Two new species of the genus *Scelimena* Serville, 1838 (Orthoptera, Tetrigidae) from the islands of Biak and Waigeo, Indonesia

Josef Tumbrinck[1] & Hannah Emde[2]

[1] Josef Tumbrinck, Auf der Hees 1, 41849 Wassenberg, Germany
email: j.tumbrinck@t-online.de, https://orcid.org/0000-0002-8955-7934
[2] Hannah Emde, Germany
email: info@hannahemde.com

Suara Serangga Papua (SUGAPA digital) 16(2): 81-87.
urn: lsid:zoobank.org:pub: 458DB60F-7DCA-4E75-B543-BA8143E00B99

Abstract: Two new species of *Scelimena* Serville, 1838 are described, *S. biakensis* **spec. nov**. and *S. waigeoensis* **spec. nov.**, recently discovered in museum material.
Rangkuman: Spesies baru dari genus *Scelimena* Serville, 1838, yaitu *S. biakensis* **spec. nov.** dan *S. waigeoensis* **spec. nov.**, dideskripsi disini. Spesies ini ditemukan di dalam koleksi museum dbaru dari New Guinea.

Keywords: Tetrigidae, *Scelimena*, Indonesia, Papua, Waigeo, Biak, taxonomy

Introduction

At the end of 2023 1987 Tetrigidae species worldwide are known (Cigliano et al., 2024). They occur on all continents and populate almost all climatic zones from taiga to rainforests (Tumbrinck & Skejo, 2017). Tetrigidae can easily be identified by their pronotum, which typically extends far over the body. This feature is clearly unique and supports assignment of specimen to this family without doubt.
Since 2014, the Tetrigidae of New Guinea has been revised in several papers (Skejo et al., 2022, Tan et al., 2016, Tumbrinck, 2014a, 2014b, 2015, 2018a, 2018b, 2019, Tumbrinck & Skejo, 2017). Before the revision started, 66 species were known from the island. With the addition of two new species described in this paper there are currently 148 species known for New Guinea including the islands of Aru, Biak, Misool, Waigeo, and Yapen (but excluding Key islands).
The genus *Scelimena* was described by Audinet-Serville in 1838. It is one of the most diverse genera found in Southeast Asia (Muhammad et al., 2018). This genus, currently consisting of 23 species, is distributed across the Oriental region including countries like China, India, Indonesia, Malaysia, Myanmar, the Philippines, and Vietnam (Cigliano et al., 2024). Members of the genus are relatively large; and good at flying, swimming and diving and can survive in semi-aquatic environment. Lamellated hind tibia and the first segment of hind tarsus are modifications that enable swimming (Muhammed et al., 2018).
Two species were previously known from New Guinea and the adjacent islands: *S. novaeguineae* (Bolívar, 1898) and *S. eremita* (Günther, 1938). In a comprehensive revision, Muhammad et al. (2018) have revised the genus and established six species groups. *S.*

DOI: 10.19269/sugapa2025.16(2).03

novaeguineae, *S. eremita* and *S. floresana* (Günther, 1955) were combined in the species group *producta* (Serville, 1838).

Methods and terminology

Pictures of all specimens were photographed using Olympus OM-D® camera with a 60 mm 1:2.8 macro, a LED ring-lamp and a camera integrated stacking system. A millimetre scale was placed beside the specimens. The morphological terminology and measurements follow Tumbrinck (2014a). The pronotal projections follow Pushkar's system (Skejo, 2017). In this publication we use the second and third frontolateral projections (at the anterior margin of the pronotum below the end of the prozonal carina, where the first frontolateral projection is located), the metalateral projections (tubercles of humeral angle), and the ventrolateral projections (spine of the lateral lobe).

Abbreviations used

BMNH – old acronym of NHMUK
CDT – Collection Dmitry Telnov, Rīga, Latvia
NHMUK – The Natural History Museum, formerly British Museum (Natural History), London, United Kingdom
NMEG – Naturkundemuseum Erfurt, Germany
ZFMK – Zoologisches Forschungsmuseum Alexander Koenig, Bonn, Germany

Systematic part

Scelimena Audinet-Serville, 1838

Type species: *Tetrix producta* Audinet-Serville, 1838 by original monotypy

The genus *Scelimena* is characterised as follows (Muhammad et al., 2018): antennal grooves below the lower margins of the compound eyes height; antennae filiform; lateral ocelli level with the lower margins of the compound eyes; frontal costa bifurcation in the lower third of the compound eyes; vertex width wider than a compound eye, the dorsal margin of a compound eye in line with the vertex; transverse and lateral carinae of the vertex in frontal view weakly visibly elevated in some, in dorsal view acutely angled; maxillar palpi not widened towards the apex, dark or pale coloured; dorsum of pronotum finely granulated, usually flat (in some species border between prozona and metazona elevated), without, with or with very strong projections; metalateral projection absent or present as simple tooth, wart, or long spine; frontomedial projection absent; ventrolateral projection projected as simple long spine; distal segment of the hind tarsi as wide as previous segment; fore and mid femora elongated, with undulated margins and visible teeth or smooth; ventral margin of the hind femur in some species with weak teeth, in some species oblique lappets, in some smooth; hind tibia and the first tarsal segment in some species slightly widened, in others

strongly; pulvilli of the hind tarsi: first two angular, third longer and more oblique, space between them wide.

Scelimena biakensis spec. nov. (fig. 1)

urn:lsid:zoobank.org:act: EBFB22D7-F8DF-4FB2-8175-277F3C5F76A4

Holotype: ♂, NMEG, Indonesia, Irian Jaya, Biak N, 6 km S Mara, 14.II.1998, 0°53'S 136°01'E, leg. A. Weigel.
Paratypes: 3 ♂♂ (1/3-3/3), NMEG, Indonesia, Irian Jaya, Biak N, 6 km S Mara, 14.II.1998, 0°53'S 136°01'E, leg. A. Weigel (3/3 transferred to ZFMK).

Description: Typical *Scelimena* species, slender, with a very long pronotum and lateral spines.
Measurements of holotype (in mm): pronotum length 19.50; pronotum lobe width 5.25; pronotum height 2.50; vertex width 0.80; eye width 0.58; ratio vertex width/eye width 1.38; tegmen length 2.25; hind wing length 17.50; postfemur length 6.65; postfemur width 1.95. Measurements of all 4 types (in mm): pronotum length 18.75-20.00 (average 19.56); pronotum lobe width 5.25-5.40 (average 5.35); pronotum height 2.45-2.65 (average 2.56); vertex width 0.78-0.83 (average 0.80); eye width 0.58-0.63 (average 0.60); ratio vertex width/eye width 1.30-1.38 (average 1.35); tegmen length 2.25-2.40 (average 2.30); hind wing length 16.75-17.88 (average 17.32); postfemur length 6.10-6.80 (average 6.55); postfemur width 1,90-2.05 (average 1.96).

Metalateral projection and frontolateral projection 2+3 small and weak. Ventrolateral projection, in dorsal view, strongly projected sidewards and curved a little backwards as a bright spine. In frontal view the spine projected downwards. Dilated hind tibiae and tarsi. No colouration is visible in dried specimen.

Diagnosis: The new species is a typical *Scelimena* species. It belongs to the *Scelimena novaeguinae* species group because of the regional affiliation, but it differs from the other three species of this group by the very small metalateral and frontolateral projections. It is the only Scelimena species where the ventrolateral projection is not curved forward (*Scelimena nitidogranulata* has no ventrolateral projection).

Distribution: The species has only be recorded from the island of Biak.

Etymology: The name of the new species refers to its homeland, the island of Biak.

Scelimena waigeoensis spec. nov. (fig. 2)

urn:lsid:zoobank.org:act: D2CC5082-5A7D-4A9A-B79C-64F85D698A47

Holotype: ♂, BMNH 1938-593, [Indonesia] N. Dutch New Guinea, Waigeo, Mt. Nok, IV.1938, leg. L. E. Cheesman.
Allotype: ♀, BMNH 1938-593, [Indonesia] N. Dutch New Guinea, Waigeo, Mt. Nok, IV.1938, leg. L. E. Cheesman.
Paratypes: 6 ♀♀ + 5 ♂♂ (1/13-11/13), BMNH 1938-593, [Indonesia] N. Dutch New Guinea, Waigeo, Mt. Nok, IV.1938, leg. L. E. Cheesman.

DOI: 10.19269/sugapa2025.16(2).03

♀ (12/13) + ♂ (13/13), CDT, Indonesia E, Raja Ampat, Waigeo, Dutch New Guinea, Waigeo Island, Walsai 10 – 13 km NE, 00°21‘17‘‘S 130°54‘37‘‘E, 70 m, primaval lowland rainforest on limestone, 16.II.2012, leg. D. Telnov (12/13 transferred to ZFMK, 13/13 transferred to NMEG).

Description: Typical *Scelimena*-species, slender, with a very long pronotum and lateral spines.
Measurements of holotype (in mm): pronotum length 18.25; pronotum lobe width 6.00; pronotum height 2.60; vertex width 0.75; eye width 0.73; ratio vertex width/eye width 1.03; tegmen length 2.80; hind wing length 19.38; postfemur length 7.70; postfemur width 2.75; antenna length 6.00. Measurements of allotype (in mm): pronotum length 22.50; pronotum lobe width 6.60; pronotum height 2.60; vertex width 0.70; eye width 0.58; ratio vertex width/eye width 1.21; tegmen length 2.40; hind wing length 16.13; postfemur length 6.50; postfemur width 1.85; antenna length 5.88.

Measurements of all types (in mm)

	♀♀	♂♂
Pronotum length	22.00-22.63 (∅ of 7: 22.39)	10.55-11.83 (∅ of 8: 19.11)
Pronotum lobe width	6.55-7.00 (∅ of 7: 6.79)	5.40-6.20 (∅ of 8: 5.88)
Pronotum height	2.50-2.85 (∅ of 7: 2.64)	1.85-2.60 (∅ of 7: 2.34)
Vertex width	0.73-0.83 (∅ of 6: 0.78)	0.60-0.75 (∅ of 8: 0.68)
Eye width	0.63-0.75 (∅ of 6: 0.71)	0.55-0.65 (∅ of 8: 0.61)
Ratio vertex width/eye width	0.97-1.32 (∅ of 6: 1.12)	1.00-1.22 (∅ of 8: 1.13)
Tegmen length	2.80-2.90 (∅ of 7: 2.84)	2.35-2.50 (∅ of 6: 2.43)
Hind wing length	19.00-20.00 (∅ of 7: 19.52)	16.13-17.63 (∅ of 8: 16.80)
Postfemur length	7.63-8.38 (∅ of 7: 7.83)	6.25-7.38 (∅ of 8: 6.71)
Postfemur width	2.10-2.75 (∅ of 7: 2.30)	1.6-2.15 (∅ of 8: 1.88)
Antenna length	6.00 (∅ of 2: 6.00)	5.00-6.00 (∅ of 5: 5.55)

Metalateral projection small and weak, frontolateral projection 2+3 as small tubercles. Ventrolateral projection, in dorsal view, long and straight, slightly tilted forward. In frontal view the spine is projected downwards. Dilated hind tibiae and tarsi. No colouration is visible in dried specimen.

Diagnosis: The new species is a typical *Scelimena* species. It belongs to the *Scelimena novaeguinae* species group because of the regional affiliation, but it differs from the other three species of this group by the very small metalateral projection and frontolateral projections. It is similar to *Scelimena celebica*, but differs in the presence of metalateral projections.

Distribution: The species has only been recorded from the island of Waigeo.

Etymology: The name of the new species refers to its homeland, the island of Waigeo.

Published on 24th November 2025

Identification key

Based on the key in the dissertation of Tumbrinck (2018b) we give an updated identification key for *Scelimena*-species of New Guinea.

1 Pronotum protrusion measured from the end of the knee to the tip of the pronotum longer than pronotum length measured from level of ventrolateral spines to of the hind knees …….. **2**

1* Pronotum protrusion measured from end of the knee up until end of pronotum shorter than pronotum length measured from level of ventrolateral spines to end of knee ……..
Scelimena eremita (Günther, 1938)

2 Lateral spines (in dorsal view) point sidewards or a little backwards …… **3**

2* Lateral spines (in dorsal view) bent forward .... ***Scelimena novaeguineae*** (Bolívar, 1898)

3 Lateral spines (in dorsal view) point a little backwards ….. ***Scelimena biakensis* spec.nov.**

3* Lateral spines (in dorsal view) point sidewards …… ***Scelimena waigeoensis* spec.nov.**

Discussion

Both species undoubtedly belong to the genus *Scelimena* and at least spatially to the *Scelimena novaeguineae* group. *Scelimena waigeoensis* is the only species known from this genus from Waigeo so far. It is closely related to *Scelimena celebica*, which occurs on Sulawesi. *Scelimena biakensis* is far unique in the genus due to its recurved lateral spines.

Acknowledgments

We wish to thank NHMUK, NMEG and Dmitry Telnov for the opportunity to study material of their collections. We also thank Josip Skejo for his remarks and for commenting on the manuscript.

Literature

Audinet-Serville, J.G., 1838. Histoire naturelle des insectes. Orthoptères. Roret, Paris, 776 pp.

Muhammad, A. A., Tan, M. K., Abdullah, N. A., Azirun, 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.

Skejo, J., Pushkar, T. I., Kasalo, N., Pavlović, M., Deranja, M., Adžić, K., Tan, M. K., Rebrina, F., Muhammad, A. A., Abdullah, N. A., Japir, R. Chung, A. Y. C. & Tumbrinck, J., 2022. Spiky pygmy devils: revision of the genus *Discotettix* (Orthoptera: Tetrigidae) and synonymy of Discotettiginae with Scelimeninae. Zootaxa 5217(1): 1-64.

Skejo, J., 2017. Taxonomic Revision of the Pygmy Devils (Tetrigidae: Discotettiginae) with Online Social Media as a New Tool for Discovering Hidden Diversity. Diploma thesis, Faculty of Science, University of Zagreb: 246 pp.

Tan, M. K., Storozhenko, S. Y. & Robillard, T., 2016. A new species of genus *Gestroana* (Orthoptera: Tetrigidae: Cladonotinae) from New Guinea. Mémoires du Muséum national d'Histoire naturelle 209: 141-148.

DOI: 10.19269/sugapa2025.16(2).03

Tumbrinck, J., 2014a. 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: 345-396. In: Telnov, D. (ed.): Biodiversity, biogeography and nature conservation in Wallacea and New Guinea. Volume II. The Entomological Society of Latvia. Riga.

Tumbrinck, J., 2014b. *Wiemersiella* gen. nov.: eine neue Dornschrecken-Gattung von Neuguinea (Orthoptera: Tetrigidae, Batrachideinae). Entomologie heute 26: 73-85.

Tumbrinck, J., 2015. New species of *Palaioscaria* Günther, 1936 (Orthoptera: Tetrigidae, Batrachideinae) from New Guinea. Sugapa 9: 29-46.

Tumbrinck, J. & Skejo, J., 2017. Taxonomic and biogeographic revision of the New Guinean genus *Ophiotettix* Walker, 1871 (Tetrigidae: Metrodorinae: Ophiotettigini trib. nov.), with the descriptions of 33 new species: 345-396. In: Telnov, D., Barclay, M. V. L. and Pauwels, O. S. G. Biodiversity, biogeography and nature conservation in Wallacea and New Guinea. Volume III. Riga: 658 pp.

Tumbrinck, J., 2018a. A new species of *Thoradonta* from New Guinea with some remarks on other Tetrigidae (Orthoptera) taxa from Indo-Australia. Sugapa 11(1): 27-46.

Tumbrinck, J., 2018b. Revision of the Pygmy grasshoppers (Orthoptera: Tetrigidae) from New Guinea and the adjacent islands. Dissertation. Westfaelische Wilhelms-Universitaet Muenster: 316 pp.

Tumbrinck, J., 2019. Taxonomic and biogeographic revision of the genus *Lamellitettigodes* (Orthoptera: Tetrigidae) with description of two new species and additional notes on *Lamellitettix*, *Probolotettix*, and *Scelimena*. Journal of Orthoptera Research 28 (2): 167-180.

Published on 24th November 2025

Fig. 1. *Scelimena biakensis* **spec.nov.**, holotype male, dorsal view.

Fig. 2. *Scelimena waigeoensis* **spec.nov.**, holotype male, dorsal view.

DOI: 10.19269/sugapa2025.16(2).03