

Contribution to the knowledge of the Afrotropical Rutelinae (Coleoptera, Scarabaeoidea, Melolonthidae)

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Summary

Seven new species of Afrotropical Rutelinae are described: *Anomala rojkoffi* sp. n. (Democratic Republic of Congo and Zambia), *Popillia rojkoffi* sp. n. (Republic of Congo and Zambia), *Adoretus* (*Chaetadoretus*) *hassoni* sp. n. and *Adoretus lamaisoni* sp. n. (Angola), *Adoretus merkli* sp. n. (Ghana and Ivory Coast), *Adoretus braeti* sp. n. and *Adoretus vingerhoedti* sp. n. (Republic of Congo) and compared to similar species. New synonymies are proposed: *Adoretus rugulosus* BURMEISTER, 1844 = *Adoretus pubipennis* LAPORTE, 1840; *Popillia basilewskyi* LIMBOURG, 2006 = *Popillia unguicularis* OHAUS, 1920; *Popillia revirescens* OHAUS, 1920 = *Popillia kolbei* OHAUS, 1897. Male lectotypes are designated for *Adoretus saetipennis* OHAUS, 1914, *Popillia kolbei* OHAUS, 1897 and *Popillia unguicularis* OHAUS, 1920. A female lectotype is designated for *Popillia montium* KOLBE, 1903 and it is restored to species status (rather than a subspecies of *Popillia aeneipennis* OHAUS, 1908). *Adoretus endroedii* FREY, 1973 is transferred to the genus *Prodoretus* BRENSKE, 1893. Male genitalia illustrations and photographs of habitus images are provided. The host plant of *P. rojkoffi* and biotope of *A. braeti*, *A. saetipennis* and *A. vingerhoedti* are also illustrated.

Keywords: *Adoretini*, *Anomalini*, Africa, new species, lectotype.

Résumé

Sept nouvelles espèces afrotropicales de Rutelinae sont décrites : *Anomala rojkoffi* sp. n. (République Démocratique du Congo et Zambie), *Popillia rojkoffi* sp. n. (République du Congo et Zambie), *Adoretus* (*Chaetadoretus*) *hassoni* sp. n. et *Adoretus lamaisoni* sp. n. (Angola), *Adoretus merkli* sp. n. (Ghana et Côte d'Ivoire), *Adoretus braeti* sp. n. et *Adoretus vingerhoedti* sp. n. (République du Congo) et sont comparées aux espèces proches. De nouvelles synonymies sont proposées : *Adoretus rugulosus* BURMEISTER, 1844 = *Adoretus pubipennis* LAPORTE, 1840; *Popillia basilewskyi* LIMBOURG, 2006 = *Popillia unguicularis* OHAUS, 1920; *Popillia revirescens* OHAUS, 1920 = *Popillia kolbei* OHAUS, 1897. Un Lectotype male pour *Adoretus saetipennis* OHAUS, 1914, *Popillia kolbei* OHAUS, 1897 et *Popillia unguicularis* OHAUS, 1920 sont désignés. Un lectotype femelle est désigné pour *Popillia montium* KOLBE, 1903, qui est reconsidéré comme bonne espèce et non plus comme sous-espèce de *Popillia aeneipennis* OHAUS, 1908 son status de bonne espèce est réhabilité. *Adoretus endroedii* FREY, 1973 est transféré dans le genre *Prodoretus* BRENSKE, 1893. Les genitalia mâles sont figurés ainsi que des photographies d'habitus. Une plante hôte de *P. rojkoffi* et les biotopes de *A. braeti*, *A. saetipennis* et *A. vingerhoedti* sont illustrés.

Introduction

This paper is a continuation of a global work on Afrotropical Rutelinae. Seven new species are described in different genera. The main difficulty in the study of Afrotropical Rutelinae is that most of the 600 known species have been described in three genera: *Anomala* SAMOUELLE, 1819,

Popillia SERVILLE, 1825 and *Adoretus* LAPORTE, 1840.

Material and method

Acronyms used are for the following measurements:
LB: body length: from apex of elytra to middle of anterior margin of pronotum.
IB: body width: measured at level of half of elytral

length.

LP: pronotum length: measured on median line (normal view).

IB: pronotum width: measured at maximal value (hind angles for *Popilliina*; lateral angles for *Anomalini* and *Adoretini*).

LE: elytra length: from apex of elytron to anterior margin of humeral calli; IE: elytra width (elytra taken together): measured at half length.

All male specimens have been dissected (except indications). Each label of typical material is delimited by []. For figures, scale = 1 mm.

Acronyms

BMNH: Natural History Museum, London, U.K. (M. Barclay).

CMNH: Carnegie Museum of Natural History, Pittsburgh, USA (R. Davidson).

FGIC: Collection François Génier, Gatineau (Québec), Canada.

HNHM: Hungarian Natural history, Budapest, Hungary (O. Merkl).

MNHN: Muséum national d'Histoire naturelle, Paris, France (O. Montreuil).

MNHUB: Zoologisches Museum, Humboldt Universität, Berlin, Germany (J. Willers).

MRAC: Musée royal d'Afrique centrale, Tervuren, Belgium (M. De Meyer).

NHMB: Musée d'Histoire naturelle, Bâle, Switzerland (I. Zürcher-Pfander).

NHRS: Swedich Museum of Natural History, Stockholm, Sweden (B. Viklund).

NMEG: Naturkundemuseum Erfurt, Erfurt, Germany (M. Hartmann).

OCIS: Observatoire et Conservatoire des insectes du Sénégal, résidence Nianing Villa N°40, route de Joal, Nianing, B.P.1255, Mbour, Senegal (A. Coache).

PCAR: Collection Andreas Reichenbach, Leipzig, Germany.

PCDC: Collection Didier Camiade, Sallespisse, France.

PCMF: Collection Mickaël François, Bar Sur Aube, France.

PCPL: Collection Pol Limbourg, Luttre, Belgium.

PCSR: Collection Sébastien Rojkoff, Lyon, France.

RBINS: Royal Belgian Institute of Natural Sciences, Brussels, Belgium (P. Grootaert).

UMO: University Museum Hope Entomological Collections, Oxford, U.K. (D. Mann).

VKCS: Collection Vaclav Krivan, Stemechy, Czech Republic.

Anomala rojkoffi sp. n.

(Figs 1-4)

Holotype ♂: [Zambia, North West Province, 20km west Mwinilunga, 23-25.XI.2005, Leg. S. Rojkoff & K. Werner] (RBINS).

Paratypes: 1♂: [Coll. Mus. Tervuren, Katanga: Kolwezi, XXV.IV.1961, à la lumière, Dr. V. Allard 152] (MRAC); 1♂ [Coll. Mus. Tervuren, Katanga: Kolwezi, X-XII.1962, Dr. V. Allard] (MRAC).

Description:

♂: length: 10.0 – 10.5 mm, breadth: 5 – 6 mm; ratio LB/IB (n = 3): 1.61 (1.59 – 1.69).

Convex, bent; yellow except vertex, frons, two subtriangular spots and posterior margin of pronotum, margins of scutellum, sutural margin of elytra, metasternum and metacoxae, shining brownish black, with a few greenish metallic reflection.

Clypeus projecting antero-ventrally, rounded and strongly excavated and reflexed, less punctate than vertex and frons.

Club of antennae very long and curved (Fig. 3).

Pronotum subrectangular, broader than long (LP/IP = 0.59 – 0.70), lateral margins not sinuate, anterior angles surpassing posterior margin of eyes; all margins carinate, deeply punctured but points separated; impressed point on lateral margins.

Scutellum rounded, punctate.

Elytra slightly longer than broad, elytra taken together (LE/IE = 1.18 – 1.22); epipleura complete; costa elevated, very slightly punctate; striae well marked, formed by a line of deep rounded points; humeral and apical calli obsolete.

Pygidium subtriangular, laterally rounded, and slightly projecting postero-ventrally, strongly longitudinally striated.

Upperside with a few erect and isolated hairs on lateral margins of pronotum; underside with long erect hairs rather close on metasternum; isolated and shorter on sternites, margins of pygidium and legs.

Abdomen slightly convex.

Protibiae thickened and tridentate, apical tooth spatulate; large claw of anterior tarsi bifid, not flattened and sinuate in the middle; large claw of median tarsi elongate, narrow and bifid.

Aedeagus: parameres subparallel, apex straight and slightly sclerotized (dorsal view); laterally subtriangular.

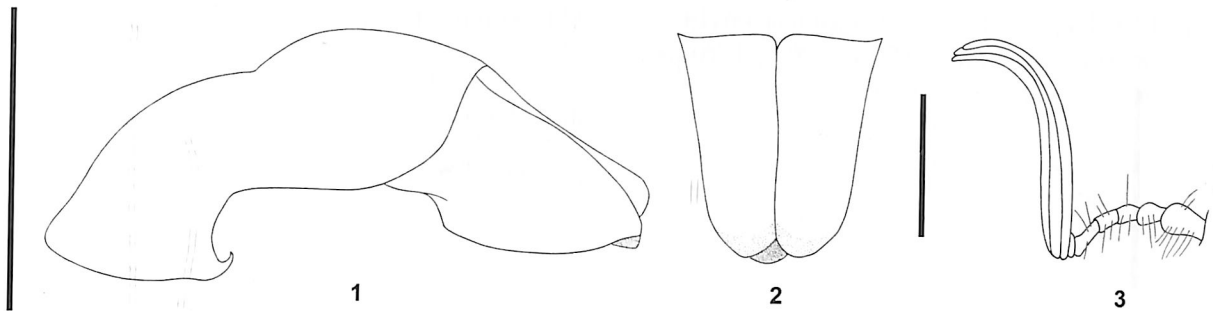
♀: unknown.

Derivatio nominis

Amicably dedicated to Sébastien Rojkoff (Lyon, France), who collected the holotype.

Comment

Shape of the aedeagus and tridentate protibiae



Figs 1-3. *Anomala rojkoffi* holotype: (1) aedeagus, lateral view; (2) parameres, dorsal view; (3) left antenna.

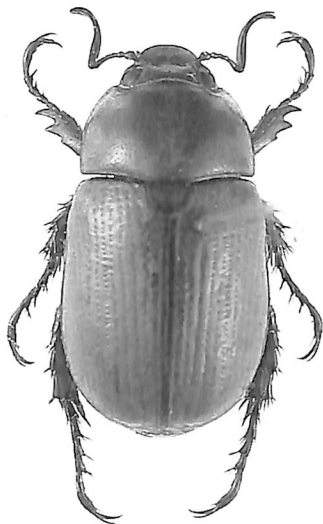
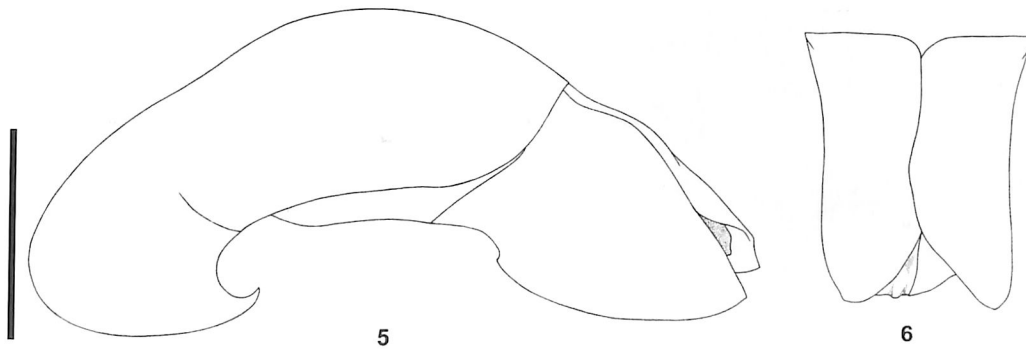


Fig. 4. *Anomala rojkoffi* habitus, dorsal view.



Fig. 7. *Anomala hassoni* habitus, dorsal view.

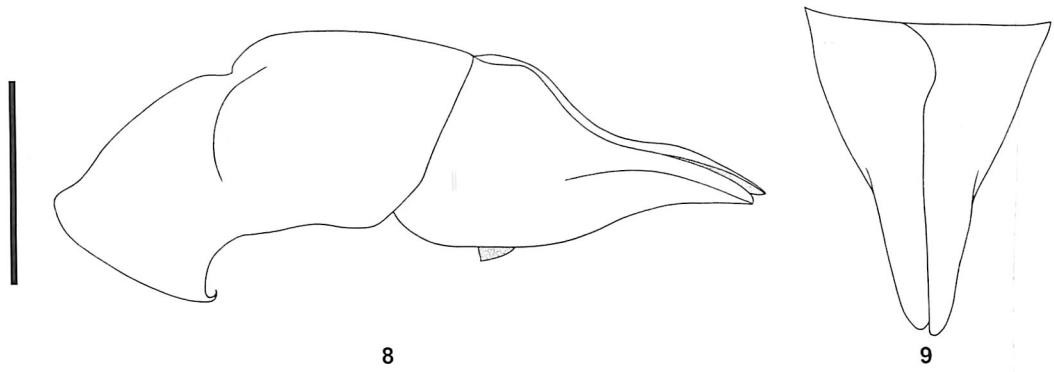


Figs 5-6. *Anomala hassoni* holotype: (5) aedeagus, lateral view; (6) parameres, dorsal view.

are similar to those of *Anomala hassoni* LIMBOURG, 2007 (Figs 5-7). *A. rojkoffi* differs by the club of antennae very long and curved and the clypeus projecting antero-ventrally, rounded and excavated. Study of females could lead to the description of a new genus for this very peculiar species.

***Popillia rojkoffi* sp. n.**
(Figs 8-11, 46)

Holotype ♂: [Zambia N. W., 150km S. of Mwinilunga, 18.X.2008, Leg. M. Snizek, I.G 31 208] (RBINS)
Paratypes: [25♂, 13♀: idem (RBINS); 1♂: MNHUB; 1♂: MNHN); 1♂, 4♀: [Zambia N.W., 150km S. of



Figs 8-9. *Popillia rojkoffi* holotype: (8) aedeagus, lateral view; (9) parameres, dorsal view.



Fig. 10. *Popillia rojkoffi* habitus, dorsal view.



Fig. 14. *Popillia schenkeli* habitus, dorsal view.

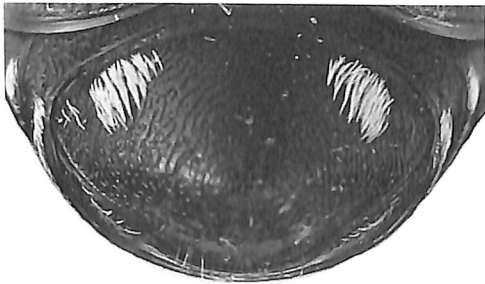


Fig. 11. *Popillia rojkoffi* pygidium.

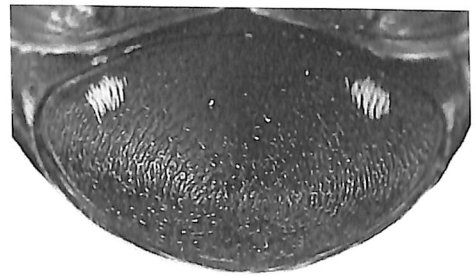
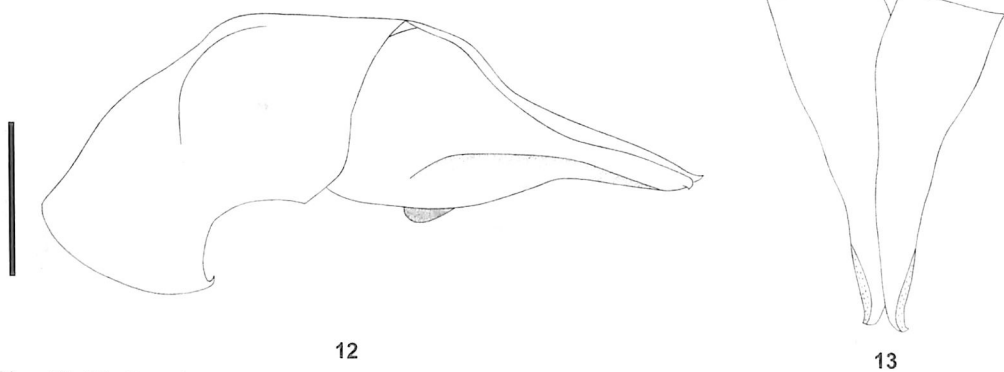


Fig. 15. *Popillia schenkeli* pygidium.



Figs 12-13. *Popillia schenkeli* holotype: (12) aedeagus, lateral view; (13) parameres, dorsal view.

Mwinilunga, 02.XI.2008, Leg. M. Snizek, I.G. 31.208] (RBINS); 1♂, 3♀: [Zambia N.W., 150km S. of Mwinilunga, 02.XI.2008, Leg. M. Snizek, I.G. 31.411] (RBINS); 1♂: [R. Congo, (Plateaux Tékés), Mah, II.(19)89, Réc. D. Camiade] (PCDC); 1♂: [Zambia (Western), 3km NW Kandunda, 1120m, 07.XII.2009, Leg. M. François] (PCMF); 1♂: [Zambia (Western), 5km NW Kandunda, 1170m, 07.XII.2009, Leg. M. François] (PCMF); 1♂: [Zambia, Western Prov., 5km N.W. Kandunda (14°49'31''S/024°38'47''E), 1170m, 07.XII.2009, Leg. S. Rojkoff] (PCPL); 1♂: [Zambia, Western Prov., 3 km of N.W. Kandunda (14°50'19''S/024°39'23''E), 1120m, 08.XII.2009, Leg. S. Rojkoff] (PCSR); 1♂: idem (PCPL); 1♂: [Zambia (Western), 3km NW Kandunda, 1142m, 27.XI.2010, Leg. M. François] (PCMF); 11♂, 1♀: [Zambia, Western Prov., 3km of N.W. Kandunda (14°50'19''S/24°39'23''E), 1120m, 27.XI.2010, Réc. S. Rojkoff] (PCSR); 2♂: idem (RBINS); 1♂: [Zambia (Western), 3km N.W. Kandunda (14°50'19''S/24°39'23''E), 1120m, 26.XI.2010, Leg. M. François] (PCMF); 1♂: idem (RBINS); 5♂, 4♀: [Zambia (Western), 3km N.W. Kandunda (14°50'19''S/24°39'23''E), 1120m, 27.XI.2010, Leg. M. François] (PCMF); 3♂, 1♀: idem (RBINS); 8♂, 4♀: [Zambia (Western Pr.), 3km N.W. Kandunda (14°50'19''S/24°39'23''E), 1100m, 04.XII.2010, Zambesian Cryptosepalum dry forest, hand, collecting F. Génier, 2010-39] (FGIC); 4♂, 2♀: idem (RBINS); 1♀: [Zambia, Western Prov., 14km S. Mangango, (14°47'23''S/24°32'17''E), 1160m, 08.XII.2009, Leg. S. Rojkoff] (PCSR); 1♂, 1♀: [Zambia (Western), 8km S Ushaa, 1060m (S15°01'12''E23°16'30'), 03.XII.2010, Leg. M. François] (PCMF).

Description:

♂: length: 11.0 – 12.5 mm, breadth: 6 – 7 mm; ratio LB/IB (n = 10): 1.40 (1.38 – 1.43).

Convex, slightly bent; green, coopery-red, greenish-red or reddish-blue, shining with strong metallic reflection, or red with slight bluish metallic reflections.

Clypeus subtrapezoidal with anterior margin straight, laterally arcuate and reflexed, slightly more deeply punctate than vertex.

Antennae with club as long as flagellum.

Pronotum hexagonal, broader than long LP/IP (n = 10): 0.65 (0.65 – 0.72), lateral margins not sinuate, lateral angles slightly marked at anterior 3/5, anterior angles not surpassing posterior margin of eyes; all margins except basal one carinate, strongly and deeply punctate on sides; disk less punctured; median line and basal margin smooth; impressed point on lateral margins.

Scutellum triangular, slightly punctate.

Elytra as long as broad, taken together LE/IE (n = 10): 1 (0.98 – 1.02); epipleura complete; costa elevated, very slightly punctate; striae well marked, formed by a single line of deep rounded points except second one, double from base to disc; lateral impression on disc; humeral calli obsolete; apical calli rounded and slightly projecting postero-ventrally; tooth at apico-internal angle.

Pygidium conical, strongly, longitudinally striate with two great zones of white decumbent squamous setae, projecting postero-ventrally.

Median axis mesosternal process-sternites shining and glabrous; short, erect, white, squamous setae on sides of metasternum, on posterior and median femora, and on sides of sternites, reaching or slightly surpassing posterior margin on latter; upperside of body with few isolated and erect setae along lateral margins and anterior sides of pronotum and on lateral margins of pygidium from base to apex.

Abdomen concave; margin of anal plate with strong notch.

Mesosternal process long and rounded at apex, compressed laterally and reaching middle of procoxa.

Protibiae thickened and bidentate; large claw of anterior tarsi bifid, broad and strongly flattened; large claw of median tarsi elongate and bifid.

Aedeagus: parameres subtriangular, laterally strongly narrowing after middle; apex pointed, excavated and covered with tubercles.

♀: length: 12.0 – 12.5 mm, breadth: 7.0 – 7.5 mm.

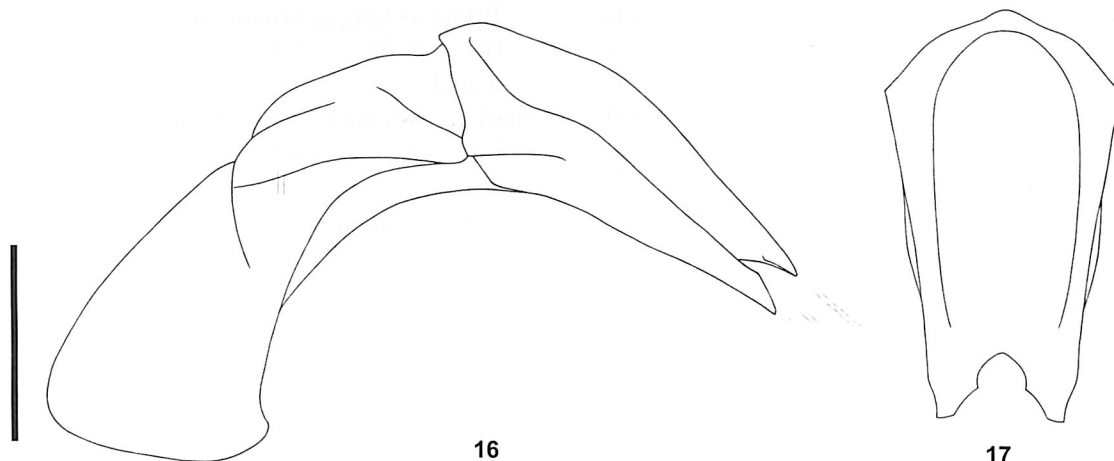
Differs from ♂ by: protibia narrower with apical tooth elongate and spatulate, and large claws of anterior tarsi slightly flattened.

Derivatio nominis

Amicably dedicated to Sébastien Rojkoff (Lyon, France), who collected some specimens of the type material.

Comment

Some specimens of *P. rojkoffi* sp. n. have been caught on an unidentified plant attributed to the Fabaceae ? (Fig. 46, Zambia, Nalweyi, M. François, *comm. pers.*). *Popillia rojkoffi* is similar to *P. schenkeli* LIMBOURG, 2008 (Figs 12-15). The species can be separated using the following characters:



Figs 16-17. *Adoretus (Chaetadoretus) hassoni* holotype: (16) aedeagus, lateral view; (17) parameres, dorsal view.

| <i>P. rojkoffi</i> ♂ | <i>P. schenkeli</i> ♂ |
|--|--|
| Two great zones of white decumbent squamous hairs on the pygidium (fig. 11). | Two small zones of white decumbent squamous hairs on the pygidium (fig. 15). |
| Apico-external angle of parameres not toothed (fig. 9). | Apico-external angle of parameres toothed (fig. 13). |

Adoretus (Chaetadoretus) hassoni sp. n.
(Figs 16-18)

Holotype ♂: [Coll. P. Limbourg, Angola, Cuanza Sul, I-II.1999, Leg. T. Bouyer] [Coll. I.R.Sc.N.B., Don P. Limbourg, I. G. 31706] (RBINS).

Paratypes: 2 ♀: idem (RBINS); 1 ♀: [Coll. P. Limbourg, Angola, Cuanza Sul, III-IV.1998, T. Bouyer] [Coll. I.R.Sc.N.B., Don P. Limbourg, I. G. 31706] (RBINS); 4 ♀: [Angola, Cuanza Sul, I-II.1999, T. Bouyer & M. Hasson, Don P. Limbourg, I.G. 31.706] (RBINS); 4 ♀: [Angola, Cuanza Sul, I-II.1999, T. Bouyer & M. Hasson] [Coll. I.R.Sc.N.B., Don P. Limbourg, I. G. 31706] (RBINS; 1: MNHUB; 1: MNHN); 2 ♂, 2 ♀: [Coll. P. Limbourg, Angola, Cuanza Sul, Cassoco, 03-13.III.2005, Leg. M. Hasson & T. Bouyer] (PCPL).

Description:

♂: length: 12.5 – 13.5 mm, width: 6.5 mm; ratio LB/lB (n = 3): 1.37 (1.32 – 1.39).

Laterally slightly convex, relatively elongate, slightly bent, broader in middle of elytra, entirely brownish-black.

Head (eye to eye) broad, clypeus rounded, entirely reflexed, punctate like vertex.

Antennae 10-segmented, with club longer than flagellum.

Pronotum rectangular, broader than long

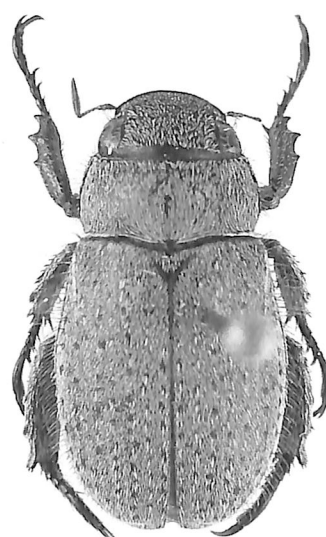


Fig. 18. *Adoretus (Chaetadoretus) hassoni* habitus, dorsal view.

(LP/IP = 0.47 – 0.49), sides regularly rounded from base to apex, with all margins carinate, anterior angle slightly projecting and reaching posterior margin of eyes; strongly punctate.

Scutellum subtriangular, punctate.

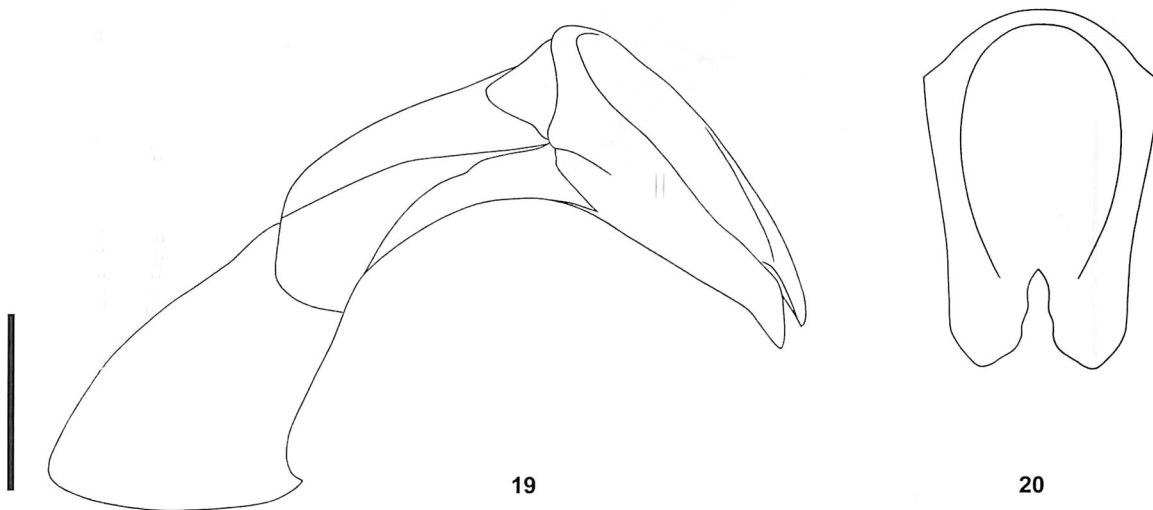
Elytra longer than broad (LE/IE = 1.32 – 1.39); epipleura complete; costae slightly elevated and intervals strongly punctate (only visible on specimens lacking setae).

Humeral calli slightly marked; apical calli rounded and slightly projecting postero-ventrally.

Pygidium laterally rounded, carinate and slightly projecting postero-ventrally, not surpassing apex of elytra.

Abdomen concave; process at base of prosternum rounded.

Protibia tridentate, pro- and mesotarsal larger



Figs 19-20. *Adoretus (Chaetadoretus) reichenbachi* holotype: (19) aedeagus, lateral view; (20) parameres, dorsal view.



Fig. 21. *Adoretus (Chaetadoretus) reichenbachi* habitus, dorsal view.

claw cleft; metatarsus with larger claw 1/3 longer than outer one.

Upper and under sides densely covered with shorts, white scales; elytra with separate, erect, white or yellow setae, and with short, rounded, aligned, bands that lack setae; long, close, yellow-brown erect hairs on all margins; yellow and white, long squamous erect hairs on disk of pygidium.

Aedeagus: parameres short and broad, subparallel; ante apico-internal angle toothed and sinuate.

♀: length: 12.5 – 13.5 mm, breadth: 6.5 – 7 mm

Differs from ♂ by: larger, club of antennae

slightly shorter, abdomen convex.

Derivatio nominis

Amicably dedicated to Michel Hasson (Bruxelles, Belgium), who collected a part of the type material.

Comment

Adoretus hassoni is extremely similar to *A. reichenbachi* LIMBOURG, 2010 (Figs 19-21) but can be distinguished by:

| <i>A. hassoni</i> ♂ | <i>A. reichenbachi</i> ♂ |
|---|--|
| Parameres: apical margin straight; ante apico-internal angle toothed and sinuate (Fig. 17). | Parameres: apical margin rounded; ante apico-internal angle sinuate (Fig. 20). |

Adoretus lamaisonii sp. n. (Figs 22-24)

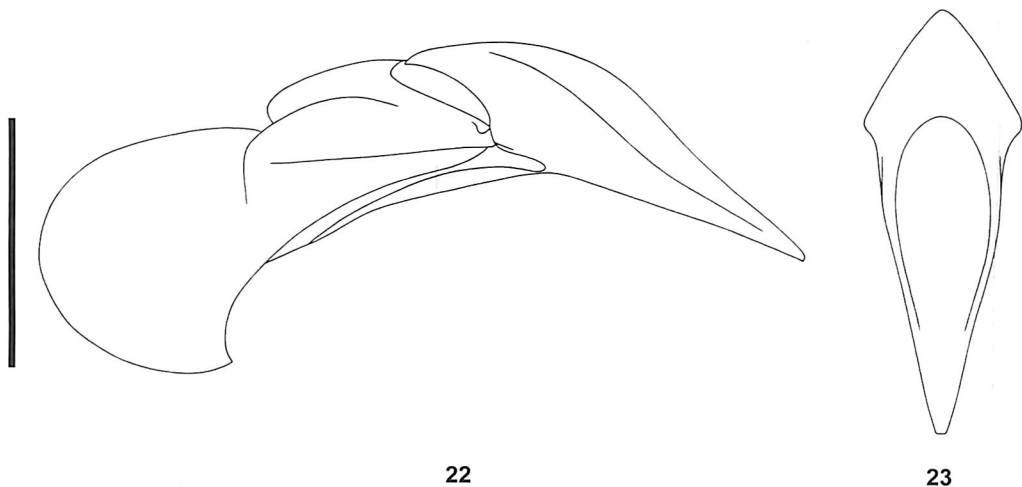
Holotype ♂: [Coll. P. Limbourg, Angola, Cuanza Sul, III-IV.1998, Leg. Th. Bouyer] [Coll. I.R.Sc.N.B., Don P. Limbourg, I. G. 31706] (RBINS).

Paratypes: 5♀: idem (RBINS); 4♂, 1♀: [Coll. Mus. Tervuren, Angola, Luanda, III.1966, Mme Giraudet] [en savane] (MRAC; 1♂: MNHN).

Description:

♂: length: 9.0 – 10.5 mm, width: 5 mm; ratio LB/IB (n = 4): 1.66 (1.65 – 1.68).

Convex, rather elongate, slightly bent, broader in middle of elytra; yellow-brown with clypeus brown, vertex, frons and abdomen deep brown and two large brown spots on pronotum; tarsi



Figs 22-23. *Adoretus lamaisoni* holotype: (22) aedeagus, lateral view; (23) parameres, dorsal view.



Fig. 24. *Adoretus lamaisoni* habitus, dorsal view.

reddish brown.

Clypeus rounded, entirely reflexed, punctate like vertex.

Head broad; eyes very large, surpassing anterior angles of pronotum.

Antennae 10-segmented, with club much longer than flagellum.

Pronotum rectangular, broader than long LP/IP ($n = 4$): 0.51 (0.51 – 0.54); sides regularly rounded from base to apex; all margins carinate, anterior angles slightly projecting and reaching posterior margin of eyes; strongly punctate.

Scutellum subtriangular, punctate.

Elytra longer than broad LE/IE ($n = 4$): 1.33 (1.32 – 1.41), epipleura complete; costae slightly elevated; intervals strongly punctate.

Humeral calli well-marked; apical calli rounded

and slightly projecting postero-ventrally.

Pygidium laterally rounded, carinate, slightly projecting postero-ventrally and slightly surpassing apex of elytra.

Abdomen concave; process at base of prosternum rounded.

Protibia tridentate and thickened, pro- and mesostarsal larger claw cleft; larger claw of metatarsus 1/3 longer than other claw.

Upper and under sides covered with rather long, dense, white, squamous, decumbent hairs; anterior margin of clypeus covered with white scales; long erect setae on canthus, on anterior and lateral margins of pronotum, on external margins, and on apex of elytra; long erect, white hairs on disc of pygidium.

Aedeagus: parameres elongate and pointed, base strongly projecting postero-ventrally in lateral view.

♀: length: 10.0 – 11.5 mm, breadth: 5 – 6 mm

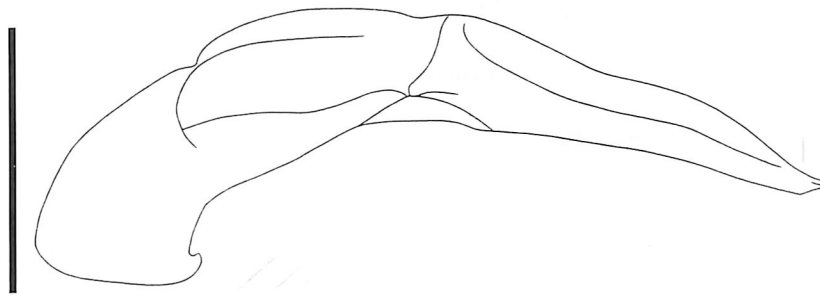
Differs from ♂ by: larger; body more convex; eyes smaller and club of antennae shorter; abdomen convex; pygidium not surpassing apex of elytra.

Derivatio nominis

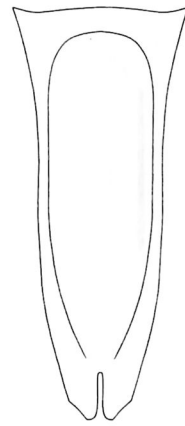
Dedicated to Patrick Lamaison (Dax, Atlantic Pyrénées, France), the great poetic hand-fisher of the Adour River!

Comment

Adoretus lamaisoni sp. n. is similar to *A. impurus* FARHRAEUS, 1857 but can be distinguished by:



25



26

Figs 25-26. *Adoretus impurus* holotype: (25) aedeagus, lateral view; (26) parameres, dorsal view.

| <i>A. lamaisonii</i> ♂ | <i>A. impurus</i> ♂ |
|---|--|
| Antennae 10-segmented. | Antennae 9-segmented. |
| Covered with rather long, dense, white, squamous, decumbent hairs. | Covered with short, sparse, white, squamous, decumbent hairs. |
| Suture of elytra brown, slightly contrasted. | Suture of elytra black. |
| Aedeagus: parameres elongate and pointed, base strongly projecting postero-ventrally in lateral view (Fig. 22). Apex not incised in middle (Fig. 23). | Aedeagus: parameres elongate and ventrally ante-apically sinuate, base not projecting postero-ventrally in lateral view (Fig. 25). Apex incised in middle (Fig. 26). |

Fig. 27. *Adoretus impurus* habitus, dorsal view.

Adoretus impurus FAHRAEUS, 1857
(Figs 25-27)

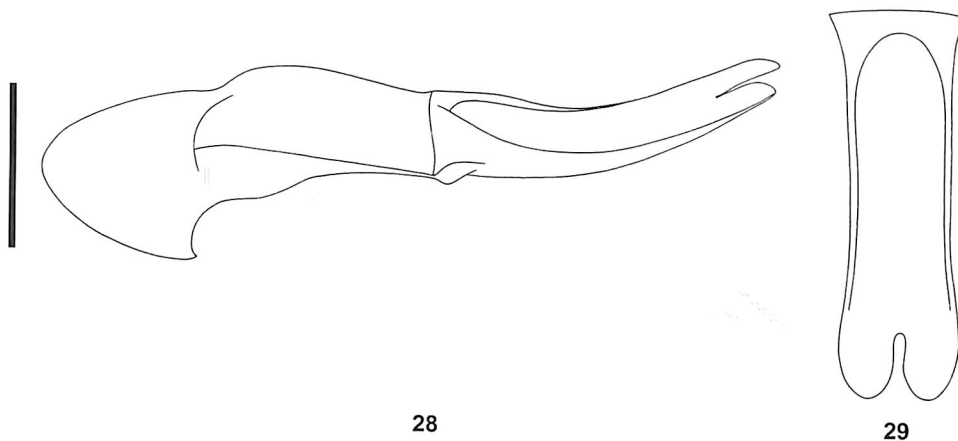
Typical material examined:

Holotype ♀: [Caffraria] [Type] [Typus] [J. Wahlb] [*A. impurus*] [202 58] [159 64] [5635E92+] [NHRS-VKSB] [Holotype ♀ of *Adoretus impurus* FAHRAEUS, 1857, dét. POL LIMBOURG 2011] (NHRS).

Material examined:

33♂, 19♀: Zimbabwe, Matopos N. P. Maleme Dam (20°33'S/28°30'E), 10.XII.1993, lux, Leg. M. Uhlig (MNHUB); 2♂, 1♀: RBINS); 1♀: Zimbabwe, Kyle Recr. Park at Lake Mutirikwi (20°13'S/31°00'E), 01-05.XII.1993, lux, Leg. M. Uhlig (MNHUB); 2♂: Zimbabwe, Victoria Falls: Zambezi N. P. (17°53'S/25°49'E), 11-12.XII.1993, Leg. M. Uhlig (MNHUB); 1♂: Swaziland, Mlilwane Wildlife Sanctuary (26°29'22S/31°11'E), 800m, NN, 17-19.XI.1996, Leg. M. Hartmann (NMEG); 1♂: Sudafrika, Bophutatswana, Pilansberg National Parc, LF (25°15'27S/27°13'23E), 1200m, NN, 14-16.XI.1996, Leg. M. Hartmann (NMEG); 2♂: Sudafrika, N.E. Prov., Kruger National Park, Skukuza (25°S/31°36'E), 250m, NN, 22.XI.1996,

Leg. M. Hartmann (NMEG); 1♂: South Africa, Transvaal, 15 km E. Karino Station, Mpageni Pass, 01.XI.1992, R. Ward (CMNH); 1♀: South Africa, Transvaal: Sabie (25°05'S/30°46'E), 11.XII.1995, Leg. F. Koch (MNHUB); 1♂, 1♀: R. S. Africa, Transvaal, Kruger N. P., Crocodile Bridge (25°19'S/31°52'E), 10.XI.1996, Leg. M. & B. Uhlig (MNHUB); 4♂, 5♀: R. S. A., N.C., Limpopo, Nylstrom, 14.XII.2008, Leg. M. Snizek (RBINS) 1♂: R. S. A., Transkei, Umtata, Basheebridge, 10.XII.2002, Leg. M. Snizek (PCPL); 1♂: Rep. Sudafrika, Midveid reg., Bambi, 1300-1700m, IX.2008, Leg. J. Grosche & J. Rillich (RBINS); 1♂: (PCAR); 1♂, 1♀: Rep. Sudafrika, Lawveld reg. 300m, 10-25.IX.2008, Leg. J. Grosche & J. Rillich (PCAR); 1♀: (RBINS); 1♂: S. Africa, Johannesburg, Wits campus, II.1977, B. Levey Coll. B.M. 1980-29 (BMNH); 1♀: R. S. A., Cape Prov., Adolo Elephant Nat. P., Port Elisabeth, 27-29.XII.1992, Leg. F. Koch (MNHUB); 2♀: R. S. A., E. Cape, Graaff-Reinert, Nieu-Bethesda, 28.I.2001,



Figs 28-29. *Adoretus merkli* holotype: (28) aedeagus, lateral view; (29) parameres, dorsal view.

Leg. M. Snizek (PCPL); 1♀: R. S. A., Natal, Itala Game Res., Louwsburg, 10-23.XII.1992, Leg. F. Koch (MNHUB); 1♂: South Africa, KwaZulu-Natal, Itala Game Res. (27°30'S/31°20'E), 08.XII.1995, Leg. F. Koch (MNHUB)

Adoretus merkli sp. n.
(Figs 28-30)

Holotype ♂: [Côte d'Ivoire, Dimbroko] [R. Mus. Hist. Nat. Belg. I.G. 12.595*] (RBINS).

Paratypes: 3♂, 2♀: idem (RBINS); 1♂: [WEST AFRICA, Ghana, Northern Region, Mole Game Reservat, 11km N. von Larabanga, Leg. Dr. S. Endrödi] [N° 45, am licht des Resthauses, 13-14.VIII.1970] [Paratypus *Adoretus Ghanaensis* G. FREY, 1973] [Paratype *Adoretus Ghanaensis* G. FREY, 1973] (HNHM).

*Lemoult vendit

Description:

♂: length: 9.0 – 10.5 mm, width: 4.5 mm; ratio LB/IB (n = 4): 1.74 (1.71 – 1.81).

Convex, rather elongate, slightly bent, broader before the declivity; entirely brown with anterior margin of clypeus and legs brown.

Head (eye to eye) broad, clypeus rounded, totally reflexed and punctate like vertex.

Antennae 10-segmented, with club much longer than flagellum.

Pronotum rectangular, broader than long LP/IP (n = 4): 0.5 (0.45 – 0.51), sides regularly rounded from base to apex, with all margins carinate, anterior angles projecting and reaching posterior margin of eyes; slightly punctate.

Scutellum subtriangular, punctate.

Elytra longer than broad LE/IE (n = 4): 1.38 (1.38 – 1.43); epipleura complete; costae slightly elevated; intervals strongly punctate.

Humeral calli slightly marked; apical calli rounded and slightly projecting postero-ventrally.



Fig. 30. *Adoretus merkli* habitus, dorsal view.

Pygidium laterally rounded, reflexed and slightly projecting postero-ventrally, and slightly surpassing apex of elytra.

Abdomen concave; process at base of prosternum rounded.

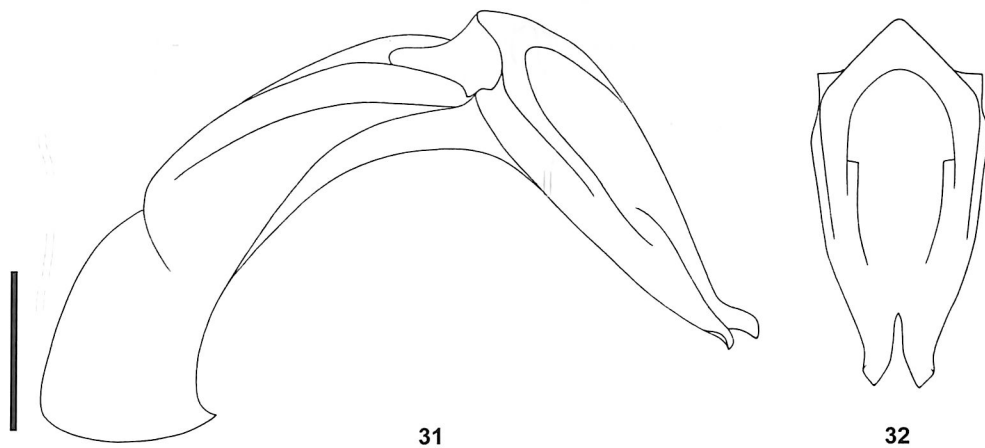
Protibia tridentate, pro- and mesostarsal larger claw cleft; metatarsus with larger claw 1/3 longer than other claw.

Upper and under sides covered with short, dense, white, squamous, decumbent setae; anterior margin of clypeus covered with white scales; long, white, erect setae on disc of pygidium.

Aedeagus: parameres straight and elongate, strongly sinuate at the apex (in dorsal view); laterally curved.

♀: length: 9.5 – 10.0 mm, breadth: 5 mm

Differs from ♂ by: larger; club of antennae shorter, abdomen convex, pygidium not surpassing apex of elytra and protibiae thickened.



Figs 31-32. *Adoretus ghanaensis* holotype: (31) aedeagus, lateral view; (32) parameres, dorsal view.

Derivatio nominis

Amicably dedicated to Otto Merkl, Curator of the Coeloptera Collections at the Hungarian Natural history (Budapest, Hungary).

Comment

Adoretus merkli sp. n. is similar to *A. ghanaensis* FREY, 1973 but can be distinguished by:

| <i>A. merkli</i> ♂ | <i>A. ghanaensis</i> ♂ |
|---|--|
| Length: 9.0 – 10.5 mm, breadth: 4.5 mm. | Length: 7.5 – 8.5 mm; breadth: 3.5 – 4 mm. |
| Pronotum laterally and regularly rounded from base to apex, convex. | Lateral margins of pronotum slightly convex. |
| Covered with short, dense, white, squamous decumbent setae. | Covered with short, sparse, white squamous decumbent setae. |
| Long white erect setae on disc of pronotum. | Short white erect setae on disc of pygidium. |
| Legs brownish. | Legs yellowish. |
| Aedeagus: parameres straight and elongate, strongly sinuate at apex (in dorsal view); laterally curved (fig. 29). | Aedeagus: parameres short and triangular, cleft at apex (fig. 32). |

Adoretus ghanaensis FREY, 1973 (Figs 31-33)

Typical material examined:

Holotype ♂: [Ghana: Western region, Busua, 15m, 4.48N/1.56W, Dr. S. Endrodi-Younga] [Nr°169, at light, 06.VI.1966] [Holotypus *Adoretus ghanaensis* G. FREY, 1973] [Type *Adoretus ghanaensis* G. Frey, 1973] [*Adoretus ghanaensis* FREY] (HNHM).

Paratypes: 9♂, 5♀: [Ghana, Western region Busua, 15m, N 4.48-W 1.56, Dr. S. Endrodi-Younga]

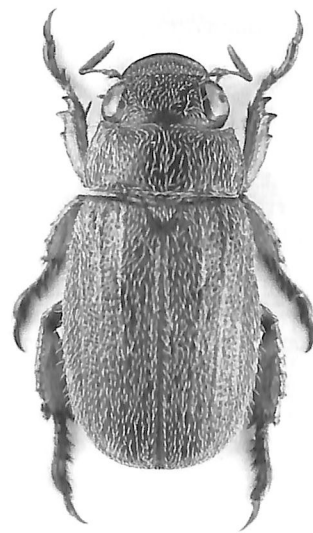
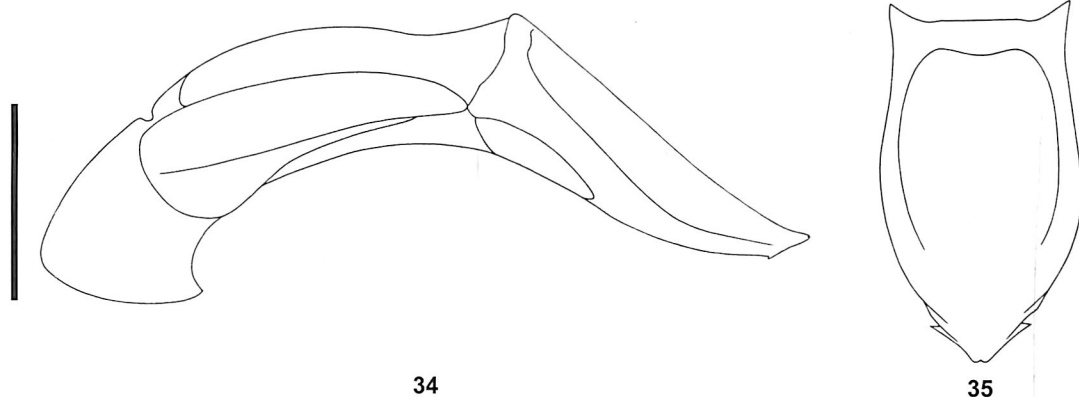


Fig. 33. *Adoretus ghanaensis* habitus, dorsal view.

[Nr.169, at light, 06.VI.1966] [Paratype *Adoretus ghanaensis* G. FREY, 1972] (NHMB); 15♂, 17♀: [Ghana, Western region Busua, 15m, N 4.48-W 1.56, Dr. S. Endrodi-Younga] [Nr.169, at light, 06.VI.1966] [Paratype *Adoretus ghanaensis* G. FREY, 1973] (HNHM).

Additional material examined:

1♂: Côte d'Ivoire, Bingerville, 1-12.III.1962, Leg. J. Decelle (MRAC); 1♂: Côte d'Ivoire, Bingerville, 15-31.III.1962, Leg. J. Decelle (PCPL); 1♀: Côte d'Ivoire, Bingerville, IV.1962, Leg. J. Decelle (MRAC); 1♂: Côte d'Ivoire, Bingerville, VII.1962, Leg. J. Decelle (RBINS); 1♂: Côte d'Ivoire, Bingerville, X.1962, Leg. J. Decelle (RBINS); 1♂: idem (MRAC); 1♂: Côte d'Ivoire, Bingerville, II.1963, Leg. J. Decelle (MRAC); 1♂: Côte d'Ivoire, Bingerville, IX.1963, Leg. J. Decelle (MRAC); 1♀: Côte d'Ivoire, Adiapoté, 80km W. Abidjan, I.1962, Leg. J. Decelle (RBINS); 1♂: Côte d'Ivoire, Mouyassué, Aboisso, I.1963, Leg. J. Decelle (RBINS); 1♂: idem (MRAC)



Figs 34-35. *Adoretus braeti* holotype: (34) aedeagus, lateral view; (35) parameres, dorsal view.

***Adoretus braeti* sp. n.**
(Figs 34-36, 47, 48)

Holotype ♂: [Congo français, Lesio-Louna, X-XII.2008, Malaise trap, Leg. Y. Braet & Zassi] (RBINS).

Paratypes: 6♂, 2♀: idem (RBINS).

Description:

♂: length: 11.5 – 12.5 mm, width: 5.0 – 5.5 mm; ratio LB/lB (n = 7): 1.98 (1.87 – 2).

Slightly convex, rather elongate, slightly bent, broader in middle of elytra; brownish orange; vertex, frons, apex of femora black or deep brown, shining.

Head (eye to eye) broad, clypeus rounded totally reflexed and strongly punctate; vertex and frons punctate (deep separated rounded punctures).

Antennae 10-segmented, with club slightly longer than flagellum.

Pronotum rectangular, broader than long L/l (n = 7): 0.49 (0.37 – 0.51), sides regularly rounded from base to apex, with all margins carinate, anterior angles projecting and reaching posterior margin of eyes; punctate like vertex.

Scutellum subtriangular, punctate like pronotum.

Elytra longer than broad L/l (n = 7): 1.59 (1.48 – 1.59); epipleura complete; costae elevated; intervals strongly punctate.

Humeral calli slightly marked; apical calli rounded and slightly projecting postero-ventrally.

Pygidium laterally rounded, carinate and slightly projecting postero-ventrally; not surpassing apex of elytra.

Abdomen concave; rounded process at base of prosternum.

Protibia tridentate, pro- and mesostarsal larger claw cleft; metatarsus with larger claw 1/2 longer than other claw.



Fig. 36. *Adoretus braeti* habitus, dorsal view.

Upperside with sparse, short, decumbent, white setae, more densely on head, longer sparse, erect setae on margins of elytra and on anterior margins of pronotum; underside with white setae slightly longer on mesosternum, setae on sternites; long yellowish erected hairs on disc of pygidium.

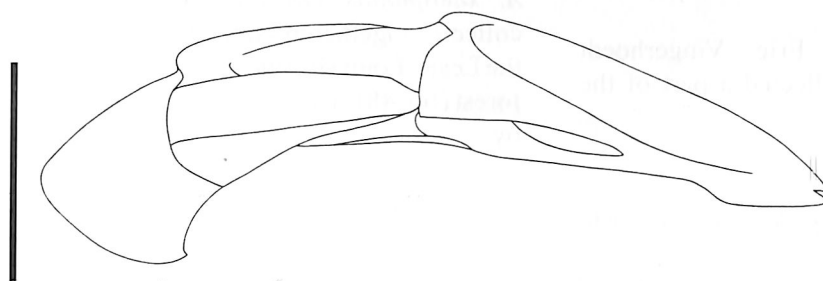
Aedeagus: parameres short and broad, laterally regularly rounded from base to apex; apex slightly sinuate in middle with a little ante-externo-apical tooth (in dorsal view).

♀: length: 12.5 – 13 mm, breadth: 5.5 mm

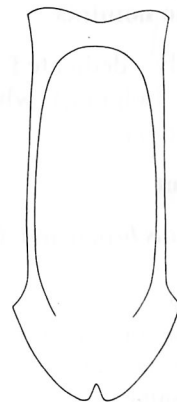
Differs from ♂ by: larger, club of antennae shorter and abdomen convex.

Derivatio nominis

Warmly dedicated to Yves Braet (Bruxelles, Belgium), who collected the type material.



37



38

Figs 37-38. *Adoretus vingerhoedti* holotype: (37) aedeagus, lateral view; (38) parameres, dorsal view.

***Adoretus vingerhoedti* sp. n.**
(Figs 37-39, 47, 48)

Holotype ♂: [Congo français, Lesio-Louna, X-XII.2008, Malaise trap, Leg. Y. Braet & Zassi] (RBINS).

Paratypes: 1♂, 8♀: idem (RBINS); 1♀: [R. D. Congo, Lésio-Louna Réserve, 16-20.X.2009, Leg. Vingerhoedt] (RBINS); 2♀: [R. D. Congo, Lésio-Louna Réserve, ABIO (S3°07'/E15°31'), XI.2009, Leg. Vingerhoedt] (RBINS)

Description:

♂: length: 10.0 – 11.5 mm, breadth: 4 – 5 mm; ratio LB/IB (n = 2): (1.87 – 1.92).

Slightly convex, elongate, slightly bent, broader in middle of elytra; yellow with pronotum and tarsi brownish, head reddish, apex of femora blackish; shining.

Head (eye to eye) broad, clypeus rounded totally reflexed, strongly but not deeply punctate, vertex and frons deeply punctate (deep, separated, rounded punctures).

Antennae of 10-segmented, with club slightly longer than flagellum.

Pronotum rectangular, broader than long (LP/IP = 0.47 – 0.49), sides regularly rounded from base to apex, with all margins carinate, anterior angles projecting and reaching posterior margin of eyes; punctate like vertex.

Scutellum subtriangular, punctate like pronotum.

Elytra longer than broad (LE/IE = 1.5 – 1.59); epipleura complete; costae elevated; intervals strongly punctate.

Humeral calli slightly marked; apical calli rounded and slightly projecting postero-ventrally.

Pygidium laterally rounded, reflexed and slightly projecting postero-ventrally; not surpassing apex of elytra.



Fig. 39. *Adoretus vingerhoedti* habitus, dorsal view.

Abdomen concave, rounded process at base of prosternum.

Protibia tridentate, pro- and mesostarsal larger claw cleft; metatarsus with larger claw 1/2 longer than other claw.

Upperside covered with short, decumbent, white setae, more dense on head; longer sparse, erect setae on margins of elytra and on anterior margins of pronotum; short, white scales along margin of clypeus; underside with white setae slightly longer on mesosternum, setae on anal plate; long yellowish erected hairs on disc of pygidium.

Aedeagus: parameres elongate and narrowed, laterally subparallel from base to apex, apex lanceolate, incised in center in dorsal view.

♀: length: 10 – 12 mm, breadth: 4.5 – 5 mm

Differs from ♂ by: larger, club of antennae shorter and abdomen convex.

Derivatio nominis

Warmly dedicated to Eric Vingerhoedt (Esneux, Belgium), who collected a part of the type material.

Comment

Adoretus braeti and *A. vingerhoedti* are close to

A. saetipennis OHAUS, 1914 and have been collected together in same Malaise trap (fig. 47) in the Lesio-Louna Reserve, characterized by gallery forest (fig. 48). These species can be distinguished by:

| <i>A. braeti</i> | <i>A. vingerhoedti</i> | <i>A. saetipennis</i> |
|---|--|--|
| Brownish orange, vertex, frons, apex of femora black or deep brown, shining. | Yellow with pronotum and tarsi brownish, head reddish, apex of femora blackish, shining. | Totally brown, vertex, frons and tarsi blackish brown, slightly shining. |
| ♂: length: 11.5 – 12.5 mm, breadth: 5 – 5.5 mm. ♀: length: 12.5 – 13 mm, breadth: 5.5 mm. | ♂: length: 10 – 11.5 mm, breadth: 4 – 5 mm. ♀: length: 10 – 12 mm, breadth: 4.5 – 5 mm. | ♂: length: 9.5 – 12 mm, breadth: 4.5 – 5.5 mm. ♀: length: 10.5 – 13 mm, breadth: 5 – 6 mm. |
| Upperside with only short decumbent white setae. | Upperside with only short decumbent white setae. | Upperside with short decumbent, white setae together with long isolated white squamous setae. |
| Aedeagus: parameres shorts and broad, sides regularly rounded from base to apex; apex slightly sinuate in middle with a little ante externo-apical tooth in dorsal view (Figs 34-35). | Aedeagus: parameres elongate and narrowed, laterally subparallel from base to apex, apex lanceolate incised in center in dorsal view (Figs 37-38). | Aedeagus: parameres rather elongate and narrowed; apex strongly sinuate in middle without ante externo-apical tooth (in dorsal view) (Figs 40-41). |

Adoretus (Chaetadoretus) saetipennis OHAUS, 1914
(Figs 40-42, 47, 48)

Typical material examined:

Lectotype ♂ present designation: [Kamerun, V. Rothkirch S.] [Kamerun, Ebolowa, IV.1912, V. Rothkirsh] [Typus !] [*Adoretus saetipennis* OHS.] [Syntypus *Adoretus saetipennis* OHAUS, 1914 labelled by MNHUB 2011] [Lectotype ♂ *Adoretus saetipennis* OHAUS, 1914 POL LIMBOURG dét. 2011] (MNHUB).

Paralectotype ♂: [Cameroun, Götterberg] [Cotype] [*Chaetadoretus saetipennis* OHS.] [Syntypus *Adoretus saetipennis* OHAUS, 1914 labelled by MNHUB 2011] [Paralectotype ♂ *Adoretus saetipennis* OHAUS, 1914 POL LIMBOURG dét. 2011] (MNHUB).

Paralectotype ♂: [Kamerun, Bibundi, 1907, B. J. Weller] [Cotype] [*Chaetadoretus saetipennis* OHS.] [Syntypus *Adoretus saetipennis* OHAUS, 1914 labelled by MNHUB 2011] [Paralectotype ♂ *Adoretus saetipennis* OHAUS, 1914 POL LIMBOURG dét. 2011] (MNHUB).

Paralectotype ♂: [Cameroun, Batanga] [Cotype] [*Chaetadoretus saetipennis* OHS.] [Syntypus *Adoretus saetipennis* OHAUS, 1914 labelled by MNHUB 2011] [Paralectotype ♂ *Adoretus saetipennis* OHAUS, 1914 POL LIMBOURG dét. 2011] (MNHUB).

Paralectotype ♀: [Cameroun, Batanga] [♀] [Cotype]

[*Chaetadoretus saetipennis* OHS.] [Syntypus *Adoretus saetipennis* OHAUS, 1914 labelled by MNHUB 2011] [Paralectotype ♀ *Adoretus saetipennis* OHAUS, 1914 POL LIMBOURG dét. 2011] (MNHUB).

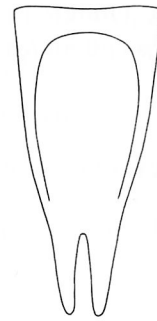
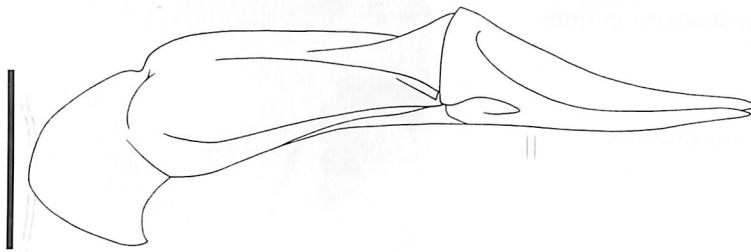
Paralectotype ♀: [Uganda, Entebbe, 1908, Dre E. Bayon] [Museo Civ. Genova] [♀] [Cotype] [*Chaetadoretus saetipennis* OHS.] [Syntypus *Adoretus saetipennis* OHAUS, 1914 labelled by MNHUB 2011] [Paralectotype ♀ *Adoretus saetipennis* OHAUS, 1914 dét. POL LIMBOURG 2011] (MNHUB).

Paralectotype ♂: [Victoria-Nyanza, Arcip. Di Sesse, Bugala, 1908, Dr. E. Bayon] [Museo Civ. Genova] [Cotype] [*Chaetadoretus saetipennis* OHS.] [Syntypus *Adoretus saetipennis* OHAUS, 1914 labelled by MNHUB 2011] [Paralectotype ♂ *Adoretus saetipennis* OHAUS, 1914 POL LIMBOURG dét. 2011] (MNHUB).

Paralectotype ♀: [Victoria-Nyanza, Arcip. Di Sesse, Bugala, 1908, Dr. E. Bayon] [Museo Civ. Genova] [♀] [Cotype] [*Chaetadoretus saetipennis* OHS.] [Syntypus *Adoretus saetipennis* OHAUS, 1914 labelled by MNHUB 2011] [Paralectotype ♀ *Adoretus saetipennis* OHAUS, 1914 POL LIMBOURG dét. 2011] (MNHUB).

Additional material examined:

1 ♀: Museum Paris, Assinie, 1882, Chaper (MNHUB);
1 ♂: Benin (Bonou), Gnanhouizoumé (06°55'N/02°24'E), 13.IX.2006, Malaise trap, Leg. J. L. Boevé (RBINS); 1 ♀: Liberia, Mt. Coffee,



40

41

Figs 40-41. *Adoretus (Chaetadoretus) saetipennis* holotype: (40) aedeagus, lateral view; (41) parameres, dorsal view.



Fig. 42. *Adoretus (Chaetadoretus) saetipennis* habitus, dorsal view.

IV.1897, R. P. Currie Collector (MNHUB); 2♂: Cameroun, Limbe, 26.XI.2000, Malaise trap, Leg. P. Schoolmesters (RBINS); 1♀: Cameroun, Limbe, sea level, 26.XI.2000, Malaise trap, Leg. P. Schoolmesters (RBINS); 1♀: Cameroun, Mbalmayo, forest, banana trap, X.1999, Col. G. Goergen (RBINS); 1♂, 1♀: Cameroun, S.W. Prov., Fako Dist., Bakingili, 25km W. Limbe, 01-10.VI.1984, Coll. R. Davidson (CMNH); 2♂, 1♀: Cameroun, SW Prov., Fako Dist., Bakingili, 25km W. Limbe, 21-30.VI.1984, Coll. R. Davidson (CMNH); 1♂: Cameroun, S.W. Prov., Fako Dist., Bakingili, 25km W. Limbe, 11-20.VII.1984, Coll. R. Davidson (CMNH); 1♀: Cameroon, S.W. Prov., Bakingili, 10m, 11-20.VI.1984, John E. Rawlins (CMNH); 1♂: Cameroon S.W. Prov., 25km W. Limbe, Bakingili, Malaise trap, 10.VII.1984, James A. Digiulio (CMNH); 2♂: Cameroun, Duala (MNHUB); 2♂: Cameroun, Duala, X.(19)11, V. Rothkirch (MNHUB); 1♂: Gabon, Petit Okano, III.1986, Leg. A. Pauly (RBINS); 1♀: Gabon, Ntoum, IX.1984, Malaise trap, leg. A. Pauly (RBINS); 1♂: Gabon, Ntoum, 01-15.VIII.1985, Leg. A. Pauly (RBINS);

1♂: Gabon, Lac Zonanghé, Ing. Lemarie (MNHUB); 1♂: Museum Paris, Ogooué, Lambaréné, 1911, R. Ellenberger (MNHUB); 13♂, 5♀: Congo français, Res. Lesio-Louna, X-XII.2008, Malaise trap, leg. Y. Braet & Zassi (RBINS); 1♂: Congo, Pool region, Voka 04°40'S/14°41'E, 620m, 21-30.V.1993, J. Rawlins, R. Davidson, G. Onore & D. Schlitter (CMNH); 1♂: Congo, Likouala Region, Epena 02°34'S/17°24'E, 340m, 11-13.VI.1993, Coll. J. Rawlins, R. Davidson, G. Onore & D. Schlitter (CMNH); 1♂: Congo belge, Leopoldville (MNHUB); 1♂: Congo belge, Stanleyfalls, R. P. Kohl (MNHUB); 1♂: Congo belge, Medje (MNHUB); 1♂: Congo belge, Kivu-See (MNHUB); 1♂: Musée du Congo, Ituri, Bunia, II.1934, J. Leroy (MNHUB); 1♂: Musée du Congo, Bamania, (près Coq), 1936, R. P. Hulstaert (MNHUB); 1♀: Congo belge, Bombo Lumene, VI.1998, Leg. P. Oremans (RBINS); 1♀: Rwanda, P. N. Nyungwe, Pindura, VI-VII.2007, Leg. E. Vingerhoedt (PCPL); 2♂: C. Afr., Kivu-S., Jns. Kwidjwi, XI.(19)07, Grauer S. V. (MNHUB); 1♂: Rwanda, P. N. Nyungwe, Pindura, 2200m, 15-27.IX.2007, Leg. P. Léonard & N. Schiltz (PCPL); 1♀: Uganda, Budongo Forest (1°43'N/31°32'E), 1224m, 12-29.I.1997, Leg. U. Göllner (MNHUB); 1♂: Uganda, Tevo Wald (MNHUB).

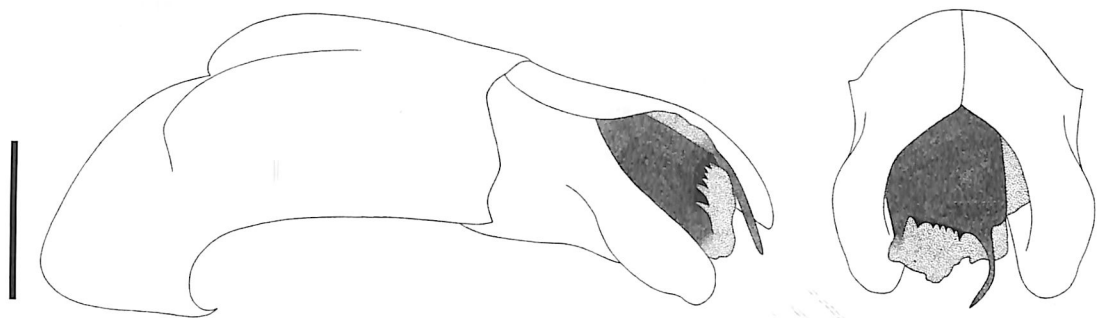
Prodoretus endroedii (FREY), 1973 comb. nov.

Adoretus endroedii FREY, 1973

Comment

FREY, 1973 described erroneously the species *endroedii* in the genus *Adoretus*, but the species possesses a transverse labrum which is characteristic of the *Prodoretina*.

The species *endroedii* belongs to the genus *Prodoretus* characterized by the pygidium not or barely visible from above.



Figs 43-44. *Popillia montium*: (43) aedeagus, lateral view; (44) parameres, dorsal view.

Adoretus pubipennis LAPORTE, 1840

Adoretus rugulosus BURMEISTER, 1844. **syn. n.**

Typical material examined:

Holotype ♀ of *A. pubipennis*: [*A. pubipennis* LAP. CAST., Sénégal, M. Leprieur] [Galans ? Leprieur] [Collection générale] [Muséum Paris] [Holotype ♀ of *Adoretus pubipennis* LAPORTE, 1840 POL LIMBOURG dét. 2011] (MNHN).

Holotype ♀ of *A. rugulosus*: [*rugulosus* B. Type, Sénégal] [Holotype ♀ of *Adoretus rugulosus* BURMEISTER, 1844 POL LIMBOURG dét. 2011] (MNHN).

Additional material examined:

1♂: Sénégal, Nianing, petite côte, 21.VII.2008, à la lumière, Leg. A. Coache (OCIS); 1♀: Sénégal, petite côte Nianing, 31.X.2008, à la lumière, Leg. A. Coache (OCIS); 1♀: idem (RBINS); 1♀: Sénégal, petite côte Nianing, 19.XI.2008, à la lumière, Leg. A. Coache (OCIS); 1♂: Sénégal, Nianing, petite côte, 21.IX.2008, à la lumière, Leg. A. Coache (RBINS); 2♂: Sénégal, Nianing, petite côte, 15.IX.2009, à la lumière, Leg. A. Coache (OCIS); 2♂: idem (RBINS); 1♂: Sénégal, Nianing, Petite Côte, 30.VI.2010, UV, Leg. Alain Coache (OCIS); 1♂: Sénégal, Wassadou, Parc Nat. du Niokolo Koba, 05.VII.2008, à la lumière, Leg. A. Coache (OCIS); 1♂: Sénégal, poste Niokolo, Parc Nat. Du Niokolo Koba, 29.IX.2008, à la lumière, Leg. A. Coache (PCPL); 1♀: Sénégal, Botou, Tambacounda, 11.VII.2008, ultra violet, Leg. A. Coache (OCIS); 1♀: (PCPL); 2♂: Ghana, Takoradi, ex. Coll. Breuning (MRAC); 1♂, 1♀: idem (RBINS); 1♂: Tchad, Dist. Kanem, N'Gouri, X/XI.58, P. Renaud, ex. Coll Dr. Breuning (MRAC)

Popillia montium KOLBE, 1903. Stat. N.
(Figs 43-45)

Typical material examined:

Lectotype ♀ present designation: [N. Nyassa-S., Unyika-Bogo Bg., 17.XI.99, W. Goetze S.] [*P. montium* KOLBE] [Type] [75719] [Syntypus *Popillia*

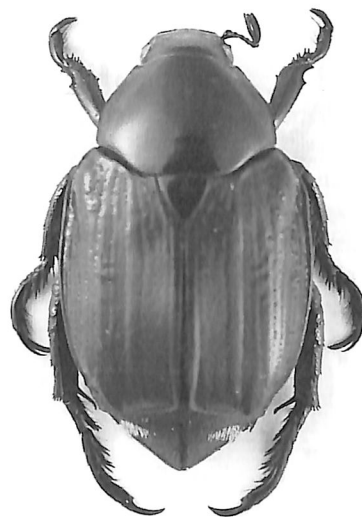


Fig. 45. *Popillia montium* habitus, dorsal view.

aeneipennis OHAUS ssp. *montium* KOLBE, 1903, labelled by MNHUB 2008] [Lectotype ♀ *Popillia montium* KOLBE, 1903, POL LIMBOURG dés. 2008] (MNHUB).

Paralectotype ♀: [N. Nyassa-S., Unyika-Bogo Bg., 17.XI.99, W. Goetze S.] [*Popillia montium* KOLBE] [Type] [75719] [Syntypus *Popillia aeneipennis* OHAUS ssp. *montium* KOLBE, 1903, labelled by MNHUB 2008] [Paralectotype ♀ *Popillia montium* KOLBE, 1903, POL LIMBOURG dét. 2008] (MNHUB).

Additional material examined:

1♂: Malawi, Chitipa Dist., Mughese Forest Reserve, XII.1992, Coll. C. O. Dudley (RBINS); 1♂: Malawi, Mt. Mulanje, 3500', Ruo River, 24.XI.1986, Leg. R. J. Murphy (RBINS); 1♂, 3♀: Nyasaland, Mlanje Plateau, 6500ft, 10.XI.13 (MNHUB)

Comment

In Genera Insectorum, 1957, W. MACHATSCHKE considered *P. montium* as a subspecies of *Popillia aeneipennis* OHAUS, 1908. After examination of a few recent



Fig. 46. Host plant (*Fabaceae* ?) of *P. rojkoffi*, (Nalweyi, Western Prov., Zambia - photo, M. François)

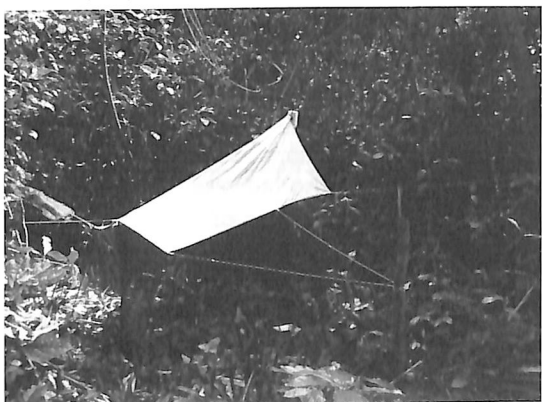


Fig. 47. Malaise trap, Lesio-Louna Reserve (photo, Y. Braet)



Fig. 48. Lesio-Louna Reserve, gallery forest (photo, Y. Braet)

specimens (σ , ♀) from Malawi, and based on similar characters, I restore this species status.

Synonymy

Popillia unguicularis OHAUS, 1920

Popillia basilewskyi LIMBOURG, 2006. **syn. n.**

Typical material examined:

Lectotype σ of *P. unguicularis* present designation: [type] [Urw. hint. d. Randbg. d. N. W. Tanganika S., 18-2200m, Grauer] [*Popillia unguicularis* OHS] [SYNTYPUS *Popillia unguicularis* OHAUS, 1920, labelled by MNHUB 2006] [Lectotype σ *Popillia unguicularis* OHAUS, 1920 POL LIMBOURG dés. 2007 (MNHUB)]

Paralectotype ♀ : [Cotype] [Urw. hint. d. Randbg. d. N. W. Tanganika S., 18-2200m, Grauer] [*Popillia unguicularis* OHS] [SYNTYPUS *Popillia unguicularis* OHAUS, 1920, labelled by MNHUB 2006] [Paralectotype ♀ *Popillia unguicularis* OHAUS, 1920 POL LIMBOURG dét. 2007] (MNHUB)

Holotype σ of *P. basilewskyi*: [Urundi, Bururi, 1800-2000m, 05-12.III.1953, Leg. P. Basilewsky] [Holotype σ of *Popillia basilewskyi* POL LIMBOURG, 2006] (MRAC).

Paratypes: 1 ♀ : [Urundi, Bururi, 1950m, VI.1949, Leg. F. François] (MRAC); 1 σ , 1 ♀ : [Burundi, Bururi, 1700m, Leg. Thiry, coll. C. Joly] (RBINS); 1 ♀ : [Burundi, Bururi, Sikuvi, 05.IV.1988, Leg. E. Vingerhoedt] (PCPL); 1 ♀ : [Burundi, Bururi, Sykuvayaie, 28.III.1984, don Ph. Oremans] (PCPL).

Additional material examined:

1 ♀ : R. D. Congo, Nord Kivu, env. Beni, IV-V.2009, Leg. R. Ducarme (RBINS); 1 ♀ : R. D. Congo, Nord Kivu, Bikara, III.1996, leg. R. Ducarme (RBINS); 1 σ : R. D. Congo, Kivu, 2008, leg. E. Vingerhoedt (RBINS); 5 σ , 9 ♀ : Burundi, forêt de Kibira, 2008, Leg. E. Vingerhoedt (RBINS); 7 ♀ : Rwanda, P. N. Nyungwe, Pindura, VI.2006, Leg. E. Vingerhoedt (RBINS); 2 ♀ : Rwanda, P. N. Nyungwe, Pindura, III.2007, Leg. E. Vingerhoedt & Vandeweghe (RBINS); 1 ♀ : Rwanda, P. N. Nyungwe, Buroro, VI.2007, Leg. E. Vingerhoedt (RBINS).

Popillia kolbei OHAUS, 1897

Popillia revirescens OHAUS, 1920. **syn. n.**

Typical material examined:

Lectotype σ of *P. kolbei* present designation: [type] [Bamenda, X.33 S. D. R. Rosevaer/Brit. Mus.] [Kamerun] [*Popillia kolbei* OHAUS] [Lectotype σ *Popillia kolbei* OHAUS, 1897 POL LIMBOURG dés. 2003] (MNHUB).

Paralectotype ♂: [type] [Kamerun interior] [*Popillia kolbei* OHAUS] [68387] [Paralectotype ♂ *Popillia kolbei* OHAUS, 1897 Pol Limbourg dés. 2003] (MNHUB); Paralectotype ♀: [type] [Kamerun] [*Popillia kolbei* OHAUS] [Paralectotype ♀ *Popillia kolbei* OHAUS, 1897 POL LIMBOURG dés. 2003] (MNHUB).

Type ♀ of *P. revirescens*: [Kamerun, Djutitsa b., Bamenda, 15-17.XII.08, Riggensch S. G.] [117677] [Type] [*Popillia revirescens* OHS. Type ♀, OHAUS déterm.] (MNHUB).

Type ♀ of *P. revirescens* var. *moerens*: [Kamerun, Schäfer S. G.] [117675] [*Popillia revirescens* v. *moerens* OHS. Type OHAUS déterm.] [Type ♀ of *Popillia revirescens* OHAUS, 1920 var. *moerens* OHAUS, 1920 POL LIMBOURG dét. 2003] (MNHUB).

Additional material examined:

1♂: Cameroun, Kamerun (MNHUB); 1♂: Cameroun, Obout env., V-VI.1999, Leg. Jean Mbida Mbida (VKCS); 1♂: (PCPL); 1♀: Cameroun, Manenzenba, 25.XI.1990, ex. Coll. Bernaud, don C. Joly (RBINS); 1♂: Cameroun, Baboussam (MRAC); 7♂, 8♀: Cameroun, Ngoundé (RBINS); 5♂, 6♀: Cameroun Ndougné (RBINS); 7♂, 1♀: Cameroun, Mt. Manegouba, (sur fleurs), Leg. G. Nazaret (PCPL).

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