

Linzer biol. Beitr.	57/1	351-357	August 2025
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An aberrant new species of *Cryptocephalus* GEOFFROY, 1762 from South Africa (Coleoptera, Chrysomelidae: Cryptocephalinae)

Matthias SCHÖLLER

Abstract: A new species of the genus *Cryptocephalus* GEOFFROY, 1762 is described from South Africa: *Cryptocephalus waterbergi* nov.sp. The new species has unique characters in the male and cannot be placed in any known Afrotropical species group. General view, and male and female genitalia are illustrated.

Key words: Coleoptera, Chrysomelidae, Cryptocephalini, Cryptocephalina, *Cryptocephalus*, South Africa, new species

Introduction

The genus *Cryptocephalus* belongs to the tribe Cryptocephalini, one out of four tribes in the subfamily Cryptocephalinae. In the subtribe Cryptocephalina, 102 species are currently known from South Africa (SCHÖLLER 2023). Several species groups of *Cryptocephalus* were proposed for the Afrotropical region (SUFFRIAN 1857, REINECK 1915). During the work on the revision of these species groups, one species new to science was discovered which cannot be placed in any of the hitherto known groups and which is described below.

Material and methods

The dried adult specimens were dissected by separating the abdomen in water. Afterwards the contents were soaked in cold KOH solution, then washed in water and the reaction stopped with acid. The eye length was measured in lateral view, the interocular space in frontal view. All measurements were made using an ocular scale mounted on a MBS-10 stereomicroscope (at 20× magnification for the body length and 40× to 70× magnification for the remaining measurements). Photographs were taken as separate layers with a Nikon D5100 with an extension tube and a macro-objective, and composed with the CombineZP software (<http://www.hadleyweb.pwp.blueyonder.co.uk>). Measurements of all segments were taken at their widest parts. The exact label data (including spacing of letters) are cited for each type specimen; a single slash (/) indicates the separation of lines and a double slash (//) indicates the separation of labels. The data are printed and the labels are white if not mentioned otherwise, the author's remarks are presented in square brackets. The following abbreviations are used for depositories of types:

SANCSouth African National Insect Collection, Pretoria, South Africa (Beth Grobbelaar)

TMSADitsong National Museum of Natural History, Pretoria, South Africa (Werner Strümpher)

ZSMZoologische Staatssammlung, München, Germany (Michael Balke)

Taxonomy

Cryptocephalus waterbergi nov.sp.

Holotype: ♂ (TSMA): // Waterberg / Dist. 1898-99 / v.Jutrzencka // Holotypus / *Cryptocephalus waterbergi* / des. M. Schöller [red] /.

Paratypes: 1♀ (TSMA): // Waterberg / Dist. 1898-99 / v.Jutrzencka //; 1♀ (TSMA): // S.Afr.:Waterberg / Geelhoutbush farm // 3.10.1995:E-Y3141 / beating / Endrödy & Bellamy //; 1♀ (SANC): // SAARTJIESNEK / SE25 27 Db / 7-11.XI 1983 / CL Bellamy [black plastic label with transparent font] // NATIONAL COLL. / OF INSECTS / Pretoria, South Africa / Ex UPSA, May 2002 //; 1♂ (SANC): // SOUTH AFRICA, TVL / Roodeplaat dam, nr / Pretoria 24.41S / 28.18E 7.X.1986 / J.S.Donaldson // NATIONAL COLL. / OF INSECTS / Pretoria, S. Afr //; 1♀ (SANC): // SOUTH AFRICA, TVL / Lapalala Nat.Res. / 23.51S / 28.17E / 15-16.xi.1986 / R.Oberprieler // NATIONAL COLL. / OF INSECTS / Pretoria, S. Afr //; 1♀ (SANC): // SOUTH AFRICA, OFS / Glen nr Bloemfontein / 28.59S / 26.19E / 11.xii.1984 / R.Oberprieler // NATIONAL COLL. / OF INSECTS / Pretoria, S. Afr // 1♀ (ZSM): // S.Afr., E. Transvaal / Barberton, 17 km NNW/ 25.36 S - 29.53 E // 10.11.1980; E-Y:1727 / flowering *Acacia* / leg. Endrödy-Younga // *Cryptocephalus* / *waterbergi* / Lindemann / det. C. Lindemann 1972 // Zool. Staatsslg. / München [blue] //; all paratypes with my label // Paratypus / *Cryptocephalus waterbergi* / des. M. Schöller [red] //.

Description: Body truncate, elongate (about 1.7 times as long as wide). Body yellowish brown with reddish and blackish brown patterns. Pronotum predominantly reddish brown. Legs brown. Ventral side whitish yellow, reddish and blackish brown. Body length of male 4.8-6.0 mm, width 2.9-3.5 mm, body length of female 5.4-6.0 mm, width 3.2-3.5 mm. General view as in Figs 1-3, 10-12.

Head: Reddish brown with blurred yellowish markings around inner eye margin (Figs 4, 5, 13), puncturation fine and sparse, denser at middle, with thick white setae. Labrum with shallowly concave anterior margin and rounded anterior angles; transverse; its surface smooth with 12 setae along anterior margin. Clypeus triangle with concave anterior margin, its surface densely covered with short white setae, clypeus not distinctly separated from frons. Eyes large and distant, ratio eye length : distance between upper lobes as 1.00 : 0.52. Canthus deep, triangular. Antenna filiform (Figs 1, 10), antennomeres I-IV mid brown, V-XI dark brown, V-XI moderately widened in both sexes, in male antennomeres with conspicuous long setae, especially on scape (Fig. 7), in male antenna half as long as body. Mandibles dark brown (Fig. 5). Maxillary and mandibular palps spindle-shaped.

Thorax: Pronotum moderately convex, narrowed from base to apex, transverse (about 1.88 times as wide as long) (Figs 1, 10). Pronotal surface shining, densely covered with large but very shallow punctures (Fig. 12). Anterior margin of pronotum narrowly bordered, reddish brown, a narrow line close to anterior margin yellow. Lateral margin of pronotum narrow, not visible simultaneously in dorsal view, brown, pronotum above lateral margin broadly yellow, enclosing a reddish brown spot each (Figs 3, 12); basal margin black, with relatively homogenous teeth that become slightly larger towards

humerus. Scutellum trapeziform, reddish brown with blackish brown margins, basally only slightly notched and apically truncate, raised above elytral surface (Figs 10, 12). Prosternal process whitish yellow, rugosely punctured, with long white setae, apically simply rounded (Figs 5, 11), and basally with a pair of strong teeth. Elytra long (width 0.83 times its length), with a transverse depression behind scutellum, elytra slightly attenuate towards apex, shiny, yellowish brown with 5 (2, 2, 1) blurred reddish brown spots (Figs 3, 12), and reddish brown almost regular striae of punctures, distinct to apex (Fig. 14), punctures coarse, interstices matt due to fine wrinkles, increasingly vaulted towards lateral margins. Epipleurae vanishing before its middle, glabrous, yellow. Legs brown, all tibiae almost straight (Figs 2, 11), all tarsomeres simple except for male fore-tarsus, which is enlarged and tarsomeres I and II with a long tuft of setae (Figs 8, 9), claws simple.

A b d o m e n : whitish to blackish brown as in Figs 2 and 11, with adherent white setae. Ventrite V in male with a broad, shiny pit with a longitudinal ridge at the middle (Fig. 6). Pygidium regularly rounded except for a short, blunt longitudinal carina at apex (Fig. 14). Aedeagus (Figs 15-19) with frontal opening, the apex with a small denticle situated ventrally (Figs 16, 17, 19), aedeagal lobe extended into two large lateral lobes, and a narrow dorsal lobe at apex in dorsal view (Figs 18, 19). In dorsal view a pair of shark-teeth-shaped endosclerites visible (Figs 15, 18). In lateral view aedeagus massive, not curved (Figs 17, 19). Underside of aedeagus regularly vaulted (Fig. 16), a group of setae present close to apex (Figs 17, 19). Length of aedeagus about 2.9 mm, width 0.85 mm.

F e m a l e : Similar to male but on average larger. Ventrite V large, with deep, longitudinal oval egg-hollow. Spermatheca medium brown, narrow, large, 0.45 x 0.40 mm, hook-shaped, tip bent downwards, apical part as long as basal part of reservoir (Fig. 22). Spermathecal duct as brown as spermatheca, fine and densely coiled close to spermatheca, more broadly coiled but still dense apically, ending in a darker pigmented hook-like structure apically (Fig. 22). Kotpresse with dorsal sclerites spatuliform, bend straight towards dorsal fold, ventrally bent part of dorsal sclerite present (Fig. 20), ventral sclerites fused at the middle, apodemes slender, wider than rectum, a chitin polster, but no ventral sclerotised area present, ventral sclerotisations of lateral fold present (Fig. 21).

V a r i a b i l i t y : The yellowish markings on the pronotum are of variable size (Figs 1, 10).

D i f f e r e n t i a l d i a g n o s i s : The only other Southern African species with a colouration similar to *C. waterbergi* nov.sp. is *C. crenatostriatus* WEISE, 1892 described from Angola. The latter is much larger (8-9 mm), the males have none of the sexual dimorphic characters described for *C. waterbergi* nov.sp. and the aedeagus is a simple tube. However, the shape of the male abdomen and the general aedeagus morphology of *C. waterbergi* nov.sp. have similarities to the species in the *C. oblongosignatus* species group (*C. bottegoi* GESTRO, 1895; *C. clavareau* REINECK, 1915; *C. cylindriiformis* BRYANT, 1944; *C. inclusus* JACOBY, 1895; *C. menelik* REINECK, 1915; *C. methneri* REINECK, 1915; *C. oblongosignatus* WEISE, 1892; *C. semicinctus* WEISE, 1919 and *C. sudanensis* REINECK, 1915). The aedeagi show a frontal opening and similar externally visible endosclerites as in *C. waterbergi*, however, in the above mentioned species there are additional hyaline parts bearing setae which are missing in *C. waterbergi*. More male specimens of *C. waterbergi* would be necessary to study the aedeagal endosclerites in detail. All these species have a different, presumably aposematic body colour. In female *C. oblongosignatus*, there is a ventral sclerotised area present close to ventral sclerite of

kotpresse, and pit-shaped depressions on the pygidium (missing in *C. waterbergi*).

E t y m o l o g y : The name *waterbergi* of the new species refers to the Waterberg mountains in the South African Waterberg district, Limpopo province, where some of the type specimens were collected. Christa Lindemann (1918-1996) already found this species to be new to science, but it remained undescribed.

B i o l o g y : One specimen was collected from flowering *Acacia*, adults may be petalophagous.

D i s t r i b u t i o n : South Africa (Free State, Gauteng, Limpopo, Mpumalanga).

Acknowledgements

I would like to express my sincere thanks to the colleagues mentioned in material and methods for the possibility to study the specimens in their respective collections.

Zusammenfassung

Es wird eine neue Art der Gattung *Cryptocephalus* GEOFFROY, 1762 aus Südafrika beschrieben: *Cryptocephalus waterbergi* nov.sp. Die neue Art zeigt Merkmale der Männchen, die aus keiner der bislang bekannten Afrotropischen Artengruppen bekannt sind. Der Habitus sowie männliche und weibliche Genitalmerkmale werden illustriert.

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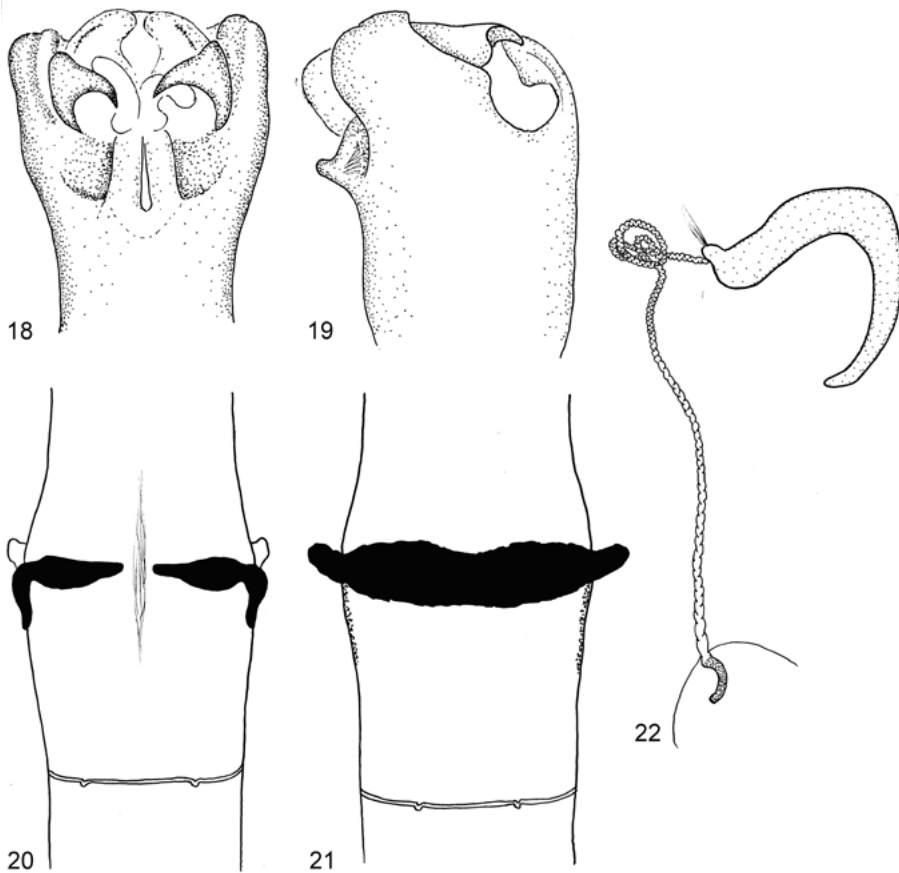
Address of the author: Dr. Matthias SCHÖLLER
Wildensteiner Str. 12, 10318 Berlin, Germany.
E-mail: Matthias.Schoeller@hu-berlin.de



Figs 1-9: *Cryptocephalus waterbergi* nov.sp., male: (1) dorsal; (2) ventral; (3) lateral; (4) frontal; (5) prothorax, ventral; (6) abdomen, ventral; (7) left antenna; (8) left protarsus, dorsal; (9) left protarsus, ventral.



Figs 10-17: *Cryptocephalus waterbergi* nov.sp.: (10) female, dorsal; (11) female, ventral; (12) female, lateral; (13) female, frontal; (14) female, pygidium; (15) male, aedeagus dorsal; (16) male, aedeagus ventral; (17) male, aedeagus lateral.



Figs 18-22: *Cryptocephalus waterbergi* nov.sp.: (18) male, aedeagus dorsal; (19) male, aedeagus lateral; (20) female, kotpresse dorsal; (21) female, kotpresse ventral; (22) female, spermatheca and spermathecal duct.

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Zeitschrift/Journal: [Linzer biologische Beiträge](#)

Jahr/Year: 2025

Band/Volume: [0057_1](#)

Autor(en)/Author(s): Schöller Matthias

Artikel/Article: [An aberrant new species of *Cryptocephalus* GEOFFROY, 1762 from South Africa \(Coleoptera, Chrysomelidae: Cryptocephalinae\) 351-357](#)