (Zheng & Jiang, 2002; Zheng, 2005; Zheng et al., 2005; Liang et al., 2007; Zheng et al., 2010; Deng et al., 2010). Species of the genus *Zhengitettix* are typical inhabitants of moist places in tropical rainforests, such as stones on banks of streams (Deng et al., 2010). The diagnosis of *Zhengitettix* and key to its species were given in two recent papers (Deng et al., 2010; Zheng et al., 2010).

Among more than two thousand specimens of Tetrigidae stored at the Zoological Institute (St Petersburg, Russia), seven new species of *Zhengitettix* from Southeast Asia and two species of the same genus described from China but collected in Vietnam were found. An annotated list of *Zhengitettix* species with descriptions of new species and new distribution data is given below. A new key to the species is also provided.

### MATERIALS AND METHODS

Twenty five specimens of *Zhengitettix* species were collected in Vietnam, Thailand and the Philippines by A. Gorochoy,

V. Trjapitzyn, A. Grigorenko, N. Orlov, I. Darevsky, V. Tomkovich and L. Anisyutkin in 1986–2010. All the specimens are dry and pinned. The examined material (including holotypes and paratypes of new species) are deposited at the Zoological Institute of the Russian Academy of Sciences, St Petersburg (ZIN). The morphological terminology follows Storozhenko & Paik (2007). Length of the body is measured from the frontal ridge to the apex of the subgenital plate. Width of the fastigium of the vertex is measured between the eyes at the base of the lateral carinae of this fastigium. All other measurements are standardised as accepted for Tetrigidae.

## SYSTEMATICS

Order **ORTHOPTERA** Olivier, 1789

Family **TETRIGIDAE** Rambur, 1838

Subfamily **SCELIMENINAE** Bolívar, 1887

Genus *Zhengitettix* Liang, 1994

*Zhengitettix* Liang, 1994: 33; Liang & Zheng, 1998: 75; Zheng, 2005: 49; Deng et al., 2010: 46; Zheng et al., 2010: 1153.

Type species: *Zhengitettix hainanensis* Liang, 1994, by original designation.

*Note.* According to the recent system of Tetrigidae, the genus *Zhengitettix* is a member of the subfamily Scelimeninae (Zheng, 2005; Deng et al., 2010; Zheng et al., 2010), closely related to the genera *Hebarditettix* Günther, 1938 and *Eucriotettix* Hebard, 1930 but easily distinguished from the two genera by a very narrow fastigium of the vertex (its width is 1.7–2.4 times narrower than width of the eye from above; in *Eucriotettix* and *Hebarditettix*, this ratio is 1 and 1.3–1.5, respectively).

*Composition.* Thirteen species in the Oriental Region, including seven new species described below.

### Key to species of *Zhengitettix*

1(6) Sternites ochrous or brown.

- 2(5) Lower part of each lateral lobe of pronotum with rather narrow and acute spine (Fig. 31).
- 3(4) Frontal ridge near base of antennae slightly wider than width of first antennal segment. Prozona of pronotum transverse ..... *Z. hainanensis*
- 4(3) Frontal ridge near base of antennae 2–2.5 times narrower than width of first antennal segment (Fig. 33). Prozona of pronotum longitudinal (Fig. 31) ..... *Z. palawanensis* sp. nov.
- 5(2) Lower part of each lateral lobe of pronotum with broadly triangular projection ..... *Z. triangularis*
- 6(1) Sternites black or sometimes (in females of *Z. extraneus* sp. nov. only) black with indistinct yellowish spots.
- 7(24) Prozona of pronotum transverse (Figs 2, 7, 16, 23, 27).
- 8(23) Lower part of each lateral lobe of pronotum with more or less long spine directed laterally (Figs 2, 9, 23, 36) or slightly curved forward (Figs 7, 16, 31).
- 9(10) Visible part of tegmen distinctly narrower than mid femur ..... *Z. nigrofemurus*
- 10(9) Visible part of tegmen equal to mid femur in width, or distinctly broader.
- 11(14) Antennal sockets situated below ventral margins of eyes (Fig. 11). Female subgenital plate with distinct longitudinal creases around the triangular posterior process; basal part of this plate smooth (Figs 8, 15).
- 12(13) Lower part of each lateral lobe of pronotum with long spine somewhat curved forward (Fig. 7). Hind tibiae ochrous with light basal part. Female sternites completely black ..... *Z. curvoispinus*
- 13(12) Lower part of each lateral lobe of pronotum with relatively short and almost straight spine (Fig. 9). Hind tibiae blackish brown with yellowish ring in basal part. Female sternites black with indistinct yellowish median spots ..... *Z. extraneus* sp. nov.
- 14(11) Antennal sockets situated between ventral margins of eyes (Figs 1, 18, 33, 38). Female subgenital plate smooth (Figs 20, 42) or with transverse creases only (Fig. 6), or with longitudinal and transverse creases (Fig. 26).
- 15(16) Hind tarsi white. Female subgenital plate with shallow transverse creases only (Fig. 6). ..... *Z. albitarsus* sp. nov.
- 16(15) Hind tarsi light brown. Female subgenital plate smooth (Figs 20, 42) or with longitudinal and transverse creases (Fig. 26).

- 17(18) Lateral ocelli placed below middle part of eyes (Fig. 22). Female subgenital plate with longitudinal and transverse creases (Fig. 26). Ovipositor with upper valves blackish brown and lower valves light brown.....  
..... *Z. mucronatus* sp. nov.
- 18(17) Lateral ocelli placed between middle parts of eyes (Figs 18, 38). Female subgenital plate smooth (Figs 20, 42). Upper and lower valves of ovipositor light brown.
- 19(20) Lower part of each lateral lobe of pronotum with relatively short spine slightly curved forward (Fig. 16). Hind tibiae completely black..... *Z. hosticus* sp. nov.
- 20(19) Lower part of each lateral lobe of pronotum with long and straight spine directed laterally (Fig. 36). Hind tibiae completely brown or black with light rings.
- 21(22) Hind tibiae brown. Body larger: length of female pronotum 13.7–15.0 mm.....  
..... *Z. spinulentus* sp. nov.
- 22(21) Hind tibiae black with light base and ring near middle. Body smaller: length of female pronotum 11.0 mm..... *Z. transpicula*
- 23(8) Lower part of each lateral lobe of pronotum with short spine directed obliquely backward (Fig. 27)..... *Z. obliquespicula*
- 24(7) Prozona of pronotum longitudinal (Fig. 43)..... *Z. taytayensis* sp. nov.

#### Annotated list of *Zhengitettix* species with descriptions of new taxa

##### *Zhengitettix albitarsus* sp. nov.

(Figs 1–6)

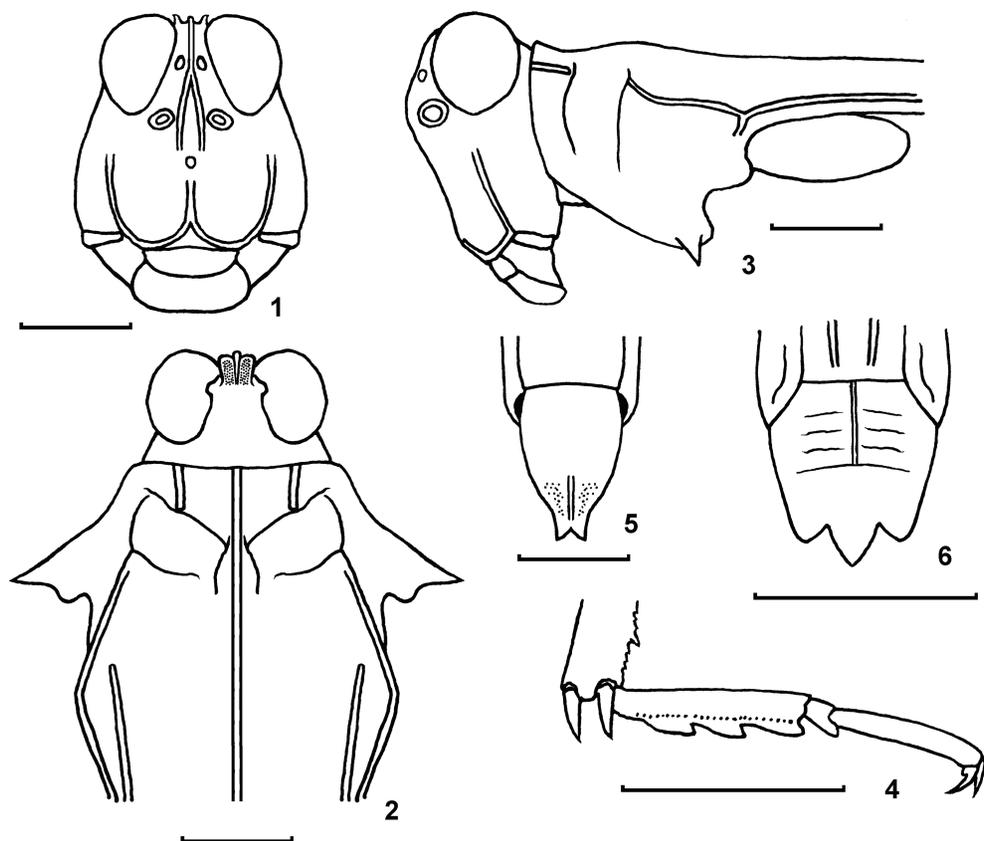
**Holotype.** Male; **Thailand**, Nakhon Ratchasima Prov., environs of Khao Yai National Park, 500–1000 m, 26 Oct.–4 Nov. 2000, A. Gorochov & L. Anisyutkin (ZIN).

**Paratypes.** **Thailand:** 1 female, same data as for holotype (ZIN); 1 male, Mae Hong Son Prov., environs of Mae Yen Vill., 19°4'N, 98°5'E, 560 m, Yellow Pans Forest, 18–24 Dec. 2010, V. Tomkovich (ZIN).

**Description.** Male. Body medium-sized for this genus. Antennae filiform, 14–15-segmented, 2.1–2.4 times as long as fore femora; middle segments (6–8th) 7.2–8.8 times as long as wide. Antennal sockets situated between ventral margins of eyes. Fastigium of vertex 2.0–2.4 times narrower

than width of one eye from above; median carina of fastigium reaching middle of eyes. Eyes protruding above pronotum in lateral view and distinctly separated from anterior margin of pronotum in dorsal view. Lateral ocelli placed between middle parts of eyes. Frontal ridge in lateral view broadly rounded. Frontal ridge near base of antennae as wide as first antennal segment. Pronotum in dorsal view with straight anterior margin; posterior process of pronotum narrow and very long, slightly surpassing apex of hind tibia. Median carina of pronotum in profile low, almost straight. Lateral carinae in prozona well defined; prozona transverse, 1.5 times as wide as long. Dorsal surface of pronotum almost smooth, without oblique carinulae. Hind margin of lateral lobes of pronotum with tegminal (upper) sinus almost twice less deep than lower sinus; lower part of lateral lobes of pronotum with short, acute and almost straight spine. Tegmina ovate; visible part of tegmen 2.4–2.6 times as long as wide and 1.1–1.25 times as wide as mid femur. Hind wings extending apex of posterior process of pronotum. Fore and mid femora with lower and upper edges straight; fore femur 4.2–4.3 times, mid femur 4.2–4.4 times, and hind femur 3.3–3.4 times as long as wide. Dorsal part of hind tibia with 6 outer and 4–5 inner teeth. First tarsal segment of hind legs 1.1 times as long as third one (without claws); ventral surface of this segment with three triangular pads (two basal pads slightly larger than apical pad). Epiproct triangular. Subgenital plate in ventral view with excised apex, 1.5–1.6 times as long as wide; in lateral view, subgenital plate conical. Cerci with attenuated apex, 2.5 times as long as wide near base.

General colouration of body blackish or yellowish brown. Head blackish from above; eyes light brown; antennae brown. Genae and frons blackish or light brown. Disc of pronotum and upper part of lateral lobes blackish or brown; lower part of lateral lobes of pronotum yellowish brown. Tegmina black, with yellowish veins. Hind wings black. Hind femora light brown with



**Figs 1–6.** *Zhengitettix albitarsus* sp. nov. **1**, male head, frontal view; **2**, female head and anterior part of pronotum, dorsal view; **3**, female head and anterior part of pronotum, lateral view; **4**, male hind tarsus, lateral view; **5**, male apex of abdomen, ventral view; **6**, female subgenital plate, ventral view. Scale bars: 1 mm.

a few indistinct dark spots on most part of outer side; lower part of outer side completely black but bordered by narrow yellowish stripe along lower keel. Hind tibiae blackish, with brown ring in basal third. Tarsal segments of hind legs white. Sternites black. Ventral part of subgenital plate light brown; dorsal part blackish. Epiproct yellowish. Cerci brown.

**Female.** Shape and structure of body similar to those of male. Antennae 15-segmented, middle (6–8th) segments of antennae 7.5–8.2 times as long as wide. Fastigium of vertex 2.2 times narrower than width of one eye from above. Width of frontal ridge near base of antennae equal to width of first

antennal segment. Median and lateral carinae of pronotum as in male; prozona transverse, 1.7 times as wide as long. Visible part of tegmen 2.5 times as long as wide and 1.2 times as wide as mid femur; hind wings as in male. Fore femur 4.4 times, mid femur 4.6, hind femur 3.2 times as long as wide. Dorsal part of hind tibia with 6 outer and 5–7 inner teeth. Epiproct narrowly triangular, with pointed apex. Subgenital plate elongate, near middle with shallow transverse creases; apex of plate with triangular posterior process. Cerci as in male. Valves of ovipositor narrow, dentate; upper valve 5.0 times and lower valve 6.75 times longer than their maximum width.

General colouration as in male. Sternites black; subgenital plate light brown with indistinct blackish marks. Ovipositor light brown, with blackish teeth.

*Length* in mm. Body: male 7.8–8.7, female 8.0; pronotum: male 12.2–13.0, female 13.7; antenna: male 4.0–4.1, female 4.3; tegmen: male 1.2–1.3, female 1.5; fore femur: male 1.7–1.9, female 2.2; mid femur: male 2.1–2.2, female 2.3; hind femur: male 5.3–5.5, female 6.0; ovipositor 1.5.

*Etymology.* The species name is a combination of the Latin word “album” (white) with the morphological term of Greek origin “tarsus” (hand); this combination is characterizing colour of the tarsal segments of hind legs.

*Distribution.* Thailand: Nakhon Ratchasima Province, Mae Hong Son Province.

***Zhengitettix curvispinus*** Liang, Jiang et Liu, 2007  
(Figs 7, 8)

*Zhengitettix curvispinus* Liang et al., 2007: 659, figs 1–3 (holotype – male, China: Guangxi Prov., Fangcheng, Shangyue; in Biology Museum, Zhongshan University, China); Deng et al., 2010: 46; Zheng et al., 2010: 1155.

*Zhengitettix curvipinnus*: Liang et al., 2007: 660 (*lapsus calami*).

*Material examined.* **Vietnam:** 1 female, Nghe An Prov., 20–25 km W of Con Cuong Town,

400 m, tropical forest, 22–30 Oct. 1994, I. Darevsky (ZIN).

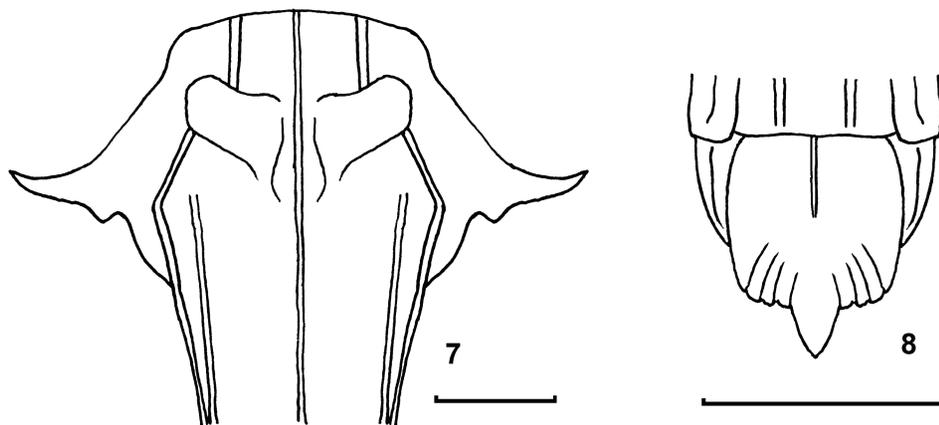
*Note.* This species is characterised by the lower part of lateral lobes of pronotum with acute spine distinctly curved forwards, by the base of antennae inserted slightly below the ventral margin of eyes, and by specific armament of the female subgenital plate (Fig. 8). The studied female from Central Vietnam well agrees with the original description of this species, except slightly shorter spine on the lower part of lateral lobes of pronotum (Fig. 7), and is considered herein as conspecific with *Z. curvispinus*.

*Length* in mm. Female from Vietnam: body 8.6; pronotum 11.1; antenna 4.0; tegmen 1.1; fore femur 2.1; mid femur 2.3; hind femur 5.9; ovipositor 1.5. Specimens from South China (after Liang et al., 2007): body in male 6.2–7.6, in female 7.7–9.6; pronotum in male 9.6–11.2, in female 9.8–11.8; hind femur in male 5.0–5.3, in female 5.6–5.9.

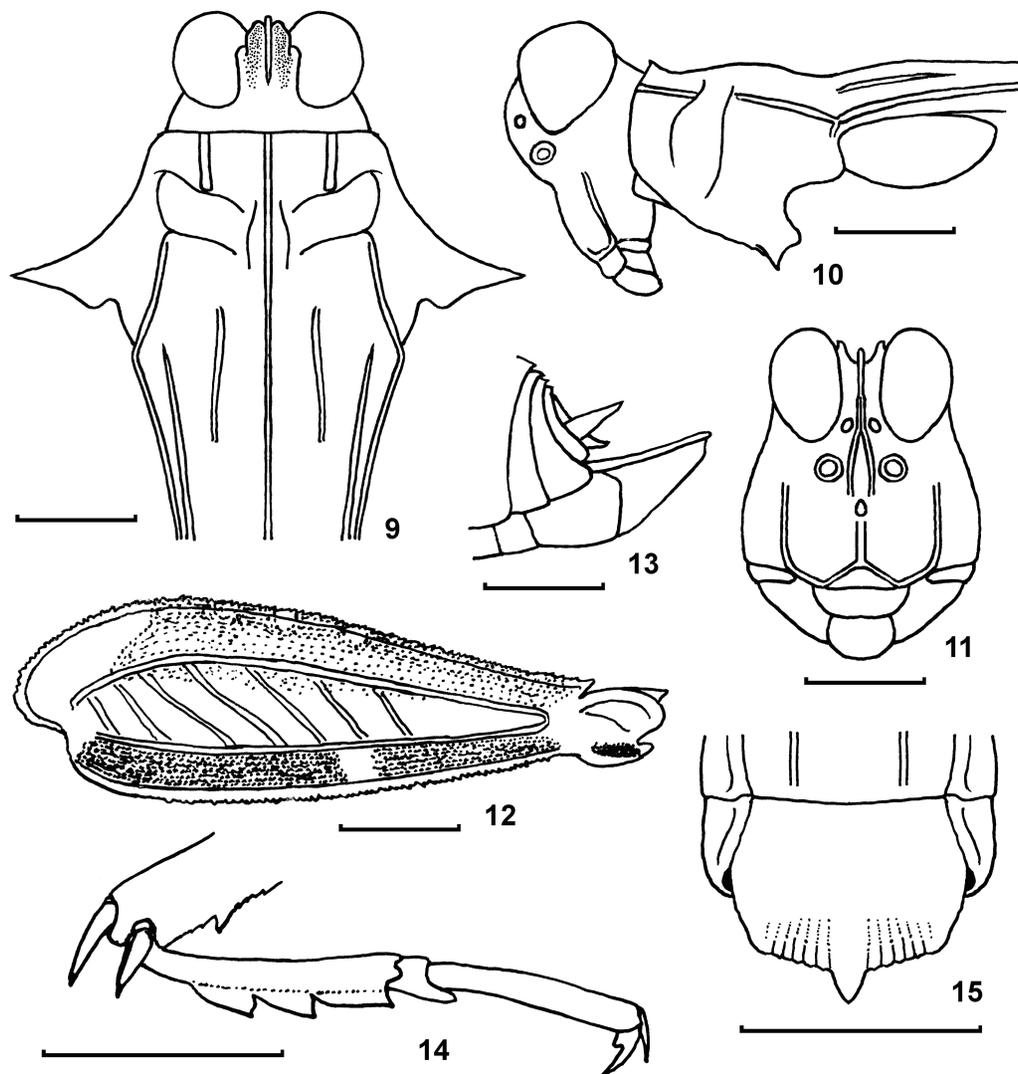
*Distribution.* China: Guangxi Province. Vietnam: Nghe An Province (new record).

***Zhengitettix extraneus* sp. nov.**  
(Figs 9–15)

*Holotype.* Male; **Thailand**, Surat Thani Prov., 40 km SW of Phanom Town, environs of Khao Sok National Park, 20–29 July 1996, A. Gorochov (ZIN).



**Figs 7–8.** *Zhengitettix curvispinus*, female from Vietnam. **7**, anterior part of pronotum, dorsal view; **8**, subgenital plate, ventral view. Scale bars: 1 mm.



**Figs 9–15.** *Zhengitettix extraneus* sp. nov. **9**, male head and anterior part of pronotum, dorsal view; **10**, male head and anterior part of pronotum, lateral view; **11**, male head, frontal view; **12**, male hind femur, lateral view; **13**, male apex of abdomen, lateral view; **14**, female hind tarsus, lateral view; **15**, female subgenital plate, ventral view. Scale bars: 1 mm.

**Paratypes. Thailand:** 1 male and 2 females, same data as for holotype (ZIN); 1 female, Phang Nga Prov., 25 km W of Phang Nga Town, 28 Dec. 1997, V. Grigorenko (ZIN).

**Description.** Male. Body large for this genus. Antennae filiform, 14-segmented, 1.7 times as long as fore femora; middle segments (6–8th) 6.5–7.0 times as long as wide. Antennal sockets situated below

ventral margins of eyes. Fastigium of vertex 1.9–2.1 times narrower than width of one eye from above; median carina of fastigium reaching posterior two thirds of eyes. Eyes protruding above pronotum in lateral view and distinctly separated from anterior margin of pronotum in dorsal view. Lateral ocelli placed below middle parts of eyes. Frontal ridge in lateral view broadly round-

ed. Frontal ridge near base of antennae as wide as first antennal segment. Pronotum in dorsal view with straight anterior margin; posterior process of pronotum narrow, reaching apex of hind tibia. Median carina of pronotum in profile low, almost straight. Lateral carinae in prozona well defined; prozona transverse, 1.6–1.8 times as wide as long. Dorsal surface of pronotum almost smooth; oblique carinulae developed. Hind margin of lateral lobes of pronotum with deep tegminal sinus; lower part of lateral lobes pronotum with relatively short and almost straight spine. Tegmina ovate; visible part of tegmen 2.4 times as long as wide and 1.25 times as wide as mid femur. Hind wings extending apex of posterior process of pronotum. Fore and mid femora with lower and upper edges straight; fore femur 4.75–5.0 times, mid femur 5.2–5.3, and hind femur 3.4–3.5 times as long as wide. Dorsal part of hind tibia with 4 outer and 4–5 inner teeth. First tarsal segment of hind legs 1.1 times shorter than third one; ventral surface of first segment with three triangular pads (two basal pads slightly shorter than apical pad). Epiproct triangular. Subgenital plate in ventral view with excised apex, 1.5 times as long as wide; in lateral view, subgenital plate conical. Cerci conical, 2.3 times as long as wide near base.

General colouration of body blackish brown. Head blackish from above; eyes brown; antennae light brown. Genae and frons blackish brown. Disc of pronotum blackish with numerous small yellow spots; upper part of lateral lobes blackish; lower part of lateral lobes yellowish. Tegmina light brown, with black dots between veins. Hind wings black. Hind femora light brown with a few indistinct dark spots on most part of outer side; lower part of outer side black with light brown spot behind middle and narrow light brown stripe along lower keel. Hind tibiae blackish brown, with yellowish ring in basal third. Tarsal segments of hind legs light brown. Sternites black. Ventral and dorsal parts of subgenital plate light brown. Epiproct yellowish brown. Cerci brown.

Female. Shape and structure of body similar to those of male. Antennae 16–17-segmented; middle segments of antennae 6.8–7.5 times as long as wide. Fastigium of vertex 1.7–2.0 times narrower than width of one eye from above. Frontal ridge near base of antennae equal to first antennal segment in width. Median and lateral carinae of pronotum as in male; prozona transverse, 1.5–1.6 times as wide as long. Visible part of tegmen 2.8–3.0 times as long as wide and equal to mid femur in width. Hind wings as in male. Fore femur 4.4–4.6 times, mid femur 4.6–5.0, hind femur 3.2–3.6 times as long as wide. Dorsal part of hind tibia with 4–6 outer and 3–4 inner teeth. Epiproct narrowly triangular, with pointed apex. Subgenital plate elongate, with distinct longitudinal creases around triangular posterior process. Cerci as in male. Valves of ovipositor narrow, dentate; upper valve 4.7–5.1 times and lower valve 6.0–6.8 times longer than their maximum width.

General colouration as in male. Sternites and subgenital plate black with indistinct yellowish spots. Ovipositor yellowish, with brown teeth.

*Length* in mm. Body: male 7.9–8.5, female 8.4–9.5; pronotum: male 11.2–12.0, female 12.6–13.4; antenna: male 3.5, female 3.7–3.8; tegmen: male 1.2, female 1.4–1.5; fore femur: male 1.9–2.0, female 2.2–2.3; mid femur: male 2.1, female 2.3–2.5; hind femur: male 5.3–5.4, female 6.2–6.4; ovipositor 1.3–1.5.

*Etymology.* The species name is the Latin adjective “extraneus” (marginal).

*Distribution.* Thailand: Surat Thani Province, Phang Nga Province.

### *Zhengitettix hainanensis* Liang, 1994

*Zhengitettix hainanensis* Liang, 1994: 33, figs 1–4 (holotype – male, China: Hainan Province, Hainan I., Janfengling; in Biology Museum, Zhongshan University, China); Liang & Zheng, 1998: 75, figs 52 a–d; Zheng, 2005: 49, 51; Deng et al., 2010: 46; Zheng et al., 2010: 1154.

*Length* (in mm). Body: male 6.2–7.6, female 7.7–9.6; pronotum: male 9.6–11.2, female 9.8–11.8; hind femur: male 5.0–5.3, female 5.6–5.9 (after Liang & Zheng, 1998).

*Distribution*. China: Hainan Island.

***Zhengitettix hosticus* sp. nov.**

(Figs 16–21)

*Holotype*. Male; **Vietnam**: Cao Bang Prov., Nguen Binh Distr., Quang Thanh Vill., 4–13 May 1998, N. Orlov (ZIN).

*Paratypes*. **Vietnam**: 3 females, same data as for holotype (ZIN).

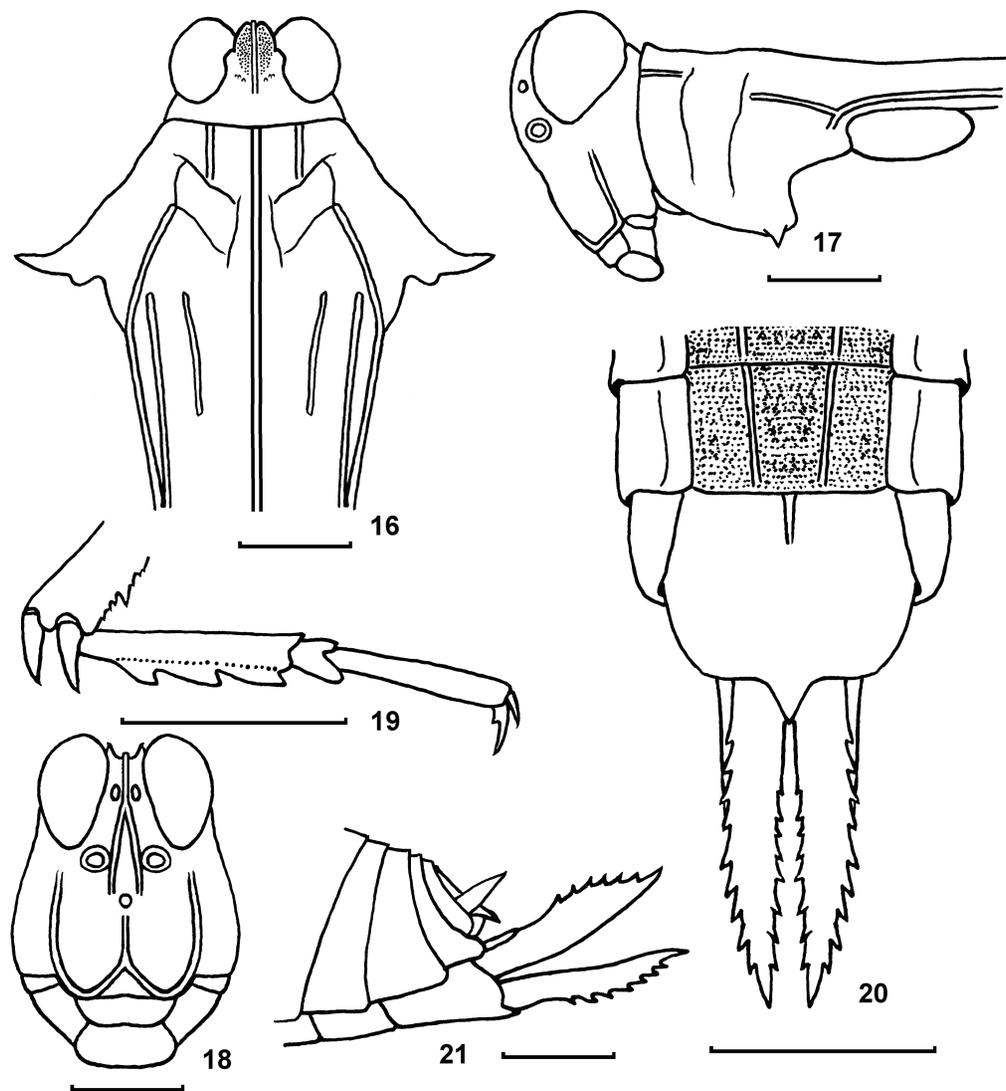
*Description*. Male. Body large for this genus. Antennae filiform, 14-segmented, 2.2 times as long as fore femora; middle segments (6–8th) 7.5–9.0 times as long as wide. Antennal sockets situated between ventral margins of eyes. Fastigium of vertex 2.2 times narrower than width of one eye from above; median carina of fastigium reaching posterior two thirds of eye. Eyes protruding above pronotum in lateral view and distinctly separated from anterior margin of pronotum in dorsal view. Lateral ocelli placed between middle parts of eyes. Frontal ridge in lateral view broadly rounded. Frontal ridge near base of antennae 1.2 times narrower than first antennal segment. Pronotum in dorsal view with straight anterior margin; posterior process of pronotum reaching middle of hind tibia. Median carina of pronotum in profile low, almost straight. Lateral carinae in prozona well defined; prozona transverse, 1.4 times as wide as long. Dorsal surface of pronotum almost smooth; oblique carinulae weak. Hind margin of lateral lobes of pronotum with deep tegminal sinus; lower part of lateral lobes of pronotum with acute spine slightly curved forwards. Tegmina ovate; visible part of tegmen 2.2 times as long as wide and 1.5 times as wide as mid femur. Hind wings extending apex of posterior process of pronotum. Fore and mid femora with lower and upper edges straight; fore femur 5.0 times, mid femur 5.5 times, and hind femur 3.2 times as long as wide. Dorsal part of hind tibia with 5–6 outer and 5–6 inner teeth. First tarsal seg-

ment of hind legs 1.1 times as long as third one; ventral surface of first segment with three triangular pads equal to each other in size. Epiproct triangular. Subgenital plate in ventral view with excised apex, 2.0 times as long as wide; in lateral view, this plate conical. Cerci conical, 2.2 times as long as wide near base.

General colouration of male body brown. Head from above blackish brown; eyes and antennae light brown. Genae and frons light brown. Disc of pronotum brown; upper part of lateral lobes blackish brown; lower part of lateral lobes light brown. Tegmina blackish. Hind wings black. Hind femora brown with a few indistinct light brown spots on most part of outer side; lower part of outer side black with narrow light stripe along lower keel. Hind tibiae black. Tarsal segments of hind legs light brown. Sternites black. Ventral and dorsal parts of subgenital plate light brown. Epiproct and cerci brown.

Female. Shape and structure of body similar to those of male. Antennae 15-segmented; middle segments of antennae 7.5–8.8 times as long as wide. Fastigium of vertex 1.7–2.0 times narrower than one eye from above. Frontal ridge near base of antennae 1.1–1.2 times narrower than first antennal segment. Median and lateral carinae of pronotum as in male; prozona transverse, 1.3–1.4 times as wide as long. Visible part of tegmen 2.4–2.6 times as long as wide and 1.2–1.3 times as wide as mid femur. Hind wings as in male. Fore femur 4.4–5.0 times, mid femur 4.9–5.6, hind femur 3.1–3.4 times as long as wide. Dorsal part of hind tibia with 5–6 outer and 4–6 inner teeth. Epiproct narrowly triangular, with pointed apex. Subgenital plate smooth, elongate, with strong triangular posterior process. Cerci conical, 2.4–2.7 times as long as wide near base. Valves of ovipositor narrow, dentate; upper valve 3.9–4.6 times and lower valve 6.1–6.2 times longer than their maximum width.

General colouration as in male. Sternites black. Subgenital plate light brown. Ovipositor light brown, with brown teeth.



**Figs 16–21.** *Zhengitettix hosticus* sp. nov. **16**, male head and anterior part of pronotum, dorsal view; **17**, male head and anterior part of pronotum, lateral view; **18**, male head, frontal view; **19**, male hind tarsus, lateral view; **20**, female apex of abdomen, ventral view; **21**, female apex of abdomen, lateral view. Scale bars: 1 mm.

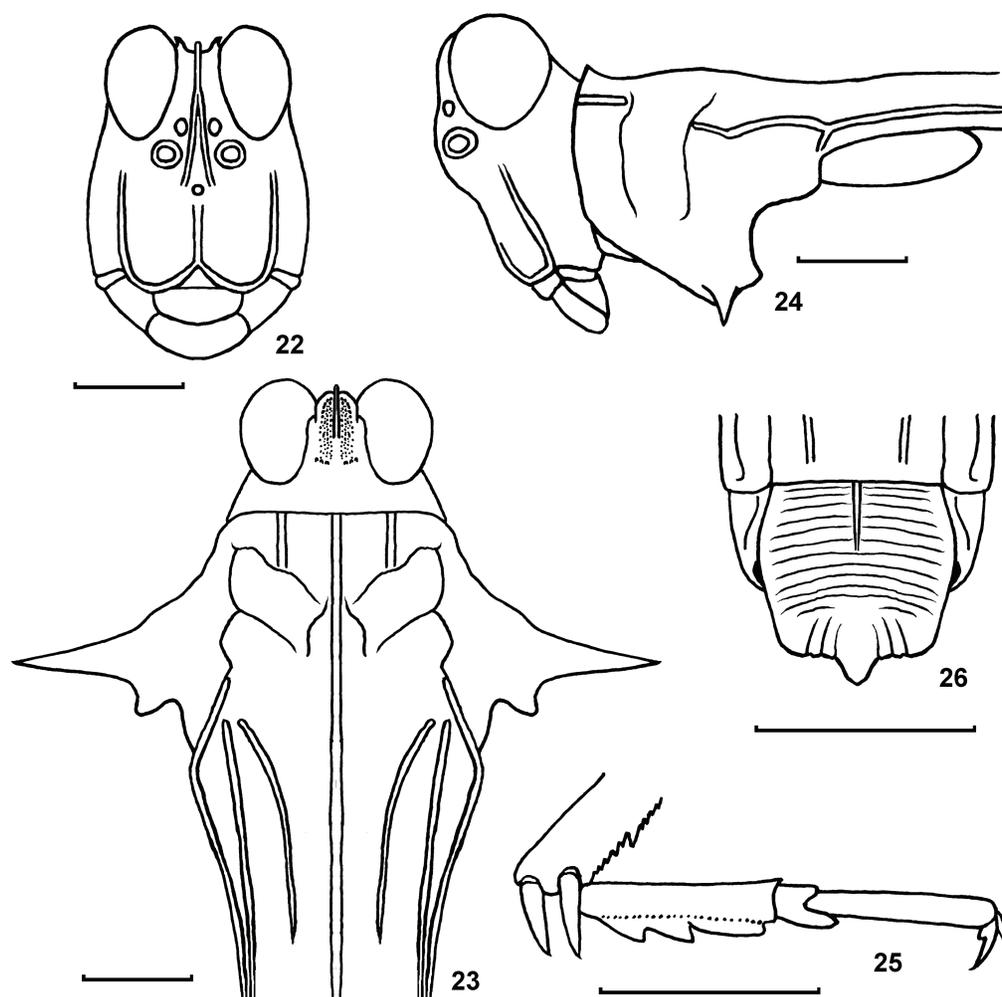
*Length* in mm. Body: male 8.5, female 9.0–9.9; pronotum: male 11.2, female 11.0–14.3; antenna: male 4.5, female 4.3–4.6; tegmen: male 1.3, female 1.2–1.5; fore femur: male 2.0, female 2.2–2.3; mid femur: male 2.2, female 2.2–2.5; hind femur: male 5.5, female 6.1–6.7; ovipositor 1.6–1.7.

*Etymology.* The species name is the Latin adjective “hosticus” (alien).

*Distribution.* Vietnam: Cao Bang Province.

***Zhengitettix mucronatus* sp. nov.**  
(Figs 22–26)

*Holotype.* Male; Vietnam, Vinh Phu Prov., Tam Dao National Park, 900–1000 m, 9–18 Nov. 1990, A. Gorochov (ZIN).



**Figs 22–26.** *Zhengitettix mucronatus* sp. nov. **22**, male head, frontal view; **23**, female head and anterior part of pronotum, dorsal view; **24**, female head and anterior part of pronotum, lateral view; **25**, female hind tarsus, lateral view; **26**, female subgenital plate, ventral view. Scale bars: 1 mm.

*Paratype. Vietnam:* female, same data as for holotype (ZIN).

*Description.* Male. Body large for this genus. Antennal sockets situated between ventral margins of eyes (antennae, excepting two basal segments, broken). Fastigium of vertex 1.9 times narrower than one eye from above; median carina of fastigium reaching middle of eyes. Eyes distinctly protruding above pronotum in lateral view and separated from anterior margin of pronotum in dorsal view. Lateral ocelli placed

below middle part of eyes. Frontal ridge in lateral view broadly rounded. Frontal ridge near base of antennae 1.4 times narrower than first antennal segment. Pronotum in dorsal view with straight anterior margin; posterior process of pronotum reaching apex of hind tibia. Median carina of pronotum in profile low, almost straight. Lateral carinae in prozona well defined; prozona transverse, 1.5 times as wide as long. Dorsal surface of pronotum rugous; oblique carinulae undeveloped. Hind margin of lateral lobes of

pronotum with deep tegminal sinus; lower part of lateral lobes of pronotum with long and straight spine. Tegmina ovate; visible part of tegmen 2.6 times as long as wide and 1.1 times as wide as mid femur. Hind wings slightly (0.5 mm) not reaching apex of posterior process of pronotum. Fore and mid femora with lower and upper edges straight; fore femur 6.0 times, mid femur 5.3 times, and hind femur 3.5 times as long as wide. Dorsal part of hind tibia with 5–6 outer and 4–5 inner teeth. First tarsal segment of hind legs 1.1 times as long as third one; ventral surface of first segment with three triangular pads (two basal pads shorter than apical pad). Epiproct triangular. Subgenital plate in ventral view with narrowly excised apex, 1.6 times as long as wide; in lateral view, this plate conical. Cerci conical, 2.3 times as long as wide near base.

General colouration of male body blackish brown. Head from above black; eyes blackish brown; two basal segments of antennae light brown. Genae and frons black. Disc of pronotum blackish brown; lateral lobes blackish brown; spine on these lobes light brown with dark brown apex. Tegmina black with brown veins. Hind wings black. Hind femora light brown with upper part of outer side brown and lower part of outer side completely black. Hind tibiae brown. Tarsal segments of hind legs light brown. Sternites black. Ventral and dorsal parts of subgenital plate light brown. Epiproct brown. Cerci light brown.

Female. Shape and structure of body similar to those of male. Antennae 15-segmented; middle segments of antennae 5.6–7.0 times as long as wide. Fastigium of vertex 2.0 times narrower than one eye from above. Frontal ridge near base of antennae 1.6 times narrower than first antennal segment. Median and lateral carinae of pronotum as in male; prozona transverse, 1.3 times as wide as long. Visible part of tegmen 3.0 times as long as wide and equal to mid femur in width. Hind wings as in male. Fore femur 5.2 times, mid femur 5.2, hind femur 3.5 times as long as wide. Dorsal part

of hind tibia with 5 outer and 4 inner teeth. Epiproct narrowly triangular, with pointed apex. Subgenital plate elongate, with shallow transverse creases in basal part and distinct longitudinal creases around posterior process; apex of this process broadly rounded. Cerci conical, 2.0 times as long as wide near base. Valves of ovipositor narrow, dentate; upper valve 4.3 times and lower valve 7.1 times longer than their maximum width.

General colouration as in male. Sternites and subgenital plate black. Epiproct light brown. Cerci blackish brown. Upper valvae of ovipositor blackish brown; lower valvae light brown.

*Length* in mm. Body: male 8.5, female 8.6; pronotum: male 12.2, female 12.5; antenna, female 4.9; tegmen: male 1.3, female 1.5; fore femur: male 2.4, female 2.6; mid femur: male 2.4, female 2.6; hind femur: male 5.8, female 6.6; ovipositor 1.3.

*Etymology.* The species name is the Latin adjective “mucronatus” (sharp-pointed).

*Distribution.* Vietnam: Vinh Phu Province.

***Zhengitettix nigrofemurus*** Deng, Zheng et Wei, 2010

*Zhengitettix nigrofemurus* Deng et al., 2010: 47, figs 1–2 (holotype – male, China: Guizhou Prov., Yaoren Mt., Sandu; in Institute of Zoology, Shaanxi Normal University, China); Zheng et al., 2010: 1155.

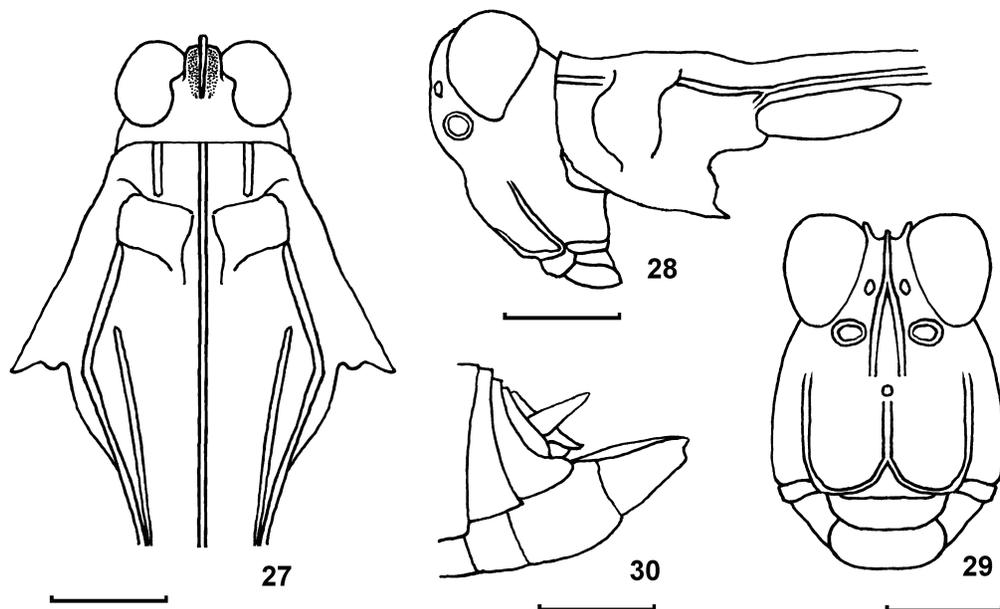
*Note.* Up to now, only two males (holotype and paratype) of this species from its type locality are known. Female unknown.

*Length* in mm. Male: body 6.5–7.0; pronotum 9.0–9.5; hind femur 4.5–5.0 (after Deng et al., 2010).

*Distribution.* China: Guizhou Province.

***Zhengitettix obliquespicula*** Zheng, Jiang et Liu, 2005  
(Figs 27–30)

*Zhengitettix obliquespicula* Zheng et al., 2005: 175, figs 1–3 (holotype – female, China: Guangxi Prov., Tianlin; in Institute of Zoology, Shaanxi Normal University, China);



**Figs 27–30.** *Zhengitettix obliquespicula*, male from Vietnam. 27, head and anterior part of pronotum, dorsal view; 28, head and anterior part of pronotum, lateral view; 29, head, frontal view; 30, apex of abdomen, lateral view. Scale bars: 1 mm.

Zheng, 2005: 50, figs 104–106; Deng et al., 2010: 46; Zheng et al., 2010: 1155.

*Material examined.* **Vietnam:** 1 male, Thai Nguyen Province, Dong Luong, 20 June 1986, V. Trjapitzyn (ZIN).

*Note.* This species was described from two females (holotype and paratype) distinguished from the other congeners by the lower part of lateral lobes of pronotum with a short oblique spine directed backwards. The studied male from North Vietnam is very similar to the females from South China in the shape of lateral lobes of pronotum and is considered herein as conspecific with *Z. obliquespicula*. Description of a previously unknown male is given below.

*Description.* Male. Body small for this genus. Antennae filiform, 14-segmented, 2.2 times as long as fore femora; middle segments (6–8th) 7.3–8.7 times as long as wide. Antennal sockets situated between ventral margins of eyes. Fastigium of vertex 1.7 times narrower than one eye from above; median carina of fastigium reaching

middle of eyes. Eyes distinctly protruding above pronotum in lateral view and separated from anterior margin of pronotum in dorsal view. Lateral ocelli placed between middle parts of eyes. Frontal ridge in lateral view broadly rounded. Frontal ridge near base of antennae 1.7 times narrower than first antennal segment. Pronotum in dorsal view with straight anterior margin; posterior process of pronotum reaching middle of hind tibia. Median carina of pronotum in profile low, almost straight. Lateral carinae in prozona well defined; prozona transverse, 1.4 times as wide as long. Dorsal surface of pronotum almost smooth; oblique carinulae undeveloped. Hind margin of lateral lobes of pronotum with deep tegminal sinus; lower part of lateral lobes of pronotum with acute spine directed backwards. Tegmina ovate; visible part of tegmen 2.4 times as long as wide and 1.1 times as wide as mid femur. Hind wings reaching apex of posterior process of pronotum. Fore and mid femora with lower and upper edges straight; fore

femur 4.5 times, mid femur 5.0 times, and hind femur 3.1 times as long as wide. Dorsal part of hind tibia with 5–6 outer and 5–7 inner teeth. First tarsal segment of hind legs 1.1 times as long as third one; ventral surface of first segment with three triangular pads almost equal to each in size. Epiproct triangular. Subgenital plate in ventral view with narrowly excised apex, 2.0 times as long as wide; in lateral view, this plate conical. Cerci conical, 2.5 times as long as wide near base.

General colouration of male body brown. Head from above brown; eyes and antennae light brown. Genae and frons light brown. Disc of pronotum brown; upper part of lateral lobes blackish brown; lower part of lateral lobes light brown. Tegmina brown with black stripe along lower (anterior) margin. Hind wings black. Hind femora brown; lower part of outer side black with narrow light stripe along lower keel. Hind tibiae brown. Tarsal segments of hind legs light brown. Sternites black. Subgenital plate, epiproct and cerci light brown.

*Length* in mm. Male from Vietnam: body 8.6; pronotum 9.8; antenna 4.0; tegmen 1.1; fore femur 1.8; mid femur 2.03; hind femur 5.3. Females from China (after Zheng, 2005): body 8.0–9.0; pronotum 10.5–11.0; hind femur 6.0.

*Distribution.* China: Guangxi Province. Vietnam: Thai Nguyen Province (first record).

***Zhengitettix palawanensis* sp. nov.**  
(Figs 31–35)

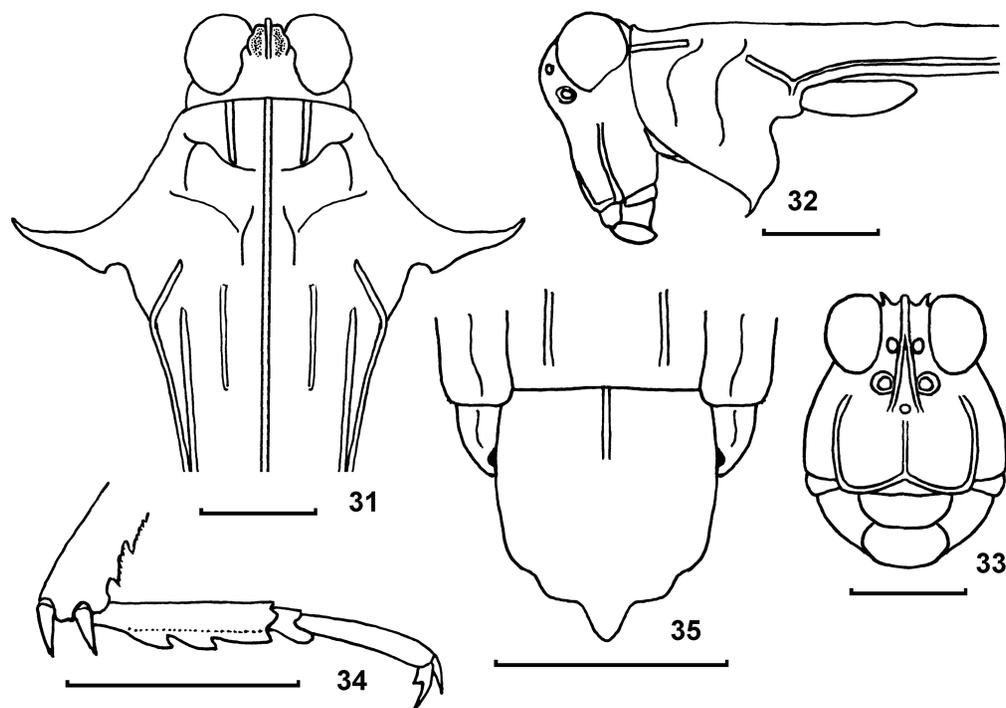
*Holotype.* Female; **Philippines**, south part of Palawan I., east coast, environs of Brooke's Point Town, 6–8 March 2004, A. Gorochoz (ZIN).

*Paratypes.* **Philippines**: 2 females, same data as for holotype (ZIN).

*Description.* Female. Body small for this genus. Antennae filiform, 16-segmented, 1.9–2.3 times as long as fore femora; middle segments (6–8th) 4.6–6.3 times as long as wide. Antennal sockets situated between ventral margins of eyes. Fastigium of vertex 1.8–2.0 times narrower than one eye from

above; median carina of fastigium reaching middle of eyes. Eyes protruding above pronotum in lateral view and contacting with anterior margin of pronotum in dorsal view. Lateral ocelli placed between middle parts of eyes. Frontal ridge in lateral view broadly rounded; this ridge near base of antennae 2.0–2.5 times narrower than first antennal segment. Pronotum in dorsal view with straight anterior margin; posterior process of pronotum reaching middle of hind tibia. Median carina of pronotum in profile low, almost straight. Lateral carinae in prozona well defined; prozona longitudinal, 1.2–1.3 times as long as wide. Dorsal surface of pronotum finely punctured; oblique carinulae distinct. Hind margin of lateral lobes of pronotum with deep tegminal sinus; lower part of lateral lobes of pronotum with acute spine slightly curved forwards. Tegmina ovate; visible part of tegmen 2.7–3.6 times as long as wide and 1.1–1.3 times narrower than mid femur. Hind wings slightly (0.5 mm) not reaching apex of posterior process of pronotum. Fore and mid femora with lower and upper edges straight; fore femur 4.0–4.3 times, mid femur 4.3–4.7 times, and hind femur 3.1–3.2 times as long as wide. Dorsal part of hind tibia with 4–5 outer and 3–6 inner teeth. First tarsal segment of hind legs 1.2–1.3 times as long as third one; ventral surface of first segment with three pads (two basal pads slightly wider than apical pad). Epiproct narrowly triangular, with pointed apex. Subgenital plate smooth, elongate, with trapezoidal posterior process. Cerci conical, 1.8–2.3 times as long as wide near base. Valves of ovipositor narrow, dentate; upper valve 4.2–4.6 times and lower valve 7.8–8.0 times longer than their maximum width.

General colouration of female body brown. Head from above brown; eyes and antennae light brown. Genae and frons brown. Disc of pronotum brown; upper part of lateral lobes blackish brown, lower part of lateral lobes light brown with brown apices of spines. Tegmina brown. Hind wings black. Hind femora light brown; lower part



**Figs 31–35.** *Zhengitettix palawanensis* sp. nov., female. **31**, head and anterior part of pronotum, dorsal view; **32**, head and anterior part of pronotum, lateral view; **33**, head, frontal view; **34**, hind tarsus, lateral view; **35**, subgenital plate, ventral view. Scale bars: 1 mm.

of outer side brown. Hind tibiae brown. Tarsal segments of hind legs whitish. Sternites brown. Subgenital plate, epiproct, cerci and ovipositor light brown.

Male unknown.

*Length* in mm. Female: body 6.0–6.2; pronotum 8.4–9.0; antenna 3.2–3.9; tegmen 1.1; fore femur 1.6–1.7; mid femur 1.7–1.9; hind femur 5.0–5.1; ovipositor 1.1.

*Etymology.* The species is named after its type locality, Palawan Island.

*Distribution.* The Philippines: Palawan Island.

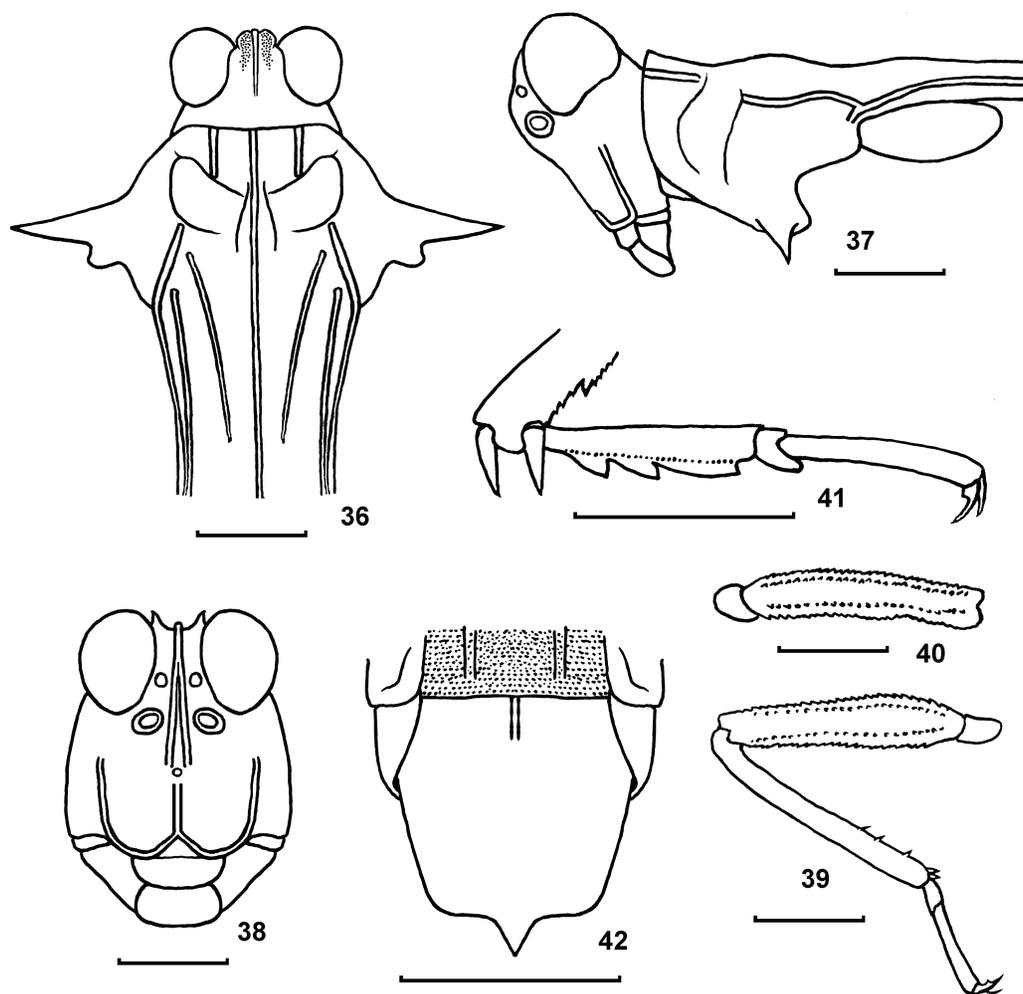
#### *Zhengitettix spinulentus* sp. nov.

(Figs 36–42)

*Holotype.* Male; **Vietnam**, Hoa Binh Prov., environs of Mai Chau Town, 30 Oct.–4 Nov. 1990, A. Gorochov (ZIN).

*Paratypes.* **Vietnam**: 1 male and 2 females, same data as for holotype (ZIN).

*Description.* Male. Body large for this genus. Antennae filiform, 14–15-segmented, 1.9–2.0 times as long as fore femora; middle segments (6–8th) 7.5–8.3 times as long as wide. Antennal sockets situated between ventral margins of eyes. Fastigium of vertex 1.7–1.9 times narrower than one eye from above; median carina of fastigium reaching posterior margin of eyes. Eyes distinctly protruding above pronotum in lateral view and separated from anterior margin of pronotum in dorsal view. Lateral ocelli placed between middle parts of eyes. Frontal ridge in lateral view broadly rounded. Frontal ridge near base of antennae 1.5 times narrower than first antennal segment. Pronotum in dorsal view with straight anterior margin; posterior process of pronotum reaching middle of hind tibia. Median carina of pronotum in profile low, almost straight. Lateral carinae in prozona well defined; prozona transverse, 1.4 times



**Figs 36–42.** *Zhengitettix spinulentus* sp. nov. 36, male head and anterior part of pronotum, dorsal view; 37, male head and anterior part of pronotum, lateral view; 38, male head, frontal view; 39, male fore leg, lateral view; 40, male mid femur, lateral view; 41, male hind tarsus, lateral view; 42, female subgenital plate, ventral view. Scale bars: 1 mm.

as wide as long. Dorsal surface of pronotum rugous; oblique carinulae distinct. Hind margin of lateral lobes of pronotum with deep tegminal sinus; lower part of lateral lobes of pronotum with long straight spine. Tegmina ovate; visible part of tegmen 2.3–2.4 times as long as wide and 1.1–1.3 times as wide as mid femur; hind wings reaching apex of posterior process of pronotum. Fore and mid femora with lower and upper edges straight; fore femur 5.5 times, mid femur 4.5–5.1 times, and hind femur 3.5 times as

long as wide. Dorsal part of hind tibia with 4–7 outer and 4–5 inner teeth. First tarsal segment of hind legs equal to third one; ventral surface of first segment with three triangular pads (two basal pads shorter than apical pad). Epiproct triangular. Subgenital plate in ventral view with narrowly excised apex, 1.7 times as long as wide; in lateral view, this plate conical. Cerci conical, 2.3 times as long as wide near base.

General colouration of body blackish brown. Head from above black; eyes black-

ish brown; antennae light brown. Genae and frons black. Disc of pronotum blackish brown; lateral lobes blackish brown with light brown spines. Tegmina black with brown veins. Hind wings black. Hind femora light brown; upper part of outer side with brown marks; lower outer side completely black. Hind tibiae brown. Tarsal segments of hind legs light brown. Sternites black. Ventral and dorsal parts of subgenital plate light brown. Epiproct and cerci light brown.

Female. Shape and structure of body similar to those of male. Antennae 15-segmented; middle segments of antennae 6.8–8.0 times as long as wide. Fastigium of vertex 1.8–1.9 times narrower than one eye from above. Frontal ridge near base of antennae 1.6–1.7 times narrower than first antennal segment. Median and lateral carinae of pronotum as in male; prozona transverse, 1.4–1.5 times as wide as long. Visible part of tegmen 2.7–2.8 times as long as wide and 1–1.2 times as wide as mid femur. Hind wings as in male. Fore femur 4.8–5.4 times, mid femur 4.7–5.6, hind femur 3.4–3.7 times as long as wide. Dorsal part of hind tibia with 4–6 outer and 5 inner teeth. Epiproct narrowly triangular, with pointed apex. Subgenital plate smooth, elongate, with triangular posterior process. Cerci conical, 1.8 times as long as wide near base. Valves of ovipositor narrow, dentate; upper valve 4.6–4.7 times and lower valve 7.5 times longer than their maximum width.

General colouration as in male. Sternites black. Subgenital plate light brown. Epiproct brown. Cerci blackish brown. Ovipositor light brown.

*Length* in mm. Body: male 8.1–8.5, female 9.7–10.8; pronotum: male 11.0–11.5, female 13.7–15.0; antenna: male 4.2–4.3, female 4.5–4.8; tegmen: male 1.2–1.4, female 1.6–1.7; fore femur: male 2.2, female 2.5–2.7; mid femur: male 2.1–2.3, female 2.5–2.8; hind femur: male 5.5, female 6.5–7.1; ovipositor 1.6–1.7.

*Etymology.* The species name is the Latin adjective “spinulentus” (spiny).

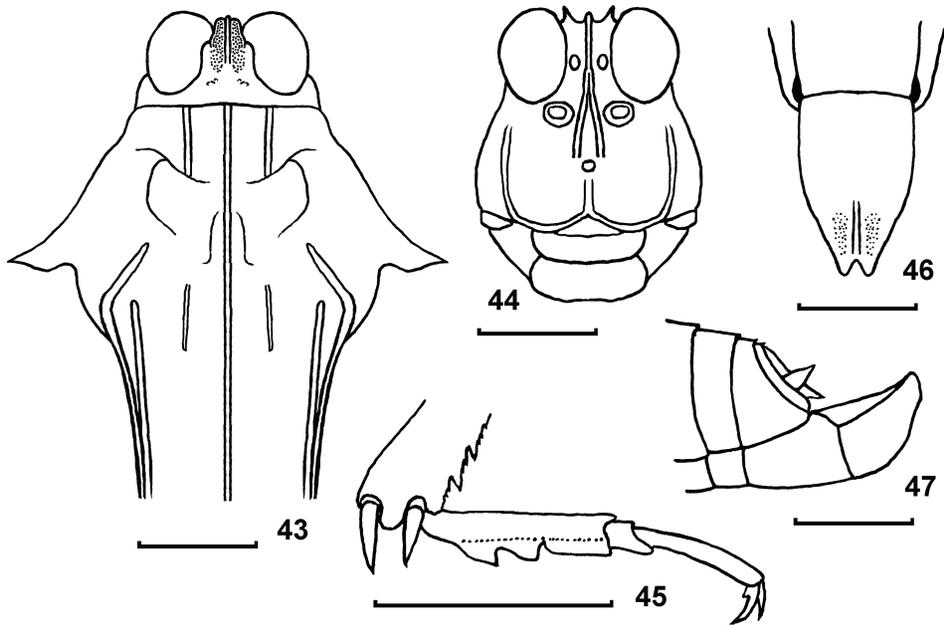
*Distribution.* Vietnam: Hoa Binh Province.

### *Zhengitettix taytayensis* sp. nov.

(Figs 43–47)

*Holotype.* Male; **Philippines:** north part of Palawan I., east coast, environs of Taytay Town, 25–26 Feb. 2004, A. Gorochov (ZIN).

*Description.* Male. Body small for this genus. Antennae filiform, 16-segmented, 2.1 times as long as fore femora; middle segments (6–8th) 5.5–6.5 times as long as wide. Antennal sockets situated between ventral margins of eyes. Fastigium of vertex 1.8 times narrower than one eye from above; median carina of fastigium reaching middle of eyes. Eyes protruding above pronotum in lateral view and separated from anterior margin of pronotum in dorsal view. Lateral ocelli placed between middle parts of eyes. Frontal ridge in lateral view broadly rounded; this ridge near base of antennae 2.0 times narrower than first antennal segment. Pronotum in dorsal view with straight anterior margin; posterior process of pronotum reaching middle of hind tibia. Median carina of pronotum in profile low, almost straight. Lateral carinae in prozona well defined; prozona longitudinal, 1.2 times as long as wide. Dorsal surface of pronotum finely punctured; oblique carinulae distinct. Hind margin of lateral lobes of pronotum with deep tegminal sinus; lower part of lateral lobes pronotum with acute and almost straight spine. Tegmina ovate; visible part of tegmen 3.0 times as long as wide and 1.3 times narrower than mid femur. Hind wings slightly (0.5 mm) not reaching apex of posterior process of pronotum. Fore and mid femora with lower and upper edges straight; fore femur 4.3 times, mid femur 4.0 times, and hind femur 3.0 times as long as wide. Dorsal part of hind tibia with 3–4 outer and 3–4 inner teeth. First tarsal segment of hind legs 1.2 times as long as third one; ventral surface of first segment with three pads (two basal pads slightly wider than apical pad). Epiproct triangular. Subgenital plate in ventral view with narrowly excised apex, 1.6 times as long as wide; in lateral view, this plate conical. Cerci conical, 1.5 times as long as wide near base.



**Figs 43–47.** *Zhengitettix taytayensis* sp. nov., male. **43**, head and anterior part of pronotum, dorsal view; **44**, head, frontal view; **45**, hind tarsus, lateral view; **46**, apex of abdomen, ventral view; **47**, apex of abdomen, lateral view. Scale bars: 1 mm.

General colouration of body blackish brown. Head from above blackish; eyes and antennae brown. Genae and frons blackish. Disc of pronotum blackish brown; lateral lobes blackish brown; spines on these lobes brown. Tegmina black with brown veins. Hind wings black. Hind femora brown; lower part of outer side black. Hind tibiae blackish. Tarsal segments of hind legs whitish. Sternites black. Subgenital plate and epiproct pale brown. Cerci black.

Female unknown.

*Length* in mm. Male: body 7.5; pronotum 10.5; antenna 3.6; tegmen 1.0; fore femur 1.7; mid femur 1.8; hind femur 4.8.

*Etymology.* The species is named after its type locality, Taytay Town.

*Distribution.* The Philippines: Palawan Island.

***Zhengitettix transpicula*** Zheng et Jiang, 2002

*Zhengitettix transpicula* Zheng & Jiang, 2002: 410, figs 1–4 (holotype – female, China: Guangxi Prov., Fangcheng; in Institute of

Zoology, Shaanxi Normal University, China); Zheng, 2005: 49, figs 100–103; Liang et al., 2007: 660; Deng et al., 2010: 46; Zheng et al., 2010: 1155.

*Note.* This species was described from the holotype only. Male unknown.

*Length* in mm. Female: body 8.0; pronotum 11.0; hind femur 6.0 (after Zheng & Jiang, 2002).

*Distribution.* China: Guangxi Province.

***Zhengitettix triangularis*** Zheng, Zeng et Ou, 2010

*Zhengitettix triangularis* Zheng et al., 2010: 1154, figs 1 A, B (holotype – male, China: Yunnan Prov., Xinshan, Mengla; in Institute of Zoology, Shaanxi Normal University, China).

*Note.* This species was described from two males from the type locality. Female unknown.

*Length* in mm. Male: body 7.5–8.0; pronotum 8.0–8.2; hind femur 5.0–5.5 (after Zheng et al., 2010).

*Distribution.* China: Yunnan Province.

## DISCUSSION

Recent classification of the family Tetrigidae is based on a very old conception proposed by Bolívar (1877). Later Hancock (1907) has revised Bolívar's system. He considered this taxon as a subfamily (Tetriginae) of the family Acrididae with nine sections: Tripetalocerae, Cleostratae, Discotettigae, Bufonidae, Cladonotae, Batrachideae, Scelimenae, Metrodora and Tetrigiae. Majority of Tetriginae described to the beginning of 20th century were placed in the sections Scelimenae, Metrodora and Tetrigiae, which are characterised by lacking of such bright synapomorphies as the foliaceous antennae, strongly oblique face, frontal ridge forming a scutellum, and distinctly sulcate anterior femora. These three groups differs from each other only in the shape of lateral lobes of pronotum and in the relative length of first and third segments of hind tarsi (in Scelimenae, the lower part of lateral lobes is directed outwards and usually forming strong spine, and first segment of hind tarsi is generally longer than third one; in Metrodora, the lower part of lateral lobes is directed outwards but obliquely truncate, and first and third segments of hind tarsi are almost equal in length; in Tetrigiae, the lower part of lateral lobes is turned downwards and rounded, and first segment of hind tarsi is longer than third one). In the beginning of his work, Günther (1938a; 1938b; 1939) follows to Hancock's system and use the sections Scelimenae, Metrodora and Tetrigiae, but finally he doesn't separate these groups (Günther, 1979). Scelimeninae, Metrodorinae and Tetriginae were considered as separate subfamilies of Tetrigidae and provided with diagnoses by Bey-Bienko (1951). Later Kevan (1966) without any diagnosis or description divided Tetrigidae into three subfamilies: Cleostratinae, Cladonotinae and Tetriginae. In the latter subfamily, he placed the tribes Scelimenini, Thoradontini (=Thoradontini), Discotettigini (including Tripetalocerinae and a few other genera of Metrodorinae), Criotettig-

ini, Metrodorini and Tetrigini. An attempt of increasing of taxonomic rank of Bolívar's and Hancock's "sections" to family level was made without any division of each family into subfamilies and tribes (Liang & Zheng, 1998; Zheng, 2005). Now, in the internet-catalogue of Orthoptera (Eades et al., 2013), Tetrigidae is divided into eight subfamilies (Batrachideinae, Cladonotinae, Cleostratinae, Discotettiginae, Tripetalocerinae, Lophotettiginae, Scelimeninae, Metrodorinae, Tetriginae) and one tribe of uncertain position (Xerophyllini).

During the last century, numerous new genera of Tetrigidae were described; some of them are characterised by combinations of the features typical of different subfamilies or tribes. Thus, still now division of the family Tetrigidae into subfamilies and tribes is not clearly defined. The above-mentioned system is useful for easy determination of genera and species, but probably it is rather far from the real phylogenetic relationships of genera. For example, there are three genera of Tetrigidae (*Zhengitettix* in the subfamily Scelimeninae, *Systolederus* Bolívar, 1887 in Metrodorinae, and *Teredorus* Hancock, 1907 in Tetriginae) characterised by almost the same combination of features: fastigium of vertex extremely narrow (apomorphy), eyes strongly exerted above the disc of pronotum (apomorphy), frontal ridge narrow (apomorphy), pronotum flat and anteriorly truncate (plesiomorphy), median and lateral carinae of pronotum low (plesiomorphy), tegminal sinus deep (plesiomorphy), tegmina and hind wings normal for this family (plesiomorphy), and first and third tarsal segments of hind legs almost equal in the length (plesiomorphy). They differs in the shape and direction of the lower part of lateral lobes of pronotum: in *Zhengitettix*, this part is typical of Scelimeninae; in *Systolederus*, typical of Metrodorinae; and in *Teredorus*, typical of Tetriginae. However, if the habitually similar genera *Zhengitettix*, *Systolederus* and *Teredorus* form a monophyletic group, their above-mentioned general apomorphic characters are synapomor-

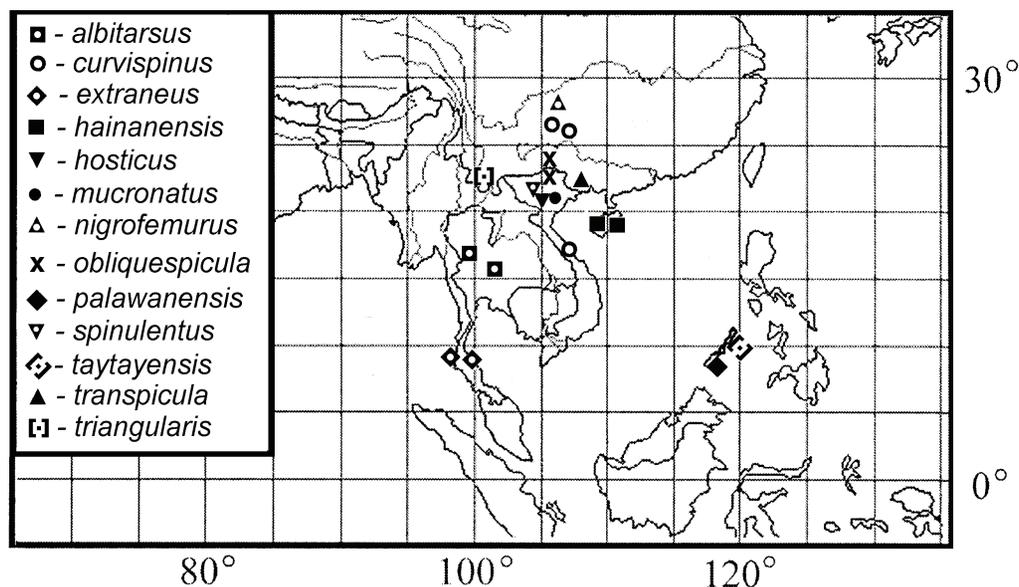


Fig. 48. Distribution map of species of *Zhengitettix*.

phies, and differences in the lateral lobes of pronotum arose within this group irrespective of the other genera of Tetrigidae, we shall be in need of a critical revision of the system of Scelimeninae, Metrodorinae and Tetriginae. But such work is not a subject of this paper devoted mainly to descriptions of new species of one genus.

Thus, here the genus *Zhengitettix* is tentatively considered as belonging to the subfamily Scelimeninae. It consists of thirteen species distributed in China, Thailand, Vietnam and Philippines (Fig. 48). Almost all these species are local endemics in different mountain areas or islands, and only *Z. curvispinus* is widely distributed in South China and Vietnam.

Finally, it is necessary to note that in the on-line catalogue of Orthoptera (Eades et al., 2013) Hancock (1907) is incorrectly mentioned as the author of the subfamily Scelimeninae. Actually, this name is based on the section Scelimenae proposed by Bolívar (1887). According to Articles 11.7 and 35.2 of the Code of Zoological Nomenclature (International Commission on Zoological Nomenclature, 1999), a complete

scientific name of this subfamily must be Scelimeninae Bolívar, 1887.

#### ACKNOWLEDGMENTS

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