

New data on the distribution of the genus *Roeseliana* Zeuner, 1941 (Orthoptera, Tettigoniidae, Tettigoniinae) in the southwestern Balkans, with description of *R. epirotica* n. sp.

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ISSN (imprimé / *print*): 1280-9551/ ISSN (électronique / *electronic*): 1638-9387

# New data on the distribution of the genus *Roeseliana* Zeuner, 1941 (Orthoptera, Tettigoniidae, Tettigoniinae) in the southwestern Balkans, with description of *R. epirotica* n. sp.

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Submitted on 9 January 2023 | Accepted on 5 March 2023 | Published on 26 July 2023

urn:lsid:zoobank.org:pub:4A49B696-2E7F-437E-8368-A361B82C13AE

Lemonnier-Darcemont M. & Darcemont C. 2023. — New data on the distribution of the genus *Roeseliana* Zeuner, 1941 (Orthoptera, Tettigoniidae, Tettigoniinae) in the southwestern Balkans, with description of *R. epirotica* n. sp. *Zoosystema* 45 (14): 445-450. <https://doi.org/10.5252/zoosystema2023v45a14>. <http://zoosystema.com/45/14>

## ABSTRACT

This article provides new biogeographical data on the genus *Roeseliana* Zeuner, 1941 in the southwestern Balkans, with the description of a new species, *Roeseliana epirotica* n. sp., discovered in four localities of the meso-Mediterranean zone of the Épirus region in Greece and Albania. From the supra-Mediterranean zone and upper, in Albania, Greece and also in the Republic of North Macedonia, we have only observed *Roeseliana ambitiosa* (Uvarov, 1924), with which *R. epirotica* n. sp. was probably confused in its most Mediterranean localities. These two taxa are nevertheless well differentiated, especially by the shape of the subgenital plate in the female and the shape in the titillators of the male.

## KEY WORDS

Épirus,  
Greece,  
Albania,  
description,  
new species.

## RÉSUMÉ

*Nouvelles données sur la répartition du genre Roeseliana Zeuner, 1941 (Orthoptera, Tettigoniidae, Tettigoniinae) dans le sud-ouest des Balkans, avec la description de R. epirotica n. sp.*

Cet article apporte de nouvelles données biogéographiques sur le genre *Roeseliana* Zeuner, 1941 dans le sud-ouest des Balkans, avec la description d'une nouvelle espèce, *Roeseliana epirotica* n. sp., découverte sur quatre stations de l'étage médio-méditerranéen de la région de l'Épire, en Grèce et en Albanie. Dès l'étage supra-méditerranéen, en Albanie, en Grèce mais également en République de Macédoine du Nord, nous avons observé uniquement *Roeseliana ambitiosa* (Uvarov, 1924), avec laquelle *R. epirotica* n. sp. a probablement été confondue dans ses stations les plus méditerranéennes. Ces deux taxons sont néanmoins bien différenciés, spécialement par la forme de la plaque sous-génitale chez la femelle et la forme des titillateurs chez le mâle.

## MOTS CLÉS

Épire,  
Grèce,  
Albanie,  
description,  
espèce nouvelle.

## INTRODUCTION

Two different taxa of the genus *Roeseliana* Zeuner, 1941 are known in the southwestern Balkans (Greece, Albania and the Republic of North Macedonia), i.e., *Roeseliana bispina* (Bolivar, 1899) and *Roeseliana ambitiosa* (Uvarov, 1924).

*R. bispina*, described from Karach: Kahramanmaraşa, from southern Turkey (Bolívar 1899), has been mentioned in the north and the eastern part of the Republic of North Macedonia by Ramme (1926, under *Metrioptera pulchra* Werner, 1901, a synonym of *R. bispina*), Zeuner (1941), Beier (1955) and Karaman (1975). We have not found any other data in the southern Balkans concerning that species in the literature and no specimen is present in the collections of the Museum of Skopje (Republic of North Macedonia).

*R. ambitiosa*, has been described from the plateau of Hortiack, Hortač: Pyléa-Chortiátis, Greek Macedonia, near Thessaloniki (Uvarov 1924); the species is found in Greece (Willemse 1984; Willemse *et al.* 2018), in Albania (Puskás & Szövényi 2016; Lemonnier-Darcemont, unpublished data 2022), and in the Republic of North Macedonia (Lemonnier-Darcemont, unpublished data 2013).

A new species, *Roeseliana epirotica* n. sp. has been discovered during the summer 2022 in several localities in the lowlands of Epirus area, in Greece and Albania (Fig. 1). We describe this new taxon, compare it to other south European taxa, and reconsider the distribution of the genus in the southwestern Balkans.

## MATERIAL AND METHODS

### SAMPLES

The material is stored in the collection of Michèle Lemonnier-Darcemont (Parga, Greece) and the types are deposited in the collection of Orthoptera of the Muséum national d'Histoire naturelle in Paris (MNHN). The material collected in Greece has been collected under the authorisation of the Hellenic Ministry of the Environment, ΥΠΕΝ/ΔΔΔ/116480/3825, dated 28.III.2022.

### CLASSIFICATION

We follow the taxonomic nomenclature of Cigliano *et al.* (2022), except for *R. ambitiosa*, considered by these authors as a sub-species of *Roeseliana roeselii* (Hagenbach, 1822) and synonym of *R. roeselii fedtschenkoi* (Saussure, 1874). Also, we do not follow Götz (1969), who considered *fedtschenkoi* as a valid species and *ambitiosa* as a subspecies of it. Taking into account morphological criteria, we consider *R. ambitiosa* as a valid species following Harz (1969), Massa & Fontana (2011) and Willemse *et al.* (2018).

### MORPHOLOGY AND MEASUREMENTS

Measurements (in mm in the text) and drawings were made using a binocular microscope with a micrometre (WF10x, scale 100/10 mm). Male genitalia are named after Harz (1969).



Fig. 1. — Map of known localities of *Roeseliana* Zeuner, 1941 genus. Symbols: **triangle**, *Roeseliana bispina* (Bolivar, 1899); **circle**, *Roeseliana ambitiosa* (Uvarov, 1924); **crossed out circle**, former localities of *R. ambitiosa* to be checked; **concentric circles**, *Roeseliana epirotica* n. sp.

### ABBREVIATIONS

Coll. ML-D Collection of Michèle Lemonnier-Darcemont, Parga;  
MNHN Muséum national d'Histoire naturelle, Paris.

### SYSTEMATIC

Family TETTIGONIIDAE Krauss, 1902  
Subfamily TETTIGONIINAE Krauss, 1902  
Tribe PLATYCLEIDINI Brunner von Wattenwyl, 1893

Genus *Roeseliana* Zeuner, 1941

TYPE SPECIES. — *Locusta roeselii* Hagenbach, 1822, by original designation.

*Roeseliana epirotica* n. sp.  
(Figs 2-7)

[urn:lsid:zoobank.org:act:EFDD4548-A060-4946-A694-AB562AD50F25](https://doi.org/10.21203/rs.3.rs-2120312/v1)

TYPE MATERIAL. — **Holotype**. Greece • ♀; Mazarakia, Epirus; 30 m a.s.l.; 39°24'1"N, 20°23'44"E; 23.VII.2022; Michèle Lemonnier-Darcemont leg.; MNHN-EO-ENSIF12400.

**Paratypes**. Greece • 1 ♂ labelled allotype; same data as for holotype;



Michèle Lemonnier-Darcemont leg.; MNHN-EO-ENSIF12401 • 1 ♂; Morfi, Epirus; 110 m a.s.l.; 39°17'52"N, 20°27'55"E; 30.VI.2005; coll. ML-D • 1 ♂; Koroni, Epirus; 9 m a.s.l.; 39°17'21"N, 20°32'18"E; 22.VII.2022; coll. ML-D. **Albania** • 1 ♀; Kranë, Delvinë; 20 m a.s.l.; 39°53'8"N, 20°5'25"E; 6.VIII.2022; coll. ML-D.

**ETYMOLOGY.** — The species is named after the geographic region where it was found.

**DIAGNOSIS.** — **Females.** They differ from *R. bispina* by the absence of spines on the sternum 6 and 7 and the shape of the subgenital plate (Únal 2018). They differ from *R. roeselii*, *R. pylnovi* (Uvarov, 1924), *R. ambitiosa* (Fig. 2), *R. brunneri* Ramme, 1951, *R. azami* (Finot, 1892) and *R. oporina* (Bolivar, 1899) by the shape of the subgenital plate (Ramme 1951; Götz 1969; Harz 1969; Gutiérrez-Rodríguez & García-París 2016; Iorio *et al.* 2019). The trapezoidal shape of the subgenital plate with lobes truncated horizontally is intermediate between that of *R. oporina* and *R. azami* but with a much shallower incision and a less pronounced central keel.

**Males.** They differ from *R. roeselii* and from *R. pylnovi* by the shape of the last tergite, of the cerci and of the titillators (Uvarov 1924; Ramme 1951; Harz 1969; Götz 1969; Gutiérrez-Rodríguez & García-París 2016); from *R. oporina* by the shape of cerci and of titillators (Gutiérrez-Rodríguez & García-París 2016), from *R. bispina* by the basal width of the apical tooth of the cerci (Harz 1969, Únal 2018); from *R. ambitiosa* (Figs 3; 4), *R. azami* and *R. brunneri* by the shape of titillators and the arrangement of their spines (Harz 1969). By their last tergite largely indented with narrow and pointed lobes at their apex, they are however close to *R. azami*, *R. oporina* and *R. ambitiosa*. The internal tooth of the cerci is short and placed at  $\frac{3}{4}$  of the cerci; it is barely wider at its base than at the apex as in *R. ambitiosa*, *R. brunneri*, *R. oporina* and *R. azami* (Harz 1969, Götz 1969, Gutiérrez-Rodríguez & García-París 2016, Iorio *et al.* 2019). The shape of titillators is similar to that of *R. bispina*, but with a different number and arrangement of spines, located at the apex (Ramme 1951; Harz 1969).

**DESCRIPTION**

*Female holotype* (Fig. 5)

Specimen in good condition except for the antennae, partly destroyed, and missing tarsi on the forelegs. Size medium, rather in the high range for the genus *Roeseliana* (body: 24.5; pronotum: 6.5; tegmina: 7.5; hind femur: 21; ovipositor : 8.5). Overall colour light brown with a few black spots on either side of the abdomen forming a longitudinal coarse band, some black spots in continuity on the thorax and a few lower black spots on the right side. Head large, brown, lighter below the vertex. Eyes brown, a thick black stripe above each eye and on both sides of the vertex, bordered laterally by a narrow white line. *Fastigium verticis* wider than long, its base 1.5 times wider than *scapus*. Median band of vertex of light colour, bordered by an irregular brown narrow band. General colour of pronotum brown, darker on *paranota* with outer borders wide and off-white, finely bordered with black on their inner part. Lateral keels highlighted with black. Median keel not well marked in the prozone, more visible in the metazone, main sulcus slightly depressed; posterior margin of pronotum regularly rounded. *Tegmina* reaching third tergite. Hind femur exceeding the apex of ovipositor, crossed in the middle of its wide part by a black sawtooth pattern. Ovipositor strongly curved, black over  $\frac{4}{5}$  of its length and very light brown at base. Subgenital plate trapezoidal

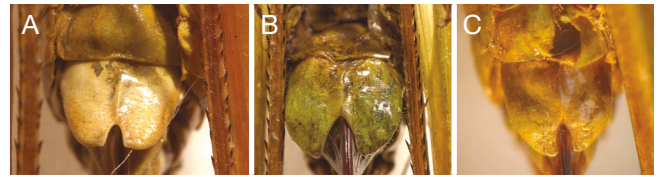


FIG. 2. — Subgenital plates of females of species with closest distribution: **A**, *Roeseliana epirotica* n. sp. ♀ (the plate of the female from Albania is strictly identical); **B**, *Roeseliana ambitiosa* (Uvarov, 1924) ♀ from the Republic of North Macedonia; **C**, *Roeseliana ambitiosa* ♀ from Paramithia, located at only 10 km from *R. epirotica* n. sp. type locality. Not to scale. Photo: C, K. G. Heller.

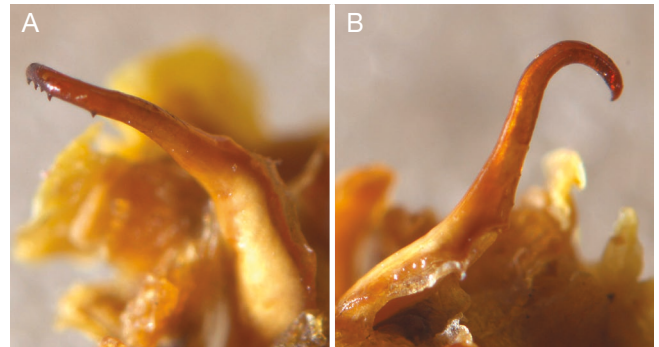


FIG. 3. — Titillators of *Roeseliana epirotica* n. sp. ♂: **A**, dorsal view; **B**, side view on the right. Not to scale.

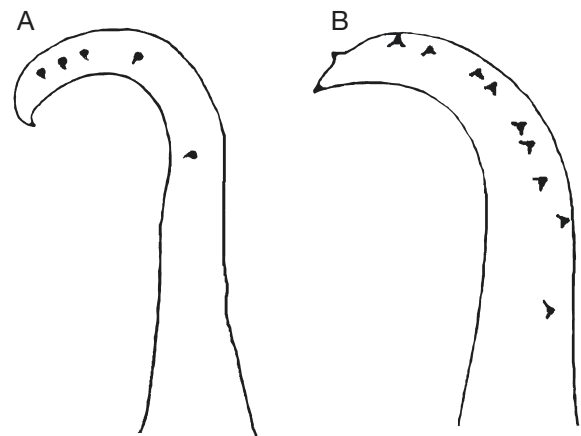


FIG. 4. — Comparison of the titillators of the two geographically close species: **A**, *Roeseliana epirotica* n. sp. ♂; **B**, *Roeseliana ambitiosa* (Uvarov, 1924) ♂.

in shape, wider than high, the lobes truncated horizontally; indentation between these two lobes narrow and shallow, lateral keels not well marked.

*Male allotype* (Fig. 6)

Specimen in good condition. Medium size (body: 19.5; pronotum: 6.5; tegmina: 9.5; hind femur: 17.5). Overall colour brown. Head broad, brown. Eyes brown, a broad black band above each eye and on both sides of the vertex. *Fastigium verticis* wider than long, with base 1.5 times wider than *scapus*. Median band of vertex of light colour, bordered by a darker and irregular band. General colour of pronotum

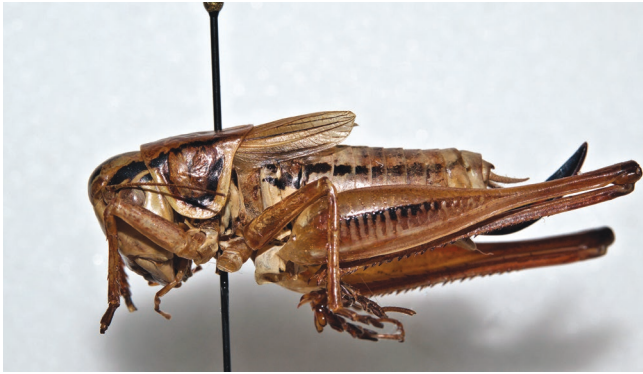


FIG. 5. — *Roeseliana epirotica* n. sp. ♀, holotype, lateral view. Body length 24.5 mm.



FIG. 6. — *Roeseliana epirotica* n. sp. ♂, allotype, lateral view. Body length 19.5 mm.



FIG. 7. — *Roeseliana epirotica* n. sp. ♀ in natura.

brown, much darker on the *paranota* with wide off-white outer borders. Median keel slightly marked in relief in the prozone, but very light in colour and slightly bordered with dark brown, more prominent in the metazone, faint main sulcus; posterior margin of pronotum regularly rounded. Tegmina slightly exceeding seventh tergite. Posterior femur crossed in the middle of its wide part by a black serrated pattern. Last tergite indented over a large width with a triangular central depression and narrow, pointed lobes. In-



FIG. 8. — Locality of Mazarakia, Epirus, Greece.

ternal tooth of the cercus short and wide located at  $\frac{3}{4}$  from the base. Styli as long as the distance between the internal tooth and the apex of cerci. Titillators long and thin, on almost all of the apical branch which ends in the shape of a beak. The two branches strongly divergent and each having at the apex the shape of a wide curve on  $\frac{1}{3}$  of a circle. Near the apex 5 spines more or less marked and aligned on the external part of the titillator.

#### HABITAT

*Roeseliana epirotica* n. sp. (Fig. 7) has been found in wet grasslands and wastelands with *Arundo* sp. and *Carex* sp., in the meso-Mediterranean zone of botanists (Quézel & Médail 2003), between 9 m and 110 m asl, a short distance from the sea (Fig. 8). These are threatened wetlands, in the process of drying up due to more or less intensive pastoralism, by both sheep and goats (Koroni, Greece), both cattle and horses (Morfi and Mazarakia, Greece) or sheep (Kranë, Albania).

#### MALE SONG

Unknown.



KEY TO SPECIES OF *ROESELIANA* ZEUNER, 1941 IN THE SOUTHWESTERN BALKANS

## Females

1. Sternum 6 and 7 with bumps ..... *R. bispina* (Bolivar, 1899)  
— Sternum 6 and 7 not modified ..... 2
2. Subgenital plate trapezoidal in shape, wider than high, the lobes truncated horizontally. Narrow and shallow excision between the two lobes ..... *R. epirotica* n. sp.  
— Subgenital plate widened with lobes slightly pointed. Deep and large excision of the subgenital plate ..... 3
3. Lobes of subgenital plates almost triangular in shape. Excision of the subgenital plate reaching beyond the middle ..... *R. roeselii* (Hagenbach, 1822)  
— Lobes more rounded on external part. Excision of the subgenital plate reaching at most to the middle .....  
..... *R. ambitiosa* (Uvarov, 1924)

## Males

1. Last tergite indented over a narrow width. Internal tooth of cerci longer than width of cercus at the point of insertion of the tooth. Tooth bent forward ..... *R. roeselii*  
— Last tergite indented over a large width. Internal tooth of cerci as most as long as the width of cercus at the point of insertion of the tooth. Tooth not bent, more rounded ..... 2
2. Titillators slightly curved ..... *R. ambitiosa*  
— Titillators strongly curved with the apex in the shape of a beak ..... 3
3. A very few number of spines, only located on the apex of the titillators ..... *R. epirotica* n. sp.  
— A larger number of spines on the titillators, from the base to the apex ..... *R. bispina*

## DISCUSSION

At a higher latitude as the shores of Lake Shkodra in Albania, which corresponds to the supra-Mediterranean zone of botanists (Quézel & Médail 2003), or inland up to the mountain-Mediterranean zone (Nimfeo, Andartika, Greece) or montane zone (Bozovce, Republic of North Macedonia), we found *R. ambitiosa* in similar biotopes. Besides that, a differentiation in this genus has been observed in France between *R. roeselii* and *R. azami* according to the biogeographic zones. The distance to the sea seems to be one of the distribution factors of *R. epirotica* n. sp.

In some places the species may have been misidentified in the past with *R. ambitiosa* and it is advisable to reconsider the samples in certain localities, particularly on the coastal parts of Epirus in Albania and in Greece. Also it is important to reconsider the samples in the sectors included in the meso-Mediterranean zone, especially: Nikopolis (Preveza, Greece), Lake Antinioti (Kerkira, Greece) (Willemse 1984).

## Acknowledgements

We wish to express our sincere thanks to Lisbeth Zechner who accompanied us in our research in Albania in August 2022. We are grateful to Bruno Massa and Klaus-Gerhard Heller for their comments and for the additional data and photos provided. We are also grateful to Audra Valanciene for correcting English language.

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*Submitted on 9 January 2023;  
accepted on 5 March 2023;  
published on 26 July 2023.*