

**New *Bruchidius* species reared from *Vachellia*
(Fabaceae: Mimosoideae: Acacieae) seeds
from Eastern and Southern Africa
(Coleoptera: Chrysomelidae: Bruchinae)**

Alex DELOBEL¹⁾ & Bruno LE RU²⁾

¹⁾Muséum National d'Histoire Naturelle, 45 rue Buffon, F-75005 Paris, France;
e-mail: delobel.alex@aliceadsl.fr

²⁾African Insect Science for Food and Health (icipe), P.O. Box 30772, Nairobi, Kenya;
e-mail: bleru@icipe.org

Abstract. Descriptions of the following new species reared from seeds of various *Vachellia* species (Fabaceae: Mimosoideae: Acacieae) are presented: *Bruchidius horridus* sp. nov. from *V. horrida* (L.) Willd., *B. quadrispinosus* sp. nov. from *V. xanthophloea* (L.) Willd., *B. tumidulus* sp. nov. from *V. seyal* (Del.) P. I. H. Hurter, *V. nilotica subulata* (Vatke) Kyal. & Boatwr and *V. lahal* (Steud. & Hochst. ex Benth.) Kyal. & Boatwr., all from Kenya, and *B. spathiger* sp. nov. from *V. etbaica* Hayne, *V. karroo* Schweinf. and *V. tenuispina* Verdoorn from Kenya, Zimbabwe, and the Republic of South Africa, respectively.

Key words. Coleoptera, Bruchinae, *Bruchidius*, seed beetles, entomology, taxonomy, host plant, *Vachellia*, Acacieae, Afrotropical Region

Introduction

In order to take into account the paraphyletic status of the tribe Acacieae (Fabaceae, Mimosoideae), the XVIIth International Botanical Congress in Vienna, Austria (2005), decided to restrict the use of the name *Acacia* L. to Australian and a few other species. Most African acacias (*Acacia* s. lat.) are now placed in the genera *Senegalia* Raf. and *Vachellia* Wight & Arn. (for a detailed treatment of world Acacieae, see WWW (2014)). A large number of African Bruchinae is known to feed in acacia pods (see for example DECELLE 1979, VAN TONDER 1985, ANTON & DELOBEL 2003, KERGOAT et al. 2008, DELOBEL 2007, DELOBEL & LE RU 2009). Larval stages of two major groups of seed beetles feed in seeds of Old World Acacieae (KERGOAT et al. 2005). The *Bruchidius submaculatus* (Fähræus, 1839) (= *B. rubicundus* (Fähræus, 1839)) species group (DELOBEL 2007, DELOBEL & LE RU 2009) is made up of usually large, oval, depressed species with sub-horizontal pygidium. The *B. albosparsus* (Fähræus, 1839)

(= *B. centromaculatus* (Allard, 1868)) species group (ANTON & DELOBEL 2003, DELOBEL et al. 2015) comprises smaller, stockier species with sub-vertical pygidium. Extensive sampling of *Vachellia* and *Senegalia* pods in Kenya and neighboring countries by one of us (BLR) yielded numerous seed beetle species, four of which are described here as new. Two of these species were also present in NCIP (Pretoria) and OÖLM (Linz) collections.

Material and methods

Ripe pods of various *Vachellia* species were collected from the trees or on the ground beneath them. Material was brought to the laboratory and kept at room temperature in Nairobi until the emergence of adults, which usually occurred within two months, but pods were kept for longer periods to monitor late emergences. As development of seed beetles occurs entirely within the seeds, the precise stage at which insects were collected was unknown. Examination of external structures was carried out under a stereoscopic microscope (Wild MZ8), photographs of body parts were taken with a hand-held camera, and measurements were performed using a photo editing software. After extraction, male genitalia were cleared in hypertonic NaOH solution heated 1 minute in a microwave oven at the lowest power setting (200 W), then temporarily mounted in water-soluble DMHF (dimethyl hydantoin formaldehyde) resin. Slides were examined under a light microscope (Leitz Laborlux K); digital photographs of microscope preparations were taken using a hand-held camera, then transferred to a vector graphics editing program. The same technique was applied to antennae. Genitalia were either glued in a drop of DMHF on a cardboard pinned under the specimen, or permanently mounted on slide in the same medium; in the latter case, a five digit slide code is given in brackets, with the last two digits referring to the year of mounting. Total body length was measured from apex of pronotum to apex of elytra; body width and length, and width of elytra are understood as the maximum values observed in a given specimen. 'W/L' and 'L/W' stand for width/length and length/width ratio. Lengths of antennomeres 1 to 11 are given as the ratio of each segment length to the length of the second segment. Terminology follows KINGSOLVER (1970) and NILSSON & JOHNSON (1993).

Studied specimens are deposited in the following collections:

- MNHN Muséum national d'Histoire naturelle, Paris, France;
CBGP Center for Biology and Management of Populations, Montferrier-sur-Lez, France;
NCIP National Collection of Insects, Pretoria, Republic of South Africa;
OÖLM Oberösterreichisches Landesmuseum, Linz, Austria.

Results

Bruchidius horridus sp. nov.

(Figs 1, 6–9)

Type locality. Kenya, Garissa Co., Garissa, 00°28.651'S, 39°33.392'E, 249 m a.s.l.

Type material. HOLOTYPE: ♂ (dissected), 'KENYA, Garissa (249 m) / ex *Acacia horrida* pods / 00°28.651'S 39°33.392'E / janvier 2003, B. Le Ru coll. // Holotype // *Bruchidius horridus* n. sp., / Delobel & Le Ru des. 2015' (MNHN). PARATYPES: 9 ♂♂ 9 ♀♀ (2 ♂♂ 1 ♀ dissected), same data as holotype (MNHN, CBGP).

Description. Length: 1.6–3.0 mm; width: 1.0–1.7 mm.

Body moderately stout, last visible tergite slanted about 20° from vertical. Integument light to dark reddish brown, antennae and four anterior legs testaceous, posterior legs reddish brown,



Figs 1–5. Habitus of *Bruchidius* species. 1 – *B. horridus* sp. nov., ♂ paratype. 2 – *B. quadrispinosus* sp. nov., ♂ holotype. 3 – *B. quadrispinosus* sp. nov., ♀ paratype. 4 – *B. spathiger* sp. nov., ♂ paratype (Kenya). 5 – *B. tumidulus* sp. nov., ♂ paratype (Kenya, Kampi Ya Moto).

last abdominal sternites usually testaceous; last tarsomeres and antennomeres 8–10 darkened; last visible tergite testaceous in male, apical two-thirds black in female. Vestiture made of scaly, fulvous setae, with white markings: longitudinal line becoming thinner anteriorly and two small dots on pronotum, irregular and incomplete transversal stripes on elytra, basal half of third interval, interrupted by small brown dot; last visible tergite almost uniformly white in male, in female with long white setae converging towards elevated midline; underside vestiture white.

Male. Head short, eyes strongly bulging, maximum head width about 1.6 times width behind eyes; eyes separated by 0.25 times head width including eyes; face wide, with distance between posterior rim of eyes and apex of clypeus / distance between eyes = 2.2; eye moderately cleft, width at bottom of sinus composed of 7 ommatidia; no defined carina on frons but strong and shiny bulge posteriorly. Punctuation of face small and dense. Antenna (Fig. 6) short, measuring 0.25 times body length; antennal segments 1–4 submoniliform, 5 and following slightly widened apically, strongly eccentric, transverse, 11 apically rounded, 1.7 times longer than wide. Lengths of antennomeres: 1.5 : 1.0 : 0.8 : 0.6 : 1.2 : 1.2 : 1.3 : 1.1 : 1.2 : 1.0 : 2.0.

Pronotum trapezoidal, at base wider than long ($W/L = 1.4$), its sides slightly convex medially; oblique impression on sides of basal lobe strong; its disc with strong and dense punctuation, punctures small and regular. Elytra evenly convex, basally not wider than pronotal base, together as long as their combined width, maximum width near middle; dented elevation at base of striae 3 and 4, teeth closer to each other than to elytron base; humeral callus well developed; striae very narrow and shallow; interstriae wide and flat, strongly alutaceous. Hind femur moderately incrassated, twice wider than median femur; mesoventral margin with small acute preapical denticle; hind tibia apically strongly widened, with ventral carina complete, lateral and dorsomesal strong but not reaching base; apex of tibia with mucro as long as tarsomere 1 width, lateral denticle about half mucro length. First tarsomere ventrally with small acute denticle.

Abdomen with ventrite 5 moderately emarginated, its length medially about half as long as sternite 4; ventrite 1 with small patch of dense setae at basal angle. Last visible tergite sub-circular in dorsal aspect, only slightly longer than wide, with apex moderately turned under.

Genitalia. Median lobe (Fig. 7) of moderate length, slender (maximum width excluding basal hood / total length = 0.13), subcylindrical, poorly sclerotized; basal hood sub-circular, not notched apically; ventral valve subtriangular, short and wide, with tip acute and bearing numerous sensillae, and two lateral groups of 4 setae; dorsal valve braced with sclerotized ring; no hinge sclerites; internal sac elongated, lined in basal three-fifths with blunt, transparent transverse tubercles, then dorsally cluster of short acute denticles, and ventrally larger, more sclerotized, longitudinally notched, blunt villi; apical bulb densely lined with very fine needles, gonopore large, circular. Basal strut (Fig. 8) with short obsolete dorsal keel; lateral lobes slender, cleft 80 % their length, pubescent; apex of parameres with a small number of setae, one of them much longer.

Female. Similar to male, last visible tergite less convex basally, but with strongly bulging longitudinal keel in apical third; disc black; ventrite 5 about as long as ventrite 4. Genitalia: ovipositor long, vagina linear and membranous, without sclerite, with 30–40 transparent spines at entrance of bursa copulatrix; spermathecal body (Fig. 9) small, ovoid, unwrinkled, with apical diverticulum thin, unevenly curved, about three times longer than body, with blunt tip; spermathecal duct opening not protruding, distinct from lateral gland duct opening.

Differential diagnosis. Even though all examined specimens lack the black sutural dot, typical for the *B. albosparsus* species group, the habitus of *B. horridus* sp. nov. corresponds with the morphology of the group. The internal sac is devoid of strong spines and sclerites, but these are also absent in several other members of the group, like *B. albosparsus* (Fåhræus,

1839), *B. tanaensis* (Pic, 1923), *B. grandemaculatus* (Pic, 1933), or *B. nongoniermai* Delobel, 2007 according to DELOBEL et al. (2015). A bulging pygidium in female is also present in *B. grandemaculatus*. The presence of a small patch of modified setae at the basal angle of male first ventrite is a neutral argument because it is commonly found outside the *B. albosparsus* group (see e.g. ANTON 1998) as well as within the group. The peculiar crenellated villi present in the distal part of the internal sac constitute a morphological trait that distinguishes the new species from all species known to us.

Host plants. Larvae develop in seeds of *Vachellia horrida* (L.) Willd., a species closely related to South African *V. karroo* Hayne, but distinct from it according to ILDIS (2014).

Etymology. The specific epithet (masculine) is the Latin adjective for ‘bristly’, a reference to the peculiar ornamentation of the internal sac, and to the host plant name as well.

Distribution. Kenya (Garissa County).

Bruchidius quadrispinosus sp. nov.

(Figs 2–3, 10–12)

Type locality. Kenya, Nairobi Co., Nairobi, icipe research complex, Kasarani Constituency–International Centre of Insect Physiology and Ecology (ICIPE), 01°13.230'S, 36°53.636'E.

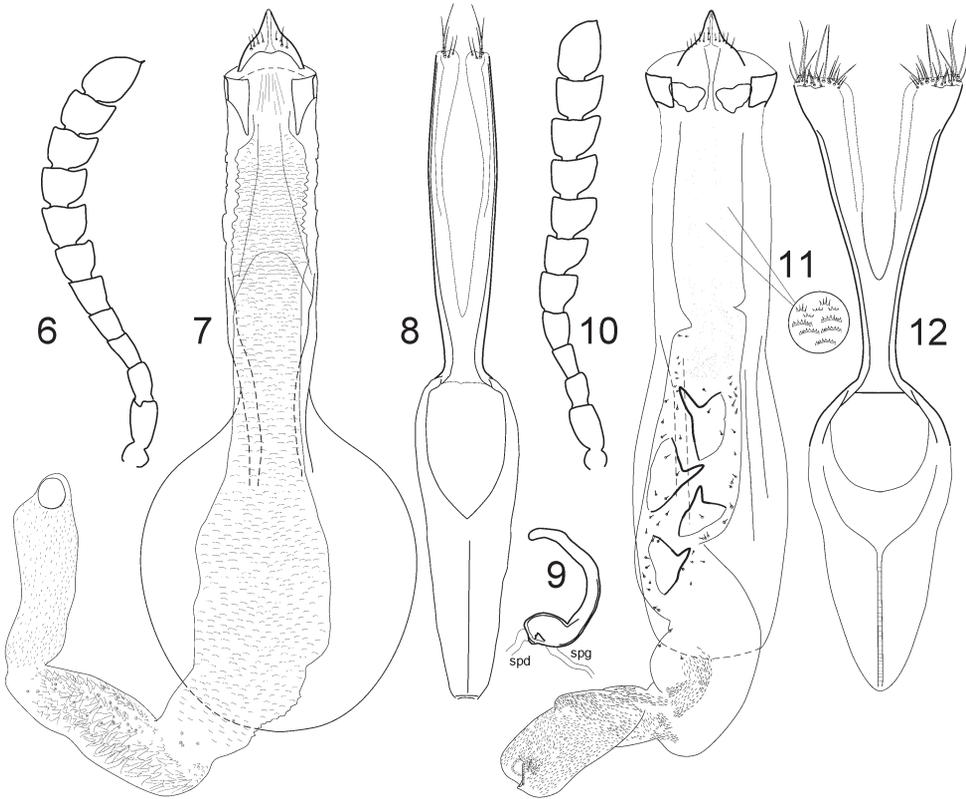
Type material. HOLOTYPE: ♂ (dissected [11108]), ‘KENYA, Nairobi, ICIPE / ex *Acacia xanthophloea* pods / 01°13.230'S 36°53.636'E / 11.i.2008, B. Le Ru coll. // Holotype // *Bruchidius quadrispinosus* n. sp., Delobel & Le Ru des. 2015' (MNHN). PARATYPES: 1 ♀, same data as holotype (MNHN); 1 ♂, Kenya-S, Kibwezi, Hunters' Lodge, 2.xii.1997, M. Snizek, dissected (OÖLM).

Description. Length: 2.9 mm; width: 1.6 mm.

Body moderately stout, last visible tergite slanted about 20° from vertical. Integument testaceous to dark reddish brown, with elytral suture and sides blackened; antennae and four anterior legs testaceous, posterior legs reddish brown, abdominal sternites testaceous, with central part darkened or not; last tarsomeres and antennomeres (8)9–10(11) blackened; last visible tergite testaceous in male, largely black in female. Vestiture made of scaly, whitish, fulvous and blackish setae, with white markings: on pronotum, a wide basal triangle and longitudinal line becoming thinner anteriorly and two small dots; elytra fulvous with lighter dots, more strikingly at basal third of intervals 3, 5, 7, 9, apex dark; last visible tergite almost uniformly white in male, in female narrowly greyish anteriorly and laterally with basal white triangle, rest of tergite black.

Male. Head short, eyes strongly bulging, maximum head width about 1.5 times width behind eyes; eyes separated by 0.3 times head width including eyes; face wide, with distance between posterior rim of eyes and apex of clypeus / distance between eyes = 2.4; eye moderately cleft, width at bottom of sinus composed of 7–8 ommatidia; frons with blunt carina and strong and shiny bulge posteriorly. Punctuation of face small and dense, clypeus visibly alutaceous. Antenna (Fig. 10) moderately long, measuring 0.38 times body length; antennal segments 1–4 submoniliform, 5 slightly widened apically, as wide as long, and following segments strongly eccentric, transverse, 11 apically rounded, 1.5 times longer than wide. Lengths of antennomeres: 1.6 : 1.0 : 1.2 : 1.2 : 1.2 : 1.2 : 1.2 : 1.2 : 1.3 : 1.3 : 2.2.

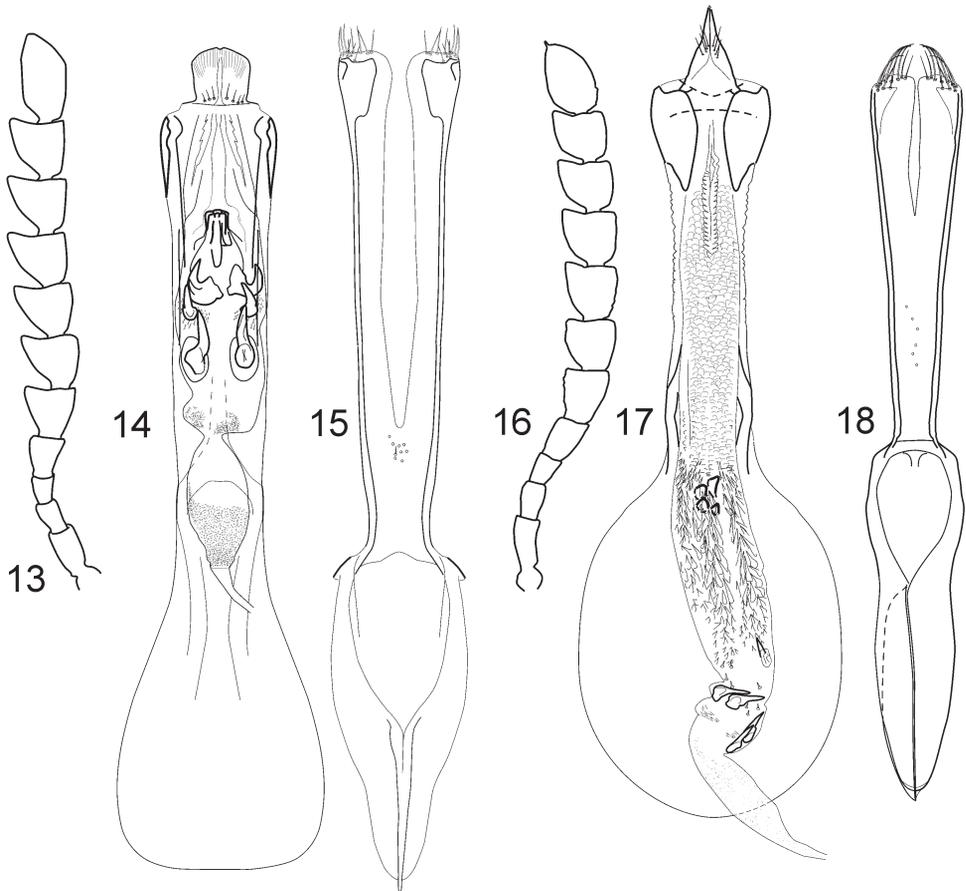
Pronotum sub-trapezoidal, transverse, at base much wider than long (W/L = 1.7), its sides slightly convex medially; oblique impression on sides of basal lobe strong; disc with strong



Figs 6–12. Genitalia and antenna of *Bruchidius* species. 6–9 – *B. horridus* sp. nov. (6 – male antenna; 7 – median lobe; 8 – lateral lobes; 9 – spermatheca). 10–12 – *B. quadrispinosus* sp. nov. (10 – male antenna; 11 – median lobe; 12 – lateral lobes).

and dense punctation. Elytra basally wider than pronotal base, slightly longer ($L/W = 1.08$) than their combined width, disc flattened; dented elevation at base of striae 3 and 4, teeth closer to each other than to elytron base; striae narrow, with small punctures, interstriae wide and flat, strongly alutaceous. Hind femur moderately incrassated, twice wider than median femur; mesoventral margin with small acute preapical denticle; hind tibia short, strongly widened towards apex, with ventral, lateral and dorsomesal carinae complete; apex of tibia with mucro shorter than tarsomere 1 width, lateral denticle about half mucro length. First tarsomere ventrally with small acute denticle.

Abdomen with ventrite 5 strongly emarginated, its length medially about half as long as sternite 4, about one third its lateral length; ventrite 1 with patch of dense setae at basal angle well developed. Last visible tergite shield-shaped, only slightly longer than wide, strongly convex in apical half, its apex strongly turned under.



Figs 13–18. Genitalia and antenna of *Bruchidius* species. 13–15 – *B. spathiger* sp. nov. (13 – male antenna; 14 – median lobe; 15 – lateral lobes). 16–18 – *B. tumidulus* sp. nov. (16 – male antenna; 17 – median lobe; 18 – lateral lobes).

Genitalia. Median lobe (Fig. 11) of moderate length (maximum width excluding basal hood / total length = 0.20), subcylindrical, moderately widened apically; basal hood narrow, not notched apically; ventral valve subtriangular, with sinuated sides, tip acute and bearing numerous sensilla, with two lateral groups of 5–6 setae; dorsal valve braced with sclerotized ring; pair of hinge sclerites; internal sac elongated, lined in basal third with hyaline ctenoid scales and small needles; four large thorns in central third, followed by smooth zone, devoid of needles or setae; apical bulb large, densely lined with very thin needles, gonopore large, circular. Basal strut (Fig. 12) with obsolete dorsal keel; lateral lobes slender, cleft 70 % of their length, pubescent; apex of parameres with about 6 long and 10–12 shorter setae.

Female. Similar to male, but last visible tergite less convex, ventrite 5 about as long as ventrite 4. Darker than male: integument almost entirely black, except antennae and legs,

only slightly darker than male; elytral disc brown, rest of elytra black, its vestiture checked black, brown and yellowish, with large black sutural marking in middle of intervals 1–3.

Differential diagnosis. The external morphology of *B. quadrispinosus* sp. nov. is very similar to that of the *Bruchidius albosparsus* species group as a whole. General body shape and color, and more particularly the presence of a black marking in the middle of elytral suture (striking in female specimen) are typical for members of the group. The large thorn-like spines in central part of the internal sac are of a type never found in the *B. albosparsus* group, but thorn-like sclerites do exist, even though in a smaller size and in a different arrangement, in at least two other members of the group, namely *B. uberatus* (Fåhraeus, 1895) and in another, yet undescribed species. Also, the pair of anterior sclerites usually named ‘hinge sclerites’ is quite similar to those found in *B. albosparsus* itself.

Host plant. Larvae develop in seeds of *Vachellia xanthophloea* (L.) Willd.

Etymology. Specific epithet (masculine adjective) meaning ‘with four spines’, a reference to the ornamentation of internal sac.

Distribution. Kenya (Makueni and Nairobi County).

Bruchidius spathiger sp. nov.

(Figs 4, 13–15)

Type locality. Kenya, Kajiado Co., Olepolos, 01°26.064'S, 36°41.002'E, 1862 m a.s.l.

Type material. HOLOTYPE: ♂, ‘KENYA, Olepolos, 1862 m / ex *Acacia etbaica* pods / 01°26,064'S 36°41,002'E / 19.i.2013, B. Le Ru coll. // Holotype // *Bruchidius spathiger* n. sp. / Delobel & Le Ru des. 2015' (MNHN). Paratypes: 3 ♂♂ 6 ♀♀ (2 ♂♂, 2 ♀♀ dissected), same data as holotype (MNHN, CBGP); 2 ♂♂ 2 ♀♀ (1 ♂ dissected), ‘ZIMBABWE / Umuza, 19.26S / 27.52E 28.v.1977 / F.R. Monyoro // ex seeds of / *Acacia karroo* // National Coll. / of Insects, S. Afr. / AcPL 1848 // *Bruchidius / senegalensis* (Pic) det. / S.J. van Tonder / 1980 // *Bruchidius spathiger* n. sp. / Delobel & Le Ru des. 2015' (NCIP); 1 ♂ (dissected), ‘SOUTH AFRICA, Tvl / Codrington, 25.03S / 28.18E, v.1977 / S.J. van Tonder // ex seeds of / *Acacia tenuispina* // National Coll. / of Insects, S. Afr. / AH 509 // *Bruchidius / senegalensis* (Pic) det. / S.J. van Tonder / 1980 // *Bruchidius spathiger* n. sp. / Delobel & Le Ru des. 2015' (NCIP).

Description. Length: 2.4–2.6 mm; width: 1.4–1.5 mm.

Body short, stocky, last visible tergite slanted about 5° from vertical in male. Integument of lighter coloured specimens yellowish red with brownish markings; darker specimens mostly black, with lighter markings; extreme apex of elytra light brown. Four basal segments of antenna testaceous, rest of antenna variously darkened, but last segment always lighter; fore and middle legs, including coxae, yellowish red; hind legs reddish brown. Ventral side (including centre of abdominal sternites) black, sides reddish brown. Base of elytra darkened, especially humeral area, disc with common black spot beyond mid-length, not reaching apex. Vestiture constituted of whitish, yellowish and black setae in various proportions, dense, covering integument, recumbent. Areas of denser white hair: on pronotum two small spots and area in front of scutellum; scutellum; on elytra scutellar area, one elongated stripe just before mid-length on interval 5 and scattered spots; irregular transverse stripes of dark (brownish to blackish) setae on elytra: just behind base on interstriae 3, 5, 7, 9 and before middle on interstriae 5, 7, 8 and 9; often sutural area black near middle, usually fused with dark coloration of apex. Last visible tergite with more or less homogeneous whitish vestiture, usually with basal white triangle and incomplete longitudinal stripe.

Male. Head short, strongly constricted behind eyes; eyes large, bulging, maximum head width 1.8 times width behind eyes; ocular sinus comparatively shallow; eyes separated by only 0.18 times head width including eyes; face narrow, distance between posterior rim of eyes and apex of clypeus / maximum head width = 0.67; post-ocular lobes hardly visible; carina on frons distinct but shallow, micro-punctured; inter-ocular tubercle distinct, also not shiny. Antenna (Fig. 13) reaching pronotal base; antennal segments 1-3 subcylindrical, segment 4 slightly widened at apex, segment 5 and following serrate, 11 oval (L/W = 1.9); lengths of antennomeres: 1.7 : 1.0 : 0.9 : 1.4 : 1.5 : 1.4 : 1.5 : 1.5 : 1.6 : 1.7 : 3.0.

Pronotum transverse (at base 1.4 times wider than long), campaniform, with slightly bi-sinuated sides, not laterally expanded behind eyes. Elytra short, 1.1 times as long as their combined width. Sides almost parallel; disc convex. At base of stria 2 very small tooth, at base of striae 3 and 4 two small teeth on moderate protuberance, teeth about twice closer to each other than to elytral base. Striae on disc punctured; punctures strong, wider than striae, distance between punctures 2 to 3 times their diameter; interstriae flat, with strong micro-punctuation. Hind femora moderately incrassated, at their widest 2.5 times wider than mid femora; mesoventral margin with small preapical denticle; hind tibiae simple with ventral carina complete, dorsomesal carina incomplete, lateral reaching base; apex of tibia with mucro about 3 times longer than lateral denticle, dorsal denticles about as long as lateral ones.

Abdomen simple; basal angle of sternite 1 with small area of denser setae; sternite 5 strongly emarginated; last visible tergite slightly longer than wide, convex in basal half, convexity steadily increasing towards apex.

Genitalia. Median lobe (Fig. 14) slender (maximum width excluding basal hood / total length = 0.14); ventral valve widened towards apex, with tip in-turned, bearing numerous sensillae and on each side row of 3–5 setae in basal half; dorsal valve wide and strongly sclerotized; median part of internal sac with large central sclerite made up of several small fused units, then three pairs of large hook-like sclerites; first pair the largest, often bearing one or two additional hooks; distal bulb lined with minute tubercles and spines, gonopore D-shaped, hardly sclerotized; basal strut comparatively small, without apical emargination. Parameres long and thin, separated in about 75% of their length; tegminal strut with strong longitudinal dorsal keel (Fig. 15).

Female. Similar to male, but antennal segments 1–5 submoniliform, 6–10 serrate, but less markedly than in male; segments 1–5 (6) and 11 testaceous, rest testaceous to dark brown; vestiture of last visible tergite whitish and black, or entirely black, with white longitudinal stripe briefly interrupted beyond middle. Ovipositor moderately elongated, vagina membranous, without dentate sclerite, but in some specimens with brown markings, spermathecal body smooth, small and spherical, apical diverticulum moderately long and slim, strongly curved.

Differential diagnosis. The new species was erroneously identified as *B. senegalensis* (Pic, 1912) (= *B. aurivillii* Blanc, 1889) by VAN TONDER (1985), which is understandable in view of its similarity to various members of the *B. albosparsus* species group. However, the very peculiar shape of the ventral valve differentiates the new species from all other members of the group. Such type of ventral valve is quite unusual among *Bruchidius* species: in addition to *B. spathiger* sp. nov., it may be found only in *B. mussooriensis* Arora, 1980 from South-East Asia and *B. lichenicola* (Wollaston, 1854) from Madeira and the Canary Islands. The

larval diet of the new species is however quite distinct from that of the latter. *Bruchidius mussooriensis* larvae feed in seeds of *Alysicarpus vaginalis* (L.) DC. (Fabaceae: Desmodieae) (DELOBEL 2010), *B. lichenicola* larvae in those of various Loteae: *Lotus campylocladus* Webb & Berthel., *L. glaucus* Sol. (Delobel, unpublished data), and *L. hillebrandii* H. Christ. (YUS RAMOS 2008). This would indicate that wide lamella-shaped ventral valves evolved independently in different parts of the world, in species with different diets.

Host plants. Reared from seeds of *Vachellia karroo* Hayne, *V. etbaica* Schweinf., and *V. tenuispina* Verdoorn. The same sample of *V. etbaica* pods collected in Olepolos yielded two other seed beetles, namely *Bruchidius quadrisignatus* (Fåhraeus, 1871) and *Tuberculobruchus longipennis* (Pic, 1902). *Bruchidius spathiger* sp. nov. adults were the last to emerge from the pods, what indicates either a slower preimaginal development, or oviposition occurring posteriorly on the pods.

Etymology. Forged Latin adjective (masculine), from *spatha*, lamella and *gere*, to carry.

Distribution. Kenya (Kajiado County), Republic of South Africa (Transvaal), Zimbabwe (Matabeleland North Province).

Bruchidius tumidulus sp. nov.

(Figs 5, 16–18)

Type locality. Kenya, Nakuru Co., Kampi Ya Moto, 00°12.779'S, 36°00.143'E, 2035 m a.s.l.

Type material. HOLOTYPE: ♂ (dissected [15102]), 'KENYA, Kampi Ya Moto / 2035 m, ex *Acacia lahal* pods / 00°12.779'S 36°00.143'E / septembre 2002, B. Le Ru coll. // Holotype *Bruchidius tumidulus* n. sp., Delobel & Le Ru des. 2015' (MNHN). PARATYPES: 8 ♂♂ 10 ♀♀, same data as holotype; 2 ♂♂ (dissected [02914, 14702]), 1 ♀, Makutano, ex *Acacia nilotica subulata*, 01°24.466'S 36°29.889'E, vi.2002, B. Le Ru coll.; 2 ♂♂ (1 ♂ dissected [14602]), 1 ♀, Narok, ex *Acacia lahal*, 01°05.533'S 36°07.027'E, vi.2002, B. Le Ru coll.; 2 ♂♂ (dissected [02611], the other specimen used for DNA extraction), Machakos, ex *Acacia seyal*, 01°50.158'S 37°26.413'E, 23.i.2008, B. Le Ru coll. (MNHN, CBGP).

Description. Length: 1.7–2.2 mm; width: 1.0–1.3 mm.

Body moderately stout, last visible tergite slanted 5 to 10° from vertical. Integument reddish brown to black, elytra black with anterior part of disc and sides brown; antennae and four anterior legs testaceous, posterior legs reddish brown, abdominal sternites black except upper part brown; last tarsomeres blackened; last visible tergite testaceous. Vestiture a mixture of thin whitish, yellowish and fulvous setae; on pronotum basal triangle, wide longitudinal line and two small dots white; elytra fulvous with lighter dots and stripes, posterior part of suture and apex forming wide dark triangle; epipleuron testaceous anteriorly; last visible tergite uniformly white in male, in female with pair of black longitudinal stripes.

Male. Head short, eyes strongly bulging, maximum head width about 1.5 times width behind eyes; eyes separated by 0.24 times head width including eyes; face narrow, with distance between posterior rim of eyes and apex of clypeus / distance between eyes = 3.0; eye moderately cleft, width at bottom of sinus composed of 5–6 ommatidia; frons with blunt carina and shiny bulge posteriorly. Punctuation of face small and dense, clypeus visibly alutaceous. Antenna (Fig. 16) moderately long, measuring 0.6 times body length; antennal segments 1–4 submoniliform, 5 widened apically, longer than wide, 6 apically as wide as long, and following segments moderately eccentric and transverse, 11 oblong, 1.6 times longer than wide. Lengths of antennomeres: 1.9 : 1.0 : 1.2 : 1.6 : 2.0 : 1.9 : 1.9 : 1.8 : 1.7 : 1.5 : 2.7.

Pronotum campaniform, at base wider than long ($W/L = 1.4$), its sides convex medially; oblique impression on sides of basal lobe wide and shallow; disc with strong and dense punctation. Elytra basally wider than pronotal base, maximum width beyond middle, longer than their combined width ($L/W = 1.13$), disc convex, dented elevation at base of striae 3 and 4, teeth as close to each other as to elytron base; striae narrow, with small punctures, interstriae wide and flat, strongly alutaceous. Hind femur moderately incrassated, twice wider than median femur; mesoventral margin with blunt preapical denticle; hind tibia moderately widened apically, with ventral, lateral and dorsomesal carinae complete; apex of tibia with mucro about half as long as tarsomere 1 width, lateral denticle almost as long as mucro, dorsal denticles very short.

Abdomen strongly telescoped, but ventrite 5 not clearly emarginated, its length medially as long as sternite 4; ventrite 1 without patch of dense setae in basal angle. Last visible tergite shield-shaped, only slightly longer than wide, moderately convex in apical half.

Genitalia. Median lobe (Fig. 17) of moderate length (maximum width excluding basal hood / total length = 0.15), subcylindrical, strongly widened apically; basal hood oval, not notched apically; ventral valve large, subtriangular, with acute tip and two lateral groups of 4 setae; dorsal valve braced with sclerotized ring becoming very wide ventrally; no hinge sclerites; internal sac in basal half lined with hyaline tubercles, followed by strands of thin acute spines, hiding four medium-sized blunt sclerites in dorsal position; distally, two to five elongated teeth; apical bulb long, densely lined with very thin needles, gonopore not sclerotized. Basal strut (Fig. 18) with large dorsal keel; lateral lobes cleft about 40 % of their length, apex of parameres with about 10 setae.

Female. Similar to male, but last visible tergite less convex, with median pair of black longitudinal stripes, ventrite 5 longer than ventrite 4, antennae slightly shorter.

Differential diagnosis. External morphology of this species is similar to *Bruchidius albosparsus* or *B. tanaensis* specimens with well contrasted colors, except for longer and entirely testaceous antennae, the elytra with black posterior triangle and testaceous epipleuron, the abdomen black with testaceous sides. However, the placement of the new species in the *B. albosparsus* species group remains doubtful, because male genital morphology is quite distinctive, without obvious relationship to other members of the group.

Host plants. Larvae develop in seeds of *Vachellia lahal* (Steud. & Hochst. ex. Benth.) Kyal. & Boatwr., *V. nilotica subulata* (Vatke) Kyal. & Boatwr., and *V. seyal* (Del.) P.J.H. Hurter.

Etymology. The specific epithet (masculine) is the Latin word for 'inflated', which refers to the shape of the median lobe apex.

Distribution. Kenya (Kirinyaga, Machakos, Nakuru, and Narok Counties).

Conclusions

We tentatively place three of the four new species in the *Bruchidius albosparsus* species group, because of their ecological and morphological similarity to other members of the group. Molecular data and phylogenetic analysis may however invalidate this hypothesis, at least for some of them. The fourth species, *B. spathiger* sp. nov., most likely belongs to a distinct, not yet defined species group.

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