

Revision of the genus *Paraguelus* Günther, 1939 (Orthoptera: Tetrigidae)

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Abstract

Four species of the genus *Paraguelus* Günther, 1939 are known from the Philippines (Palawan Island) and Malaysia (Borneo Island), of them *P. sabahensis* **sp. nov.**, *P. philippinensis* **sp. nov.**, and *P. gorochovi* **sp. nov.** are described and illustrated. A key to species of *Paraguelus* is provided. Based solely on morphology, the genera *Paraguelus*, *Edentatettix* Deng, 2025 and *Tondanotettix* C. Willemse, 1928 are tentatively transferred from subfamily Metrodorinae to Criotettiginae and genus *Hainantettix* Deng, 2020 is tentatively transferred from subfamily Cladonotinae to Criotettiginae. The position of these genera in the modern system of the family Tetrigidae is briefly discussed.

Key words: pygmy grasshoppers, Criotettiginae, Metrodorinae, Cladonotinae, taxonomy, new species, Oriental region

Introduction

The monotypic genus *Paraguelus* Günther, 1939 was established for *P. palawanicus* Günther, 1939 from Palawan Island and placed in the section Amorphopi (= Metrodorae) of the family Tetrigidae (Günther, 1939). Later, this genus was transferred to the tribe Discotettigini of subfamily Tetriginae (Kevan, 1966). Currently, the genus *Paraguelus* is considered a representative of the subfamily Metrodorinae without being assigned to any tribe (Cigliano *et al.*, 2025).

The division of the family Tetrigidae into subfamilies and tribes, as well as their composition and taxonomic rank, has been actively discussed in recent years (Tumbrinck, 2014; Devriese *et al.*, 2023; Kasalo *et al.*, 2023; Storozhenko, 2023; Sudebi *et al.*, 2025; Cadena-Castañeda *et al.*, 2025; Kasalo *et al.*, 2025). Therefore, the aim of this work is both to describe new species and to clarify the correct position of the genus *Paraguelus* in the system of family Tetrigidae.

Material and methods

This paper is based on the collections of the Zoological Institute of the Russian Academy of Sciences, St. Petersburg, Russia (ZIN), the Federal Scientific Center of the East Asia Terrestrial Biodiversity, Vladivostok (FCBV), as well as on the type specimens deposited in the Senckenberg Deutsches Entomologisches Institut, Müncheberg, Germany (SDEI), the images of which available in the Orthoptera Species File database (Cigliano *et al.*, 2025).

Nomenclature is given according to rules of the International Code of the Zoological Nomenclature (ICZN, 1999). The morphological terminology and measurements follow those of Tumbrinck (2014) and Sudebi *et al.* (2025). Photographs were taken with an Olympus SZX16 stereomicroscope and an Olympus DP74 digital camera, and then stacked using Helicon Focus software. The final illustrations were post-processed for contrast and brightness using Adobe® Photoshop® software.

Taxonomy

Order Orthoptera Olivier, 1789

Family Tetrigidae Rambur, 1838

Subfamily Criotettiginae Kevan, 1966

Genus *Paraguelus* Günther, 1939

Paraguelus Günther, 1939: 38; Kevan, 1966: 380; Steinmann, 1970: 226; Blackith, 1992: 131; Yin *et al.*, 1996: 893; Otte, 1997: 55.

Type species: *Paraguelus palawanicus* Günther, 1939, by original designation.

Diagnosis. Body robust. Head and eyes not protruding above pronotum in lateral view. Antennae filiform. Antennal grooves situated at the level of lower margin of eyes. Frontal costa in lateral view deeply excised between eyes; width of frontal costa near base of antennae almost equal to width of 1st antennal segment; sides of frontal costa below lateral ocelli divergent. Fastigium of vertex in dorsal view considerably wider than width of one eye from above. Maxillary palps with apical segment strongly dilated, oviform. In dorsal view pronotum with its anterior margin straight; apex of posterior process of the pronotum rounded or weakly acute; the lateral lobes of the pronotum with its hind margin deep lower sinus; upper sinus shallow or absent; the lateral lobes of the pronotum directed outwards and downwards, with posterior angles truncated; infrascapular area widened. Tegmina and hind wings absent. Fore and mid femora smooth, without lappets. Hind femora stout; antegenicular and genicular teeth distinct. Hind legs with 1st tarsal segment almost as long as 3rd segment. Valves of ovipositor broad and dentate.

Composition. The genus consists of four species, three of which are described below.

Distribution. The genus is known from the Philippines (Palawan Island) and Borneo (Sabah, Malaysia).

Comparison. The genus *Paraguelus* is similar to the genera *Tondanotettix* C. Willemse, 1928, *Hyboella* Hancock, 1915, *Coptotettix* Bolívar, 1887, *Hainantettix* Deng, 2020, and *Edentatettix* Deng, 2025. The genus *Tondanotettix* differs from *Paraguelus* in the following combination of features: 1) fore and mid femora with lappets; 2) apex of posterior process of the pronotum bifurcate; 3) lateral lobes of the pronotum with only a deep lower sinus; 4) infrascapular area very broad (Storozhenko, 2025). The genera *Hyboella* and *Coptotettix* are recognizable from *Paraguelus* by the following features: 1) frontal costa in lateral view broadly rounded or weakly excised between eyes; 2) the tegmina and hind wings usually present, while in few species absent (Storozhenko, 2022). The genus *Hainantettix* is characterized by fastigium of vertex in dorsal view narrower than width of one eye from above (Zhang *et al.*, 2020). The genus *Edentatettix* differs from *Paraguelus* in follow features: 1) head and eyes exserted above pronotal surface; 2) antennal grooves situated distinctly below lower margin of eyes; 3) frontal costa in lateral view slightly excised between eyes (Li *et al.*, 2025). Moreover, *Paraguelus* is similar to *Coptotettix* in the shape of head, but the latter genus is distinguished by a short and shallow infrascapular area, by the lateral lobes of pronotum directed downwards, and by presents of tegmina and hind wings (Devriese *et al.*, 2023; Sudebi *et al.*, 2024).

Key to species of *Paraguelus*

1. Pronotum short, reaching only middle of hind femur, and not reaching abdominal apex; lateral lobes of the pronotum with upper sinus absent; infrascapular area slightly narrower than width of mid femur (Fig. 1)... *P. palawanicus* Günther, 1939
- Pronotum longer, almost reaching base of hind knees, and reaching or surpassing abdominal apex; lateral lobes of the pronotum with upper sinus shallow; infrascapular area broader than width of mid femur (Figs. 3, 10, 17, 23, 27, 33). ... 2
2. In dorsal view, posterior process of pronotum with apex attenuated (Figs. 4, 11). Distribution: Borneo. *Paraguelus sabahensis* **sp. nov.**
- In dorsal view, posterior process of pronotum with triangle rounded apex (Figs. 18, 24, 28, 34). Distribution: Philippines. 3
3. Fastigium of vertex in dorsal view about 1.5 times as width of one eye from above. Posterior process of pronotum with apical part narrower (Figs. 18, 24). Female subgenital plate with lamella-like mid process (Fig. 22). Apical segment of maxillary palps with black basal spot (Figs. 19, 25)... *Paraguelus philippinensis* **sp. nov.**

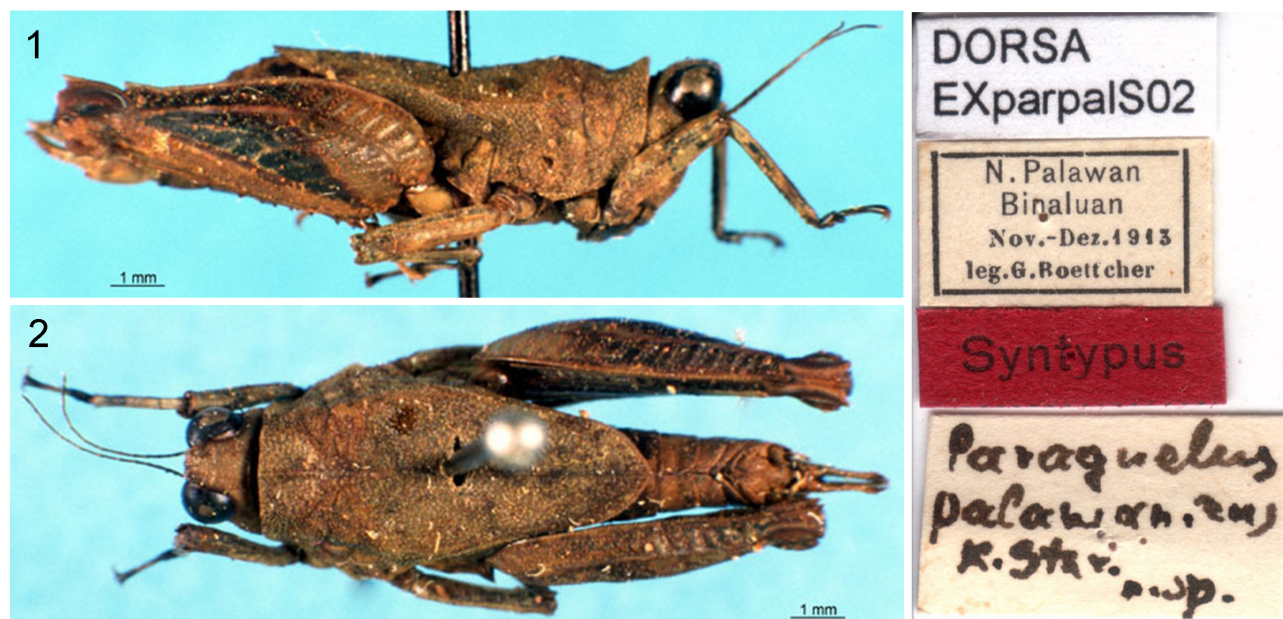
- Fastigium of vertex in dorsal view about as wide as width of one eye from above. Posterior process of pronotum with apical part broader (Figs. 28, 34). Female subgenital plate with narrow mid process (Fig. 32). Apical segment of maxillary palps completely light brown (Figs. 29, 36)..... *Paraguelus gorochovi* **sp. nov.**

Paraguelus palawanicus Günther, 1939

(Figs. 1, 2)

Paraguelus palawanicus Günther, 1939: 38; Kevan, 1966: 380; Petersen & Gaedike, 1970: 168; Blackith, 1992: 132; Yin *et al.*, 1996: 893; Tan *et al.*, 2025: 19, 56.

Type material. Three syntypes (females) with labels “N. Palawan, Binaluan, Nov.-Dez. 1913, leg. G. Boettcher” (SDEI).



FIGURES 1–2. Female syntype of *Paraguelus palawanicus*. 1. Body, lateral view; 2. Same, dorsal view. (Photographs by Sigfrid Ingrisch; available in the Orthoptera Species File (Cigliano *et al.*, 2025) by default open-access under the terms of the CC BY-NC-SA license).

Remarks. Male unknown. In Günther ‘s (1939) original drawing, the position of the eyes was shown incorrectly. According to the images of syntypes available in the Orthoptera Species File (Cigliano *et al.*, 2025), the eyes protrude only slightly above the pronotum (Fig. 1).

Diagnosis (after original description of species and images of syntypes available in the Orthoptera Species File). Female. Body robust, medium sized for genus. Antennae filiform. Lateral ocelli placed slightly below the middle of eyes. Antennal grooves situated at the level of lower margin of eyes. Width of frontal costa near base of antennae almost equal to width of 1st antennal segment. Fastigium of vertex in dorsal view 1.2 times wider than width of one eye from above. Pronotum in dorsal view punctured, reaching middle of hind femora; anterior margin straight; posterior process broad with triangle rounded apex. Pronotum with median carina in profile excised before shoulders. Prozonal carinae indistinct. Lateral lobes of pronotum with hind margins having deep lower sinus, upper sinus absent. Infrascapular area maximum width equal to width of the mid femur. Apterous. Hind femur stout, 2.9 times as long as wide. Hind legs with 1st tarsal segment 1.2 times longer than 3rd segment (without claws), ventrally with 3 pulvilli almost equal in length. Valves of ovipositor elongated; upper valve 3.9 times longer than its maximum width.

Body brown with blackish marks. Head brown. Eyes black. Antennae brown. Maxillary palps with apical segment blackish. Pronotum brown or blackish brown. Hind femur brown with oblique black stripe, knees with upper lophi reddish brown and lower lophi light brown. Hind tibia brown. Ovipositor light brown.

Male unknown.

Measurements (in mm). Length of female body 12.0; pronotum 7.2; hind femur 7.0 (after Günther, 1939).

Distribution. Philippines (northern Palawan, Binaluan).

***Paraguelus sabahensis* Storozhenko et Tan, sp. nov.**

(Figs. 3–16)

Material examined. Holotype—female, Malaysia: Borneo Island, Sabah State, Trus Madi Mts, 1000 m, 5.67 N, 116.45 E, partly primary/partly secondary forest, 13–25.V.2007, leg. A.V. Gorochov (ZIN). Paratypes: 4 females, 2 males, same data as in holotype (ZIN, FSCB); 1 female, Sabah, Trus Madi Mts, Tambunan distr., 975 m, 25.IV–10.V.2006, leg. P. Udovichenko (ZIN); 2 females, 2 males, Sabah State, Tawau Hills, 4.40 N, 117.89 E, litter in primary forest, 21–26.VIII.2019, leg. M.M. Omelko (ZIN, FSCB); 1 male, same locality but 6–14.III.2014, leg. M. Berezin (ZIN).

Diagnosis. Both sexes of this new species can be distinguished from all congeners by the pronotum process with its apex attenuated (Figs. 4, 11); the median carina at the anterior margin more protruding anteriorly. The female subgenital plate with the apical part having a broad mid process (Fig. 9), slightly broader than that in *P. gorochovi* sp. nov. (Fig. 32).

Description. Female. Body robust, medium sized for genus. Antennae filiform, 15–16-segmented; length of antenna 1.9 times longer than length of fore femur; mid segments of antennae 8.1–8.5 times as long as wide. Lateral ocelli placed slightly below the middle of eyes. Fastigium of vertex in dorsal view with deep concavities between lateral carinae, reaching front of eyes from dorsal aspect, 1.3–1.5 times wider than width of one eye from above; fastigium with anterior margin almost straight, with median carina long; lateral carinae low. Pronotum rugulose, reaching base of hind knees; in dorsal view pronotum with anterior margin almost straight in the middle; pronotum with posterior process broad with attenuated apex. Pronotum with median carina in profile slightly raised before shoulders. Prozonal carinae not defined. Lateral lobes of pronotum with hind margin having deep lower sinus, upper sinus weak; lateral lobes with posterior angles in dorsal view truncated. Infrascapular area maximum width 1.65–1.75 times wider than width of mid femur. Apterous. Fore femur 3.9–4.0 times, mid femur 4.4–4.5 times as long as wide. Fore and mid femora with upper and lower margins straight but mid femur with lower margin weakly sinuate. Hind femur stout, 2.4–2.5 times as long as wide; upper and lower carinae finely serrate. Hind tibia upper margin with 7 outer and 5–6 inner teeth. Hind leg with 1st tarsal segment 1.1–1.2 times longer than 3rd segment (without claws), ventrally with 3 pulvilli almost equal in length. Subgenital plate as long as wide; posterior margin trilobate, mid process wide. Cerci short, conical. Valves of ovipositor short; upper valve 3.3 times longer than its maximum width; lower valve 5.5 times longer than its maximum width.

Body blackish brown. Head brown; concavities between lateral carinae of fastigium black. Antennae yellowish with brown rings. Maxillary palps with apical segment white, other segments with black marks. Pronotum dorsally and lateral lobes blackish brown; anterior 2/3 of infrascapular area black. Fore and mid femora blackish. Fore and mid tibiae brown, with two blackish rings. Fore and mid tarsi with 1st segment brown; 2nd segment apically blackish; claws brown. Hind femora dark brown with black knees. Hind tibiae blackish. Abdomen light brown with black marks. Ovipositor light brown.

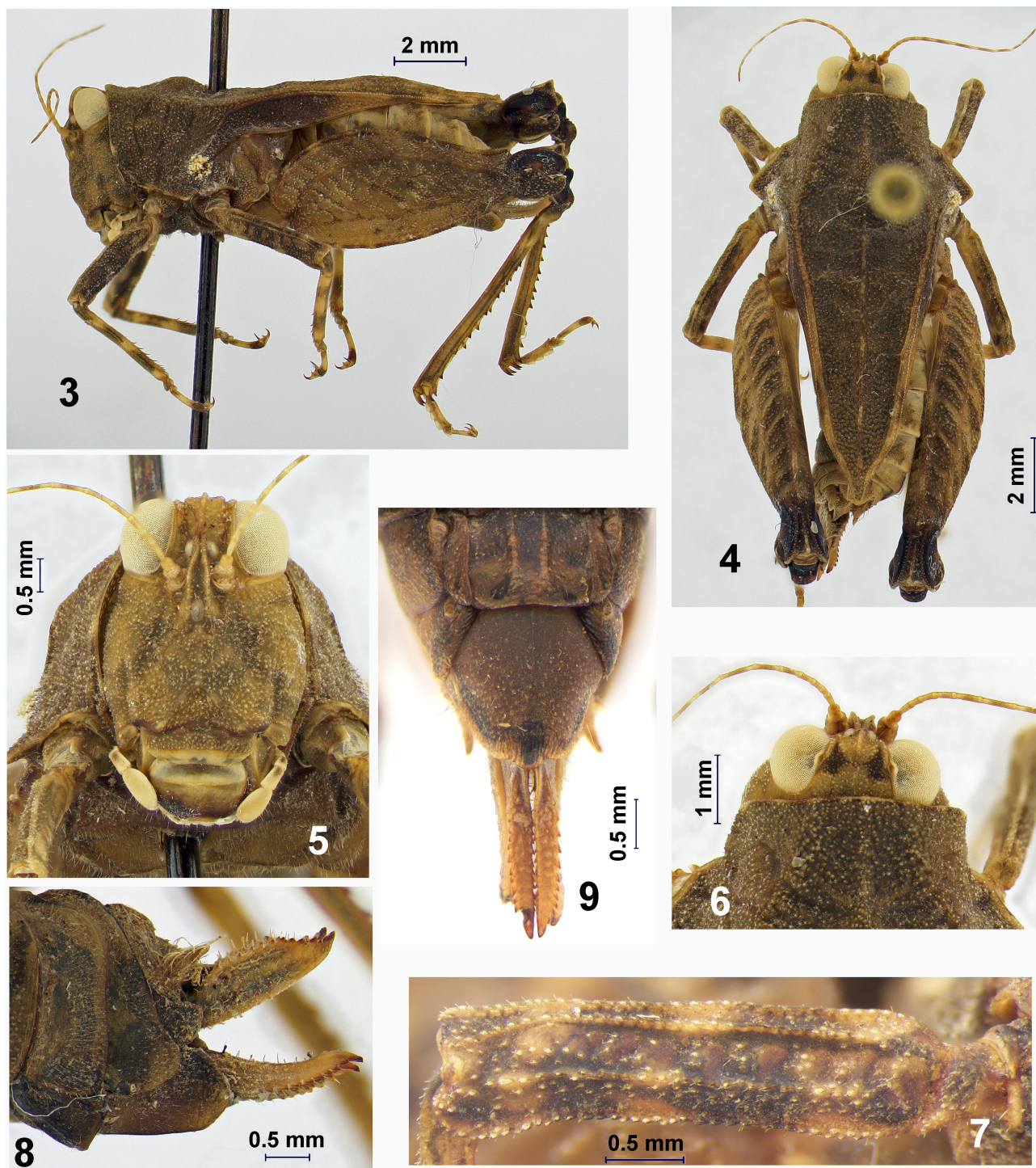
Male. Similar to female. Antennae 15-segmented; length of antenna 1.5–1.6 times longer than length of fore femur; mid segments of antennae 7.6–7.8 times as long as wide. Fastigium of vertex 1.35–1.45 times wider than width of one eye from above. Pronotum with anterior margin in dorsal view weakly triangle at the middle. Lateral lobes of pronotum, median and prozonal carinae as in female. Infrascapular area maximum width 1.6–1.65 times wider than width of mid femur. Tegmina and hind wings absent. Fore femur 3.9–4.2 times, mid femur 3.6–3.9 times as long as wide; fore femur with upper and lower margins straight; upper mid femur with upper carina straight, lower carina weakly sinuate. Hind femur 2.5–2.8 times as long as wide; upper and lower carinae as in female. Hind tibia with upper margin having 8 outer and 5–6 inner teeth. Hind leg with 1st tarsal segment 1.2 times longer than 3rd segment (without claws); pulvilli as in female. Epiproct narrow triangular, with pointed apex. Subgenital plate elongated, in ventral view apex of plate excised. Cerci as in female.

Body colored as in female. Epiproct and cerci light brown; subgenital plate blackish with light brown apex.

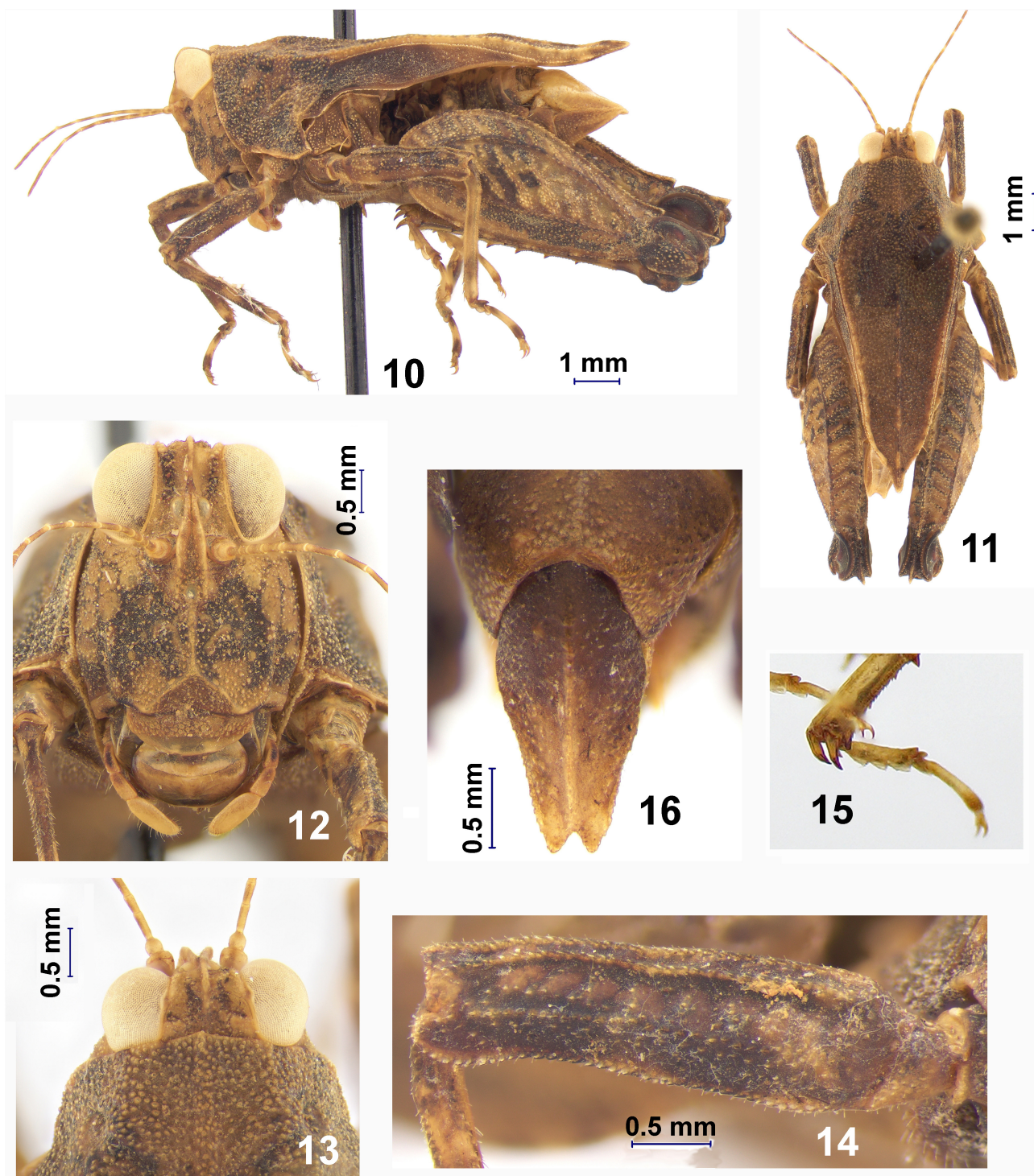
Measurements (in mm). Length of body (from frontal ridge to apex of subgenital plate) male 10.6–12.5, female 12.4–12.6; pronotum male 9.6–9.8, female 11.4–11.7; antenna male 4.5–5.0, female 5.9–6.0; fore femur male 2.7–3.0, female 3.0–3.1; mid femur male 2.9–3.2, female 3.5–3.6; hind femur male 7.5–8.5, female 8.4–8.6; hind tibia male 6.1–6.4, female 8.4–8.6; ovipositor 1.9–2.1. Width of infrascapular area male 1.1–1.3, female 1.4–1.6; mid femur male 0.7–0.8, female 0.8–0.85.

Distribution. Malaysia (Borneo Island). This species so far is the only representative of the genus outside the Philippines.

Etymology. The name of new species is originated from the type locality (Sabah State in East Malaysia).



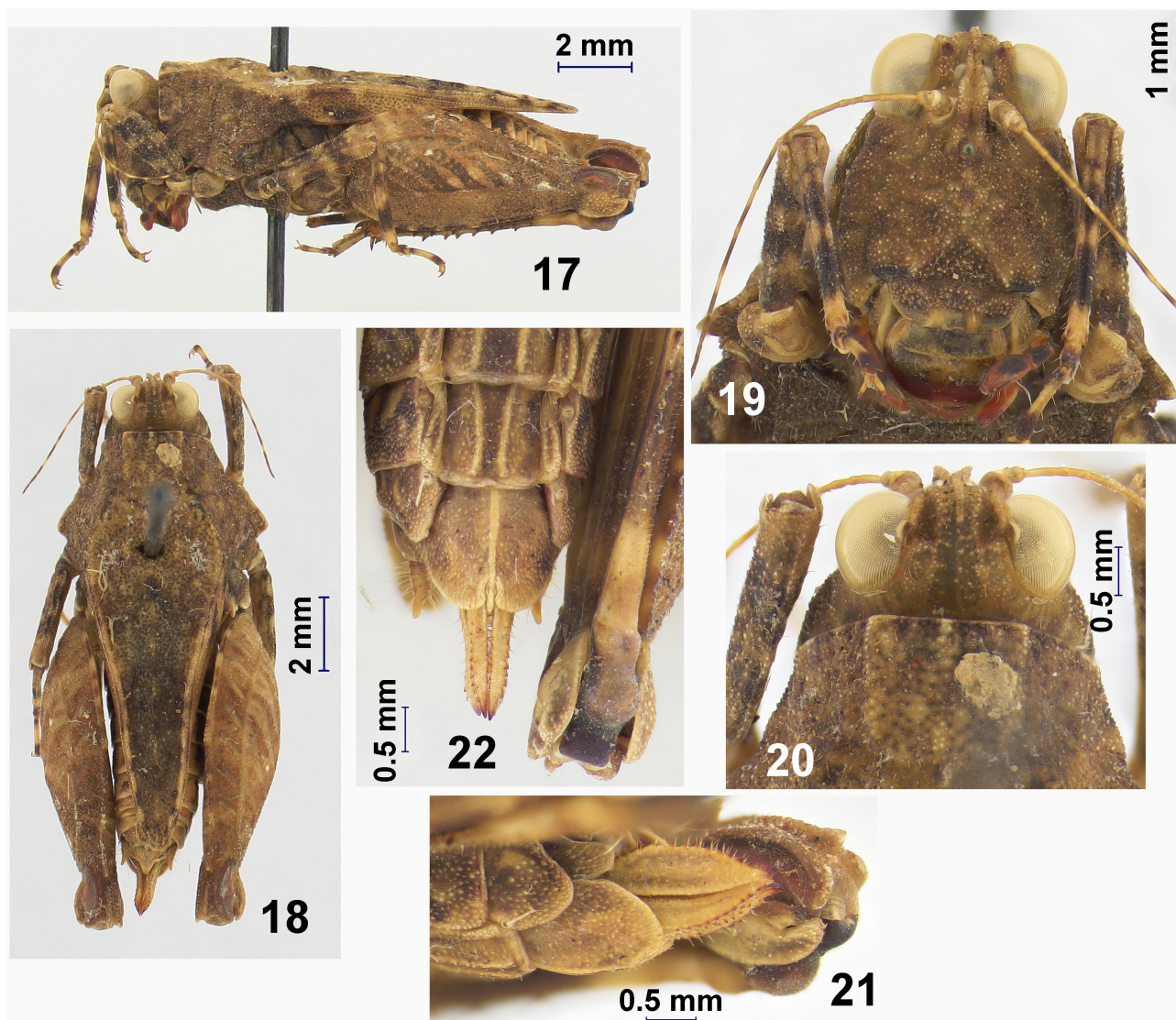
FIGURES 3–9. Female of *Paraguelus sabahensis* sp. nov. 3. Body, lateral view; 4. Same, dorsal view; 5. Head, frontal view; 6. Head and anterior part of pronotum, dorsal view; 7. Mid femur, lateral view; 8. Apex of abdomen, lateral view; 9. Same, ventral view.



FIGURES 10–16. Male of *Paraguelus sabahensis* sp. nov. 10. Body, lateral view; 11. Same, dorsal view; 12. Head, frontal view; 13. Head and anterior part of pronotum, dorsal view; 14. Mid femur, lateral view; 15. Hind tarsus, lateral view; 16. Apex of abdomen, ventral view.

***Paraguelus philippinensis* Storozhenko et Tan, sp. nov.**
(Figs. 17–26)

Material examined. Holotype—female, Philippines: North Palawan, env. of Sabang (W coast), 10.18 N, 118.89 E, 1–2.III.2004, leg. A.V. Gorochoy (ZIN). Paratypes: 2 males, same data as in holotype (ZIN, FSCB); 1 male, same locality but 27–29.II.2004, leg. A.V. Gorochoy (FSCB).

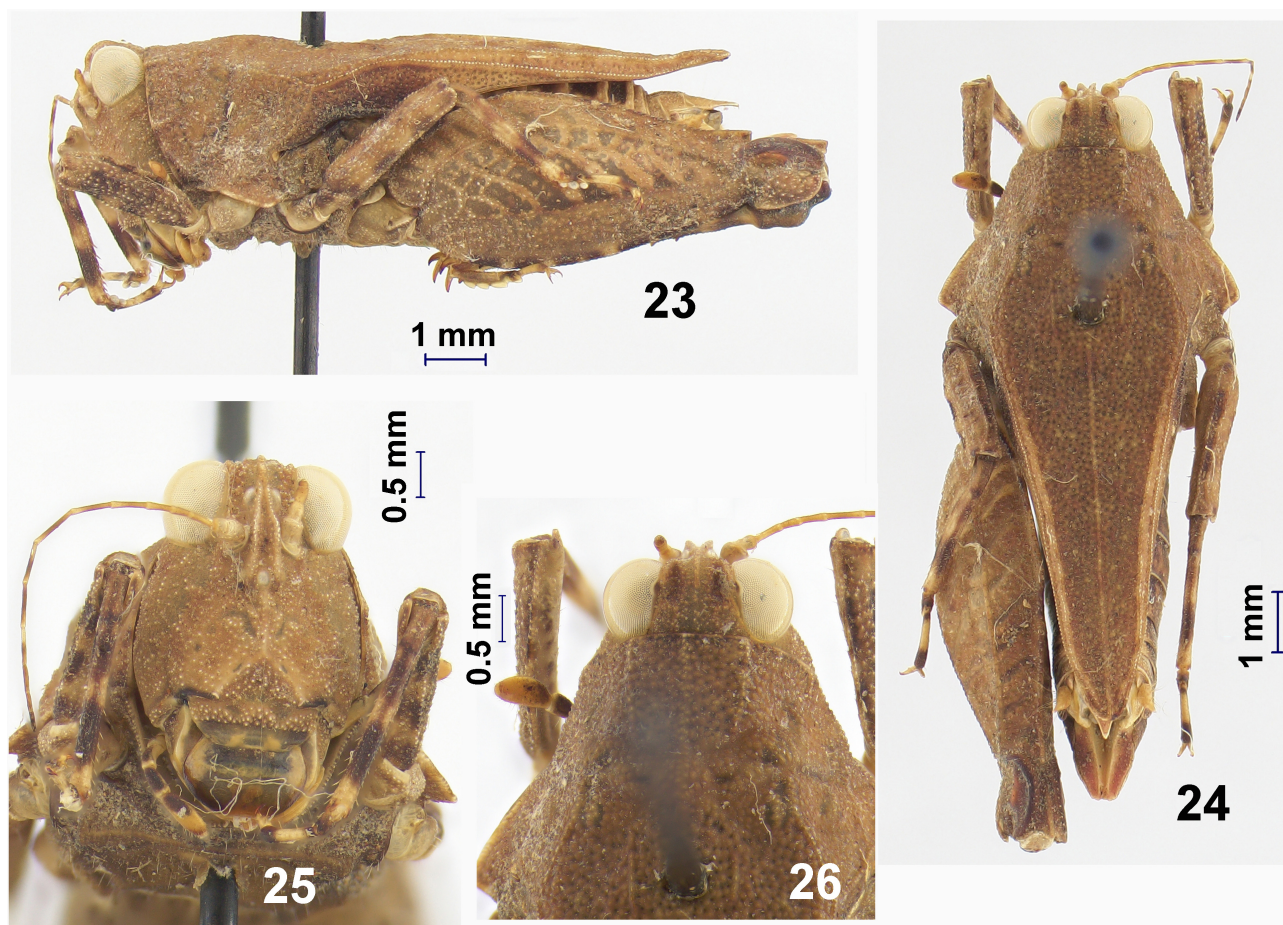


FIGURES 17–22. Female of *Paraguelus philippensis* **sp. nov.** 17. Body, lateral view; 18. Same, dorsal view; 19. Head, frontal view; 20. Head and anterior part of pronotum, dorsal view; 21. Apex of abdomen, lateral view; 22. Same, ventral view.

Diagnosis. The new species can be distinguished from all congeners by the female subgenital plate with the apical part having a lamella-like mid process (Fig. 22); as well as the apical segment of the maxillary palps of both sexes having a large black spot (Figs. 19, 25). The new species is also similar to *P. sabahensis* **sp. nov.** by broad fastigium of vertex but differs in narrow infrascapular area.

Description. Female. Body robust, medium sized for genus. Antennae filiform, 15-segmented; length of antenna 1.5 times longer than length of fore femur; mid segments of antennae 8.0–9.2 times as long as wide. Lateral ocelli placed slightly above the middle of eyes. Fastigium of vertex in dorsal view with deep concavities between lateral carinae, slightly surpassing the front of eyes from dorsal aspect, 1.4 times wider than width of one eye from above; fastigium with anterior margin almost straight, with median carina long and lateral carinae low. Pronotum in dorsal view punctured, almost reaching base of hind knees; anterior margin straight; posterior process narrow with rounded apex. Pronotum with median carina in profile slightly raised between shoulders. Prozonal carinae distinct, parallel. Lateral lobes of pronotum with hind margins having deep lower sinus, upper sinus less defined; lateral lobes with posterior angles in dorsal view truncated. Infrascapular area maximum width 1.2 times wider than width of mid femur. Apterous. Fore femur 3.4 times, mid femur 3.3 times as long as wide. Fore and mid femora with upper and lower margins straight. Hind femur stout, 2.4 times as long as wide; upper and lower carinae finely serrate. Hind

tibia with upper margin having 7 outer and 6 inner teeth. Hind legs with 1st tarsal segment 1.2. times longer than 3rd segment (without claws), ventrally with 3 pulvilli almost equal in length. Subgenital plate almost as long as wide; posterior margin trilobate, mid process lamelle-like. Cerci short, conical. Valves of ovipositor short; upper valve 3.5 times longer than its maximum width; lower valve 5.9 times longer than its maximum width.



FIGURES 23–26. Male of *Paraguelus philippensis* sp. nov. 23. Body, lateral view; 24. Same, dorsal view; 25. Head, frontal view; 26. Head and anterior part of pronotum, dorsal view.

Body blackish brown. Head brown; concavities between lateral carinae of fastigium blackish. Antennae yellowish with blackish rings. Maxillary palps with apical segment reddish with black basal spot. Disk of pronotum and lateral lobes blackish brown; infrascapular area light brown with blackish stripe at anterior part of area. Fore and mid femora and tibiae brown, with two blackish rings. Fore and mid tarsi with 1st segment brown; 2nd segment apically blackish; claws brown. Hind femur brown, knees with upper lophi reddish brown and lower lophi light brown. Hind tibia blackish with light brown base. Abdomen black with light brown stripes. Ovipositor light brown.

Male. Similar to female. Antennae 15-segmented; length of antenna 1.5 times longer than length of fore femur; mid segments of antennae 9–10 times as long as wide. Fastigium of vertex 1.5 times wider than width of one eye from above. Anterior margin of pronotum, posterior angles of lateral lobes of the pronotum, median and prozonal carinae as in female. Infrascapular area maximum width 1.1 times wider than width of mid femur. Tegmina and hind wings absent. Fore femur 2.9–3.3 times, mid femur 2.0–3.0 times as long as wide; fore and mid femora with upper and lower margins straight. Hind femur 2.4 times as long as wide; upper and lower carinae as in female. Hind tibia with upper margin having 6 outer and 6 inner teeth. Hind legs with 1st tarsal segment as in female. Epiproct narrow triangular, with pointed apex. Subgenital plate elongated, in ventral view apex of plate excised. Cerci as in female.

Body light brown, dorsally dark brown. Maxillary palps with apical segment light brown apex reddish and having black basal spot. Epiproct and cerci light brown; subgenital plate brown.

Measurements (in mm). Length of body (from frontal ridge to apex of subgenital plate) male 11.5–12.5, female 13.7; pronotum male 9.7–10.3, female 11.6; antenna male 3.8–4.3, female 4.7; fore femur male 2.3–2.6, female

3.1; mid femur male 2.6–2.7, female 3.1; hind femur male 6.8–7.4, female 8.5; hind tibia male 6.4–6.5, female 7.5; ovipositor 1.5. Width of infrascapular area male 0.9, female 1.1; mid femur male 0.8, female 0.9.

Distribution. Philippines (northern Palawan, Sabang).

Etymology. The name of new species is originated from the type country, the Philippines.

***Paraguelus gorochovi* Storozhenko et Tan, sp. nov.**

(Figs. 27–36)

Material examined. Holotype—female, Philippines: South Palawan, env. of Brooke's Point (E cost), 8.79 N, 117.80 E, 6–8. III.2004, leg. A.V. Gorochov (ZIN). Paratypes: 1 male, 1 female, same data as in holotype (ZIN, FSCB).

Diagnosis. The new species is very similar to *P. sabahensis* sp. nov. but differs by the pronotum process with its median carina in lateral view less undulating and having its apex triangular rather than attenuated, female subgenital plate with apical part having a narrow mid process. The new species is also similar to *P. palawanicus* by narrow fastigium of vertex but differs by long pronotum and wide infrascapular area.

Description. Female. Body robust, medium sized for genus. Antennae filiform, 16-segmented; length of antenna 1.75 times longer than length of fore femur; mid segments of antennae 8.2 times as long as wide. Lateral ocelli placed at level of middle of eyes. Fastigium of vertex in dorsal view with deep concavities between lateral carinae, reaching the front of eyes from dorsal aspect, 1.1 times wider than width of one eye from above; fastigium with anterior margin almost straight; median carina short; lateral carinae low. Pronotum in dorsal view rugulose, reaching base of hind knees; anterior margin broadly rounded; posterior process broad with triangle rounded apex. Pronotum with median carina in profile slightly raised before shoulders. Prozonal carinae traced by tubercles. Lateral lobes of the pronotum with hind margins having deep lower sinus, upper sinus less defined; lateral lobes with posterior angles in dorsal view truncated. Infrascapular area maximum width 1.5–1.6 times wider than width of mid femur. Apterous. Fore femur 3.3–3.4 times, mid femur 3.9–4 times as long as wide. Fore and mid femora with upper and lower margins straight; lower side of mid femur with lower margin weakly sinuate. Hind femur stout, 2.3–2.5 times as long as wide; upper and lower carinae finely serrate. Hind tibia with upper margins having 6 outer and 5 inner teeth. Hind legs with 1st tarsal segment 1.1–1.2. times longer than 3rd segment (without claws), ventrally with 3 pulvilli almost equal in length. Subgenital plate almost as long as wide; posterior margin of plate trilobate, mid process narrow. Cerci short, conical. Valves of ovipositor short; upper valve 3.1 times longer than its maximum width; lower valve 5.2 times longer than its maximum width.

Body dark brown. Head brown; concavities between lateral carinae of fastigium blackish. Antennae yellowish. Maxillary palps with apical segment light brown; pronotum with dorsal disk and lateral lobes brown; infrascapular area light brown with blackish anterior portion. Fore and mid femora and tibiae blackish, with brown rings. Fore and mid tarsi with 1st segment brown; 2nd segment apically blackish; claws light brown. Hind femora brown with black knees. Hind tibiae brown. Abdomen black with small light brown spots. Ovipositor brown.

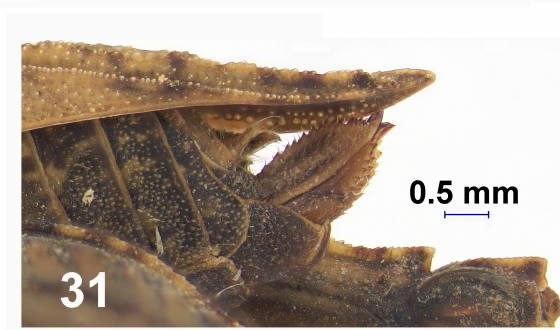
Male. Similar to female. Antennae 15-segmented; length of antenna 1.7 times longer than length of fore femur; mid segments of antennae 9.7 times as long as wide. Fastigium of vertex 1.2 times wider than width of one eye from above. Anterior margin of pronotum, posterior angles of lateral lobes of the pronotum, median and prozonal carinae as in female. Infrascapular area maximum width 1.3 times wider than width of mid femur. Tegmina and hind wings absent. Fore and mid femora 3.4 times as long as wide; upper and lower margins of fore and mid femora as in female. Hind femur 2.5 times as long as wide; upper and lower carinae as in female. Hind tibia with upper margin having 6 outer and 5 inner teeth. Hind legs with 1st tarsal segment as in female. Epiproct narrow triangular, with pointed apex. Subgenital plate elongated, in ventral view apex of plate excised. Cerci as in female.

Body generally colored as in female. Apical segment of maxillary palps completely light brown, without black basal spot. Abdomen black. Epiproct and cerci brown; subgenital plate black with brown apex.

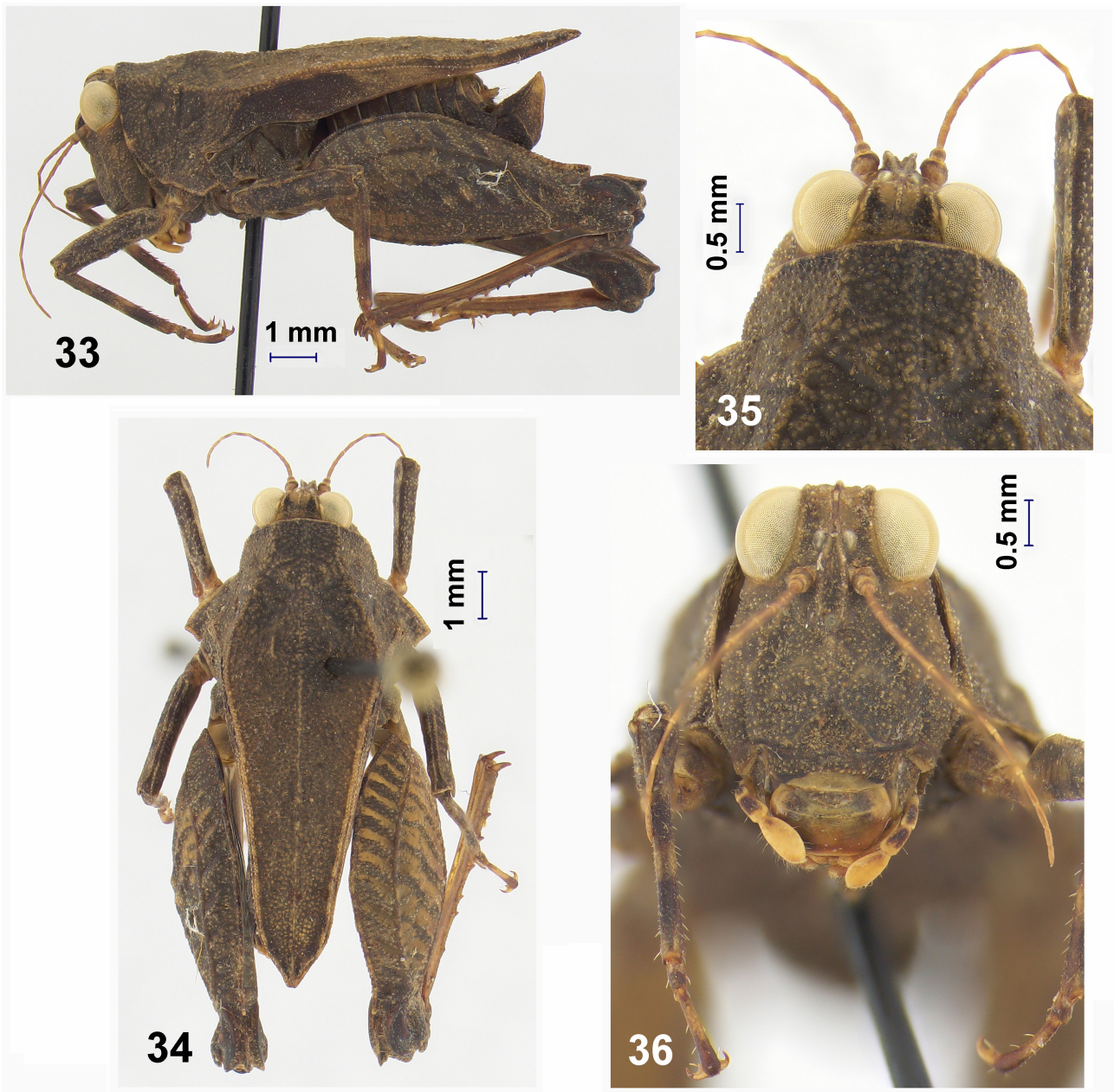
Measurements (in mm). Length of body (from frontal ridge to apex of subgenital plate) male 10.5, female 10.6–11.3; pronotum male 10.3, female 11.7–12.1; antenna male 4.5, female 4.8–4.9; fore femur male 2.7, female 2.8–2.9; mid femur male 2.7, female 3.2–3.3; hind femur male 7.5, female 7.9–8.1; hind tibia male 6.2, female 6.8–7.0; ovipositor 1.7–1.8. Width of infrascapular area male 1.0, female 1.3; mid femur male 0.75, female 0.8–0.85.

Distribution. Philippines (southern Palawan, Brooke's Point).

Etymology. The new species is named in honor of A.V. Gorochov, who collected the type specimens.



FIGURES 27–32. Female of *Paraguelus gorochovi* **sp. nov.** 27. Body, lateral view; 28. Same, dorsal view; 29. Head, frontal view; 30. Head and anterior part of pronotum, dorsal view; 31. Apex of abdomen, ventral view; 32. Same, lateral view.



FIGURES 33–36. Male of *Paraguelus gorochovi* **sp. nov.** 33. Body, lateral view; 34. Same, dorsal view; 35. Head and anterior part of pronotum, dorsal view; 36. Head, frontal view.

Discussion

The genus *Paraguelus* consists of four species distributed in the Philippines (Palawan) and Malaysia (Borneo) (Fig. 37).

The subfamily Criotettiginae is established recently for 24 genera and characterized by the following combination of features: 1) frontal costa narrow and not forming wide scutellum; 2) the bifurcation of costa is situated in the upper quarter of compound eye height; 3) lateral carinae of the vertex not elevated; 4) fastigium of vertex with deep depressions between median and lateral carinae; 5) disc of the pronotum more or less flat; 6) projections on disc of pronotum absent; 7) lateral lobes of pronotum always directed outwards; 8) 1st tarsal segment of hind legs equal or slightly longer than 3rd segment (Sudebi *et al.*, 2025). This subfamily most similar to Cladonotinae, Metrodorinae Scelimeninae and Tettiginae, but Cladonotinae have wide scutellum and usually highly arched in profile median carina, Metrodorinae have frontal costa bifurcations situated around middle of eye height, Scelimeninae have

elevated lateral carinae of the vertex modified in horns and numerous projections at the disc of pronotum, and Tetriginæ have always directed downwards lateral lobes of pronotum and 1st tarsal segment of hind legs distinctly shorter than 3rd segment. The subfamily Criotettiginæ is divided into two tribes, Criotettigini and Thoradonotini (Sudebi *et al.*, 2025).

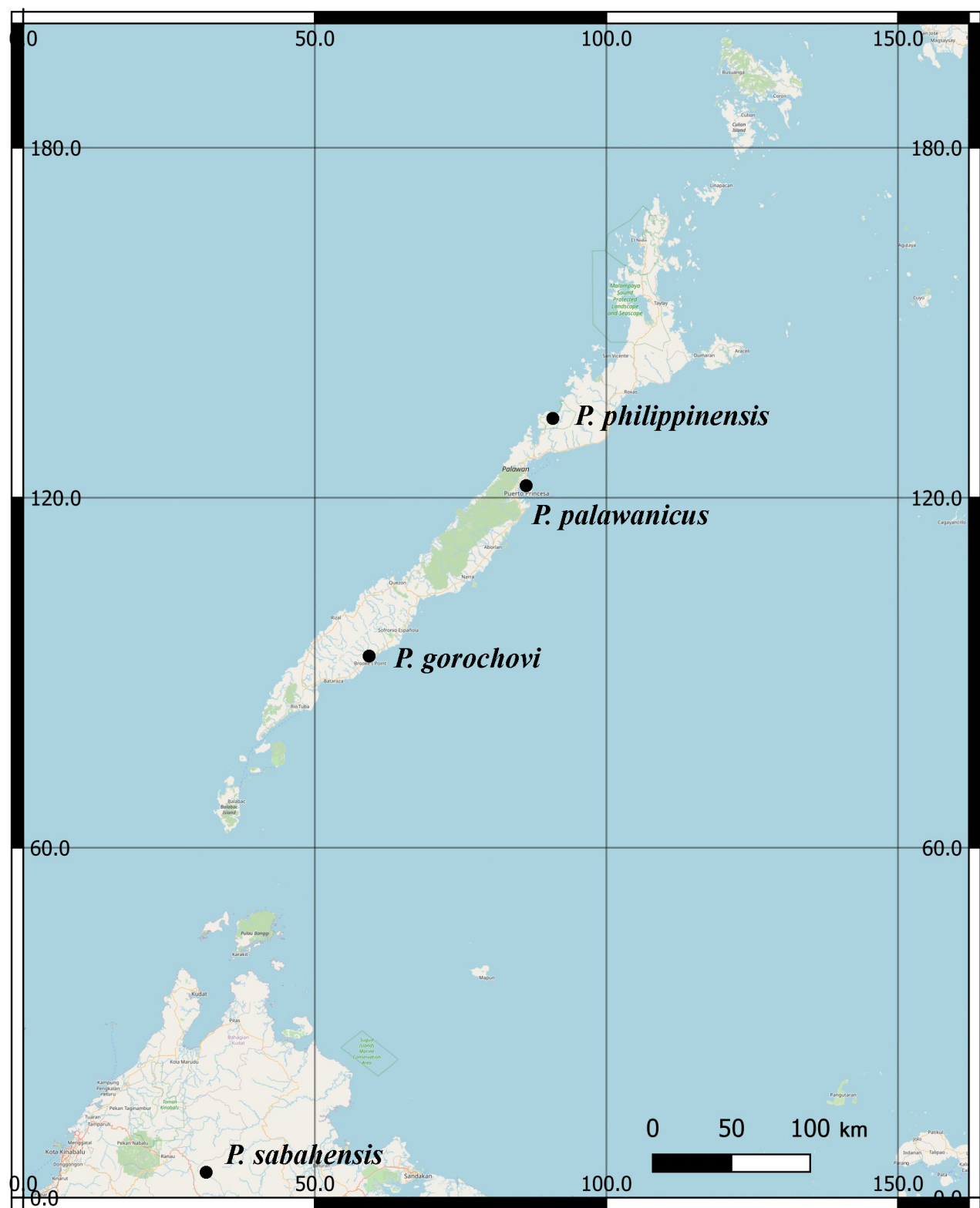


FIGURE 37. The distribution map of *Paraguelus* species.

Based solely on the morphology, the genus *Hyboella* was transferred recently from subfamily Metrodorinae to Criotettiginae based on the specific shape of head and other typical characteristic of Criotettiginae (Sudebi *et al.*, 2025). Owing to the similarities in the morphology mentioned above, we also tentatively transfer the genera *Tondanotettix* and *Hainantettix* from subfamily Cladonotinae and genera *Edentatettix* and *Paraguelus* from Metrodorinae to subfamily Criotettiginae. However, a thorough revision of *Edentatettix*, *Hainantettix*, *Hyboella*, *Paraguelus*, *Tondanotettix* and related genera, preferably with the use of molecular phylogeny, is necessary to verify and confirm their subfamilial positions.

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