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Description of a new species of *Phradonoma* JACQUELIN DU VAL,  
1859 from South Africa  
(Coleoptera: Dermestidae: Megatominae)

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ABSTRACT. *Phradonoma borowieci* from South Africa is described and figured.  
A key to species of the genus *Phradonoma* from South Africa is given.

Key words: entomology, taxonomy, Coleoptera, Dermestidae, *Phradonoma*, new species, South Africa, description.

#### INTRODUCTION

The genus *Phradonoma* JACQUELIN DU VAL, 1859 currently includes over 32 species distributed in Palaearctic and Afrotropical regions, 11 species are known from Afrotropical region (HÁVA 2003a, 2005; HERRMANN & HÁVA, 2005). Genus *Phradonoma* JACQUELIN DU VAL, 1859 is divided into three species groups: *interruptum*, *nobile* and *villosulum* (HÁVA 2003, 2005; HERRMANN & HÁVA 2005). The first paper with a key to species of the genus occurring in South Africa was published by HERRMANN & HÁVA (2005). In material studied recently we have found specimens representing a new species. Its description is given below.

#### MEASUREMENTS AND METHODS

Explanation of abbreviations:

MK – Marcin KADEJ, Instytut of Zoology, Department of Biodiversity and Evolutionary Taxonomy collection, Wrocław, Poland;

NMPC - National Museum, Prague, Czech Republic;

SANC – National Collection of Insects, Plant Protection Research Institute, Pretoria, South Africa;

TMPS - Transvaal Museum, Pretoria, South Africa;

BL - body length (measured from the head anterior margin to the apex of the elytra);

BW - body width (measured between two anterolateral humeral calli);

HW - head width (measured as a distance between two lateral head margins on the eyes level);

PL - pronotum length (measured from the top of the anterior margin to scutellum);

PW - pronotum width (measured between the two posterior angles of pronotum);

SL - sternites length (measured from the anterior margin to the apex of posterior margin);

SW - sternites width (measured between two lateral margins in the anterior part of sternites);

AFL - antennal fossa length (measured along the antennal fossa);

LMP - length of lateral margin of pronotum (measured as a distance between inferior part of pronotum and exterior angle).

All measurements are given in millimeters. The morphological structures (antenna, wing, leg, genitalia, galea and lacinia, pygidium, eighth sternite, ninth abdominal sternite, ninth abdominal tergite) were observed under phase contrast microscope Nikon Eclipse E 600 with a drawing attachment in transparent light in glycerin. All morphological structures were put into plastic micro vials with glycerin under proper specimens. Photos were taken with the camera Nikon Coolpix 4500. Colour photos were prepared used Syncroscopy Auto-Montage Essentials software.

All type specimens were labelled with red, printed labels bearing the text as follows: “HOLOTYPE [or PARATYPE, respectively] *genus\_name species\_name* sp. n. det. J. Háva & M. Kadej 2005“.

### ***Phradonoma borowieci* n. sp.**

(Figs 1-3)

#### **DISTRIBUTION**

South Africa: Zululand, North province.

#### **NAME DERIVATION**

Dedicated to the eminent Polish entomologist, specialist in tortoise beetles (*Cassidinae*), Professor Lech BOROWIEC (Poland, University of Wrocław).

#### **DIAGNOSIS**

*Phradonoma borowieci* n. sp. can be easily distinguished from allied species by the dorsal patterns with white scales on the pronotum and elytra. *Phradonoma*

*borowieci* n. sp. is the most similar to *Phradonoma trizonatum* (FAIRMAIRE, 1883) (Algeria, Morocco) and *P. eximium* (ARROW, 1915) (Botswana, Congo, Namibia, South Africa, Zambia, Zimbabwe), but the new species differs in shape of antennae, male genitalia and number of elytral spots:

- antennae black, antennal club with 3 segments; each elytron black with orange-brown apical part and with small white spots (South Africa) ..... ***P. borowieci* n. sp.**
- antennal segments I-VII brown, VIII-XI black, antennal club with 4 segments; each elytron black with orange apical spot and orange median spot and short anterior transverse band covered by white pubescence (Botswana; Congo; Namibia; South Africa; Zambia; Zimbabwe) ..... ***P. eximium* (ARROW)**
- antennae brown, antennal club with 3 segments; each elytron with anterior half black and posterior brown with three transverse bands and small apical spot of white pubescence (Algeria, Morocco) ..... ***P. trizonatum* (FAIRMAIRE)**

#### BIOLOGY AND ECOLOGY

Unknown.

#### LARVA AND PUPA

Unknown.

#### DESCRIPTION

Body strongly convex, elongate, covered with brown pubescence and white scales (BL: ♂ 2.3; ♀ 3.0-3.35; BW: ♂ 1.5; ♀ 1.9-2.05) (Fig. 13).

Head (HW: 0.55-0.65) with big convex eyes. Frons gently punctated, covered with dark pubescence.

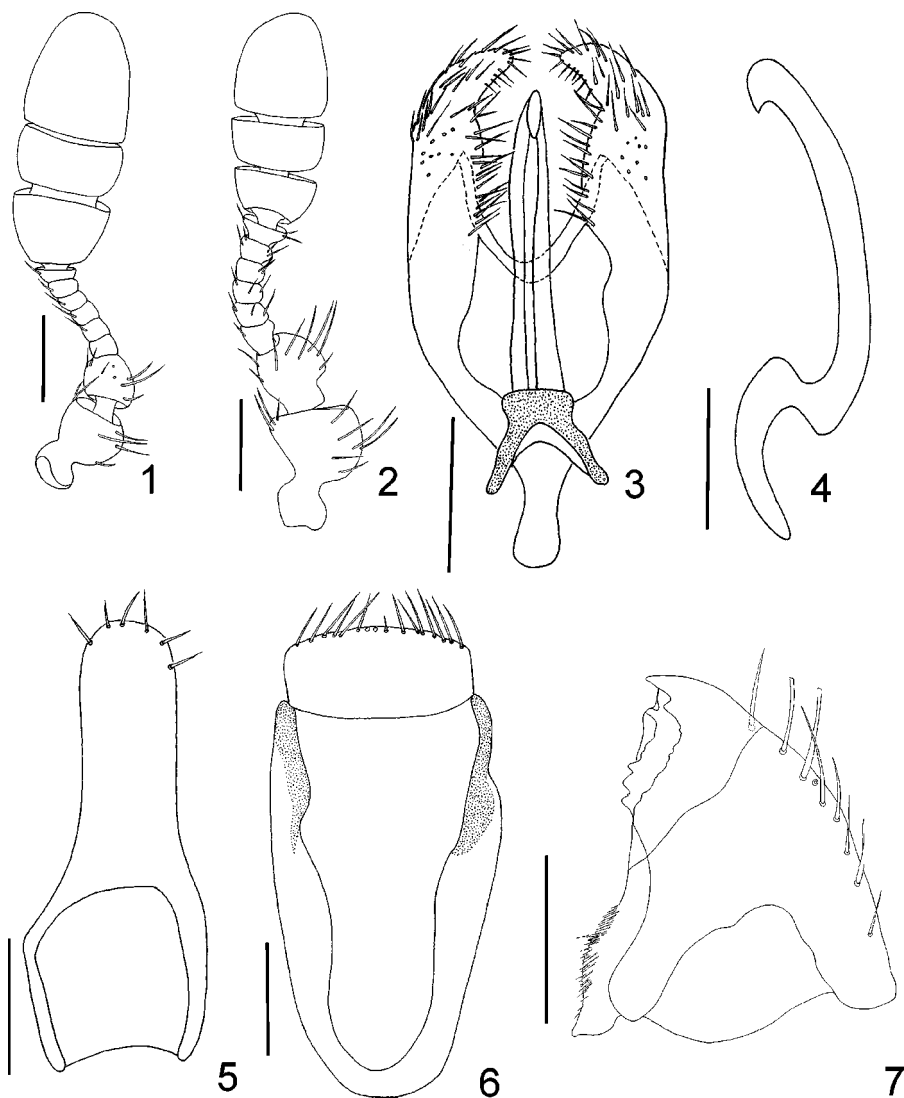
Mandible as in Fig. 7. Galea and lacinia with the same morphology in both sexes. Maxillary palp three-segmented, covered with few setae. Third segment twice as broad as long (Fig. 8).

Antenna of both sexes brown, 11-segmented, antennal club three-segmented, covered densely with light-brown pubescence. Antenna occupies whole cavity of antennal fossa. Antennal fossa open completely along whole length of lateral margin of the pronotum (AFL: ♂ 0.32; ♀ 0.31, LMP: ♂ 0.55 ♀ 0.65). Female eleventh segment oval, twice as long as wide (Fig. 2). Male antennal club is longer than half length of antennal scape (Fig. 1). Segments of antennal scape in both sexes compact (Figs 1-2).

Pronotum (PL: ♂ 0.6; ♀ 0.85-0.9; PW: ♂ 1.25; ♀ 1.6-1.75) and elytra dark-brown, almost black, gently but densely punctate, covered with black pubescence which might seem to be a grey in transparent light. On the pronotum five white spots: one of them situated centrally on the apex of pronotum, two symmetrical spots under the angles of the pronotum and two small spots interior laterally. On the elytra 14 spots composed by white scales: one or two small spots very close to

anterior margin of elytra, two spots near humeral calli (first ventrally, second laterally). Four spots create almost transverse line in the half of the length of the elytra, beneath three other spots, the last one on the apex of elytra.

Prosternum punctate on disc, without impunctate median line. Mesosternal disc with punctation as that on the prosternum.

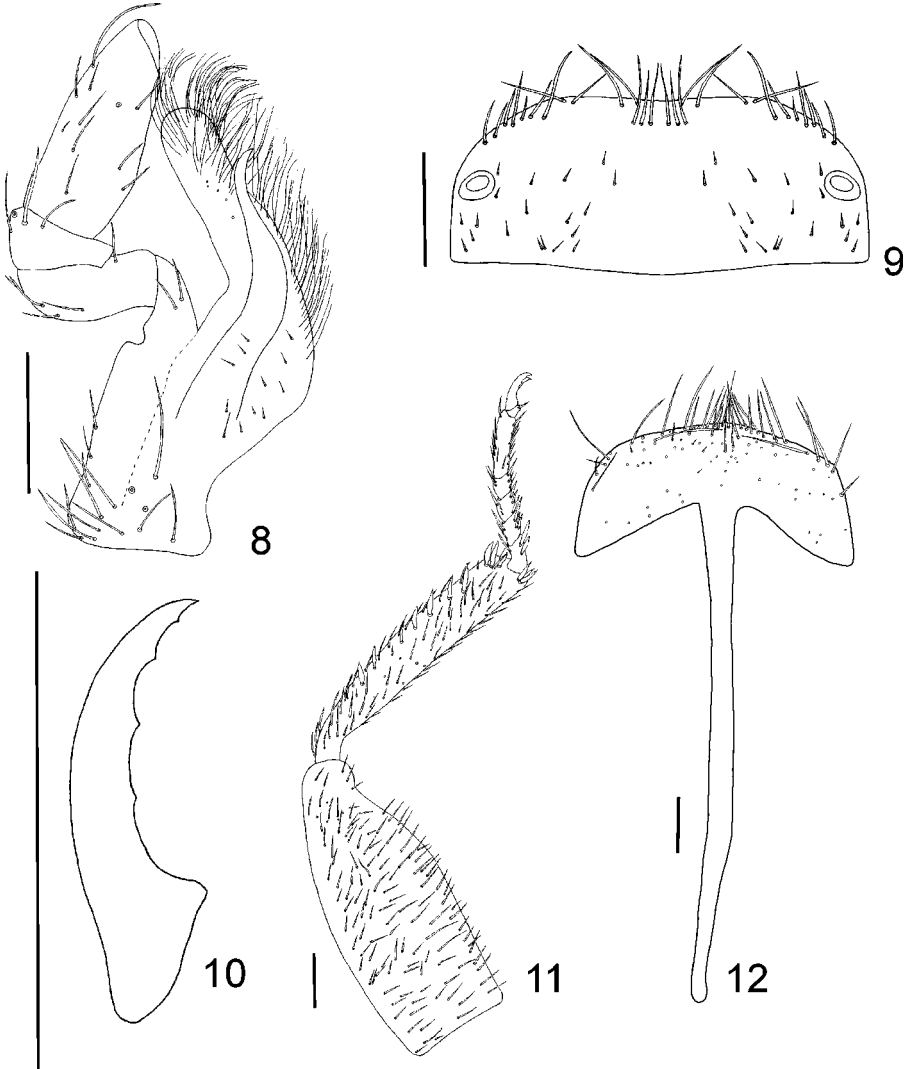


1-7. *Phradonoma borowieci* n. sp.: 1 - male antenna, 2 - female antenna, 3 - male genitalia, 4 - aedeagus (lateral view), 5 - 9<sup>th</sup> abdominal sternit (male); 6 - last tergite (male); 7 - mandible

Abdominal sternite (SL: ♂ 1.05; ♀ 1.4; SW: ♂ 1.35; ♀ 1.75) dark brown, almost black, gently but densely punctuated, covered with black pubescence which might seem to be a grey in transparenting light (Fig. 14).

Legs covered with brown coloration pubescence on dorsal surface. Trochanter and femur with black-brown coloration, tibia and tarsus light-brown (Fig. 11).

Tarsus with two tarsal-claws, inner margin of claw with four, slightly curved teeth (Figs 10-11). Male genitalia as in Fig. 3. Parameres with curved apex,



8-12. *Phradonoma borowieci* n. sp.: 8 - galea, lacinia and maxillary palp; 9 - 6<sup>th</sup> abdominal tergite (male), 10 - tarsal claw, 11 - leg, 12 - 8<sup>th</sup> abdominal sternite (female)

covered with numerous thin, short and delicate setae (Fig. 3). Aedeagus sharply tipped, slightly bent (Fig. 4). Abdominal tergite VI with two types of setae: longer at the posterior margin and shorter centrally in the anterior part of pygidium (Fig. 9). Abdominal sternite IX and last tergite with sparse setae on the top (Figs 5, 6). Sternite VIII in female anchor-like, with long marginal setae and short ones on surface of the plate (Fig. 12).

Wing as in Fig. 15.



13-14. *Phradonoma borowieci* n. sp.: 13 - dorsal side; 14 – ventral side; 15 - wing

## TYPE MATERIAL

Holotype male: "S Africa, North province, Waterberg, [S 24°22'E 27°33'], Geelhoutbosh farm, 15-18.11.1997, S. Bílý lgt.". Allotype female: "[Ndumo, Province of KwaZulu-Natal]" Ndumu, Zululand., 8-11.XI.1971., A. STRYDOM. Paratypes (5 females): 1 ex.: South West Africa, 50 km W Mariental 24.42S 17.33E, 22.iii.1983, C. D. Eardley; 1 ex.: South Africa, Bronkhorstpruit Tvi.12.xii.1973, M. v. d. Berg; 1 ex.: South Africa, D'Nyala Nat. Res., Ellisras District., 23.45S 27.49E, 18-20.xii.1987, B. Grobbelaar; 1 ex.: South Africa: Nwanedi Resort, 22.38S 30.24E, 09.ii.1994, B. Grobbelaar; 1 ex.: South Africa: S A Wildlife College, 10 km from Orpen Gate of KNP, 24.30S 31.19E, 16.x.2000, W. Breytenbach. Holotype deposited in SANC, allotype in TMPS, 4 paratypes in SANC, 1 paratype in MK.

KEY TO THE SPECIES OF THE GENUS *PHRADONOMA* OCCURRING IN SOUTHERN AFRICA

- 1(12) Elytra bicolorous
- 2(7) Elytra with more transverse bands or spots
- 3(4) Elytra brownish-black except for three (sometimes only two) reddish, transverse bands ..... ***P. nobile* (REITTER, 1881)**
- 4(3) Elytra with more small white isolated spots
- 5(6) Antennae black, antennal club with 3 segments; each elytron black with orange-brown apical part and with small white spots ..... ***P. borowieci* n. sp.**
- 6(5) Antennal segments I-VII brown, VIII-XI black, antennal club with 4 segments; each elytron black with orange apical spot and orange median spot and short anterior transverse band covered by white pubescence ..... ***P. eximium* (ARROW, 1915)**
- 7(2) Elytra brown or black with one orange-red fascia in the anterior part of each elytron
- 8(5) Club of the antenna oval, receptaculum seminis elongate and bent, body size smaller, length 2.5-4.0 mm, fascia of the elytra is covered by dark hairs ..... ***P. constantini* HERRMANN & HÁVA, 2005**
- 9(4) Club of the antenna elongate, receptaculum seminis short, broad and straight, body size bigger, length 3.3-4.8 mm, the fascia of the elytra is broad and often covered by bright hairs
- 10(7) Tibia dark brownish, body elongate and smaller. Elytra and pronotum shiny. Bursa copulatrix very small ..... ***P. interruptum* (THUNBERG, 1781)**
- 11(6) Tibia black, body broad and bigger. Elytra and pronotum not shiny, puncture of the pronotum extremely dense. Bursa copulatrix very big ..... ***P. magnum* HERRMANN & HÁVA, 2005**
- 12(1) Elytra unicolorous, black, without fasciae, pubescence unicolorous brownish-black ..... ***P. funestum* (REITTER, 1881)**

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