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NEW SPECIES OF THE PYGMY GRASSHOPPERS GENUS *FALCONIUS* BOLÍVAR, 1898 (ORTHOPTERA: TETRIGIDAE) FROM JAVA ISLAND

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Summary. *Falconius bogor* Storozhenko, **sp. n.** is described and illustrated from Indonesia (Java Island). The new species is similar to *F. clavatus* Bolívar, 1898 from Mentawai Islands (Indonesia) but differs from latter by broad fastigium of vertex and sinuate upper side of fore femora.

Key words: Orthoptera, Tetrigidae, Scelimeninae, taxonomy, new species, Indonesia.

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Резюме. С острова Ява (Индонезия) описывается *Falconius bogor* Storozhenko, **sp. n.** Новый вид сходен с *F. clavatus* Bolívar, 1898 с островов Ментавай (Индонезия), но отличается более широкой вершиной темени и волнистым верхним краем передних голеней.

INTRODUCTION

At present, the genus *Falconius* Bolívar, 1898 includes 20 species distributed in India, Myanmar, South China, Thailand, Vietnam, Malaysia (Peninsular Malaysia, Borneo), Indonesia (Java, Sumatra, Mentawai), and the Philippines (Palawan) (Bolívar, 1887; Brunner von Wattenwyl, 1893; Bolívar, 1898; Hancock, 1907; Bolívar, 1909; Günther, 1938; Zheng & Jiang, 1997; Liang, 2000; Zheng, 2005; Zheng *et al.*, 2006; Deng *et al.*, 2009; Storozhenko, 2014; Deng *et al.*, 2015; Storozhenko & Dawwrueng, 2015; Storozhenko, 2017; Muhammad *et al.*, 2018; Cigliano *et al.*, 2020). A new species of this genus is described below.

MATERIAL AND METHODS

This paper is based on specimens collected by Dr. A.V. Gorochov in Indonesia in 1999. The length of body is measured from the frontal ridge to the apex of subgenital plate; the width of prozona is measured along anterior margin of pronotum; other measurements are standardized for Tetrigidae (Tumbrinck, 2014). 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. The holotype of new species is deposited at the Zoological Institute of the Russian Academy of Sciences, St. Petersburg (ZIN).

TAXONOMY

Genus *Falconius* Bolívar, 1898

Type species: *Criotettix clavitarsis* Bolívar, 1887, by subsequent designation (Karny, 1910).

NOTES. The genus belongs to the nominotypical tribe of the subfamily Scelimeninae Bolívar, 1887. Members of this genus are smaller than most Scelimenini, having visible interhumeral carina, lacking pronotal projections homologous to that of Scelimenini, despite of having sometimes wrinkled pronotum with elevations, and the antennal grooves and lateral ocelli situated higher (Muhammad *et al.*, 2018).

Falconius bogor Storozhenko, sp. n.

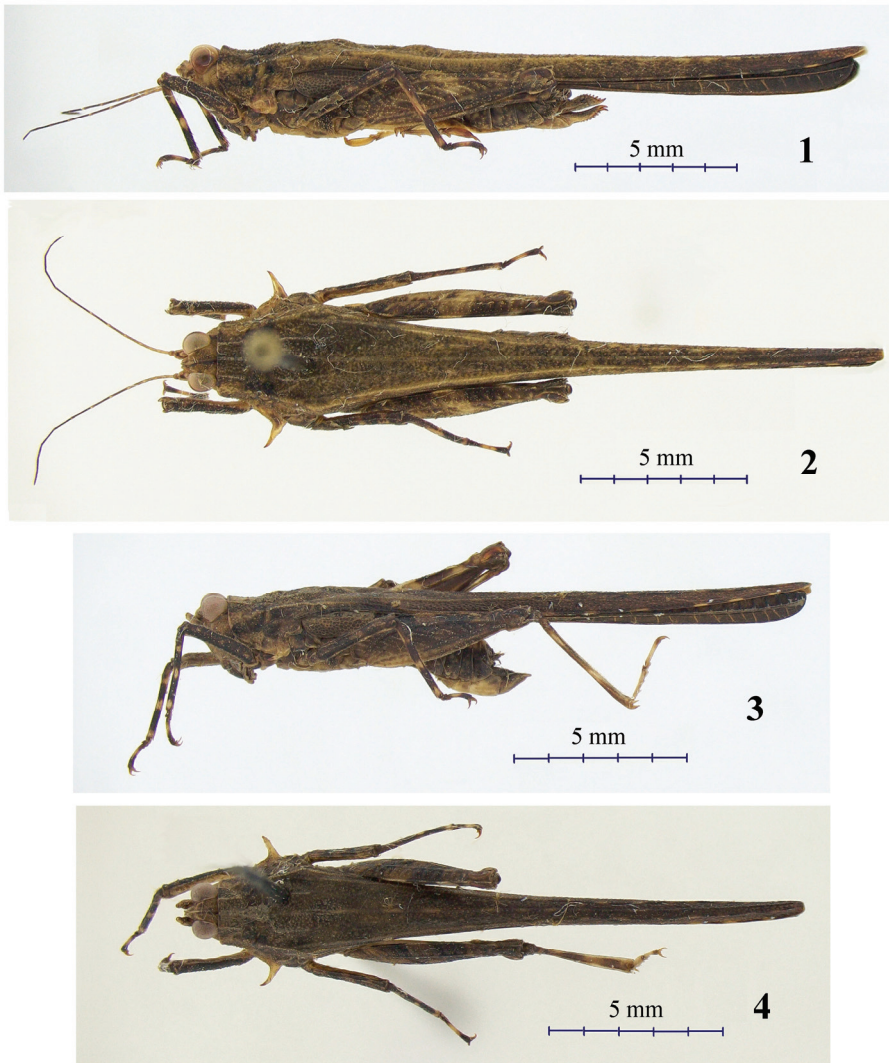
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Figs 1–14

TYPE MATERIAL. Holotype – ♀, **Indonesia**: Java, 20–25 km SE of Bogor, env. of Cemanda, Mt. Pangrango, 1000 m, 27.XI–7.XII 1999, leg. A. Gorochov (ZIN). Paratypes: 2♂, the same data as holotype (ZIN).

DESCRIPTION. Female. Body medium-sized for genus. Antennae filiform, 15-segmented, 2.4 times as long as fore femur; middle segments (7–9th) 9.2–10.1 times as long as wide. Antennal sockets situated between lower margins of eyes. Fastigium of vertex 1.25 times as wide as one eye from above; median carina of fastigium distinct; transverse carinae disappearing near middle of fastigium and distinctly elevated between eyes; supraocular lobes vestigial. Eyes not protruding above pronotum in lateral view. Lateral ocelli large, situated between middle of eyes. Frontal ridge in lateral view broadly rounded between the antennal sockets and slightly excised below the median ocellus; in frontal view the ridge widened below the antennal sockets. Width of frontal ridge near the base of the antennae 1.5 times narrower than width of the 1st antennal segment. Pronotum in dorsal view with almost straight anterior margin; posterior process of pronotum narrow and very long, far surpassing apex of hind tarsi. Median carina of pronotum in profile low, distinctly sinuate in anterior part, straight in posterior part. Lateral carinae in prozona parallel-side; prozona subsquare, its width 1.05 times its length. Disc of pronotum distinctly depressed between prozona and humeral angles and concave behind apex of tegmina, with a pair of interhumeral carina; short additional keels situated near middle of hind femora absent; posterior process of pronotum almost smooth. Hind margin of lateral lobes of pronotum with tegminal (upper) sinus as deep as lower sinus; lower side of lateral lobes pronotum in dorsal view forming long transverse but slightly curved forwards spine. Tegmina ovate, with acutely rounded apex; visible part of tegmen 2.9 times as long as wide; width of visible part of tegmen 1.8 times width of mid femur. Hind wing almost reaching apex of posterior process of pronotum. Upper side of fore femora sinuate and serrate, lower side straight, serrated, without lobules. Upper and lower side of mid femora straight. Fore femur 5.4 times, and mid femur 6.2 times as long as wide. Upper side of hind femur serrate, lower side almost smooth. Hind femur 3.7 times as long as wide. Upper side of hind tibia without outer and inner teeth, lamelliform, finely serrate. First tarsal segment of hind leg compressed, 1.3 times as long as 3rd segment (without claws); dorsal side of 1st segment with 3 subequal and distinctly pointed pads; 3rd segment swollen. Epiproct triangular, with pointed apex. Subgenital plate elongated, 1.3 times as long as wide; posterior side of plate

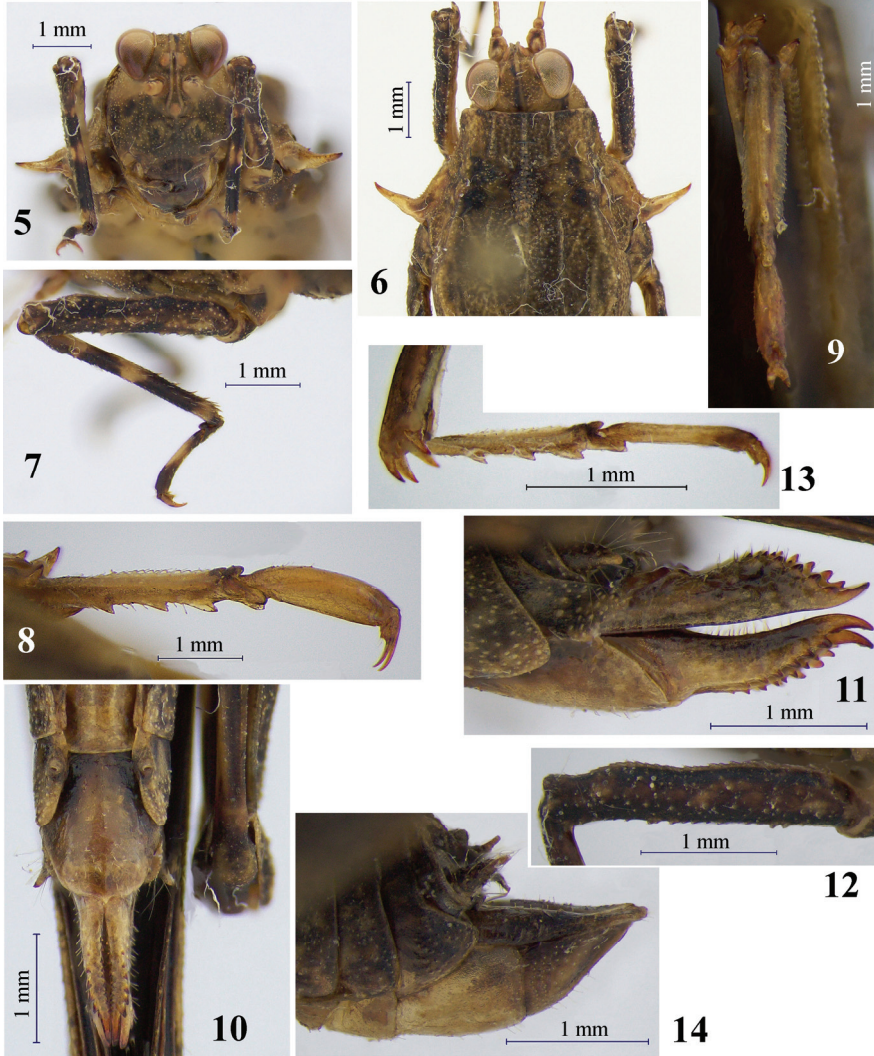
weakly triangular near middle. Cerci conical, with pointed apices, 1.8 times as long as wide near base. Valves of ovipositor short, dentate; length of upper valve 3.2 times its maximum width; length of lower valve 4.6 times its maximum width.



Figs 1–4. *Falconius bogor* sp. n., body, lateral (1, 3) and dorsal (2, 4) view. 1, 2 – female (holotype); 3, 4 – male (paratype). Scale bars = 5 mm.

General coloration of body brownish black with light brown marks. Apical segments of antennae black with pale rings near base of each segment; basal part of antennae brown. Disc of pronotum blackish brown; lower part of lateral lobes of pronotum and spine light brown. Visible part of tegmina and anterior margin of hind wings blackish. Fore and mid femora black

with small light marks. Fore and middle tibiae black with 3 pale rings. Hind femur blackish. Hind tibia black, with 2 light brown rings. First tarsal segment of hind leg pale brown, 3rd segment shiny brown. Tergites, sternites, epiproct and subgenital plate blackish brown. Cerci brown. Ovipositor blackish brown.



Figs 5–14. *Falconius bogor* sp. n. 5–11 – female (holotype), 12–14 – male (paratype). 5 – head, frontal view; 6 – head and anterior part of pronotum, dorsal view; 7 – fore leg, lateral view; 8 – hind tarsus, lateral view; 9 – the same, ventral view; 10 – apex of abdomen, ventral view; 11 – the same, lateral view; 12 – fore femur, lateral view; 13 – hind tarsus, lateral view; 14 – apex of abdomen, ventral view. Scale bars = 1 mm.

Male. Similar to female but smaller. Fastigium of vertex 1.2 times as wide as one eye from above. Antennae filiform, 14-segmented, 2.5 times as long as fore femur; middle segments (7–9th) 9.0–9.3 times as long as wide. Width of frontal ridge near the base of the antennae 2.0 times narrower than width of the 1st antennal segment. Visible part of tegmen 2.6–2.7 times as long as wide and 1.8–1.9 times as wide as mid femur. Hind wing almost reaching apex of posterior process of pronotum. Fore femur 6.0 times, mid femur 5.4–5.8 times, and hind femur 3.4–3.6 times as long as wide. First tarsal segment of hind leg compressed, 1.1 times as long as 3rd segment (without claws); dorsal side of 1st segment with 3 subequal and distinctly pointed pads; 3rd segment not swollen. Subgenital plate conical; cerci 2.1 times as long as wide near base.

MEASUREMENTS (in mm). Length body: ♀ 12.1, ♂ 10.0–10.2; antenna: ♀ 6.5, ♂ 6.0; pronotum: ♀ 20.6, ♂ 17.0–17.5; tegmen: ♀ 2.6, ♂ 2.1–2.3; fore femur: ♀ 2.7, ♂ 2.4; mid femur: ♀ 3.1, ♂ 2.6–2.7; hind femur: ♀ 6.6, ♂ 5.4–5.5; ovipositor 1.6 mm.

DIAGNOSIS. The new species is similar to *Falconius clavatus* Bolívar, 1898 from Mentawai Islands situated approximately 150 km off the western coast of Sumatra Island, but differs from latter by broad fastigium of vertex and sinuate upper side of fore femora (in *F. clavatus*, fastigium as wide as one eye from above and the upper side of fore femora straight). From other congeners *F. bogor* sp. n. is distinguished by the shape of spine situated on the lower side of lateral lobes of pronotum.

DISTRIBUTION. Indonesia: Java Island.

ETHYMOLOGY. The new species is named after the type locality. Treat as a noun in apposition.

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REFERENCES

- Bolívar, I. 1887. Essai sur les acridiens de la tribu des Tettigidae. *Annales de la Société Entomologique de Belgique*, 31: 175–313.
- Bolívar, I. 1898. Contributions à l'étude des Acridiens espèces de la faune indo et austromalaisienne du Museo Civico di Storia Naturale di Genova. *Annali del Museo Civico di Storia Naturale di Genova*, 39: 66–101.
- Bolívar, I. 1909. Nouvelles espèces d'Acridiens du Musée de Geneve. *Boletín de la Real Sociedad Espanola de Historia Natural*, 9: 393–403.
- Brunner von Wattenwyl, C. 1893. Revision du système des orthoptères et description des espèces rapportées par M. Leonardo Fea de Birmanie. *Annali del Museo Civico di Storia Naturale di Genova*, 33: 1–230.
- Cigliano, M. M., Braun, H., Eades, D. C., & Otte, D. 2020. *Orthoptera Species File Online. Version 5.0/5.0*. Available from: <http://Orthoptera.SpeciesFile.org>. (Accessed: 15 May 2020).
- Deng, W.A., Zheng, Z.M., Li, X.D., Lin, M.P., Wei, S.Z., Yuan, B.D. & Lin, L.L. 2015. The groundhopper fauna (Orthoptera: Tetrigidae) of Shiwanshan (Guangxi, China) with description of three new species. *Zootaxa*, 3925(2): 151–178. DOI: <http://dx.doi.org/10.11646/zootaxa.3925.2.1>.
- Deng, W.A., Zheng, Z.M. & Wei, S.Z. 2009. A review of the genus *Falconius* Bolivar (Orthoptera: Tetrigoidea: Scelimeninae). *Zootaxa*, 1976: 63–68.

- Günther, K. 1938. Revision der Acrydiinae, I. Sectiones Tripetalocerae, Discotettigiae, Lophotettigiae, Cleostratae, Bufonidae, Cladonotae, Scelimenae verae. *Mitteilungen aus dem Zoologischen Museum in Berlin*, 23(2): 299–437.
- Hancock, J.L. 1907. Studies of the Tetriginae (Orthoptera) in the Oxford University Museum. *Transactions of the Royal Entomological Society of London*, 2: 213–244.
- Kirby, W.F. 1910. *A synonymic catalogue of Orthoptera. Vol. III. Orthoptera Saltatoria. Part II. (Locustidae vel Acridiidae)*. The Trustees of the British Museum, London. 674 pp.
- Liang, G.Q. 2000. Three new species of Tetrigoidea (Orthoptera) from China. P. 26–30. In: Zhang, Y.L. (Ed.). Systematic and faunistic research on Chinese insects. China Agriculture Press, Beijing. [In Chinese with English summary]
- Muhammad, A.A., Tan, M.K., Abdullah, N.A., Azurin, M.S. Bhaskar D. & Skejo, J. 2018. An annotated catalogue of the pygmy grasshoppers of the tribe Scelimenini Bolívar, 1887 (Orthoptera: Tetrigidae) with two new *Scelimena* species from the Malay Peninsula and Sumatra. *Zootaxa*, 4485(1): 1–70. DOI: <https://doi.org/10.11646/zootaxa.4485.1.1>
- Storozhenko, S.Yu. 2014. A new species of the genus *Falconius* Bolívar, 1898 (Orthoptera: Tetrigidae, Scelimeninae). *Zoologicheskii Zhurnal*, 93(1): 167–170. [In Russian; English translation: *Entomological Review*, 2014, 94(4): 602–604. DOI: <http://dx.doi.org/10.1134/S0013873814040125>]
- Storozhenko, S.Yu. 2017. A new species of the genus *Falconius* Bolívar, 1898 (Orthoptera: Tetrigidae, Scelimeninae) from Cambodia. *Far Eastern Entomologist*, 332: 1–6.
- Storozhenko, S.Yu. & Dawwrueng, P. 2015. New and little-known pygmy grasshoppers (Orthoptera: Tetrigidae) from Thailand. *Zootaxa*, 4052(5): 527–554. DOI: <http://dx.doi.org/10.11646/zootaxa.4052.5.2>
- Tumbrinck, J. 2014. Taxonomic revision of the Cladonotinae (Orthoptera: Tetrigidae) from the islands of South-East Asia and from Australia, with general remarks to the classification and morphology of the Tetrigidae and descriptions of new genera and species from New Guinea and New Caledonia. P. 345–396, pls 64–91. In: Telnov D. (Ed.). *Biodiversity, biogeography and nature conservation in Wallacea and New Guinea. Volume II*. RHGa, the Entomological Society of Latvia.
- Zheng, Z.M. 2005. *Fauna of Tetrigoidea from Western China*. Science Press, Beijing. 501 pp. [In Chinese with English summary]
- Zheng Z.M. & Jiang, G.F. 1997. Two new species of Scelimenidae and first description of female of *Bolivaritettix longzhouensis* (Orthoptera, Tetrigoidea) from China. *Entomotaxonomia*, 19(2): 164–168.
- Zheng Z.M., Wang, B., Li, P. & Niu, Y. 2006. A taxonomic study on the genus *Falconius* Bolívar (Orthoptera, Scelimenidae) from China. *Acta Zootaxonomica Sinica*, 31(4): 821–823.