

The genus *Corticeus* Piller & Mitterpacher (Coleoptera: Tenebrionidae) in arboreal habitats of South Africa¹

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Abstract

The species of the genus *Corticeus* Piller & Mitterpacher, 1783 (Tenebrionidae: Diaperinae: Hypophtaeini) from South Africa are compiled. Newly collected specimens are listed, additional records originate from adjacent Namibia, Botswana, Zimbabwe and Mozambique. To facilitate subsequent identifications photographs of all 18 species from this area are included. All species of the genus *Corticeus* have an arboreal mode of life and live together with their larvae, often in aggregations, under the bark of trees. They are more abundant in the eastern and northern parts of South Africa, but are lacking in the drier tree-less western parts.

Key words: Coleoptera, Tenebrionidae, *Corticeus*, South Africa, new records.

Zusammenfassung

Die Arten der Gattung *Corticeus* Piller & Mitterpacher, 1783 (Tenebrionidae: Diaperinae: Hypophtaeini) aus Südafrika werden zusammengestellt. Neu gesammelte Exemplare werden aufgelistet, zusätzliche Nachweise stammen aus dem angrenzenden Namibia, Botswana, Zimbabwe und Mozambique. Um spätere Bestimmungen zu erleichtern, werden Fotografien aller 18 Arten beigelegt. Alle Arten der Gattung *Corticeus* haben eine arboreale Lebensweise und leben zusammen mit ihren Larven, oft vergesellschaftet, unter Baumrinden. Sie sind häufiger in den östlichen und nördlichen Regionen Südafrikas, fehlen aber in den trockeneren, baumlosen westlichen Teilen.

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1 Introduction

The species of the genus *Corticeus* Piller & Mitterpacher, 1783 (Tenebrionidae: Diaperinae: Hypophtaeini) from Africa south of the Sahara including Madagascar were revised by BREMER (1985, 1987, 1995). Since that time, newly collected specimens have been accumulated in different collections. The present paper gives the current state of knowledge about the genus in South Africa, based on literature and own research. Additional records from adjacent Namibia, Botswana, Zimbabwe and Mozambique are treated as well. Photographs to facilitate subsequent identifications of all 18 species are included.

Acronyms of depositories

CRSW	Collection RUDOLF SCHUH, Wien
HNHM	Hungarian Natural History Museum, Budapest
MNB	Museum für Naturkunde, Berlin
SMNS	Staatliches Museum für Naturkunde, Stuttgart
TMSA	Transvaal Museum, Pretoria
ZSM	Zoologische Staatssammlung, München

Acknowledgements

South African authorities kindly provided permits for joint field work in cooperation with RUTH MÜLLER (Transvaal Museum Pretoria). Dr. OTTÓ MERKL (Budapest), RUTH MÜLLER (Pretoria), as well as BERND JAEGER and Dr. MANFRED UHLIG (both Berlin) supported my studies by the loan of specimens from the collections under their care. My colleague JOHANNES REIBNITZ (Stuttgart) prepared the photographs using a Leica DFC 480 digital camera on a Leica MZ16 APO microscope. The digital photographs were subsequently processed using Leica LAS software. Last but not least I thank Prof. Dr. HANS J. BREMER (Melle) for helpful comments on certain species and types. Thanks are also due to the referees Dr. KIYOSHI ANDO (Osaka) and Prof. Dr. KIMIO MASUMOTO (Tokyo) for their comments and corrections.

2 The species

Corticeus cedrinus Bremer, 1995 (Fig. 17)

New material: South Africa, N Drakensberge, 17.XII.1996, leg. P. MACHÁČEK, 1 ex. SMNS (det. BREMER).

¹ Contributions to Tenebrionidae, no. 82. – For no. 81 see: Caucasian entomological Bulletin 5 (2009).

– South Africa, Mpumalanga, Sjonajona, Badplaas, 1410 m, 11.XI.2002, leg. TMSA staff, 1 ex. TMSA.

Type locality: South Africa, “Cederberge”.

Distribution: South Africa (Western Cape) (BREMER 1995); South Africa (KwaZulu-Natal, Mpumalanga) (new records).

Corticeus chakai Bremer, 1995

(Fig. 12)

New material: South Africa, Eastern Cape, Mbotyi Coastal Forest, 29.XI.–3.XII.2003, leg. M. BURGER, R. MÜLLER & W. SCHAWALLER, 2 ex. TMSA, 1 ex. SMNS. – South Africa, Eastern Cape, Port St. Johns, Silaka Nature Reserve, 7.–8.I.2009, leg. P. SCHÜLE, 1 ex. SMNS. – South Africa, Eastern Cape, Double Drift Nature Reserve, 11.–12.I.2009, leg. P. SCHÜLE, 1 ex. SMNS. – South Africa, Mpumalanga, Mariepskop Forest Reserve, gallery forest of Blyde River, 800–1000 m, 23.–26.XI.2008, leg. W. SCHAWALLER, 1 ex. SMNS.

Type locality: South Africa, “East London”.

Distribution: South Africa (Eastern Cape, Natal, Mpumalanga) (BREMER 1995).

Corticeus egregius Bremer, 1995

(Fig. 1)

New material: South Africa, KwaZulu-Natal, 15 km S Eshowe, Entumeni Forest, 6.–7.XII.2000, leg. S. BEČVÁŘ, 1 ex. SMNS.

Type locality: South Africa, “Pondoland”, “Port St. Johns”.

Distribution: Mozambique, Zimbabwe, South Africa (Eastern Cape) (BREMER 1995); South Africa (KwaZulu-Natal) (new record).

Corticeus glabratus (Kolbe, 1898)

(Fig. 2)

New material: W Kenya, Kagamega Forest Nature Reserve, 1600 m, 21.IX.–10.X.2005, leg. J. HOLSTEIN & D. BARTSCH, 1 ex. SMNS. – Swaziland, Mlilwane Wildlife Sanctuary near Mbabane, 21.–22.XI.2001, leg. P. SCHÜLE, 1 ex. SMNS. – S Uganda, road Mbarara to Kasese, Kalinzu Forest, 1400 m, 4.IV.2007, leg. A. PUCHNER, 1 ex. CRSW. – NW Botswana, Tsodili Hills, 1000 m, 18.–19.III.2006, leg. W. SCHAWALLER, 1 ex. SMNS. – South Africa, KwaZulu-Natal, Tembe Elephant Park, 17.–19.XI.2002, leg. W. SCHAWALLER, 1 ex. SMNS. – South Africa, KwaZulu-Natal, Kosi Bay Nature Reserve, 11.–17.XI.2002, leg. W. SCHAWALLER, 5 ex. SMNS. – South Africa, Eastern Cape, Port St. Johns, Silaka Nature Reserve, 7.–8.I.2009, leg. P. SCHÜLE, 1 ex. SMNS.

Type locality: “Usambara”.

Distribution: Cameroon, Zaire, Tanzania, Kenya, Uganda, Malawi, Mozambique, Zambia, South Africa (KwaZulu-Natal, Eastern Cape) (BREMER 1995); Swaziland, Botswana (new records).

Corticeus gracilis Bremer, 1995

(Fig. 13)

New material: South Africa, Northern Province, Combreum Park, NE Nylstroom, 9.XI.2002, leg. W. SCHAWALLER, 9 ex. SMNS. – South Africa, KwaZulu-Natal, Kosi Bay Nature Reserve, 11.–17.XI.2002, leg. J. HARRISON, R. MÜLLER & W. SCHAWALLER, 34 ex. TMSA, 11 ex. SMNS. – South Africa, KwaZulu-Natal, Tembe Elephant Park, 17.–19.XI.2002, leg. J. HARRISON, R. MÜLLER & W. SCHAWALLER, 1 ex. SMNS, 1 ex. TMSA. – South Africa, KwaZulu-Natal, SW Mugudu, 4.–5.I.2009, leg. P. SCHÜLE, 5 ex. SMNS.

Type locality: South Africa, “Natal”, “Weza”.

Distribution: South Africa (Natal) (BREMER 1995); South Africa (Northern Province, KwaZulu-Natal) (new records).

Corticeus hiekei Bremer, 1995

(Fig. 11)

New material: NW Botswana, Tsodili Hills, 1000 m, 18.–19.III.2006, leg. W. SCHAWALLER, 1 ex. SMNS. – Namibia, Okavango Distr., Mutompo, 60 km S Rundu, 1180 m, 15.III.2003, leg. J. FRISCH & K. VOHLAND (BIOTA 1557), 1 ex. MNB.

Type locality: “Deutsch-Ost-Afrika”, “Muansa”.

Distribution: Tanzania (Bremer 1995); Botswana, Namibia (new records); to be expected also in South Africa.

Corticeus kaszabi natalensis Bremer, 1995

(Fig. 5)

New material: South Africa, KwaZulu-Natal, Tembe Elephant Park, 17.–19.XI.2002, leg. W. SCHAWALLER, 1 ex. SMNS.

Type locality: Kenya, “Marakwet” (ssp. *kaszabi*); South Africa, “Natal”, “Vernham” (ssp. *natalensis*).

Distribution: South Africa (Zululand, Natal, Transvaal), Zimbabwe (BREMER 1995).

Corticeus longicollis (Wollaston, 1867)

(Fig. 3)

New material: N Namibia, Waterberg Park, 1500 m, 6.–7.III.2006, leg. R. MÜLLER & W. SCHAWALLER, 20 ex. TMSA, 6 ex. SMNS.

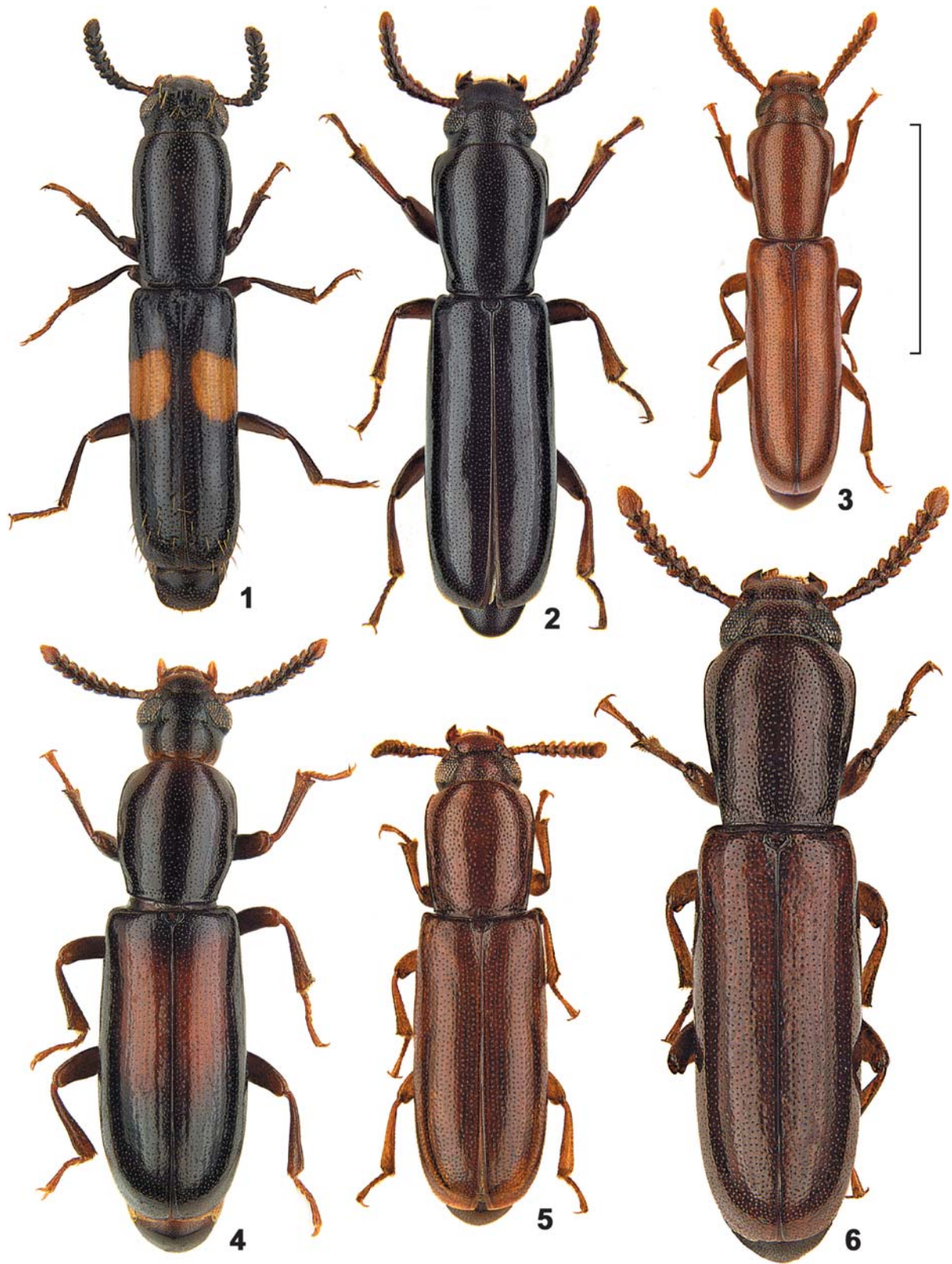
Type locality: Cape Verde Islands, “S. Jago Island”.

Distribution: Cape Verde Islands, Gambia, West Africa, Zaire, Uganda, Tanzania, Angola (BREMER 1995); Yemen (SCHAWALLER 2007); Namibia (new record); to be expected also in South Africa.

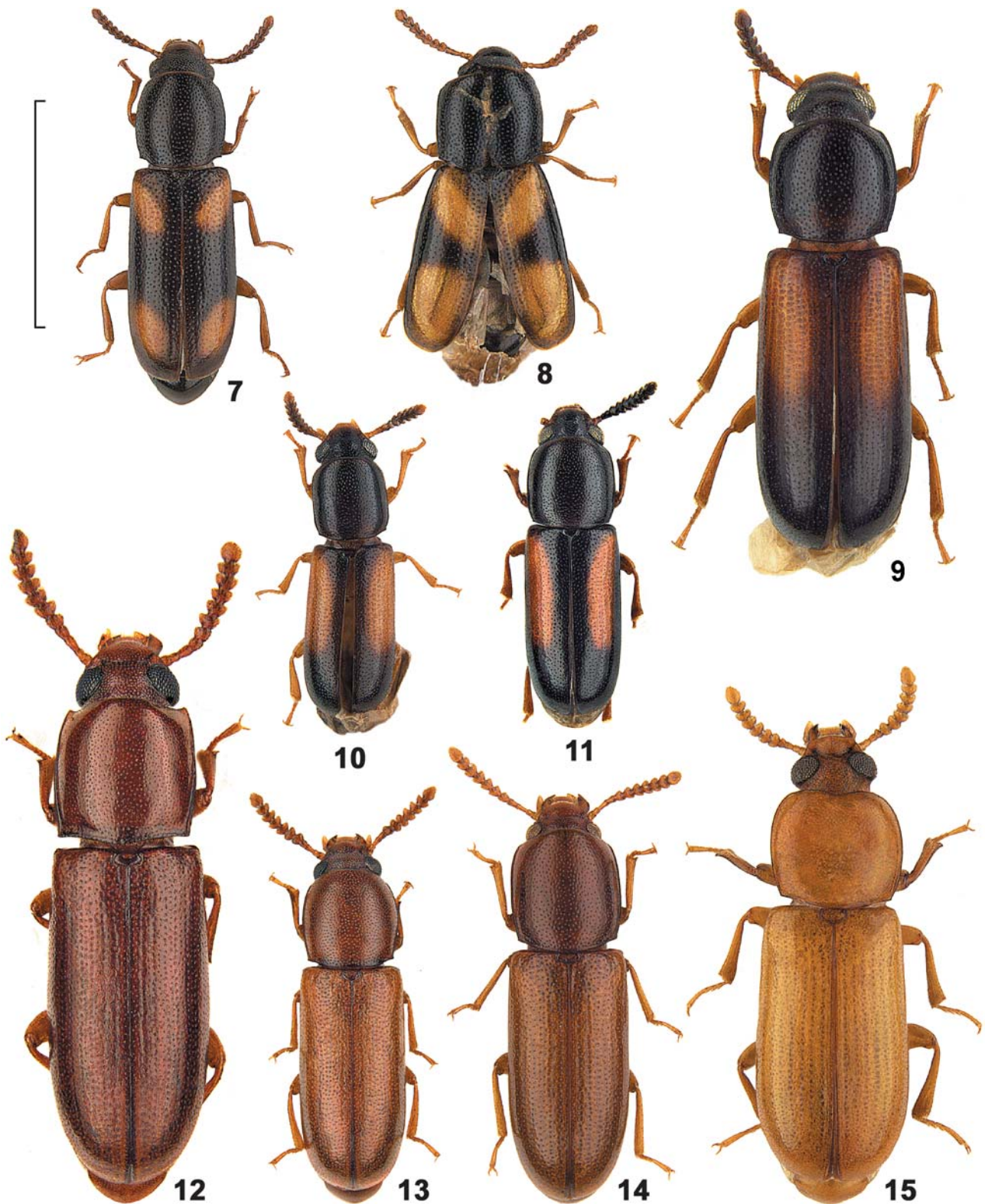
Corticeus mocquerysi (Pic, 1914)

(Fig. 18)

New material: South Africa, KwaZulu-Natal, Ndumu Game Reserve, 20.–22.XI.2002, leg. J. HARRISON, R. MÜLLER & W. SCHAWALLER, 3 ex. SMNS, 1 ex. TMSA. – South Africa,



Figs. 1–6. *Corticeus* spp., dorsal view. – 1. *C. egregius*, paratype TMSA. 2. *C. glabratus*, non-type SMNS. 3. *C. longicollis*, non-type SMNS. 4. *C. voluptuosus*, paratype MNB. 5. *C. kaszabi natalensis*, paratype SMNS. 6. *C. volvulus*, non-type SMNS. – Scale: 2 mm.



Figs. 7–15. *Corticeus* spp., dorsal view. – 7. *C. schereri*, paratype HNHM. 8. *C. speciosus*, non-type SMNS. 9. *C. slipinskii*, paratype MNB. 10. *C. penrithae*, non-type MNB. 11. *C. hiekei*, holotype MNB. 12. *C. chakai*, non-type SMNS. 13. *C. gracilis*, non-type SMNS. 14. *C. xhosa*, paratype SMNS. 15. *C. praecipuus*, holotype TMSA. – Scale: 2 mm.

KwaZulu-Natal, SW Mugudu, 4.–5.I.2009, leg. P. SCHÜLE, 4 ex. SMNS. – South Africa, Northern Province, Arbor Farm, Levubu, 28.I.1998, leg. R. MÜLLER, 1 ex. TMSA. – South Africa, Northern Province, 33 km NE Vaalwater, Lindani Nature Reserve, 18.–19.XI.2004, leg. P. SCHÜLE, 1 ex. SMNS. – South Africa, Limpopo, Lindani Nature Reserve, 4.I.2008, leg. R. MÜLLER, 1 ex. TMSA. – South Africa, Limpopo, Lekgalameetse Nature Reserve, 800–1000 m, 27.XI.–1.XII.2008, leg. W. SCHAWALLER, 1 ex. SMNS. – South Africa, Limpopo, 10 km N Modimolle (Nylstroom), Kuthaba Bush Lodge, 1300 m, 10.–13.XII.2008, leg. W. SCHAWALLER, 1 ex. SMNS. – South Africa, Mpumalanga, Helena Farm, 1091 m, 11.II.2002, leg. TMSA staff, 4 ex. TMSA. – South Africa, Mpumalanga, Der Brochen Farm, 11.II.2002 and 7.XII.2005, leg. TMSA staff, 2 ex. TMSA. – South Africa, Mpumalanga, Steelpoort, 15.X.2002, leg. M. BURGER & J. LEGWAI, 1 ex. TMSA. – South Africa, Mpumalanga, Groblersdal, 19.I.2004 and 10.III.2005, leg. TMSA staff, 2 ex. TMSA. – South Africa, Mpumalanga, Mariepskop Forest Reserve, gallery forest of Blyde River, 800–1000 m, 23.–26.XI.2008, leg. R. MÜLLER, 1 ex. TMSA. – South Africa, Waterberg, Geelhoutbosch Farm, 13.–15.XII.1997, leg. C. BELLAMY, 19 ex. TMSA. – South Africa, Gauteng, Tswaing, 17.II. and 24.XI.2003, leg. TMSA staff, 2 ex. TMSA. – Namibia, Kavango, Mahango Game

Reserve, 24.XI.1993, leg. M. UHLIG, 3 ex. MNB (det. BREMER). – Namibia, Otjozondjupa Distr., Otjiamongombe West 44, 1498 m, 28.II.2003, leg. J. FRISCH & K. VOHLAND (BIOTA 1529), 1 ex. MNB. – Zimbabwe, Nyagui Valley, 50 km E Bindura, 16.XII.1996, leg. F. KANTNER, 1 ex. SMNS. – Zimbabwe, Bubi Valley, 70 km N Beitbridge, 8.XII.1998, leg. F. KANTNER, 1 ex. SMNS. – Tanzania, 70 km N Dodoma, 1330 m, 17.XII.2006, leg. F. KANTNER, 1 ex. SMNS.

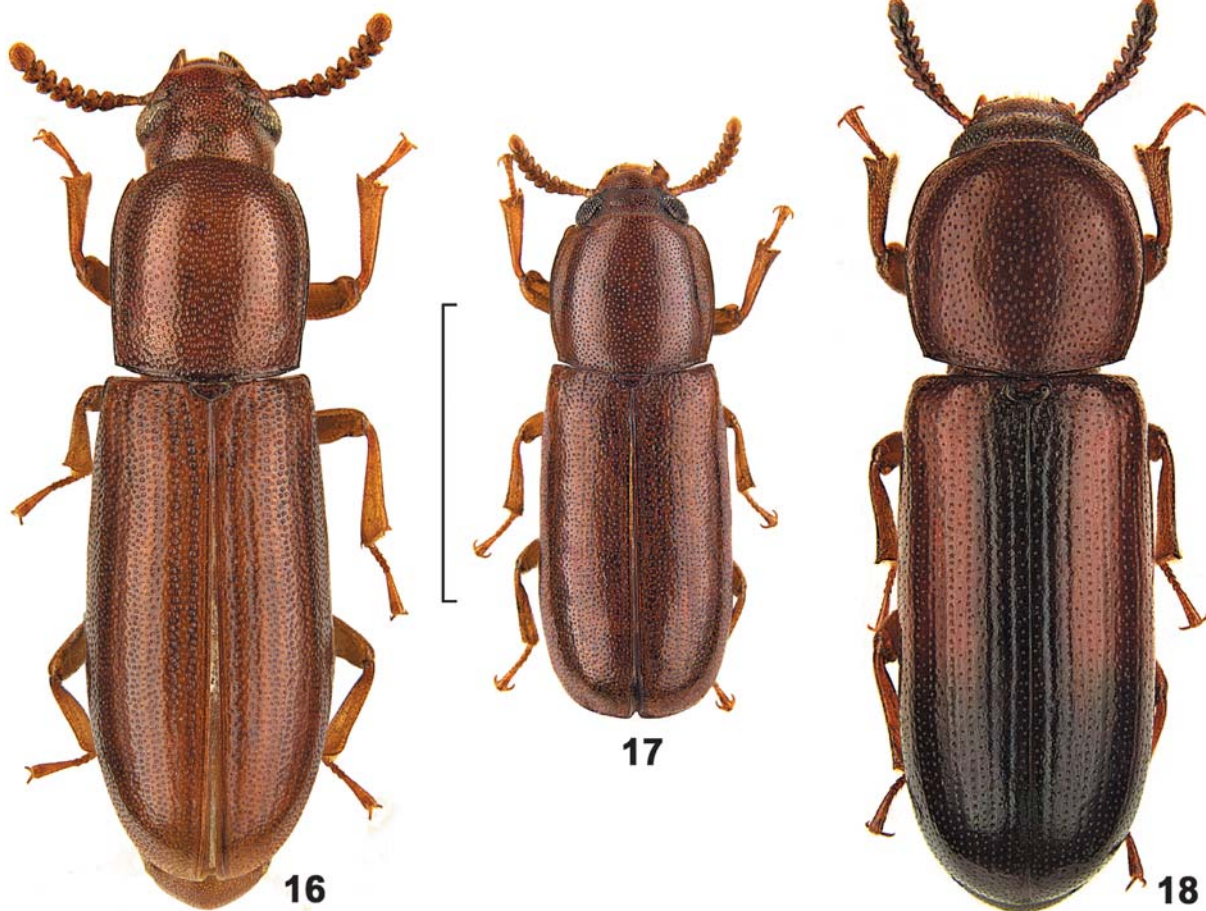
Type locality: “Gabon”.

Distribution: Widely distributed in all subsaharan Africa, South Africa (Transvaal, Transkei) (BREMER 1995); Namibia, South Africa (KwaZulu-Natal, Mpumalanga, Northern Province, Gauteng) (new records).

Corticeus penrithae Bremer, 1995

(Fig. 10)

New material: South Africa, Kruger National Park, Skukuza Research Camp, 3.–6.III.1996, leg. S. ENDRÓDY-YOUNGA, 2 ex. TMSA. – Same data as before, but 1.III.1995, 1 ex. TMSA. – Same data as before, but 13.I.1996, 1 ex. TMSA. – South Africa,



Figs. 16–18. *Corticeus* spp., dorsal view. – 16. *C. punctipennis*, paralectotype MNB. 17. *C. cedrinus*, holotype TMSA. 18. *C. mocquersyi*, non-type SMNS. – Scale: 2 mm.

Natal, Itala Game Reserve, 27.–29.I.1994, leg. M. UHLIG, 1 ex. MNB. – South Africa, KwaZulu-Natal, Kosi Bay Nature Reserve, 11.–17.XI.2002, leg. W. SCHAWALLER, 3 ex. SMNS. – South Africa, KwaZulu-Natal, SW Mugudu, 4.–5.I.2009, leg. P. SCHÜLE, 6 ex. SMNS.

Type locality: South Africa, “Transvaal”, “Penge”.

Distribution: South Africa (Transvaal) (BREMER 1995); South Africa (Limpopo, KwaZulu-Natal) (new records).

Corticeus praecipuus Bremer, 1995

(Fig. 15)

Type locality: South Africa, “Cape Amatole”, “Isidenge”.

Distribution: South Africa (Eastern Cape) (BREMER 1995).

Corticeus punctipennis (Gebien, 1910)

(Fig. 16)

New material: Uganda, Jinja, VII.1931, leg. VAN SOMEREN, 1 ex. SMNS (det. BREMER). – South Africa, Eastern Cape, Dwesa Nature Reserve, 10.I.2009, leg. P. SCHÜLE, 5 ex. SMNS.

Type locality: “Kilimandjaro”.

Distribution: Tanzania, Uganda, Zaire, South Africa (Natal), Lesotho (BREMER 1995); South Africa (Eastern Cape) (new record).

Corticeus schereri Bremer, 1995

(Fig. 7)

Type locality: South Africa, “Mountain Zebra NP”, “Craddock”.

Distribution: South Africa (Eastern Cape) (BREMER 1995).

Corticeus slipinskii Bremer, 1995

(Fig. 9)

Type locality: “Congo Belge”, “Parc National de Garamba”.

Distribution: Congo, Tanzania, Zambia, Malawi (BREMER 1995); to be expected also in South Africa.

Corticeus speciosus Bremer, 1995

(Fig. 8)

New material: South Africa, Eastern Cape Prov., Alexandria Forest Station, 4.XII.1987, leg. S. ENDRÖDY-YOUNGA, 4 ex. TMSA, 1 ex. SMNS.

Type locality: South Africa, “Transkei”, “Port St. John”.

Distribution: South Africa (Transkei, Natal) (BREMER 1995).

Corticeus voluptuosus Bremer, 1995

(Fig. 4)

Type locality: South Africa, “Cape Amatole”, “Isidenge”.

Distribution: South Africa (Eastern Cape) (BREMER 1995).

Corticeus volvulus (Gerstaecker, 1871)

(Fig. 6)

New material: Zimbabwe, Manicaland, 20 km SE Mutare, Vumba Mts., Bunga Forest, 1645 m, 28.–29.XI.2006, leg. S. GUSSMANN, R. MÜLLER & P. SCHÜLE, 15 ex. TMSA, 7 ex. SMNS. – Zimbabwe, Chirinda Forest, 2.XII.2004, leg. S. GUSSMANN & R. MÜLLER, 1 ex. TMSA. – Mozambique, Sofala Prov., Mt. Gorongosa, Mountain Forest, 1400–1700 m, 1.–2.XII.2006, leg. P. SCHÜLE, 4 ex. SMNS. – South Africa, Natal Midland, Karkloof Forest, 11.XII.1989, leg. S. ENDRÖDY-YOUNGA, 1 ex. TMSA. – South Africa, Eastern Cape, Mbotyi Coastal Forest, 29.XI.–3.XII.2003, leg. M. BURGER, R. MÜLLER & W. SCHAWALLER, 4 ex. TMSA, 3 ex. SMNS. – South Africa, Eastern Cape, Dwesa Nature Reserve (The Haven), 4.–6.XII.2003, leg. W. SCHAWALLER, 1 ex. SMNS. – South Africa, Zululand [=KwaZulu-Natal], Hluhluwe Game Reserve, 20.XI.1992, leg. S. ENDRÖDY-YOUNGA, 6 ex. TMSA, 1 ex. SMNS.

Type locality: Tanzania, “Ugono-Berge”.

Distribution: Tanzania, Kenya, Uganda, Rwanda, Zambia, Zimbabwe, South Africa (KwaZulu-Natal, Eastern Cape) (BREMER 1995); Mozambique (new record).

Corticeus xhosa Bremer, 1995

(Fig. 14)

New material: South Africa, Limpopo Prov., Lajuma, Southpansberg, tree fogging, 10.II.2008, leg. D. DE BAKKER, R. JOUQUÉ et al., 9 ex. SMNS. – South Africa, Natal Midland, Karkloof Forest, 1300 m, 2.XII.1989, leg. S. ENDRÖDY-YOUNGA & J. KLIMASZEWSKI, 3 ex. TMSA. – South Africa, KwaZulu-Natal, Cathedral Peak Park, 1500 m, 24.–27.XI.2003, leg. M. BURGER, R. MÜLLER & W. SCHAWALLER, 2 ex. SMNS, 1 ex. TMSA. – South Africa, KwaZulu-Natal, Kamberg Nature Reserve, 29.XI.2000, leg. P. SCHÜLE, 1 ex. SMNS. – South Africa, Eastern Cape, 50 km W Graaf-Reinet, E Mt. Torberg, 1200–1600 m, 21.–25.XI.2007, leg. R. MÜLLER & W. SCHAWALLER, 10 ex. TMSA, 16 ex. SMNS. – South Africa, Eastern Cape, Fort Fordyce Forest Reserve, 1000 m, 4.XII.2007, leg. R. MÜLLER, 1 ex. TMSA.

Type locality: South Africa, “Natal”, “Kloof”.

Remarks: Males possess a small finely punctured but not tubercle-like area on the frons, which is present also in the similar species *C. gracilis*. This (feeble) sexually dimorphic character was unknown to BREMER (1995). In other species, like *C. praecipuus*, such a modification on the male frons is more distinct and was previously known.

Distribution: South Africa (Transvaal, Natal, Transkei, Knysna, Cape Amatole) (BREMER 1995).

3 Biology

The species of the genus *Corticeus* have an arboreal mode of life and co-occur with their larvae, often in aggregations, under the bark of trees. It is not yet clear if the beetles, or more likely their larvae, are predaceous on the larvae of bark beetles (Scolytidae), or if they – possibly – frequent their galleries only for feeding on the exuding sap and detritus contained in them. According to own observations, species of *Corticeus* prefer trees in an early stage of decomposition and do not settle older, completely decayed wood. It is unknown whether the species are specialized on certain tree species with a suitable bark structure or whether the stage of the wood decomposition is the decisive factor. In any case it is evident that the abundance of species in South Africa must depend on the distribution of trees and forests. In other words: species of *Corticeus* are more abundant in the eastern and northern parts of the country and are lacking in the drier, tree-less western parts.

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