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Two new seed beetles from Cameroon (Coleoptera: Chrysomelidae: Bruchinae)

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Abstract. *Bruchidius faroensis* and *B. obscurevittatus* are described from Northern Cameroon.

Key words: entomology, taxonomy, new species, Coleoptera, *Bruchidius*, Cameroon.

INTRODUCTION

A small collection of seed beetles was gathered in 2006 and 2007 in the Faro Game Reserve of Northern Cameroon by R. Jocqué, K. Loosveldt, L. Baert, and M. Alderweireldt (Royal Museum for Central Africa in Tervuren). These insects are presently kept in the collections of the Institut Royal des Sciences Naturelles de Belgique in Brussels. Among these, two species are new to Science and will be described below.

METHODS

As described by Fannes *et al.* (2008), canopy arthropods were collected by insecticide knockdown fogging. The selected area consisted of wooded savannah and gallery forest, with average annual rainfall 500-1000 mm. Sampling occurred at the beginning of the local wet season (May-October). A 1% solution of natural pyrethrum in diesel was sprayed from the ground during 6 minutes, and dead specimens were stored in absolute ethanol.

Examination of external structures was carried out under a stereoscopic microscope (Wild MZ8), photographs of body parts were taken with a hand-held digital camera, and measurements were performed using a photo editing software. After extraction, male

genitalia were cleared in heated hypertonic NaOH solution and temporarily mounted in water-soluble DMHF (dimethyl hydantoin formaldehyde); genitalia were examined under a light microscope (Leitz Laborlux K); for Figs. 1, 2, 4, and 5, digital photographs of microscope preparations were taken using a hand-held camera, then transferred to a vector graphics editing program. Abreviations used: CBGP, Centre de Biologie et Génétique des Populations, Montpellier; IFAN, Institut Fondamental d'Afrique Noire Cheikh Anta Diop, Dakar; IRSN, Institut Royal des Sciences Naturelles de Belgique, Brussels; MNHN, Muséum National d'Histoire Naturelle, Paris.

SPECIES DESCRIPTION

Bruchidius faroensis sp. nov.

Type material

Holotype: Male, CAMEROON, Faro Game Reserve, N8°23'0.5" E12°50'14.1", gallery forest, fogging *Cola laurifolia*, 26.iv.2007, Jocqué, Loosveldt, Baert & Alderweireldt, IRSN. Paratypes, 3 males, 5 females, same data as holotype, IRSN (6), MNHN (2); 1 male, 1 female, same data, but "fog 15", IRSN.

Description

Length (pronotum-pygidium): 1.3 mm; width: 0.8 mm.

Body stout, rather thick, pygidium almost vertical.

Integument black, except four basal segments of antenna (dorsal side of segments 1 and 2 often more or less darkened), apex to apical 2/3 of femur and whole tibia of anterior and median legs (median legs usually darker), testaceous.

Vestiture made of moderately dense whitish scaly setae, slightly denser and longer on pronotum, particularly on prescutellar area, on pygidial base and on underside; setation slightly yellowish on elytral sides and apex.

Male. Head moderately short; eyes strongly bulging, maximum head width about 1.4 times width behind eyes; eyes separated by 0.29 times head width including eyes; face moderately narrow, with distance between posterior rim of eyes and apex of clypeus / distance between eyes = 2.4; eye deeply cleft, width at bottom of sinus composed of 5 ommatidia; carina on frons well defined, shining. Antenna (Fig. 3) long, measuring about half body length; antennal segments 1 to 3 submoniliform, 3 1.5 times longer than 2, 4 slightly widened apically, 5-8 strongly eccentric, subserrate, 11 oval (L/W = 2.0). Length of antennomeres: 1.5; 1; 1.5; 1.8; 2.0; 2.0; 2.2; 2.2; 2.3; 2.2; 3.0.

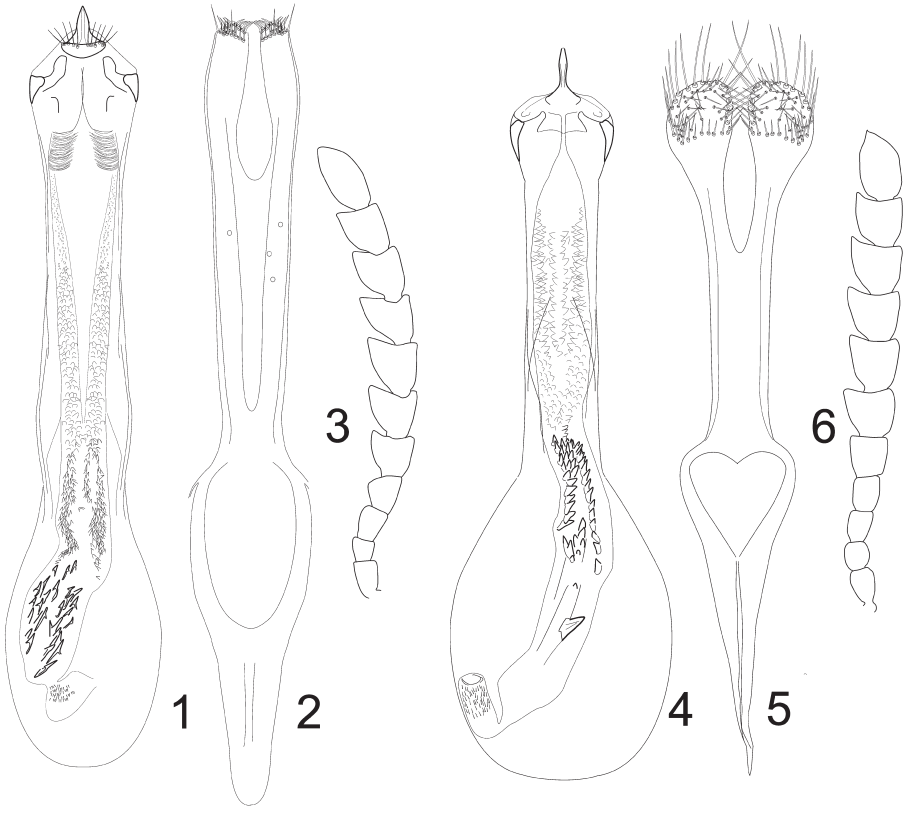
Pronotum subcampaniform, with greatest width at base (W/L = 1.3), its sides almost straight, not expanded behind eyes; with oblique impression on sides of basal lobe. Sculpture of pronotum strong and dense, with ocellate punctures coalescent on disc.

Elytra very short, 1.05 times longer than combined width, their sides convex, maximum width beyond middle; disc not flattened; base elevated, with a very small tooth some distance behind base of stria 4. Striae on disc deep and wide, with large and strong punctures, especially on basal half.

Hind femora moderately widened; mesoventral margin with wide blunt preapical denticle; hind tibia apically strongly widened, with dorsomesal and ventral carinae complete; apex of tibia with mucro a little shorter than width of tarsomere 1 at base; lateral and dorsal denticles short and acute; dorsal face of tibia slightly scabrous.

Abdomen with ventrites 2-5 telescoped, their length medially much shorter than on sides; ventrite 1 basally without particular arrangement of setae. Last visible abdominal narrowly shield-shaped, 1.1 times longer than wide at base, with apex not turned under.

Genitalia: Median lobe (Fig. 1) of moderate length (maximum width excluding basal hood / total length = 0.10), widened before apex; basal hood not emarginate; ventral valve subtriangular, with broad base, and two groups of 5-6 sensilla; a pair of poorly defined hinge sclerites; internal sac basally with densely packed and strongly curved needles, and strands of weakly sclerotized tubercles gradually transformed into small spines; saccus lined with numerous larger spines. Basal strut (Fig. 2) without keel; lateral lobes cleft to about 40% their length, pubescent; apex of parameres triangular, with a transverse row of 12 short setae and numerous short curved setae along margins.



1-6. Genitalia and antenna of male *Bruchidius*: 1-3 – *B. faroensis* ; 4-6 − *B. obscurevittatus* ; 1, 4 − lateral lobe ; 2, 5 − tegminal strut; 3, 6 – antenna

Female. Similar to male, but last visible tergite less convex than in male, slightly slanted, ventrites not telescoped.

Etymology
Specific name (adjective masculine) from Faro, the typical locality.

Biology
Larval host plant unknown.

Discussion
Adults of *B. faroensis* show morphological affinities with a few minute African species with black integument such as *B. dahomeyensis* Pic, *B. dilaticornis* Pic, *B. diversimembris* Pic, *B. hiekei* Decelle, *B. ivorensis* Delobel, and *B. multivariegatus* Pic. The new species is most closely related to *dahomeyensis*, from which it differs in smaller body size (2.0 mm in *dahomeyensis*), black tarsi (testaceous in *dahomeyensis*), vestiture less dense and shorter, particularly on elytra and last visible tergite. The type of *B. dahomeyensis*, which is kept in the collections of MNHN (and not in IFAN as indicated in the original description), is a female. *B. diversimembris* is also a closely related species; the type of *B. diversimembris* is apparently lost (H. Perrin, pers. comm.); specimens from Ivory Coast (Lamto, ex *Desmodium ramosissimum* seeds) identified as *diversimembris* by J. Decelle in 1983 and kept in CBGP show a narrower pronotum, a shorter face and tarsi also entirely testaceous. The size and arrangement of spines in the saccus and of setae at the apex of parameres clearly distinguish *B. faroensis* from all other species mentioned above.

Distribution
Cameroon.

Bruchidius obscurevittatus sp. nov.

Type material
Holotype: Male, CAMEROON, Faro Game Reserve, N8°23'0.5" E12°50'14.1", 26.iv.2007, Gallery Forest, fogging *Cola laurifolia*, Jocqué, Loosveldt, Baert & Alderweireldt, IRSN. Paratypes, 34 males, 20 females, same data as holotype, IRSN (50), MNHN (4); 4 males, 4 females, same data, but "fog 15", IRSN.

Description
Length (pronotum-pygidium): 1.4-1.5 mm; width: 0.8-0.9 mm.

Body stout, rather thick, pygidium subvertical. Integument black, except basal half of antenna testaceous, segment 6-7 more or less darkened, 8-11 black, four anterior legs testaceous, posterior legs reddish brown except base of femur, more or less extensively blackened, as are apex of posterior tibia and last tarsal segment of all legs.

One male specimen with elytra almost entirely testaceous, only base, lateral sides and suture narrowly black.

Vestiture a mixture of whitish, yellowish and dark brown scaly setae; pronotum disc yellowish and white, with long and dense white setation on prescutellar area, extending as a short line on disc; elytra whitish, with three dark areas: a large humeral corner, a small patch at basal fourth of striae 3-5, and a large transversal stripe between half and apical third of elytra; underside white.

Male. Head moderately elongated; eyes strongly bulging, maximum head width about 1.5 times width behind eyes; eyes separated by 0.22 times head width including eyes; face long and narrow, with distance between posterior rim of eyes and apex of clypeus / distance between eyes = 3.3; eye deeply cleft, width at bottom of sinus composed of 4 ommatidia; carina on frons well defined, shining, interocular tubercle indistinct. Punctation of face very dense, vanishing towards clypeus, alutaceous. Antenna (Fig. 6) long, measuring 0.7 times body length; antennal segments 1 to 4 submoniliform, 5 and following slightly widened apically, eccentric, about as wide as long, 11 oval (L/W = 1.8). Length of antennomeres: 1.2; 1; 1.1; 1.3; 1.4; 1.6; 1.7; 1.7; 1.7; 1.7; 2.5.

Pronotum subcampaniform, with greatest width at base (W/L = 1.3), its sides slightly bulging in the middle, not expanded behind eyes; with oblique impression on sides of basal lobe; disc with small, dense punctures, not clearly ocellate.

Elytra short, 1.1 times longer than combined width, their sides convex, maximum width around middle; disc briefly flattened; a small tubercle behind base of interstriae 3 and 4, with inconspicuous teeth. Striae on disc narrow and shallow, with small punctures; interstriae with dense and very strong punctures, particularly in basal third, coriaceous.

Hind femoral margin with preapical denticle small but well defined, strongly slanted backwards; hind tibia apically strongly widened, with ventral and lateral carinae complete; apex of tibia with mucro about as long as width of tarsomere 1 at base; lateral denticle about 1/3 mucro length, and dorsal denticles minute.

Abdomen with ventrites 2-5 telescoped, their length medially much shorter than on sides; ventrite 1 basally without particular setation. Last visible abdominal tergite narrowly shield-shaped, 1.2 times longer than wide at base, with apex not turned under.

Genitalia: Median lobe (Fig. 4) of moderate length (maximum width excluding basal hood / total length = 0.11), slightly widened apically; basal hood ovate, not emarginate; ventral valve very narrow, with blunt tip, apparently with no setae; a pair of poorly defined hinge sclerites; internal sac with weakly sclerotized tubercles in basal half, more sclerotized distally, with two strands of small teeth, two dented plates, followed by a large but thin and weakly sclerotized plate bearing a very small tooth and a large horn-like sclerite. Basal strut (Fig. 5) elongated, with a narrow and transparent keel; lateral lobes cleft to 45% their length; apex of parameres highly modified, enlarged and circular, with numerous long setae.

Female. Similar to male, but last visible tergite slanted about 20° from vertical, less convex than in male.

Etymology

Specific name (adjective masculine) from latin adverb *obscure* and adjective *vittatus*: "obscurely striped".

Biology

Host plant unknown.

Discussion

B. *obscurevittatus* shows close morphological affinities with the other species described here, *B. faroensis*: both share a very small sized, black body, with antennal base and four anterior legs testaceous, abdomen telescoped and last visible tergite almost vertical in male. Apart from obvious differences in genital morphology, the present species has quite distinctive features: more extensive light colour of antennae and posterior legs, disc of elytra with interstriae coriaceous.

Distribution

Cameroon.

CONCLUSION

The host plants of five of the six species showing strong morphological similarities with the two new species are presently known: *B. diversimembris, B. multivariegatus,* and *B. ivorensis* feed in the larval stage in seeds of Desmodieae (Leguminoseae Fabaceae) (Gillon *et al*. 1992; Delobel 2007) whereas *B. hiekei* and *B. dilaticornis* were reared from pods of Aeschynomeneae (Leguminoseae Fabaceae) in Kenya (Delobel & Le Rü 2008 and unpublished data). It may therefore be hypothesized that both new species find their larval food in hosts that are members of these two leguminous tribes.

Other specimens collected in the Faro Game Reserve belong to the following species: *Bruchidius aurivillii* (Blanc), *Bruchidius ituriensis* (Decelle), *Bruchidius kiliwaensis* (Decelle), *Bruchidius schoutedeni* (Pic), *Bruchidius silaceus* (Fahr.), *Spermophagus multifloccosus* Borowiec, *Spermophagus kavangoensis* Wendt, *Spermophagus scotti* Decelle and three unidentified species of *Callosobruchus*.

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REFERENCES

Delobel, A., 2007. Description of previously reported but hitherto undescribed African *Bruchidius* (Coleoptera: Bruchidae). Genus, **18**: 687-720.

Delobel, A. & B. Le Rü, 2008. Les *Bruchidius* consommateurs de graines d'*Aeschynomene* ; définition du groupe d'espèces *Bruchidius kiliwaensis* (Decelle) (Coleoptera, Bruchidae). Bull Soc. entomol. Fr., **113**: 5-14.

Fannes, W., D. De Bakker, K. Loosveldt, R. Jocqué, 2008. Estimating the diversity of arboreal oonopid spider assemblages (Araneae, Oonopidae) at Afrotropical sites. Journal Arachnol., **36**: 322-330.

Gillon Y., J.-Y. Rasplus, A.M. Boughdad, 1992. Utilisation des graines de Légumineuses par un peuplement de Bruchidae et d'Anthribidae en zone de mosaïque forêt-savane (Lamto : Côte-d'Ivoire). Journ. Zool. afric., **106**: 421-443.