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Nine new species of *Axinotoma* Dejean, 1829 from Africa

(Insecta Coleoptera Carabidae Harpalinae)

Abstract

Nine new species of *Axinotoma* Dejean, 1829 from continental Africa are described and the habitus and male genitalia of the new taxa are illustrated. A key to the known species of *Axinotoma* and maps with their distribution are provided.

Key words: Coleoptera, Carabidae, Harpalinae, *Axinotoma*, taxonomy, new species, Africa.

Riassunto

[*Nove nuove specie africane di Axinotoma Dejean, 1829*]

In questo articolo sono descritte nove nuove specie di *Axinotoma* Dejean, 1829 dell'Africa continentale, inoltre sono fornite le fotografie raffiguranti l'habitus dei nuovi taxa e i disegni del lobo mediano dell'edeago. Sono illustrate le cartine con la distribuzione delle specie ad oggi note del genere *Axinotoma* ed è proposta una tabella per la loro determinazione.

Introduction

BASILEWSKY (1950) treated the genus *Axinotoma* Dejean, 1829 and provided a key to the 7 taxa known at that time. Later, the same author described *A. decellei* Basilewsky, 1968a and *A. latipalpis* Basilewsky, 1968b and SCIAKY & TOLEDANO (1995) described *A. viossati* from Comoro Islands. Recently FACCHINI (2003) described *A. tanzaniana* from Tanzania and *A. pseudofallax* from Kenya.

The species considered by BASILEWSKY (1950) included 2 taxa, *A. posticalis* Péringuey, 1896 and *A. pseudornata* Basilewsky, 1948, with completely pubescent elytra in females (almost glabrous in males) and with mentum without a tooth. For this reason, CLARKE (1972) described the genus *Allonixus*, making *A. pseudornata* a synonym of *A. posticalis*. The genus *Metarpalus* Jeannel, 1946, mentioned also in a later monograph of Madagascan Carabidae (JEANNEL 1948) and including only 2 species endemic to Madagascar, was considered by NOONAN (1976, 1985) and SCIAKY & TOLEDANO (1995) as a synonym of *Axinotoma*. The latter includes 12

species at present (13 in LORENZ 2005, with *A. posticalis*). The genus *Axinotoma* is characterized by its large head, mentum with tooth, penultimate palpomere of labial palpi with more than 2 setae, elytra with dense non-setigerous punctures on the intervals (one Madagascan species, with punctures almost absent near the apex), usually 1 discal setigerous puncture situated on interval 3, sometimes missing, without setigerous punctures on intervals 5 and 7, protarsomeres 1-4 of male dilated, with 2 rows of scale-like bristles ventrally, mesotarsomeres not dilated, without rows of scale-like bristles ventrally, metatarsomere 1 as long as 2 and 3 together. The present-day distribution shows that *A. decellei* occurs in western Africa, *A. latipalpis* and *A. lepersonneae* Burgeon, 1942 occur in central Africa, *A. maynei* Burgeon, 1936 and *A. hulstaerti* Basilewsky, 1950 occur in western and central Africa, *A. obtuseangula* Péringuey, 1896 occurs in eastern and southern Africa, *A. fallax* Dejean, 1829 occurs in western, central and eastern Africa, *A. tanzaniana* Facchini, 2003 and *A. pseudofallax* Facchini, 2003 occur in eastern Africa, *A. ambigena* (Jeannel, 1946) and *A. perrieri* (Jeannel, 1946) occur in Madagascar and *A. viossati* occurs in Comoro Islands. The purpose of this work is the description of nine new species belonging to this genus.

Material and methods

This work is based upon a series of specimens of *Axinotoma* spp. from Africa. Typical material examined: *Metarpalus ambigenus* Jeannel, 1946 (holotypus), *M. ambigenus semipunctatus* Jeannel, 1948 (holotypus), *M. perrieri* Jeannel, 1946 (holotypus), *Axinotoma decellei* Basilewsky, 1968 (holotypus), *A. fallax* Dejean, 1829 (typus), *A. punctulata* Chaudoir, 1876 (typus) (syn. of *fallax* Dejean, 1829), *A. hulstaerti* Basilewsky, 1950 (holotypus), *A. latipalpis* Basilewsky, 1968 (paratypus), *A. lepersonneae* Burgeon, 1942 (holotypus), *A. maynei* Burgeon, 1936 (holotypus), *A. viossati* Sciaky & Toledano, 1995 (paratypus), *A. tanzaniana* Facchini, 2003 (holotypus), *A. pseudofallax* Facchini, 2003 (holotypus). I have seen, moreover, a specimen of *A. obtuseangula* Péringuey, 1896 compared with the type by P. Basilewsky.

Measurements were made with an ocular micrometer in a Leica MZ 12.5 stereomicroscope. The total length was measured from the apex of the mandibles (closed) to the apex of the elytra. Measurements of body parts and abbreviations used for them in the text are:

- El length of elytra from base of scutellum to apex
- Ew maximum width of elytra
- Pl length of pronotum along median line
- Pw maximum width of pronotum

Ratios used in this publication are Pw/Pl and El/Ew.

The photographs are composite images with progressive focusing obtained by



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6

Figs. 1-6. Photographs of the habitus of: 1. *Axinotoma kivuensis* n. sp., holotypus; 2. *A. morettoii* n. sp., holotypus; 3. *A. dilatipalpis* n. sp., holotypus; 4. *A. bifida* n. sp., holotypus; 5. *A. sinuatipennis* n. sp., holotypus; 6. *A. demeyeri* n. sp., holotypus.

Luca Toledano (Verona, Italy) with a Nikon DSFi1 digital camera controlled by Nikon DS-L2 stand alone remote controller mounted on a Leica Z6 microscope equipped with a customized motorized stand made by L.T., then processed on a Macintosh Mac Book Pro computer with Helicon Focus® 3.61 program and then optimized with Photoshop® Elements 3.0 on the same computer.

Typical material here described is preserved in the following collections, each of which is coded by an acronym used in this publication:

MRAC	Musée Royal de l'Afrique Centrale, Tervuren (Belgium)
ZFMK	Forschungsmuseum A. Koenig, Bonn
CB	Coll. Bulirsch, Prague (Czech Republic)
CBs	Coll. Bašta, Brno (Czech Republic)
CF	Coll. Facchini, Piacenza (Italy)
CK	Coll. Kmeco, Litovel (Czech Republic)
CSc	Coll. Schüle, Herrenberg (Germany)

Axinotoma kivuensis n. sp.

Type locality - Kivu: Itombwe, Kakozi.

Type material - Holotypus: male "I.R.S.A.C. – MUS. R.A.C., Kivu : Itombwe, Kakozi, 1200-1400 m, V.1961, B.154, N. Leleup; Biot. 154, Vestiges de forêt heliophile" (MRAC). Paratypes: same data as holotypus, 6 males, 6 females (MRAC); I.R.S.A.C. – MUS. R.A.C., Kivu : Itombwe, Kakozi, 1200-1400 m, V.1961, B.153, N. Leleup; Biot. 153, Vestiges de forêt heliophile, 9 males, 1 female (MRAC, CF); I.R.S.A.C. – MUS. R.A.C., Kivu : Itombwe, Kakozi, 1200-1400 m, V.1961, B.152/2, N. Leleup; Biot. 152/2, Vestiges de forêt heliophile, 1 male, 1 female (MRAC); I.R.S.A.C. – MUS. R.A.C., Kivu : Itombwe, Kakozi, 1400 m, V.1961, B.151, N. Leleup; Biot. 151, Vestiges de forêt heliophile, 1 female (MRAC); I.R.S.A.C. – MUS. R.A.C., Kivu : Itombwe, Kakozi, 1400 m, V.1961, B.150, N. Leleup; Biot. 150, Vestiges de forêt heliophile, 1 male (MRAC); I.R.S.A.C. – Mus. Congo, Kivu : Itombwe, haute Kalimabenge, 2400 m, B. 51, XII.1958, N. Leleup; Biot. N. 51, Forêt de montagne, 1 female (MRAC); N. Lac Kivu: Rwankwi, III-1951, J.V. Leroy, 2 males (MRAC); Kivu: Lemera, terr. Uvira, 1600 m, XII-1956, N. Leleup, 1 female (MRAC); Congo Belge : P.N.A., 4-VI-1955, P. Vanschuytbroeck, 13.441-44; Secteur Nord, riv. Mukandwe, affl. Talya, 1.200 m, humus s. pl. basses, 2 males, 1 female (MRAC); Terr. des cataractes, Kavuya (Grot. B. 15b/15c), XII-1952, P. Basilewsky, 1 male (MRAC); Zw.Tanganika-und Albert Edward-See, Grauer, 1910, 3 males, 1 female (MRAC); Kenya, Western

Province, Kakamega Forest, Colobus, E 34°51'41.1" N 00°21'4.9", Transect 2, 12.06.2007, 1650 m, leg. Marcell Peters, 15 males, 21 females (ZFMK, CF, CSc); Kenya, Western Province, Kakamega Frst, Buyangu G2, E 34°52'25.0" N 00°20'58.6", leg. M. Hagen, 03.05.2006, 1 female (ZFMK); Kenya, Western Province, Kakamega Frst, Buyangu G1, E 34°52'25.0" N 00°20'58.6", leg. M. Hagen, 03.05.2006, 1 male (ZFMK); Kenya, Western Province, Kakamega Frst, Buyangu G1, E 34°52'25.0" N 00°20'58.6", leg. M. Hagen, 21.11.2005, 1 female (ZFMK); Kenya, Western Province, Kakamega Frst, Buyangu G1, E 34°52'25.0" N 00°20'58.6", leg. M. Hagen, 24.05.2006, 1 male, 1 female (ZFMK); Kenya, Western Province, Kakamega Frst, Buyangu G2, E 34°52'25.0" N 00°20'58.6", leg. M. Hagen, 17.05.2006, 2 females (ZFMK); Kenya, Western Province, Kakamega Frst, Buyangu G1, E 34°52'25.0" N 00°20'58.6", leg. M. Hagen, 10.05.2006, 1 male, 1 female (ZFMK); Kenya, Western Province, Kakamega Frst, Buyangu G2, E 34°52'25.0" N 00°20'58.6", leg. M. Hagen, 10.05.2006, 1 female (ZFMK); Kenya, Western Province, Kakamega Frst, Buyangu G3, E 34°52'25.0" N 00°20'58.6", leg. M. Hagen, 10.05.2006, 1 female (ZFMK); Kenya, Western Province, Kakamega Forest, Buyangu, Transect 25, E 34°51'54.1" N 00°20'53.6", 06.09.2007, 1650 m, leg. F. Hita Garcia, 1 male (ZFMK); Kenya, Western Province, Kakamega – Kisere Forest E2, E 34°53'27.0" N 00°23'29.0", leg. M. Hagen, 01.12.2005, 1 male, 1 female (ZFMK); Kenya, Western Province, Kakamega – Kisere Forest E1, E 34°53'27.0" N 00°23'29.0", leg. M. Hagen, 20.05.2006, 1 male (ZFMK); Kenya, Western Province, Kakamega – Kisere Forest E2, E 34°53'27.0" N 00°23'29.0", leg. M. Hagen, 05.01.2006, 1 female (ZFMK); Kenya, Western Province, Kakamega – Kisere Forest E2, E 34°53'27.0" N 00°23'29.0", leg. M. Hagen, 10.11.2005, 1 female (ZFMK); Kenya, Western Province, Kakamega – Kisere Forest E1, E 34°53'27.0" N 00°23'29.0", leg. M. Hagen, 27.05.2006, 1 female (ZFMK); Kenya, Western Province, Kakamega Frst, Campsite 1, E 34°52'00.2" N 00°21'09.2", leg. M. Hagen, 11.05.2006, 1 male (ZFMK); Kenya, Western Province, Kakamega Frst, Campsite A1, E 34°52'00.2" N 00°21'09.2", leg. M. Hagen, 18.05.2006, 1 female (ZFMK); Kenya, Western Province, Kakamega Frst, Kabrasi C/D1, E 34°51'58.4" N 00°22'11.6", leg. M. Hagen, 05.01.2006, 1 male (ZFMK); Kenya, Western Province, Kakamega Frst, Bukhaywa B2, E 34°51'08.1" N 00°20'53.3", leg. M. Hagen, 18.05.2006, 1 female (ZFMK); Kenya, Western Province, Kakamega Frst, Ivakale A3, E 34°52'34.6" N 00°21'51.4", leg. M. Hagen, 22.12.2005, 1 female (ZFMK); Kenya, Western Province, Kakamega For., Udo's camp, Transect 7, E 34°52'2.6" N 00°21'7.9", 02.07.2007, 1650 m, leg. Georg Fischer, 1 male, 1 female (ZFMK); Kenya, Western Province, Kakamega Forest, Kaimosi, Study site 4, E 34°50'24" N



Figs. 7-9. Photographs of the habitus of:
7. *Axinotoma sinuaticollis* n. sp., holotypus;
8. *A. toledanoi* n. sp., holotypus;
9. *A. schuelei* n. sp., holotypus.

00°07'40.8", VIII-XII. 2005, 1600 m, leg. G. Fischer, 1 female (ZFMK); Kenya, Western Province, Kakamega Forest, Isecheno, Transect 23, E 34°52'9.2" N 00°14'6.1", 28.08.2007, 1650 m, leg. F. Hita Garcia, 2 males, 2 females (ZFMK); Kenya, Western Province, Kakamega Forest, Isecheno, Transect 23, E 34°52'9.2" N 00°14'6.1", 25.06.2007, 1650 m, leg. F. Hita Garcia, 1 male (CSc); Kenya, Western Province, Kakamega Forest, Ikuywa, Transect 20, E 34°55'52.3" N 00°12'42.6", 16.08.2007, 1650 m, leg. F. Hita Garcia, 1 female (ZFMK).

Derivatio nominis - This name is derived from the region where the holotypus was collected.

Diagnosis - Total length 10.1 mm in holotypus, head brown, pronotum pale brown with darker disc, elytra brown with paler apex and lateral margin, legs and palpi testaceous, antennae brown with antennomeres 1-3 testaceous, apical labial palpomere slender, constricted towards apex, elytra convex, median lobe of the aedeagus without apical disc.

Description - Total length 8.5-10.3 mm (10.1 mm in holotypus), head brown, pronotum pale brown with darker disc, elytra brown with paler apex and lateral margin, legs and palpi testaceous, antennae brown with antennomeres 1-3 testaceous. Fully winged. Habitus as in Fig. 1. Microsculpture almost effaced on head, shallow on pronotum, effaced on elytra.

Head large, finely punctate, much narrower than pronotum, fronto-ocular grooves distinct. Labrum not concave at middle, with 6 setae, clypeus with 1 seta on each side, very slightly concave at middle. Mentum with tooth, ligula not expanded at apex, shorter than paraglossae. Apical labial palpomere slender, constricted towards apex, penultimate palpomere of labial palpi with more than 2 setae. Eyes markedly convex, tempora short. Antennae with antennomeres 1 and 3-11 medium-sized, 2 short; antennomeres 1-2 glabrous, 3-11 densely pubescent, except for the base of 3.

Pronotum markedly transverse (index Pw/Pl = 1.74 in holotypus), with wide lateral gutter; sides slightly rounded in the anterior third, almost straight before hind angles, more constricted at anterior margin than at base, maximum width anterior to the middle, basal angles almost right. Lateral seta anterior to the middle. Anterior angles not protruding, rounded. Median longitudinal impression moderately deep. Basal impressions wide, indistinctly delimited, markedly punctate, one on each side of pronotum. Base completely bordered. Dorsal surface sparsely punctate in the middle, markedly punctate at sides and in basal impressions. Pro- and mesosternum, pro- and mesoepisterna smooth, metepisterna and metasternum almost smooth, with only very few punctures. Metepisterna markedly longer than wide, constricted; prosternal projection unbordered, with some setae at apex.

Elytra wide (index El/Ew = 1.39 in holotypus), convex, glabrous, maximum width posterior to the middle. Basal border entire. Striae moderately deep, complete,

impunctate. Intervals flat in the posterior half, very slightly convex in the anterior half, with dense non-setigerous punctures. Scutellar stria long, scutellar setigerous puncture present at base of scutellar stria, 1 discal setigerous puncture situated on interval 3, a little behind the middle. Umbilicate series composed of 22-23 setigerous punctures, without a gap between humeral and apical series. Abdomen almost smooth, with only very few punctures, last visible sternite with 2 setae on each side in both sexes.

Legs short, metatarsomere 1 as long as 2 and 3 together; onychium with few thin setae ventrally. Protarsomeres 1-4 of male dilated, with 2 rows of scale-like bristles ventrally, mesotarsomeres not dilated, without rows of scale-like bristles ventrally.

Median lobe of aedeagus (Fig. 10) medium sized, with dorsal ostium, without apical disc, apex straight in dorsal view.

Distribution - Known from D. R. Congo and Kenya. The distribution of the species of the genus *Axinotoma* is given in figs. 19-20.

Affinities - *Axinotoma kivuensis* n. sp. is similar to *A. maynei* Burgeon and *A. tanzaniana* Facchini by the apical labial palpomere slender, constricted towards apex, but it can be easily distinguished from them by its more convex elytra, the antennae brown with antennomeres 1-3 testaceous and the median lobe of the aedeagus with a different shape and without apical disc (with apical disc in *A. maynei* and *A. tanzaniana*).

Axinotoma moretto n. sp.

Type locality - Senegal, Ziguinchor, Oussouye.

Type material - Holotypus: male "Senegal, Ziguinchor, Oussouye, 25.VII.2008, leg. Moretto" (CF). Paratype: same data as holotypus, 1 female (CF).

Derivatio nominis - This species is cordially dedicated to my friend Philippe Moretto, from Toulon, very good collector of Carabids and specialist in Scarabaeinae, in particular in African Onthophagini.

Diagnosis - Total length 10.8 mm in holotypus, head, pronotum and elytra dark green, lateral margin of pronotum brown, legs testaceous, apical labial palpomere stout, dilated towards apex, median lobe of the aedeagus without apical disc.

Description - Total length 10.5-10.8 mm (10.8 mm in holotypus), head, pronotum and elytra dark green, lateral margin of pronotum brown, body brown inferiorly, legs testaceous and antennomere 1, mandibles, labrum, clypeus, palpi and antennomeres 2-11 brown. Fully winged. Habitus as in Fig. 2. Microsculpture absent on head, vanishing on pronotum, shallow on elytra, made up by transverse meshes.

Head large, finely punctate, much narrower than pronotum, fronto-ocular grooves shallow. Labrum not concave at middle, with 6 setae, clypeus not concave, with 1 seta on each side. Mentum with tooth, ligula not expanded at apex, with 2 setae, slightly shorter than paraglossae. Last palpomere pubescent, apical labial palpomere stout, dilated towards apex, penultimate palpomere of labial palpi with more than 2 setae. Eyes markedly convex, tempora short. Antennae with antennomeres 1 and 3-11 medium-sized, 2 short; antennomeres 1-2 glabrous, 3-11 densely pubescent, except the base of 3.

Pronotum markedly transverse (index $Pw/Pl = 1.72$ in holotypus), with wide lateral gutter; sides rounded in the anterior third, almost straight before hind angles, more constricted at anterior margin than at base, maximum width anterior to the middle, basal angles almost right. Lateral seta anterior to the middle. Anterior angles not protruding, rounded. Median longitudinal impression shallow. Basal impressions markedly punctate. Base bordered except in the middle. Dorsal surface punctate, more finely and sparsely punctate on the disc. Pro- meso- and metasternum almost smooth, sparsely pubescent, pro- meso- and metepisterna sparsely and finely punctate. Metepisterna markedly longer than wide, constricted; prosternal projection unbordered, with some setae at apex.

Elytra wide (index $EI/Ew = 1.48$ in holotypus), moderately convex, glabrous, apical margin moderately sinuate. Basal border entire. Striae deep, complete, finely punctate. Intervals slightly convex, flat on the disc, with dense non-setigerous punctures. Scutellar stria long, scutellar setigerous puncture present at base of scutellar stria, 1 discal setigerous puncture situated on interval 3, in the posterior third, adjoining stria 2. Umbilicate series composed of 22-23 setigerous punctures, without a gap between humeral and apical series. Abdomen almost smooth and glabrous at sides, slightly pubescent only at middle near the base, last visible sternite with 2 setae on each side in both sexes.

Legs short, metatarsomere 1 as long as 2 and 3 together; onychium with few thin setae ventrally. Protarsomeres 1-4 of male dilated, with 2 rows of scale-like bristles ventrally, mesotarsomeres not dilated, without rows of scale-like bristles ventrally.

Median lobe of aedeagus (Fig. 11) medium sized, with dorsal ostium, apex without apical disc.

Distribution - Known only from Senegal: Ziguinchor (Oussouye). The distribution of the species of the genus *Axinotoma* is given in figs. 19-20.

Affinities - *Axinotoma morettoii* n. sp. is similar to *A. fallax* Dejean but it can be easily distinguished from the latter by its dark green body instead of dark brown and a different shape of the median lobe of the aedeagus.

Axinotoma dilatipalpis n. sp.

Type locality - Zambia NW, Chibwika env.

Type material - Holotypus: male “Zambia NW, Chibwika env., 18.11.2003, leg. Snížek” (CF). Paratype: Zambia NW, Mwinilunga, 12.11.2003, leg. Snížek”, 1 female (CF).

Derivatio nominis - The name of this species alludes to the apical labial palpomere strongly dilated towards apex.

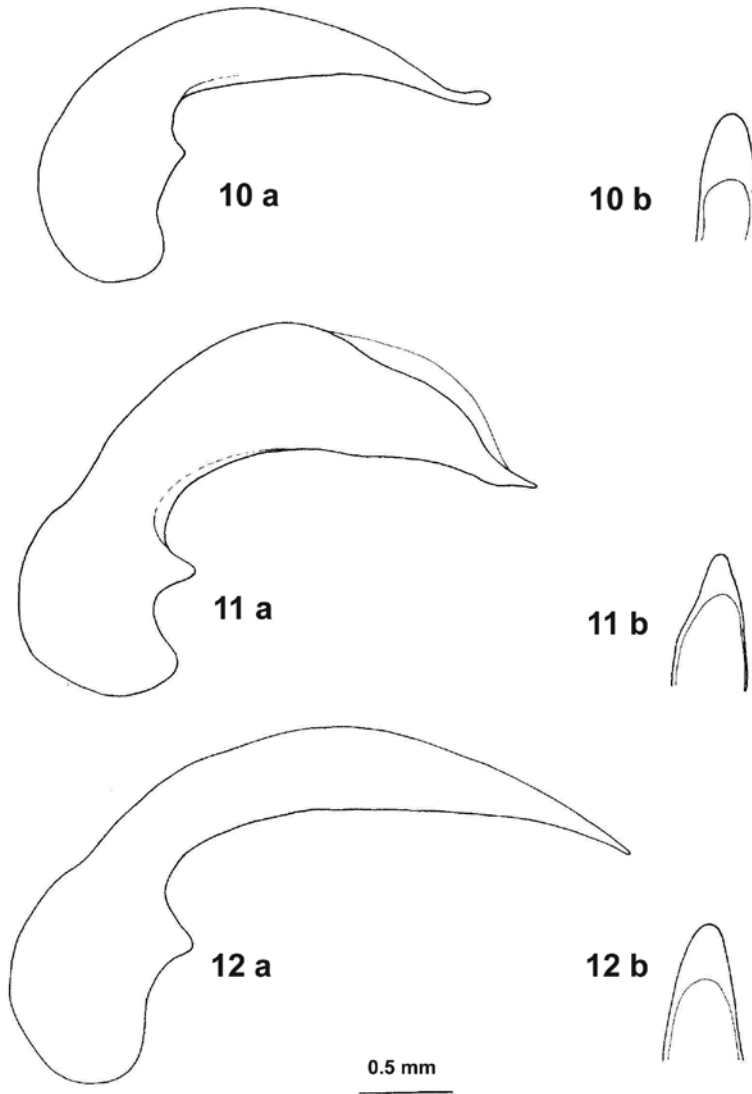
Diagnosis - Total length 12.9 mm in holotypus, body dark brown with testaceous legs and palpi, last palpomere brown, labial palpi clearly bicolored, antennae reddish-brown, pronotum with lateral gutter reddish-brown, apical labial palpomere markedly dilated towards apex, elytra quite long, without a discal setigerous puncture, median lobe of the aedeagus without apical disc.

Description - Total length 12.9-14.1 mm (12.9 mm in holotypus), body dark brown with testaceous legs and palpi, last palpomere brown, antennae reddish-brown, pronotum with lateral gutter reddish-brown. Fully winged. Habitus as in Fig. 3. Microsculpture vanishing on head, very shallow on pronotum and elytra, made up by transverse meshes.

Head large, finely punctate, much narrower than pronotum, fronto-ocular grooves shallow. Labrum not concave at middle, with 6 setae, clypeus not concave, with 1 seta on each side. Mentum with tooth, ligula not expanded at apex, with 2 setae, slightly shorter than paraglossae. Last palpomere pubescent, apical labial palpomere stout, markedly dilated towards apex, penultimate palpomere of labial palpi with more than 2 setae. Eyes markedly convex, tempora short. Antennae with antennomeres 1 and 3-11 medium-sized, 2 short; antennomeres 1-2 glabrous, 3-11 densely pubescent, except for the base of 3.

Pronotum transverse (index $Pw/Pl = 1.54$ in holotypus), with narrow lateral gutter in the anterior half, dilated in the posterior half; sides straight or faintly sinuate before hind angles, slightly more constricted at anterior margin than at base, maximum width anterior to the middle, basal angles almost right. Lateral seta anterior to the middle. Anterior angles not protruding, rounded. Median longitudinal impression moderately deep. Basal impressions markedly punctate, one on each side of pronotum. Base completely bordered. Dorsal surface punctate, more finely and sparsely punctate on the disc. Pro- meso- and metasternum sparsely pubescent, pro- meso- and metepisterna sparsely and finely punctate. Metepisterna markedly longer than wide, constricted; prosternal projection unbordered, with some setae at apex.

Elytra quite long (index $Ei/Ew = 1.61$ in holotypus), convex, glabrous, sides almost parallel-sided, apical margin slightly sinuate. Basal border entire, basal margin joining lateral margin with a curve. Striae deep, complete, faintly punctate. Intervals slightly convex, flat on the disc, with dense non-setigerous punctures.



Figs. 10-12. Left view (a) and dorsal view, apical part, (b) of the median lobe of the aedeagus of: 10. *Axinotoma kivuensis* n. sp., holotypus; 11. *A. morettoii* n. sp., holotypus; 12. *A. dilatipalpis* n. sp., holotypus.

Scutellar stria long, scutellar setigerous puncture present at base of scutellar stria, without a discal setigerous puncture. Umbilicate series composed of 22-27 setigerous punctures, without a gap between humeral and apical series. Abdomen smooth and glabrous at sides, only at middle near the base pubescent, last visible sternite with 2 setae on each side in both sexes.

Legs short, metatarsomere 1 as long as 2 and 3 together; onychium with few thin setae ventrally. Protarsomeres 1-4 of male dilated, with 2 rows of scale-like bristles ventrally, mesotarsomeres not dilated, without rows of scale-like bristles ventrally.

Median lobe of aedeagus (Fig. 12) medium sized, with dorsal ostium, apex in lateral view slender, bent downwards, without apical disc, straight in dorsal view.

Distribution - Known only from NW Zambia: Chibwika env. and Mwinilunga. The distribution of the species of the genus *Axinotoma* is given in figs. 19-20.

Affinities - *Axinotoma dilatipalpis* n. sp. is similar to *A. latipalpis* Basilewsky but it can be easily distinguished from the latter by its apical labial palpomere more markedly dilated towards apex, labial palpi clearly bicolored, pronotum less markedly transverse, elytra longer, intervals less convex and a different shape of the median lobe of the aedeagus in lateral view.

Axinotoma bifida n. sp.

Type locality - Zambia NW, Ikelenge env., Nchila.

Type material - Holotypus: male “Zambia NW, Ikelenge env., Nchila G.R., 14.11.2003, leg. Snizek” (CF).

Derivatio nominis - The name of this species alludes to the mentum tooth strongly bifid.

Diagnosis - Total length 13.8 mm, body dark brown, apical labial palpomere stout, dilated towards apex, mentum tooth strongly bifid (u-shaped), elytra with flat intervals, pronotum with protruding anterior angles, elytra quite long, median lobe of the aedeagus without apical disc, with large basal bulb.

Description - Total length 13.8 mm, body dark brown with reddish-brown labrum, palpi and antennae, reddish-brown legs with testaceous femora. Fully winged. Habitus as in Fig. 4. Microsculpture present on elytra, made up by transverse meshes, effaced on head and very shallow on pronotum.

Head large, finely punctate, much narrower than pronotum, fronto-ocular grooves distinct. Labrum not concave at middle, with 6 setae, clypeus not concave, with 1 seta on each side. Mentum with tooth, strongly bifid (u-shaped); ligula not expanded at apex, with 2 setae, as long as the paraglossae. Last palpomere pubescent, apical

labial palpomere stout, dilated towards apex, penultimate palpomere of labial palpi with more than 2 setae. Eyes markedly convex, tempora short. Antennae with antennomeres 1 and 3-11 medium-sized, 2 short; antennomeres 1-2 glabrous, 3-11 densely pubescent, except for the base of 3.

Pronotum markedly transverse (index $Pw/Pl = 1.6$), with narrow lateral gutter in the anterior half, dilated in the posterior half; sides rounded in the anterior third, almost straight before hind angles, more constricted at anterior margin than at base, maximum width anterior to the middle, basal angles almost right. Lateral seta anterior to the middle. Anterior angles protruding, rounded. Median longitudinal impression shallow. Basal impressions narrow, markedly punctate, one on each side of pronotum. Base completely bordered. Dorsal surface punctate, more finely and sparsely punctate on the disc. Pro- meso- and metasternum finely and sparsely pubescent, pro- meso- and metepisterna finely and sparsely punctate. Metepisterna markedly longer than wide, constricted; prosternal projection unbordered, with some setae at apex.

Elytra quite long (index $El/Ew = 1.57$), convex, glabrous, sides almost parallel-sided, apical margin slightly sinuate. Basal border entire. Striae moderately deep, complete, faintly punctate. Intervals flat, with dense non-setigerous punctures. Scutellar stria long, scutellar setigerous puncture present at base of scutellar stria, 1 discal setigerous puncture situated on interval 3, in the posterior fourth, adjoining stria 2. Umbilicate series composed of 23-25 setigerous punctures, without a gap between humeral and apical series. Abdomen almost smooth and glabrous at sides, only at middle near the base slightly pubescent, last visible sternite with 2 setae on each side.

Legs short, metatarsomere 1 as long as 2 and 3 together; onychium with few thin setae ventrally. Protarsomeres 1-4 of male dilated, with 2 rows of scale-like bristles ventrally, mesotarsomeres not dilated, without rows of scale-like bristles ventrally.

Median lobe of aedeagus (Fig. 13) medium sized, with large basal bulb, with dorsal ostium, apex without apical disc.

Distribution - Known only from NW Zambia: Ikelenge (Nchila). The distribution of the species of the genus *Axinotoma* is given in figs. 19-20.

Affinities - *Axinotoma bifida* n. sp. is similar to *A. dilatipalpis* n. sp. but it can be easily distinguished from the latter by its mentum tooth strongly bifid (u-shaped) (not bifid in *A. dilatipalpis* n. sp.), apical labial palpomere markedly less dilated towards apex, labial palpi not clearly bicolored (clearly bicolored in *A. dilatipalpis* n. sp.), pronotum more markedly transverse, with anterior angles more protruding, elytra with flat intervals, 1 discal setigerous puncture situated on interval 3 (without a discal setigerous puncture in *A. dilatipalpis* n. sp.), different shape of the median lobe of the aedeagus and larger basal bulb.

Axinotoma sinuatipennis n. sp.

Type locality - Zambia C, 140 Km NE Kapiri Mposhi, 40 Km SW Serenje.

Type material - Holotypus: male “Zambia C, 140 Km NE Kapiri Mposhi, 40 Km SW Serenje, 30.11.2004, Snížek” (CF). Paratypes: Zambia, 70 Km NE Kapiri, ATB Lodge, Mposhi, 21.XI.05, leg. Snížek, 1 female (CF); C-Zambia, 70 Km N Lusaka, Chisamba vall., 21.XI.2004, leg. Snížek & Tichý, 6 males, 7 females (CF); Zambia S, Choma env., Batoka, 26.11.03, 1 female (CF); Zambia NE, 90 Km NW Mpika, 27.11.2005, M. Snížek lgt, 1 male (CBs); S- Rhodesia, Christon Bank, 25.11.73, J. Duke, 2 males (MRAC); Zambia, Kasanka N.P., Kabwe campsite, 11-15.11.2010, 12°32.462' S, 30°12.68' E, 3625 ft, J-F Josso lgt., 3 females (CB, CF); Zambia S Mwense, Muchinga, 8-10.11.2010, 10°.41.137 S, 28°45.9 E, 3620 ft, J-F Josso lgt., 1 female (CB).

Derivatio nominis - The name of this species alludes to the apical margin of elytra strongly sinuate.

Diagnosis - Total length 9.6 mm in holotypus, body brown with testaceous legs, apical labial palpomere stout, dilated towards apex, apical margin of elytra strongly sinuate, median lobe of the aedeagus without apical disc.

Description - Total length 8.7-10.5 mm (9.6 mm in holotypus), body brown, pronotum with lateral gutter reddish-brown, labrum, palpi and antennae pale brown, legs testaceous. Fully winged. Habitus as in Fig. 5. Microsculpture present on elytra, made up by transverse meshes, effaced on head and almost effaced on pronotum.

Head large, finely and sparsely punctate, much narrower than pronotum, fronto-ocular grooves distinct. Labrum not concave at middle, with 6 setae, clypeus not concave, with 1 seta on each side. Mentum with tooth, more or less rounded at apex, ligula not expanded at apex, with 2 setae, slightly shorter than paraglossae. Last palpomere pubescent, apical labial palpomere stout, dilated towards apex, penultimate palpomere of labial palpi with more than 2 setae. Eyes markedly convex, tempora short. Antennae with antennomeres 1 and 3-11 medium-sized, 2 short; antennomeres 1-2 glabrous, 3-11 densely pubescent, except for the base of 3.

Pronotum markedly transverse (index Pw/Pl = 1.53 in holotypus), with narrow lateral gutter in the anterior half, dilated in the posterior half; sides rounded in the anterior half, straight or very slightly sinuate before hind angles, slightly more constricted at anterior margin than at base, maximum width slightly anterior to the middle, basal angles moderately obtuse. Lateral seta anterior to the middle. Anterior angles not protruding, rounded. Median longitudinal impression shallow. Basal impressions markedly punctate, one on each side of pronotum. Base completely bordered. Dorsal surface punctate, more finely and sparsely punctate

on the disc. Pro- meso- and metasternum finely and sparsely pubescent in the middle, metasternum punctate at sides, pro- meso- and metepisterna punctate. Metepisterna markedly longer than wide, constricted; prosternal projection unbordered, with some setae at apex.

Elytra quite long (index $El/Ew = 1.61$ in holotypus), convex, glabrous, sides almost parallel-sided, apical margin strongly sinuate. Basal border entire, basal margin joining lateral margin with a curve. Striae deep, complete, finely punctate. Intervals almost flat, with dense non-setigerous punctures. Scutellar stria long, scutellar setigerous puncture present at base of scutellar stria, 1 discal setigerous puncture situated on interval 3, in the posterior third, adjoining stria 2 (missing in some paratypes). Umbilicate series composed of 19-23 setigerous punctures, without a gap between humeral and apical series. Abdomen almost smooth and glabrous at sides, only at middle near the base slightly pubescent, last visible sternite with 2 setae on each side in both sexes.

Legs short, metatarsomere 1 almost as long as 2 and 3 together; onychium with few thin setae ventrally. Protarsomeres 1-4 of male dilated, with 2 rows of scale-like bristles ventrally, mesotarsomeres not dilated, without rows of scale-like bristles ventrally.

Median lobe of aedeagus (Fig. 14) medium sized, with dorsal ostium. Apex in lateral view slender, without apical disc, straight in dorsal view.

Distribution - Known only from Zambia and Zimbabwe. The distribution of the species of the genus *Axinotoma* is given in figs. 19-20.

Affinities - *Axinotoma sinuatipennis* n. sp. is similar to *A. obtuseangula* Péringuey but it can be distinguished from the latter by its apical margin of elytra more markedly sinuate and different shape of the median lobe of the aedeagus.

Axinotoma demeyeri n. sp.

Type locality - Burundi: Mugeru.

Type material - Holotypus: male "Coll. Mus. Tervuren, Burundi : Mugeru, II/III.1966, J.J. Rwabuneza" (MRAC). Paratypes: same data as holotypus, 1 female (MRAC); Coll. Mus. Tervuren, Burundi: Mugeru, fin 1965, J.J. Rwabuneza, 1 male, 2 females, (MRAC, CF); Coll. Mus. Tervuren, Burundi: Mugeru, VI/VII.1965, J.J. Rwabuneza, 1 female, (CF); Coll. Mus. Tervuren, Urundi: Bururi, R.P. Giraudin, (ex. coll. Breuning), 1 male (MRAC).

Derivatio nominis - This species is cordially dedicated to Marc de Meyer, head of the entomology section of the Royal Museum for Central Africa, Tervuren, for constantly receiving me in the most cordial way and for always allowing me to study the rich collections of his Museum.

Diagnosis - Total length 11.5 mm in holotypus, body dark brown with testaceous legs, apical labial palpomere stout, dilated towards apex, elytra with apical margin markedly sinuate, median lobe of the aedeagus without apical disc.

Description - Total length 10.4-11.7 mm (11.5 mm in holotypus), body dark brown with testaceous legs and brown palpi and antennae. Fully winged. Habitus as in Fig. 6. Microsculpture absent on head, very shallow on pronotum and elytra.

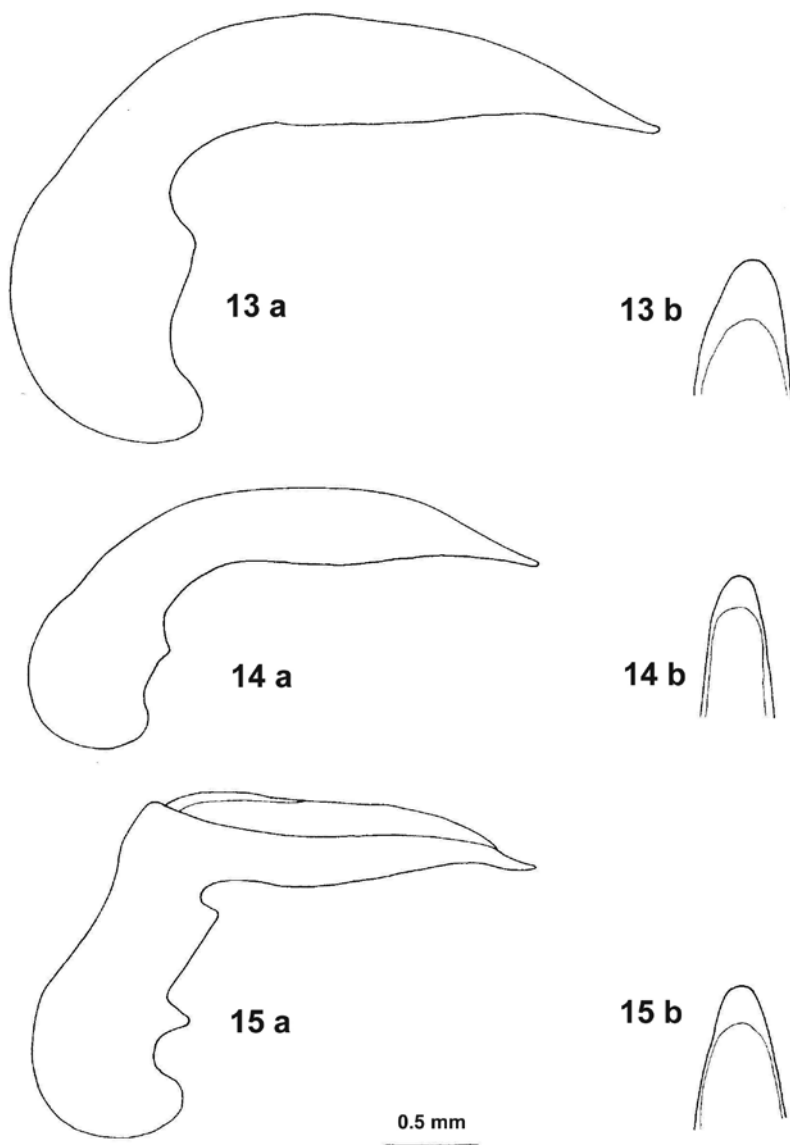
Head large, finely and sparsely punctate, much narrower than pronotum, fronto-ocular grooves distinct. Labrum not concave at middle, with 6 setae, clypeus not concave, with 1 seta on each side. Mentum with tooth, ligula not expanded at apex, with 2 setae, slightly shorter than paraglossae. Last palpomere pubescent, apical labial palpomere stout, dilated towards apex, penultimate palpomere of labial palpi with more than 2 setae. Eyes markedly convex, tempora short. Antennae with antennomeres 1 and 3-11 medium-sized, 2 short; antennomeres 1-2 glabrous, 3-11 densely pubescent, except for the base of 3.

Pronotum markedly transverse (index Pw/Pl = 1.7 in holotypus), with narrow lateral gutter in the anterior half, dilated in the posterior half; sides rounded in the anterior half, almost straight before hind angles, more constricted at anterior margin than at base, maximum width anterior to the middle, basal angles moderately obtuse. Lateral seta anterior to the middle. Anterior angles moderately protruding, rounded. Median longitudinal impression moderately deep. Basal impressions markedly punctate, one on each side of pronotum. Base bordered, except in the middle. Dorsal surface punctate, more finely and sparsely punctate on the disc. Pro-meso- and metasternum finely and sparsely pubescent in the middle, metasternum punctate at sides, pro- meso- and metepisterna punctate. Metepisterna markedly longer than wide, constricted; prosternal projection unbordered, with some setae at apex.

Elytra quite long (index El/Ew = 1.57 in holotypus), moderately convex, glabrous, sides almost parallel-sided, apical margin markedly sinuate. Basal border entire, basal margin meeting lateral margin with a curve. Striae moderately deep, complete, finely punctate. Intervals slightly convex, with dense non-setigerous punctures. Scutellar stria long, scutellar setigerous puncture present at base of scutellar stria, 1 discal setigerous puncture (rarely 2) situated on interval 3, in the posterior third, adjoining stria 2. Umbilicate series composed of 22-23 setigerous punctures, without a gap between humeral and apical series. Abdomen almost smooth and glabrous at sides, only at middle near the base slightly pubescent, last visible sternite with 2 setae on each side in both sexes.

Legs short, metatarsomere 1 as long as 2 and 3 together; onychium with few thin setae ventrally. Protarsomeres 1-4 of male dilated, with 2 rows of scale-like bristles ventrally, mesotarsomeres not dilated, without rows of scale-like bristles ventrally.

Median lobe of aedeagus (Fig. 15) medium sized, with dorsal ostium, apex without apical disc.



Figs. 13-15. Left view (a) and dorsal view, apical part, (b) of the median lobe of the aedeagus of: 13. *Axinotoma bifida* n. sp., holotypus; 14. *A. sinuatipennis* n. sp., holotypus; 15. *A. demeyeri* n. sp., holotypus.

Distribution - Known only from Burundi. The distribution of the species of the genus *Axinotoma* is given in figs. 19-20.

Affinities - *Axinotoma demeyeri* n. sp. is similar to *A. fallax* Dejean but it can be distinguished from the latter by its pronotum more markedly transverse and different shape of the median lobe of the aedeagus.

***Axinotoma sinuaticollis* n. sp.**

Type locality - Zambia NW, Chibwika env.

Type material - Holotypus: male “Zambia NW, Chibwika env., 18.11.2003, leg. Snizek” (CF). Paratypes: same data as holotypus, 4 females, (CF); Zambia NW, 40 Km SSW Solwezi, 8.12.2004, leg. Snizek, Tichý, 1 female (CF); Zambia NW, 90 Km S Mwinilunga, 14.12.2007, 1400 m, leg. M. Bednarik, 1 male (CF); Zambia, Copperbelt prov., 85 Km W of Chingola, 19-21. Jan. 2006, 1600 m, leg. R. Kmeco, 1 female (CK); Zambia NW, 150 Km S of Mwinilunga, 2.11.2008, leg. Snizek, 1 male, 1 female (CSc).

Derivatio nominis - The name of this species alludes to the pronotal sides sinuate before hind angles.

Diagnosis - Total length 10.0 mm in holotypus, head and elytra dark brown, pronotum brown with lateral gutter reddish-brown, with testaceous legs, apical labial palpomere stout, dilated towards apex, pronotum with sides sinuate before hind angles, median lobe of the aedeagus without apical disc.

Description - Total length 9.1-11.0 mm (10.0 mm in holotypus), head and elytra dark brown, pronotum brown with lateral gutter reddish-brown, labrum, palpi and antennae reddish-brown, with testaceous legs. Fully winged. Habitus as in Fig. 7. Microsculpture shallow on elytra, made up by transverse meshes, effaced on head and almost effaced on pronotum.

Head large, finely and sparsely punctate, much narrower than pronotum, fronto-ocular grooves distinct. Labrum not concave at middle, with 6 setae, clypeus not concave, with 1 seta on each side. Mentum with tooth, ligula not expanded at apex, with 2 setae, slightly shorter than paraglossae. Last palpomere pubescent, apical labial palpomere stout, dilated towards apex, penultimate palpomere of labial palpi with more than 2 setae. Eyes markedly convex, tempora short. Antennae with antennomeres 1 and 3-11 medium-sized, 2 short; antennomeres 1-2 glabrous, 3-11 densely pubescent, except for the base of 3.

Pronotum markedly transverse (index $P_w/P_l = 1.54$ in holotypus), with narrow lateral gutter in the anterior half, dilated in the posterior half; sides rounded in the anterior half, sinuate before hind angles, slightly more constricted at anterior margin than at base, maximum width anterior to the middle, basal angles almost

right. Lateral seta anterior to the middle. Anterior angles not protruding, rounded. Median longitudinal impression moderately deep. Basal impressions markedly punctate, one on each side of pronotum. Base completely bordered, sometimes except in the middle. Dorsal surface punctate, more finely and sparsely punctate on the disc. Pro- meso- and metasternum finely and sparsely pubescent in the middle, metasternum slightly punctate at sides, proepisterna almost smooth, meso- and metepisterna finely punctate. Metepisterna markedly longer than wide, constricted; prosternal projection unbordered, with some setae at apex.

Elytra quite long (index $El/Ew = 1.58$ in holotypus), convex, glabrous, sides almost parallel-sided, apical margin slightly sinuate. Basal border entire, basal margin meeting lateral margin with a curve. Striae deep, complete, very finely punctate. Intervals almost flat on the disc, slightly convex near the base and at apex, with dense non-setigerous punctures. Scutellar stria long, scutellar setigerous puncture present at base of scutellar stria, without a discal setigerous puncture (1 paratype with 1 discal setigerous puncture situated on interval 3, only on the right elytron). Umbilicate series composed of 23-27 setigerous punctures, without a gap between humeral and apical series. Abdomen almost smooth and glabrous at sides, only at middle near the base slightly pubescent, last visible sternite with 2 setae on each side in both sexes.

Legs short, metatarsomere 1 as long as 2 and 3 together; onychium with few thin setae ventrally. Protarsomeres 1-4 of male dilated, with 2 rows of scale-like bristles ventrally, mesotarsomeres not dilated, without rows of scale-like bristles ventrally.

Median lobe of aedeagus (Fig. 16) medium sized, with dorsal ostium, apex without apical disc.

Distribution - Known only from Zambia. The distribution of the species of the genus *Axinotoma* is given in figs. 19-20.

Affinities - *Axinotoma sinuaticollis* n. sp. is similar to *A. pseudofallax* Facchini but it can be distinguished from the latter by its pronotum with sides sinuate before hind angles instead of almost straight, elytra with intervals almost flat on the disc, slightly convex near the base and at apex (completely flat in *A. pseudofallax*) and median lobe of the aedeagus with dorsal ostium (deflected to the left side in *A. pseudofallax*).

Axinotoma toledanoi n. sp.

Type locality - Zambia, 140 Km NE Kapiri Mposhi, 62 Km SW Serenje.

Type material - Holotypus: male "Zambia 2005, 140 Km NE Kapiri Mposhi, 62 Km SW Serenje, 22.XI, leg. Snížek" (CF). Paratypes: Zambia, Central prov., 15 Km E Serenje, 29-30.11.2007, 1430 m, leg. M. Bednarik, 1 female (CF); Zambia,

Northern prov., 35 Km S of Kasama, 17-18.12.2009, 1260 m, Rudolf Kmeco leg, 1 female (CK).

Derivatio nominis - This species is cordially dedicated to my dear friend Luca Toledano from Verona, excellent specialist in Bembidiina.

Diagnosis - Total length 11.3 mm in holotypus, body dark brown with testaceous legs and brown palpi and antennae, pronotum with lateral gutter reddish-brown, apical labial palpomere stout, dilated towards apex, pronotum with basal angles almost right, rounded at apex, median lobe of the aedeagus without apical disc.

Description - Total length 11.3-12.3 mm (11.3 mm in holotypus), body dark brown with testaceous legs and brown palpi and antennae, pronotum with lateral gutter reddish-brown. Fully winged. Habitus as in Fig. 8. Microsculpture shallow on elytra, made up by transverse meshes, absent on head and vanishing on pronotum.

Head large, finely punctate, much narrower than pronotum, fronto-ocular grooves distinct. Labrum not concave at middle, with 6 setae, clypeus not concave, with 1 seta on each side. Mentum with tooth, ligula not expanded at apex, with 2 setae, as long as the paraglossae. Last palpomere pubescent, apical labial palpomere stout, dilated towards apex, penultimate palpomere of labial palpi with more than 2 setae. Eyes markedly convex, tempora short. Antennae with antennomeres 1 and 3-11 medium-sized, 2 short; antennomeres 1-2 glabrous, 3-11 densely pubescent, except for the base of 3.

Pronotum markedly transverse (index $Pw/Pl = 1.68$ in holotypus), with narrow lateral gutter in the anterior half, dilated in the posterior half; sides rounded in the anterior half, almost straight before hind angles, more constricted at anterior margin than at base, maximum width slightly anterior to the middle, basal angles almost right, rounded at apex. Lateral seta anterior to the middle. Anterior angles slightly protruding, rounded. Median longitudinal impression moderately deep. Basal impressions markedly punctate, one on each side of pronotum. Base bordered except in the middle. Dorsal surface punctate, more finely and sparsely punctate on the disc. Pro- meso- and metasternum finely and sparsely pubescent in the middle, metasternum slightly punctate at sides, proepisterna almost smooth, meso- and metepisterna finely punctate. Metepisterna markedly longer than wide, constricted; prosternal projection unbordered, with some setae at apex.

Elytra quite long (index $El/Ew = 1.61$ in holotypus), convex, glabrous, sides almost parallel-sided, apical margin slightly sinuate. Basal border entire, basal margin meeting lateral margin with an obtuse angle. Striae deep, complete, finely punctate. Intervals almost flat, with dense non-setigerous punctures. Scutellar stria long, scutellar setigerous puncture present at base of scutellar stria, 1 discal setigerous puncture situated on interval 3, in the posterior third, adjoining stria 2. Umbilicate series composed of 22-24 setigerous punctures, without a gap between humeral and apical series. Abdomen almost smooth and glabrous at sides, slightly pubescent only at middle near the base, last visible sternite with 2 setae on each

side in both sexes.

Legs short, metatarsomere 1 as long as 2 and 3 together; onychium with few thin setae ventrally. Protarsomeres 1-4 of male dilated, with 2 rows of scale-like bristles ventrally, mesotarsomeres not dilated, without rows of scale-like bristles ventrally.

Median lobe of aedeagus (Fig. 17) medium sized, with dorsal ostium, apex without apical disc..

Distribution - Known only from Zambia. The distribution of the species of the genus *Axinotoma* is given in fig. figs. 19-20.

Affinities - *Axinotoma toledanoi* n. sp. is similar to *A. fallax* Dejean but it can be distinguished from the latter by its pronotum with basal angles more rounded at apex and different shape of the median lobe of the aedeagus.

Axinotoma schuelei n. sp.

Type locality - Elisabethville (D.R. Congo).

Type material - Holotypus: male "Coll. Mus. Congo, Elisabethville (à la lumière), 1-1956/I-1957, Ch. Seydel" (MRAC). Paratypes: Elisabethville (à la lumière), 1-III.52/30-IX.1953, Ch. Seydel, 1 male (CF); Zambia, Copperbelt, near Solwezi, 10.XI.2003, Werner & Lizier leg., 1 male (CSc); Zambia NW, Chibwika env., 18.11.2003, leg. Snížek, 1 female (CF); Zambia NW, E Mutumbwe, NW Kasempa, 15.XI.2005, leg. Snížek, 1 female (CF); Zambia W, 40 Km W Kawana, 22.11.2003, leg. Snížek, 1 female (CF).

Derivatio nominis - This species is cordially dedicated to my friend Peter Schüle, from Herrenberg, very good collector of Carabids and specialist in Cicindelidae and Carabidae.

Diagnosis - Total length 11.5 mm in holotypus, body brown with testaceous legs, brown palpi and antennae, apical labial palpomere stout, dilated towards apex, elytra without a discal setigerous puncture, median lobe of the aedeagus without apical disc.

Description - Total length 11.0-12 mm (11.5 mm in holotypus), body brown with testaceous legs, brown palpi and antennae. Fully winged. Habitus as in Fig. 9. Microsculpture shallow on elytra, made up by transverse meshes, absent on head and very shallow on pronotum.

Head large, finely and sparsely punctate, much narrower than pronotum, fronto-ocular grooves distinct. Labrum not concave at middle, with 6 setae, clypeus not concave, with 1 seta on each side. Mentum with tooth, ligula not expanded at apex, with 2 setae, as long as the paraglossae. Last palpomere pubescent, apical

labial palpomere stout, dilated towards apex, penultimate palpomere of labial palpi with more than 2 setae. Eyes markedly convex, tempora short. Antennae with antennomeres 1 and 3-11 medium-sized, 2 short; antennomeres 1-2 glabrous, 3-11 densely pubescent, except for the base of 3.

Pronotum markedly transverse (index Pw/Pl = 1.6 in holotypus), with narrow lateral gutter in the anterior half, dilated in the posterior half; sides rounded in the anterior half, slightly sinuate before hind angles, more constricted at anterior margin than at base, maximum width slightly anterior to the middle, basal angles right. Lateral seta anterior to the middle. Anterior angles moderately protruding, rounded. Median longitudinal impression moderately deep. Basal impressions markedly punctate, one on each side of pronotum. Base completely bordered. Dorsal surface punctate, more finely and sparsely punctate on the disc. Pro- meso- and metasternum finely and sparsely pubescent in the middle, metasternum slightly punctate at sides, pro- meso- and metepisterna finely punctate. Metepisterna markedly longer than wide, constricted; prosternal projection unbordered, with some setae at apex.

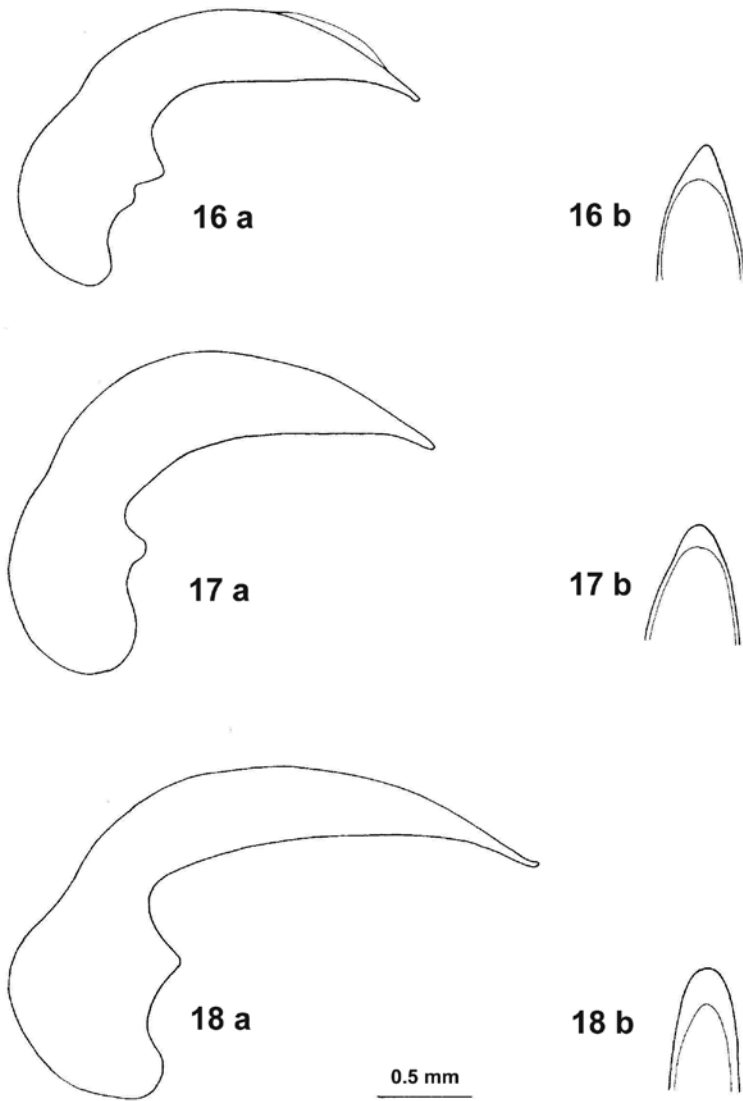
Elytra quite long (index El/Ew = 1.62 in holotypus), convex, glabrous, sides almost parallel-sided, apical margin slightly sinuate. Basal border entire. Striae moderately deep, complete, finely punctate. Intervals slightly convex near the base, with dense non-setigerous punctures. Scutellar stria long, scutellar setigerous puncture present at base of scutellar stria, without a discal setigerous puncture. Umbilicate series composed of 20-23 setigerous punctures, without a gap between humeral and apical series. Abdomen almost smooth and glabrous at sides, only at middle near the base slightly pubescent, last visible sternite with 2 setae on each side in both sexes.

Legs short, metatarsomere 1 almost as long as 2 and 3 together; onychium with few thin setae ventrally. Protarsomeres 1-4 of male dilated, with 2 rows of scale-like bristles ventrally, mesotarsomeres not dilated, without rows of scale-like bristles ventrally.

Median lobe of aedeagus (Fig.18) medium sized, with dorsal ostium. Apex in lateral view slender, without apical disc, straight in dorsal view.

Distribution - Known only from D.R. Congo and Zambia. The distribution of the species of the genus *Axinotoma* is given in figs. 19-20.

Affinities - *Axinotoma schuelei* n. sp. is similar to *A. pseudofallax* Facchini but it can be distinguished from the latter by its pronotum more markedly transverse, elytra with intervals slightly convex near the base (completely flat in *A. pseudofallax*) and different shape of the median lobe of the aedeagus, with dorsal ostium (deflected to the left side in *A. pseudofallax*). *A. schuelei* n. sp. is rather similar to *A. sinuaticollis* n. sp. but it can be distinguished from this last by its pronotum more markedly transverse, with sides less markedly sinuate before hind angles and different shape of the median lobe of the aedeagus.



Figs. 16-18. Left view (a) and dorsal view, apical part, (b) of the median lobe of the aedeagus of: 16. *Axinotoma sinuaticollis* n. sp., holotypus; 17. *A. toledanoi* n. sp., holotypus; 18. *A. schuelei* n. sp., holotypus.

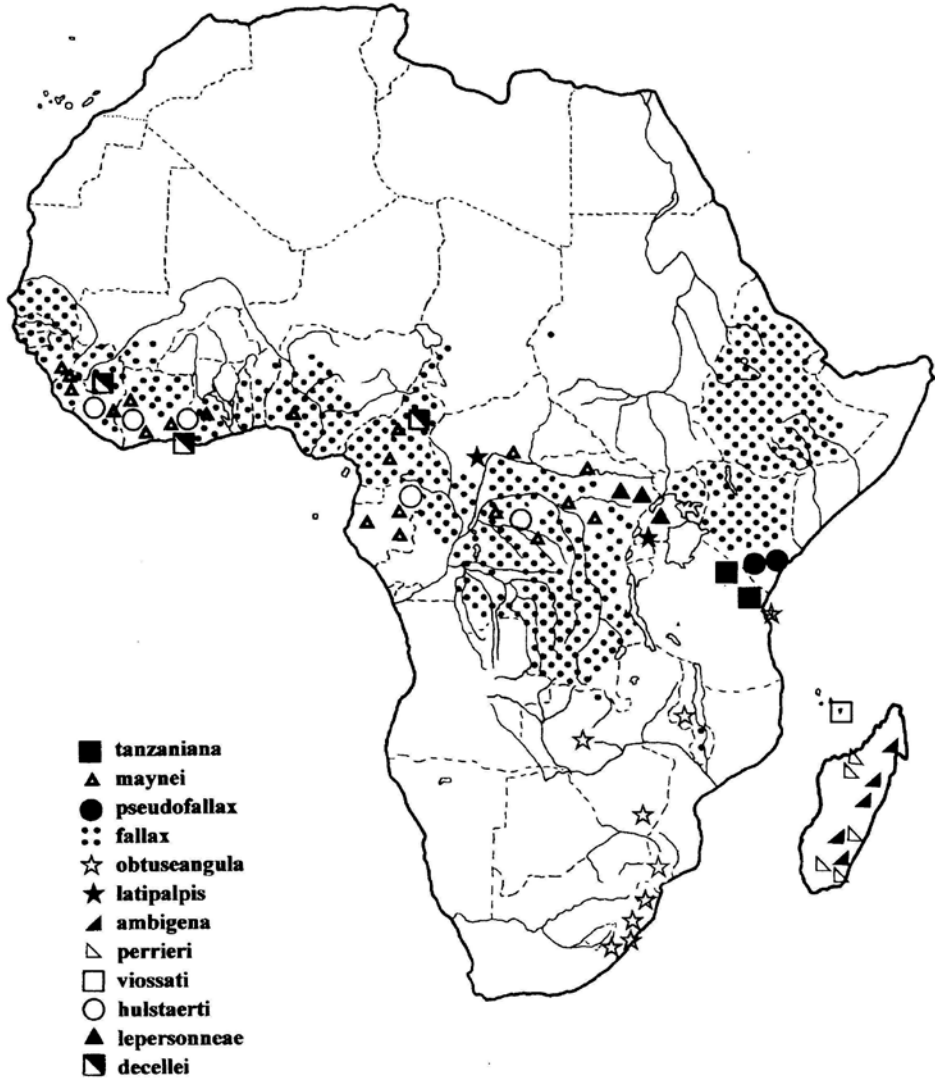


Fig. 19. Distribution of the species of the genus *Axinotoma*.

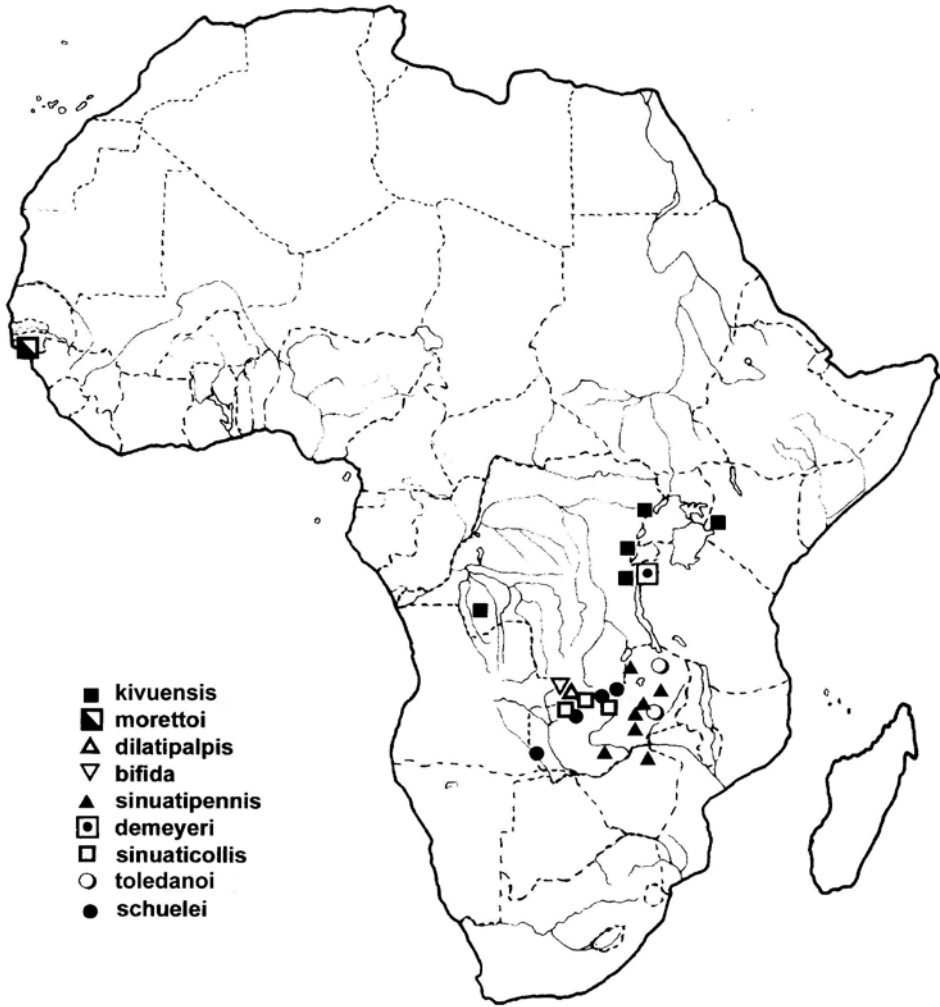


Fig. 20. Distribution of the species of the genus *Axinotoma*.

Key to the *Axinotoma* species

- 1 Elytra unicolorous 2
- Elytra with reddish or yellowish spots or bands, or with yellowish apex ... 16
- 2 Apical labial palpomere slender, constricted towards apex 3
- Apical labial palpomere stout, not constricted towards apex, frequently dilated ...
..... 5
- 3 Median lobe of the aedeagus with apical disc 4
- Median lobe of the aedeagus without apical disc. 8.5-10.3 mm - D.R. Congo,
Kenya *kivuensis* n. sp.
- 4 Elytra with flat intervals. 10.1-10.8 mm - Tanzania . *tanzaniana* Facchini, 2003
- Elytra with convex intervals. 9-11 mm - W and C Africa
..... *maynei* Burgeon, 1936
- 5 Dark green body, 1 discal setigerous puncture on interval 3. 10.5-10.8 mm –
Senegal *morettoii* n. sp.
- Dark brown body, with or without a discal setigerous puncture on interval 3.. 6
- 6 Tooth of mentum strongly bifid (u-shaped), 1 discal setigerous puncture on
interval 3. 13.8 mm - Zambia *bifida* n. sp.
- Tooth of mentum not bifid 7
- 7 Apical labial palpomere more markedly dilated 8
- Apical labial palpomere less markedly dilated 9
- 8 Labial palpi clearly bicolored, pronotum less markedly transverse, elytra
longer, intervals less convex. 12.9-14.1 mm - Zambia *dilatipalpis* n. sp.
- Labial palpi not clearly bicolored, pronotum more markedly transverse, elytra
shorter, intervals more convex. 9.5-13.5 mm - C Africa
..... *latipalpis* Basilewsky, 1968
- 9 Median lobe of the aedeagus with ostium deflected to the left side; elytra
without discal setigerous puncture on interval 3. 9.1-9.8 mm - Kenya
..... *pseudofallax* Facchini, 2003
- Median lobe of the aedeagus with dorsal ostium, elytra with or without discal
setigerous puncture on interval 3 10
- 10 Pronotum with basal angles obtuse 11
- Pronotum with basal angles almost right 13
- 11 Apical margin of elytra more markedly sinuate 12
- Apical margin of elytra less markedly sinuate. 10-12 mm - E and S Africa ...

- *obtuseangula* Péringuey, 1896
- 12 Body stouter, pronotum more markedly transverse, median lobe of the aedeagus as in fig. 15. 10.4-11.7 mm - Burundi *demeyeri* n. sp.
- Body slender, pronotum less markedly transverse, median lobe of the aedeagus as in fig. 14. 8.7-10.5 mm - Zambia, Zimbabwe
.....*sinuatipennis* n. sp.
- 13 Pronotum with sides sinuate before hind angles. 9.1-11.0 mm - Zambia
..... *sinuaticollis* n. sp.
- Pronotum with sides not or very slightly sinuate before hind angles 14
- 14 Elytra without a discal setigerous puncture. 11.0-12 mm - D.R. Congo, Zambia *schueleii* n. sp.
- Each elytron with 1 discal setigerous puncture situated on interval 3 15
- 15 Pronotum with basal angles more rounded at apex, elytra longer, median lobe of aedeagus stouter. 11.3-12.3 mm - Zambia *toledanoi* n. sp.
- Pronotum with basal angles less rounded at apex, elytra shorter, median lobe of aedeagus slender. 9.5-12 mm - W, C and E Africa *fallax* Dejean, 1829
- 16 Elytra with completely yellowish apex, species from Madagascar and Comoro Islands 17
- Elytra without completely yellowish apex but with yellowish bands near the apex or with reddish or yellowish spots near the apex and near the shoulders, species from continental Africa 19
- 17 Median lobe of the aedeagus with ostium slightly deflected to the left side, species from Madagascar 18
- Median lobe of the aedeagus with dorsal ostium, species from Comoro Islands. 6.9-8.5 mm*viossati* Sciaky & Toledano, 1995
- 18 Elytra with dense non-setigerous punctures on the intervals, also near the apex. 8.5-10.5 mm *perrieri* (Jeannel, 1946)
- Elytra without dense non-setigerous punctures near the apex. 8-10.5 mm
..... *ambigena* (Jeannel, 1946)
- 19 One reddish or yellowish, rounded spot on each elytron, near the shoulder, and one reddish or yellowish common spot near the apex. Median lobe of the aedeagus markedly twisted. 9.5-10.5 mm - W and C Africa
..... *hulstaerti* Basilewsky, 1950
- One small yellowish spot near the shoulders and 3 yellowish bands near the apex. Median lobe of the aedeagus not twisted 20
- 20 Elytra with convex intervals, median lobe of the aedeagus with apical disc.

- 10-12 mm - C Africa *lepersonneae* Burgeon, 1942
- Elytra with flat intervals, median lobe of the aedeagus without apical disc.
- 11-12 mm - W Africa *decellei* Basilewsky, 1968

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