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ANNOTATED RECORDS OF SOUTHERN AFRICAN BRUCHIDAE (COLEOPTERA) ASSOCIATED WITH ACACIAS, WITH A DESCRIPTION OF A NEW SPECIES

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ABSTRACT

Key words: Annotated records; southern African Bruchidae; Acacias.

Host plant records are provided for 16 known species of bruchid beetles associated with indigenous *Acacia* species in southern Africa. One species of Bruchidae, *Bruchidius montisustis*, is described from both sexes as new, and the following nomenclatorial changes are proposed: *discoidalis* (Fahraeus), *petechialis* (Gyllenhal), *quadrisignatus* (Fahraeus) and *multiplicatus* (Pic) are transferred from *Bruchus* to *Bruchidius* as new combinations; new status is given to *Bruchidius luteopygus* Pic, which was formerly treated as a variety of *Bruchidius longipennis* Pic; and *Pachymerus albonotatus* var. *multinotatus* Pic is given species status and transferred to the genus *Caryedon*. A table with 37 species of southern African acacias, and the bruchids that are associated with them, is provided.

Uittreksel

GEANNOTEERDE AANTEKENINGE VAN SUIDELIKE AFRIKAANSE BRUCHIDAE (COLEOPTERA) WAT MET AKASIAS GEASSOSIEER IS, MET 'N BESKRYWING VAN 'N NUWE SPESIE

Gasheerplantrekords word vir 16 Bruchidae-kewers wat met inheemse Acacia-*spesies geassosieer is, voorsien. Een nuwe Bruchidae-spesie van beide geslagte word beskryf en die volgende nomenklatoriese veranderings word voorgestel:* discoidalis *(Fahraeus),* petechialis *(Gyllenhal),* quadrisignatus *(Fahraeus) en* multiplicatus *(Pic) word van* Bruchus *na* Bruchidius *as nuwe kombinasies oorgeplaas; nuwe status word aan* Bruchidius luteopygus *Pic, wat voorheen as 'n variëteit van* Bruchidius longipennis *Pic beskou is, verleen; en* Pachymerus albonotatus *var.* multinotatus *Pic word as 'n aparte spesie beskou en na die genus* Caryedon *oorgeplaas. 'n Tabel met 37 Suidelike Afrikaanse* Acacia-*spesies, tesame met die Bruchidae-kewers wat met hulle geassosieer is, word verskaf.*

INTRODUCTION

This paper has resulted from a taxonomic study of the Bruchidae which attack indigenous species of *Acacia* in southern Africa. The results of the study were submitted for the degree of M.Sc., in the Department of Zoology and Entomology, University of the Orange Free State, Bloemfontein, South Africa.

Bruchids comprise a cosmopolitan family of chrysomeloid beetles, and their larvae develop in the seeds of plants, mainly legumes. Many species are of economic importance as pests of grain legumes, whilst others are of potential importance as natural enemies of invasive legumes such as the acacias. Despite their importance and abundance, relatively few host plants of African bruchids are known and, until now, our knowledge of the associations of these beetles with the many species of southern African acacias has been equally poor. A great deal of new information in this regard is recorded here for the first time.

During the course of this study, an attempt was made to collect bruchids from as wide a range of southern African *Acacia* species as possible. Of the 45 indigenous species of acacias (Ross, 1975) seeds of 41 were collected for the purpose of recovering Bruchidae. Of these, 37 yielded one or more bruchid species, and these, together with their host acacias, are summarized in Table 1. A detailed taxonomic study of the bruchid fauna revealed 15 known species, and these are recorded together with host and distributional data, as well as certain nomenclatorial changes. The study also yielded at least 12 new species of Bruchidae, and one of these, namely *Bruchidius montisustis*, is described below. The remainder, which are listed as undetermined species under their respective genera in Table 1, are not described here, and many of them will be documented by Dr J. E. Decelle, Musée Royal de l'Afrique Centrale, Belgium in the near future (Decelle, personal communication, 1985).

Unless otherwise stated, material recorded in this study is in the National Collection of Insects, Pretoria, and the accession numbers under 'Material', namely AcP1, AcX and AcXP, are those of the latter institution. The number preceding each accession number refers to the number of specimens in each particular series of Bruchidae.

GENUS *BRUCHIDIUS* SCHILSKY

The following 12 species of this genus are recorded below.

Bruchidius discoidalis (Fahraeus) comb. nov.

Bruchus discoidalis Fahraeus, 1839: 104

This species, which is here transferred to *Bruchidius*, seems to be host specific, and it was collected only from the pods of *Acacia davyi*. It is a strikingly marked species, and the red area on the integument of each elytron, together with the structure of the male genitalia, distinguish this species.

MATERIAL. SOUTH AFRICA. Transvaal: Nelspruit, vii. 1977 (10, AcPl 1698); Middelburg, vi. 1976 (5, AcPl 1699); Louis Trichardt, viii. 1964 (3, AcX 2070, 2071); all ex pods of *Acacia davyi*.

Bruchidius uberatus (Fahraeus)

Bruchus uberatus Fahraeus, 1839: 40
Bruchidius uberatus (Fahraeus): Decelle, 1966: 110; 1975: 20.
Bruchidius baudoni (Caillol): Herford, 1935: 18; De Luca, 1965: 727–738.

Bruchidius uberatus can be distinguished by the colour of the vestiture, which is black and white with scattered yellowish setae, as well as by the structure of the male antenna. It is known from the Transvaal and Natal, as well as from several other African countries (Decelle, 1966; De Luca, 1965) and also South America (Decelle, 1966) and Europe (Herford, 1935). It has been recorded from several species of *Acacia*, but in this study it was reared only from the pods of *Acacia nilotica* in the Transvaal.

MATERIAL. SOUTH AFRICA. Transvaal: Pretoria, various dates (60, AcPl 1689; 5, AcPl 1911; 37, AcX 918; 12, AcP 4413; 1, AcX 965; 1, AcX 933); Malelane, vi. 1976 (26, AcPl 1719); Nelspruit, vi. 1976 (37, AcPl 1718); Nylstroom, various dates (13, AcPl 1722; 18, AcPl 1720; 6, AcPl 1744; 5, AcPl 1723); Potgietersrus, iv. 1976 (5, AcPl 1724); De Wildt, vi. 1971 (7, AcX 2668); Brits, various dates (13, AcX 1996, 1997, 1696, 1710, 2007, 1658, 1999, 1977, 2006, 1994, 1327 and

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1331); Groblersdal, iii. 1964 (2, AcX 1446 and 1451); Marble Hall, iii. 1964 (2, AcX 1445 and 1488); Hammanskraal, vii–x. 1964 and vii. 1962 (10, AcX 1989, 2001, 2004, 1326 and 1334); Rustenburg, vi. 1964 (1, AcX 1765); all material ex pods of *Acacia nilotica*.

***Bruchidius senegalensis* (Pic)**

Bruchus mimus Gyllenhal, 1833: 43
Bruchus senegalensis Pic, 1912: 92 (replacement name for *mimus* Gyllenhal)
Bruchidius senegalensis (Pic): Decelle, 1975: 21.

The colour and vestiture of this species is very variable, and it is sometimes confused with *Bruchus albosparsus* Fahraeus. It was previously recorded from Senegal, Upper Volta, Namibia and Angola from undetermined species of *Acacia* (Decelle, 1975). It is here recorded from five species of *Acacia* taken at various localities in South Africa, S.W.A./Namibia and Zimbabwe.

MATERIAL. SOUTH AFRICA. Transvaal: Warmbaths, iv. 1976 (12, AcPl 1901); Naboomspruit, iv. 1976 (6, AcPl 1974); Potgietersrus, iv. 1976 (14, AcPl 1902); Zeerust, v. 1977 (23, AcPl 1925); Thabazimbi, viii–x. 1964 (4, AcX 2083, 2084); Stilfontein, vi. 1971 (1, AcX 2677); all ex *Acacia erioloba;* Vivo, x. 1977 and x. 1978 (43, AcPl 1971; 66 AcPl 1968), ex *Acacia stuhlmannii;* Pietersburg, vi. 1977 (32, AcPl 1881); Warmbaths, v. 1977 (4, AcPl 1970); Nylstroom, vii. 1978 (23, AcPl 1973; Zeerust, vi. 1977 (20, AcPl 1972); all ex *Acacia hebeclada*. Cape Province: Douglas, v. 1977 (64, AcPl 1872); Kuruman, v. 1977 (11, AcPl 1969); Kimberley, iii. 1971 (5, AcX 2736); Hotazel, v. 1977 (10, AcPl 1899); Uppington, v. 1977 (9, AcPl 1976); all ex pods of *Acacia erioloba;* Kalahari Gemsbok Park, xii. 1970 (5, AcX 2632); Kimberley, viii. 1971 (8, AcX 2674); Kuruman, v. 1977 (21, AcPl 1977); Vryburg, v. 1977 (11, AcPl 1978); all ex pods of *Acacia hebeclada;* Griekwastad, v. 1977 (9, AcPl 1751; 17, AcPl 1979), ex *Acacia haematoxylon;* Kuruman, v. 1968; Douglas, v. 1977 (34, AcPl 1980); both ex *Acacia erioloba* × *Acacia haematoxylon*.

BOPHUTHATSWANA. Mafikeng, v. 1977 (26 AcPl 1894, 1926), ex *Acacia hebeclada*.

SOUTH WEST AFRICA/NAMIBIA. Keetmanshoop, v. 1977 (11, AcPl 1918); Windhoek, viii. 1977 (50 AcPl 1843); Koes, viii. 1976 (35, AcPl 1893); Otjiwarongo, vii. 1976 and vii. 1977 (55, AcPl 1865; 36, AcPl 1879); Khomas Hochland, viii. 1977 (23, AcPl 1907); Okahandja, viii. 1977 (5, AcPl 1844); Uis, ii. 1978 (20, AcPl 2016); all ex pods of *Acacia erioloba;* Windhoek, viii. 1977 (41, AcPl 1962); Okahandja, viii. 1977 (20, AcPl 1963); Grünau, v. 1977 (10, AcPl 1964); all ex pods of *Acacia hebeclada*.

ZIMBABWE. Wankie National Park, viii. 1976 (4, AcPl 1932); Gwaai Forest reserve, iv. 1977 (2, AcPl 1965); Umohlo, vi. 1977 (8, AcPl 1966); all ex pods of *Acacia erioloba*.

***Bruchidius spadiceus* (Fahraeus)**

Bruchus spadiceus Fahraeus, 1839: 53.
Bruchidius spadiceus (Fahraeus): Decelle, 1972: 236; Lamprey *et al.*, 1974: 81–82.
Bruchus advena Wollaston, 1870: 26

This species is here recorded from the pods of *Acacia davyi, A. luederitzii, A. fleckii, A. tortilis* and *A. karroo*, and was found to be most abundant in the pods of the latter species. It has previously been recorded from *A. tortilis spirocarpa* by Lamprey *et al.* (1974) in Kenya and is also known from the island of St. Helena (Wollaston, 1870).

MATERIAL. SOUTH AFRICA. Transvaal: Pretoria, iv. 1976 (9 AcPl 1982); Potchefstroom, iv. 1976 (9, AcPl 1938); Nylstroom, iv. 1978 (33, AcPl 2012); Middelburg, v. 1978 (26, AcPl 2013); Rustenburg, iv. 1977 (1, AcPl 2014); Nelspruit, v. 1977 (1, AcPl 2015); Pretoria, xi. 1962 (1, AcX 1370); Cullinan, ix. 1962 (1, AcX 1387); all samples ex pods of *Acacia karroo;* White River, vi. 1976 (2, AcPl 1990); Nylstroom, iv. 1977 (6, AcPl 1826); both ex pods of *Acacia luederitzii;* Nelspruit, vii. 1977 (6, AcPl 1983); Louis Trichardt, x. 1964 (2, AcX 2072); Kaap Muiden, viii. 1964 (1, AcX 2068); all ex pods of *Acacia davyi*. Cape Province: Hotazel, v. 1977 (26, AcPl 1858); Middelburg, vi. 1977 (22, AcPl 1886); both samples ex pods of *Acacia karroo*. Natal: Lake Sibaya, viii. 1976; Jozini, 6. iv. 1977 (7, AcPl 1876); both ex *Acacia karroo;* Umgeni, viii. 1968, ex *Acacia tortilis*.

ZIMBABWE. Umgusa, v. 1977 (9, AcPl 1848), ex *Acacia karroo;* Umbambangwe, vi. 1977 (10, AcPl 1927), ex *Acacia fleckii*.

***Bruchidius petechialis* (Gyllenhal) comb. nov.**

Bruchus petechialis Gyllenhal, 1833: 74; Fahraeus, 1839: 100.

This poorly known species, which was originally placed in the genus *Bruchus*, was described from the "Cape of Good Hope" and is here transferred to *Bruchidius*. Host plant records are given here for the first time. The species was recorded from four species of *Acacia* from various localities in South Africa.

MATERIAL. SOUTH AFRICA. Transvaal: Codrington, v. 1977 (10, AcPl 1909); Pretoria, v. 1976 (30, AcPl 1693); Potgietersrus, iv. 1976 (8, AcPl 1700); Potchefstroom, iv. 1976 (4, AcPl 1694); Rayton, xi. 1962 (9, AcX 1530, 1369 and 1378); Lindeques Drift, ix. 1971 (5, AcX 2741); Marble Hall, iii. 1964 (3, AcX 1484, 1459); Johannesburg, xi. 1962 (3, AcX 1377); Groblersdal, iii. 1964 (1, AcX 1452); Hartebeespoort Dam, iii. 1964 (1, AcX 1420); Bronkhorstspruit, vii. 1964 (1, AcX 2027); all samples ex pods of *Acacia karroo;* Pietersburg, iv. 1976 (9, AcPl 1700), ex *Acacia rehmanniana*. Cape Province: Middelburg, v. 1977 (1, AcPl 1847); Kei Mond, iv. 1970 (AcXP 112); both samples ex *Acacia karroo;* Kimberley, v. 1977 (14, AcPl 1891), ex *Acacia tortilis*. Natal: Mkuze, iv. 1977 (9, AcPl 1822), ex *Acacia senegal* var. *rostrata*.

***Bruchidius luteopygus* Pic stat. nov.**

Bruchidius longipennis var. *luteopygus* Pic, 1952: 8

Bruchidius luteopygus was originally regarded as a variety of *B. longipennis* Pic, but according to J. E. Decelle (personal communication), who has examined the type specimen of this variety, it should be regarded as a distinct species. It is here recorded from four South African species of *Acacia*.

MATERIAL. SOUTH AFRICA. Transvaal: Kampersrus, vii. 1977 (19, AcPl 1772); Numbi Gate, Kruger National Park, vi. 1976 (28, AcPl 1937); Bosbokrand, iv. 1976 (15, AcPl 1771); Nelspruit, v–vi. 1976 (many, AcPl 1736, 1812, 1740); Acornhoek, iv. 1976 (2, AcPl 1738); all samples ex pods of *Acacia sieberana;* Pretoria, xi. 1962 (1, AcX 1276); Bronkhorstspruit, vi. 1964 (1, AcX 1766); all ex *Acacia robusta;* Nylstroom, iv. 1976 and iii. 1976 (7, AcPl 1811, 1814), ex *Acacia gerrardii;* Chuniespoort, v. 1978 (7, AcPl 1766); Steelpoort, vi. 1978 (3, AcPl 1806); both samples ex *Acacia grandicornuta*. Natal: Exeter, ix. 1939 (5, AcP 4416), ex *Acacia sieberana*.

***Bruchidius quadrisignatus* (Fahraeus) comb. nov.**

Bruchus quadrisignatus Fahraeus, 1871: 449

This striking and distinctive black species with two red circular markings on the elytra was orginally described from "Caffraria". It is here recorded from Natal, the Transvaal and Zimbabwe, and was reared from the pods of two species of *Acacia*. It is here transferred from *Bruchus* to *Bruchidius*.

MATERIAL. SOUTH AFRICA. Natal: Durban, vii. 1963 (7, AcC 2695, in South African Museum); Stanger, vi. 1978 (14, AcPl 1994); Dukuduku Forest Reserve, nr. Mtubatuba; both samples ex pods of *Acacia kraussiana*. Transvaal: Soutpansberg, ix. 1959 (1, AcX 920), ex *A. kraussiana;* Malelane, v. 1978 (5, AcPl 1944), ex *Acacia schweinfurthii*.

ZIMBABWE. Salisbury (=Harare), ix. 1976 (1, AcPl 1995), ex *Acacia schweinfurthii*.

***Bruchidius silaceus* (Fahraeus)**

Bruchus silaceus Fahraeus, 1839: 53

Tuberculobruchus silaceus (Fahraeus): Decelle, 1960: 50.

Bruchidius silaceus (Fahraeus): Decelle, 1970: 258; 1975: 22.

This species was collected in the Cape Province, Orange Free State and the Transvaal from pods of *Acacia hereroensis* and *A. caffra,* and it was found to be usually very numerous in the pods of the latter species.

MATERIAL. SOUTH AFRICA. Transvaal: Nylstroom, iv. 1978 (11, AcPl 1935); Pretoria, xi. 1962 (7, AcX 1395, 1391, 1376); Rustenburg, iv–v. 1977 (25, AcPl 1778); Barberton, iv. 1978 (4, AcPl 1936); Nietverdient, v. 1977 (22, AcPl 1779); Hartebeespoort Dam, v. 1977 (2, AcPl 1913); Hammanskraal, viii–x. 1963 (2, AcX 1496); Krugersdorp, xi. 1962 (2, AcX 1410, 1397); Warmbaths, iv. 1976 (1, AcPl 1815); Groblersdal, iii. 1964 (1, AcX 1476); Brits, ix. 1962 (1, AcX 1505); all ex pods of *Acacia caffra*. Orange Free State: Reddersburg, xi. 1962 (1, AcX 1409), ex pods of *Acacia caffra*.

BOPHUTHATSWANA. Mafikeng, v. 1977 (20, AcPl 1780), ex *Acacia caffra;* same data except (20, AcPl 2010), ex *Acacia hereroensis*.

***Bruchidius krugeri* Decelle**

Bruchidius krugeri Decelle, 1970: 260

Host plant records of this species, which was originally described from South Africa, are here given for the first time, and it is recorded from the Transvaal and Zimbabwe.

MATERIAL. SOUTH AFRICA. Transvaal: Hoedspruit, vi. 1977 (4, AcPl 1777), ex *Acacia nigrescens;* Zeerust, v. 1977 (2, AcPl 1996); Nylstroom, iv. 1977 (2, AcPl 1877); both series ex *Acacia erubescens*.

ZIMBABWE. Bulawayo, viii. 1979 (12, AcPl 1991), ex *Acacia nigrescens*.

***Bruchidius submaculatus* (Fahraeus)**

Bruchus submaculatus Fahraeus, 1839: 50; Peake, 1952: 318.

Bruchidius submaculatus (Fahraeus): Decelle, 1973: 183; 1975: 22.

This species was originally described from "Caffraria". Previously recorded host plants of this species (Peake, 1952) include, *Albizzia* sp., *Combretum* sp., *Acacia senegal* and *Acacia nilotica*. For this study at least 60 trees of the latter *Acacia* were sampled in various areas without having recorded *B. submaculatus*. It was, however, reared from the pods of three other *Acacia* species, as listed below.

MATERIAL. SOUTH AFRICA. Transvaal: Nylstroom, iv. 1976 (41, AcPl 1732); Malelane, v. 1977 (8, AcPl 1735); Pretoria, v. 1977 (2, AcPl 1733); Thabazimbi, iv. 1977 (1, AcPl 1760); all series ex pods of *Acacia galpinii;* Ellisras, iv. 1977 (1, AcPl 1917), ex *Acacia burkei*. Natal: Mkuze, v. 1964 (in South African Museum), ex *Acacia nigrescens*.

***Bruchidius multiplicatus* (Pic) comb. nov.**

Bruchus multinotatus Pic, 1928 (nec 1902): 30

Bruchus multiplicatus Pic, 1929: 35 (replacement name)

This poorly known species is here recorded from two species of *Acacia* collected in Natal.

MATERIAL. SOUTH AFRICA. Natal: Lower Tugela Valley, vi. 1977 (23, AcPl 1883); Keatsdrift, vi. 1978 (30, AcPl 1993); Ashburton, ix. 1963 (in S.A. Museum); Durban, vii. 1963 (1, in S.A. Museum); Camperdown, iv. 1963 (1, in S.A. Museum); all series ex *Acacia brevispica;* Dukuduku Forest Reserve, ii. 1977 (7, AcPl 1862, 1910); Durban, vii. 1963 (2, in S.A. Museum); Camperdown, iv. 1963 (1, in S.A. Museum); Ashburton, ix. 1963 (1, in S.A. Museum); all ex *Acacia kraussiana*.

***Bruchidius montisustis* spec. nov. Fig. 1–4.**

This new species appears to be host-specific and restricted in its distribution, and it has so far been recorded only from the pods of *Acacia montis-usti,* a tree which is found in a fairly restricted area in South West Africa/Namibia. *Bruchidius montisustis* is the only bruchid to have been reared from this *Acacia,* and it can be separated from its congeners by the following combination of characters.

Length about 3,8 mm; width about 2,7 mm.

MALE: Colour. Integument: head reddish; mouthparts reddish to yellowish red; antennal segments one to four yellowish, remainder brownish with apex of each segment greyish to black; pronotum reddish to reddish brown, medially usually reddish; scutellum brown to dark reddish brown; elytra yellowish brown to reddish brown, their apices dark brown to black; pygidium dark

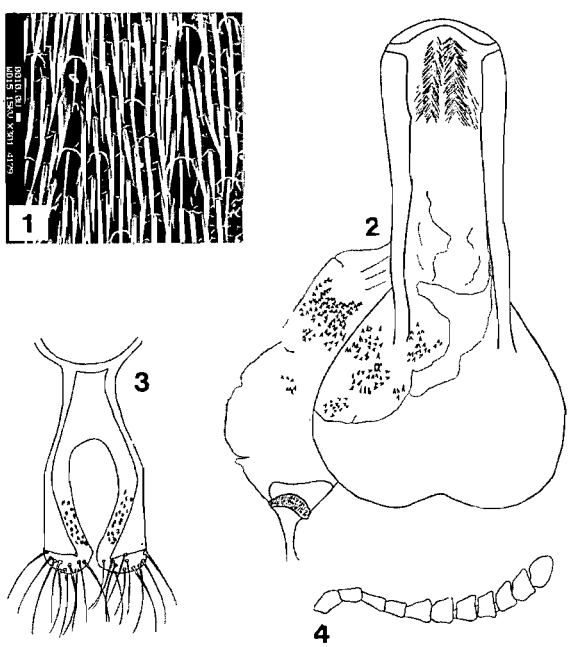

FIG. 1–4. *Bruchidius montisustis* spec. nov., male. 1. Scanning electronmicrograph of striae. 2. Median lobe of genitalia. 3. lateral lobes of genitalia. 4. Antenna.

brown basally, apically reddish brown, or entirely reddish brown with basal end dark brown to slightly blackish; undersurface reddish, prosternum medially blackish; hind femur reddish, carinae and spine blackish; tibia reddish; tibial corona black; tarsi reddish; claw blackish basally, yellowish to brown apically. Vestiture rather variable: on head of most specimens, setae yellowish, recumbent; on pronotum the setae dense, white anteriorly and laterally, on median basal lobe short, white median impressed line, two white spots medially, one on each side of midline, remainder yellowish, the colour pattern variable; on elytra setae vary from pale to dark brown with or without white, apex of elytra blackish; on pygidium white to pale yellowish, sparse in some areas giving brownish impression; undersurface white to greyish.

Head: short, not very broad; integument rough; frons with median glabrous line extending from frontoclypeal suture to vertex; glabrous line not raised; setae sparse; width of eye slightly more than width of frons, twice the length of ocular sinus; distance from base of antenna to apex of labrum one half the distance from upper limit of eye to apex of labrum; antenna (Fig. 4): with first segment twice as long as broad; second almost just as long as broad, not as rounded as the first, slightly narrow basally to one half its length becoming broader apically; third segment longer than broad, narrow basally, broad apically; fourth segment about as long as broad, apex not much broader than base; from segments five to ten tending to be serrate; last segment rounded, dorsolaterally shorter than ventrolaterally, curving down, longest point ventroapically.

Prothorax: pronotum in dorsal view subcampanulate; punctuations visible despite fairly dense setae; diameter of a puncture subequal to that of two ommatidia; integument between punctures rough; lateral carina absent; gibbosities absent; broad median basal lobe, with short, broad, median impressed line; apices abruptly downcurved.

Mesothorax and metathorax: scutellum hidden by dense recumbent setae, apparently slightly broader than long, setae forming posterolateral tooth of setae; elytra each more than twice as long as broad; dorsal surface of elytra evenly convex between humerus and apex, their apices sloping; gibbosities absent; striae (Fig. 1): sometimes almost concealed beneath vestiture, ventrally striae four and five shorter than the remaining striae, four a bit shorter than five; striae fairly evenly spaced; integument of interstriae rough; small raised area with two short, sharp spines at basal end of striae three and four; humerus raised, covered with moderately dense recumbent setae; integument of undersurface slightly rough; dorsal margin of hind femur moderately arcuate, with inner and outer ventral longitudinal carinae; inner ventral carina prominent from base to apex, outer ventral carina prominent in distal one half of its length; a short, sharp, broad spine present on inner ventral carina; tibia with inner and outer longitudinal ventral carinae each ending in a prominent spine; tibial corona with one long and one slightly shorter spine and three spinules; first tarsomere with inner and outer longitudinal carinae.

Abdomen: with first ventrite slightly flattened basally, rounded apically; slightly shorter than ventrite two to five together; ventrite two to four not modified; five slightly emarginate, narrowing apically; pygidium with integument rough, the punctures large; in lateral view moderately straight.

Genitalia (Fig. 2–3): median lobe moderate in length and width; moderately sclerotized for about one-half its length; in ventral view, ventral valve broad at apex, short, concave laterally, almost straight at base, as broad as median lobe; armature of internal sac consisting of two dense clusters of spicules at level of ventral valve, becoming sparse laterally; medially with sparse cluster of denticles; lateral lobes fairly short, broad; cleft for slightly more than one half its length; apically large with long setae, not very expanded mesally, with short clusters of setae; laterally not straight, curved at about one half its length.

FEMALE: last ventrite straight; otherwise as in the male.

MATERIAL. Male holotype, 15 paratypes (AcPl 1697) with the following data: SOUTH WEST AFRICA/NAMIBIA, Brandberg, ii. 1978, C. Kok & S. J. van Tonder, ex pods of *Acacia montis-usti*; holotype and paratypes in National Collection of Insects, Pretoria; 2 paratypes in State Museum, Windhoek, S.W.A./Namibia, and 2 in Musée Royal de l'Afrique Centrale, Tervuren, Belgium.

GENUS *TUBERCULOBRUCHUS* DECELLE

***Tuberculobruchus natalensis* (Pic)**

Bruchus natalensis Pic, 1903: 170

Tuberculobruchus natalensis (Pic): Decelle, 1951: 178.

Bruchidius natalensis (Pic): Prevett, 1967: 1–5.

This species, which was originally described from Natal, appears to be host specific on *Acacia sieberana*. It is here recorded from several localities in the Transvaal from that host, and it has been recorded from the same *Acacia* from northern Nigeria by Prevett (1967).

MATERIAL. SOUTH AFRICA. Transvaal: Plaston, vii. 1964 (8, AcX 2040, 2037); Witrivier, vii. 1964 (1, AcX 2031); Waterval-onder, vi. 1976 (37, AcPl 1686); Nelspruit, vi. 1976 (59, AcPl 1685, 1715); Kampersrus, iv. 1977 (8, AcPl 1713); Schoemanskloof, v. 1977 (7, AcPl 1714); Numbi Gate, Kruger National Park, vi. 1976 (6, AcPl 1716); Barberton, vii–viii. 1964 (14, AcPl 1683); Stofberg, iii. 1964 (2, AcX 1448); Acornhoek, iv. 1976 (13, AcPl 1687); all series ex pods of *Acacia sieberana* var. *woodii*. Natal: Exeter, ix. 1939 (8, AcP 4416), ex *Acacia sieberana*.

***Tuberculobruchus signatopygus* (Pic)**

Bruchus signatopygus Pic, 1933: 16

Tuberculobruchus signatopygus (Pic): Decelle, 1951: 180

This species was originally described from Zimbabwe. Additional records from this country are given here, as well as two from localities in South Africa. Its host is recorded for the first time.

MATERIAL. SOUTH AFRICA. Transvaal: Malelane, vi. 1978 (7, AcPl 2017); Natal: Lower Tugela, vi. 1978 (2, AcPl 2018); both samples ex *Acacia schweinfurthii*.

ZIMBABWE. Salisbury (= Harare), x. 1976 (16, AcPl 1745); Bulawayo, x. 1979 (19, AcPl 1992); both ex *Acacia schweinfurthii*.

GENUS *CARYEDON* SCHÖNHERR

***Caryedon multinotatus* (Pic) comb. nov., stat. nov.**

Pachymerus albonotatus var. *multinotatus* Pic, 1935: 12

Pachymerus interstinctus Fahraeus: Skaife, 1926: 579–581 (Misidentification).

This species, which develops in the pods of *Acacia erioloba*, has a distinctive life cycle which takes nearly two years to complete (Skaife, 1926).

MATERIAL. SOUTH AFRICA. Transvaal: Thabazimbi, xii. 1964 (2, AcPl 1870); Warmbaths, vi. 1977 (2, AcPl

TABLE 1. The *Acacia* host plants of Southern African Bruchidae

Host plants	Bruchidae
Acacia albida Del.	*Bruchidius* sp. (2 undet. species)
A. arenaria Schinz	*Bruchidius* sp.
A. ataxacantha DC.	*Bruchidius* sp.
A. borleae Burtt Davy	*Bruchidius* sp.
	Caryedon acaciae (Gyllenhal)
A. brevispica Harms	*Bruchidius multiplicatus* (Pic)
A. burkei Benth.	*Bruchidius submaculatus* (Fahraeus)
A. caffra (Thunb.) Willd.	*Bruchidius silaceus* (Fahraeus)
A. davyi N.E. Br.	*Bruchidius discoidalis* (Fahraeus)
	Bruchidius spadiceus (Fahraeus)
A. erioloba E. Mey.	*Bruchidius senegalensis* (Pic)
	Caryedon multinotatus (Pic)
A. erioloba E. Mey. × *A. haematoxylon* Willd.	*Bruchidius senegalensis* (Pic)
A. erubescens Welw. ex Oliv.	*Bruchidius krugeri* Decelle
A. fleckii Schinz	*Bruchidius spadiceus* (Fahraeus)
A. galpinii Burtt Davy	*Bruchidius submaculatus* (Fahraeus)
A. gerrardii Benth.	*Bruchidius luteopygus* Pic
	Bruchidius sp. (2 undet. species)
A. grandicornuta Gerstn.	*Bruchidius luteopygus* Pic
	Bruchidius sp.
A. haematoxylon Willd.	*Bruchidius senegalensis* (Pic)
A. hebeclada DC.	*Bruchidius senegalensis* (Pic)
A. hereroensis Engl.	*Bruchidius silaceus* (Fahraeus)
A. karroo Hayne	*Bruchidius spadiceus* (Fahraeus)
	Bruchidius petechialis (Gyllenhal)
	Bruchidius sp.
A. kraussiana Meisn. ex Benth	*Bruchidius multiplicatus* (Pic)
	Bruchidius quadrisignatus (Fahraeus)
A. luederitzii Engl.	*Bruchidius spadiceus* (Fahraeus)
A. mellifera (Vahl) Benth.	*Bruchidius* sp.
A. montis-usti Merxm. & A. Schreib.	*Bruchidius montisustis* spec. nov.
A. nigrescens Oliv.	*Bruchidius krugeri* Decelle
	Bruchidius submaculatus (Fahraeus)
A. nilotica (L.) Willd. ex Del.	*Bruchidius uberatus* (Fahraeus)
	Bruchidius sp.
A. polyacantha Willd.	*Bruchidius* sp.
A. permixta Burtt Davy	*Bruchidius* sp.
A. reficiens Wawra	*Caryedon acaciae* (Gyllenhal)
A. rehmanniana Schinz	*Bruchidius petechialis* (Gyllenhal)
A. robusta Burch.	*Bruchidius luteopygus* Pic
	Bruchidius sp. (3 undet. species)
A. schweinfurthii Brenan & Exell	*Bruchidius quadrisignatus* (Fahraeus)
	Tuberculobruchus signatopygus (Pic)
A. senegal (L.) Willd.	*Bruchidius petechialis* (Gyllenhal)
	Bruchidius sp.
A. sieberana DC.	*Bruchidius luteopygus* Pic
	Tuberculobruchus natalensis (Pic)
	Bruchidius sp. (2 undet. species)
A. stuhlmannii Taub.	*Bruchidius senegalensis* (Pic)
A. tenuispina Verdoorn	*Bruchidius* sp.
A. tortilis (Forssk.) Hayne	*Bruchidius spadiceus* (Fahraeus)
	Bruchidius petechialis (Gyllenhal)
	Bruchidius sp.
A. xanthophloea Benth.	*Bruchidius* sp. (2 undet. species)

1998); Potgietersrus, vi. 1977 (1, AcPl 1999); Zeerust, vi. 1978 (1, AcPl 2003). Cape Province: Griekwastad, v. 1977 (2, AcPl 2000); Douglas, v. 1977 (2, AcPl 2001); Kuruman, v. 1977 (1, AcPl 2004). All series ex pods of *Acacia erioloba*.

Caryedon acaciae (Gyllenhal)

Bruchus (Caryoborus) acaciae Gyllenhal, 1833: 97.

Caryedon acaciae (Gyllenhal): Arora, 1977: 104; Decelle, 1979: 328

Caryedon capicola (Motschulsky): Decelle, 1975: 24.

This species is widely distributed in Africa and also known from India, and it has been recorded from a number of *Acacia* species (Decelle, 1979; Arora, 1977). Two further species of *Acacia* are here recorded as hosts of this bruchid for the first time.

MATERIAL. SOUTH AFRICA. Transvaal: Komatipoort, v. 1977 (4, AcPl 1776); Nylstroom, iii. 1976 (4, AcPl 1857); both series ex pods of *Acacia borleae*.

SOUTH WEST AFRICA/NAMIBIA Omaruru, v. 1968 (1, AcXP 87), ex *Acacia reficiens*.

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REFERENCES

ARORA, G. L., 1977. Taxonomy of the Bruchidae (Coleoptera) of Northwest India, Part I. Adults. *Oriental Insects* 7: 1–132.

DECELLE, J. E., 1951. Contribution à l'étude des Bruchidae du Congo belge (Col. Phytophaga). *Revue de zoologie et de botanique africaines* 45: 172–192.

DECELLE, J. E., 1960. Bruchidae (Coleoptera Phytophagoidea). *In: Exploration du Parc National de la Garamba, Mission M. de Saeger*. Fasc. 18 (3): 45–75. Hayez. Brussels.

DECELLE, J. E., 1966. La Bruche Sud-Americaine des Acacias: *Pseudopachymerina spinipes* (Erichson). *Bulletin et Annales de la Societé royale d'Entomologie de Belgique* 102: 109–116.

DECELLE, J. E., 1970. Coleoptera: Bruchidae. *In: South African Animal Life* xiv. Ed. R. Hanström, P. Brinck and G. Rudebeck, Lund, Sweden.

DECELLE, J. E., 1972. La Faune Terrestre de l'Ile de Sainte-Hélène. *Annales du Musée royal du Congo belge*. (Ser. 8) 192: 235–237.

DECELLE, J. E., 1973. Coleoptera: Bruchidae de Ceylon. *Entomologica Scandinavica* 4: 179–194.

DECELLE, J. E., 1975. Les Coléoptères Bruchides d'Angola. *Publicações culturais da Companhia de Diamantes de Angola, Lisboa* 89: 13–32.

DECELLE, J. E., 1979. Insects of Saudi Arabia. Coleoptera: Fam. Bruchidae. *Fauna of Saudi Arabia* 1: 318–330.

DE LUCA, Y., 1965. Étude de la morphologie imaginale et remarques concernant *Bruchidius baudoni* Caillol (Coleoptera, Bruchidae). *Bulletin de l'Institut francais d'Afrique noire* 27A: 727–738.

FAHRAEUS, O. I., 1839. (Bruchidae) *In:* Schönherr, C. J., *Genera et Species Curculionidum cum Synonymia Hujus Familiae*. v. Paris and Lipsiae.

FAHRAEUS, O. I., 1871. Coleoptera Caffrariae, annis 1838–1845 a J. A. Wahlberg collecta. Fam. Brentidae, Antribidae et Bruchidae, descriptae. *Öfversight af Kongliga Svenska Vetenskapsakademiens Förhandlingar* 4: 433–452.

GYLLENHAL, I., 1833. (Bruchidae) *In:* Schönherr, C. J., *Genera et Species Curculionidum cum Synonymia Hujus Familiae*. i. Paris and lipsiae, 31–114.

HERFORD, G. M., 1935. A key to the members of the family Bruchidae (Coleoptera) of economic importance in Europe. *Transactions of the Society for British Entomology* 2 (1): 1–28.

LAMPREY, H. F., HALEVY, G. & MAKACHA, s., 1974. Interactions between *Acacia*, bruchid seed beetles and large herbivores. *East African Wildlife Journal* 12: 81–85.

PEAKE, F. G. G., 1952. On a Bruchid seed-borer in *Acacia arabica*. *Bulletin of Entomological Research* 43: 317–324.

PIC, M., 1903. Coléoptères de l'Afrique Australe. *Revue d'entomologie* 22: 165–171.

PIC, M., 1912. Coléoptères exotiques nouveaux ou peu connus. *L'Echange* 28: 5–94.

PIC, M., 1928. Nouveautés Diverses. *Melanges Exotico-Entomologiques* 52:1–32.

PIC, M., 1929. Nouveautés Diverses. *Melanges Exotico-Entomologiques* 54: 1–36.

PIC, M., 1933. Nouveautés Diverses. *Melanges Exotico-Entomologiques* 61: 3–36.

PIC, M., 1935. Nouveautés Diverses. *Melanges Exotico-Entomologiques* 65: 1–36.

PIC, M., 1952. Coléoptères du globe (suite) *L'Echange* 528: 8.

PREVETT, P. F., 1967. Notes on the biology, food plants and distribution of Nigerian Brichidae (Coleoptera) with particular reference to the Northern region. *Bulletin of the Entomological Society of Nigeria* 1: 3–6.

ROSS, J. H. (ed.), 1975. *Flora of Southern Africa*. 16, pt 1 Government Printer, Pretoria.

SKAIFE, S. H., 1926. The bionomics of the Bruchidae. *South African Journal of Science* 23: 575–588.

WOLLASTON, T. V., 1870. The Coleoptera of St Helena. *Annals and Magazine of Natural History* v: 18–37.

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