Studies and reports of District Museum Prague-East
Taxonomical Series 5 (1-2): 1-10, 2009

The spider beetles of the continental Africa (Coleoptera: Ptinidae). Part I - Genus *Mezium* Curtis

Jerzy BOROWSKI

Warsaw University of Life Sciences, Department of Forest Protection and Ecology,
ul. Nowoursynowska 159/34, 02-776 Warsaw, Poland
e-mail: jerzy_borowski@sggw.pl

Taxonomy, new species, spider beetles, checklist, geografical distribution, key to species, Coleoptera, Ptinidae, *Mezium*, continental Africa

Abstract. The first of the planned series of papers on continental African spider beetles contains descriptions of five new species (*Mezium africanum* sp. n., *M. glabrum* sp. n., *M. pseudafricanum* sp. n., *M. setosum* sp. n. from Namibia and *M. pseudamericanum* sp. n. from Morocco) of the genus *Mezium*, key to all the *Mezium* species known from continental Africa, and the catalogue of African species of the genus, showing general and intra-African distribution.

INTRODUCTION

Ptinidae (sensu stricto) from continental Africa have never been monographically worked out; only Bellés'
(1985) world revision of one subgroup - the subfamily Gibbiinae - includes also African taxa. The catalogue of Ptinidae of Palearctic part of Africa was added in 2007 (Borowski 2007).
In the successive parts - concerning usually particular genera - of the planned revision, under the general title of „The spider beetles of the continental Africa (Coleoptera, Ptinidae)", data on the geographical distribution and bionomy, as well as the descriptions of new taxa will be provided.
The first part of the planned series refers to the genus *Mezium* Curtis, 1828. Hitherto it included 8 known species, 7 of them reported from Africa. Herein four new species from south - west Africa (Namibia) and one from Morocco are added, so the present paper contains 14 % of all African Ptinidae.

MATERIALS AND USED ABBREVIATIONS

The material of the following collections has been examined:

JB author's collection;
JV Jiří Vávra, private collection, (Ostrava, Czech Republic);
MNHN Museum National d'Histoire Naturelle, Paris, France;
MNHU Museum für Naturkunde der Humboldt-Universität, Berlin, Germany;
MZLU Museum of Zoology, Lund University, Sweden;
NHML Natural History Museum, London, England;

NMB National Museum, Bloemfontein, RSA;
PZ Petr Zahradník, private collection (Praha, Czech Republic);
SAM South African Museum, Cape Town, RSA;
SMWN State Museum, Windhoek, Namibia.

DESCRIPTIONS

Mezium africanum sp. n.
(Figs 1, 12)

Type material. Holotype: "Merkerhöhle, Maltahöhe district, SE 2416 Ab, 26.v.1990, E. Marais, J. Irish, in cave", (SMWN). Paratypes: (19 spec.): labelled as the holotype, (SMWN, JB); (2 spec.): "Uhlenhorsthöhle, SE 1917 Ca, 6.viii.1993, E. Marais, in cave", (SMWN); (2 spec.): "Namibia, Grootfontein dist., Uhlmann Cave, 19˚33'S, 17˚14'E, 3.vi.1993, J. Irish, in dark zone", (NMB).

Description. Length 2.1-3.0 mm. Head, antennae, anterior and middle part of pronotum, legs, and ventral side covered with dark-yellow, basal part of pronotum with white squamulae. Sides of pronotum partly rounded, apical margin somewhat swollen. From apical margin to middle run two parallel, rather low carinulae with pair of tubercles at ends. Between carinulae and on their sides broad round scales occur. As well on median pair as on two inconspicuous lateral tubercles scales are arranged conically. Posterior (behind tubercles) part of pronotum covered with white squamulae. Scaly collar on elytral base is divided into four tufts on each side of body. Elytra chestnut-brown, rarely brown. Pilosity double: erect on odd intervals and recumbent in rows, both occurring from elytral base to apices. Genitalia as in fig. 12.

Differential diagnosis. The occurrence of erect pubescence on the elytra makes this species highly distinctive and easy to recognize. The most similar is *M. pseudafricanum*, but in that species erect pilosity is practically absent and structure of genitalia different.

Name derivation. Species epithet *africanum* derives from Africa, continent of occurrence of new species.

Mezium glabrum sp. n.
(Figs 2, 13)

Type material. Holotype: "Mara 114, Bethanien Distr., 27˚54'S, 17˚19'E, 24.xi.1992, E. Marais, in cave", (SMWN). Paratypes: (3 spec.): labelled as the holotype, (SMWN, JB); (1 spec.): "Aurusberg, Diamond area 1, 27˚41'S, 16˚22'E, 17.xi.1992, huns exp.", (SMWN).

Description. Length 2.1-2.5 mm. Head, antennae, anterior and middle part of pronotum, legs, and ventral side covered with yellow, basal part of pronotum with white squamulae. Antennal joints elongated, basal 4-5 with long erect hairs. Pronotal sides divergent anterad. Anterior and middle part densely covered with short, erect, backwards directed, yellow squamulae

with intermixed long, erect hairs; scales in basal part white, recumbent, without erect hairs. No pronotal tubercles or conically arranged scales. Scaly collar on elytral base divided into five tufts on each side of pronotum. Elytra strongly convex, smooth, resembling the genus *Gibbium* Scop., with sparse erect hairs at base. Femoral edges and tibiae with erect yellow pilosity, scales on femora and tibiae arranged like on reptile skin. Genitalia as on fig. 13.

Differential diagnosis. This species differs from the remaining representatives of the genus by erect hairs on proximal 4-5 antennomeres, lack of pronotal tubercles, and dense erect squamulae intermixed with long erect hairs on anterior and middle part of pronotum; characteristic are also exceptionally convex elytra.

Name derivation. Species epithet *glabrum* derives from Latin *glăbrŭm* - glabrous, smooth, bald, from glabrous elytra of new species.

***Mezium pseudafricanum* sp. n.**
(Figs 3, 14)

Type material. Holotype: "Verloren Cave, SE 2316 Ab, 29-30.vi.1993, E. Marais, in cave", (SMWN). Paratypes: (10 spec.): labelled as the holotype, (SMWN, JB); (3 spec.): "S.W. Africa, N.W. Otavi, Uisib Mts., Aigamos Cave, 11.xi.1933", (NHML); (28 spec.): " Namibia, Windhoek dist., Velroren Cave, 23˚09'S, 16˚20'E, 28.vii.1993, J. Irish, on guano in dark zone", (NMB); (2 spec.): „Namibia centr. or., Arnhem Cave, etwa 500 m, vom Eingang; in Guano, 24.5˚C, 22˚82'S - 18˚14'E, 21.iii.1997, H. J. Bremer leg." (JB).

Description. Length 2.0-2.7 mm. Head, antennae, almost all pronotum, legs, and ventral side covered with yellow squamulae, basal white-scaled part very narrow. Sides of pronotum subparallelsided, apical margin somewhat swollen. From apical margin to near base run two parallel, rather low carinulae with pair of inconspicuous tubercles at ends; lateral tubercles not discernible. Anteriorly, between carinulae and on their sides broad round scales occur; basal part behind tubercles very narrow, poorly visible, covered with white scales. Scaly collar on elytral base divided into three tufts on each side of pronotum. Elytra brown or pale brown. Elytral pubescence recumbent, in rows; short erect hairs absent or seen only in anterior part of elytra, on odd intervals. Genitalia as on fig. 14.

Differential diagnosis. Sibling species of *M. africanum*, differing from the latter by lack of long erect elytral pilosity, disparate structure of genitalia, very poorly developed tubercles and much narrower posterior (covered with white scales) part of pronotum.

Name derivation. The new species name is a combination of Greek prefix - pseudēs (false) and *africanum*, the name of sibling species of *Mezium* Curtis.

Mezium pseudamericanum sp. n.
(Figs 4, 15)

Type material. Holotype (♂): „Morocco - Western Sahara, 150 km S. of Boujdour, 24˚48,55'N, 014˚51,31'W, 6-7.ii.2005, (WGS84), lgt. Fouquè R.+ H. & Bečvář S.", (PZ). Paratypes: (72 spec.): labelled as the holotype, (PZ, JB, JV).

Description. Length 1.7-2.6 mm. Head, antennae, pronotum, anterior margin and apex of elytra, legs, and ventral side densely covered with yellowish-white squamulae. antennomeres short and thick; interantennal space narrow, flattened; eyes small, not protruding from outline of head. Pronotum transverse, index (length/width) I=0.6. Anterior margin indistinctly swollen. Of four tubercles, placed in middle part of pronotum, median pair is larger than lateral two; all with blunt tips, concolorous scales on them arranged in loose cone. Scaly "collar" on elytral base broken at suture and once on each side. Dorsal surface of elytra, from base to apex, covered with perpendicularly erect (shorter in posterior part) hairs; apex with small yellow squamulae. Genitalia (Fig. 15) very distinctive: penis strikingly swollen at base, markedly narrowed in middle and apical parts; base of tegmen strongly elongated and pointed at apex; parameres only apically pilose.

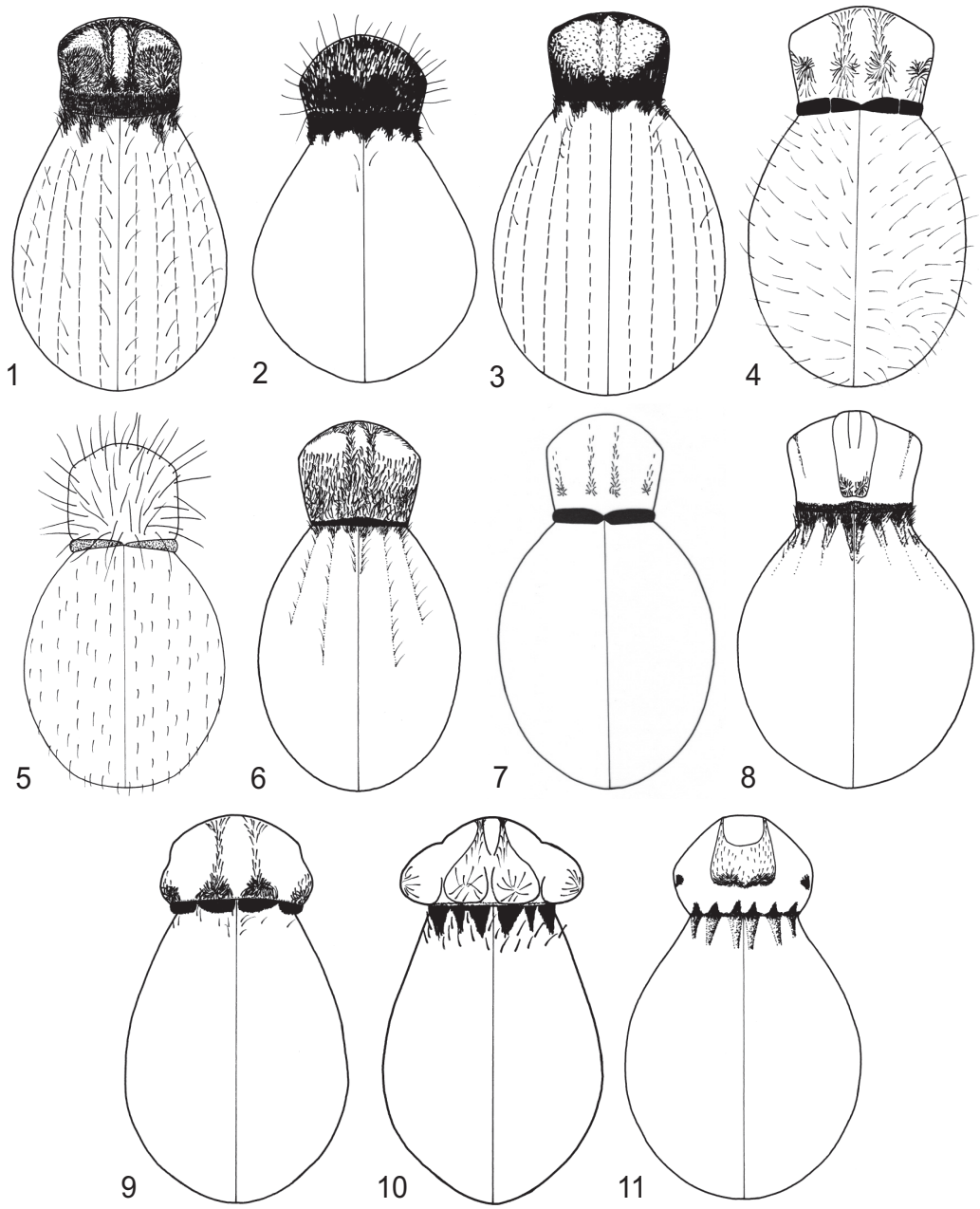
Differential diagnosis. Similar to *M. americanum* but differing in structure of genitalia, wider (index in *M. americanum* is I= 0.8) and anteriorly less narrowed pronotum, pronotal tubercles placed at middle rather than close to base as in *M. americanum*, and pubescence evenly covering the elytra throughout their length.

Name derivation. The new species name is a combination of Greek prefix - pseudēs (false) and *americanum*, the name of sibling species of *Mezium* Curtis.

Mezium setosum sp. n.
(Figs 5, 16)

Type material. Holotype: "Cayimaeis S.W.A., Mus. Exped. Mar. 1925", (SAM). Paratypes: (2 spec.): "Warmbad, Kaokoveld S.W.A", (SAM).

Description. Length 1.7-2.1mm. Antennae yellowish-brown, joints strongly elongated, basal IV with long erect pilosity. Head, pronotum, legs and ventral side covered with brown scales. Pronotum partly parallelsided, without tubercles or conicallly arranged squamulae, evenly covered with brown or pale brown scales placed in rather large pores (pronotal structure somewhat resembling pumice) and sparsely distributed, long, erect, yellowish-brown hairs. Collar on elytral base entire, unbroken, slightly narrowed at suture. Elytra black or blackish-brown, slightly shining, distinctly microsculptured in form of fine, shallow, very dense punctures. Elytral pubescence double: erect, slightly inclined backwards, arranged in sometimes irregular rows; and recumbent, distributed on various places throughout the surface. Legs with erect long pilosity. Genitalia as on fig. 16.



Figs 1-11. Outline of body of *Mezium* Curt. species: 1- *M. africanum* sp. n.; 2- *M. glabrum* sp. n.; 3- *M. pseudafricanum* sp. n.; 4- *M. pseudamericanum* sp. n.; 5- *M. setosum* sp. n.; 6- *M. andreaei* Pic; 7- *M. affine* Boield.; 8- *M. namibiensis* Bellés; 9- *M. americanum* (Laporte); 10- *M. sulcatum* (F.); 11- *M. gracilicorne* Pic.

Differential diagnosis. Not similar to other representatives of the genus; it differs from them as follows: very long, thin, erect pilosity of proximal antennomeres, pronotum and legs; lack of tubercles and very distinctive, pumice-like arrangement of scales on pronotum; worth mentioning is also elytral microsculpture consisting of dense and fine punctures.

Name derivation. Species epithet setosum derives from Latin saetā, sētā - seta, hair, from long, erect pilosity of proximal antennomeres, pronotum and legs.

NEW LOCALITIES AND REMARKS ON THE GEOGRAPHICAL DISTRIBUTION OF THE REMAINING SPECIES OF THE GENUS *MEZIUM* CURTIS.

The genus *Mezium* Curtis shows two centers of geographical distribution: western- Palaearctic, extending over Iberian Peninsula, Morocco and Canary Islands, and south-west Ethiopian including Namibia and southwestern part of RSA.

Mezium affine Boieldieu, 1856

Geographical distribution: Algeria, Congo (introduced), Egypt, Equatorial Guinea (introduced), Libya, Mali, Morocco, RSA (introduced), Tunisia.
Circummediterranean species. In Africa common in Palaearctic part; records from West Africa (Bellés 1985) and RSA (Irish 1999) should be treated as introductions from Mediterranean areas.

Mezium americanum (Laporte, 1840)

Geographical distribution: Morocco, RSA (introduced).
The center of distribution is probably Morocco and Canary Islands, from where it is often - much more frequently, especially within tropics, than *M. affine* or *M. sulcatum* - introduced to various parts of the world, to all continents. In Africa known only from Morocco. Irish (1999) recorded it from RSA as introduced species.

Mezium andreaei Pic, 1953

Geographical distribution: South Africa.
Hitherto known only from the type-localities (Holgat, Brandkross) in RSA, close to the Namibian border.
New localities: "RSA, Bredasdorp" (MZLU); "RSA, De Hoop" (MZLU, SMWN).

Mezium giganteum Escalera, 1914

Geographical distribution: Morocco.
Described from Morocco (Marrakesh). In Africa known only from Morocco, otherwise reported from southern Europe (Spain, Andalusia).

***Mezium gracilicorne* Pic, 1902**

Geographical distribution: Angola, Mozambique, Namibia.
Known from few widely spaced localities: described from Angola (Benguella) and São Tomé Island in the Gulf of Guinea; otherwise reported from one locality in Mozambique.
New localities: "Namibia, Hermitarium" (SMWN); "Namibia, Swakopmund" (SMWN); "Angola, Curoca River" (NHML); "Angola, Bahia das Pipas" (MNHU); "Angola, Lungo" (JB); "Namibia, Rocky Point" (MZLU); "Namibia, Khumib Valley" (MZLU).

***Mezium namibiensis* Bellés, 1984**

Geographical distribution: Namibia, South Africa.
Described from Albathöhle (Namibia) and never found thereafter.
New localities: "Namibia, Märchenhöhle" (SMWN); "RSA, Hay" (SMWN, NMB); "RSA, Kuruman" (NMB).

***Mezium sulcatum* (Fabricius, 1781)** (Fig. 10)

Geographical distribution: Algeria?, RSA (introduced).
Inhabits Iberian Peninsula and Canary Islands. Lucas (1847) reported it from Algeria (Constantine), but this record was probably based on misidentification; this species was indeed introduced to some European countries, and even to other continents (Bellés 1985, Irish 1999), but much less frequently than *M. americanum* or *M. affine*. In view of lack of voucher specimens and new evidence for North African occurrence, *M. sulcatum* should be excluded from the list of beetles of continental Africa.

GENERAL REMARKS

The geographical distribution of species belonging to the genus *Mezium* Curtis shows their tendency to occur in close proximity of seas and oceans; analysis of the European taxa like e.g. *Mezium affine* Boield. confirms this observation. Similar to the majority of representatives of the family, species of this genus prefer so called "mediterranean climate". There are 5 regions in the world where the maximum diversity of Ptinidae may be expected:
a) Palearctis - circummediterranean areas
b) Ethiopian Region - Cape Province
c) Australian Region - south-western and south-eastern Australia (Victoria)
d) Neotropical Region - Chile between 30º and 35ºS
e) Nearctis - western coast of USA between 30º and 40ºN.
Representatives of the genus *Mezium* Curtis inhabit with preference caves (their natural biotope) and various farm-buildings where animals are kept (artificial biotope). Heretofore all species from South Africa have been most often collected in caves, where they develop in animal - especially bat - excrements. North African species can also be found in caves, but much more frequently are collected in open habitats as well as in stables, cow-barns, hen-cotes or goat and sheep stockyards.

KEY TO THE IDENTIFICATION OF AFRICAN SPECIES OF THE GENUS *MEZIUM* CURTIS

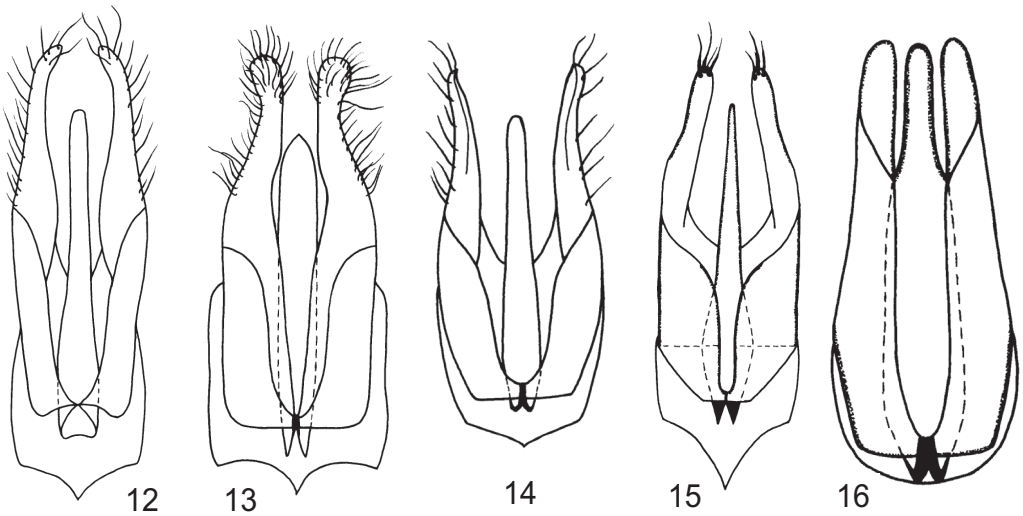
1. Elytra at least partly covered with recumbent hairs or squamulae ..... 2.
- Elytra glabrous or covered with erect hairs, especially in anterior part ..... 5.
2. Recumbent hairs on elytra arranged into regular rows ..... 3.
- Recumbent hairs on elytra irregularly distributed ..... 4.
3. Elytra with only recumbent hairs; or, if erect hairs occur, they occupy only the anterior, basal part (fig. 3) .... *M. pseudafricanum* sp. n.
- Entire elytra covered, besides recumbent hairs, also with erect pilosity (fig. 1) ..... *M. africanum* sp. n.
4. Pronotum without tubercles or tufts of scales, with long erect hairs distributed throughout the surface (fig. 5) .. .. *M. setosum* sp. n.
- Pronotum with tubercles in middle part, without long erect hairs ..... *M. giganteum* Escalera
5. Entire pronotum densely, evenly covered with white, yellowish-white or yellow scales, without long erect hairs ..... 7.
- Pronotum covered with dense squamulae only in basal part, while anteriorly scales are distributed rather sparsely, not fully concealing the surface. Especially in middle part of pronotum long erect hairs occur .....6.
6. Basal 4-5 antennal joints with long erect pilosity; on pronotum such hairs are distributed throughout its surface; elytra anteriorly smooth, not punctured (fig. 2) ..... *M. glabrum* sp. n.
- Basal 4-5 antennomeres without long erect hairs, those of pronotum concentrated in middle part; anterior part of elytra finely punctured (fig. 6) ..... *M. andreaei* Pic
7. Collar of scales on elytral base constricted or broken only at middle. Pronotum partly parallelsided, without distinct tubercles (fig. 7) ..... *M. affine* Boieldieu
- Collar at elytral base broken or constriced at several places on each side. Pronotal sides usually narrowed anteriorly from base or partly rounded, with conspicuous tubercles at middle and sides (figs 4, 8, 9, 10, 11) . 8.
8. Anterior part of elytra finely punctured; punctures arranged into rows not extending to elytral midlength (fig. 8) ..... *M. namibiensis* Bellés
- Elytra anteriorly smooth, not punctured ..... 9.
9. Pronotum with 4 tubercles of similar size (figs 4, 9, 10) ..... 10.
- Pronotum with two large median and two small lateral tubercles (fig. 11) ..... *M. gracilicorne* Pic
10. Tubercles prominent, placed closer to the base (fig. 9, 10). Parts of collar distinctly separated. Elytra usually without long erect hairs..... 11.
- Tubercles small, placed at middle of pronotum (fig. 4). Parts of collar indistinctly separated. Entire elytra with long erect hairs. Penis as on fig. 15 ..... *M. pseudamericanum* sp. n.
11. Collar at elytral base broken at 3 places on each side; tubercles very large, good conspicuous (fig. 10) .... *M. sulcatum* (F.)
- Collar at elytral base broken at 2 places on each side; tubercles smaller (fig. 9) ..... *M. americanum* Laporte

CATALOGUE OF SPECIES OF THE GENUS *MEZIUM* CURTIS OCCURRING IN CONTINENTAL AFRICA

Genus ***Mezium*** Curtis, 1828: 232; type species - *Ptinus sulcatus* Fabricius, 1781.

1. *Mezium affine* Boieldieu, 1856 (Fig. 7)
Mezium affine Boieldieu, 1856: 674.
syn. *Mezium hirtipenne* Reiche, 1864: 241.
General distribution: Around Mediterranean Sea, Madeira, Caucasus; introduced also to North and South America and New Zealand.
African distribution: Algeria, Egypt, Libya, Mali, Morocco, Tunisia, introduced to Congo, Equatorial Guinea and RSA.

2. *Mezium africanum* sp. n.
General and African distribution: Namibia.



Figs 12-16. Male genitalia of new species of *Mezium* Curt.: 12- *M. africanum* sp. n.; 13- *M. glabrum* sp. n.; 14- *M. pseudafricanum* sp. n.; 15- *M. pseudamericanum* sp. n.; 16- *M. setosum* sp. n.

3. *Mezium americanum* (Laporte, 1840) (Fig. 9)
Gibbium americanum Laporte, 1840: 297.
syn. *Gibbium nitidipenne* Germain, 1856: 395.
syn. *Mezium arachnoides* Desbrochers des Loges, 1875: 50.
General distribution: Canary Islands, Cape Verde Islands, Madeira, Morocco; otherwise introduced to southern European countries, both Americas, RSA, Australia, Tahiti and New Caledonia.
African distribution: Morocco.

4. *Mezium andreaei* Pic, 1953 (Fig. 6)
Mezium andreaei Pic, 1953: 253.
General and African distribution: RSA.

5. *Mezium glabrum* sp. n.
General and African distribution: Namibia.

6. *Mezium giganteum* Escalera, 1914
Mezium giganteum Escalera, 1914: 258.
General distribution: Morocco, southern Spain.
African distribution: Morocco.

7. *Mezium gracilicorne* Pic, 1902 (Fig. 11)
Mezium gracilicorne Pic, 1902: 139.
General distribution: Angola, Namibia, Mozambique, São Tomé Island.
African distribution: Angola, Namibia, Mozambique.

8. *Mezium namibiensis* Bellés, 1984 (Fig. 8)
Mezium namibiensis Bellés, 1984: 393.
General and African distribution: Namibia, RSA.

9. *Mezium pseudafricanum* sp. n.
General and African distribution: Namibia.

10. *Mezium pseudamericanum* sp. n.
General and African distribution: Morocco.

11. *Mezium setosum* sp. n.
General and African distribution: Namibia.

ACKNOWLEDGEMENTS. The Author wishes to express his gratitude to the following persons for making available the materials on which this study has been based: J. Beard (NHML), N. Berti (MNHN), M. A. Cochrane (SAM), R. Danielsson (MZLU), F. Hieke (MNHU), J. Irish (NMB), E. Marais (SMWN), J. J. Menier (MNHN), M. Uhlig (MNHU) and P. Zahradník (Praha, Czech Republic).

REFERENCES

Bellés X. 1984: *Mezium namibiensis* sp. nov. et d'autres Gibiinae (Coleoptera, Ptinidae) du Muséum d'Histoire naturelle de Genéve. *Revue Suisse de Zoologie* 91: 393-398.

Bellés X. 1985: Sistemática, filogenia y biogeografia de la subfamilia Gibbiinae (Coleoptera, Ptinidae). *Treballs del Museu de Zoologia Barcelona* 3: 1-94.

Borowski J. 2007: Ptinidae, pp. 328-339. In: Löbl I. & Smetana A. (ed.): *Catalogue of Palaearctic Coleoptera. Vol. 4. Elateroidea, Derodontoidea, Bostrichoidea, Lymexyloidea, Cleroidea and Cucujoidea*. Stenstrup: Apollo Books, 935 pp.

Boieldieu M. 1856: Monographie des Ptiniores. *Annales de la Société Entomologique de France* (3)4: 285-315, 487-504, 629-686, pl. 10, 13, 17-19.

Laporte (= de Castelnau) F. L. N., 1840: *Histoire naturelle des insectes coléoptères.* 1. Paris: P. Duménil, 297 pp.

Curtis J. H. 1828: *British Entomology; being illustrations and descriptions of the genera of Insects found in Great Britain and Ireland: containing coloured figures from natureeof the most rare and beautiful species, and in manyinstances of plants upon which they are found.* Vol. 5. London: J. Curtis, [8] pp. +195-241 pls. and sheets.

Desbrochers des Loges M. J. 1875: Ptinides nouveaux. *Opuscules Entomologiques (Coléoptéres)* 1: 49-51.

Escalera M. M. 1914: Los Coleópteros de Marruecos. *Trabajos del Museo Nacional de Ciencias Naturales*. *Serie Zoológica* 11: 258-265.

Fabricius J. C. 1781: *Species Insectorum Exhibentes eorum Differentias Specificas, Synonyma Avctorum, Loca Natalia, Metamorphosin adiectis Observationibus, Descriptionibus. 1.* Hamburgi et Kilonii, 552 pp.

Irish J. 1999: First records of pest species of Ptinidae (Coleoptera) from southern Africa. *African Entomology* 7: 149-150.

Lucas P. H. 1847: *Exploration scientifique de l'Algérie pendant les années 1840, 1841, 1842 publiée par ordre du gouvernement et avec le concours d'une Commission Académique. Sciences Physiques Zoologie. Vol. II. Histoire Naturelle des animaux articulés. Cinquième classe. Insectes. Premier Orde. Les coléoptères.* Paris: Imprimerie Nationale [1849], 590 pp., 47 pls.

Pic M. 1902: Deux Coléoptéres nouveaux du Congo Portugais. *Bulletin de la Société Entomologique de France* 1902: 139.

Pic M. 1953: Un nouveau coleoptere Ptinidae du Namaqualand. *Annales of the Transvaal Museum* 22: 253.

Reiche M. L. 1864: Espéces nouvelles de Coléoptéres d'Algerie. *Annales de la Société Entomologique de France* 4: 241.

Received: 16.1.2009
Accepted: 30.1.2009