

## Two new species in the genus *Reicheadella* Reitter, 1913 from Greece (Coleoptera: Carabidae: Scaritinae: Clivinini)

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**Taxonomy, new species, Coleoptera, Carabidae, Clivinini, Reicheiina, *Reicheadella*, Greece**

**Abstract.** *Reicheadella krausi* sp. nov. and *R. reneae* sp. nov. from Greece are described, figured including their female genitalia and are differentiated from the nearest species. A preliminary key to the identification of the species of the genus *Reicheadella* is given.

### INTRODUCTION

The clivinini genus *Reicheadella* Reitter, 1913 comprises seven blind species widespread in Greece and Albania. According to Jeannel (1957), Casale et al. (1998), Giachino & Vailati (2004), Bulirsch & Pavićević (2008) and Arndt et al. (2011), six species occur in Greece (two of them are known also in Albania) and Bulirsch & Guéorguiev (2008) described another species from Southern Albania. Two additional new species of the genus are described below.

### MATERIAL AND METHODS

The study of dry-mounted specimens, including measurements and examination of microsculpture, was done at a magnification up to 98×. Female styli were fixed in Euparal and placed on the same pin below the beetle. Measurements: length of body is measured from the anterior margin of the closed mandibles to the apex of the elytra along the suture; length of the pronotum along its midline; width of the pronotum at widest point; length of the elytra from its base to its apex along the suture; width of the elytra at its widest point. Length of body is given with 0.05 mm accuracy; other measurements including ratios and means are rounded to two decimal places. Label locality data are quoted verbatim except for standardizing the dates.

Macrophotographs were taken by the second author using a Nikon D2X or D800 digital camera, applied to a Nikon Labophot II binocular optical microscope or a Nikon SMZ 1000 stereomicroscope, with diaphragmed lenses.

The following abbreviations are used to indicate the depository of specimens:

PBPC Petr Bulirsch, private collection, Praha, Czech Republic;  
PMFI Paolo Magrini, private collection, Firenze, Italy;  
ZKMC Zdeněk Kraus, private collection, Mikulovice u Znojma, Czech Republic.

Other abbreviations:

SP: setiferous puncture(s); BSP: basal setiferous puncture(s); HT: holotype(s); PT: paratype(s); /, // by locality labels: end of line, label.

## RESULTS

### **Genus *Reicheadella* Reitter, 1913**

**Type species:** *Reicheadella corcyrea* (Reitter, 1884).

#### ***Reicheadella krausi* sp. nov.**

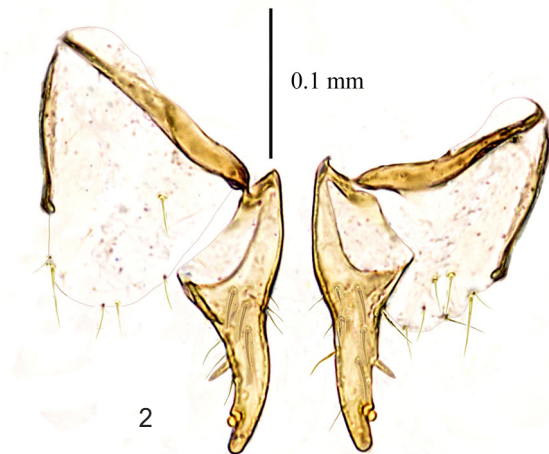
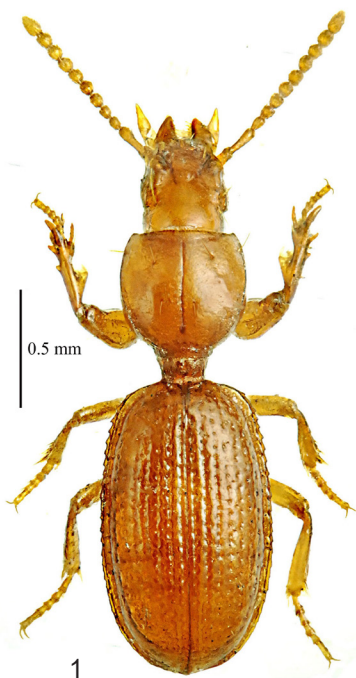
(Figs. 1-2, 5)

**Type material.** Holotype (♀): “Graecia, Thessalia bor. / Kastraki, 39°43′N 21°38′E / 1.v-2.vi.2023, 640 m / underground trap, Z. Kraus leg.”, (PBPC). Paratypes: (1 ♀: with the same data as HT except 2.vi-17.vii.2023, (ZKMC); (4 ♀♀: with the same data except 17.vii.2023-15.vii.2024, (ZKMC, PBPC, PMFI).

**Description.** Habitus as in Fig. 1. Body rusty red-brown, legs very slightly, antennae slightly lighter, mouthparts yellowish. Length 2.30-2.55 mm (mean 2.43; HT 2.40 mm, n=6).

Head. Moderately broad, neck broad; anterior margin of clypeus between distinctly protruding, rather sharp lateral lobes very slightly emarginated; impressions of clypeus oblique, broad and moderately deep, longitudinal carina short and broad. Genal posterior angles broadly rounded; moderately strongly vaulted supraantennal plates separated from genae by deep and narrow furrow; carina of prolonged supraantennal plates irregular and blunt. Eyes absent, genae moderately strongly, regularly vaulted, slightly narrowed anteriorly. Entire upper surface especially vertex almost regularly, rather deeply reticulated. Antennae with antennomere 2 long, slightly longer than 3 and 4 combined, antennomeres 6-8 moniliform, 9-10 very slightly longer than broad. Mandibles rather long with acute apex, in two specimens (incl. HT) short, directly narrowed to apex, latter not curved (slightly abraded).

Pronotum (Fig. 1). In lateral view flattened, surface moderately shiny, anteriorly with moderately deep isodiametric reticulation, on basal inclination reticulation much finer; 0.96-1.00 (mean 0.98, HT 0.99) times as wide as long, 1.38-1.47 (mean 1.42, HT 1.44) times as wide as head, widest at about midlength; lateral margin between lateral SP regularly, slightly rounded. Reflexed lateral margin entire, extended from small, moderately sharp, slightly protruded anterior angles to base, slightly thinner in latero-basal part and above flange; posterior angles very broadly rounded; lateral channel narrow, with anterior and posterior pair of lateral SP, both slightly removed from lateral channel inside; disc with two pairs of submedian SP; anterior very distinct pair in middle of fore third and posterior, barely finer SP in posterior third, closer to median line. Median line moderately impressed, deeper posteriorly and superficially reaching basal furrow, anterior transverse impression very



Figs. 1-2. *Reicheadella krausi* sp. nov., HT: 1- habitus; 2- female stylomeres.

superficial, medially almost indistinct. Basal part (flange) small, barely produced posteriorly. Proepisterna slightly visible from above in apical half.

Elytra (Fig. 1). Almost regularly long oval, disc flattened in lateral view, 1.71-1.77 (mean 1.74; HT 1.71) times as long as wide, 1.29-1.37 (mean 1.34 , HT 1.36 ) times as wide as pronotum; 2.23-2.39 (mean 2.34, HT 2.32) times as long as pronotum; surface shiny, disc without reticulation, apex and especially base finely reticulated; base slightly sloping to moderately broadly rounded, rather protruded humeri; lateral margins slightly broadened, in middle third almost parallel; lateral channel broad, slightly broadened apically, anteriorly reaching interval 5, elytral margins in anterior two thirds with about 20 humero-lateral teeth, posteriorly gradually decreasing, teeth on apex almost indistinct. Elytra broadest just below midlength; suture barely depressed at base. Base without tubercle, with deep BSP. Elytral striae 1-5, especially 1-3 on disc rather deep, 6 slightly, 7 distinctly finer; striae rather roughly punctured, latero-basally striae shortened just below base; postero-laterally on apex. Intervals 1-3 distinctly vaulted basally, latero-apically intervals slightly flattened. Intervals 3 and 5 with rows of about 18-12 SP with long setae.

Legs. Anterior tibiae with terminal tooth bent outwards and downwards; lower lateral tooth large and sharp, upper smaller and moderately sharp.

Stylomeres. As in Fig. 2; apex very short with broadly rounded tip.

**Differential diagnosis.** *R. krausi* sp. nov. has the body moderately large, the head and the pronotum distinctly reticulated; the head is without eye remnants and the clypeus has the oblique impressions broad and rather deep, prolonged by a short and blunt longitudinal keel; the pronotum with the sides slightly convex; its disc with two pairs of submedial SP; the rather long elytra with numerous humero-lateral teeth and basally with rather deep and regular striae 1-7 with rough punctuation.

It can be distinguished from the most similar species, *R. smetanai* Bulirsch & Guéorguiev, 2008 from Southwestern Albania by the body being much larger (2.05 mm in the latter species); by the head having much stronger reticulation and by the elytra being distinctly broader. The new species differs from all other species of the genus by the combination of the following characters: the pronotum with only two pairs of the submedial SP, the elytra having SP in intervals 3, 5 only and the elytral lateral margin having several teeth in anterior two thirds.

**Name derivation.** The species is named in honour of Zdeněk Kraus (Mikulovice u Znojma), collector of the types.

**Distribution and bionomy.** The new species is known only from the type locality in Greece (Thessalia). All specimens were collected in a pasture (Fig. 5) with remnants of macchia (savannah-like shrubland) and few oak trees by using underground traps.

***Reicheadella reneae* sp. nov.**

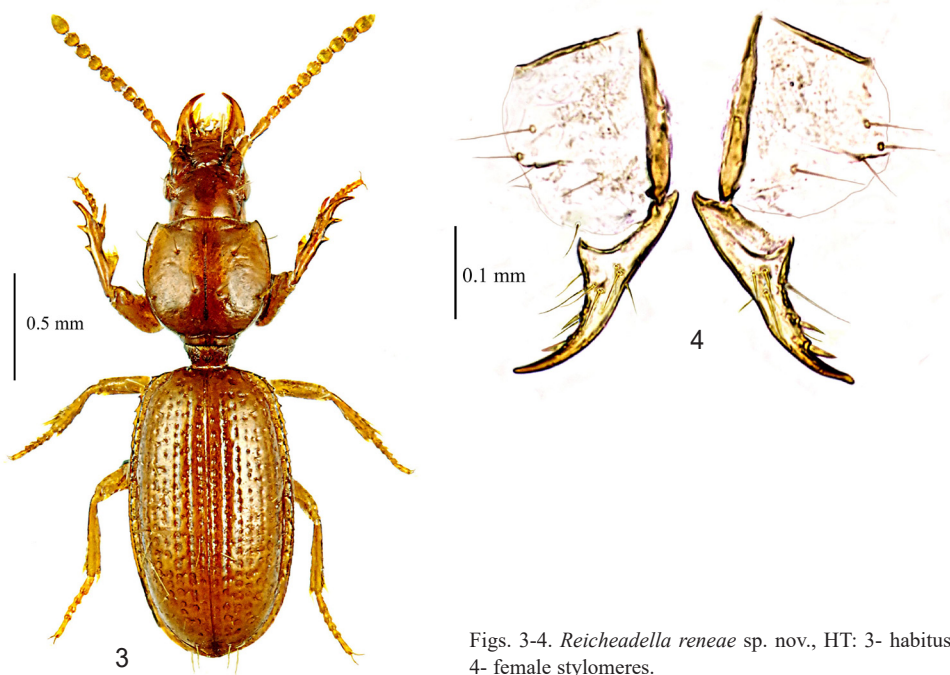
(Figs. 3-4, 6)

**Type material.** Holotype (♀): “Graecia, Thessalia bor. / Stomio, 39°51'N 22°43'E, 515 m / 17.vii.2023-15.vii.2024 / underground trap, Z. Kraus leg.”, (PBPC). Paratype: (1 ♀): with the same data as HT, (ZKMC).

**Description.** Habitus as in Fig. 3. Body rusty red-brown, legs very slightly, antennae slightly lighter, mouthparts yellowish. Length 2.50 mm in HT and 2.30 mm in PT.

Head. Moderately broad, neck broad; anterior margin of clypeus between distinctly protruding, moderately sharp lateral lobes very slightly emarginated; impressions of clypeus oblique, broad and moderately deep, longitudinal carina short and broad. Genal posterior angles blunt; moderately strongly vaulted supraantennal plates separated from genae by deep and narrow furrow; carina of prolonged supraantennal plates irregular and blunt. Eyes absent, genae moderately strongly, regularly vaulted, slightly narrowed anteriorly. Entire upper surface especially vertex almost regularly, rather deeply reticulated. Antennae with antennomere 2 long, slightly longer than 3 and 4 combined, antennomeres 6-10 moniliform. Mandibles rather long with acute apex.

Pronotum (Fig. 3). In lateral view moderately vaulted posteriorly, surface rather shiny, with almost regular, postero-laterally with moderately deep isodiametric reticulation; in HT and PT 1.00 times as wide long as, in HT 1.46, in PT 1.48 times as wide as head, widest at about midlength; lateral margin between lateral SP regularly, slightly rounded. Reflexed lateral margin entire, extended from sharp, distinctly protruded anterior angles to base, thinner in latero-basal part and barely finer above flange; posterior angles broadly rounded; lateral channel narrow, with anterior and posterior pair of lateral SP, both slightly removed



Figs. 3-4. *Reicheadella reneae* sp. nov., HT: 3- habitus; 4- female styloceres.

from lateral channel inside; disc with two pairs of deep submedian SP; anterior in fore third and posterior in posterior third, latter closer to median line (in HT with additional pair of vestigial, irregular and very fine punctures just below anterior ones as in Fig. 3). Median line moderately impressed, deeper posteriorly and very superficially reaching basal furrow, anterior transverse impression very superficial, medially almost indistinct. Basal part (flange) small, barely produced posteriorly. Proepisterna slightly visible from above in apical third.

Elytra (Fig. 3). Almost regularly long oval, disc flattened in lateral view, in HT 1.76, in PT 1.78 times as long as wide, in HT 1.29, in PT 1.32 times as wide as pronotum, in HT 2.36, in PT 2.35 times as long as pronotum; surface shiny, disc without reticulation, apex and especially base with fine reticulation; base slightly sloping to rather broadly rounded, moderately protruded humeri; lateral margin very slightly broadened, in middle third almost parallel; lateral channel broad, slightly broadened apically, anteriorly reaching interval 5, lateral margin in anterior half with about 8-10 humero-lateral teeth, posteriorly denticulation almost indistinct; elytra broadest just below midlength; suture barely depressed at base. Base without tubercle, with deep BSP. Elytral striae 1-3 on disc moderately deep, 4-5 slightly, 6-7 distinctly finer, moderately roughly punctured, latero-basally striae shortened just below base; postero-laterally almost diminish on apex. Intervals 1-3 moderately vaulted, latero-apically intervals flattened. Intervals 3 and 5 with rows of about 15-11 SP with long setae.

Legs. Anterior tibiae with terminal tooth bent outwards and downwards; lower lateral tooth large and sharp, upper smaller and rather sharp.

Styloceres. As in Fig. 4; its apex long with rather sharp tip.



Fig. 5. Greece, Kastraki env.; type locality of *Reicheadella krausi* sp. nov. (photographed by Z. Kraus).



Fig. 6. Greece, Stomio env.; type locality of *Reicheadella reneae* sp. nov. (photographed by Z. Kraus).

**Differential diagnosis.** *R. reneae* sp. nov. has the body moderately large, the head and the pronotum distinctly reticulated; the head is without eye remnants and the clypeus has the oblique impressions broad and moderately deep, prolonged by a short and blunt longitudinal keel; the pronotum with the sides slightly convex; the disc with two pairs of submedial SP; the rather long elytra with 8-10 humero-lateral teeth and with moderately deep and regular striae 1-5 with moderately rough punctuation.

The new species is similar to *R. krausi* sp. nov. described above. It differs from the latter species by the pronotum having the anterior angles very sharp, distinctly protruded; by the elytra having the lateral margin with 8-10 lateral teeth only in the anterior half and having the lateral striae finer. Both new species are known by females and their stylomeres are very different (Fig. 4 versus Fig. 2).

**Name derivation.** The new species is named in honour of Renéa Krausová (Mikulovice u Znojma), collector's wife.

**Distribution and bionomy.** The new species is known only from the type locality in Northeastern Greece. Both specimens were collected in an old chestnut forest (Fig. 6) by using underground traps.

#### PRELIMINARY KEY TO SPECIES OF GENUS *REICHEADELLA*

This key is based on study of the type material of six species; the remaining three described species\* are unknown to us and are added to the key based on their (re)descriptions.

- 1(12) Pronotal disc with 3-4 pairs of SP.
- 2(5) Larger species, body length 3.05-3.4 mm. Pronotal disc with 3-4 pairs SP. Greece (Xanthi and Aetolia).
- 3(4) Pronotal disc with three pairs SP on disc and another pair of SP laterally of median ones. Elytra with SP in intervals 2-7 and with elytral margin with several lateral teeth in anterior two thirds. Male unknown. Northeastern Greece (Xanthi). ..... *R. xanthina*\* Casale et al., 1995
- 3(4) Pronotal disc standardly with three pairs SP on disc (only HT with another pair of vestigial SP inside of anterior ones). Elytra with SP in intervals 3, 5, 7 and with elytral margin with 3-6 (sub)humeral teeth. Apex of aedeagus in lateral view narrow, apex sharply hooked upwards (as in Giachino & Vailati (2004): Fig. 4). Southwestern Greece (Aetolia). ..... *R. aetolica* Giachino & Vailati, 2004
- 5(2) Smaller species, body length less than 3.0 mm. Pronotal disc with three pairs of SP. Species from other regions.
- 6(7) Clypeus posteriorly with moderately to very long and narrow longitudinal carina. Elytra with SP in intervals 3, 5, 7 and with elytral margin with 3-6 humeral teeth. Body length 2.50-2.95 mm. Albanian and Northern Greek mountains. .... *R. bischoffi* Meschnigg, 1933
- 7(6) Clypeus with very short, almost missing longitudinal carina. Elytra with SP in intervals 3, 5, 7 and with elytral margin with 3-10 (sub)humeral teeth. Body length 2.30-2.90 mm. Ionian Islands and Northeastern Greece.
- 8(9) Elytral margins with 8-10 (sub)humeral teeth. Aedeagus with simple, not hooked apex. Body length 2.40-2.45 mm. Northeastern Greece (Imathia). ..... *R. imathiae*\* Casale et al., 1995
- 9(8) Elytral margins with 3-10 (sub)humeral teeth. Aedeagus with apex hooked upwards. Body length 2.30-2.90 mm. Mostly from Ionian Islands.
- 10(11) Elytral margins with 3-5 humeral teeth. Body length 2.50-2.90 mm. Korfu Island (and one female from adjacent part of Southwestern Albania). ..... *R. corcyrea* (Reitter, 1884)

- 11(10) Elytral margins with humeral teeth more prolonged laterally (according to Jeannel (1957: p. 177). Body length 2.30-2.40 mm. Aedeagus unknown. Kefalonia Island. .... *R. cephalonica*\* (Winkler, 1911)
- 12(1) Pronotal disc with two pairs of SP.
- 13(14) Smaller species; body length 2.05 mm Elytral margin distinctly denticulated up to apex, elytra with SP in intervals 3, 5, 7. Southwestern Albania (Liqueni and Butrintit). ..... *R. smetanai* Bulirsch & Guéorguiev, 2008
- 14(13) Longer species; body length 2.30-2.55 mm. Elytral margin denticulated up to midlength or almost to apex, elytra with SP in intervals 3, 5. Greece, mainland.
- 15(16) Anterior angles of pronotum smaller, slightly protruding, elytral margin with about 20 humero-lateral teeth. Styli with apex very short, as in Fig. 2. Greece (Kastraki). ..... *R. krausi* sp. nov.
- 16(15) Anterior angles of pronotum larger, distinctly protruding, elytral margin with about 8-10 humero-lateral teeth. Styli with apex long, as in Fig. 4. Northeastern Greece (Stomio). ..... *R. renae* sp. nov.

ACKNOWLEDGEMENTS. We are very thankful to Zdeněk Kraus (Mikulovice u Znojma, Czech Republic), collector of all type specimens, for donating of some specimens to the authors.

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Received: 20.10.2024

Accepted: 10.11.2024

Printed: 31.3.2025