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Ebenacobius Haran, a new southern African genus of flower weevils (Coleoptera: Curculioninae: Derelomini) associated with dicotyledonous plants

Julien HARAN [*,1], Laure BENOIT [2], Şerban PROCHEŞ [3] & Gael J. KERGOAT [4]

[1,2] CBGP, CIRAD, Montpellier SupAgro, INRAe, IRD, Montpellier University, Montpellier, France.
[3] Centre for Functional Biodiversity and Discipline of Geography, University of KwaZulu-Natal, Durban, South Africa.
[4] CBGP, INRAE, CIRAD, IRD, Institut Agro, Univ Montpellier, Montpellier, France.

[*] Corresponding author: julien.haran@cirad.fr
[2] Email: Laure.Benoit@cirad.fr
[3] Email: setapion@gmail.com
[4] Email: gael.kergoat@inrae.fr

[1] urn:lsid:zoobank.org:author:A04E1722-994A-44AD-8FD2-28DC0F220805
[2] urn:lsid:zoobank.org:author:61963F74-724B-4174-9E9A-8817A3516B0E
[3] urn:lsid:zoobank.org:author:0ACCE987-9774-453B-A1BA-42E93D75D3C7
[4] urn:lsid:zoobank.org:author:D763F7EC-A1C9-45FF-88FB-408E3953F9A8

Abstract. A new genus of derelomine flower weevil (Curculionidae: Derelomini sensu Franz 2006), *Ebenacobius* Haran gen. nov., is described to accommodate a clade of species morphologically and phylogenetically distinct from other genera in this tribe. This genus can be diagnosed as follows: protibiae armed with an apical mucro, claws free, eye convexity exceeding the contour of head in dorsal view and forehead with a median furrow. In total, 19 species are recognized in this genus; 14 species are described as new (*E. curvisetis* Haran gen. et sp. nov.; *E. duplicatus* Haran gen. et sp. nov.; *E. grobbelaarae* Haran gen. et sp. nov.; *E. hessei* Haran gen. et sp. nov.; *E. hippopotamorum* Haran gen. et sp. nov.; *E. kuscheli* Haran gen. et sp. nov.; *E. mulanjensis* Haran gen. et sp. nov.; *E. oberprieleri* Haran gen. et sp. nov.; *E. rectirostris* Haran gen. et sp. nov.; *E. san* Haran gen. et sp. nov.; *E. pedi* Haran gen. et sp. nov.; *E. thoracicus* Haran gen. et sp. nov.; *E. tsonga* Haran gen. et sp. nov. and *E. xhosa* Haran gen. et sp. nov.), five species of *Derelomus* Schoenherr (*D. atratus* Hesse; *D. costalis* Fåhraeus; *D. incognitus* Hesse; *D. rhodesianus* Hesse; *D. turneri* Marshall) are hereby transferred to *Ebenacobius* gen. nov. and one species name is placed in synonymy (*Derelomus rugosicollis* Hesse, 1929 = *Derelomus costalis* Fåhraeus, 1844 syn. nov.). Members of *Ebenacobius* gen. nov. seem to develop in inflorescences of dicot plants, with larval stages of at least two species recovered from the flowers of *Euclea* species (Ebenaceae). A key to the continental African genera of Derelomini and to species of *Ebenacobius* gen. nov. is provided. Pictures of habitus and terminalia of adults, along with distribution and life history data are also provided for each species.

Keywords. Afrotropics, Barcoding, Ebenaceae, molecular phylogenetics, mutualism, new weevil species, plant-weevil interactions.

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Introduction

Derelomine flower weevils (Curculionidae: Derelomini Lacordaire, 1865) are a lineage engaged in mutualistic relationships with plants involving brood-site pollination (Dufay & Anstett 2003; Caldara *et al*. 2014). This tribe appears to be a promising model to understand the evolutionary consequences of mutualistic interactions in weevils and insects in general (e.g., see de Medeiros & Farrell 2020; Haran *et al.* 2021).

In its current concept Derelomini (sensu Franz 2006) are a pantropical tribe, comprising ca 265 species distributed in 40 genera (Franz 2006). The tribe has been unequally studied. Whereas its species diversity, host plants and generic limits have been quite well documented in the Western hemisphere (Kuschel 1952; see Franz & Valente 2005 for a review), the majority of Old World genera lack comprehensive taxonomic work and are in need of revision (Franz 2006). In the context of a project aiming at clarifying the diversity, life history and evolution of Afrotropical Derelomini, specimens apparently belonging to an undescribed genus were found associated with the inflorescences of woody species in the African native genus *Euclea* L. (Ebenaceae Gürke).

Only four genera of Derelomini are known to occur in continental Africa: *Derelomus* Schoenherr, 1825 (ca 30 species); *Prosoestus* Faust, 1899 (two species); *Lomederus* Marshall, 1932 (one species) and *Elaeidobius* Kuschel, 1952 (eight species) (Alonso-Zarazaga & Lyal 1999). According to current knowledge, three of these four genera are exclusively associated with the inflorescences of palms (Arecaceae), whereas *Lomederus* is associated with the flower buds of the legume plant *Baikiaea insignis* Benth. (Fabaceae) (Marshall 1932; Franz & Valente 2005). When considered collectively, Derelomini are a morphologically and biologically heterogeneous tribe (Caldara *et al.* 2014), and it is thus difficult to provide diagnostic characters that work for all genera (Franz 2006). However, in continental Africa the four derelomine genera can be easily separated from other derelomines or Curculioninae Latreille, 1802 genera by the combination of lateral carina on prothorax, interstriae 9 on elytra raised and males with tergite VII forming a stridulatory plate (Schoenherr 1825; Marshall 1935; Haran *et al.* 2020). Interestingly, representatives of a putative new genus agree with all these features, but could not be placed in any of the previously recognized genera due to the following characters: eyes convex (flat in *Prosoestus* and *Elaeidobius*), claws free (connate in *Lomederus*), and prothorax not strangled before apex, only constricted (strangled in *Derelomus*).

In this study, the genus *Ebenacobius* Haran gen. nov. is described and diagnosed in comparison to the four other continental African derelomine genera. In total 20 species are treated; 14 species are described as new, five species of *Derelomus* are hereby transferred to *Ebenacobius* and one species name placed in synonymy. A key to species, photos of habitus and terminalia of adults are provided along with distribution and life history data for each species. Finally, phylogenetic analyses relying on six gene fragments (three mitochondrial and three nuclear genes) were conducted to validate the species boundaries and placement of this genus within the Derelomini.

Material and methods

Sampling

Fresh specimens of flower-visiting Derelomini were sampled by beating flowering bushes and trees in the Republic of South Africa between 2018 and 2019. The determined host plant records exclusively refer to the plant taxa used for the development of larval stages. Derelomine weevils generally show a high degree of host specificity (Franz & Valente 2005). A massive aggregation of adults on a host plant usually indicates a clear trophic relationship (Franz & Valente 2005). By contrast, the isolated occurrence of a few specimens on a plant generally correspond to plants used as a refuge or for pollen feeding. When available, fresh larvae found on host plants were DNA barcoded to match immature

stages with adults and confirm the trophic relationship. It is also worth noting that derelomine weevils may form speciose sympatric species assemblages on a single host (Haran *et al.* 2021). Knowing this, species found in sympatry on the same host were recorded and are reported in the remarks section under each species. The sampling for this study was also expanded with specimens of Afrotropical Derelomini housed in museums and private collections (see section 'Abbreviations of repositories' below). In all, ca 350 specimens were examined.

Preparation and taxonomic treatment

Abdomens of adult specimens were dissected and digested in KOH to obtain clean preparations of genital structures, which are commonly used to distinguish between species among derelomine genera (Franz 2003; de Medeiros & Vanin 2020). Habitus and genitalia were photographed using a Keyence® VHX5000 imaging system. Measurements were taken with an optical micrometer. Body length refers to the distance from the apical margin of the head (excluding the rostrum) to the apex of the elytra (Fig. 1G). Rostrum length refers to the distance between the apical margin of the eyes and the apex of mandibles. The ratio of width to length (W:L ratio) was measured at the widest point of the prothorax, the elytra and the penis (Fig. 1A, I). The length of the elytra was measured between the anterior part of the scutellar shield and the apex of the elytra (Fig. 1A). The interstriae are counted from the elytral suture and include the sutural interstriae. The length of the penis was measured between the base of the penis body (apodemes excluded) and the apex (Fig. 1I). The terminology used follows Lyal (2020).

Derelomini are a taxonomically challenging tribe (Franz 2006), as many species exhibit converging phenotypes whereas colour patterns are often too variable to be used as a diagnostic feature. Males can also be morphologically quite polymorphic, especially regarding the size of the prothorax and the prosternal process that can be much developed or absent among males from the same locality (as in *Elaeidobius subvittatus* (Faust, 1898); Haran *et al.* 2020). Identity of species previously described was established based on examination of type material (for *Derelomus costalis* Fåhraeus, 1844; *D. rhodesianus* Hesse, 1929 and *D. turneri* Marshall, 1935) and reference collections and diagnosis (*D. atratus* Hesse, 1929 and *D. incognitus* Hesse, 1929). It should be noted that a revision of Old World Derelomini had been undertaken more than a decade ago by the late Guillermo Kuschel (see postscript in Haran *et al.* 2020) and that the recovery of some type material is still incomplete for some taxa. However, details of labels from some type specimens he studied were obtained thanks to the examination of a preliminary manuscript kindly transmitted by colleagues at NZAC (Rich Leschen and Samuel Brown). Details for each species are given in the remarks sections in this case. Data from the labels of holotypes are reported between double quotation marks, each line of the label is separated by a semicolon. Additional information to help the reading of labels is given in square brackets. The names of all new species are attributed to the first author of this study, following Article 50.1 and Recommendation 50A of the Code (ICZN 1999).

DNA barcodes

Whenever fresh material could be obtained, specimens of each putative species were sequenced for the standardized 658 bp barcode fragment of the mitochondrial cytochrome *c* oxidase subunit I (COI) gene (see Hebert *et al.* 2003). DNA was extracted from entire specimens using a DNeasy Blood & Tissue kit (Qiagen, Hilden, Germany). PCR amplifications were carried out using a cocktail of COI primers for invertebrates (Table S2). PCR reactions were carried out on a Mastercycler® Nexus (Eppendorf, Hamburg, Germany) in a volume of 10 µL of PCR mix containing 5 µl of Multiplex Master Mix (Qiagen, Hilden, Germany), 2µM of Forward and Reverse primers and 2 µl of DNA. The PCR conditions were as follows: initial DNA denaturation at 94°C for 15 minutes, followed by 35 cycles of 30 s at 94°C, 1 min at 52°C, and 1 min at 72°C with a final extension of 20 min at 72°C. The PCR products were sequenced by Eurofins Genomics (http://www.eurofinsgenomics.eu/). All voucher specimens sequenced

were mounted, dried and deposited in the Continental Arthropod Collection at Centre de Biologie pour la Gestion des Populations, Montpellier, France (CBGP https://doi.org/10.15454/D6XAKL). Barcode sequences were aligned using CodonCode Aligner ver. 3.7.1. (CodonCode Corporation, Centerville, MA, USA). Uncorrected *p*-distance values of pairwise genetic distances between species were computed with Mega ver. 7 (Kumar *et al.* 2016).

Specimens and genes sampling

Fresh specimens of the putative new genus were sampled (10 species available, 1-6 specimens per species) together with specimens from other Afrotropical and Mediterranean derelomine genera (Table S1), including data from previous studies on this tribe (Haran *et al.* 2020, 2021). Outgroups were selected among the tribes Curculionini Latreille, 1802 and Mecinini Gistel, 1848 as these tribes belong with Derelomini to the subfamily Curculioninae (Alonso-Zarazaga & Lyal 1999) and among the Molytinae Schönherr, 1823 (Amorphocerini Voss, 1934) as it contains species pollinators of primitive plant lineages (Zamiaceae Horan.). A more distant outgroup was selected among the Scolytinae Latreille, 1807 (Hylesinini Erichson, 1836) as this lineage is found nested with Curculioninae in recent molecular phylogenies of Curculionidae (e.g., Shin *et al.* 2017). Four protein-coding gene fragments were amplified and sequenced for each specimen of the putative new genus: the mitochondrial cytochrome *c* oxidase subunit I and II (COI and COII), the nuclear gene fragments of Elongation factor-1 alpha (EF1a) and Arginine kinase (AK). The primer names, sequences, PCR conditions are detailed in Table S2. The PCR products were sequenced from both strands at Eurofins Genomics (Ebersberg, Germany). Failure of amplification was equal or below 10% for all specimens among all genes. We used Mesquite ver. 3.61 (Maddison & Maddison 2019) to check the coding frame for possible errors or stop codons. All newly generated sequences were deposited on GenBank (Table S1).

We then combined the newly generated sequences with data available on GenBank (including sequences previously generated by our research group). Here, we also included sequences from two non-coding genes: the mitochondrial 16S ribosomal gene (16S) and the nuclear 18S ribosomal gene (18S). The sequences of the two ribosomal genes were variable in length and their alignment was accomplished using MAFFT ver. 7 (Katoh & Standley 2013) with default option settings. The combination of the six gene fragments resulted in a combined matrix of 58 specimens and 5545 aligned characters (see Table S1 for all GenBank accession numbers).

Phylogenetic analyses

Phylogenetic analyses were conducted using maximum likelihood (ML). Partitioned ML analyses were implemented to improve phylogenetic accuracy (Nylander *et al.* 2004). The dataset was divided a priori into 14 partitions, with three partitions (one per codon position) defined for each coding gene fragment (COI, COII, EF1a and AK) and one partition defined for each non-coding gene fragment (16S and 18S). ML analyses were conducted with IQ-TREE ver. 2 (Minh *et al.* 2020). The best-score ML tree was obtained using a heuristic search implementing 500 random-addition replicates with the following settings: random-starting tree, hill-climbing nearest neighbor interchange (NNI) search (-allnni option), perturbation strength of 0.2 (-pers 0.2 option), partition-resampling strategy (-sampling GENE option), best partition scheme allowing the merging of partitions (-m MFP+MERGE option). Support of nodes for the IQ-TREE 2 analyses was assessed using 1000 replicates for both ultrafast bootstraps (Minh *et al.* 2013) and SH-like approximate likelihood ratio tests (SH-aLRT; Guindon *et al.* 2010). Nodes supported by ultrafast bootstrap values (uBV) $\geq$ 95% and SH-aLRT values $\geq$ 80% were considered as strongly supported following authors' recommendations.

Abbreviations of repositories

The specimens on which this study was based are lodged in the following institutions and specimen collections.

CBGP = Continental Arthropod Collection, Centre de Biologie pour la Gestion des Populations, Montpellier, France
CMN = Canadian Museum of Nature, Ottawa, Canada
FFWS = Faculty of Forestry and Wood Sciences, Czech University of Life Sciences, Prague, Czech Republic
MNHN = Muséum national d'histoire naturelle, Paris, France
NHMUK = The Natural History Museum, London, United Kingdom
NHRS = Swedish Museum of Natural History, Stockholm, Sweden
NZAC = New Zealand Arthropod Collection, Auckland, New Zealand
SAMC = Iziko South African Museum, Cape Town, South Africa
SANC = South African National Collection of Insects, Pretoria, South Africa
TMSA = Ditsong National Museum of Natural History, Pretoria, South Africa
USNM = Smithsonian National Museum of Natural History, Washington D.C., United States

Results

Class Insecta Linnaeus, 1758
Order Coleoptera Linnaeus, 1758
Family Curculionidae Latreille, 1802
Subfamily Curculioninae Latreille, 1802
Tribe Derelomini Latreille, 1865

Subtribe **Derelomina** Latreille, 1865

Key to genera of afrotropical continental Derelomini (sensu Franz 2006)

1. Eyes in dorsal view flat, not protruding over contour of head capsule in dorsal view. Larvae developing on *Elaeis guineensis* Jacq. (Arecaceae) 2
– Eyes in dorsal view convex (Fig. 1B), at least moderately exceeding the contour of head capsule in dorsal view (Fig. 2F). Larvae developing on other plants than *Elaeis guineensis* 3

2. Integument black, deeply sculptured, without darker or paler markings on prothorax and elytra. Prothorax with a knob or tooth between procoxae and basal margin of prosternum ..... ***Prosoestus*** Faust, 1899
– Integument yellow to reddish brown, shallowly sculptured, usually with dark markings on prothorax and elytra. Prothorax lacking knob or tooth behind procoxae, in some species males with a prosternal process between procoxae ..... ***Elaeidobius*** Kuschel, 1952

3. Claws free 4
– Claws connate. Central Africa (Congo) ..... ***Lomederus ghesquierei*** Marshall, 1932

4. Forehead flat, lacking a middle groove (Fig. 1C). Lateral carina of prothorax generally strangled before apex (Fig. 1C). Body of penis with a thickening near base, visible in lateral view. In males, stridulatory plate (tergite VII) basally indented on each side of the row of tubercles ..... ***Derelomus*** Schoenherr, 1825
– Forehead with a middle groove (Fig. 1B). Lateral carina of prothorax constricted before apex (Fig. 1A). Width of body of penis regular in lateral view (Fig. 6). In males, stridulatory plate (tergite VII) with basal margin smooth, lacking indentation on each side of the row of tubercles (Fig. 1J) .. ***Ebenacobius*** Haran gen. nov.

Description of new genus

Genus ***Ebenacobius*** Haran gen. nov.
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Type species

Ebenacobius rhodesianus (Hesse, 1929) gen. et comb. nov., by present designation.

Differential diagnosis

This genus agrees in all respects with the features enabling Afrotropical Derelomini to be distinguished from other Curculioninae: prothorax with a lateral carina, interstriae 9 on elytra raised and males with tergite VII forming a stridulatory plate with two rows of tubercles (Fig. 1J). *Ebenacobius* gen. nov. can be distinguished from other Derelomini genera by the following combination of putative synapomorphies: protibiae armed with an apical mucro (Fig. 1F); claws free; eyes convex, exceeding the contour of head in dorsal view (Fig. 1A–B); forehead with a median furrow (Fig. 1B); prothorax only constricted laterally near apex (Fig. 1A), not strangled (as in *Derelomus* Fig. 1C). Additional diagnostic features enabling to distinguish species of *Ebenacobius* from the closely related genus *Derelomus* Schoenherr, 1825 include the stridulatory plate (tergite VII) in males with basal margin lacking indentation on each side of the row of tubercles (Fig. 1J), and the base of the body of penis in lateral view lacking a thickening (Fig. 1I). The larval development of some species of *Ebenacobius* takes place in flowers of dicot plants, which contrasts with the life history of the large majority of species of Derelomini, themselves largely monocot-associated.

Etymology

The genus name refers to the association of species of this genus with inflorescences of *Euclea* spp. from the family Ebenaceae. The gender is masculine.

Description

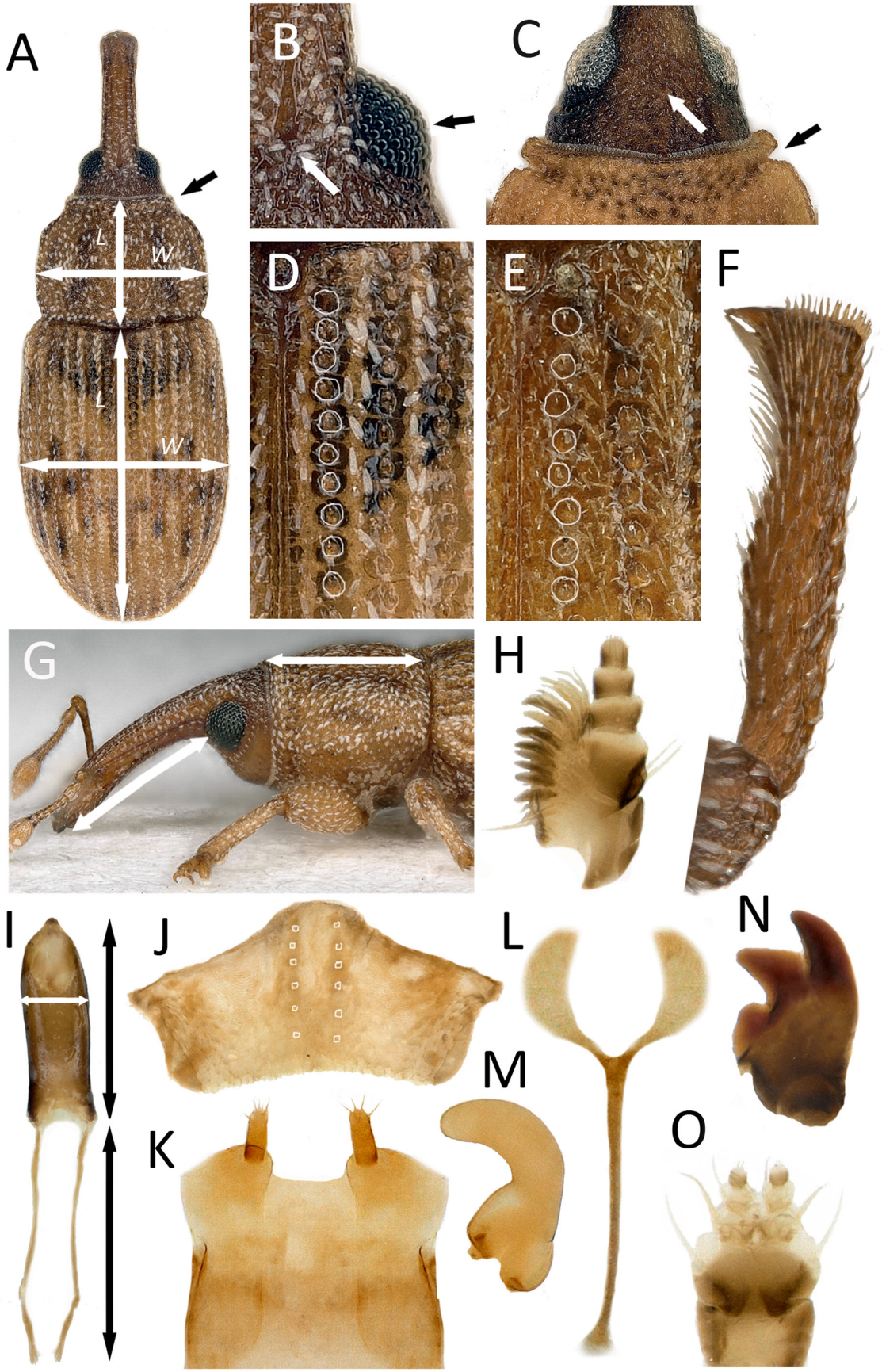
Male

Body length. 2.1–4.0 mm.

Colour. Body integument pale brown to reddish brown, generally with dark brown patterns on prothorax (colour uniform in 10% of species); dorsum (prothorax + elytra) with a coating made of minute recumbent setae or whitish scales or long erect setae.

Mouthparts (Fig. 1H, N–O). Mandible with 2 teeth (Fig. 1N), outer dens slightly narrower and more arcuate than inner dens, outer margin with 1–2 punctures near basal third, bearing very short to long seta. Maxilla (Fig. 1H) with galea, lacinia and palpiger fused, outer margin with 2 elongate setae, inner apical ¾ with dense setation, middle of length with about 8 broad lacinial dentes; maxillary palp 3-segmented, located on apex of palpiger, glabrous; I 2× as wide as long, II moderately transverse, glabrous, III as long as wide, apically papillate. Labium (Fig. 1O) with prementum transverse, 2× as wide as long, laterally with 1 very long seta near middle of length; labial palp 3-segmented located on apical margin of prementum; I globular, larger than 2, with a large seta, II similar to I but about 2× smaller, III small, 2× smaller than II, globular, apically papillate.

Rostrum. Slightly shorter to 1.2× longer than prothorax in lateral view, almost straight (Fig. 4C) to strongly downcurved (Fig. 4E), curvature uniform or stronger in basal ⅓; underside with whitish setae between scrobes, short and recumbent to erect and almost as long as segment 1 of funicle, integument forming an angle or tubercle near mouthparts, sometimes absent; scrobes elongate, narrow, extending from antennal insertion to apical margin of eyes, upper margin carinate, entirely straight; in dorsal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view rostrum about as wide as profemora, width similar overall, slightly widening near apex, bearing 5 carinae, the central one sometimes divided into two throughout, or basally and near antennal insertion, with small whitish setae oriented toward central carina, contiguous or not, area near mouthparts smooth and shiny, with very short setae oriented forward.

Antenna. Inserted at apical ¼ or ²/₅ of length; scape as long as protibiae, narrow, straight, slightly clavate at apex, 2 × wider there than in middle of length, contiguous or subcontiguous with anterior margin of eyes in repose; funicle 7-segmented, as long as ⅔ of length of scape, bearing short whitish setae, segment 1 longer than wide, 2 transverse to 2 × as long as wide, 5–7 transverse; club 3-segmented, oval, compact, with dense, short pubescence, segment 1 longer than 2+3.

Eyes. Moderately to strongly convex in dorsal view, exceeding the contour of head (Fig. 1B); in lateral view subcircular, contiguous with lower contour of head or closer to lower than upper contour of head.

Head capsule. Globular, coarsely punctate dorsally, forehead with a deep median groove (Fig. 1B); in lateral view integument smooth or scarcely punctate, at least with a row of punctures surrounding posterior margin of eyes, each bearing a seta (Figs 4–5).

Thorax. Prothorax. Transverse in dorsal view (W:L ratio: 1.16–1.40) apical margin straight or slightly bisinuate, ⅔ to ¾ as wide as basal margin, basal margin slightly bisinuate; sides subparallel or moderately to strongly convex, widest near base or near middle of length, more or less abruptly converging apicad, generally forming an apical constriction (collar) at least as long as width of scape at apex. Mesepimeron and Mesepisternum triangular, the latter reaching anterior margin of metepisternum. Metepisternum extending beyond lateral margin of metasternum, with ventral margin concave. Prosternum at least 2 × as long as than mesosternum, convex or forming a protruding prothoracic process between procoxae sometimes reduced to a small blunt tubercle; apical margin concave, basal margin straight; central area glabrous or with recumbent whitish scales, not overlapping; procoxal cavities inserted from middle of

Fig. 1 (see preceding page). **A–M**. Details of morphology and measurements of *Ebenacobius* Haran gen. nov. and *Derelomus* Schoenherr, 1825. **A**. *Ebenacobius rhodesianus* (Hesse, 1929) gen. et comb. nov. in dorsal view, with the white arrows showing where the measurements of width (*w*) and length (*L*) are made for the prothorax (top) and elytra (bottom). Black arrow showing the narrowing of prothorax near apical margin. **B**. Head in lateral view of *E. rhodesianus* with white arrow showing the groove on forehead and the black arrow showing the convexity of the eyes, exceeding the lateral curve of head. **C**. Head and apex of prothorax in dorsal view of *Derelomus chamaeropsis* Fabricius, 1798 with the white arrow showing flat forehead, lacking groove and black arrow showing the constriction on the prothorax near apical margin. **D**. Detail of the top-left part of the right elytron in *E. rhodesianus* showing the white scales on interstriae and with the well aligned punctures at base of stria 1 highlighted in white. **E**. Detail of the top-left part of the right elytron in *E. costalis* (Fåhraeus, 1844) gen. et comb. nov. showing the setae on interstriae and with the misaligned punctures at base of stria 1 highlighted in white. **F**. Protibia of males of *E. rhodesianus*, showing the apical acute mucro and the ante-apical brush of setae. **G**. Head and prothorax of *E. rhodesianus* in lateral view with the arrows showing where measurements of rostrum and prothorax length are made. **H**. Right maxilla of *E. rhodesianus* in dorsal view. **I**. Penis of *E. costalis* in dorsal view showing were measurements are made for the body of penis (white arrows: width; top right black arrows: length) and the length of apodemes (bottom right black arrows). **J**. Stridulatory plate (tergite VII) in male of *E. rhodesianus* in dorsal view, with the cuticular tubercles used for stridulation highlighted in white. **K–M**. Female genitalia. **K**. Ovipositor in *E. rhodesianus*. **L**. Sternite VIII, same species. **M**. Spermatheca, same species. **N**. Right mandible, same species. **O**. Labial prementum, same species. A–O: not to scale.

length to basal 1/6, not contiguous. Mesosternum 2 to 3 × as short as metasternum, transverse, convex, posteriorly projecting between mesocoxae and reaching middle of their length, posterior margin with metasternum straight; mesocoxal cavities separated by distance slightly shorter than their width. Metasternum more than 2 × as wide as long, convex laterally, medially canaliculate on posterior ⅓ of length, anterior margin projecting between mesocoxae, posterior margin projecting before middle of length of metacoxae, posterior margin slightly indented; metacoxal cavities 2 × as wide as long, separated by distance slightly shorter than their width.

Legs. Prothoracic legs (Fig. 1F) slightly longer and wider than mesothoracic legs; procoxa large, subspherical; protrochanter longer than wide, basally rounded, acute at apex; profemora similar in length to prothorax length or slightly shorter, widest near middle of length, internally sinuate or angulate in apical ⅓; protibiae slightly shorter than profemora, in cross-section subcircular, width regular or expanding from base to apex, external margin straight or downcurved in apical ⅓, internal margin bisinuate; apex slightly broadened with an internal mucro (acute and downcurved) and an anteapical brush of setae contiguous with mucro (Fig. 1F), apical margin obliquely truncate with antero/posteroventral margin with row of 15–20 elongate, pale brown, acute spines, homologous to setae; protarsus 5-segmented, ⅔ as long as protibia; segment 1 longer than wide; 2 and 3 transverse, 3 deeply bilobate; 4 ⅓ as long as 2; 5 as long as 2 + 3, widening apicad; protarsal claws free, simple or with a thickening or a tooth internally. Mesothoracic legs similar to prothoracic legs but shorter and slender, external margin of mesotibiae at least slightly arcuate outward in apical ½, with or without apical mucro. Metathoracic legs similar to mesothoracic legs, slightly longer, apical mucro shorter when present.

Scutellar shield. Exposed, small, rounded, slightly convex, glabrous.

Elytra. In dorsal view elongate (W:L ratio: 0.64–0.76), sides slightly convex, widest near middle of length (Fig. 1A), at humeral angles subquadrate, slightly wider than basal margin of prothorax; in lateral view convex, regular or more convex on declivity, lateral margin slightly bisinuate; 10-striate, striae at least slightly narrower than interstriae, 3–4 and 5–6 merging before apical margin, 9–10 merging or submerged in apical ⅓, 9 erased in basal 1/6 (distinct on Fig. 4J). Interstriae slightly to strongly convex, 9 more convex than 1–8 or carinate throughout. Vestiture (when visible) with 2–3 rows of scales or setae on each interstria, oriented posteriorly (Fig. 1D–E).

Abdomen. Venter nearly 3 × as long as than metasternum, laterally convex. Ventrite 1 medially slightly longer than 2, posterior margin bilobate; 2 ⅔ as long as 3+4+5; 2–4 with apical margin straight; integument of ventrites densely punctate, each puncture bearing a whitish seta oriented posteriorly. Tergites 1–6 with a basal dark band, in 1 and sometimes 2 interrupted in middle. Tergum 7 (stridulatory plate) with basal margin obtuse in middle (Fig. 1J), straight laterally, apical margin bilobate, setose; medially with two subparallel rows of 6–10 tubercles.

Terminalia. Tergum 8 transverse, subrectangular, basal margin straight, apical margin and posterior angles broadly convex, surface punctate, setose. Sternum 8 forming 2 small transverse separated sclerites, outer margin acute, downcurved inward. Spiculum gastrale nearly as long as body of penis, basally downcurved, medially flattened in cross-section, apically asymmetrically widening into two obtuse projections, apical margin straight. Tegmen nearly as long as penis body, connected, forming a ring around penis body. Penis body (Fig. 6) in dorsal view moderately to very elongate (W:L ratio: 0.5–0.26), basal margin bisinuate or concave, latero-basal edges rounded, sides bisinuate or subrectate or convex, converging apicad in apical 1/6 or strangled before apex, apical margin acute or acuminate or rounded or truncate; in lateral view curvature stronger in basal ½. Apodemes 2 × shorter to 2 × longer than penis body.

Female

Terminalia. Tergum 8 ⅔ × as long as sternum 8, transverse (W:L ratio: 2), apical margin regularly convex, setose, basal margin ill-sclerotized in middle, surface punctate, punctures condensed near apical margin. Tergum 9 similar in shape to tergum 8, 2 × smaller. Sternum 8 (Fig. 1L) slender, apical ¼ Y-shaped, arcuate widest near middle of length, moderately sclerotized. Coxites (Fig. 1K) 2 × shorter than sternum 8, narrowed apicad, moderately sclerotized; styli 2 × longer than wide, apically with 4–5 erect setae. Spermatheca stocky or slender (Fig. 1M), cornu wide and curved, nodulus rounded, collum and ramus inserted near base, forming 2 projections, transverse or 2 × longer than wide, contiguous or distinctly separated.

Sexual dimorphism

Females can be distinguished from males by their rostrum which is slightly narrower, at least slightly longer and less downcurved in lateral view. Females lack a prosternal process between procoxae or a cuticular elevation before procoxae.

Variation

Intraspecific size variation is moderate in this genus. The background colour of integument and dark patterns on dorsum can be, however, quite variable within a population. Males may show a substantial variation in size and shape of prothorax and of prosternal process. In 'minor' males, this process may be reduced to a small blunt tubercle between the procoxae.

Remarks

As defined here, this genus contains 19 species, but at least four additional species (only represented by one or two female specimens) await description (deposited in CBGP, FFWS and MNHN). The inconspicuous nature of the species in this genus and the presence of cryptic or closely related sympatric species in this group indicate that more species may be discovered with more focused sampling. The genus *Ebenacobius* gen. nov. provides another example of presence of a prothoracic process in males among the Afrotropical Derelomini (Haran *et al.* 2020). Prothoracic structures of males such as prothoracic horns are usually used in fights between males (Davis & Engel 2010). In most *Ebenacobius* the role of these structures remains unclear since they are generally quite small or not protruding forward (Fig. 4G).

Life history

Most species seem to develop in flowers of *Euclea* (Ebenaceae) although some seem to be associated with flowers of other dicot plant families (Apocynaceae, Sapotaceae). The detailed life cycle is known for *E. hessei* Haran gen. et sp. nov. on *Euclea natalensis* A.DC. (see details under that species). Adults may form massive aggregations on inflorescences of their host. Some species are inconspicuous and have only been collected using a light trap or by sifting leaf litter. In several species, field observations indicate a timed crepuscular flight phenology. Adults are generally active from late winter to summer, though some species are found all year round.

Distribution

In the current state of knowledge, the genus *Ebenacobius* gen. nov. is distributed in southern and south-eastern Africa, from the Western and Northern Cape Provinces of the Republic of South Africa to southern Malawi. The highest species diversity occurs in the north-east provinces of the Republic of South Africa, which is consistent with the distribution of representatives of the genus *Euclea* (Schmidt *et al.* 2002).

Key to species of Ebenacobius Haran gen. nov.

1. Claws simple 2
– Claws appendiculate internally 16

2. Prothorax and elytra with dorsum glabrous or with setae (Fig. 1D) 3
– Dorsum with small whitish scales (Fig. 1A, D) .... ***E. rhodesianus*** (Hesse, 1929) gen. et comb. nov.

3. Body covered with long erect setae, as long as length of segment 1 of funicle; apex of elytra acute; apical ⅓ of protibiae downcurved with a long internal mucro at apex (Fig. 2A) .... ***E. curvisetis*** Haran gen. et sp. nov.
– Body at most with recumbent setae, shorter than length of segment 1 of funicle; apex of elytra jointly rounded; protibiae straight, with a short internal mucro at apex 4

4. Rostrum short and almost straight in lateral view (Fig. 4C); in males, underside of rostrum smooth, lacking an angle or tubercle near mouthparts. Body integument generally uniformly pale brown (Fig. 2B), only 2% of specimens with dark dots near middle of length of interstriae 5 of elytra or forming a dark band between these dots. Males lacking a prosternal process near procoxae .... ***E. rectirostris*** Haran gen. et sp. nov.
– Rostrum elongated and distinctly downcurved in lateral view (Fig. 4D–J); in males, underside of rostrum with integument forming an angle or tubercle near mouthparts. Body integument generally with dark patterns on elytra and/or prothorax, or uniformly reddish brown (Figs 2C–I, 3A–E). Males with or without prosternal process near procoxae 5

5. Striae on elytra made of a double row on punctures (Fig. 2C). First segment of funicle elongate, 2.5 × as long as wide (Fig. 4E) ..... ***E. duplicatus*** Haran gen. et sp. nov.
– Striae with a single row of punctures (Fig. 1D). First segment of funicle of funicle at most 2 × longer than wide 6

6. Rostrum very elongate, in lateral view 1.2 × as long as prothorax (Fig. 4G). In males, prosternal process oriented backward ..... ***E. grobbelaarae*** Haran gen. et sp. nov.
– Rostrum shorter, generally as long as prothorax in lateral view (Fig. 4D), at most 1.1 × as long as prothorax (Fig. 4I). In males, prosternal process oriented forward (when present) 7

7. Basal ⅓ of striae 1 with punctures well aligned (Fig. 1D) 8
– Basal ⅓ of striae 1 with punctures slightly to strongly misaligned (Fig. 1E) .... ***E. costalis*** (Fåhraeus, 1844) gen. et comb. nov.

8. Dorsum (prothorax + elytra) with distinct dark pattern, forming longitudinal, transverse or oblique bands on elytra (Figs 2H–I, 3A–E); background colour of elytra generally pale yellow (only dark reddish in *E. kuscheli* gen. et sp. nov.; Fig. 2I) 10
– Dorsum uniformly reddish brown, lacking dark pattern on prothorax or elytra (Fig. 2F–G) 9

9. Eyes almost flat, moderately exceeding the lateral curve of head in dorsal view (Fig. 2F). In males prothorax almost forming a rectangle, not narrowed before apex near eyes. Body of penis short, 2 × as long as wide in dorsal view, strongly downcurved before middle of length in lateral view (Fig. 6F). Profemora in males smooth, lacking internal angle near middle of length .... ***E. thoracicus*** Haran gen. et sp. nov.
– Eyes convex, strongly exceeding the lateral curve of head in dorsal view (Fig. 2G). In males prothorax narrowed at apex near eyes. Body of penis elongate, more than 2 × as long as wide in dorsal view, moderately downcurved in lateral view (Fig. 6G). Profemora in males with an internal angle near middle of length ..... ***E. xhosa*** Haran gen. et sp. nov.

10. Second segment of funicle longer than wide. Prothorax densely punctate, space between larger punctures at most 2 × larger than diameter of punctures. Apodemes of penis as long as or longer than body of penis (Fig. 6K–N). Prothorax with dark bands or uniformly dark brown (Figs 2H–I, 3B–E) 11
– Second segment of funicle transverse. Prothorax with scattered puncturesseparated by a distance 2 to 3 × the diameter of punctures at least in some part of the central area. Apodemes of penis shorter than body of penis (Fig. 6J). Prothorax uniformly pale brown, similar to the background colour of elytra (Fig. 3A) ..... ***E. mulanjensis*** Haran gen. et sp. nov.

11. Prothorax with very short setae, shorter or as long as diameter of larger punctures, punctures not contiguous 12
– Prothorax with long setae, longer than diameter of larger punctures, punctures subcontiguous at least laterally ..... ***E. kuscheli*** Haran gen. et sp. nov.

12. Prothorax with longitudinal dark bands (Fig. 3B–E). In males rostrum moderately downcurved in lateral view (Fig. 5A, C, E, G) 13
– Prothorax uniformly dark brown (Fig. 2H). In males rostrum strongly downcurved in lateral view, almost forming a quarter of a circle (Fig. 4F) ..... ***E. san*** Haran gen. et sp. nov.

13. Prothorax with 2 longitudinal dark stripes on each side of the median line (Fig. 3C–E) 14
– Prothorax with 3 longitudinal dark bands, one median and two lateral (Fig. 3B) ..... ***E. hessei*** Haran gen. et sp. nov.

14. Scutellar shield and base of interstriae 1 pale brown, similar in colour to the rest of background colour of elytra; dark bands on prothorax not reaching apical margin (Fig. 3C–D) 15
– Scutellar shield and base of interstriae 1 dark brown; dark bands on prothorax generally reaching apical margin (Fig. 3E) ..... ***E. hippopotamorum*** Haran gen. et sp. nov.

15. Elytra glabrous in appearance, with very small setae, almost invisible. In males rostrum slightly shorter than prothorax in lateral view (Fig. 5C). Body of penis truncate at apex, sides widening from base to apex (Fig. 6L) ..... ***E. pedi*** Haran gen. et sp. nov.
– Dorsum of elytra with aligned recumbent and subcontiguous setae on interstriae 5–10. In males rostrum as long as prothorax in lateral view (Fig. 5E). Body of penis converging apically, acute at apex (Fig. 6M) ..... ***E. tsonga*** Haran gen. et sp. nov.

16. Dorsum with minute setae, glabrous in appearance (Fig. 3F). Body of penis longer than apodemes (Fig. 6O) ..... ***E. incognitus*** (Hesse, 1929) gen. et comb. nov.
– Dorsum with distinct erect or recumbent setae (Fig. 3G–H). Body of penis shorter than apodemes (Fig. 6P–Q) 17

17. Elytra with long erect and downcurved setae (Figs 3G, 5D). Apical margin of elytra yellow, similar to general background colour (Fig. 3G) ..... ***E. oberprieleri*** Haran gen. et sp. nov.
– Elytra with recumbent setae (Figs 3H, 5F). Apical margin of elytra black or dark brown, contrasting with the pale brown colour of background of elytra (Fig. 3H) 18

18. Interstriae with a row of long, erect piliform setae (see remarks section under that species) ..... ***E. turneri*** (Marshall, 1935) gen. et comb. nov.
– Interstriae with a row of short, not or slightly raised squamiform setae ..... ***E. atratus*** (Hesse, 1929) gen. et comb. nov.

Description of the species

Ebenacobius curvisetis Haran gen. et sp. nov.
urn:lsid:zoobank.org:act:3DD9C8C6-8783-49E7-B92E-4938BC82263C
Figs 2A, 4A, 6A

Differential diagnosis

Ebenacobius curvisetis Haran gen. et sp. nov. can be distinguished by the combination of simple claws and long erect setae on dorsum. It is also the sole species of the genus with apex of elytra forming an acute expansion.

Etymology

This species is named in reference to the peculiar downcurved setae on its dorsum.

Material examined

Holotype

REPUBLIC OF SOUTH AFRICA • ♂; "S. Afr. [REPUBLIC OF SOUTH AFRICA]; Limpopo Prov; Meletse Reserve 1003m; 24.36S – 27.39E" "24-26.11.2014. E-Y:3953. At light, bushveld; Leg. Ruth Müller" "Holotype; *Ebenacobius curvisetis* Haran 2022"; TMSA.

Paratypes

REPUBLIC OF SOUTH AFRICA – **Limpopo Province** • 1 spec.; Meletse Reserve, at center; 24°36′ S, 39°13′ E; 2 Dec. 2015; E. Seamark leg.; TMSA • 1 ♂, 2 ♀♀; D'Nyala Nature Reserve, Ellisras; 23°45′ S, 27°49′ E; 24–26 Sep. 1990; R. Oberprieler leg.; SANC • 1 ♂; same collection data as for preceeding; CBGP • 1 ♂; Lapalala Wilderness; 23°53′ S, 28°20′ E; 10–11 Jan. 1991; R. Oberprieler leg.; SANC • 2 ♂♂; Mogol Nature Reserve, Ellisras District; 23°58′ S, 27°45′ E; 19–23 Nov. 1979; S.J. van Tonder and C. Kok leg.; light trap; SANC • 2 ♀♀; Waterberg, Geelhoutbush farm; 24°22′ S, 27°34′ E; 10 Oct. 1995; Endrödy-Younga & Bellamy leg.; pyrethrum fogging of *Peltophorum africanum*; E-Y:3161; TMSA • 1 ♀; same locality as for preceding; 7 Oct. 1995; Endrödy-Younga & Bellamy leg.; UV light; E-Y:3154; TMSA • 1 ♀; Nylsvley Meteorological station; 24°40′ S, 28°42′ E; 25 Sep. 1975; Endrödy-Younga leg.; sifted litter; E-Y: 916; TMSA • 1 ♀; same locality as for preceding; 27 Jan. 1976; Endrödy-Younga leg.; sifted litter; E-Y:1015; TMSA • 1 ♀; Kwalata; Jan. 2011; at light; Ş. Procheş leg.; no. 2371; CBGP.

Description

Male

Body length. 3.2–3.5 mm.

Colour. Body integument pale brown; vestiture of elytra made of rows of erect setae, downcurved in apical half, as long as interstria width and of rows of short recumbent setae, each interstria with a row of long and two rows of short setae laterally; setae not concealing the integument.

Head. Rostrum as long as prothorax in lateral view, moderately downcurved, in dorsal view covered with suberect setae up to apex; antennae inserted at apical 1/4 of length; head capsule densely covered with erect setae in dorsal view, with row of longer setae along dorsal margin of eyes; eyes slightly convex, moderately exceeding lateral curve of head capsule in dorsal view; antennal funicle with segment 1 elongate, 2 × longer than wide, as long as 2+3, 4 isodiametric, 5–7 wider than long.

Prothorax. Wider than long (W:L ratio: 1.37), widest in basal half, sides rounded, narrowed in apical ½; integument shiny, with coarse punctures, space between punctures micropunctate, as wide as or narrower than diameter of larger punctures; setae oriented toward scutellar shield.

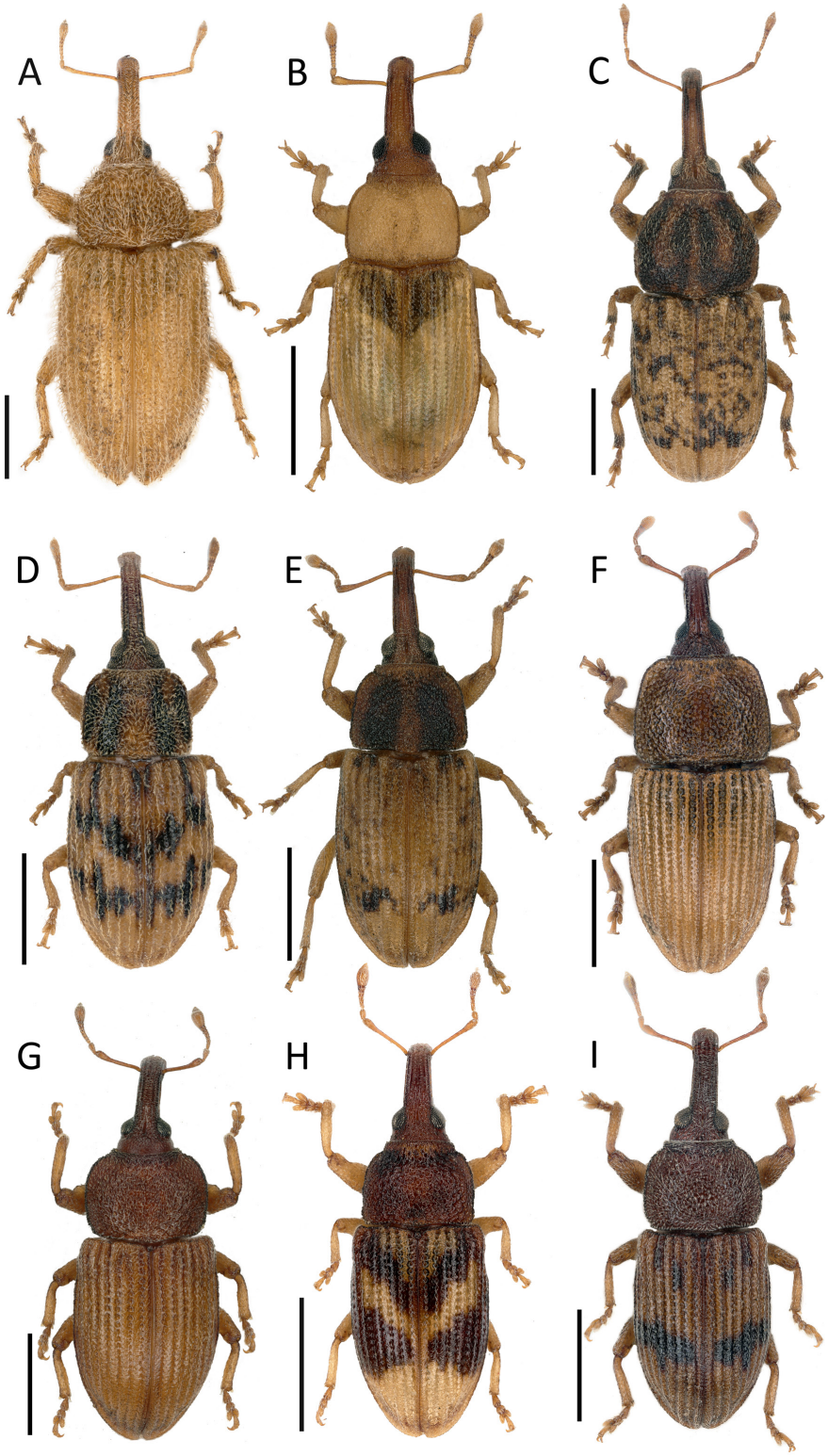

Fig. 2. A–I. Habitus of males of *Ebenacobius* Haran gen. nov. in dorsal view (part 1). **A**. *E. curvisetis* Haran gen. et sp. nov. **B**. *E. rectirostris* Haran gen. et sp. nov. **C**. *E. duplicatus* Haran gen. et sp. nov. **D**. *E. grobbelaarae* Haran gen. et sp. nov. **E**. *E. costalis* (Fåhraeus, 1844) gen. et comb. nov. **F**. *E. thoracicus* Haran gen. et sp. nov. **G**. *E. xhosa* Haran gen. et sp. nov. **H**. *E. san* Haran gen. et sp. nov. **I**. *E. kuscheli* Haran gen. et sp. nov. Scale bars = 1 mm.

Elytra. Sides slightly convex, widest near middle of length (W:L ratio: 0.64); humeri raised, forming a carina at base on interstria 7; each elytron separately acuminate apically; striae as wide or slightly narrower than interstriae, interstriae flat, 1–3 convex apicad, 9 entirely convex; scutellar shield rounded, bearing setae.

Abdomen. Underside mostly covered with short whitish scales.

Legs. Profemora moderately thickened in middle; protibiae straight in basal ⅔, downcurved apically; all tibiae armed with a strong apical mucro; claws simple.

Terminalia. Body of penis elongate (W:L ratio: 0.26), 2 × as long as apodemes, widest at base, narrowing from base to basal ⅓ of length, from there widening apicad, constricted before apex, apex flat; in lateral view curvature stronger in basal ⅓, narrowing apicad in apical ¼ (Fig. 6A).

Sexual dimorphism

Males and females can be distinguished by their rostrum which is longer than prothorax and narrower in ♀♀, as long as prothorax and thicker in ♂♂. Antennal insertion located at apical ⅓ in ♀♀ and at apical ¼ in ♂♂.

Life history

Ebenacobius curvisetis gen. et sp. nov. was collected with light traps and by sifting leaf litter. The host plant is unknown, two specimens were recorded once on the Fabaceae *Peltophorum africanum* Sond. Adults were collected from September to January.

Distribution

This species occurs in the Republic of South Africa where it seems restricted to the Limpopo Province.

Ebenacobius rectirostris Haran gen. et sp. nov.
urn:lsid:zoobank.org:act:960A68FE-5C99-4BBF-BFB2-3E4C4F72B87E
Figs 2B, 4C, 6B, 7A–C

Differential diagnosis

Ebenacobius rectirostris gen. et sp. nov. can be distinguished from other species of the genus by its short and straight rostrum in lateral view and its body integument glabrous, uniformly pale yellow or brownish at most with a transverse dark stripe at base and near middle of length between interstriae 5. Males lack a prosternal process. *Ebenacobius rectirostris* is morphologically closely related to *Derelomus pallidus* Fåhraeus, 1844 but in the latter species the interocular groove is lacking and the penis shows a distinct thickening near the base.

Etymology

This species is named in reference to its straight rostrum in lateral view, an apparently unique feature among species of *Ebenacobius* gen. nov.

Material examined

Holotype

REPUBLIC OF SOUTH AFRICA • ♂; "Rep. of South Africa [REPUBLIC OF SOUTH AFRICA]; Limpopo Pr. Mulati; 10.vii.2018; J. Haran leg." "-23.92 30.84; flowers *Euclea natalensis*; JHAR01147_0101" "Holotype; *Ebenacobius rectirostris*; Haran 2022"; SAMC.

Paratypes

REPUBLIC OF SOUTH AFRICA – **Limpopo Province** • 1 ♂, 1 ♀; same collection data as for holotype; TMSA • 1 ♂, 1 ♀; same collection data as for holotype; SAMC • 1 ♂, 1 ♀; same collection data as for holotype; MNHN • 1 ♂, 1 ♀; same collection data as for holotype; SANC • 1 ♂, 1 ♀; same collection data as for holotype; NHMUK • 1 ♂, 1 ♀, 100 specs (preserved in ethanol); same collection data as for holotype; CBGP • 3 ♀♀; Lapalala Nature Reserve; 23°30′36.0″ S, 28°10′12.0″ E; 21–22 Jan. 1987; R. Oberprieler leg.; SANC • 1 ♀; Mogol Nature Reserve, Ellisras District; 23°34′48.0″ S, 27°27′00.0″ E; 19–23 Nov. 1979; S.J. van Tonder and C. Kok leg.; light trap; SANC • 1 ♀; La Cotte, near Tzaneen; 9 Oct. 1979; Colin R. Owen leg.; USNM • 1 ♂; N Transvaal, Mmabolela estate; 22°40′ S, 28°15′ E; 8 Mar. 1973; Endrödy-Younga leg.; mercury vap. light; E-Y: 27; TMSA. – **Free State Province** • 1 ♀; Bloemfontein Naval Hill; 29°06.296′ S, 26°13.581′ E; 27 Nov. 2017; R. Borovec leg.; FFWS • 1 ♀; 5 km west of Maseru; 22 Oct. 1988; W. Wittmer leg.; TMSA – **Gauteng Province** • 1 ♂; Kwalata; Jan. 2011; Ş. Procheş leg.; on flowers of *Kiggelaria*; no. 2399; CBGP. – **Mpumalanga Province** • 2 ♂♂; Mbombela [formerly Nelspruit]; 25°30′02.7″ S, 30°57′16.5″ E; 4 Apr. 2018; J. Haran leg.; on inflorescences of *Cussonia spicata*; JHAR00843; CBGP • 2 ♀♀; Kruger National Park, Skukuza Research Camp; 25°00′ S, 31°35′ E; 1–16 Dec. 2010; James Harrison leg.; UV light trap; TMSA • 1 ♀; Kruger National Park, Skukuza Research Camp; 24°59′54.7″ S, 31°35′42.7″ E; 12–14 Dec. 1985; S. and J. Peck; thornscrub and riverine lightraps; CMN. – **KwaZulu-Natal Province** • 3 ♀♀; Qachas Neck; 30°09′36.0″ S, 28°40′48.0″ E; 30 Dec. 2018; J. Haran leg.; on inflorescences of *Searsia* sp. (Anacardiaceae); JHAR02070; CBGP. – **Western Cape Province** • 2 specs (preserved in ethanol); Stellenbosch Mountain; 33°57′36.0″ S, 18°52′48.0″ E; 17 Aug. 2018; J. Haran leg.; on inflorescences of *Searsia* sp. (Anacardiaceae); JHAR01360; CBGP • 1 spec. (preserved in ethanol); Jonkershoek Nature Reserve; 33°58′26.4″ S, 18°56′06.4″ E; 22 Jul. 2018; J. Haran leg.; beating fynbos; JHAR03295; CBGP • 1 ♂, 3 ♀♀; Gamka Nature Reserve; 33°40.301′ S, 21°53.397′ E; 25 Oct. 2019; R. Borovec leg.; night beating and sweeping of fynbos; FFWS • 1 ♂; R62, 20 km of West Barrydale, Op de Tradowpas; 33°55.265′ S, 20°30.805′ E; 15 Nov. 2016; R. Borovec leg.; sifting litter under *Galenia africana* L.; FFWS • 6 ♂♂, 4 ♀♀; North Uniondale, North Side Kammanasieberge; 33°32.348′ S, 22°58.613′ E; 22 Oct. 2019; R. Borovec leg.; FFWS • 1 ♀; 10 km south of Elands Bay; 32°30′12.5″ S, 18°20′31.4″ E; 27 Jul. 2019; J. Haran leg.; beating flowering *Lebeckia sericea* (Fabaceae); JHAR02488; CBGP.

Description

Male

Body length. 2.1–2.5 mm.

Colour. Body integument uniformly pale brown to brown (the dark triangle at base on elytra correspond to the dark sternites visible through the translucent integument of elytra), 5% of specimens with a dark dot on mid-length of interstriae 5, very few specimens with a dark transverse strip between interstriae 5 at base and near middle of length; dorsum with very short recumbent setae, glabrous and shiny in appearance.

Head. Rostrum as long as prothorax in lateral view, almost straight, regularly narrowing from base to apex; in dorsal view covered with recumbent non-contiguous setae; antennae inserted at apical 1/4 of length; head capsule glabrous and coarsely punctate in dorsal view; eyes convex, exceeding the lateral curve of head capsule in dorsal view; antennal funicle with segment 1 elongate, 1.5 × longer than wide, as long as 2–4, 4–7 wider than long.

Prothorax. Slightly wider than long (W:L ratio: 1.25), widest near middle of length, narrower there than elytra at humeral angles; sides subparallel in basal ⅔, narrowed in apical ⅓; apical constriction as long as width of apex of funicle; integument densely punctate, space between punctures micropunctate, narrower than diameter of larger punctures.

Elytra. Sides subparallel in basal half, widest near middle of length (W:L ratio: 0.70); humeri raised; apex jointly rounded; striae as wide or slightly narrower than interstriae, interstriae slightly convex, 9 forming a carina; scutellar shield rounded, glabrous.

Abdomen. Underside covered with minute whitish setae, glabrous in appearance.

Legs. Profemora strongly thickened near middle of length; tibiae with external margin straight, armed with a small apical mucro; claws simple.

Terminalia. Body of penis elongate (W:L ratio: 0.30), as long as apodemes, widest at base, slightly narrowing from base to apical ⅓ of length, widening and then narrowing in apical ⅓, apex truncate; in lateral view curvature stronger in basal half, narrowing sharply near apex (Fig. 6B).

Sexual dimorphism

Females can be distinguished from males by their rostrum which is slightly narrower and longer than in ♂♂. Antennae inserted slightly closer to middle of length in ♀♀ than in ♂♂.

Remarks

Ebenacobius rectirostris gen. et sp. nov. is remarkably morphologically similar to *Derelomus pallidus* and was collected in sympatry with this species at several sites in the Western Cape Province (JHAR01360/2488/3295), though always in smaller numbers. *Derelomus pallidus* is associated with inflorescences of *Euclea racemosa* L. and seems restricted to the Western Cape Province (JH unpubl. obs.). *Ebenacobius rectirostris* by contrast is found abundantly in the North Eastern provinces of South Africa on inflorescences of *Euclea natalensis*. This peculiar case suggests that the genus *Euclea* was independently colonized by two derelomine genera and that these shifts resulted in strong morphological convergences. *Ebenacobius rectirostris* is a quite variable species, with some populations from the Western Cape Province exhibiting a slightly larger body size, longer rostrum and darker integuments. The sequencing of the COI barcode showed high intraspecific uncorrected *p*-distances ranging up to 2.74% between individuals from the Western Cape Province (JHAR01360) and the Mpumalanga (JHAR00843). This elevated level of intraspecific divergence suggests that several genetic lineages might exist in this species as currently considered. To date morphological examination of available specimens showed no morphological differences among specimens presenting a high level of genetic differentiation.

Life history

Ebenacobius rectirostris gen. et sp. nov. was collected in large numbers on flowers of *Euclea natalensis* in the Limpopo Province. The records in the Western Cape Province suggest that this species may use other species of *Euclea* as host plants. The few isolated records on inflorescences of Anacardiaceae, Araliaceae and Fabaceae likely correspond to host plants only used as shelter or refuge by adults. Adults are attracted by UV lights and have been collected by sifting leaf litter, suggesting that this species may be active at night and hide during the day at the base of plants. This species was recorded in sympatry with *E. atratus* gen. et comb. nov. Adults were collected almost all year round.

Distribution

This species is widely distributed in the Republic of South Africa, in the Gauteng, Kwazulu-Natal, Limpopo, Mpumalanga and Western Cape Provinces.

Ebenacobius duplicatus Haran gen. et sp. nov.
urn:lsid:zoobank.org:act:ADCA7273-EAD1-4701-A4BD-3C76BAA93182
Figs 2C, 4E, 6C

Differential diagnosis

Ebenacobius duplicatus Haran gen. et sp. nov. can be distinguished from other species of the genus by the distinct two rows of more or less well aligned punctures on elytral striae 1 to 8. Some specimens of *E. costalis* gen. et comb. nov. have irregular striae (Fig. 1E), but they never form two rows throughout the length of the striae.

Etymology

This species is named in reference to its peculiar striae, forming two parallel rows of punctures.

Type material

Holotype

REPUBLIC OF SOUTH AFRICA • ♂; "S. Afr. [REPUBLIC OF SOUTH AFRICA]; Limpopo Prov. Soutpans, near vivo. 10.1.2009; T. Beyers" "Holotype; *Ebenacobius duplicatus*; Haran 2022"; TMSA.

Paratypes

REPUBLIC OF SOUTH AFRICA – **Limpopo Province** • 1 ♂; Tshipisie, 22°36′ E, 30°10′ S; 11 Dec. 2005; Gussmann and Müller leg.; light trap; E-Y: 3693; TMSA • 1 ♀; Amatola farm, Soutpans; 22°56′ S, 29°23′ E; 17 Dec. 2003; R. Müller leg.; light trap; E-Y:3600; TMSA. – **Mpumalanga Province** • 3 ♀♀; Kruger National Park, Skukuza-Sabi River; 24°57′ S, 31°42′ E; 22 Feb. 1995; Endrödy-Younga leg.; riverinefor-litter; E-Y:3111; TMSA • 1 ♂; Kruger National Park, Shirombe Pan; 22°44′ S, 31°24′ E; 24 Jan. 1984; M.W. Mansell leg. SANC • 1 ♂; Kruger National Park, Skukuza Research Camp; 25°00′ S, 31°35′ E; 1–16 Dec. 2010; James Harrison leg.; UV light trap; TMSA • 1 ♂; same collection data as for preceding; CBGP • 3 ♀♀; Kruger National Park, Skukuza Research Camp; 24°59′54.7″ S 31°35′42.7″ E; 12–14 Dec 1985; S. and J. Peck; thornscrub and riverine lightraps; CMN.

Description

Male

Body length. 3.0–4.0 mm.

Colour. Body integument brown to pale brown, apical ⅓ on tibiae, temples and rostrum dark brown; prothorax with two longitudinal dark strips on each side of the median line; basal ¾ of elytra with a dense network of transverse shades; dorsum (prothorax + elytra) with short recumbent whitish setae forming 1–2 rows on each interstria, not concealing the integument.

Head. Rostrum as long as prothorax in lateral view, strongly and regularly downcurved; underside with a row of long setae, almost as long as 1st segment of funicle, integument forming an angle before apex; in dorsal view covered with recumbent setae, more densely condensed basally; antennae inserted near apical ⅓ of length; head capsule coarsely punctate in dorsal view, with a short seta on each puncture, forming more dense tuft near dorsal margin on eyes; eyes slightly convex, moderately exceeding the lateral curve of head capsule in dorsal view; antennal funicle with segment 1 elongate, 2 × longer than wide, as long as 2–4, 5–7 wider than long.

Prothorax. Variable in shape; slightly wider than long (W:L ratio: 1.16), widest at middle of length or in basal half, as wide as or narrower than elytra at humeral angles; sides slightly rounded or subparallel in basal half; apical constriction as long as width of apex of funicle; basal margin impressed near scutellar shield; integument densely punctate, space between punctures smooth and shiny, narrower than or equal

to diameter of punctures; setae recumbent, oriented toward scutellar shield; prosternal process inserted between procoxae, directed anteriorly, truncate at apex.

Elytra. Sides subparallel in basal half, widest near middle of length (W:L ratio: 0.75); humeri raised; apex jointly rounded; striae made of two subparallel rows of punctures, wider than interstriae, interstriae convex, 9 forming a carina; scutellar shield rounded, glabrous.

Abdomen. Underside covered with small non-contiguous whitish setae.

Legs. Profemora moderately thickened near middle of length; protibiae with external margin straight, meso and meta tibiae curved outward in apical half; tibiae armed with a small apical mucro; claws simple.

Terminalia. Body of penis elongate (W:L ratio: 0.38), slightly shorter that apodemes, widest at base, sides subparallel, narrowing in apical 1/5, apex acuminate; in lateral view curvature strong in basal half, straight in apical half, widening from base to apical 1/4, narrowing apicad in apical 1/4 (Fig. 6C).

Sexual dimorphism

Females can be distinguished from males by their rostrum which is narrower in dorsal view and less downcurved in lateral view than in ♂♂.

Remarks

The male specimens of this species show substantial variation of size and shape of prothorax,

Life history

The host plant of this species is unknown. Adult specimens were collected in December, January and February in leaf litter or using light traps.

Distribution

Republic of South Africa (Limpopo and Mpumalanga Provinces).

Ebenacobius grobbelaarae Haran gen. et sp. nov.
urn:lsid:zoobank.org:act:E4651F33-88D1-4229-81A9-817DB4FF1FFE
Figs 2D, 4G, 6D

Differential diagnosis

This species can be distinguished by the peculiar shape of the rostrum that is very elongate and strongly downcurved at base in lateral view (Fig. 4G). In males, the prosternal process is directed backward (when present).

Etymology

Ebenacobius grobbelaarae Haran gen. et sp. nov. is dedicated to our colleague Beth Grobbelaar, entomologist and collection manager at SANC who first recorded specimens of this new taxon.

Type material

Holotype

REPUBLIC OF SOUTH AFRICA • ♂; "SOUTH AFRICA [REPUBLIC OF SOUTH AFRICA], Tvl [Limpopo Province]; D'Nyala Nat. Res. Ellisras District; 23.45S – 27.49E; xii.1987; B. Grobbelaar" "Holotype; *Ebenacobius grobbelaarae*; Haran 2022"; SANC.

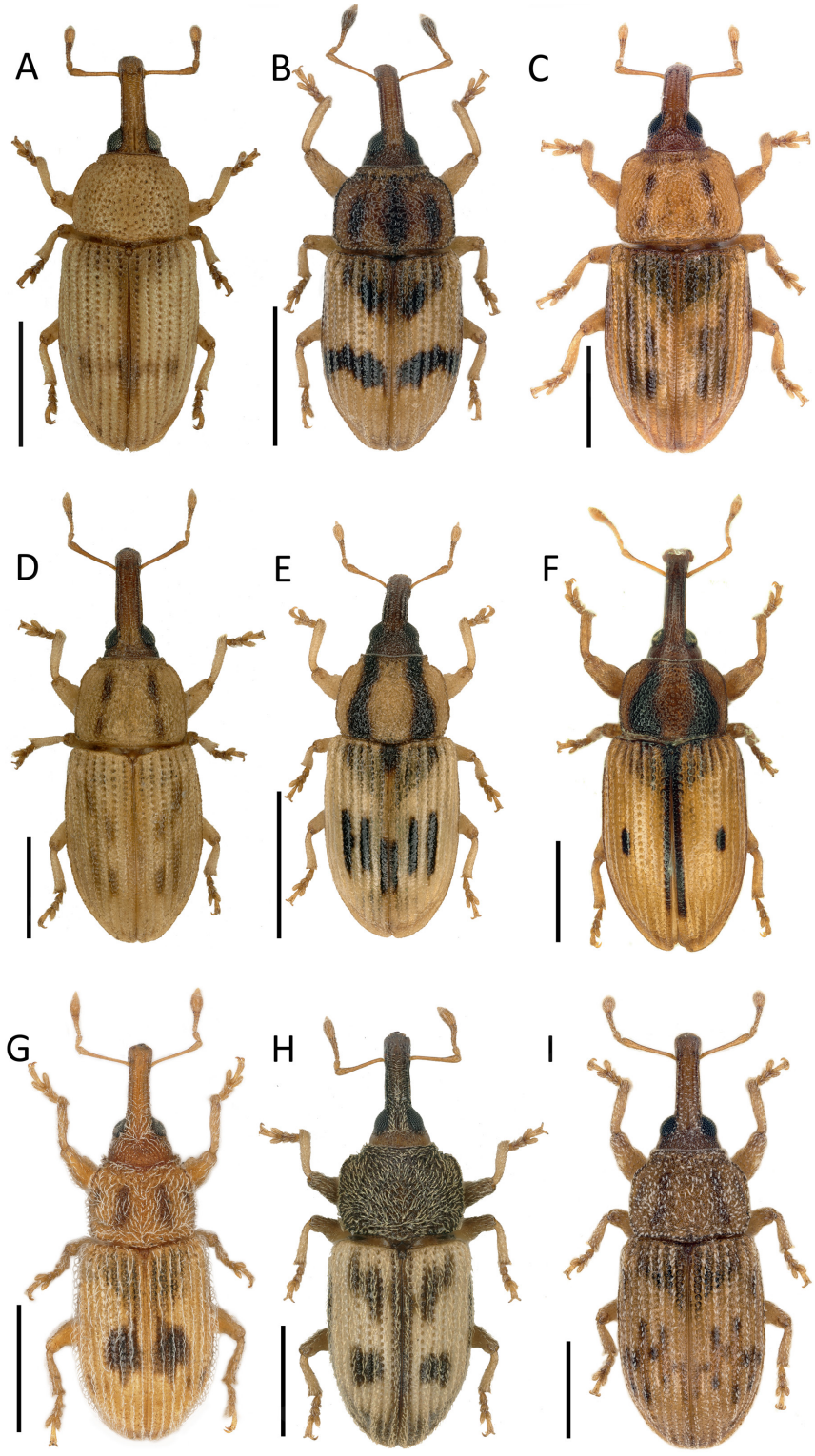

Fig. 3. A–I. Habitus of males of *Ebenacobius* Haran gen. nov. in dorsal view (part 2). **A**. *E. mulanjensis* Haran gen. et sp. nov. **B**. *E. hessei* Haran gen. et sp. nov. **C**. *E. pedi* Haran gen. et sp. nov. **D**. *E. tsonga* Haran gen. et sp. nov. **E**. *E. hippopotamorum* Haran gen. et sp. nov. **F**. *E. incognitus* (Hesse, 1929) gen. et comb. nov. **G**. *E. oberprieleri* Haran gen. et sp. nov. **H**. *E. turneri* (Marshall, 1935) gen. et comb. nov. **I**. *E. rhodesianus* (Hesse, 1929) gen. et comb. nov. Scale bars = 1 mm.

Paratypes

REPUBLIC OF SOUTH AFRICA – **Limpopo Province** • 2 ♂♂, 3 ♀♀; same collection data as for holotype; SANC • 1 ♂; same collection data as for holotype; CBGP • 1 ♀; Tshitangani forest patch, East of Louis Trichard; 22°54.715′ S, 30°20.382′ E; 10 Dec. 2017; R. Borovec leg.; FFWS. – **Gauteng Province** • 1 ♀; Pretoria, hill inside of town; 25°41.507′ S, 28°12.534′ E; 3 Dec. 2017; R. Borovec leg.; general sweeping (grasslands) and beating of shrubs and trees; FFWS. – **North West Province** • 3 ♂♂; Saartjiesnek Farm near Hartbeestpoort; 25°45′ S, 27°56′ E; 3 Dec. 1995; R. Stals leg.; on flower head of *Protea caffra* (Proteaceae); SANC • 1 ♂, 1 ♀; 25 km west of Pretoria; 23–29 Nov. 1984; H. and A. Howden leg.; SANC • 1 ♂; same collection data as for preceding; CMN.

Description

Male

Body length. 2.9–3.1 mm.

Colour. Body integument pale brown, head reddish-brown, prothorax with two ill-defined dark-brown stripes on each side on the median line, elytra with two oblique dark-brown stripes, one situated three punctures below humeral angle to mid-length of elytral suture, another at level of metafemora laterally to apical ⅓ of suture, dark strips extending on odd interstriae; base of interstriae 1 and 5 usually dark-brown; dorsum (prothorax + elytra) with recumbent contiguous setae forming 1–2 row on each interstria, not concealing the integument.

Head. Rostrum 1.2 × longer than prothorax in lateral view, strongly downcurved at base, then curvature regular; underside with row of setae, almost as long as 2nd segment of funicle, integument forming small tubercle before apex; in dorsal view covered with recumbent contiguous setae; antennae inserted at 3/5 of length; head capsule coarsely punctate in dorsal view, with contiguous setae, forming more dense tuft near dorsal margin on eyes; eyes slightly convex, moderately exceeding the lateral curve of head capsule in dorsal view; antennal funicle with segment 1 elongate, 2 × longer than wide, as long as 2–4, 5–7 wider than long.

Prothorax. Wider than long (W:L ratio: 1.27), widest near base, narrower there than elytra at humeral angles; sides subparallel in basal ¾, slightly and regularly converging apicad; apical constriction as long as width of funicle in middle of length; lateral carina forming cuticular expansion at apex, before constriction; integument densely punctate, space between punctures smooth and shiny, narrower than or equal to diameter of punctures; setae recumbent, contiguous, oriented toward scutellar shield; prosternal process inserted between procoxae, directed posteriorly, 1.5 to 4 × longer than wide, sides straight or forming a spatula, truncate at apex.

Elytra. Sides slightly convex, widest near middle of length (W:L ratio: 0.68); humeri raised; apex jointly rounded; striae made of one row of punctures, as wide as or slightly narrower than interstriae; interstriae convex, 1-3-5 more convex apically, 9 forming a carina; scutellar shield rounded, glabrous.

Abdomen. Underside covered with small non-contiguous whitish setae.

Legs. Profemora moderately thickened near middle of length; protibiae with external margin straight, meso- and metatibiae curved outward in apical half; tibiae armed with a small apical mucro, reduced and almost invisible on mesotibiae; claws simple.

Terminalia. Body of penis elongate (W:L ratio: 0.34), almost 2 × shorter than apodemes, sides subparallel in dorsal view, narrowing in apical 1/5, apex obtuse; in lateral view curvature stronger in basal half, moderate in apical half, width regular (Fig. 6D).

Sexual dimorphism

Females can be distinguished from males by their rostrum which is less downcurved basally in lateral view than in ♂♂. The dorsal curve of the rostrum is also continuous with the curve of the head (forming an obtuse angle in ♂♂; Fig. 4G).

Remarks

As is the case in several species of Derelomini (Haran *et al.* 2020), this species has major and minor males. In minor males, the prosternal process may be reduced to a small tubercle between the procoxae. This species represents the first case of a prosternal process oriented backward in derelomine weevils.

Life history

The host plant of this species is unknown, adults were collected in November and December. Collected once in the same sampling event together with *E. atratus* gen. et comb. nov.

Distribution

Republic of South Africa (Gauteng, Limpopo and North West Provinces).

Ebenacobius costalis (Fåhraeus, 1844) gen. et comb. nov.
Figs 1E, I, 2E, 4I, 6E

Derelomus costalis Fåhraeus, 1844: 93.
Derelomus rugosicollis Hesse, 1929: 530. **Syn. nov.**

Differential diagnosis

Ebenacobius costalis gen. et comb. nov. can be distinguished from other species of the genus by the combination of basal ⅓ of first stria with a single row of at least slightly misaligned punctures (Fig. 1E) and by the rostrum moderately downcurved and only slightly longer than prothorax (1.1 ×) in lateral view (Fig. 4I).

Type material

Lectotype of *Derelomus costalis* Fåhraeus, 1844 (here designated)
REPUBLIC OF SOUTH AFRICA • "♂" "Cap. B. Spei. [REPUBLIC OF SOUTH AFRICA, Western Cape Province]" "Drege" "3758. E91+" "Lectotype ♂; *Derelomus. costalis*; Fåhraeus, 1844; Haran Des. 2022" "*Ebenacobius*; *costalis*; (Fåhraeus, 1844); Haran 2022"; NHRS.

Lectotype of *Derelomus rugosicollis* Hesse, 1929 (here designated)
REPUBLIC OF SOUTH AFRICA • 1 ♂; "Mfongosi; Zululand [REPUBLIC OF SOUTH AFRICA, KwaZulu-Natal Province]" "Zululand; Mfongosi; Apr 1923; W E Jones" "*Derelomus*; *rugosicollis*; Types Hesse" "Type [red label]" "Type; SAM/Ent; 4037 [red label]" "Lectotype ♂; *Derelomus; rugosicollis*; Hesse, 1929; Haran Des. 2022" "*Ebenacobius*; *costalis*; (Fåhraeus, 1844); Haran 2022"; SAMC.

Paralectotype of *Derelomus costalis* Fåhraeus, 1844
REPUBLIC OF SOUTH AFRICA • 1 ♀; same collection data as for lectotype of *Derelomus rugosicollis* excluding red type label; "Paralectotype ♀; *Derelomus; rugosicollis*; Hesse, 1929; Haran Des. 2022" "*Ebenacobius*; *costalis*; (Fåhraeus, 1844); Haran 2022"; SAMC.

Other material examined

REPUBLIC OF SOUTH AFRICA – **Eastern Cape Province** • 1 ♀; Kirkwood; 33°22′48.0″ S, 25°27′36.0″ E; 15 Jul. 2019; J. Haran leg.; on yellow Asteraceae; JHAR02390_0101; CBGP • 1 ♂, 1 ♀; Alexandria Forest Station; 33°43′ S, 26°23′ E; 3 Dec. 1987; Endrödy-Younga leg.; general collection;

E-Y: 2549; TMSA • 1 ♀; Little Karoo, Baviaanskloof; 33°39′ S, 24°31′ E; 6 Dec. 1995; C.L. Bellamy leg.; beating; E-Y: 3172; TMSA. – **Kwazulu-Natal Province** • 2 ♂♂; Pongolapoort; 27°25′15.7″ S, 31°55′10.3″ E; Oct. 2009; Ş. Procheş leg.; on *Schotia brachypetala* (Fabaceae); JHAR04161-62; CBGP. – **Western Cape Province** • 1 ♀; Plettenberg Bay; 34°03′ S, 23°23′ E; 13 Feb. 1990; V.M. Uys leg.; SANC • 4 ♀♀; CT [Cape Town]; Nov. 1900; CleDoux leg.; acc67769; USNM.

Redescription

Male

Body length. 3.0–3.2 mm.

Colour. Body integument pale brown, head reddish-brown, prothorax with two large dark-brown areas on each side on the median line, elytra generally with a dense network of transverse dark shades on basal ⅔, sometimes reduced to transverse band on apical ⅔ or absent; dorsum (prothorax + elytra) with minute recumbent setae, not contiguous.

Head. Rostrum 1.1 × longer than prothorax in lateral view, moderately downcurved, slightly more near base; underside with row of setae, almost as long as 2nd segment of funicle, integument forming small tubercle before apex; in dorsal view covered with recumbent non-contiguous setae; antennae inserted at ⅔ of length; head capsule coarsely punctate in dorsal view, with non-contiguous setae, setae slightly longer near dorsal margin on eyes; eyes convex, exceeding the lateral curve of head capsule in dorsal view; antennal funicle with segment 1 elongate, 1.5 × longer than wide, as long as 2–4, 3–7 wider than long.

Prothorax. Wider than long (W:L ratio: 1.3), widest near base, narrower there than elytra at humeral angles; sides subparallel in basal ¾, slightly and regularly converging apicad; apical constriction as long as width of funicle at apex; integument densely punctate, space between punctures smooth and shiny, narrower than or equal to diameter of punctures; setae in each puncture very short, recumbent, not exceeding in length the diameter of punctures; prosternal process reduced forming a small tubercle between the procoxae.

Elytra. Sides slightly convex, widest near middle of length (W:L ratio: 0.68); humeri raised; apex jointly rounded; striae made of one row of more or less misaligned punctures, at least misaligned on basal ⅓ of stria 1, narrower than interstriae; interstriae flat, 1-3-5 convex apically, 9 entirely convex; scutellar shield rounded, glabrous.

Abdomen. Underside covered with small non-contiguous whitish setae.

Legs. Profemora strongly thickened near middle of length; protibiae with external margin straight, meso- and metatibiae curved outward in apical half; tibiae armed with small apical mucro; claws simple.

Terminalia. Body of penis elongate (W:L ratio: 0.32), as long as apodemes, sides slightly bisinuate in dorsal view, widest near apical ⅓, rounded and converging in apical ⅓, apex acuminate; in lateral view curvature stronger in basal ⅓, almost straight in apical ⅔, width slightly expanding apicad in basal ⅔ (Fig. 6E).

Sexual dimorphism

Females can be distinguished from males by their rostrum which is narrower and distinctly longer, 1.3 × longer than prothorax in lateral view (1.1 in ♂♂).

Remarks

In the collection housed at NHRS, a male specimen with the labels “Cap. B. Spei.” and “Drège” and corresponding to the description of *Derelomus costalis* in all respects was located. This specimen is the

unique individual available and the description does not refer to a specific holotype, it is therefore here designated as the lectotype of *Derelomus costalis* Fåhraeus, 1844 and was labeled accordingly. In the collections housed at SAMC, a male specimen with the labels "Mfongosi; Zululand" and "*Derelomus*; *rugosicollis*; Types; Hesse [hand written]" was identified. The description only refers to an undetermined number of males and females forming the type series. In the absence of a specific holotype designated for this species, the male specimen reported above is here designated as the lectotype for *Derelomus rugosicollis* Hesse, 1929 and was labeled accordingly. A detailed examination of the external and internal morphology of this specimen revealed no differences with the lectotype of *Derelomus costalis*. The name *Derelomus rugosicollis* is therefore a junior synonym of *Derelomus costalis*. It should be noted that the lectotypes of both *D. costalis* and *D. rugosicollis* are young ill-sclerotized specimens and that their uniformly pale colour is not representative of the colour pattern of the species. A redescription of this species is provided to account for the patterns found on fully sclerotized specimens of this species. In some specimens from the western Cape and Kwazulu-Natal Provinces of the Republic of South Africa, striae 9 are not erased in basal 1/6, but subcontiguous or merged with striae of 10.

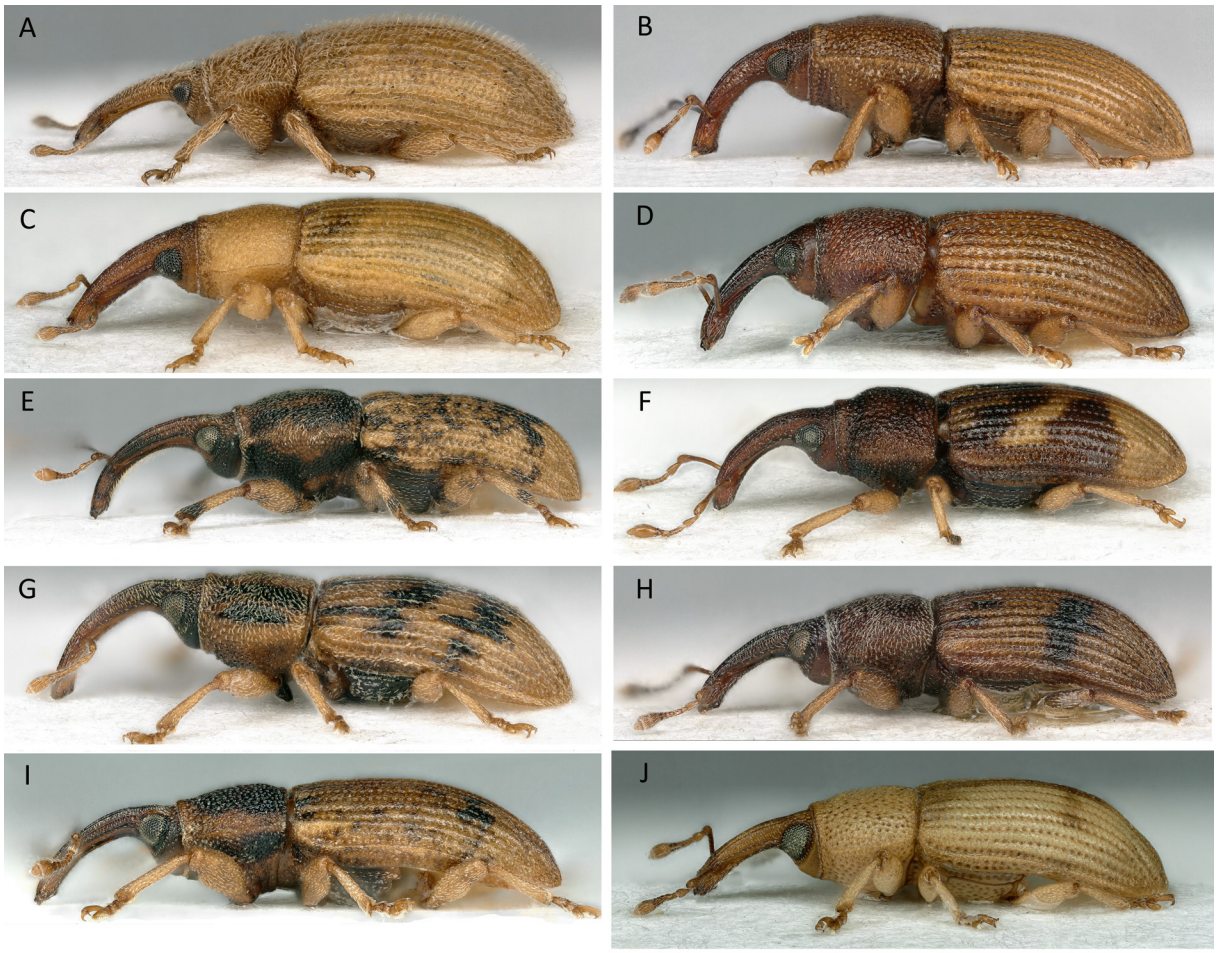

Fig. 4. A–J. Habitus of males of *Ebenacobius* Haran gen. nov. in lateral view (part 1). **A**. *E. curvisetis* Haran gen. et sp. nov. **B**. *E. thoracicus* Haran gen. et sp. nov. **C**. *E. rectirostris* Haran gen. et sp. nov. **D**. *E. xhosa* Haran gen. et sp. nov. **E**. *E. duplicatus* Haran gen. et sp. nov. **F**. *E. san* Haran gen. et sp. nov. **G**. *E. grobbelaarae* Haran gen. et sp. nov. **H**. *E. kuscheli* Haran gen. et sp. nov. **I**. *E. costalis* (Fåhraeus, 1844) gen. et comb. nov. **J**. *E. mulanjensis* Haran gen. et sp. nov. A–J = not to scale.

Life history

The host plant of *E. costalis* gen. et comb. nov. is unknown, adults have been sporadically collected on flowers of Asteraceae and Fabaceae, which are probably only used as shelters by this species. Adults were collected in February, July, October, November and December.

Distribution

Republic of South Africa (Eastern Cape, Kwazulu-Natal and Western Cape Provinces).

Ebenacobius thoracicus Haran gen. et sp. nov.
urn:lsid:zoobank.org:act:8F86FB49-B989-447A-BAE8-4F814D47E320
Figs 2F, 4B, 6F

Differential diagnosis

Ebenacobius thoracicus gen. et sp. nov. can be distinguished from other species of the genus by its uniformly reddish integuments and the peculiar shape of prothorax in males, almost rectangular, with a very short apical constriction (Fig. 2F). The body penis is very short in this species, being at most 2× longer than wide in dorsal view (Fig. 6F). *Ebenacobius thoracicus* is similar to *E. xhosa* gen. et sp. nov. in general appearance, but the latter species has convex eyes (flatter in *E. thoracicus*, only slightly exceeding lateral curve of head in lateral view), males lack a distinct prosternal process (visible and directed forward in *E. thoracicus*) and show an internal angle on profemora (profemora smooth in *E. thoracicus*).

Etymology

This species is named in reference to the specific shape of the prothorax in males, being almost rectangular.

Type material

Holotype

MOZAMBIQUE • ♂; "MOZAMBIQUE, Inhaca Island; 12.ii.1980; E. Lavabre leg." "-26.01 32.91. *Mimusops obovata*; JHAR03125_0101" "Holotype ♂; *Ebenacobius thoracicus*; Haran 2022"; SAMC.

Paratypes

MOZAMBIQUE • 1 ♀; same collection data as for holotype; SAMC • 2 ♂♂, 1 ♀, 2 specs (preserved in ethanol); same collection data as for holotype; CBGP.

REPUBLIC OF SOUTH AFRICA – **Limpopo Province** • 9 ♀♀; Lajuma nr. [near] Vivo, wilderness camp; 23°02.358′ S, 29°26954′ E; 11 Dec. 2017; R. Borovec leg.; light trap collection, indigenous forest; FFWS • 1 ♀; same locality as for preceding; 23°02.305′ S, 29°26.426′ E; 12 Dec. 2017; R. Borovec leg.; canopy forest, sifting; FFWS.

Description

Male

Body length. 2.9–3.1 mm.

Colour. Body integument uniformly reddish-brown, head and prothorax slightly darker; dorsum (prothorax + elytra) with minute recumbent setae, not contiguous on prothorax, subcontiguous and forming rows on interstriae.

Head. Rostrum shorter than prothorax in lateral view, strongly downcurved, a little more near base; underside with row of setae, almost as long as 2nd segment of funicle, integument forming angle before apex; in dorsal view covered with recumbent non-contiguous setae; antennae inserted at apical ⅓ of length; head capsule coarsely punctate in dorsal view, with minute setae, glabrous in appearance; eyes slightly convex, moderately exceeding lateral curve of head capsule in dorsal view; antennal funicle with segment 1 elongate, 2 × longer than wide, as long as 2–4, 3–7 wider than long.

Prothorax. Wider than long (W:L ratio: 1.3), widest near base, base as wide as elytra at humeral angles; sides subparallel in basal ½, slightly and regularly converging apicad in apical ½; apical constriction very short, as long as width of funicle at base; integument densely punctate, space between punctures smooth and shiny, wider than diameter of punctures, with smaller punctures 3 × smaller than larger punctures; setae in each larger puncture very short, recumbent, not exceeding in length the diameter of these punctures; prosternal process oriented forward, forming a wide spatula.

Elytra. Sides slightly convex, widest before middle of length (W:L ratio: 0.74); humeri raised; apex jointly rounded; striae with punctures well aligned, narrower than interstriae; interstriae flat, 1-3-5 convex apically, 9 entirely convex; scutellar shield rounded, glabrous.

Abdomen. Underside covered with small non-contiguous whitish setae.

Legs. Profemora strongly thickened near middle of length; pro- and mesotibiae with external margin straight, metatibiae curved outward in apical half; tibiae armed with a small apical mucro, on metatibiae very small; claws simple.

Terminalia. Body of penis short (W:L ratio: 0.5), ⅓ shorter than apodemes, sides subparallel in dorsal view, apex obtuse; in lateral view curvature strong in basal ½, almost straight in apical ½, width slightly expanding apicad from mid length and abruptly narrowing in apical 1/5 (Fig. 6F).

Sexual dimorphism

Females can be distinguished from males by their rostrum which is longer (slightly longer than prothorax in lateral view) and almost straight.

Life history

Specimens from Mozambique (data JHAR03125) were found aggregated on flowers of *Mimusops obovata* Sond. (Sapotaceae), which probably constitutes its host plant. Adults were collected in February and December.

Distribution

Mozambique (Maputo Province) and Republic of South Africa (Limpopo Province).

Ebenacobius xhosa Haran gen. et sp. nov.
urn:lsid:zoobank.org:act:3BF246BA-CB1D-4434-971E-D20CBBF78D3F
Figs 2G, 4D, 6G

Differential diagnosis

Ebenacobius xhosa gen. et sp. nov. can be distinguished by the combination of uniformly reddish dorsum, lacking dark pattern made of strips or dots, the convexity of eyes distinctly exceeding the lateral curve of the head in dorsal view and the profemora angled internally (only males available).

Etymology

This species is dedicated to the Xhosa people, inhabitants of the Eastern Cape Province of the Republic of South Africa, where the few known specimens of this taxa were collected.

Type material

Holotype

REPUBLIC OF SOUTH AFRICA • 1 ♂; "SOUTH AFRICA, CP. [Eastern Cape Province]; Thomas Bains Nat. Res. nr. Grahamstown; 33.24S. 26.30E; 500m 3.xii1992; R. Oberprieler" "NATIONAL COLL. OF INSECTS; Pretoria, S. Afr." "Holotype; *Ebenacobius xhosa*; Haran 2022"; SANC.

Paratype

REPUBLIC OF SOUTH AFRICA • 1 ♂; same collection data as for holotype; SANC.

Description

Male

Body length. 3.0–3.2 mm.

Colour. Body integument uniformly reddish-brown, head and prothorax slightly darker; dorsum (prothorax + elytra) with small recumbent setae, contiguous, forming 2 rows on interstriae.

Head. Rostrum as long as prothorax in lateral view, downcurved near base, moderately downcurved in apical ⅔; underside with a row of setae, as long as 2nd segment of funicle, integument forming angle before apex; in dorsal view covered with recumbent subcontiguous setae; antennae inserted at apical ⅓ of length; head capsule coarsely punctate in dorsal view, with minute setae, glabrous in appearance, setae longer and more visible near dorsal margin of eyes; eyes convex, exceeding the lateral curve of head capsule in dorsal view; antennal funicle with segment 1 elongate, 2 × longer than wide, as long as 2–4, 3–7 wider than long.

Prothorax. Wider than long (W:L ratio: 1.4), widest near middle of length, slightly narrower there than elytra at humeral angles; sides slightly rounded; apical constriction short, lateral curve oblique, as long as width of funicle at apex; integument densely punctate, space between punctures smooth and shiny, wider than diameter of punctures, with smaller punctures 3 × smaller than larger punctures, setae in each larger puncture as long as diameter of these punctures; prosternal absent, integument between procoxae without elevation.

Elytra. Sides slightly convex, widest near middle of length (W:L ratio: 0.76); humeri raised; apex jointly rounded; striae with punctures well aligned, narrower than interstriae; interstriae slightly convex, 1–3–5 more convex apically, 9 entirely convex; scutellar shield rounded, glabrous.

Abdomen. Underside covered with small non-contiguous whitish setae.

Legs. Profemora strongly thickened near middle of length, forming internal tooth-like angle; protibiae with external margin straight, meso- and metatibiae curved outward in apical half; tibiae armed with a small apical mucro; claws simple.

Terminalia. Body of penis moderately elongate (W:L ratio: 0.44), 1/5 shorter than apodemes, sides subparallel in dorsal view, apex truncate; in lateral view curvature moderate and regular, width slightly narrowing from basal ¼ to apex (Fig. 6G).

Sexual dimorphism

Females are unknown.

Life history

Unknown, adults were collected in December.

Distribution

Ebenacobius xhosa gen. et sp. nov. is only known from the type locality in the Eastern Cape Province of the Republic of South Africa.

Ebenacobius san Haran gen. et sp. nov.
urn:lsid:zoobank.org:act:FD9CE50F-2C4D-425F-A5D1-88A7F3E073C1
Figs 2H, 4F, 6H, 7D–F

Differential diagnosis

This species can be distinguished from other *Ebenacobius* gen. nov. by the following combination of features: claws simple, integument of prothorax uniformly reddish-brown, darker than background of elytra (excluding dark patterns). In males, the rostrum is strongly and regularly downcurved, as long as the prothorax in lateral view, the penis body is very elongated in dorsal view (W:L ratio: 0.28).

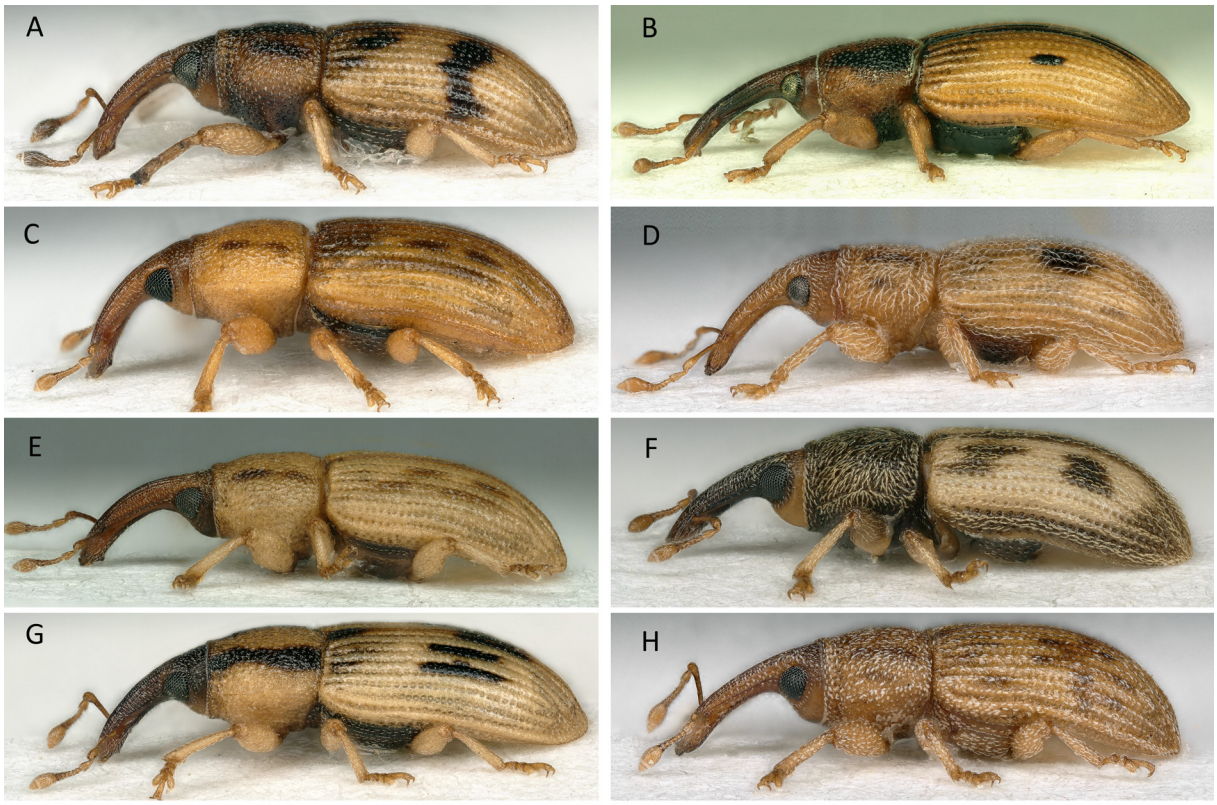

Fig. 5. A–H. Habitus of males of *Ebenacobius* Haran gen. nov. in lateral view (part 2). **A**. *E. hessei* Haran gen. et sp. nov. **B**. *E. incognitus* (Hesse, 1929) gen. et comb. nov. **C**. *E. pedi* Haran gen. et sp. nov. **D**. *E. oberprieleri* Haran gen. et sp. nov. **E**. *E. tsonga* Haran gen. et sp. nov. **F**. *E. turneri* (Marshall, 1935) gen. et comb. nov. **G**. *E. hippopotamorum* Haran gen. et sp. nov. **H**. *E. rhodesianus* (Hesse, 1929) gen. et comb. nov. A–H = not to scale.

Etymology

Ebenacobius san gen. et sp. nov. is dedicated to the San people, first inhabitants of southern Africa from 40 000 years before present. These hunter-gatherer people left evidence of their activities (debris of bones, shells) along the coast of the Western Cape Province of the Republic of South Africa, where this species was discovered.

Type material

Holotype

REPUBLIC OF SOUTH AFRICA • ♂; "South Africa [REPUBLIC OF SOUTH AFRICA], CP [Western Cape Province]; Ysterfontein, 33.21S 18.09E; 1.i.1984; H. Geertsema" "beaten out of; *Pterocelastrus; tricuspidatus*" "National Coll. Of Insects; Pretoria, S. Afr." "Holotype; *Ebenacobius san*; Haran 2022"; SANC.

Paratypes

REPUBLIC OF SOUTH AFRICA – **Western Cape Province** • 1 ♀; Cape Peninsula; 34°19′12.0″ S, 18°25′12.0″ E; 15 Apr. 2019; J. Haran leg.; beating inflorescences of *Euclea racemosa*; JHAR00821; CBGP • 1 ♀; same collection data as for preceding; SAMC • 1 spec. (larva); same collection data as for preceding; larva from flowers of *Euclea racemosa*; JHAR0917_0203; CBGP • 1 ♂, 1 ♀, 9 specs (preserved in ethanol); West Coast NP; 33°12′00.0″ S, 18°04′48.0″ E; 30 Mar. 2019; J. Haran leg.; beating inflorescences of *Euclea racemosa*; JHAR03294; CBGP • 1 ♂, 2 ♀♀; 1 km north of Lambert's Bay; 32°04′36.3″ S, 18°18′20.3″ E; 33 m a.s.l.; 29 Oct. 2011; R. Borovec leg.; beating vegetation; FFWS • 1 ♂, 1 ♀; Arniston; 34°40′26.0 ″ S, 20°13′55.2″ E; 21 Mar. 2019; J. Haran leg.; beating inflorescences of *Euclea racemosa*; JHAR02251; CBGP.

Description

Male

Body length. 2.2–2.8 mm.

Colour. Body integument pale brown, head and prothorax reddish-brown, dark pattern on elytra forming an oblique strip from humeral angle to basal ⅓ of elytra (sometimes only visible on interstriae 3 and 5) and a subtriangular spot extending from metafemora laterally to apical ⅔ of suture; dorsum (prothorax + elytra) with minute recumbent setae, not contiguous.

Head. Rostrum as long as prothorax in lateral view, strongly and regularly downcurved in lateral view; underside with row of setae, as long as 2nd segment of funicle, integument forming angle before apex; in dorsal view covered with very short recumbent not contiguous setae; antennae inserted at apical ¼ of length; head capsule coarsely punctate in dorsal view, with minute setae, glabrous in appearance, setae not condensed near dorsal margin of eyes; eyes convex, exceeding the lateral curve of head capsule in dorsal view; antennal funicle with segment 1 elongate, 2 × longer than wide, as long as 2–4, 3–7 wider than long.

Prothorax. Wider than long (W:L ratio: 1.3), widest near base, slightly narrower there than elytra at humeral angles; sides subparallel in basal ½, rounded in apical ½; apical constriction as long as width of funicle at apex; integument densely punctate, space between punctures smooth and shiny, generally wider than diameter of punctures, setae in each larger puncture shorter than diameter of punctures; prosternal process oriented forward, forming a short but wide spatula.

Elytra. Sides slightly convex, widest near middle of length (W:L ratio: 0.66); humeri raised; apex jointly rounded; striae with punctures well aligned, narrower than interstriae; interstriae slightly convex, 1-3-5 slightly more convex apically, 9 entirely convex; scutellar shield rounded, glabrous.

Abdomen. Underside covered with small non-contiguous whitish setae.

Legs. Profemora thickened near middle of length; protibiae with external margin straight, meso- and metatibiae curved outward in apical half; tibiae armed with a small apical mucro; claws simple.

Terminalia. Body of penis very elongate (W:L ratio: 0.28), 0.8 × as long as apodemes, sides slightly convex in dorsal view, widest near middle of length, apex rounded; in lateral view curvature moderate, stronger in basal ½, widening from base to apical ⅓, narrowing apicad in apical ⅓ (Fig. 6H).

Sexual dimorphism

Females can be distinguished from males by their rostrum which is less downcurved, longer than prothorax in lateral view. Females lack prosternal process between procoxae.

Life history

Larvae of this species were obtained from flowers of *Euclea racemosa* (Ebenaceae). Identity of the larva was obtained by barcoding (JHAR00917_0203; see Fig. 8). The single record on *Pterocelastrus tricuspidatus* Walp. (Celastraceae) seems accidental. Adults were collected in January, March, April and October.

Distribution

Republic of South Africa (Western Cape Province).

Ebenacobius kuscheli Haran gen. et sp. nov.
urn:lsid:zoobank.org:act:E85498E4-BF3F-48B4-A3FF-FEB0DEC51FE3
Figs 2I, 4H, 6I

Differential diagnosis

Ebenacobius kuscheli gen. et sp. nov. can be distinguished by the following combination of features: claws simple, presence of dark patterns on elytra, setae on prothorax longer than the diameter of larger punctures (Fig. 2I) and rostrum moderately downcurved in lateral view (Fig. 4H). Males lack a protruding prosternal process.

Etymology

This species is dedicated to the late Guillermo Kuschel for his significant contribution to the knowledge of Derelomini.

Type material

Holotype

REPUBLIC OF SOUTH AFRICA • ♂; "S. Afr [REPUBLIC OF SOUTH AFRICA]; Tvl. [Mpumalanga Province] Nelspruit [Mbombela]; Nat. Res., Rivulet val; 25.29S – 30-55 E" "18.12.1986; E-Y: 2397; Litt; riverine bush. Leg. Endrödy-Younga" "Holotype; *Ebenacobius kuscheli*; Haran 2022"; TMSA.

Paratypes

REPUBLIC OF SOUTH AFRICA – **Mpumalanga Province** • 1 ♂, 1 ♀; same collection data as for holotype; TMSA • 1 ♂; same collection data as for holotype; SANC • 1 ♂♂, 2 ♀♀; Nelshoogte Knuckles rocks; 25°47′ S, 30°50′ E; 4 Dec. 1986; Endrödy-Younga leg.; interception trap, 62 days; TMSA • 1 ♂; same collection data as for preceeding; CBGP • 2 ♂♂; Berlin, gorge-edge; 25°32′ S, 30°44′ E; 3 Feb. 1987; Endrödy-Younga Leg.; beating bushes; E-Y:2405; TMSA. – **Gauteng Province** • 2 ♀♀;

Tierpoort; 23 Oct. 1967; C.M. Niemann leg.; SANC. – **KwaZulu-Natal Province** • 1 ♀; Drakensberg, Oqalweni Forest; Oct. 1960; in humus; Z.A.26; TMSA.

Description

Male

Body length. 2.8–3.0 mm.

Colour. Body integument pale brown to dark reddish-brown, head and prothorax generally darker than background of elytra; prothorax uniform or with two longitudinal and ill-defined dark bands on each sides of the median line; elytra with dark elongated spots on base of interstriae 3 and 5, in some individuals forming a continuous trip at base of interstriae 1–5 and a transverse more or less continuous dark band near middle of length, generally wider on interstria 5; dorsum (prothorax + elytra) with recumbent setae, contiguous, on prothorax longer than diameter of larger punctures.

Head. Rostrum as long as prothorax in lateral view, slightly and regularly downcurved in lateral view; underside with a row of setae, shorter than 2nd segment of funicle, integument forming a small tubercle before apex; in dorsal view covered with recumbent not or subcontiguous setae; antennae inserted at apical 1/4 of length; head capsule coarsely punctate in dorsal view, with recumbent whitish setae, longer than diameter of punctures; eyes convex, exceeding the lateral curve of head capsule in dorsal view; antennal funicle with segment 1 elongate, 2 × longer than wide, as long as 2–4, 3–7 wider than long.

Prothorax. Wider than long (W:L ratio: 1.3), widest near middle of length, slightly narrower there than elytra at humeral angles; sides moderately and regularly convex; apical constriction as long as width of funicle at apex; integument densely punctate, space between punctures smooth and shiny, mostly wider than diameter of punctures; setae longer than diameter of punctures; prosternal process absent, integument only slightly raised before procoxae.

Elytra. Sides slightly convex, widest near middle of length (W:L ratio: 0.70); humeri raised; apex jointly rounded; striae with punctures well aligned, 1.5–2 × narrower than interstriae; interstriae slightly convex, slightly more convex apically, 9 entirely convex; scutellar shield rounded, glabrous.

Abdomen. Underside covered with small non-contiguous whitish setae.

Legs. Profemora strongly thickened near middle of length, almost forming an internal angle beyond middle of length; protibiae with external margin straight, meso- and metatibiae slightly curved outward in apical half; tibiae armed with a small apical mucro, smaller on metatibiae; claws simple.

Terminalia. Body of penis elongate (W:L ratio: 0.42), 0.7 × as long as apodemes, sides subparallels in dorsal view, abruptly narrowed in apical 1/5, apex truncate; in lateral view curvature moderate, regular, narrowing apicad in apical 1/5 (Fig. 6I).

Sexual dimorphism

Feebly apparent, females can be distinguished from males by their rostrum which is slightly less downcurved, longer than prothorax in lateral view.

Life history

Unknown. Adults of *E. kuscheli* gen. et sp. nov. were collected on unidentified bushes, with interception traps or by sifting leaf litter. Adults are active in February, October and December.

Distribution

Republic of South Africa (Mpumalanga and Kwazulu-Natal Provinces).

Ebenacobius mulanjensis Haran gen. et sp. nov.
urn:lsid:zoobank.org:act:73BA65FD-05A5-4A66-BB01-628E0D56663B
Figs 3A, 4J, 6J

Differential diagnosis

Ebenacobius mulanjensis gen. et sp. nov. can be distinguished from other species by the transverse 2nd funicular segment (longer than wide in other *Ebenacobius* spp.) and the scattered punctures on the prothorax, being separated by a distance 2 to 3 × the diameter of punctures at least in some part of the central area (Fig. 3A). The penis is peculiar in this species (Fig. 6J), having very short apodemes (only the very distinct *E. curvisetis* gen. et sp. nov. has such short apodemes; Fig. 6A).

Etymology

This species name refers to the locality where the holotype was recorded, namely the Mulanje mountains in Southern Malawi.

Type material

Holotype

MALAWI • ♂; "MALAWI: Mt. Mulanje; Chambe plateau, Chambe hut; 1953 m, sifting, 21.XI.2018; S15°54'18.7" E35°32'50.4"; P. Banar & Hlavac lgt." "Holotype; *Ebenacobius mulanjensis*; Haran 2022"; FFWS.

Description

Male

Body length. 2.6 mm.

Colour. Body integument pale brown; elytra with transverse dark bands at base and near middle of length of interstriae 1–5, first interstria dark on basal ⅔ of length; dorsum (prothorax + elytra) with short whitish recumbent setae, not contiguous, on prothorax as wide as diameter of larger punctures.

Head. Rostrum as long as prothorax in lateral view, slightly and regularly downcurved in lateral view; underside with a row of setae, shorter than 2nd segment of funicle, integument forming an angle before apex; in dorsal view covered with recumbent not contiguous setae; antennae inserted at apical 1/4 of length; head capsule coarsely punctate in dorsal view, with recumbent whitish setae, longer than diameter of punctures; eyes moderately convex, slightly exceeding the lateral curve of head capsule in dorsal view; antennal funicle with segment 1 short, only slightly longer than wide, as long as 2–4, 2–7 wider than long.

Prothorax. Wider than long (W:L ratio: 1.33), widest near middle of length, slightly narrower there than elytra at humeral angles; sides moderately and regularly convex; apical constriction as long as width of funicle at apex; integument punctate, space between punctures smooth and shiny, up to 2–3 × wider than diameter of puncture in the central area; setae short, as long as diameter of punctures; prosternal process absent, integument only slightly raised before procoxae.

Elytra. Sides slightly convex, widest near middle of length (W:L ratio: 0.70); humeri raised; apex jointly rounded; striae with punctures well aligned, 1.5–2 × narrower than interstriae; interstriae slightly convex, slightly more convex apically, 9 entirely convex; scutellar shield rounded, glabrous.

Abdomen. Underside glabrous.

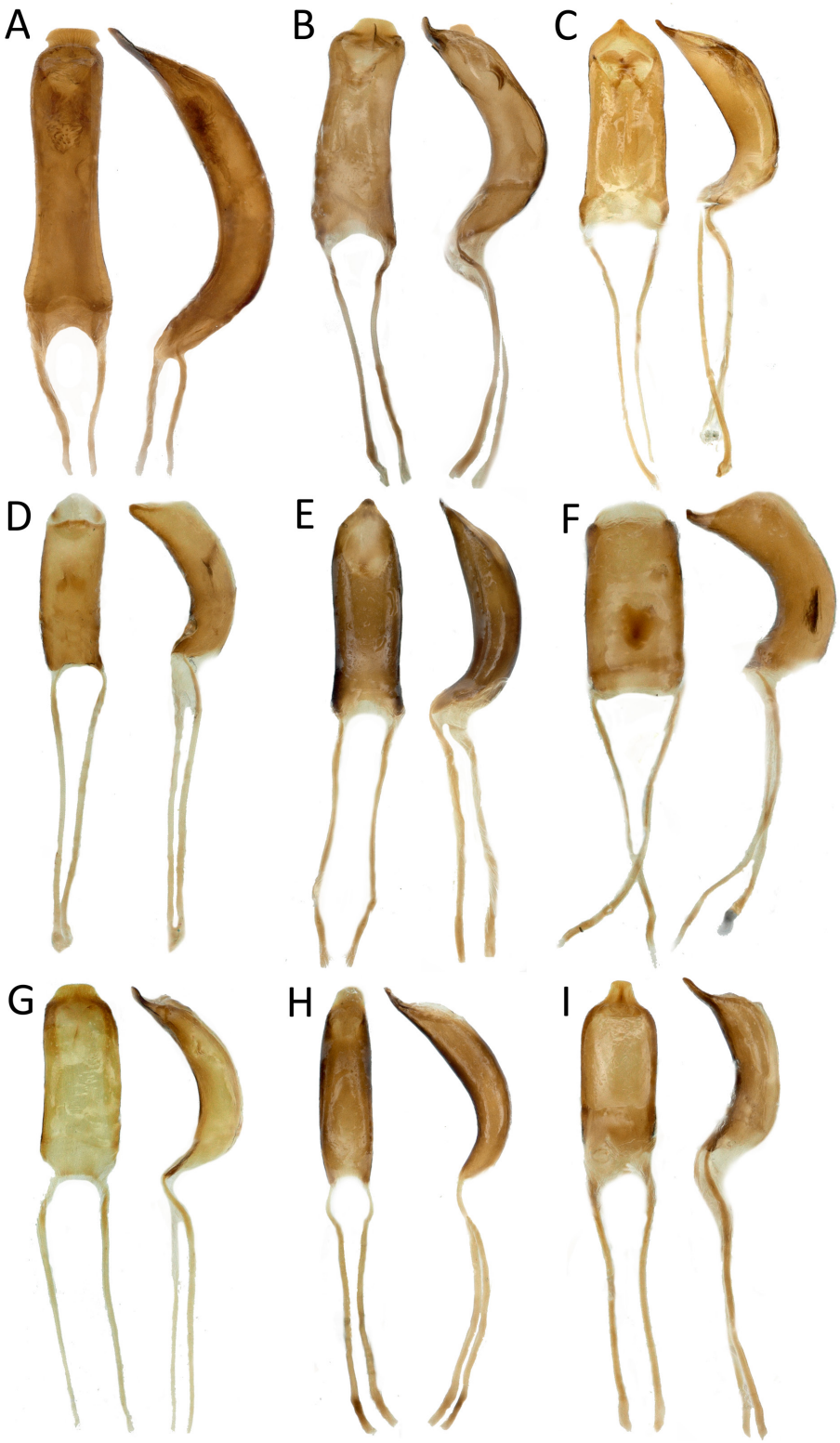

Fig. 6 (part 1). **A–I**. Male genitalia of *Ebenacobius* Haran gen. nov., penis in dorsal (left) and lateral (right) view. **A**. *E. curvisetis* Haran gen. et sp. nov. **B**. *E. rectirostris* Haran gen. et sp. nov. **C**. *E. duplicatus* Haran gen. et sp. nov. **D**. *E. grobbelaarae* Haran gen. et sp. nov. **E**. *E. costalis* (Fåhraeus, 1844) gen. et comb. nov. **F**. *E. thoracicus* Haran gen. et sp. nov. **G**. *E. xhosa* Haran gen. et sp. nov. **H**. *E. san* Haran gen. et sp. nov. **I**. *E. kuscheli* Haran gen. et sp. nov. A–I = not to scale.

Fig. 6 (part 2). **J–R**. Male genitalia of *Ebenacobius* Haran gen. nov.. penis in dorsal (left) and lateral (right) view. **J**. *E. mulanjensis* Haran gen. et sp. nov. **K**. *E. hessei* Haran gen. et sp. nov. **L**. *E. pedi* Haran gen. et sp. nov. **M**. *E. tsonga* Haran gen. et sp. nov. **N**. *E. hippopotamorum* Haran gen. et sp. nov. **O**. *E. incognitus* (Hesse, 1929) gen. et comb. nov. **P**. *E. oberprieleri* Haran gen. et sp. nov. **Q**. *E. turneri* (Marshall, 1935) gen. et comb. nov. **R**. *E. rhodesianus* (Hesse, 1929) gen. et comb. nov. J–R = not to scale.

Legs. Profemora thickened near middle of length, smooth internally; protibiae with external margin straight, meso- and metatibiae slightly curved outward in apical half; tibiae armed with a small apical mucro; claws simple.

Terminalia. Body of penis elongate (W:L ratio: 0.40), 3 × as long as apodemes, sides converging apicad in dorsal view, apex rounded (Fig. 6J).

Remarks

This species is only known from a single male specimen. This specimen shows ill-sclerotized external and internal integuments and was probably collected shortly after its emergence from pupa. As a result, the body of penis could not be observed and described in full detail. The patterns on elytra are probably darker than they appear on Fig. 3A and a range of variation of this pattern can be expected with the examination of longer series.

Life history

The host plant of this species is unknown; adults were collected in November in leaf litter.

Distribution

Malawi (Southern Province).

Ebenacobius hessei Haran gen. et sp. nov.
urn:lsid:zoobank.org:act:35D58461-0DA6-4FFF-8167-0232D817604F
Figs 3B, 5A, 6K

Differential diagnosis

This species can be distinguished by the 3 longitudinal dark strips on the prothorax (Fig. 3B).

Etymology

This species is dedicated to Albert J. Hesse for his early contribution to the knowledge of southern African Derelomini.

Type material

Holotype

REPUBLIC OF SOUTH AFRICA • ♂; "Rep. of South Africa [REPUBLIC OF SOUTH AFRICA]. Byra river mouth; 14.vii.2019" -33.379 27.316; *Euclea sp*; JHAR02381_0101" "Holotype; *Ebenacobius hessei*; Haran 2022"; SAMC.

Paratypes

REPUBLIC OF SOUTH AFRICA – **Eastern Cape Province** • 1 ♂, 1 ♀; same collection data as for holotype; TMSA • 1 ♂; same collection data as for holotype; SAMC • 1 ♂; same collection data as for holotype; MNHN • 10 specs (preserved in ethanol); same collection data as for holotype; CBGP. – **Gauteng Province** • 1 ♀; Pretoria; 25°45′ S, 28°12′ E, 20 Oct. 1982; R. Oberprieler leg.; SANC. – **KwaZulu-Natal Province** • 4 ♂♂, 7 ♀♀, 5 specs (preserved in ethanol); Durban, Palmiet Nature Reserve, Faurea Place; Jul. 2013; Ş. Procheş leg.; on and from flowers of *Euclea natalensis* (Ebenaceae); no. 3447-8, JHAR03348; CBGP. – **Western Cape Province** • 1 ♀; Stellenbosch; 33°57′00.0″ S, 18°50′24.0″ E; Ş. Procheş leg.; on *Diospyros lycoides* (Ebenaceae); CBGP.

Description

Male

Body length. 2.2–2.6 mm.

Colour. Body integument pale brown, prothorax slightly darker than elytra, head reddish-brown; prothorax with 3 longitudinal and parallel dark bands, one on the medial line and 2 laterally; dark pattern on elytra forming an oblique strip from base of interstria 5 basal ⅓ of elytra (sometimes only visible on interstriae 1, 3 and 5) and a transverse band slightly beyond middle of elytra, more or less continuous, sometimes only visible on interstriae 3 and 5; dorsum (prothorax + elytra) with minute recumbent setae, not contiguous.

Head. Rostrum as long as prothorax in lateral view, regularly downcurved; underside with a row of setae, shorter than 2nd segment of funicle, integument forming a small tubercle before apex; in dorsal view covered with recumbent non-contiguous setae; antennae inserted near apical 1/4 of length; head capsule coarsely punctate in dorsal view, with recumbent whitish setae, shorter or as wide as diameter of punctures; eyes convex, exceeding the lateral curve of head capsule in dorsal view; antennal funicle with first segment 1.5 × longer than wide, as long as 2–4, 3–7 wider than long.

Prothorax. Wider than long (W:L ratio: 1.38), widest near base, slightly narrower there than elytra at humeral angles; sides with a basal constriction forming an angle near basal 1/8, subparallel between basal 1/8 and middle of length, convex in apical ½, apical constriction as long as width of funicle at apex; integument densely punctate, rugose, space between punctures smooth, shiny, raised, mostly as wide as diameter of punctures; setae as long as diameter of punctures in the central area; prosternal process short, sides converging apicad in dorsal view, truncate at apex.

Elytra. Sides slightly convex, widest near middle of length (W:L ratio: 0.73); humeri raised; apex jointly rounded; striae with punctures well aligned, 1.5–2 × narrower than interstriae; interstriae slightly convex, 1, 3 and 5 slightly more convex apically, 9 entirely convex; scutellar shield rounded, glabrous.

Abdomen. Underside covered with subcontiguous whitish setae.

Legs. Profemora moderately thickened near middle of length, almost forming an internal angle beyond middle of length; protibiae with external margin straight, meso- and metatibiae slightly curved outward in apical half; protibiae armed with a small apical mucro; meso- and metatibiae with mucro indistinct; claws simple.

Terminalia. Body of penis elongate (W:L ratio: 0.33), 0.7 × as long as apodemes; sides convex in basal half in dorsal view, widest near basal 1/4, subparallel in apical half, narrowing in apical 1/5, apex truncate; in lateral view curvature stronger in basal half, width expanding from base to apical ⅓, then narrowing apicad (Fig. 6K).

Sexual dimorphism

Females can be distinguished from males by their rostrum which is slightly slender and less downcurved in lateral view. Females lack a prosternal process.

Life history

Ebenacobius hessei gen. et sp. nov. develops in male flowers of *Euclea natalensis*, in the Durban area (data JHAR03348). Adults gather on inflorescences in large numbers during the day. They copulate and feed on the flowers, leaving many feeding marks on the petals and buds. Oviposition was observed in Durban in July and August. Eggs are deposited in the flower buds, through the petals, on the immature anthers of male flowers. The larvae are ectophagous, they develop at the base of anthers during flowering. One or two larvae may be found per flower. No pupa was observed in the dissected flowers (n = 50), suggesting that larval-pupal transformation takes place in the ground. This species was also collected in

sympatry with *Derelomus pallidus* in the Eastern Cape Province on an unidentified *Euclea* species (data JHAR02381). Adults were collected by beating *Euclea* bushes in July and October.

Distribution

Republic of South Africa (Eastern Cape, Gauteng, Kwazulu-Natal and Western Cape Provinces).

Ebenacobius pedi Haran gen. et sp. nov.
urn:lsid:zoobank.org:act:A03ED41A-311F-42BA-A64C-EA6124508AC5
Figs 3C, 5C, 6L

Differential diagnosis

Ebenacobius pedi gen. et sp. nov. can be distinguished by the following combination of features: claws simple, prothorax and elytra similarly pale brown, with two longitudinal dark bands on prothorax not reaching apical margin and glabrous elytra (Fig. 3C), lacking a visible row of recumbent setae on interstriae. This species shows a peculiar body of penis, regularly widening from base to apex in dorsal view, with the apex truncate (Fig. 6L). This species is very close to *E. tsonga* gen. et sp. nov., but the latter species shows distinct rows of setae on interstriae 5–10 of elytra. *Ebenacobius pedi* is also closely related to *E. hippopotamorum* Haran gen. et sp. nov. but in the latter species the scutellar shield and the base of first interstriae is dark brown and the dark bands on prothorax are generally reaching the apical margin (Fig. 3E).

Etymology

This species name is dedicated to the Pedi people, inhabitants of the northern provinces of the Republic of South Africa. These peoples share this land with the Tsonga peoples, as do *E. pedi* gen. et sp. nov. and *E. tsonga* gen. et sp. nov., apparently on the same host plant.

Type material

Holotype

REPUBLIC OF SOUTH AFRICA • ♂; "S. Afr [REPUBLIC OF SOUTH AFRICA]; Limpopo Prov; Meletse NatRes; 1003m; 24.36S – 27.39E" "13.ii.2016; E-Y: 3986; Sifting forest litter; Leg. Ruth Müller" "Holotype; *Ebenacobius pedi*; Haran 2022"; TMSA.

Paratypes

REPUBLIC OF SOUTH AFRICA – **Limpopo Province** • 1 ♂; same collection data as for holotype; TMSA • 1 ♂; Lajuma near Vivo Wilderness Camp; 23°02.358′ S, 29°26.954′ E; 11 Dec. 2017; R. Borovec leg.; light trap collection in indigenous forest; FFWS. – **Gauteng Province** • 1 ♂; Magaliesburg, Tonquane; 25°51′ S, 27°29′ E; 1 Jul. 1973; Endrödy-Younga leg.; sifted humus; E-Y:89; TMSA. – **Mpumalanga Province** • 2 ♂♂, 1 ♀, 2 specs (preserved in ethanol); Mbombela [formerly Nelspruit]; 25°30′02.7″ S, 30°57′16.5″ E; 4 Apr. 2018; J. Haran leg.; on flowers of *Acokanthera oblongifolia* (Hochst.) Codd (Apocynaceae); JHAR00838_0102/4/6; CBGP.

Description

Male

Body length. 2.7–3.1 mm.

Colour. Body integument pale brown, head reddish; prothorax with 2 longitudinal dark bands on each side of the median line, not reaching apical margin of prothorax, bands sometimes interrupted in middle of length; dark pattern on elytra generally forming elongated dots on interstriae 3 and 5, one before and one beyond middle of length on interstriae 3 and one near basal ¼ and one near middle of length

on interstriae 5, dark dots sometimes contiguous on interstriae 5 or almost absent on elytra; dorsum (prothorax + elytra) with minute recumbent setae, not contiguous, integument glabrous in appearance.

Head. Rostrum slightly shorter than prothorax in lateral view, strongly downcurved in basal ⅓, slightly downcurved in apical ⅔; underside with a row of setae, as long as 2nd segment of funicle, integument forming a small tubercle before apex; in dorsal view covered with short recumbent and non-contiguous setae; antennae inserted near apical 1/4 of length; head capsule coarsely punctate in dorsal view, with minute recumbent whitish setae, shorter than diameter of punctures; eyes convex, exceeding the lateral curve of head capsule in dorsal view; antennal funicle with first segment 1.5 × longer than wide, as long as 2–4, 3–7 wider than long.

Prothorax. Wider than long (W:L ratio: 1.37), widest near base, slightly narrower there than elytra at humeral angles; sides straight or slightly convex, moderately converging apicad, abruptly converging in apical 1/5, apical constriction narrower than width of funicle at apex; integument densely punctate, space between punctures smooth, shiny, at most 2 × wider than diameter of punctures; setae of larger punctures shorter than diameter of punctures in the central area; prosternal process oriented forward, only moderately exceeding the level of procoxae, forming a spatula in dorsal view.

Elytra. Sides slightly convex, widest near middle of length (W:L ratio: 0.75); humeri raised; apex jointly rounded; striae with punctures well aligned, 1.5–2 × narrower than interstriae; interstriae slightly convex, 1, 3 and 5 slightly more convex apically, 9 entirely convex; scutellar shield rounded, glabrous.

Abdomen. Underside covered with recumbent whitish setae, not contiguous.

Legs. Profemora strongly thickened near middle of length, smooth internally; protibiae with external margin straight, meso- and metatibiae slightly curved outward in apical half; tibiae armed with a small apical mucro; claws simple.

Terminalia. Body of penis elongate (W:L ratio: 0.40), 0.7 × as long as apodemes; sides straight and regularly widening apicad in basal 3/4 in dorsal view, widest near apical 1/4, convex in apical 1/4, apex truncate; in lateral view curvature stronger in basal half, width expanding from base to apex (Fig. 2A).

Sexual dimorphism

Females can be distinguished from males by their rostrum which is less downcurved in lateral view, almost straight in apical half and by the absence of prosternal process between procoxae.

Remarks

Ebenacobius pedi gen. et sp. nov. is morphologically remarkably closely related to *E. tsonga* gen. et sp. nov., the two species are only distinguished externally by subtle morphological differences. The contrasted shape of the penis body between these species and the genetic distances allows, however, to distinguish them unambiguously (Figs 6, 8). The two species were collected in sympatry in two distant localities and were observed on flowers of the same plant in one of the two sites (JHAR00838). These species might represent another case of sister-species sympatric assemblage, as it has been described in other Derelomini (Franz & Valente 2005; Haran *et al.* 2021).

Life history

The specimens from Mbombela (data JHAR00838) were all collected on flowers of *Acokanthera oblongifolia* (Hochst.) Codd (Apocynaceae) around 5 p.m. Despite repeated attempts, specimens were not observed on these flowers earlier or later in the day. Such timed phenology on flowers has been described in other plant-weevil pollination mutualism (Auffray *et al.* 2017; Saunders 2020), suggesting

that *Acokanthera* might constitute the host plant for *E. pedi* gen. et sp. nov. rather than only a refuge. This species was collected using light traps and by sifting leaf litter. Adults were collected in February, April, July and December.

Distribution

Republic of South Africa (Limpopo, Gauteng and Mpumalanga Provinces).

Ebenacobius tsonga Haran gen. et sp. nov.
urn:lsid:zoobank.org:act:828D39B0-FDC2-4558-84AD-54A406B54E7B
Figs 3D, 5E, 6M

Differential diagnosis

Ebenacobius tsonga gen. et sp. nov. can be distinguished by the following combination of features: simple claws, prothorax and elytra similarly pale brown, with two longitudinal dark bands on prothorax not reaching apical margin and elytra with a row of recumbent and subcontiguous setae on interstriae 5–10 of elytra. This species is closely related to *E. pedi* gen. et sp. nov. and *E. hippopotamorum* gen. et sp. nov. but in both species setae on elytra are minute, not forming a row of subcontiguous setae laterally. The body of penis in *Ebenacobius tsonga* is also much shorter (W:L ratio: 0.5; Fig. 6M) than in *E. pedi* and *E. hippopotamorum* (W:L ratio at least 0.40; Fig. 6L, N).

Etymology

This species name is dedicated to the Tsonga people, inhabitants of the north-eastern provinces of the Republic of South Africa (Limpopo and Mpumalalnga). These peoples share this land with the Pedi peoples, as do *E. tsonga* gen. et sp. nov. and *E. pedi* gen. et sp. nov., apparently on the same host plant.

Type material

Holotype

REPUBLIC OF SOUTH AFRICA • ♂; "S. Afr [REPUBLIC OF SOUTH AFRICA]; Limpopo Prov; Meletse NatRes; 1003m; 24.36S – 27.39E" "13.ii.2016; E-Y: 3986; Sifting forest litter; Leg. Ruth Müller" "Holotype; *Ebenacobius tsonga*; Haran 2022"; TMSA.

Paratype

REPUBLIC OF SOUTH AFRICA – **Mpumalanga Province** • 1 ♂; Mbombela [formerly Nelspruit]; 25°30′02.7″ S, 30°57′16.5″ E; 4 Apr. 2018; J. Haran leg.; on flowers of *Acokanthera oblongifolia* (Hochst.) Codd (Apocynaceae); JHAR00838_0101; CBGP.

Description

Male

Body length. 3.0 mm.

Colour. Body integument pale brown, head reddish; prothorax with 2 longitudinal dark bands on each side of the median line, not reaching apical margin of prothorax, bands sometimes interrupted in middle of length; dark pattern on elytra generally forming elongated dots on interstriae 3 and 5, one before and one beyond middle of length on interstriae 3 and one near basal ¼ and one near middle of length on interstriae 5, dark dots sometimes contiguous on interstriae 5 or almost absent on elytra; dorsum (prothorax + elytra) with recumbent setae, subcontiguous and forming rows on interstriae, more distinct on interstriae 5–10.

Head. Rostrum as long as prothorax in lateral view, more downcurved in basal ⅓ than in apical ⅔; underside with a row of setae, as long as 2nd segment of funicle, integument forming a small tubercle before apex; in dorsal view covered with short recumbent and non-contiguous setae; antennae inserted near apical 1/4 of length; head capsule coarsely punctate in dorsal view, with recumbent whitish setae, as long as diameter of punctures; eyes convex, exceeding the lateral curve of head capsule in dorsal view; antennal funicle with first segment 1.5 × longer than wide, as long as 2–4, 3–7 wider than long.

Prothorax. Wider than long (W:L ratio: 1.27), widest near base, slightly narrower there than elytra at humeral angles; sides straight or slightly convex, moderately converging apicad, abruptly converging in apical 1/5, apical constriction as long as width of funicle at apex; integument densely punctate, space between punctures smooth, shiny, at most 2 × wider than diameter of punctures; setae of larger punctures shorter than diameter of punctures in the central area; prosternal process short, not exceeding the level of procoxae.

Elytra. Sides slightly convex, widest near middle of length (W:L ratio: 0.75); humeri raised; apex jointly rounded; striae with punctures well aligned, 1.5–2 × narrower than interstriae; interstriae slightly convex, 1, 3 and 5 slightly more convex apically, 9 entirely convex; scutellar shield rounded, glabrous.

Abdomen. Underside covered with recumbent whitish setae, not contiguous.

Legs. Profemora strongly thickened near middle of length, smooth internally; protibiae with external margin straight, meso- and metatibiae slightly curved outward in apical half; tibiae armed with a small apical mucro; claws simple.

Terminalia. Body of penis short (W:L ratio: 0.50), 0.7 × as long as apodemes; sides slightly convex in dorsal view, widest near middle of length, apex acute; in lateral view curvature stronger near middle of length, width narrowing apicad in apical ⅓ (Fig. 6M).

Sexual dimorphism

Female specimens were not available in this species.

Remarks

Ebenacobius tsonga gen. et sp. nov. is very close to *E. pedi* gen. et sp. nov. and was found in sympatry with it, see remarks section under that species for details. Only two males were available for this description, more variability in pattern on dorsum can be expected with the examination of longer series.

Life history

Ebenacobius tsonga gen. et sp. nov. was collected on flowers of *Acokanthera oblongifolia* (Apocynaceae) together with *E. pedi* gen. et sp. nov. See life history section under than species for details. Adults were collected in February and April.

Distribution

Republic of South Africa (Limpopo and Mpumalanga Provinces).

Ebenacobius hippopotamorum Haran gen. et sp. nov.
urn:lsid:zoobank.org:act:B47B9BFA-B008-4D25-AC97-14AF75D0C6CA
Figs 3E, 5G, 6N

Differential diagnosis

Ebenacobius hippopotamorum gen. et sp. nov. can be distinguished by the following combination of features: claws simple, prothorax with two dark bands on each side of the median line, reaching the basal

and apical margins of prothorax and elytra with minute setae glabrous in appearance (Fig. 3E). This species is closely related to *E. pedi* gen. et sp. nov. and *E. tsonga* gen. et sp. nov., but in these species bands on prothorax are not reaching the apical margin (Fig. 3C–D).

Etymology

The species name refers to the location where the recently collected specimens were found: a dry river bank inhabited by a group of hippos that made access to the flowering *Euclea* bush particularly delicate.

Type material

Holotype

REPUBLIC OF SOUTH AFRICA • ♂; "Rep. of South Africa [REPUBLIC OF SOUTH AFRICA]. Mulati [Limpopo Province**]**; 10.vii.2018" "23°55'12.0″ S 30°50'24.0″ E; flowers of *Euclea natalensis*; J. Haran leg.; JHAR01148" "Holotype; *Ebenacobius hippopotamorum*; Haran 2022"; SAMC.

Paratypes

REPUBLIC OF SOUTH AFRICA – **Limpopo Province** • 1 ♂, 1 ♀, 1 spec. (preserved in ethanol); Mulati; 23°55′12.0″ S, 30°50′24.0″ E; 10 Jul. 2018; J. Haran leg.; on flowers of *Euclea natalensis*; JHAR01148; CBGP • 2 ♀♀; SA Wildlife College, 10 km from Orpen Gate of KNP; 24°01′58.3″ S, 31°11′25.5″ E; 17 Oct. 2000; W. Breytenbach leg.; collected along tar road on flowering *Lonchocarpus capassa* (Fabaceae); SANC.

Description

Male

Body length. 2.0–2.2 mm.

Colour. Body integument pale brown, head reddish-brown; prothorax with 2 longitudinal dark bands on each side of the median line, reaching basal and apical margin of prothorax; dark pattern on elytra forming interstriae 1, 3 and 5 a spots at base longitudinal bands near middle of length; dorsum (prothorax + elytra) with minute recumbent setae, not contiguous, integument glabrous in appearance.

Head. Rostrum shorter than prothorax in lateral view, moderately downcurved; underside with a row of setae, as long as 2nd segment of funicle, integument forming a small tubercle before apex; in dorsal view covered with short recumbent and non-contiguous setae; antennae inserted near apical 1/4 of length; head capsule coarsely punctate in dorsal view, with minute recumbent whitish setae, shorter than diameter of punctures; eyes convex, exceeding the lateral curve of head capsule in dorsal view; antennal funicle with first segment 1.5 × longer than wide, as long as 2–4, 3–7 wider than long.

Prothorax. Wider than long (W:L ratio: 1.30), widest near basal ⅓, slightly narrower there than elytra at humeral angles; sides straight or slightly convex in middle of length, moderately converging apicad, abruptly converging in apical 1/5, apical constriction as long as width of funicle at apex; integument densely punctate, space between punctures smooth, shiny, at most as wide as diameter of punctures; setae of larger punctures shorter than diameter of punctures in the central area; prosternal process absent, integument only raised beyond procoxae.

Elytra. Sides slightly convex, widest near middle of length (W:L ratio: 0.70); humeri raised; apex jointly rounded; striae with punctures well aligned, 1.5–2 × narrower than interstriae; interstriae slightly convex, more convex apically, 9 entirely convex; scutellar shield rounded, glabrous.

Abdomen. Underside covered with recumbent whitish setae, not contiguous.

Legs. Profemora strongly thickened near middle of length, forming internal angle beyond middle of length; protibiae with external margin straight, meso- and metatibiae slightly curved outward in apical half; tibiae armed with a small apical mucro, almost indistinct on meso- and metatibiae; claws simple.

Terminalia. Body of penis elongate (W:L ratio: 0.33), 0.8 × as long as apodemes; sides subparallel, narrowing apicad in apical ¼ in dorsal view, apex acute; in lateral view curvature slightly stronger in basal half, width expanding from base to apical ¼, narrowing apicad in apical 1/4 (Fig. 6N).

Sexual dimorphism

Females can be distinguished from males by their rostrum which is almost straight in lateral view.

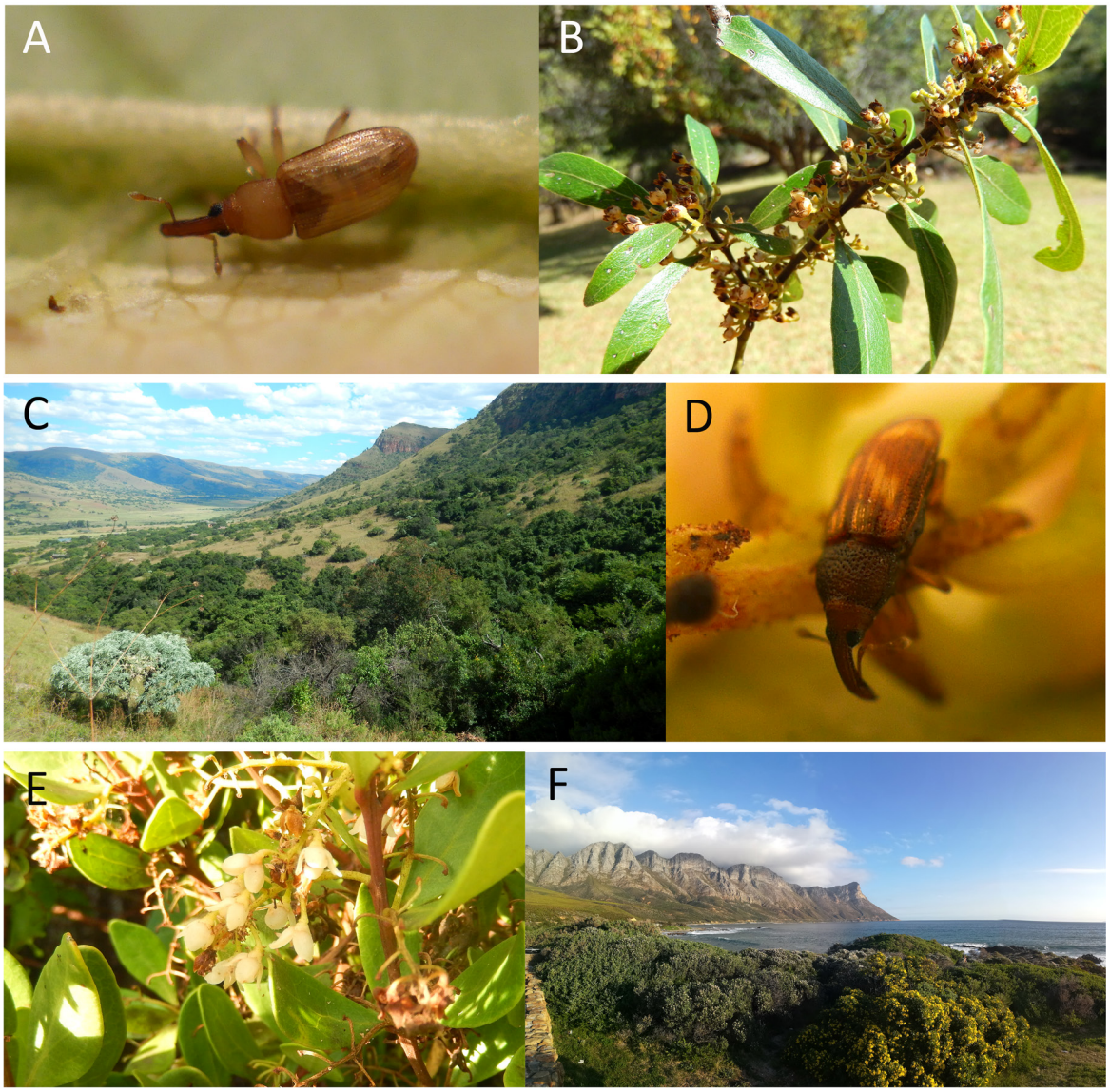

Fig. 7. Habitus in natura, host plants and habitats of *Ebenacobius* Haran gen. nov. **A**. Habitus of adult of *E. rectirostris* Haran gen. et sp. nov. **B**. Inflorescence of *Euclea natalensis* A.DC. (Ebenaceae), host of *E. rectirostris*. **C**. Biotope of *E. rectirostris* in the Mpumalanga Province of South Africa. **D**. Habitus of adult of *E. san* Haran gen. et sp. nov. **E**. Inflorescence of *Euclea racemosa* L. (Ebenaceae), host of *E. san.* **F**. Biotope of *E. san* in the Western Cape Province of South Africa.

Remarks

One of the female specimens from Orpen Gate of KNP shows a distinctly less downcurved and more elongate rostrum. This divergent phenotype exceeds the variability commonly observed in *Ebenacobius* gen. nov. and in Derelomini in general and could indicate that several closely related species might exist in this species in its current concept.

Life history

Ebenacobius hippopotamorum gen. et sp. nov. was collected on flowers of *Euclea natalensis*, which is probably its host plant. This species was collected in sympatry with *E. rectirostris* gen. et sp. nov. on this plant, although in smaller numbers. Adults were collected in July and October.

Distribution

Republic of South Africa (Limpopo Province).

Ebenacobius incognitus (Hesse, 1929) gen. et comb. nov.
Figs 3F, 5B, 6O

Derelomus incognitus Hesse, 1929: 526.

Differential diagnosis

This species can be distinguished by the following combination: claws appendiculate and dorsum (prothorax + elytra) with minute whitish setae, glabrous in appearance. In most specimens, the basal $^{4}/_{5}$ of first interstriae are dark brown (Fig. 3F). Apex of protibiae in females has a long premucro giving the impression of a double mucro.

Type material

Holotype

REPUBLIC OF SOUTH AFRICA • ♀; "C/T [Cape Town; Western Cape Province; REPUBLIC OF SOUTH AFRICA]; Aug/93" "Type [red label]" "*Derelomus incognitus;* Type; Hesse" "Holotype; *Ebenacobius*; *incognitus*; (Hesse, 1929); Haran 2022"; SAMC.

Other material examined

REPUBLIC OF SOUTH AFRICA – **Eastern Cape Province** • 2 ♂♂; The Claims' Farm, near Komga Kubusi R. valley; 32°29′ S, 27°53′ E; 1 Dec. 1992; R. Oberprieler leg.; SANC • 1 ♂; Fort Beaufort; Jun. 1947; R. Story leg.; SANC • 1 ♀; Suurberg Nature Reserve; 33°16′ S, 25°45′ E; 28 Nov. 1988; R. Oberprieler leg.; in crown of *Encephalartos longifolius* (Zamiaceae); SANC. – **Western Cape Province** • 1 ♂, 1 ♀; Mossel Bay; Apr. 1921; R.E. Turner leg.; NHMUK • 1 ♀; Cape Town; 17 Mar. 1902; CleDoux leg.; acc67769; USNM • 1 ♂; Sweweekspoort, Klein Swartberge; 33°24′ S, 21°24′ E; 1 Dec. 1988; R. Oberprieler leg.; SANC.

Remarks

Ebenacobius incognitus gen. et comb. nov. was described in the genus *Derelomus* based on a single male deposited at SAMC (Hesse 1929). This specimen was loaned to Guillermo Kuschel (loan 24018) who undertook a study on palaeotropical Derelomini from 2007. Unfortunately he passed away before he could complete this work and left the very preliminary manuscript and the material borrowed from institutions (see postscript in Haran *et al.* 2020). Despite intensive search in the material of Derelomini loaned, the holotype of this species could not be identified and is provisionally considered as lost. This species is very distinct and specimens examined were easily identified based on Hesse's description.

Life history

Host plant unknown. The record on *Encephalartos longifolius* (Jacq.) Lehm. is accidental given the known biology of the genus. Adults were collected in March, April, August, November and December.

Distribution

Republic of South Africa (Eastern and Western Cape Provinces).

Ebenacobius oberprieleri Haran gen. et sp. nov.
urn:lsid:zoobank.org:act:AB825DBB-F0CB-42AB-86A3-CBD2DBBE4746
Figs 3G, 5D, 6P

Differential diagnosis

Ebenacobius oberprieleri gen. et sp. nov. can be distinguished by the combination of appendiculate claws and elytra with long erect and curved setae, longer than width of interstriae.

Etymology

This species is dedicated to our colleague Rolf G. Oberprieler who collected all known specimens of this species.

Type material

Holotype

REPUBLIC OF SOUTH AFRICA • ♂; "SOUTH AFRICA [REPUBLIC OF SOUTH AFRICA], C.P [**Northern Cape Province**]; Richtersveld, Orange River at De Hoop; 28.16S 17.03E; 650m, 2.x.1991, R. Oberprieler" "On *Euclea*; *pseudebenus*; (EBENACEAE)" "National Coll; of Insects; Pretoria, S. Afr." "Holotype; *Ebenacobius oberprieleri*; Haran 2022"; SANC.

Paratypes

REPUBLIC OF SOUTH AFRICA – **Northern Cape Province** • 1 ♂, 3 ♀♀; same collection data as for holotype; SANC • 1 ♂; same collection data as preceeding; CBGP.

Description

Male

Body length. 2.5 mm.

Colour. Body integument pale brown, head and sometimes prothorax reddish-brown; prothorax generally with 2 longitudinal dark bands on each side of the median line and two dark dots close to the lateral carina near middle of length, all these patterns not reaching basal and apical margin of prothorax, sometimes entirely absent; dark pattern on elytra generally forming a large dot on middle of length of interstriae 2–5 and dots on apical ⅔ of interstriae 6, 8 and 9; dorsum (prothorax + elytra) with long erect and downcurved setae, contiguous, longer than width of interstriae, forming one row on each interstria; each puncture of striae with a minute recumbent, whitish seta.

Head. Rostrum slightly longer than prothorax in lateral view, moderately downcurved; underside with a row of setae, as long as 2nd segment of funicle, integument smooth before apex, not forming an angle or tubercle; in dorsal view covered with recumbent setae, long and contiguous in basal ⅓, short and non-contiguous in apical ⅔; antennae inserted slightly beyond apical ⅓ of length; head capsule densely punctate in dorsal view, with setae mostly contiguous and longer than diameter of punctures, oriented toward a point located on frons between basal margin of eyes; eyes moderately convex, exceeding

slightly the lateral curve of head capsule in dorsal view; antennal funicle with first segment 2 × longer than wide, as long as 2–5, 3–7 wider than long.

Prothorax. Wider than long (W:L ratio: 1.30), widest near middle of length or in basal ½, slightly narrower at widest point than elytra at humeral angles; slightly convex in middle of length or subparallel in basal ½, moderately converging apicad in apical ½, apical constriction as long as width of funicle at apex; integument densely punctate, space between punctures smooth, shiny, narrower than diameter of punctures; erect setae longer than diameter of punctures; prosternal process absent, integument only raised beyond procoxae.

Elytra. Sides slightly convex, widest near middle of length (W:L ratio: 0.74); humeri raised; apex jointly rounded; striae with punctures well aligned, 1.5 × narrower than interstriae; interstriae flat, 9 entirely convex; scutellar shield rounded, glabrous.

Abdomen. Underside covered with recumbent whitish setae, contiguous.

Legs. Profemora moderately thickened near middle of length, profemora with a small internal tooth beyond middle of length; protibiae with external margin straight, meso- and metatibiae slightly curved outward in apical half; tibiae armed with a small apical mucro; claws appendiculate internally.

Terminalia. Body of penis moderately elongate (W:L ratio: 0.43), 0.7 × as long as apodemes; sides straight, slightly narrowing apicad in dorsal view, more abruptly in apical 1/5, apex acuminate; in lateral view curvature slightly stronger in basal half, width widening from base to apical middle of length, narrowing apicad in apical half (Fig. 6P).

Sexual dimorphism

Females can be distinguished from males by their rostrum which is distinctly longer than the prothorax in lateral view (only slightly longer in males).

Remarks

All specimens of this species were collected in a single sampling event at one locality. More variability in colour pattern can be expected if larger series from other localities are sampled.

Life history

All specimens of this species were found aggregated on *Euclea pseudebenus* E.Mey. ex A.DC. Given that species of *Ebenacobius* gen. nov. with known host records are generally associated with species of *Euclea*, this plant is probably the host for the larval stages of this species. Adults were collected in October.

Distribution

Republic of South Africa (Northern Cape Province).

Ebenacobius turneri (Marshall, 1935) gen. et comb. nov.
Figs 3H, 5F, 6Q

Derelomus turneri Marshall, 1935: 139.

Differential diagnosis

Ebenacobius turneri gen. et comb. nov. can be distinguished by the combination of appendiculate claws and elytra with distinct but recumbent setae, as long as or shorter than width of interstriae. This species

is very close if not conspecific with *E. atratus* gen. et comb. nov. (see remarks section). The two species have been distinguished based on vestiture of elytra (Guillermo Kuschel unpubl. data), the interstriae bearing a row of long, erect piliform setae (short, not or slightly raised squamiform setae in *E. atratus*).

Type material

Lectotype (here designated)

REPUBLIC OF SOUTH AFRICA • ♂; "Aliwal North,; Cape Province [REPUBLIC OF SOUTH AFRICA, **Eastern Cape Province**]; Dec. 1922." "S. Africa; R.E. Turner. Brit. Mus; 1923-45" "*Derelomus*; *turneri*, Mshl; Cotype ♂" "Lectotype; *Ebenacobius*; *turneri*; (Marshall, 1935); Haran des. 2022"; NHMUK.

Other material examined

REPUBLIC OF SOUTH AFRICA – **KwaZulu-Natal Province** • 1 ♂; R617, 25 km east of Bulwer; 5 Oct. 1986; W. Wittmer leg.; SANC • 1 ♂; Quachas Neck; 30°09′36.0″ S, 28°40′48.0″ E; 30 Dec. 2018; J. Haran leg.; on inflorescences of *Searsia* sp. (Anacardiaceae); JHAR02026; CBGP. – **Northern Cape Province** • 1 ♂; Pniel, 5 km south of Barkly West; 28°35′ S, 24°32′ E; 13–15 Dec. 1984; R. Oberprieler leg.; SANC. – **Limpopo Province** • 1 ♀; D'Nyala Nature Reserve Ellisras District; 23°45′ S, 27°49′ E; 10–14 Nov. 1986; B. Grobbelaar leg.; SANC. – **Mpumalanga Province** • 1 ♀; Vaalkop near Morgenzon; 26°51′ S, 29°40′ E; 21 Sep. 1985; R. Oberprieler leg.; beating *Diospyros lycioides* (Ebenaceae); SANC. – **Western Cape Province** • 1 ♂; North Uniondale, North Side Kammanasieberge; 33°32.348′ S, 22°58.613′ E; 22 Oct. 2019; R. Borovec leg.; FFWS. – **Gauteng Province** • 1 ♀; Pretoria, hill inside of town; 25°41.507′ S, 28°12.534′ E; 3 Dec. 2017; R. Borovec leg.; general sweeping (grasslands) and beating of shrubs and trees; FFWS. – **North-West Province** • 3 ♂♂; West Sannieshof, Barberspan Dam; 26°32.611′ S, 25°35.735′ E; 29 Oct. 2018; R. Borovec leg.; FFWS • 1 ♂, 1 ♀; 4 km east of Vryburg; 26°57.603′ S, 24°46.583′ E; 29 Oct. 2018; R. Borovec leg.; FFWS.

Remarks

In the syntypic series of *Derelomus turneri* Marshall, 1935 housed at NHMUK, a male with a label referring to the type locality and bearing the label "*Derelomus turneri* Mrsh. Cotype ♂" was identified. As the description does not refer to a specific holotype, this specimen is here designated as the lectotype for this species and labelled accordingly. Other specimens of the syntypic series were labelled as paralectotypes of *Derelomus turneri*. The name *Derelomus turneri* is most probably a junior synonym of *D. atratus* gen. et comb. nov. The lectotype and all the specimens of *D. turneri* examined correspond exactly to the description of *D. atratus* made by Hesse based on a single specimen. The only difference lies in the density of scale cover on the dorsum, but the examination of large series of specimens shows that this feature is quite variable at a locality, ranging from narrow and golden to wide and whitish. The actual synonymy could not be made in this study as the holotype of *E. atratus* is currently lost (see remarks section of that species).

Life history

The host plant of this species is unknown, it was recorded once on *Diospyros lycioides* Desf. from the family Ebenaceae. This species was collected in the same sampling event with *E. grobbelaarae* gen. et sp. nov. and *E. rectirostris* gen. et sp. nov. Adults were collected from September to December.

Distribution

Republic of South Africa (Eastern Cape, Gauteng, Kwazulu-Natal, Limpopo, Mpumalanga, Northern Cape, North West & Western Cape Provinces).

Ebenacobius atratus (Hesse, 1929) gen. et comb. nov.

Derelomus atratus Hesse, 1929: 525.

Differential diagnosis

Ebenacobius atratus gen. nov. can be distinguished by the combination of appendiculate claws and elytra with distinct but recumbent setae, as long as or shorter than width of interstriae. This species is very close to, if not a synonym of, *E. turneri* gen. et comb. nov. (see the remarks section under that species). *E. atratus* has short, not or slightly raised squamiform setae on elytra (long, erect and piliform setae in *E. turneri*).

Material examined

Holotype (from description)
REPUBLIC OF SOUTH AFRICA – **KwaZulu-Natal Province** • ♂; Estcourt.

Remarks

Ebenacobius atratus gen. nov.) was described in the genus *Derelomus* based on a single male deposited at SAMC (Hesse 1929). This specimen was loaned to Guillermo Kuschel (loan 24018) who undertook a study on palaeotropical Derelomini from 2007. Unfortunately he passed away before he could complete this work and left the very preliminary manuscript and the material borrowed from institutions was partly not recovered (see postscript in Haran *et al.* 2020). Despite intensive search in the material of Derelomini loaned, the holotype of this species could not be identified and is provisionally considered as lost.

Life history

Unknown.

Distribution

Republic of South Africa (Kwazulu-Natal Province).

Ebenacobius rhodesianus (Hesse, 1929) gen. et comb. nov.
Figs 1A–B, D, F–H, J–O, 3I, 5H, 6R

Derelomus rhodesianus Hesse, 1929: 529.

Differential diagnosis

This species is distinct from all *Ebenacobius* by the presence of small whitish scales on prothorax and elytra (Fig. 1I). It is closest in general appearance to *E. turneri* gen. et comb. nov. but the latter species has appendiculate claws (claws simple in *E. rhodesianus* gen. et comb. nov.).

Type material

Holotype
ZIMBABWE • ♂; "[ZIMBABWE] Bulawayo; H. C. Pead; Sept 1911" "*Derelomus*; *rhodesianus*; Type Hesse" "Type [red label]" "Type; SAM/Ent; 4036 [red label]" "Holotype ♂; *Derelomus; rhodesianus*; Hesse, 1929; Kuschel 2004" "*Ebenacobius; rhodesianus*; (Hesse, 1929); Haran 2022"; SAMC.

Other material examined

REPUBLIC OF SOUTH AFRICA – **Mpumalanga Province** • 1 ♂; SA Wildlife College, 10 km west of Orpen Gate of Kruger National Park; 24.30° S, 31.19° E; 17 Oct. 2000; W. Breytenbach leg.; collected

along tar road on flowering *Lonchocarpus capassa* Fabaceae; SANC. – **Limpopo Province** • 2 ♂♂, 20 specs (preserved in ethanol); Thohoyandou; 30.65° E, 22.89° S; 4 Jul. 2018; J. Haran leg.; on flowers of *Euclea* cf. *crispa*; JHAR01136; CBGP.

ZIMBABWE • 3 ♂♂, 2 ♀♀; Shanghani farm; 19°32.775′ S, 29°12.371′ E; 6 Dec. 2017; R. Borovec leg.; beating shrubs and trees, miombo forest; FFWS.

Remarks

The single card mounted specimen used by Hesse (1929) for the description of *Derelomus rhodesianus* Hesse was located in the collection housed at SAMC. This specimen bears a red type label, it was identified as the holotype for this species and labelled accordingly.

Life history

This species was collected in large numbers on *Euclea* cf. *crispa*. Adults were observed on the branches, near the flower buds before blooming. The single record on flowers of *Lonchocarpus* (Fabaceae) is probably accidental. Adults were collected from July to October.

Distribution

Republic of South Africa (Limpopo and Mpumalanga Provinces), Zimbabwe.

Phylogenetic analyses

Ten of the 19 species of *Ebenacobius* gen. nov. were successfully amplified. The resulting phylogenetic tree supports the placement of the genus within Derelomini sensu Franz (2006) (Fig. 8). All species of *Ebenacobius* but one are grouped in a well-supported clade (uBV of 99%, SH-aLRT of 97.8%) distinct from the other African derelomine genera *Derelomus*, *Elaeidobius* and *Prosoestus*. A single species of *Ebenacobius*, *E. costalis* gen. et comb. nov. is grouped with an undetermined Derelomini (JHAR01151) collected in the Limpopo Province of the Republic of South Africa; the resulting clade is recovered sister with a weak support (uBV of 70%, SH-aLRT of 31.9%) to the clade encompassing all other species of *Ebenacobius*. Overall, it is also worth highlighting that the phylogenetic relationships among the sampled derelomine genera are generally poorly supported (uBV < 95% and SH-aLRT < 80%).

In the genus *Ebenacobius* gen. nov., the three species recorded on plants other than Ebenaceae (*E. thoracicus* gen. et sp. nov*., E. pedi* gen. et sp. nov. and *E. tsonga* gen. et sp. nov.) are grouped in a moderately well-supported (uBV of 92%, SH-aLRT of 85.3%) clade. For all species of *Ebenacobius* the interspecific splits recovered were consistent with the species boundaries identified via morphological examination.

Discussion

This study reveals the existence of a new genus and 14 new species of Derelomini from southern Africa, thus contributing to the knowledge on this tribe in the Afrotropical region. *Ebenacobius* gen. nov. belongs to the Derelomini as shown by morphological examination and molecular analyses and forms a distinct clade from other genera of the tribe in continental Africa. Unresolved relationships were only observed for *Ebenacobius costalis* gen. et comb. nov. that is apparently more distantly related to the clade encompassing all *Ebenacobius* available for molecular analysis. This case calls for a more detailed study since external and internal morphology of this species showed no significant divergence from the typical features of *Ebenacobius.*

This study also shows that *Ebenacobius* gen. nov. exhibits an apical mucro on the tibiae, a feature that is supposed to be absent in Derelomini as currently recognized (Franz 2006), though present in *Lomederus*

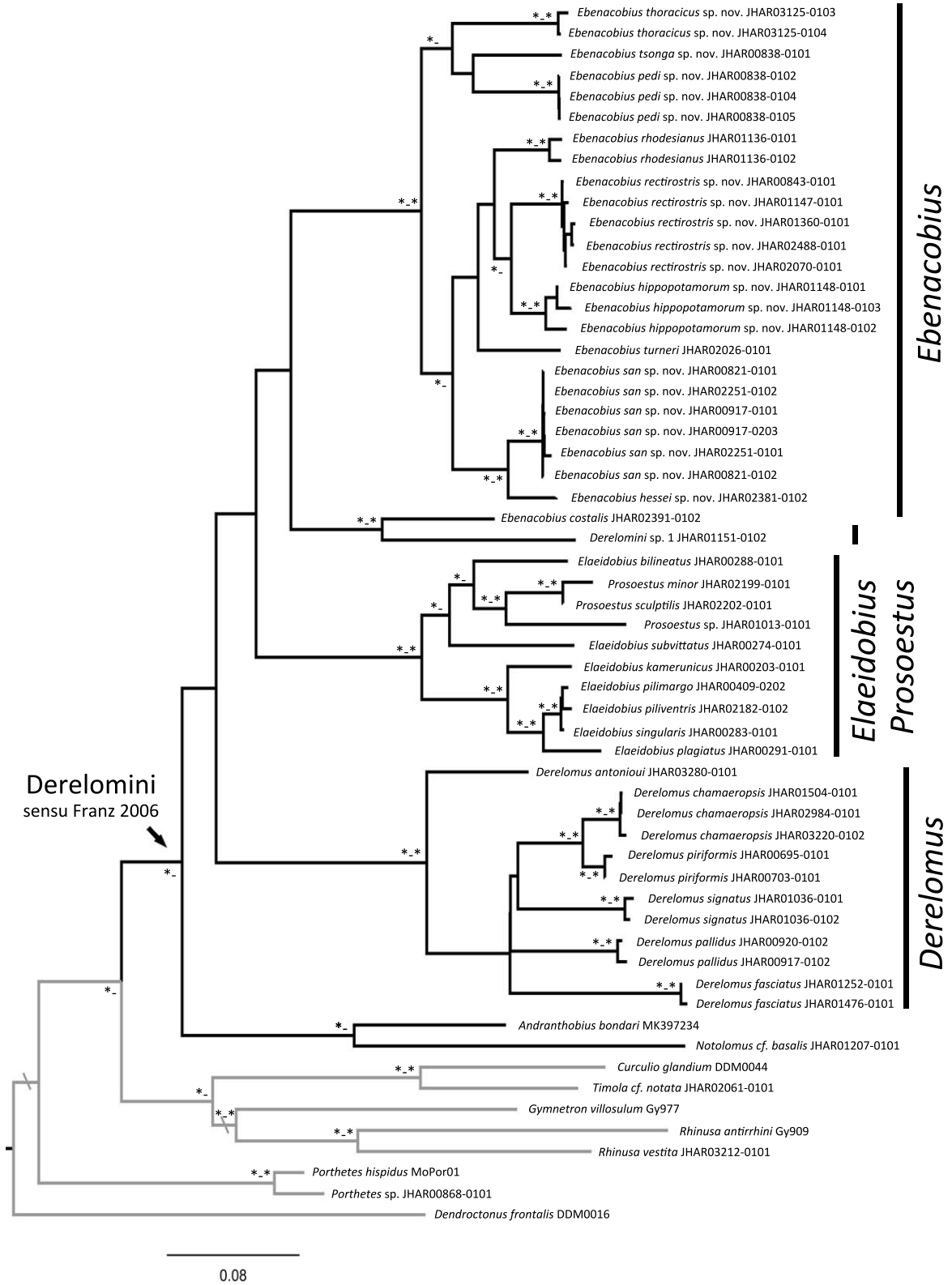

Fig. 8. Best-fit ML tree of *Ebenacobius* Haran gen. nov. and Afrotropical Derelomini resulting from the partitioned analyses of the concatenated molecular dataset (the scale bar represents the estimated number of nucleotide substitutions per site). Support values (*) at nodes indicate SH-aLRT ≥ 80% and uBV ≥ 95% values, in that order.

Table 1. Summary of plant associations and distribution of species of *Ebenacobius* Haran gen. nov. Plants marked with an asterisk indicate that larval stages of the species were obtained from flower tissues. Provinces of South Africa: EC = Eastern Cape; FS = Free State; GP = Gauteng; KZN = Kwazulu-Natal; LP = Limpopo; MP = Mpumalanga; NC = Northern Cape; NW = North West; WC = Western Cape.

Species	Host associations	Distribution
E. curvisetis Haran sp. nov.	_	South Africa (LP)
E. rectirostris Haran sp. nov.	*Euclea natalensis*	South Africa (FS, GP, KZN, LP, MP & WC)
E. duplicatus Haran sp. nov.	_	South Africa (LP & MP)
E. grobbelaarae Haran sp. nov.	_	South Africa (GP, LP & NW)
E. costalis (Fahraeus, 1844) = *Derelomus rugosicollis* (Hesse, 1929)	_	South Africa (EC, KZN & WC)
E. thoracicus Haran sp. nov.	*Mimusops obovata*	Mozambique (Maputo), South Africa (LP)
E. xhosa Haran sp. nov.	_	South Africa (EC)
E. san Haran sp. nov.	*Euclea racemosa**	South Africa (WC)
E. kuscheli Haran sp. nov.	_	South Africa (KZN &MP)
E. mulanjensis Haran sp. nov.		Malawi (Southern)
E. hessei Haran sp. nov.	*Euclea natalensis**	South Africa (EC, GP, KZN & WC)
E. pedi Haran sp. nov.	*Acokanthera oblongifolia*	South Africa (GP, LP & MP)
E. tsonga Haran sp. nov.	*Acokanthera oblongifolia*	South Africa (LP & MP)
E. hippopotamorum Haran sp. nov.	*Euclea natalensis*	South Africa (LP)
E. incognitus (Hesse, 1929)	_	South Africa (EC & WC)
E. oberprieleri Haran sp. nov.	*Euclea pseudebenus*	South Africa (NC)
E. turneri (Marshall, 1935)	_	South Africa (EC, GP, KZN, LP, MP, NC, NW & WC)
E. atratus (Hesse, 1929)	_	South Africa (KZN)
E. rhodesianus (Hesse, 1929)	*Euclea* cf. *crispa*	South Africa (LP & MP), Zimbabwe (Gwanda)

and *Elaeidobius*. This observation strengthens the conclusions of Franz (2006) and Caldara *et al.* (2014) stating that this tribe is currently morphologically and biologically heterogeneous and difficult to define. Both the unsatisfactory definition of this tribe and the unresolved relationships between the sampled genera of Derelomini stress the need for more phylogenetic studies on derelomine weevils, with a more comprehensive sampling and gene coverage.

Species of *Ebenacobius* gen. nov. are inconspicuous and rarely collected via traditional methods such as sweeping or beating vegetation. Life history data show that most species are hidden in leaf litter during the day and are recorded with a light trap at dusk. The genus *Ebenacobius* provides the second verified example of host plant association between Derelomini and dicotyledonous plants with *Lomederus* on Fabaceae (Franz & Valente 2005). The larval stages of two species (*E. hessei* gen. et sp. nov. and *E. san* gen. et sp. nov.) were identified in the flowers of species of *Euclea* (Ebenaceae) thus confirming that this tribe is not restricted to monocotyledonous plants. Several arguments suggest that these species are engaged in a brood-site pollination mutualism with their *Euclea* host, in line with what is seen in other plant-Derelomini relationships: 1) adult weevils form massive aggregations on their host during

blooming, 2) flowers of *Euclea* spp. are of cantharophilous type, creamy white and hanging down, 3) several species (*E. curvisetis* gen. et sp. nov. and *E. oberprieleri* gen. et sp. nov.) show erect setae on elytra and prothorax that are typical adaptations to pollen transport in Derelomini (although pollination might occur with species not showing such adaptation; Anstett 1999) and 4) adults show a crepuscular and night flight phenology, as is described in several Derelomini and Tychiini acting as pollinators of their hosts (Auffray *et al.* 2017; Saunders 2020).

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Supplementary material

Supp. file 1. Table S1. Details for specimens used of phylogenetic analyses and Genbank accessions. https://doi.org/10.5852/ejt.2022.818.1771.6703

Supp. file 2. Table S2. PCR primers and conditions. https://doi.org/10.5852/ejt.2022.818.1771.6705