

**A contribution to knowledge of the subfamily Panagaeinae Hope, 1838
from Africa. Part 4.
Revision of the *Craspedophorus erichsoni* and *nobilis* groups
(Coleoptera: Carabidae)**

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Abstract. Another Afrotropical species of the genus *Craspedophorus* Hope, 1838 are revised. Three new species groups are established, *C. erichsoni*, *C. nobilis* and *C. benoiti* group. New taxa are *C. hanangensis* sp. nov. (Tanzania, Maniara) of the *C. strachani* species group Häckel 2017b, *C. ornatus occidentalis* ssp. nov. (West Africa) and *C. graciosus drakensis* ssp. nov. (South Africa, KwaZulu Natal). *C. difficilis* (Chaudoir, 1879) is removed from the synonymy with *C. ornatus* (Boheman, 1848) and is considered a good subspecies of *C. erichsoni* (Hope, 1842). *C. bilunifer* Jeannel, 1949 is synonymised with *C. volana* (Alluaud, 1895) and *C. gibbosus* (Péringuey, 1896) is synonymised with *C. bonvouloirii* (Chaudoir, 1861).

INTRODUCTION

This paper presents further results of my study of the Afrotropical ground beetles of the subfamily Panagaeinae (Coleoptera, Carabidae). It is a continuation of published parts (Häckel 2016, 2017a, b), and it also concentrates on the systematics of the large and heterogeneous genus *Craspedophorus* Hope, 1838 and the related genera *Epigraphus* Chaudoir, 1869, *Epigraphodes* Basilewsky, 1967 and *Psecadius* Alluaud, 1911. According to the most recent studies (Lorenz 2005, Häckel & Farkač 2012, 2013, Häckel 2016, 2017a, b), these genera include 93 Afrotropical species, 73 species in *Craspedophorus*, 7 species in *Epigraphus*, 3 species in *Epigraphodes* and 4 species in *Psecadius*, all of them with mostly prevailing nocturnal activity. Despite the recent descriptions of numerous species by Kirschenhofer (2000), Fedorenko (2016) and the author (Häckel & Kirschenhofer 2014, Häckel 2015, 2016, 2017a, b), the taxa of this subfamily and their bionomy in tropical regions remain inadequately known.

MATERIAL AND METHODS

Observation and dissections of the specimens were made under Nikon stereo-binocular microscope. Photographs were taken with a Nikon SLR camera equipped with AF-5 DX Micro NIKKOR 40mm f/2.8G lens and processed using Helicon Focus computer software. The following values were measured: maximum body length from anterior margin of

clypeus to apex of elytra, maximum head width including eyes, length of pronotum along midline, maximum width of pronotum, length of elytra from its base to apex along suture, and maximum width of elytra. Whenever possible, the aedeagus was extracted, studied dry and glued on a card appended beneath the dissected specimen. High-resolution habitus images of type specimens are available at Carabidae of the World web-project [http:// www.carabidae.org](http://www.carabidae.org). The acronyms used for the entomological collections where the examined material is deposited are as follows:

- BMNH The Natural History Museum, London, United Kingdom (B. Garner, M. Barclay);
MNHN Muséum National d'Histoire naturelle, Paris, France (Th. Deuve);
MRAC Musée Royal de l' Afrique Centrale, Tervuren, Belgium (S. Hanot);
NMPC National Museum, Praha, Czech Republic (J. Hájek);
NMWC Naturhistorisches Museum, Wien, Austria (H. Schillhammer);
OUMNH Oxford University Museum of Natural History, Oxford, United Kingdom (D. Mann);
SAMC Iziko Museums of South Africa, Cape Town, Republic South Africa (A. Mayekiso);
cDM private Collection of D. Maquet, Grâce-Hollogne (Bierset), Belgium;
cDW private Collection of D. W. Wrase, Berlin, Germany;
cIB private Collection of I. Brunk, Dresden, Germany;
cJB private Collection of J. Bašta, Brno, Czech Republic;
cMH private Collection of M. Häckel, Praha, Czech Republic;
cPB private Collection of P. Bulirsch, Praha, Czech Republic;
cPK private Collection of P. Kučera, Liberec, Czech Republic;
cPS private Collection of P. Schüle, Herrenberg, Germany;
cRK private Collection of R. Kmeco, Litovel, Czech Republic;
cSc private Collection of R. Sciaky, Milan, Italy;
cSF private Collection of S. Facchini, Piacenza, Italy;
DR Congo Democratic Republic of the Congo;
RSA Republic of South Africa;
/ marks the end of the line on the original label;
// marks the end of one specific original label;
/// differentiates pinned labels from the pasted ones in the boxes of the Chaudoir collection (MNHN).

SYSTEMATIC PART

***Craspedophorus* Hope, 1838**

Craspedophorus Hope, 1838: 165; type species *Carabus reflexus* Fabricius, 1781: 302.

Eudema Laporte de Castelnau, 1840: 137; type species *Panagaeus regalis* Gory, 1833: 213 (synonymised by Andrewes 1919: 128).

Isotarsus LaFerté-Sénectere, 1851: 217; type species *Panagaeus regalis* Gory, 1833: 213 (synonymised by P. Basilewsky 1953: 168).

Epicosmus Chaudoir, 1846: 512; type species *Panagaeus tomentosus* Vigors, 1825: 537 [= *Craspedophorus angulatus* (Fabricius, 1781)] (synonymised by P. Basilewsky 1953: 168).

Brachyonychus Chaudoir, 1878: 85; type species *Epicosmus sublaevis* Chaudoir, 1869: 67.
Acanthocosmus Jeannel, 1949: 855 (Subgenus); type species *Eudema nigrita* Künckel d'Herculeis, 1891: Tab. 30 (synonymised by P. Basilewsky 1953: 171).
Brachycosmus Jeannel, 1949: 857 (Subgenus); type species *Panagaeus festivus* Klug, 1833: 128 (synonymised by P. Basilewsky 1953: 171).

***Craspedophorus erichsoni* species group nov.**

(see Chaudoir 1879: 116*)

*Reference to Chaudoir's review (1879) is discussed in the first part of this series (Häckel 2016).

This homogeneous group contains similar Afrotropical panageine species with paraglossae reaching in front of glossa, increasing slenderness and length of ligula and protarsi equal in both sexes. Similarly to the species of the following *C. nobilis* group, the species of the *C. erichsoni* group also differ from those of preceding groups in their palps - the terminal labial palpomere is dilated or triangular in males, not elongated or kidney-shaped. Because of this difference, Chaudoir (1879) placed these species in his genus *Epicosmus*, later synonymised with *Craspedophorus* by Andrewes (1919). The species of the *C. erichsoni* group differ from those of the *C. nobilis* group in their metepisterna trapeziform (elongated anteroposteriorly, Fig. 34e) and their tarsi consisting of stout tarsomeres covered ventrally with setae. Similarly to those species, the ventrites are not crenulated anteriorly or the crenulation is strongly reduced in the *C. erichsoni* group. This group includes also two apterous species with crenulation present or described by authors (Burgeon 1930), but it is very indistinct in both cases (Fig. 34c). Laferté's (1851) classification based on pronotal shape seems to me better delineating this group. Chaudoir (1879) considered all these species fully winged (the only two apterous species were described later). He placed *C. erichsoni* (Hope, 1842), *C. ornatus* (Boheman, 1848) and *C. oxygonus* in this group (Chaudoir, 1861). He also established a fourth species (*Epicosmus difficilis* Chaudoir 1879) and placed it close to the preceding three. With respect to Péringuey's notes (1896), I consider also *C. rikatlensis* (Péringuey, 1896) as belonging to this group. Two endemic Madagascan species, *C. nigrita* (Künckel d'Herculeis, 1891) and *C. pungens* (Alluaud, 1895), originally separated in the subgenus *Acanthocosmus* by Jeannel (1949), later synonymised with *Craspedophorus* by Basilewsky (1953), also seem to belong in the *C. erichsoni* group. After visiting MRAC and inspecting the holotype of *C. ghesquierei* (Burgeon, 1930), I include also this apterous species in the same group. After Basilewsky's (1987), synonymisation of *Epicosmus difficilis* Chaudoir, 1879 with *Craspedophorus ornatus* (Boheman, 1848) the group counts seven species. All the taxonomic changes here performed do not change the number of species in the *C. erichsoni* group.

Characters. Smaller and medium-sized species (16-22 mm). Head short, constriction behind eyes indistinct. Antennae slender. Labial palps with terminal article very dilated, triangular. Mentum with external lobes fully rounded, medial process rounded anteriorly.

Pronotal base pedunculate, with a deep notch near each lateral margin. Metepisterna longer than wide, trapeziform, similarly to those of *C. reflexus* or *C. leprieuri* groups (Häckel 2016). Ventrites anteriorly without crenulation. Tarsomeres stout, each with dense cover of setae on its ventral surface. Almost all species winged, with humeri markedly distinct, except two apterous species with humeri rounded. Elytral colouration similar in almost all species, with two isolated maculae on each elytron, one in the basal half and one in the apical half of elytra. One species unicolorous, black.

Distribution remarks. The distribution of this group is wider than that of the preceding groups, encompassing the entire Afrotropical region including Madagascar.

***Craspedophorus erichsoni* (Hope, 1842)**
(Plate 1, Figs. 1-6, Figs. 35a, 36)

Panagaeus erichsoni Hope, 1842: 92 (type locality “Circa Palmas [=southeastern Liberia, southern Ivory Coast]”).
Schaum 1854: 434.

Epicosmus erichsoni Chaudoir, 1861: 344, 1879: 117.

Isotarsus erichsoni Quedenfeldt, 1883: 260.

Eudema erichsoni Gemminger and Harold, 1868: 208.

Craspedophorus erichsoni Murray, 1857: 123. Bates 1890: 481, Burgeon 1930: 161, 1935: 182, Basilewsky 1953: 173, 1954: 247, 1963: 383, 1968: 93, Lorenz 2005: 320, Häckel and Farkač 2012: 80.

Isotarsus parvicollis LaFerté-Sénéctere, 1851: 220 (type locality “Guin. Lusit. [Guinea Bissau]”), Chaudoir 1861: 344.

Type material. Lectotype (♀) labelled: “*Erichsoni* / Hope [handwritten in black on white label]// Type / Hope [printed in black] / Anna. Nat. Hist- / 10. 1842 / P. 93. [handwritten in black] / Coll. Hope Oxon. [printed in black on white label]// Type [printed in black] Col: 91 1/3 / *Panagaeus / erichsoni* / Hope [handwritten in black] / Hope Dept. Oxford [printed in black on white label]// Lectotype [handwritten in black on red label]” (Plate 1, Fig. 1, Fig 36, OUMNH). Paralectotypes. 1 ♀: “*Erichsoni* / Hope [handwritten in black on white label]// Type [printed in black] Col: 91 2/3 / *Panagaeus / erichsoni* Hope [handwritten in black] / Hope Dept. Oxford [printed in black on white label]” (Plate 1, Fig. 2, OUMNH); 1 ♀: “Guinea // 36. [handwritten in black on white label]// Type / Hope [printed in black] / Anna. Nat. Hist- / 10. 1842 / P. 93. [handwritten in black] / Coll. Hope Oxon. [printed in black on white label]// Type [printed in black] Col: 91 3/3 / *Panagaeus / erichsoni* Hope ?? [handwritten in black] / Hope Dept. Oxford [printed in black on white label]” (OUMNH).

Compared material:** 1 ♀: “Comp. typ. / Basilewsky [printed in black on red circumscribed label]// Guinea [handwritten in black on white label]// Museum Western? [printed in black on white label]// Coll. Mus. Congo / Col. P. Basilewsky [printed in black on white label]// *Erichsoni* Hope [handwritten in black] / P. Basilewsky det., 19[printed in black]59 [handwritten in black on white label]” (Plate 1, Fig. 6, MRAC); 1 ♀: “Assinie [Sud-Comoé Region, Ivory Coast] / Côte occid. Afrique / Ch. Alluud 1886 [printed in black on white label]// *Cr. Erichsoni* Hope / P. Basilewsky det., 19[printed in black]54[handwritten in black on white label] (MNHN).

**Material mentioned here is designated as compared by Basilewsky in MRAC.

Additional material examined: Cameroon: Centre. 1 ♀: “Centre” (cSc); 1 ♂: “Ebogo” (cSc); 1 ♀: “[Yaoundé:] Nlong-Kak, Mont Félé” (Plate 1, Fig. 5, cMH); 1 ♂, 2 ♀♀: “Obout env.” (cOH, cSc); 1 ♀: “Yaoundé.” (cDW), Littoral; 1 ♀: “Edea” (cSc). Northwest; 1 ♀: “Bamenda” (cDM). Southwest; 1 ♂, 1 ♀: “Monts Bamboutos” (cDM); 1 ♀: “Weme” (cSc). Central Africa: 1 ♀: “[Bamingui-Bandoran prefecture] 45 km SSW Bamingui, 450 m” (cMH); 1 ♀: “[Ombella-M’Poko prefecture] Bangui, Kongo” (cPS). Congo (Brazzaville): 1 ♀: “Cuvette Prov., Mbomo West env., 00°24’20”N 14°39’26”, 600m” (cRS); Ghana: 1 ♂, 2 ♀♀: “Aschanti. Collect. Plason” (NMWC); 1 ♀: “Kibi” (cSc). Guinea: 1 ♂: “Beyla” (cJB); 1 ♀: “Nimba Mts., Ziela St., 545m” (cDW). Ivory Coast: 1 ♀: “[labelled as *C. erichsoni* (Hope) by Basilewsky (1954)]: “Akrezie [= Akresi, Comoé District, Sud-Comoé Region]”

(MNHN); 3 ♂♂, 4 ♀♀: “Touba. Biemasso / Dolla” (Plate 1, Figs. 3-4, cMH, cPS). Nigeria: Nasarawa. 1 ♀: “Abuja 09°2'55N, 7°38'17E, 450m” (cDM). Taraba. 1 ♂, 1 ♀: “Gashaka Gumti National Park, Kwano, 07°20'N, 11°35'E, 560m” (cJB, cMH).

Examined specimens of transitional populations: *C. erichsoni* trans ad *C. erichsoni difficilis*. Burundi. 1 ♂, 1 ♀: “Rumonge” (MRAC). Kenya: 1 ♂: “Kenya Colony, Africa orient., Škulina lgt.” (NMPC). DR Congo: Bas-Congo. 2 ♂♂, 3 ♀♀: “Mayidi: Kisantu [=Inkisi]” (MRAC). Équateur. 1 ♂: “Flandria” (MRAC). Maniéma. 1 ♂: “Kindu” (MRAC). Nord Kivu. 1 ♂: “Kivu: Kalonge”; 1 ♂, 2 ♀♀: “Kivu: Beni” (MRAC); 1 ♂, 1 ♀: “North Kivu: Kasuo” (cSc); 1 ♂: “Urwald-Beni” (NMWC). Orientale. 2 ♂♂, 3 ♀♀: “Uele”; 3 ♂♂, 5 ♀♀: “P.N.G.[aramba]: Ndelele”, “Mt. Embe” (MRAC); 1 ♂: “Urw. Mawambi” (NMWC). Sud Kivu. 1 ♂, 2 ♀♀: “Uvira” (MRAC); 1 ♀: “Urw. Hint. d. Randbg. d. N. W. Tanganika-S, 1800-2200 m” (NMWC). Rwanda. 1 ♂, 1 ♀: “Dendezi” (MRAC).

Note. This species is based on specimens in Hope Collection deposited at OUMNH. They were located by Hope as “Circa Palmas” (which now includes the coast of Liberia and the Ivory Coast). A specimen marked as “Type 91 31/3” and labeled “Guinea” and “? *P. erichsoni*” was added to the type series by OUMNH curators. It is undoubtedly conspecific, but its reliability as paralectotype is doubtful. Description (in part, see Hope 1842: 94): “Length 8 points, width 3 points. Black, proximal three antennomeres black and glossy, distal antennomeres covered with brown setae, pronotum semilunar-shaped with anterior angles rounded, posterior angles abruptly truncated, disc variously punctured. Elytra striated, punctured, ornated with four maculae margined irregularly, underside and legs black. Hab. Circa Palmas” [from Latin]. “This elegant species is named in honour of Erichson of Berlin, the author of a valuable work on the Brachelytra or Rove Beetles. In the above insect only four interstitial spaces are covered with the yellow spots, and all of them are irregularly shaped.” Description of *Isotarsus parvicollis* (in part, see key to species in LaFerté-Sénéctere 1851: 220) “(First division): larger species. Antennae longer than to body midlength, distal attenuated, III. article twice longer than the second. Legs black; (aa) pronotum not convex, margins more or less elevated, (bb) transverse, not too annular, with sinuate margins, (c) with constriction at base (peduncle)” [translated from the French original].

Redescription of lectotype. Length 17.3 mm, width 7.1 mm. Proportions: Pronotum (Fig. 36) 1.40x wider than long, 1.80x wider than head with eyes, elytra 1.52x wider than pronotum. Head elongated, squared, labrum and mandibles smooth, black. Palps black, palpomeres distally brownish, terminal labial palpomere distinctly dilated, triangular (in male lectotype; in female paralectotype this shape is only weakly distinct). Frons smooth, moderately elevated in middle. In front of eyes with two longitudinal depressions, lateral one creating a thin ridge running from base of clypeus dorsolaterally and then dorsomedially to anterior margin of eye (supra-antennary ridge). Vertex coarsely but sparsely punctured, punctuation running to occiput and neck where it disappears, neck smooth posteriorly, with a fine furrow. Antennae flagellate, distally neither widening nor flattening. Scape more than twice longer than pedicel, third antennomere one and half times longer than scape, fourth antennomere twice shorter than scape, surface densely covered with short setae, longer setae concentrated at distal ends of antennomeres.

Pronotum semicircular (Fig. 35a), a little less transverse (length to width ratio 1.34-1.40) than in *C. oxygonus* (Chaudoir, 1861), with LW ratio 1.35-1.47 (Fig. 35f), lateral margins anteriorly rounded, merging to anterior margin, without distinct anterior angles; anterior

margin as wide as length of neck (in contrast to *C. oxygonus*); lateral margins rounded to midlength, maximum width located distinctly behind midlength, then narrowing in almost straight line toward base, with a weak sinuosity and with a very small and shallow notch in front of posterior angles, also almost indistinct. Hind angles sharper, almost rectangular. Base with central part parallel with anterior margin and wider than it, with a moderately deep notch near each lateral margin, forming a distinct peduncle. Disc moderately convex, more so anteriorly and at middle, lateral rim narrowing anteriorly, not markedly separated from disc but distinct lengthwise, elevated posteriorly and then flattening and depressed near base. Pronotal surface throughout coarsely, quite unevenly and deeply punctured, lateral rim posteriorly punctured more finely and evenly. Sagittal line weakly distinct, interrupted by coarse punctures mostly in its margins, reaching neither anterior nor posterior margin. Basal impressions indistinctly separated from shallow lateral furrows separating lateral rims from disc, each distinct only as a deeper impression near base (Fig. 36).

Elytra almost parallel-sided, weakly rounded, widening posteriorly, maximum width distinctly past midlength, humeri weakly rounded, distinct. Striae narrowly, deeply impressed, finely, densely and evenly punctate. Intervals moderately convex, coarsely but more sparsely, regularly punctuated in one to two, or rarely in three lines. Surfaces of intervals glabrous or with faint microsculpture between punctures. Elytral humeral macula moderately transverse, reaching from interval V to VIII, elytral margin black, macular spots short anteroposteriorly, not always of equal length on each interval, longer on intervals VI and VIII (Plate 1, Figs. 1-6), creating humeral macula less regularly margined than that in *C. oxygonus* (Plate 1, Figs. 9-11). Preapical macula similarly shaped, spanning same intervals, consisting of four spots of nearly equal length, two spots closer to apex, spot on interval V by one third and spot on interval VII by one half of its length, creating preapical macula margined quite regularly.

Underside black, finely punctate, punctuation coarser near each margin, ventrites finely furrowed at middle, sparsely covered with long, yellow setae. Metepisterna trapezoid, longer anteroposteriorly, ventrites anteriorly without crenulation or crenulation only weakly indicated. Legs black, long, tarsi in lectotype male densely covered by ventral brush of ferruginous setae.

Distribution. Central, northwestern and southwestern Cameroon, Central Africa, Ghana, Ivory Coast, Nigeria: Nasarawa, Taraba States.

***Craspedophorus erichsoni difficilis* (Chaudoir, 1879) stat. nov.**

(Plate 1, Figs. 7, 8, Fig. 35b)

Epicosmus difficilis Chaudoir, 1879: 118 (type locality “Zambéze [= flow of Zambezi River, probably in Zambia or Mozambique]”).

Eudema (Epicosmus) difficile Péringuey, 1896: 479.

Craspedophorus difficilis Burgeon, 1935: 183. Basilewsky 1962: 172, 1976: 715, Ferreira 1963: 120.

Craspedophorus ornatus Basilewsky, 1987: 200.

Compared material: 1 ♀: “Février [printed in black on white label]// Tanga / Afrique Orient^{lc} All^{dc} [printed in black on white label]// *difficilis* / Chaud. [handwritten in black]/ Alluaud det., 19 [printed in red]2[printed in red, overwritten by hand in black to 3]0 [handwritten in black on white label circumscribed in red]” (MNHN).

Additional material examined: DR Congo: Katanga. 4 ♂♂, 6 ♀♀: “P.N.U[pemba].” (MRAC); 1 ♂: “Urw. Moera” (Plate 1, Fig. 7, NMWC). 1 ♀: “Lubumbashi, C. U. Kassapa” (cDM). Tanzania. 1 ♂, 1 ♀: “Tanganyika” (NMPC). Iringa. 1 ♂ labeled as *C. difficilis* Chd. by Basilewsky 1954: “Manow D.O.Afr.” (MNHN). Morogoro. 1 ♂: “Uluguru Mts., Morning Side, forêt de Toelo, 1450 m” (MRAC). Mtwara. 1 ♀: “Masasi distr.” (cDM). Tanga. 1 ♂: “O-Afr., Tanga” (NMWC), 1 ♀: “Usambara, Neu Bethel” (NMWC). Zambia. 1 ♀: “[Copperbelt / Northwestern Province border] Chingola, 50-100 km to Solwezi” (cIB); 2 ♂♂, 3 ♀♀: “N Rhodesia: Abercorn [=Northern Province: Mbala]” (MRAC); 1 ♀: “[North Western Province] Lukwakwa, West Lunga NP, S12°39’40”, E24°26’13, 1147 m” (Plate 1, Fig. 8, cMH).

Note. This taxon was based on a single specimen labeled “Zambéze”. It is the region of the Zambezi River, which flows through Angola, Zambia and Mozambique and forms the northern border of Namibia, Botswana and Zimbabwe. The river is 2660 km long and its flow covers 1 330 000 km². I believe the type specimen comes from the territory of today’s Zambia. Description of *Epicosmus difficilis* (in part, see Chaudoir 1879: 118): “Length 16.5 mm, width 6.67 mm. I have long hesitated to separate this species from (*C.*) *Erichsoni*, but am now convinced that it is clearly distinct. Its head is different, reaching the width of that in (*C.*) *oxygonus*; the occipital constriction is very shallow, much closer to posterior eye margin, and the neck is distinctly less narrow; the lateral frontal impressions are shallower, eyes are somewhat less convex. The pronotum is shorter (Fig. 35b), more transverse and generally more similar to that in (*C.*) *oxygonus* (Fig. 35f), with less convex lateral margins, but its convexity, relief and structure are the same. Elytra as parallel-sided as in (*C.*) *Erichsoni*, with humeri less narrowed, less rounded and more distinct, elytral margins as well are less rounded and more parallel (contrary to those in (*C.*) *oxygonus*); the dorsum is somewhat less convex than that in (*C.*) *Erichsoni* and markedly less convex than that in (*C.*) *oxygonus*, the striae and intervals are similar to those in the preceding species (*C. erichsoni*), with similarly located yellow elytral fasciae consisting of shorter spots, spot on interval VII shortened posteriorly, the preapical macula with spots on outer intervals (out of interval VI) is very small and short. Except this there are no significant differences in elytral colouration of both species. I have one specimen from Zambezia borders”. Péringuey added (1896: 479): “Length 16.5 mm, width 6.5 mm. Shape and size of *E.* (= *Craspedophorus*) *ornatum* (Boheman, 1848), but the head is shorter and not so narrow, the neck is also shorter; the prothorax (Fig. 35b) is short, one-third wider than long, amplified laterally from the apex to two-thirds of the length, sinuated behind, median part of the base produced behind; shape of the elytra similar to those of *E. ornatum*, but more parallel; the yellow patches are also similar. Zambeze River, teste De Chaudoir.” Populations well matching this description differ from *C. ornatum*, however they live sympatrically. The main difference is in its pronotum (Fig. 35b, c). Differences between it and *C. erichsoni* are subtle (Fig. 35a, b), based mainly on body proportions and elytral colouration.

Distribution. DR Congo: Katanga Province, Tanzania: Iringa, Morogoro, Mtwara, Tanga; northern, northwestern Zambia.

***Craspedophorus ghesquierei* Burgeon, 1930**

(Plate 3, Figs. 31-33, Figs. 34, 35e)

Craspedophorus ghesquierei Burgeon, 1930: 161 (type locality “Lulonga: Befale [= Équateur Province, Democratic Republic of the Congo]”). 1935: 181. Lorenz 2005: 320, Häckel and Farkač 2012: 81.

Type material. Holotype (♀): “Type [printed in black on red label]// 87.041.1 [handwritten in black on red label]// Musée du Congo [printed in black]// [DR Congo: Équateur Province] Lulonga: Befale / -IX-1927 [handwritten in black]// L' Ghesquière [printed in black on white label]// *Crasped.* / nov. sp. ? / (aptère) [handwritten in black on white label]// *Craspedoph.* / *Ghesquierei* / n. sp. / type [handwritten in black on white label]// [DataMatrix] RMCA Ent / 000020064 [printed on white label]” (Plate 3, Figs 31, 34, MRAC).

Additional material examined: DR Congo: Kasai-Occidental. 1 ♂, 1 ♀: “Dekese” (Plate 1, Fig. 33), MRAC). Orientale (Tshopo). 1 ♀: “Stanleyville [=Kisangani]: Banguru, Bafwasende” (MRAC). Guinea. 1 ♂: “Kéoulenta, Nimba (Guinée) M. Lamotte IV. 1942” (Plate 1, Fig. 32, MRAC). Ivory Coast. 1 ♂: “Mt. Tonkovi, 800 m” (cSc).

Note. This species is based on a single specimen labeled “Lulonga: Befale”. The Lulonga is a river in the Équateur province of Democratic Republic of the Congo. It is about 200 km long from its beginning at the town of Basankusu. There the Lopori and the Maringa join to form the Lulonga. The Lulonga River flows into the Congo River at the town of Lulonga, coordinates 0°37'00.0"N, 18°23'00.0"E. Description (in part, see Burgeon 1930: 162): “Length 19 mm, it resembles *C. erichsoni* (Hope, 1842) but is apterous, with humeri indistinct. Head markedly stronger, glossy, distinctly more punctured, lateral sulci very short, terminated before eyes. Pronotum similar (Figs. 34d, 35e) but wider, more glossy, coarsely and sparsely punctured. Elytra with humeri ovoid (Fig. 34b), convex, elytral margins more rounded than those in *C. erichsoni* (Hope, 1842), very sparsely and weakly punctured, covered with quite long and dense setae; ornamented anteriorly by large yellow macula, ovoid, reaching from interval V to margin, composed of elongated spots of equal length except spot on interval VI, which is shortened; spots are ball-shaped anteriorly, especially spots on intervals IV and V are strongly deviant in their prominence. Metepisterna longer than wide (Fig. 34e); ventral segments anteriorly crenulated (Fig. 34c). Tarsi densely covered with ventral brush of brown setae... (from French)”.

Distribution. Democratic Congo: Équateur, Kasai-Oriental Province.

***Craspedophorus nigrita* (Künckel d'Herculais, 1891)**

(Plate 3, Figs. 26-27)

Eudema nigrita Künckel d'Herculais, 1891: tab. 30, fig. 2: (type locality “Madagascar”). Alluaud 1895: clxxx.

Craspedophorus (Epicosmus) nigrita Alluaud, 1900: 30.

Craspedophorus (Acanthocosmus) nigrita Jeannel, 1949: 855.

Craspedophorus nigrita Basilewsky, 1953: 171. Lorenz 2005: 321, Häckel and Farkač 2012: 82.

Type material. Holotype (?♂): “*Eudema* / sp. nov / voisine d'*ornatum* [handwritten in black on white label]// 34[handwritten in black on white halving disc circumscribed in blue]// Museum Paris / Madagascar / Goudot 1834 [printed in black on white label]// *Craspedoporus* / *nigrita* / Alluaud / type unique [handwritten in black on white label]// *nigrita* / Madagascar [handwritten in black on blue label]” (Plate 3, Fig. 26, MNHN).

Additional material examined: Madagascar: Mahajanga. 1 ♀: “Mahatsinjo, près Tananarive” (MNHN). Toamasina. 1 ♀: “Andasibe-Mantadia NP, Analamazaotra, 1000 m” (Plate 3, Fig. 27), cMH).

Note. This species was based on a single specimen described by Alluaud (1899: cxxx) and previously figured by Künckel d’Herculais (1891: tab. 30, fig. 2) without description. Description (in part, see Alluaud 1899: 380): “Length 16 (-17) mm. Black, glossy, body elongated, covered with black setae. Head on vertex coarsely punctured. Pronotum narrow, hexagonal, with surface punctured coarsely, irregularly, lateral rims elevated, pronotum narrowing toward rectangular posterior angles, base constricted behind posterior angles [pedunculated]. Elytra quite narrow, elongated, without maculae, striated, intervals punctured. Pronotum coarsely punctured almost throughout. Metepisterna elongated, coarsely punctured. Tibiae each with sulcus on external part; tarsi almost throughout covered with ferruginous setae” [from Latin]. Alluaud added: “At sight this small species resembles *C. impictus* (Boheman, 1848), from South Africa, differing from it in pronotal shape, pronotum anteriorly much narrower, with rounded anterior angles and base constricted behind posterior angles (pedunculation). Such a shape we can see in other species, as in *C. oxygenus* (Chaudoir, 1861), *C. erichsoni* (Hope, 1842), and *C. pungens* (Alluaud, 1895)” [from French].

Distribution. Madagascar.

***Craspedophorus ornatus* (Boheman, 1848)**

(Plate 2, Figs. 12-17, Figs. 35c, 37)

Panagaeus ornatus Boheman, 1848: 124 (type locality “Caffraria interior”). Schaum 1853: 434.

Epicosmus ornatus Chaudoir, 1861: 344. Chaudoir 1879: 116.

Eudema ornatum Gemminger and Harold, 1868: 209.

Eudema (*Epicosmus*) *ornatum* Péringuey, 1896: 478.

Craspedophorus ornatus Burgeon, 1930: 161, 1935: 183, Basilewsky 1953: 174, Häckel and Farkač 2012: 82.

Compared material: 1 ♀: “Comp. typ. / Basilewsky [printed in black on red circumscribed label]// D. O. Afrika [printed in black]// Ungani [=Tanzania, Ruvuma, handwritten in black on white label]// R. dét. / 1784 [printed in black on white label]// Muséu du Congo [printed in black]// Congo [handwritten in black]// don [handwritten] L. Burgeon [printed in black on white label]// *C. ornatus* Boh. [handwritten and underlined by black]// identifique à un /de la coll. Chaudoir [handwritten in black]// P. Basilewsky det., 19 [printed in black]// déterminé comme tel [handwritten in black on white label] (Plate 2, Fig. 15, MRAC); 1 ♀: “Janson / Acq. 1884 [printed in black on white label]// *ornatus* / Boheman [printed in black on white label]” (Plate 2, Fig. 13, MNHN, Bates-Oberthür Collection).

Additional material examined: Angola. 1 ♂: “Benguela, Alto-Catumbela env.” (cRK). DR Congo: Katanga. 1 ♂, 1 ♀: “Lubumbashi” (cDM); 1 ♂, 1 ♀: “Mikembo” (cDM). South Africa: KwaZulu Natal. 1 ♂: “Natal// Ex-Musæo Mniszech” (Plate 2, Figs 12, 37, MNHN, Bates-Oberthür Collection); 1 ♂ (labeled as *Eudema ornatum* Boheman by Péringuey 1897): “Natal, D’Urban [=Durban]” (SAMC); 1 ♀: “Natal, 1904, Museum Pragense, Collection B. Rýdl” (NMPC); 1 ♀: “20 km ne Ixopo, 55 km sw Pietemartitzburg, 400 m” (cMH). Eastern Cape. 2 ♀♀: “Eastern-Cape. 70-80 km e Umtata, 15 km w of Port St. Johns, 30 m” (cIB, cMH). Tanzania: Pwani. 1 ♀ labeled as *C. ornatus* Boheman by Basilewsky 1954: “Bagamoyo” (MNHN). Ruvuma. 1 ♂, 3 ♀♀: “Tanganyika Terr., Matengo-Hochland wsw. v. Songea, Ugano, 1500-1700 m” (cMH, NMWC). Zambia. 1 ♀: “Lusaka [Province], 10 km s city center, Leopard Road” (NMPC); 1 ♀: “NW Province, 77 km w Mutanda, 12°14’9.47S 25°33’0.77”E (cPS); 2 ♂♂, 1 ♀: “[North Western Province] 20 km nw Mwinilunga” (Plate 2, Fig. 14, cMH, cPS); 1 ♀: “NW Prov., nr. Kabompo” (cMH); 1 ♀: “Nchila Game Reserv., Ikelenge” (cPS); 1 ♂: “120 km w Solwezi” (cPS); 1 ♀: “near Kasempa” (cPS).

Examined specimens of transitional populations: *C. o. ornatus* trans ad *C. o. occidentalis*. Burundi. 1 ♀: “Usumbara” [=Bujumbura]” (MRAC). Ethiopia: Oromiya. 3 ♂♂, 2 ♀♀: “6 km nw of Dolomena, 1400 m” (cMH). DR Congo: Bas-Congo. 1 ♂: “Maydi” (MRAC). Nord Kivu. 1 ♂: “région des lacs” (MRAC); Orientale. 1 ♂, 1 ♀: “Bas-Uele” (MRAC); Sud Kivu. 1 ♂, 1 ♀: “Kadjudju” (MRAC). South Sudan. 3 ♂♂: “East Equatoria state, Akotos Prov.: Lolibai Mts.” (Plate 2 Figs 16-17, cMH).

Note. This species is based on a specimen labeled “Caffraria interior”, see also Note in *C. impictus* (Häckel 2016: 511). Description (in part, see Boheman, 1848: 125): “Length 16 mm, width 6.75 mm. Black, weakly glossy, covered with short setae; ...somewhat smaller than *P.* (= *Craspedophorus*) *nobilis* Boheman, 1848, antennae longer, more slender distally, pronotum more deeply, sparsely punctured, rugate, with deep notch near each margin posteriorly, well distinguishable mainly in its elytra, which less convex, with yellow maculae smaller, humeral macula closer to base, intervals more sparsely and weakly punctured. Black, weakly glossy, covered with short and brown setae. Head elongated, squared, almost flat, punctured quite densely, not too deeply, rugate, anteriorly smooth; neck almost simply fixed to prosternum; frons with two longitudinal impressions near each lateral margin; palps ferruginously black, glossy; eyes convex, grey. Antennae reaching to body midlength, terminally more slender, three basal antennomeres quite densely covered with setae, the other pubescent. Pronotum narrower (Figs. 35c, 37), anteriorly almost truncated, hardly wider than the head, rounded and arcuate immediately after neck, then narrowing strongly and obliquely, weakly sinuate, almost truncated posteriorly, lateral margins each with a notch before posterior angle, disc very weakly convex, coarsely, quite densely punctured, rugate, moderately canaliculate longitudinally, lateral rims elevated weakly anteriorly, posteriorly more strongly. Scutellum small, triangular, smooth. Elytra hardly twice wider than pronotal base, longer than wide by one-half, humeri strongly rounded, with margins weakly rounded behind midlength, narrowing toward apex, truncated before apex, very weakly convex, moderately striated, striae not deeply punctured, intervals convex, punctured dorsally not too deeply, sparsely; each with two yellow, moderately transverse maculae reaching from stria IV to VIII [= interval V to VIII], humeral macula located behind base, consists of four macular spots, which are unequal, elongated and elevated; preapical macula located between midlength and apex, consists of four macular spots, two [medial] of equal length, III. spot located more posteriorly than the others, contrary to fourth one, which is small, rounded. Underside partially covered with setae; prosternum punctured deeply, not too sparsely, episterna punctured coarsely, more densely; venter moderately rugate and punctured. Legs partially covered with setae; tarsi with ventral brush of brownish setae” (from Latin). Péringuey (1896: 478) added: “Black, moderately shining, very briefly pubescent; head narrow, deeply punctured from the epistoma to the neck; prothorax not wider than the neck at the apex, amplified diagonally laterally to past the median part, sinuated from the lateral post-median angle to the posterior one with the outer margins much recurved, and the median part of the base much produced behind, disk plane, impressed laterally on each side of the posterior part, and covered with wide, deep, confluent punctures; elytra broad than the prothorax at the base, which is subtruncate with the humeral angles slightly rounded, elongated, one-fourth wider past the middle than at the base, hardly convex, punctato-striate, with the intervals convex and punctured, very briefly pubescent, and with a supra-median

yellow transverse patch consisting of an elongate spot on the V., VI., VII., and VIII. intervals, of about the same length, but disconnected in the stria, and a supra-apical one consisting of four similar patches situated on the same intervals, but with the two outer ones shorter than the other two, and even with the one on the eighth interval reduced occasionally to a mere dot; under side closely punctured, densely pubescent; tarsi with a long, brown pubescence beneath. Length 17-18 mm; width 6.25-7 mm”.

Distribution. Angola: Benguela Province; Burundi, Ethiopia: Oromiya, DR Congo: Katanga Province; South Africa: Eastern Cape, KwaZulu-Natal; South Sudan, Tanzania: Pwani, Ruvuma; northwestern Zambia.

***Craspedophorus ornatus occidentalis* ssp. nov.**

(Plate 2, Figs. 18-23)

Type locality. “80 km w Boda, 40 km s Gadzi, Sangha-Mbaéré prefecture, Central African Republic”.

Type material. Holotype (♂) “c Afr. [=W Centrafrique] / Mambere-Kadei prov. / 80 km w Boda 40 km s Gadzi / XII - 2008 lgt. A. Kudrna jr.” (Plate 2, Fig. 18, NMPC). Paratypes. 1 ♀ same labeled as holotype except “500 m” (Plate 2, Fig. 19, cMH), 1 ♀: “18.-25. n. 62 [handwritten in black]/ Kindia-Guinea-Afrika / legit. Dr. Šabacký [printed in black on white label]” (Plate 2, Fig. 23, cMH), 1 ♂: “Benin (Agoué) / Abbé Ménager / 3e Trimestre 1878 [printed in black on white label]” (Plate 2, Fig. 22, MNHN, Oberthür / Bates Collection), 1 ♀: “[Sangha-Mbaéré prefecture] 90 km ne Nola, N 04°07' E 16°37', 560 m” (cRS), 1 ♂, 1 ♀: “Cameroun [West], Dschang / XII-2004/ II-2005 / Ndongmo leg.” (Plate 2, Figs 20-21, cMH).

Description of holotype. Length 16.9 mm, width 6.5 mm. Head and pronotum same as in *C. ornatus*, elytra slightly more transverse than in nominotypical populations and differing in extent and shape of maculae, with yellow sections on individual intervals anteroposteriorly lengthened so that entire macula, especially humeral, is circular although its width reaches at least 5 (IV-VIII) and often even 6 intervals (III-VIII.). Apical macula is composed of yellow sections that reach at least 4 intervals (Plate 2, Figs. 18-23). In most similar individuals of nominotypical subspecies (here regarded as transitional populations) maculae are more reduced either a) anteroposteriorly as in populations from southern Ethiopia in which humeral macula usually spans 5 intervals and apical macula 4 intervals, or b) transversely as in populations from South Sudan (Plate 2, Figs. 16-17) in which both maculae usually span only 4 intervals (Fig. 16), but length of yellow sections approaches *C. o. occidentalis*.

Distribution. Benin, western Cameroon, Central Africa, Guinea.

***Craspedophorus oxygenus* (Chaudoir, 1861)**

(Plate 1, Figs. 9-11, Fig. 35f)

Epicosmus oxygenus Chaudoir, 1861: 342 (type locality “Gabon”).

Eudema oxygenum Gemminger and Harold, 1868: 209. Chaudoir 1879: 118.

Eudema oxygona Alluaud, 1895.

Craspedophorus oxygenus Bates, 1890: 481, Burgeon 1930: 161, 1935: 183, Basilevsky 1948: 37, 1956: 131, Häckel and Farkač 2012: 82, 2013: 251.

Compared material. 1 ♀: “Comp. typ. / Basilewsky [printed in black on red circumscribed label]// Coll. Mus. Congo / Gabon: Lambaréné / Col. P. Basilewsky [printed in black]on white label] // *oxygonus* Chd. [handwritten in black]/ P. Basilewsky det. 19 [printed in black on white label]” (Plate 1, Fig. 11, MRAC). 1 ♀, 1 ♂: “Sherbro [handwritten in black on white label (probably Sherbro Island, Sierra Leone)]// Col. Bates [handwritten in black on white label] // *Cr. oxygonus* Chd. [handwritten in black on white label] / P. Basilewsky det., 19[printed in black]54[handwritten in black on white label]” (MNHN).

Additional material examined: Cameroon: Centre. 1 ♀: “Ebogo” (cSc). Littoral. 1 ♂: “Edea” (cSc). Northwest. 1 ♀: “Bamenda” (cDM). Southwest. 1 ♀: “Duala” (Plate 1, Fig. 10), cMH). West. 1 ♀: “Prov. Sud-Quest, Dschang Reg. Umg. Fontem, N05°28'3. O 009°47'5.” (cPS). DR Congo: Orientale (Tshopo). 1 ♀ “Aruwimi R., Ex Musæo H. W. Bates 1892” (MNHN); 1 ♂, 2 ♀♀: “Likenga, près de Kisangani” (cDM). Equatorial Guinea. 1 ♂, 1 ♀: “Guinée espagnole, Mongo” (MRAC). Gabon. 1 ♂: “Lac Zonanghé [=Onangué Lake, Moyen-Ogooué Province]” (Plate 1, Fig. 9), cMH); 1 ♀: “P.N. Monts de Cristal. Vallée Mbei” (cDM).

Note. This species is based on a single specimen collected in Gabon. Description (in part, see Chaudoir 1861: 342): “Length 17.5 mm. It resembles (*C.*) *erichsoni* (Hope, 1842) in its pronotum with base strongly protruded posteriorly in the middle, and in its elytral shape as well as colouration. Head the same as in *E. erichsoni*, punctured near eyes and posteriorly on the frons, remainder smooth, eyes quite convex. Pronotum wider, transverse, weakly narrowing anteriorly (Fig. 35f), angularly dilated at midlength, with lateral margins strongly rounded toward anterior angles and strongly sinuate posteriorly, posterior angles sharp even on their tops, base distinctly prolonged in the middle [pedunculated], deeply sinuate near each margin, where it turns posteriorly toward angles; disc moderately convex, coarsely punctured, with points separated by elevated net which is rugate and irregular, covered by long and black setae; lateral rims widely elevated, punctured as well; sagittal line very finely impressed and shallow, basal pit quite distinct near each margin in front of basal notch. Elytra more convex and shorter than those in *E. erichsoni*, somewhat wider than pronotum at the base, widening posterolaterally to midlength, where margins are rounded, then sinuate and weakly pointed to apex, base oblique to each humerus, which is quite rounded, striae quite deeply punctured, intervals convex, looking crenulated near margins, very finely punctured and covered by short setae, others almost smooth, very sparsely covered by setae, lateral rim narrow. Underside except episterna coarsely and deeply punctured, as well as abdominal margins, venter punctured more finely in the middle. Body black, glossy, except two small lemon yellow maculae on each elytron, humeral macula in basal fourth, almost square, consisting of three equal macular spots angularly located longwise on intervals VI, VII, and VIII, second macula transverse, located near apex, reaching from intervals V to VIII, consisting of four macular spots of differing length; antennae brown with four basal articles black, each terminally almost ferruginous, as well as palps. This insect was brought to me by Mr. Deyrolle who got it from Gabon” [from French]. Chaudoir later added (1879: 117, 118): “...anterior fascia weakly oblique, composed of three spots, quite long; in one specimen there is a fourth very small and narrow spot on the external margin of interval V” (from French).

Distribution. Southwestern and western Cameroon, DR Congo: Bas-Congo; Gabon, Sierra Leone.

Craspedophorus pungens (Alluaud, 1895)

(Plate 3, Figs. 28-30)

Eudema pungens Alluaud, 1895: clxxx (type locality “montagne d’Ambre [= Amber Mountains, Antsiranana Province]”).

Craspedophorus (*Epicosmus*) *pungens* Alluaud, 1900: 30.

Craspedophorus (*Acanthocosmus*) *pungens* Jeannel, 1949: 856.

Craspedophorus pungens Basilewsky, 1953: 171. Lorenz 2005: 321, Häckel and Farkač 2012: 83, 2013: 251.

Type material. Holotype (♀): “Madagascar / Diego-Suarez / Ch. Alluaud 189[corrected to 7 by hand]3 [printed in black on white label]// *Eudema / pungens / Alluaud / type* [handwritten in black on white label]// Type [printed in black on red label]// Museum Paris / Coll. Ch. Alluaud [printed in black on blue label]” (Plate 3, Fig. 29, MNHN).

Additional material examined: Madagascar: Antsiranana. 1 ♂: “Mt.d’Ambre, Madagascar” (Plate 3, Fig. 28, MNHN). 2 ♂♂: “Montagne d’Ambre, N.P. ‘1000 trees circuit’ S 12°31’8.8” E 49°10’30.3”, 1036m” (Plate 3, Fig. 30, cMH).

Note. This species is based on four specimens labeled “montagne d’Ambre”. Montagne d’Ambre (Ambre Mountain) is an isolated patch of montane forest that rises from the surrounding dry region. It is located near Joffreville (= Ambohitra), about 27 km southwest of Diego Suarez (=Antsiranana). Description (in part, see Alluaud 1895: clxxx): “Length 20 mm. Pronotum deeply and irregularly punctured, lateral margins excavated near base, elevated, posterior angles very sharp, base strongly constricted behind them. Elytra as in *E.* (= *Craspedophorus*) *festivus* (Klug, 1833) but four maculae much smaller” [translated from the Latin original]. Alluaud added (1895: cxxxi): “Body as in *E. festiva*, but differs markedly by pronotum, which resembles more that in *E.* (= *Craspedophorus*) *oxygonus* (Chaudoir, 1861) from West Africa. Furthermore, elytral maculae are distinctly smaller in *E. pungens*. In many specimens of *E. festiva* seen, I found typical extension of elytral maculae reaching to fifth interval anteriorly as well as posteriorly, but all four specimens of *E. pungens* that I collected differ from this pattern. Humeral maculae cover 2-3 intervals, and preapical maculae cover 2, 3 or 4 intervals. I collected this species in Amber Mountains, northern Madagascar, in about 1000 and 1200 m of altitude” (from French).

Distribution. Northern Madagascar: Antsiranana Province.

Craspedophorus rikatlensis (Péringuey, 1896)

(Plate 3, Figs. 24-25, 35d)

Eudema (*Epicosmus*) *rikatlense* Péringuey, 1896: 479 (type locality “Rikatla, [= Maputo Province] Mozambique”).

Craspedophorus rikatlensis Burgeon, 1935: 183. Basilewsky 1956b: 131, Ferreira 1963: 120, Lorenz 2005: 321, Häckel and Farkač 2012: 8, 2013: 251.

Type material. Lectotype (♂ designated by Häckel 2017): “Rikatla / Delagoa [handwritten in black on white label]// *Eudema / rikatlae / Py.* [handwritten in black on white label]// Type [printed in black italics on red label]// SAM / Ent [printed in black] / 001046 [handwritten on orange label]// Imaged entovision [printed in black on yellow label]” (Plate 3, Fig. 24, SAMC). Paralectotypes. 1 ♂: labeled as holotype except: “*Epicosmus / Rikatlae.* Pry [handwritten in black on white label]// SAM / Ent [printed in black] / 001046 [handwritten on orange label]”, 5

♂♀ labeled as preceding except: “Delagoa / Bay / 1894 [handwritten in black on white label]// SAM / Ent [printed in black]/ 001047” [handwritten on orange label]” (Plate 3, Fig. 25, (SAMC).

Additional material examined: Angola: Benguela. 1 ♂, 1 ♀: “Benguela” (cDW, cJB). Huambo. 1 ♀: “Nova Lisboa [=Huambo]” (MRAC). Burundi. 1 ♂, 1 ♀: “Urundi: Rugari” (MRAC). DR Congo: Kasai-Oriental. 1 ♂, 2 ♀♀: “Sankuru” (MRAC). Katanga. 1 ♂: “Lubumbashi” (cDM); 3 ♂♂, 3 ♀♀: “Lulua: Kapanga”; 1 ♀: “P.N.U.[=Parc National Upemba], Lusinga” (MRAC). Nord-Kivu. 1 ♂: “Butembo” (MRAC). Orientale. 2 ♂♂, 1 ♀: “Haut Uelé: Doruma” (MRAC). Sud-Kivu. 1 ♀: “Bulira” (MRAC). Mozambique. 1 ♂: “Mosamb. Collect. Plason” (NMWC). Tanzania: Iringa. 1 ♂, 2 ♀♀: “D.O.A. Manow” (MRAC). Zambia. 1 ♂: “Central prov. 15 km e Serenje” (cRK); 1 ♂: “[Eastern Province] 240 km se Mansa, 25 km se Mukuku” (cMH).

Note. This species is based on specimens collected near Lake Rikatla, Mozambique. Likatle Lake, Ricatla or Lagoa Ricatla, with rough GPS position of 25.7831°S, 32.6231°E, is located in Maputo City, Mozambique. Maputo, known as Lourenço Marques before independence, is the capital and largest city of Mozambique. Description (in part, see Péringuey 1896: 479): “Length 17-18 mm, width 6-6.75 mm. Black, moderately shining, densely but briefly pubescent; head narrow, deeply and roughly punctured; prothorax not wider than the neck at the apex, gradually rounded from the anterior angle to two-thirds of the length, with the posterior part subdiagonal and slightly sinuate, median part of the base much produced behind, disk plane, and covered with wide, deep, confluent punctures, impressed laterally on each side behind, posterior outer sides raised; elytra elongated, subtruncate at the base which is one-third wider than the prothorax, a little amplified past the median part, very little convex, narrowly punctato-striate with the intervals convex, not much raised and irregularly punctured, very briefly pubescent, and with two small, ante-median oblong yellow patches on each side, one on the sixth, the other on the eighth interval, the latter slightly nearer the shoulder than the one on the sixth interval, and two supra-apical ones on the same interval, the outer one of which is the smaller of the two and placed a little lower than the one on the sixth interval; tarsi set with dense, bristly pubescence beneath. The shape of the prothorax is intermediate between that of *Eudema* (= *Craspedophorus*) *ornatum* (Boheman, 1848)], and of *E. oxygonum* (Chaudoir, 1861) but the shape of the elytra is similar to that of *E. ornatum* and *E. difficile*; the four yellow oblong patches on each elytron are very peculiar. Captured near the small lake of Rikatla, not far from the town of Lourenço-Marquez, by the Rev. Junod, to whom I am greatly indebted for the communication of some rare or hitherto undescribed species of Coleoptera found in that locality”.

Distribution. DR Congo: Katanga; Mozambique, central and eastern Zambia.

Craspedophorus nobilis species group nov.

(see also Chaudoir 1879: 120*)

This homogeneous group was established for three very similar species from South Africa (and fourth species from the Oriental Region). These species were placed by Chaudoir in the genus *Epicosmus* (together with many other species with terminal palpomere securiform in male), later synonymised with *Craspedophorus* by Andrewes (1919: 126). Although Chaudoir did not exclude these four apterous species from the genus, he separated

them strictly from the other *Epicosmus* species. He figured them separately because of differently shaped episterna, squared and never longer than wide (Chaudoir, 1879: 120, Fig. 68e, f). The Afrotropical *C. nobilis* (Dejean, 1826), *C. bonvouloirii* (Chaudoir, 1861) and *C. graciosus* (Chaudoir, 1879) and the Oriental *C. pubiger* (Chaudoir, 1861) lack anterior crenulation of ventrite margin (Fig. 68c), similarly to other species with securiform terminal labial palpomere (Fig. 68b) placed in the preceding *C. erichsoni* group (nov.). Péringuey (1898: 351) described *C. opulentus*, which also fulfils Chaudoir's criteria for placement in the *C. nobilis* group, and these criteria are applicable also to *C. volana* (Alluaud, 1895) and Jeannel's *C. bilunifer*, both described from Madagascar. In this work I synonymize *C. bilunifer* with *C. volana*, which is thus recognized as the only *C. nobilis* group species occurring in Madagascar. Basilewsky (1987: 199) described *C. subgraciosus* from Limpopo and emphasized its similarity with *C. graciosus* Chaudoir, 1879. I place *C. subgraciosus* in the *C. nobilis* species group as well, enlarging the group to five species on the African continent. In the Afrotropical region this group has six species.

Characters. Small to medium-sized apterous species (9.8-20 mm). Body, palps, antennae and legs black. Pronotum weakly transverse, almost rounded or hexagonal, with lateral margins only weakly sinuate posteriorly, hind angles almost obtuse without any indentation. Surface coarsely punctured, lateral rims narrow or indistinct, not clearly delineated medially by a groove. Metepisterna rhombic, not longer than wide, ventrites not crenulated anteriorly. Elytra ovoid, convex, intervals convex as well. South African species always have two maculae on each elytron; humeral macula usually reaches from interval IV (rarely II) to interval IX or to elytral margin; apical macula reaches interval VIII. *C. volana* (Madagascar) is distinguished by having only one extensive round macula in posterior half of each elytron, reaching from interval III to VIII.

Distribution remarks. The five continental species are confined to the southernmost part of the Rift, i.e. to KwaZulu Natal, Eastern Cape, Mpumalanga and Limpopo in RSA, Swaziland, Botswana, and southernmost province of Mozambique. The Madagascan species is confined to sandy areas in the extreme southwest and east (Toliara, Antsiranana Provinces, Fig. 81).

***Craspedophorus bonvouloirii* (Chaudoir, 1861)**

(Plate 5, Figs. 52-55)

Epicosmus bonvouloirii Chaudoir, 1861: 336 (type locality "Afrique australe"). Chaudoir 1879: 123.

Eudema bonvouloiri Gemminger and Harold, 1868: 208.

Eudema (*Epicosmus*) *bonvouloiri* Péringuey, 1896: 478. 1926: 582.

Craspedophorus bonvouloiri Ferreira, 1963: 120.

Craspedophorus bonvouloirii Lorenz, 2005: 320, Häckel and Farkač 2012: 790.

Eudema gibbosum Péringuey, 1896: 476 nomen nudum.

Craspedophorus gibbosus Lorenz, 2005: 320. Häckel and Farkač 2012: 81 **syn. nov.**

Type material. Holotype (♀) "Ex Musæo / Chaudoir [printed in red on white upper pinned label]"/ pinné in the series labelled: "Eudema / Castelnau // Bonvouloiri / Chaudoir / Pt-Natal ? / De Bonvouloir [handwritten in black

on white box label in Chaudoir's Collection]" (Plate 5, Fig. 53, MNHN). 1 ♂: "Cap / cotype [handwritten in black on white label]// *nobile* [handwritten in black on white label]// Muséum Paris / Ex Coll. M. Maindron / Coll. G. Babault 1930 [printed in black on blue label]// *Cr. Bonvouloiri* / Chd. [handwritten in black]// P. Basilewsky det. 19[printed in black]54[handwritten in black on white label]" (MNHN).

Additional material examined: Botswana. 1 ♂: "Central District. 50 km nw Selebi Phikwe, 530 m" (cMH). Mozambique: Maputo. 1 ♂, 1 ♀: "Namaacha" (MRAC). South Africa: KwaZulu Natal. 1 ♂: "Natalus Dept. / Natal // "Ex Musæo / Mniszech [printed in red on white lower pinned label] // *Epicosmus / gibbosus* / Péring. [handwritten on white label]/// pinned in the series labeled: "*Eudema / Castelnau // Bonvouloiri / Chaudoir / Pt-Natal ? / De Bonvouloir* [handwritten in black on white box label in Chaudoir's Collection]" (MNHN); 1 ♂ labelled as "?*Cr. graciosus* Chd. by Basilewsky 1954": "Dumisa, Natal" (MNHN); 5 ♂♂, 3 ♀♀: "Maputa / Zululand" (MRAC); "1 ♂: "Hluhluwe NR, 28.04S 32.02E, 440 m", 2 ♀♀: "20 km e Magudu", 1 ♀: "Richards Bay", 1 ♂: "St. Lucia/ False Bay" (cPS); 3 ♂♂: "25 km s Pongola, 27°34'S 31°35'E, 500 m" (cMH, cRS); 1 ♀: "Mkuze Riv. env., 25 km sw of Mbazwana" (cRK); 1 ♀: "Mkuzi Game Reserve" (cSc). Limpopo. 3 ♂♂, 2 ♀♀: "Shilouvane, près Leydsdorp [Shiluvane Mission]/ H.A. Junod" (MNHN, Chaudoir/Oberthür Collection); 1 ♂: "Blouberg (Leipzig. Miss. Station) [=w of Makhado, Vivo]" (MRAC). Mpumalanga. 1 ♀: "Mariepskop" (MRAC); "1 ♂, 1 ♀: "Northern Prov. (Transvaal), 3 km ne to border (RSA/ Swaziland) gate Mananga, 300 m" (Plate 5, Fig. 55, cMH, cPS); 1 ♂: "20 km sw Kaapmuiden, Three Sisters" (Plate 5, Fig. 52, cMH). Swaziland. 1 ♂: "Eranchi" (MRAC); 1 ♂: "Mlawula Nature Reserve" (Plate 5, Fig. 54, cMH); 1 ♀: "Zwaziland. Hlane [Royal] Nat. Park" (cDM).

Note. This species is based on a single specimen labeled "Afrique australe". According to Chaudoir (1879: 123), its origin is probably in Natal, in the vicinity of Durban. Description (in part, see Chaudoir, 1861: 336): "Length 19 mm. Body smaller than some specimens of (*C. angulatus* (Fabricius, 1781), but more elongated. Head the same as in (*C. nobilis* (Boheman, 1848). Pronotum almost the same as in (*C. angulatus*, but more narrowing anteriorly, hind angles almost rectangular, weakly rounded, distinctly notched in front of angles. Lateral margins somewhat more rounded at midlength, i.e. less distinct, sinuate posteriorly, cordiform, disc more coarsely and strongly punctured, covered by shorter setae; sagittal line and basal grooves more-or-less impressed and shorter. Elytra more elongated and less convex than in (*C. angulatus* but wider, with humeri more oblique, less distinct and angular toward base. Elytra striated, punctured, and colored similarly to (*C. nobilis*, maculae of same width (reaching the same intervals), but somewhat larger, more squared, more densely and fairly punctured... similarly to (*C. nobilis*, its origin is in southern Africa without detailed location" [translated from the French original]. In his elderly work Chaudoir differentiated *C. bonvouloiri* from Oriental *C. angulatus* (Fabricius, 1781). The two species are not too similar. Furthermore, *C. angulatus* Fabricius, 1781, which is placed in a different species group (see Häckel et Kirschenhofer 2014b: 356), occurs in Oriental region, contrary to Chaudoir's species, which is strictly Afrotropical. Chaudoir later (1879: 123) differentiated his species from *C. nobilis* (Dejean, 1826), which is very similar and occurs in a nearby region, therefore I place it in the same group. Chaudoir corrected: "Length 18.5 mm, width 7 mm. It resembles (*C. nobilis*, but differs by pronotum and shorter, more convex elytra. Head similar, antennae less elongated, larger, with carinate articles on inner side; pronotum with maximum width behind midlength, more narrowing anteriorly; lateral margins more arcuate, posterior part between lateral and posterior angles shorter, more oblique, base and posterior angles the same as in *C. graciosus* (Chaudoir, 1879), but basal medial protrusion posteriorly shorter and posterior angles less pronounced, preceded by a notch, more distinct; dorsum more convex anteriorly and flattened laterally, lateral rims less elevated posteriorly; sagittal line more distinct, basal pits distinctly

less deeply impressed. Elytra distinctly shorter, with margins more rounded, more convex, and striae and intervals equally punctured; yellow elytral fasciae wider, humeral macula with the same anterior margin as that in *C. nobilis*, preapical macula less rounded anteriorly, less sinuate posteriorly. It also inhabits Natal, but seems rare” (from French).

Distribution. Botswana, Mozambique: Maputo Province; RSA: KwaZulu Natal, Limpopo, Mpumalanga; Swaziland.

Craspedophorus graciosus (Chaudoir, 1879)

(Plate 6, Figs. 56-59, Plate 7, Fig. 70)

Epicosmus graciosus Chaudoir, 1879: 122 (type locality “Delagoabay [= Maputo Bay, southern Maputo Province, Mozambique]”).

Eudema (Epicosmus) graciosum Péringuey, 1896: 478.

Eudema graciosum Péringuey, 1926: 581.

Craspedophorus graciosus Basilewsky, 1987: 199, Lorenz 2005: 320, Häckel and Farkač 2012: 81.

Type material. Holotype (♀) “Ex Musæo / Chaudoir [printed in red on white label]// Type [printed in black on red label]// pinned in the series labeled: “*Eudema* / Castelnau // *graciosus* / Chaudoir / Delagoabay / Sallé [handwritten in black on white box label in Chaudoir’s Collection]” (Plate 6, Fig. 57, MNHN)

Compared material: 1 ♂: “Genit. ♂ [printed in black] / 87.041.5 [handwritten in black on yellow label]// “Comp. typ. / Basilewsky [printed in black on red circumscribed label]// Coll. Mus. Congo [printed in black] / Natal [handwritten in black] / Col. P. Basilewsky [printed in black] on white label]// *graciosus* / Chd. [handwritten in black] / P. Basilewsky det. 19 [printed in black on white label]” (Plate 6, Fig. 56, MRAC).

Additional material examined: 1 ♀: “Trans / Vaal [handwritten in black]// Ex Musæo / H.W. Bates / 1892 [printed in black on white label]” (Plate 6, Fig. 59, MNHN, Oberthür-Bates Collection). Mpumalanga. 1 ♂: “Barberton” (Plate 6, Fig. 58, cPS). KwaZulu Natal. 1 ♀: “Natal // Coll. Sicard // verisim *graciosus* / Alluaud déterm.” (cMH); 1 ♂: “Umkommas River, distr. Richmond” (MRAC).

Note. This species is based on a single specimen collected in South Africa. According to Chaudoir (1879: 123) it probably came from Natal, however the type in Chaudoir’s collection is labeled “Delagoabay”, which is today known as Maputo Bay in eponymous province of southern Mozambique. Description (in part, see Chaudoir, 1879: 122): “Length 10.5 mm, width 3.75 mm. It rather resembles (*C.*) *nobilis* (Boheman, 1848), from which it differs by elytral coloration with lighter, lemon yellow bands. Head somewhat shorter, frons between eyes larger, with angles meeting eyes posteriorly more deep, eyes seem more convex; frontal impressions less strong, neck narrower, surface finely transversely rugate. Pronotum anteriorly shaped as that in (*C.*) *nobilis*, lateral margins more curved at midlength, forming more marked flexure; base not flat, quite strongly prolonged in peduncle enlarging anteriorly, forming angles near basal margins, quite deeply drawn in but a little obtuse (Plate 7, Fig. 70a); posterior angles, each rounded on its top, are rectangular because of a small notch in front of them (Plate 7, Fig. 70b) ; surface equally punctured, lateral rims equally shaped and elevated toward posterior angles. Peduncle connecting elytra with pronotal base longer, elytra similarly shaped near base, but basal margins markedly more oblique to humeri, markedly less curved at humeri; striae more coarsely punctured, intervals less markedly and less densely punctured,

in this regard elytral surface is more glossy; convexity is nearly even; humeral elytral fascia less transverse, weakly sinuate anteriorly, rounded and weakly serrate posteriorly; preapical fascia similarly located, almost as long as wide, rounded anteriorly, without notch posteriorly. It inhabits Natal; I have a single specimen bought by Mr. Sallé during clearance of the late Edwin Brown's collection in England" (from French).

Distribution. Mozambique: Maputo Province; South Africa: KwaZulu Natal, Mpumalanga Provinces.

***Craspedophorus gratiosus drakensis* ssp. nov.**

(Plate 6, Fig. 60, Plate 7, Fig. 69)

Type locality. "Ogalweni Forest, Bergville District, Drakensberg Mountains, KwaZulu-Natal, South African Republic".

Type material. Holotype (♂): "Natal: Bergville distr. / Drakensberg, Ogalweni For. / 1800 m, humus (ZA.26) / N. Leleup X. 1960" (Plate 6, Fig. 60, Plate 7, Fig. 69, NMPC). Paratype: 1 ♂: "SA, KwaZulu-Natal / Cathedral Peak, / 28.97814S/ 29.25976E / 1916 m, Grassland // Site No.23, / Active Searching /MDTP No: 0057" (cPS).

Description of holotype. Length 9.8 mm, width 3.5 mm. Head, pronotum and elytra in shape and sculpture similar to *C. gratiosus*, from which *C. g. drakensis* differs in size and pattern of elytral colouration. In *C. gratiosus drakensis* humeral orangish yellow macula narrows medially more strongly than laterally, which causes it to be much more rounded, reminding of an elongate letter D (Plate 6, Fig. 60, Plate 7, Fig. 69). In *C. g. gratiosus* medial narrowing is minor and termination angular, which combined with stronger elongation on lateral intervals causes a hook-shape reminding more of letter J (Plate 7, Fig. 70). Aedeagi are similar in both subspecies (Plate 8, Figs. 74,75).

Etymology. The subspecies name derives from the occurrence in Drakensberg Mountains in RSA and Lesotho.

Distribution. South Africa: KwaZulu Natal, Drakensberg Mountains.

***Craspedophorus nobilis* (Dejean, 1826)**

(Plate 5, Figs. 46-49, Fig. 68)

Panagaeus nobilis Dejean, 1826: 285 (type loc. "Cap di Bona Speranza [= Cape of Good Hope, probably Eastern Cape Province, South African Republic]"). Dejean 1831: 598. Boheman, 1848: 125.

Isotarsus nobilis La Ferté-Sénectère, 1851: 220.

Epicosmus nobilis Chaudoir, 1861: 338, 1879: 121.

Eudema nobile Gemminger and Harold, 1868: 209.

Eudema (Epicosmus) nobile Péringuey, 1896: 477, 1926: 581.

Craspedophorus nobilis Basilewsky, 1953: 169. Lorenz 2005: 321. Häckel and Farkač 2012: 81.

Type material. Lectotype (♂, diagnosis of sex based on palps) established by Chaudoir (1879: 122): "*nobilis*. Klug / ad. Cap. Bon. Sp // Drège [handwritten on upper pinned blue labels]// "Ex Musæo / Chaudoir [printed in red on white label]// Type [printed in black on red label] // pinned first from left in first row of the series labeled: "*Eudema*

/ Castelneau // *nobilis* / Dejean / Port Natal. [handwritten in black on white box label in Chaudoir's Collection]" (Plate 5, Fig. 47, MNHN). Paralectotypes. 1 ♀ (dg. based on palps): "Ex Musæo / Chaudoir [printed in red on white label]" pinned fourth from left in first row; 1 ♂, 1 ♀ (dg. based on palps): same labeled, pinned second and third from left in second row of the series labeled: "*Eudema* / Castelneau // *nobilis* / Dejean / Port Natal. [handwritten in black on white box label in Chaudoir's Collection]" (MNHN). Specimens added by Chaudoir to the same series as paralectotypes. 2 ♂♂ (dg. based on palps): "Ex Musæo / Mniszech [printed in red on white label]"/// pinned second and third from left in first row of the series; 1 ♂ (dg. based on palps): "Natal [handwritten on white label]" pinned fourth to first row of the series; 1 ♂ (dg. based on palps): "Natal [handwritten on white label]/ Ex Musæo / Mniszech [printed in red on white label]"/// pinned second in second row of the series; 1? (palps lost): "Caffrerie / Schaufuss [handwritten on white label]" pinned fourth in second row of the series labeled: "*Eudema* / Castelneau // *nobilis* / Dejean / Port Natal. [handwritten in black on white box label in Chaudoir's Collection]" (MNHN). 1 ♂: "Cap / cotype [handwritten in black on white label]// *nobile* [handwritten in black on white label]// Muséum Paris / Ex Coll. M. Maindron / Coll. G. Babault 1930 [printed in black on blue label]// *Cr. Bonvouloiri* / Chd. [handwritten in black]// P.Basilewsky det., 19[printed in black]54[handwritten in black on white label]" (MNHN).

Compared material: 1 ♂, 1 ♀: "Comp. typ. / Basilewsky [printed in black on red circumscribed label]// Cape Town [handwritten in black on white label]// Coll. Mus. Congo / Col. P. Basilewsky [printed in black on white label]// *nobilis* Dej. [handwritten in black]// P. Basilewsky det., 19[printed in black on white label]" (MRAC).

Additional material examined: South Africa: 2 ♂♂, 1 ♀: "Cap. / Coll. Plason [= probably Eastern Cape]", 1 ♂: "*nobilis* / Chaudoir, 1859 [= probably Eastern Cape Province]", 1 ♂: "Pöy č. 222 [= probably Eastern Cape Province]" (NMWC). Eastern Cape Province. 1 ♂: "Eastern Cape, 70-80 km e Umtata, 15 km w of Port St. John, 30 m" (Plate 5, Fig. 46, cMH). 3 ♂♂, 1 ♀: "Port St. Johns Distr. iNgogo Forest" (MRAC); 6 ♂♂: "Port St. Johns, Silaka NR 31.39S 29.30E" (cMH, cPS); 1 ♂: "Beaufort Distr.[= Amathole], Katberg" (MRAC). KwaZulu Natal. 1 ♂ labelled as *Cr. nobilis* Boh. by Basilewsky 1954: "Natal" (MNHN); 3 ♂♂, 3 ♀♀: "Natal" (cMH, NMPC, NMWC). 1 ♀: "Marian-Hill, Süd-africa" (NMWC); 1 ♂: "Ingwavuma Distr., Gwaliweni [=Hlatikhulu] Forest" (MRAC); 3 ♂♂, 2 ♀♀: "Ntendeka Wilderness Area, Ngomi Forest 27°51'S, 31°23'E" (Plate 5, Fig. 48, cMH, cPB), 1 ♂: "Ngome Forest 27°49'S, 31°25'E" (cOH, cPS), 1 ♂: "uMgungundlovu pr., Wartburg distr., 29.2971°S 30.3008°S, Karkloof Forest (cMH); 1 ♂: "35 km n Port Edward" (cPS). Mpumalanga. 1 ♀: "Transvaal, near Barberton" (Plate 5, Fig. 49, cMH).

Note. This species is based on specimen labeled "Cap di Bona Speranza", a Portuguese name for the Cape of Good Hope, later The Cape Colony, recently administrated as Western or Eastern Cape Provinces. Description (in part, see Dejean, 1826: 285): "Length 7.5 points, width 3.75 points. Black; elytra almost ovoid, convex, striated, each with two large yellow maculae, anterior macula transverse, posterior macula semilunar" (translated from the Latin original). "It is smaller and much longer than (*Panagaeus*) *tomentosus* (= *Craspedophorus angulatus*), dorsum matte black, weakly glossy, fully covered by setae, which are similarly coloured, quite rough, uniform. Head is small, quite elongated, almost flat, surface irregularly rugate, punctured, with strongly reticular microsculpture. Eyes strongly convex, brown to black. Pronotum at midlength twice wider than head, as long as wide, rounded and almost hexagonal, disc almost flat, surface unevenly rugate, punctured, with strongly reticular microsculpture; sagittal line weakly impressed, open into a longitudinal, vaguely bordered basal pit. Anterior margin very slightly excavated and almost truncate. Lateral margins rimmed, almost carinated, elevated in front of strongly rounded posterior margins; base slightly excavated. Scutellum triangular, smooth, fairly concave. Elytra almost ovoid, fully convex, at midlength almost twice wider than pronotum; each elytron with nine rows of well bordered, distinctly punctured striae; intervals very densely punctured throughout. Each elytron as in previous species (*C. angulatus*), with two large, light yellow, almost lemon-

shaped maculae, composed of elongated spots on intervals: humeral macula transverse, with fairly serrate margins, reaching from stria III [interval III (rarely IV)] to margin; preapical macula composed of five spots, with spots on two outer intervals fairly moved toward apex, creating a lunular shape, reaching from stria III to VIII. Dorsum and legs of the same colour. It was collected near Cape of Good Hope and sent to me by M. Schüppel" (from French). Chaudoir added (1879: 122): "Length 15-18 mm, width 5.5-6.7 mm. Head weakly enlarged anteriorly, frons densely punctured, flat, but depressed near each margin along and before eyes, without transverse furrow separating neck; epistoma smooth, convex, shrunk near each margin; neck weakly tumid posteriorly, fairly rugate, surface punctured. Pronotum wider than head by a half, somewhat more narrowing anteriorly than posteriorly; anterior margin weakly sinuate, indistinctly wider than neck, with anterior angles rounded and not protruded; lateral margins widening gradually each in a direct wire to midlength where it forms a flexure, very rounded and obtuse, and then directly narrows toward base, where it forms an obtuse angle with a rounded top and a very fine and shallow sinus in front of the angle; base flat, weakly rounded near angles; surface coarsely, deeply and very densely punctured, with a reticulate pattern, elevated, very irregular, separating each point, sagittal line quite deeply impressed, especially in the middle, disk quite convex anteriorly, flattened very narrowly toward lateral margins, anteriorly rimmed with very thin lateral rims, widening and gradually more elevated from midlength to base, each with a short and deep notch near peduncle; marginal points each with vertical seta, quite long. Elytra wider than pronotum more-or-less by a half, longer than wide by a half, ovoid, regularly rounded toward humeri as well as toward apex, weakly obtuse only along peduncle, without distinct humeri, weakly sinuate in front of apex, gradually convex in two planes, strongly striated, striae more-or-less markedly punctured; intervals quite convex, markedly but finely and very densely punctured, covered by setae, inclined posteriorly; rudimental praescutellum not too elongated, interval IX with a rank of umbilical points reaching midlength, where they become more sparse; lateral margin quite elevated, its width of middle size, but widening anteriorly toward peduncle. Underside with prosternum, sternal margins, and venter more densely punctured than in most other panagaeines. Body as well as antennae, palps and legs black, surface weakly glossy; each elytron with two large fasciae; yellow humeral fascia located in basal fourth, reaching from stria III to margin as well as on external margin of epipleura, composed of seven spots, two external more prolonged toward base than the others, angulating the anterior fascial margin anteriorly; posterior margin serrate; preapical fascia recumbent weakly obliquely to margin, reaching from stria III to stria VIII, rounded, not too serrate anteriorly, weakly sinuate posteriorly; fascia width [length of macular spots] varies more-or-less in each specimen I have. According to Drège Dejean's type comes from Cape of Good Hope; I have four specimens from the same place; other specimens come from Natal, where the species does not seem to be rare, because I have a large number of specimens of the same provenience (from French).

Distribution. Republic of South Africa: Eastern, Western Cape, KwaZulu-Natal, Mpumalanga, North West Provinces.

Craspedophorus opulentus (Péringuey, 1898)

(Plate 5, Figs. 50, 51, Fig. 68)

Eudema opulentum Péringuey, 1898: 351 (type locality “Natal: Lower M’Komas River [= Lower Umkomazi River, KwaZulu Natal, South African Republic]). 1926: 581.

Craspedophorus opulentus Lorenz, 1998: 221, 2005: 321. Häckel and Farkač 2012: 82.

Type material. Holotype (♂): “Lower / M’Komas. N / 9/97 // *Eudema / opulentum* / Typ~ Pry.[handwritten in black on white label]// Type [printed in black italics on red label]// [empty white label with rest of glue, probably of removed aedeagus]// Type / SAM / Ent [printed]/ 001050 [handwritten on orange label]// Imaged / Entovision [printed on yellow label]” (Plate 5, Figs 50, 68, SAMC). Paratypes. 1 ♀: labeled as holotype except “*Eudema / opulentum* [handwritten in black on white label]//”; 1 ♂: labeled as holotype except “2 G // *Eudema / opulentum* Pry. [handwritten in black on white label]//” (Plate 5, Fig. 51), SAMC).

Additional material examined: South Africa: KwaZulu Natal. 1 ♂: “Port Edward, Umtamwuna NR 31°3’25.02”S 30°10’7.43”E” (cMH).

Note. This species is based on specimens labeled “Natal, Lower M’Komas River”. The river, today known as Umkomazi River, arises in some of the highest eastwards-facing slopes of the Drakensberg mountains in Natal (the river flows southeastwards towards the Indian Ocean, which it enters through a navigable estuary at Umkomaas, about 40 km southwest of Durban. Its main tributaries are the Loteni, Nzinga, Mkomazane, Elands and Xobho Rivers). Description (in part, see Péringuey 1898: 351): “Length 19 mm; width 8 mm. Black, subopaque; head very rugose but with a median smooth space, epistoma also smooth; neck finely plicate transversely; third joint of antennae not quite as long as the following two put together; prothorax rounded laterally from the apex to two-thirds of the length, gradually ampliate to that distance, and produced diagonally from there to the basal part where it is not wider than apex; the posterior part of the margin is recurved from where it narrows, but not angular, while the basal angles are sharp, and the base straight and not projecting; it is setulose and very roughly shagreened; elytra one-fourth wider than the prothorax at the base, a little rounded at the shoulders, oblong-ovate, somewhat convex, striate, pubescent, finely shagreened, and having on each side two yellow patches; the first, near the shoulder, is somewhat aculeate from the outer margin to the third stria, and nearly straight; the suprapical one is slanting, narrower than the first, and extends from the third to the seventh interval inclusive; underside punctured, pubescent. Wider than *E. (= C.) ornatus* (Boheman, 1848); this species is easily distinguished from it by the more ampliate prothorax; the colour of the patches on the elytra are paler yellow, and they are much narrower. Hab. Natal (Lower M’Komas River).” Figured in Péringuey (1898: plate XI, fig. 4). This species is extremely rare in collections, the author has not seen any other specimen except the type series. During the final corrections of this article another specimen recently collected was found, 1 male collected by Peter Schüle near Estern Cape / KwaZulu-Natal border about 80 km southerly of the type locality.

Distribution. South Africa: KwaZulu Natal.

***Craspedophorus subgratiosus* Basilewsky, 1987**
(Plate 6, Fig. 61, Plate 7, Fig. 71)

Craspedophorus subgratiosus Basilewsky, 1987: 196 (type locality “Transvaal: Woodbush Forest, Pietersburg dist. [= Limpopo Province, South African Republic]). Häckel and Farkač 2012: 83.

Type material. Holotype (♂): “Holotypus [printed in black on red label]// Transvaal: Pietersburg / distr., Woodbush Forest / humus (ZA.16) / N. Leleup IX-1960 [printed in black on white label]// *Crasp. / subgratiosus* n. sp. / P. Basilewsky det., 19 [printed in black on white label]// [DataMatrix] RMCA Ent / 000020054 [printed on white label]” (Plate 6, Fig. 61, Plate 7, Fig. 71, MRAC). Paratype. 1 ♂ same labeled as holotype, except 87041.6 (number of its edeagus separately enclosed in Canadian balsam).

Note. This species is based on two males collected in Woodbush Forest. It is located in Limpopo, South Africa, Latitude: -23.81766, Longitude: 29.99216. Description (in part, see Basilewsky 1987: 199): “Length 12-13 mm. Apterous, elytra not inflated. Black, mandibles and five distal antennal articles brown, fully darkish; each elytron with two large orange maculae, humeral macula located in basal third of elytra, reaches from interval IV to margin and even on epipleura, macular spot located on interval III from margin (= on interval VIII) moved anteriorly before anterior margin of spots on inner intervals, almost reaching humerus. Macular spots on inner intervals almost equally long, except spot on fourth interval, which is cut short from behind, and spot on interval VI, somewhat elongated posteriorly; preapical macula smaller, reaching from interval III to VII, fairly transverse and oblique, with slightly more serrate margin” [translated from the French original]. Although Basilewsky differentiated *C. subgratiosus* from *C. gratiosus* Chaudoir, 1879 and emphasized the similarity of both species in name selection, he did not place them in any group of species. Basilewsky added: “At a glance it is similar to *C. gratiosus* Chaudoir, and without detailed inspection we can simply confuse them. It is possible to differentiate between them by two main characters as follows: pronotal base is completely parallel with anterior margin in *C. subgratiosus*, contrary to *C. gratiosus* in which base is strongly oblique near margins, creating peduncle. Distal antennal articles, beginning with the fourth, are partially dilated in Chaudoir’s species (*C. gratiosus*), contrary to the newly described species in which antennal articles are slender, not dilated. Other characters seem the same in both species; although very similar, they are distinguishable. Mental process is long, triangular in *C. gratiosus*, but short and wide, parallel-sided, with perpendicular anterior margin in *C. subgratiosus*. In *C. gratiosus* pronotum is the same except the basal peduncle shaped differently; anterior margin wider than neck, lateral margins anteriorly less rounded, posteriorly weakly sinuate in front of hind angles, which are well distinct but without sharp indentation, contrary to *C. subgratiosus* in which anterior pronotal margin is not wider than the neck, lateral margins are less rounded at maximum width, posteriorly arcuate with indentation in front of hind angles, which are strongly rounded. Elytra of equal shape, in *C. subgratiosus* intervals less densely punctured in 1 or 2 rows, in contrast to Chaudoir’s species with intervals punctured in 3-4 rows; humeral macula more transverse in *C. gratiosus*, macular spots on three outer intervals less elongated. Aedeagi in both species are rather different” (Plate 8, Figs. 74-76) (from French).

Distribution. Republic of South Africa: Limpopo Province.

Craspedophorus volana (Alluaud, 1895)

(Plate 6, Figs. 62-65)

Eudema volana Alluaud, 1895: clxxxi (type locality “pays des Mahafaly /extrémité s.-o. de Madagascar [= Mahafaly Plateau, Toliara Province]). *Craspedophorus* (*Eudema*) *volana* Alluaud, 1900: 30.

Craspedophorus (s. str.) *volana* Jeannel, 1949: 854.

Craspedophorus volanus Lorenz, 2005: 321, Häckel and Farkač 2012: 83 [in error].

Craspedophorus (s. str.) *bilunifer* Jeannel, 1949: 855 (type locality “Madagascar”) Lorenz 2005: 320. Häckel and Farkač 2012: 79 **syn. nov.**

Type material. Holotype (♀): “Type [printed in black on red label]// Museum Paris / Madagascar / A. Granddier 1867 [printed in black on white label]// *Eudema / volana / Alluaud / 1895* [handwritten in black on white label] (Plate 6, Fig. 65, MNHN).

1 ♂ (Holotype of *Craspedophorus bilunifer* Jeannel, 1949): “♂ [handwritten in black on red label]// *bilunifer / n. sp.* [handwritten in black on white label]// Madagascar / collection Le Moul't [printed in black on white label]// Type [printed in black on red label]// Museum Paris / Coll. Ch. Alluaud [printed in black on blue label]// Collection / Chulliat [printed in black on red label]” (Plate 6, Fig. 62, MNHN).

Additional material examined: Madagascar. 1 ♂: “Madagaskar. Collectio Florián Hanuš” (NMPC); 1 ♂, 1 ♀: “Antalaba [= Antalaha env., Antsiranana Province]; (NMPC); 2 ♂♂, 3 ♀♀: “Toliara Province: 15-20 km s of Tulear, 50 m” (Plate 6, Fig. 64, cMH, cRK), 2 ♀♀: “Toliara Province, Tsimanampetsotsa National Park, Mitoho Camp, 24°02.898'S 43°45.138'E, 10m” (Plate 6, Fig. 63, cMH).

Note. This species was based on two specimens, collected at Mahafaly plateau, southwestern Madagascar. Description (in part, see Alluaud, 1895: clxxxi): “Length 16 mm. Pronotum hexagonal, irregularly punctured. Elytra quite short, each elytron behind midlength decorated with one large annular orange macula” (translated from Latin). Alluaud added: “It is well distinguishable because of that one large annular red macula. Anterior margin of it is fairly drawn out in elytral middle. The name “*volana*” originates from the Malagasy language and means a Moon. One specimen was sent to me from Mahafal’s country, another I have seen in MHNP” (translated from the French original). Jeannel (1949) established a new species based on some specimens collected at the bank of Ihosy Lake in Tongobory area, district of Betsioky, which is a part of Atsimo-Andrefana Region in Toliara Province. Description (in part, see Jeannel 1949: 855): “Length (18)20-22 mm. It strongly resembles previous species (*C. volana* (Alluaud, 1895)) because of its similar colouration, except elytral maculae are brick-coloured, not yellow. Frons before eyes somewhat shorter, medial convexity almost smooth. Pronotum generally equal-shaped but lateral angles more anterior, closer midlength, lateral margins less narrowing anteriorly, anterior angles less rounded; base similar. Disk as well grossy, punctured. Elytra somewhat longer, similarly shaped and striated, but with internal intervals equally sparsely punctured as external ones. Legs tough, metatarsi more elongated, with article IV twice longer than wide, without dentiform process of internal apical angle. Aedeagus arcuate in angle, almost flat, preapical part dilated, flattened, spatulated, apex very reduced. Stylus widely ovoid. Except one series of Alluaud, two other of mine, labeled ‘Fénériver’. Its occurrence on east coast needs more confirmation” (from French).

Craspedophorus benoiti species group nov.

In this concept *C. benoiti* (Basilewsky, 1953) stands separately within the genus, in its own species group. It agrees with species of the preceding group in many characters. Short, rhombic metepisterna seem to place it in the *C. nobilis* group nov., and so do the terminal labial palpomeres, which are dilated, semicircular to triangular in males. These palpomeres are elongated almost to a kidney shape in some males. An important character seems to be also anterior crenulation of the ventrites, which is absent in species of the *C. nobilis* group. Both latter characters place it closer to the *C. strachani* group, in the *C. muata* subgroup. These characters together isolate *C. benoiti* within the genus *Craspedophorus*, as do many smaller differences of lesser consequence. One of such characters is habitual similarity with the species of the genus *Epigraphodes* Basilewsky, 1967. The differences between *C. benoiti* and species of the other genera were refined by Basilewsky in his monograph of the genera *Epigraphus* (Chaudoir, 1869) and *Epigraphodes* (Basilewsky 1967: 130). Till then similar species were placed (and described) in the genus *Epigraphus*, as was *C. benoiti*. Basilewsky (1967) transferred it back in *Craspedophorus* together with a few similar species differing from *C. benoiti* in their metepisterna, which are trapezoid in other species. In my opinion many morphological differences recently considered characteristic for different Afrotropical genera are not found generally, mainly outside of Africa. Taxonomy of panagaeines with similarly shaped mouthparts, i.e. with paraglossae surpassing glossa, ligula shorter and more slender, and others, is not sufficiently resolved and fails mainly on the generic level. It needs a global revision. For the present this interesting species must be separated to form its own group within the genus *Craspedophorus*.

Craspedophorus benoiti (Basilewsky, 1953)

(Plate 6, Figs. 66, 67, Fig. 78)

Epigraphus benoiti Basilewsky, 1953a: 175 (type locality “Lualaba: Kinda [= Katanga Province, Democratic Republic of the Congo]”). *Craspedophorus benoiti* Basilewsky, 1967: 13. Lorenz 2005: 320, Häckel and Farkač 2012: 79, 2013: 250.

Type material. Holotype (♀). “Holotypus [printed in black on red circumscribed label]// ♀ [printed in black on white label]// Coll. Mus. Congo [printed in black]/ Katanga: Kinda / Don Cercle Z. C. [handwritten in black on white label]// *Epigraphus / Benoiti* n. sp. [handwritten in black]// P. Basilewsky det., 19[printed in black]50 [handwritten in black on white label]// [DataMatrix] RMCA Ent / 000020045 [printed on white label]” (Plate 6, Fig. 67, MRAC). Paratypes. 1 ♂, 1 ♀ labeled as holotype except: “Paratypus [printed in black on red circumscribed label]”, “P.N.U[pemba] / Mabwe 585 m / 1.-8. IX. 1942 [printed in black on white label]”, 1 ♂ labeled as previous except: “Lupiala 850 m / 24.X.1947”, 2 ♀♀: “Munoi bi. Lupiala / 890 m 31.V. -2.VI.1948”, 1 ♀ labeled as previous except: “12-24.1948”, 1 ♂, 1 ♀ labeled as previous except “Kaswabilenga 700 m 29-30.X.1947” and “17-24.I.1949” (MRAC).

Additional material examined: DR Congo: Katanga. 2 ♂♂, 2 ♀♀: “Lualaba: Zilo”; 1 ♂: “Kanzenze” (MRAC, cMH); 1 ♀: “Kinda, Katanga, Belg. Congo” (Fig. 78, cMH). Zambia. 1 ♂: “[North-western Province] Solwezi” (Plate 6, Fig. 66, cMH).

Note. This species is based on specimens labelled “Lualaba: Kinda”. Lualaba District is located in the Katanga Province, in the Democratic Republic of the Congo. Kinda is a name used for

a Lake of latitude -9.466667, longitude 24.816667, and for an eponymous town located in the Lualaba River basin. Description (in part, see Basilewsky, 1953: 177): “Length 8-9 mm. Body throughout piceous black, opaque, densely covered by adjoining setae, which are quite long, yellow; pronotum with lateral rims, ferruginous, very narrow; each elytron with two yellowish-orange maculae; humeral macula elongated, reaching neither base nor lateral margin, spanning from interval VI to IX, spots on intervals VI and VII shorter than spots on intervals VIII and IX; preapical macula located posteriorly, more-or-less squared, reaching from interval V to VIII. Underside piceous black, opaque, antennae and palps ferruginous brownish. Head normal, very wide and short, eyes partially protruded, neck very constricted. Pronotum moderately transverse, maximum width strongly behind midlength; anterior margin flat, anterior angles not protruded anteriorly and indistinct; lateral margins evenly rounded, widening lengthwise gradually to maximal width, without any strong narrowing toward base, posterior angles each with a small indentation preceded by a shallow notch; base strongly concave; posterior angles protruded posteriorly; sagittal line short but very deeply and widely impressed, basal pits strongly impressed, with elongated furrow on the bottom, not too distinct; surface strongly and densely punctured. Elytra ovoid, pointed posteriorly, convex, less flattened on disk, striae deeply impressed, punctured, stria I strongly oblique to stria II, adjoining with it near base; intervals fairly convex, finely and densely punctured, covered by yellow setae... This species resembles (*Epigraphodes*) *congoensis* (Burgeon, 1935) by its elytral colouration with humeral maculae elongated, not squared or transverse as those in other species of the genus (currently genera *Craspedophorus*, *Epigraphus* and *Epigraphodes*). It differs by its smaller body structure and mainly by its pronotal shape, which is markedly more transverse in Burgeon’s species, curvature of its lateral margins abruptly narrowed toward base and not regularly arcuate lengthwise; pronotum more densely and finely sculptured; elytral intervals less convex, less deeply and more finely punctured, more densely covered by setae...” (from French).

Distribution. DR Congo: Katanga Province; northwestern Zambia.

***Craspedophorus strachani* species group Häckel, 2017**

***Craspedophorus hanangensis* sp. nov.**

(Fig. 79)

Type locality. “Tanzania, Maniara Region, Mt. Hanang, Katesh”.

Type material. Holotype (♀): “NC-Tanzania, Manyara [Region], Hanang Mt., Katesh env., 04°26’S 035°24’E 3300 m, IX, 2014, lgt. P. Kayombo” (Fig. 79, ZSM).

Description of holotype. “Length 18.9 mm, width 7.8 mm. Proportions: Pronotum 1.43x wider than long, 1.77x wider than head with eyes, elytra 1.25x wider than pronotum.

Colouration. Body piceous black, glossy, elytra without yellow maculae; underside black, legs, palps, antennae, mandibles and tarsi distally darkish brown.

Head wide (width ratio head to pronotum 1.77) subquadrate, labrum and mandibles smooth, opaque, terminal labial palpomere elongately bow-shaped (in female). Eyes

moderately convex. Frons medially raised, finely punctured, posteriorly and laterally punctured coarsely and irregularly, in front of eyes with two longitudinal depressions, lateral in form of a thin ridge running from antennal base to anterior margin of eye (supra-antennary ridge), medial weak and wide, running from anterior margin of eye to clypeus base, coarsely and irregularly punctured and furrowed. Vertex also punctured coarsely and irregularly, with a weak constriction into occiput and neck, punctured less coarsely but more densely than head. Antennae whip-shaped, distally not widening or flattening, reaching up to one-quarter of elytral length. Scape truncate and about twice longer than pedicel, third antennomere much more slender and slightly longer than first, fourth antennomere one-half longer than third, surface sparsely covered with short setae (Fig. 79b).

Pronotum moderately transverse (length to width ratio 1.43), almost hexagonal, maximum width behind midlength, disc moderately convex, lateral rims strongly and widely flattened, not elevated; anterior margin straight, anterior angles very widely rounded, weakly protruded anteriorly; margins markedly arcuate anteriorly, narrowing in straight line or indistinctly sinuate posteriorly, with indistinct notch in front of each posterior angle, which is little more closed (than in *C. montivagus* Basilewsky, 1976) and rounded; base weakly convex; sagittal line widely and deeply impressed; lateral rims distinct, each separated from disc by a shallow but distinct furrow reaching both pronotal ends; basal pits located medially from rims, each triangular, shorter (than in *C. montivagus*) and similarly deep; surface quite strongly and coarsely densely punctured, at middle and on lateral rims, where punctation finer, disappearing posteriorly; posterior pronotal pore located on margin near notch before posterior angles (Fig. 79b).

Elytra fused, almost ovoid, strongly convex, widening posteriorly, maximum width at apical one-third. Humeri rounded but distinct, not bevelled, elytral base lined with a smooth rim, separating base from elytral striae between humeri and interval V, laterally margined with a flattened narrow rim that does not widen along length, disappears near base, and is finely punctate. Striae deeply impressed, impunctate. Intervals convex, indistinctly, sparsely punctate in two lines, almost glabrous, with subtle isodiametric microsculpture, very sparsely covered with black setae, mainly posteriorly.

Underside covered with short setae, finely punctured medially, coarsely punctured near margins; metepisterna rhombic, as long as wide. Legs moderately covered with black setae.

Differential diagnosis. The species is based on a single female specimen most closely resembling *C. montivagus* but differing from it by a distinctly less transverse and more coarsely punctate pronotum; markedly more coarsely punctate head; elytra more convex, with striae deeply impressed and glabrous, and intervals more convex and glabrous except isodiametric microsculpture.

Etymology. The name refers to the type locality (Mt. Hanang).

Distribution. Known only from the type locality.

Craspedophorus brevicollis species group Häckel, 2017

Craspedophorus latifrons (Chaudoir, 1876)

Material examined: Somaliland, 3 ♂♂: “Daallo Reservation camp, 10°45.610 N 47°18.216 E, 1758 m” (cMH).

Distribution. Ethiopia: Oromiya, State of Southern Nations, Nationalities and Peoples’, Tigray; Kenya: Coast Province; Yemen, new for Somaliland.

KEY TO SPECIES GROUPS OF *CRASPEDOPHORUS* HOPE, 1838 (Afrotropical region)

- 1 Terminal labial palpomere (mainly in males) weakly dilated, elongated, more or less kidney-shaped.
..... species groups not included here (*C. brevicollis*, *C. leprieuri*, *C. reflexus*, *C. regalis*, *C. strachani* groups)
- Terminal labial palpomere in males strongly dilated, more triangular, securiform. 2
- 2 Metepisterna rhombiform, approximately as long as wide. *C. nobilis* group nov., *C. benoiti* (Basilewsky, 1953)
- Metepisterna trapeziform, longer than wide, proximally wider than distally 6
- 3 Ventrites not (or slightly) crenulated anteriorly. 4
- Ventrites distinctly or strongly crenulated anteriorly. species groups not included here
- 4 Pronotal base straight, laterally notched (markedly pedunculate) *C. erichsoni* group nov.
- Pronotal base straight or concave, without lateral notches (pedunculation absent or only weakly indicated)
..... species groups not included here

KEY TO SPECIES OF *CRASPEDOPHORUS ERICHSONI* GROUP

- 1 Apterous species with elytra ovoid, strongly convex, humeri rounded, weakly indicated. Elytral striae finely and densely punctate; intervals glossy, very finely punctate. Humeral and apical maculae span at least 3 and usually 4 intervals. 18-21 mm. Tropical continental Africa. *C. ghesquierei* Burgeon, 1930
- Alate species with well developed humeri. 2
- 2 Pronotum weakly transverse, nearly circular, lateral margins widely rounded. Elytral striae densely and coarsely punctate, intervals matte, densely and finely punctate. Humeral and apical maculae both very small, humeral macula covers at most 3 but usually only 2 intervals, apical macula covers at most 4 but usually only 2-3 intervals. 18-20 mm. Madagascar, endemic to Amber Mountains. *C. pungens* (Alluaud, 1895)
- Pronotum of different shape, either more transverse or strongly narrowing forward and lateral margins slanted toward neck. 3
- 3 Pronotum more transverse (length to width ratio 1.35-1.47), front margin markedly wider than neck, nearly as wide as base and parallel with base. Elytra ovoid, weakly convex. Humeral macula composed of 3 equally long blotches covering 6th to 8th intervals. *C. oxygonus* (Chaudoir, 1861)
- Pronotum less transverse (length to width ratio 1.34-1.40), front margin not wider than neck, lateral margins rounded or slanted toward neck. Elytra flat, more parallel-sided and elongated. Humeral macula always covers a different number of intervals or is absent. 4
- 4 Elytra without maculae, entirely black. 16-17 mm. Madagascar. *C. nigrita* (Künckel d’Herculeis, 1891)
- Each elytron with at least a trace of of humeral and preapical yellow macula. 5

- 5 Pronotum more transverse, lateral margins widely rounded toward neck, nearly imperceptible. 17-20 mm. Entire Afrotropical region. *C. erichsoni* (Hope, 1842)
 - Pronotum less transverse, lateral margins slanted or gently rounded toward neck. 6
- 6 Lateral margins of pronotum gently rounded toward neck. Humeral macula usually reduced to 2 small blotches on 6th and 8th intervals, apical macula reduced to one blotch on 6th interval and sometimes several traces in its proximity. 17-19 mm. Central Africa, Angola to Tanzania, DR Congo to southern Mozambique.
C. rikatlensis (Péringuey, 1896)
 - Lateral margins of pronotum steeply slanted toward neck. Both humeral and apical macula usually cover interval IV or V through intervals VIII. 17-20 mm. Entire Afrotropical region. *C. ornatus* (Boheman, 1848)

KEY TO SPECIES OF *CRASPEDOPHORUS NOBILIS* GROUP AND *C. BENOITI*

- 1 Pronotum strongly transverse and convex, nearly semicircular, its base gently concave. Front margins of ventrites distinctly crenulate. Elytra with humeral and apical maculae anteroposteriorly longer than wide and reduced, medially reaching only interval VI. Small species (< 11 mm). DR Congo: Katanga *C. benoitii* (Basilewsky, 1953)
 - Pronotum much less transverse and convex, roughly hexagonal, at least posterolaterally with margins gently leveled or upturned, base straight, never concave, sometimes with lateral emarginations (pedunculate). Front margins of ventrites not crenulate. Elytral maculae medially reaching at least interval IV. 2
- 2 Elytra black, behind midlength of each elytron with an orange macula that covers nearly one quarter of surface. Medium-size species, 16-18 mm. Madagascar *C. volana* (Alluaud, 1895)
 - Elytra differently coloured, each elytron with orange humeral and apical macula. 3
- 3 Pronotum almost hexagonal, maximum width at midlength, its base straight, without lateral emarginations. ... 4
 - Pronotum more triangular, with maximum width behind midlength and base always with at least minor lateral emarginations (pedunculate). Antenna from 4th antennomere on always flattened. 6
- 4 Entire antenna flagellate, central segments (from antennomere IV) not flattened/widened. Small species, 12-13 mm. South Africa: Limpopo. *C. subgratiosus* Basilewsky, 1987
 - Antenna from antennomere IV weakly flattened. Large species, >15 mm. 5
- 5 Pronotum less transverse, its disc more convex, lateral margins more undulate, behind midlength elevated and then posteriorly slanted, hind angles rounded and indistinct. Humeral maculae rectangular, fascia-like. 15-19 mm. Eastern RSA from Cape to Mpumalanga. *C. nobilis* (Dejean, 1826)
 - Pronotum more transverse and flattened, lateral margins without perceptible undulation except just before obtuse but distinct hind angles. Humeral maculae narrowing anteriorly, isosceles-shaped. 19-21 mm. RSA: KwaZulu Natal, lower flow of Umkomazi River. *C. opulentus* (Péringuey, 1898)
- 6 Shape wider and more convex, elytra more ovoid, each elytron with two rectangular to quadrate yellow maculae. Larger species, 15-20 mm. Eastern RSA, southern Mozambique Swaziland, Botswana.
 *C. bonvouloiri* (Chaudoir, 1837)
 - Shape more elongate, elytra more parallel-sided, each elytron with two rectangular maculae (fasciae) or two round maculae that are never square. Smaller species, 9.8-12.5 mm. RSA: KwaZulu Natal, Mpumalanga to southern Mozambique. *C. gratiosus* (Chaudoir, 1879)

DISCUSSION

The species of the newly defined *C. erichsoni* group are at the first glance distinguishable from the other Afrotropical species of *Craspedophorus* by the characteristic pronotal base with pronounced pedunculation. The group contains species well distinguished also by the

characteristic body structure or elytral colouration, as well as mutually very similar specimens in complexes of taxa of differing species validity. Taxa that may be difficult to determine are apart from Madagascar present in the entire Afrotropical Region. They belong in the *erichsoni* / *ornatus* / *difficilis* / *rikatlensis* complex and differ from species with similarly coloured elytra either in statue - always have a) pronounced humeri because they are alate, in contrast to *C. ghesquierei* Burgeon, 1930, and b) flatter and more parallel-sided elytra, in contrast to *C. oxygonus* (Chaudoir, 1861) and the Madagascan endemite *C. pungens* (Alluaud, 1895). Or they can be distinguished from species with similar statue on the elytral colouration: the maculae are always yellowish red, in contrast to another Madagascan endemite, *C. nigrita* (Künckel d'Herculeis, 1891). Within the said aforementioned complex, basic distinguishing character is the shape of the pronotum. This character has not been accepted by some authors (Basilewsky 1987: 200) and overemphasized by others: e.g. for instance Jeannel (1949: 855) erected subgenera (*Acanthocosmus* and *Brachyocosmus*) solely mainly on this basis. In accord with Basilewsky's opinion (1953: 171), I do not regard the pronotal character justifying subgeneric divisions and apply consider the differences in pronotal shape on the level of species groups and species. In the *erichsoni* / *ornatus* / *difficilis* / *rikatlensis* complex there are two types of pronotal shape, both with pedunculate base and the front margin as wide as the head and neck. One is more semicircular with broadly rounded front angles (Fig. 35a, b, Fig. 36), and the second is similar but in straight narrowing forward and the front angles slanted instead of broadly rounded (Fig. 35c, d, Fig. 37). Populations with both types of pronotum are present from the far west Africa to the Zambezi flow, whereas the region south of there is occupied by populations with the second type of pronotal structure only (Fig. 80). Both types were described early as separate species and the species status has never been doubted, whereas subsequent descriptions based on other differences have not been accepted. The oldest species of the complex is *C. erichsoni* Hope, 1842 from "Circa Palmas", today interpreted as encompassing the area between southeastern Liberia and southern Ivory Coast (Häckel 2017b: 45). The lectotype (Plate 1, Fig. 1), most likely a female, was selected at OUMNH by an unknown curator and given the accession number 91 1/3. The OUMNH paralectotypes are two specimens, one of them (maybe a male) probably from the same locality as the lectotype (Plate 1, Fig. 2) is numbered 91 2/3, and the second (probably a female) is numbered 91 3/3, but in contrast to the other two is labelled "Guinea". The same label bears can be seen under also Basilewsky's comparative specimen at MRAC, which is a female (Plate 1, Fig.1). All these specimens are identified as *C. erichsoni* Hope, 1842). They indeed are conspecific, and this species occurs from western Gambia to Zambia (Map A in Fig. 80). Specimens from south-central and eastern Africa are notably wider, but have the same pronotal shape (Figs. 35 a, b). The pronotal transversity and statue of the southeastern populations of *C. erichsoni* approaches *C. oxygonus* (Fig. 35f) that occurs more to the north and west, i.e. sympatrically with the nominotypical (west- and central African) populations of *C. erichsoni*. The greater pronotal transversity is best apparent in specimens from Zambia (Plate 1, Fig. 8). The presence of a similar specimen in the "Zambéze" region (in my opinion somewhere in Zambia or Mozambique) led Chaudoir (1879: 118) to erecting *C. difficilis*, based on a female. His statement "I have long hesitated to separate this species from [C.]

erichsoni...” indicates a persisting doubt about the validity of the new taxon. Alluaud (1935: 183) and at first also Basilewsky (1962: 172, 1976: 715) accepted the validity of *C. difficilis* and labeled as such all populations with semicircular pronotum inhabiting the southeastern Belgian Congo, south of there, and east of the Rift. Studies of specimens from the Congo River flow and west of the Rift (Map A in Fig. 80) show a gradual transition from the west African to Zambian, Katanga and Tanzanian populations. The two taxa are in my opinion conspecific and minor morphometric differences between them are best interpreted as subspecific. Therefore, I consider *C. difficilis* as a subspecies of *C. erichsoni* and regard Basilewsky’s (1987: 200) synonymization of *C. difficilis* with another species (1987: 200), done without any comment, as erroneous. The form with a narrower pronotum is virtually sympatric with *C. erichsoni* but penetrates much farther south into KwaZulu Natal in RSA, and according to the latest data also to the northwesterly into southern Ethiopia. Regarding it as a purely southern or possibly an eastern African species is in my opinion incorrect. The species is of an old vintage. Since Boheman (1848: 124) labeled his type of the *C. ornatus* species as “Caffraria interior”, it is likely that the specimen was collected during a trip from the Natal coast into the interior, probably in the northeastern RSA. I have not seen the type, but MNHN, MRAC and other large museums house ample topotypic and comparative material. I studied specimens determined by Chaudoir (a male from Natal, Plate 2, Fig. 11), Bates (a female in the Janson collection, Plate 2, Fig. 12) and/or Basilewsky (comparative type, a female from Ungani in today’s Ruvuma region, Tanzania, Plate 2, Fig. 14). Study of specimens in a number of collections shows that *C. ornatus* penetrates as far west as *C. erichsoni* (see maps A and B in Fig. 79), but I have not seen at any specimen of *C. ornatus* correctly determined label in any material from west Africa, Cameroon or Central African Republic. West African specimens of *C. ornatus* remind of the elytral colouration of nominotypical *C. erichsoni*, and if the pronotal shape is not examined the two species may be easily confused. Several differences can be found within geographic distributions of the two species. In populations of *C. erichsoni* elytral maculae tend to become larger, more elongate, from west to south, but their position and shape are fairly stable and subspecific differences are more-or-less confined to the statue and pronotal transversity (Plate Figs. 1-8). In *C. ornatus* the differences in colouration are apparent at the first glance. Whereas southern and southeastern populations have the maculae quite anteroposteriorly reduced (to transverse fasciae with straight front margins, Figs. 12-15), west-central and western specimens have the maculae more extensive and circular, with front and hind margins equally serrate (Plate 2, Figs. 18-23). In the northeast there are not known specimens transitional between the two forms to be found (South Sudan, Plate 2, Figs. 16, 17, and according to new data also southern Ethiopia). All stated differences were previously regarded as indicating subspecies; therefore if *C. erichsoni difficilis* (Chaudoir, 1879) is treated as a subspecies, also in case of *C. ornatus* a name should be found for the west African populations. In light of geographical data, I have decided to name the subspecies *C. occidentalis* ssp. nov. The last taxon of the complex, *Craspedophorus rikatlensis* (Péringuey, 1896), is difficult to resolve in a doubtless way. Péringuey named it after the locality *Eudema rikatlae* and as other authors, myself included, characterized the species (1896: 479) primarily by the pronotal shape (Fig. 35d), which appeared to him transitional between the types “ornatus” (Fig. 35c) and “oxygonus”

(Fig. 35f). The shape of the elytra, transitional between *C. ornatus* and *C. (erichsoni) difficilis*, places it in the same complex of taxa. Peculiar in this species is the reduction of orange elytral maculae, most often to two short lines, one on the 6th and the second on the 8th interval (Plate 3, Figs. 24, 25). The differences in appearance between *C. ornatus ornatus* and *C. rikatlensis* are subtle and consist mainly of the elytral colouration. These differences cannot indicate a subspecies of the same species because the distribution of the two taxa is practically identical (see maps B and C in Fig. 79). The aedeagi of the two forms are similar to those of all the others in taxa of the group (Plate 4, Figs. 40, 42), and it is difficult to accept the possibility that a number of populations occurring sympatrically in many different locations would result in such two relatively stable variants. Therefore, pending results of DNA analysis, I maintain *C. rikatlensis* (Péringuey, 1896) as a species.

Apart from this said complex of taxa, in the *C. erichsoni* group there are also species similar to those discussed above in e.g. elytral colouration, but at a closer examination these are distinct in other characters. For instance specimens with slanted humeri collected in central Africa, DR Congo provinces Équateur, Kasai-Occidental and Orientale (Tshopo) are apterous. One apterous population is also known from west Africa (Mt. Nimba, Guinea, Plate 3, Fig. 31). In this species the elytral colouration is somewhat variable namely in the antero-posterior extent of the yellow maculae, which in females are longer and overall larger (Plate 3, Figs. 30, 32). The species was based by Burgeon on a female from Befale in Lulonga region, Équateur Province of DR Congo, and named after the collector *C. ghesquierei* Burgeon, 1930. West African populations differ from those in DR Congo only within the limits of intraspecific variation and in my opinion do not require any formal descriptions and names. Two other species are alate fully and resemble those in the *erichsoni / ornatus / difficilis / rikatlensis* complex less closely, e.g. have smaller maculae and more convex body structure. The reduced maculae readily distinguish them, but they differ also in the pronotal shape. A straight front margin of the pronotum and wider maculae are present in *C. oxygonus* (Chaudoir, 1861), that inhabits western and central Africa (Plate 1, Figs. 9-11). Semicircular pronotum and markedly reduced elytral maculae characterize the endemic northern Madagascan *C. pungens* (Alluaud, 1895), which is confined only to the montane forests of Amber Mountains, at the north of the island (Plate 3, Figs. 28-30). The last species of the *C. erichsoni* group is another endemite of Madagascan forests, *C. nigrita* (Künckel d'Herculais, 1891) known from the central part of the island. Apart from the size and distribution it does not morphologically differ very much from the continental species of the complex, but cannot be confused with them because it is entirely black, without any trace of elytral maculation (Plate 1, Figs. 26, 27).

Madagascar also houses another species of *Craspedophorus*, with a very convex body structure and a rhombic metepisternum, characters that place it in the *C. nobilis* group (nov.). Two species with rhombic metepisterna have been described from Madagascar, both from the south, but one of them lacks closer locality data. Both taxa have a characteristic colouration of the elytra, which distinguishes them from all other species of the genus, especially from all continental species of the *C. nobilis* group. Similarly coloured specimens with maculae reminding of a full moon have been collected in the southern and southwestern coastal sandy belt and in similar northeastern environment of the island. The first taxon was

described by Alluaud in 1895 and named after the Malagasy expression for the full moon, “volana“. A specimen with slightly different dimensions of the pronotum and shape of the elytral macula was described by Jeannel in 1949 and again named in reference to the Moon *C. bilunifer*. Study of more specimens in museum collections and in the field brought me to the realisation that the described differences between the two taxa actually correspond to differences between males and females. Males have a slightly more transverse pronotum and antero-posteriorly longer macula (Plate 6, Figs. 62, 64), whereas females in of the same populations have the macula more transverse and antero-posteriorly shorter (Plate 6, Fig. 65). Jeannel described the species from more specimens, all with dark yellow maculae, and his type is a male (Plate 6, Fig. 62). He had only one MNHN specimen of *C. volana* (Alluaud, 1895) for comparison, the type female which has unusually light yellow maculae (Plate 6, Fig. 65). The shade of yellow may be due to the age of the specimen and mode of conservation, but the lunar shape of the macula is the same in Alluaud’s type and in females from other populations (Plate 6, Fig. 63). I regard the two taxa as conspecific and synonymize *C. bilunifer* Jeannel, 1949 with *C. volana* (Alluaud, 1895).

A number of similar taxa with rhombic metepisterna and two orange maculae on each elytron have been described from the continent. It is interesting that all continental species of the *C. nobilis* group inhabit a relatively small region of southern Africa in the southernmost part of the Rift and its vicinity (see Figs. 80, 81). The earliest described taxon is *C. nobilis* (Dejean, 1826), which has the most extensive southern distribution reaching eastern Cape. The lectotype was designated and redescribed by Chaudoir (1879: 122, Plate 5, Fig. 47) and is labeled “Cape of Good Hope“. The northernmost distribution has the second oldest larger species, *C. bonvouloirii* (Chaudoir, 1861), which is sympatric with the preceding species over a vast territory but reaches into Botswana, and can be easily differentiated from the similar *C. nobilis* in the pronotal shape and more convex and shorter statue. Both species are among the larger in the group, the largest being *C. opulentus* (Péringuey, 1898) based on three specimens from a locality in KwaZulu Natal (Plate 5, Figs. 50, 51). Since its description it was known only from the type series, and it seemed that this apparently stenotopic species has by now become extinct. But unexpectedly during the final corrections of this article another specimen recently collected was found in KwaZulu Natal, RSA. Two other, smaller species of the *C. nobilis* group are also inadequately known. Of them more frequently collected is *C. gratiosus* (Chaudoir, 1879), which could be a montane form of *C. bonvouloirii* if it would not be for a rather different aedeagus (Plate 8, Figs. 72, 73, 75). A somewhat larger *C. subgratiosus* Basilewsky, 1987 reminds of smaller specimens of *C. nobilis*, but has a flagellate antenna without broadened segments (Figs. 69-71); the species is known by only two males relatively recently described males collected at the same locality. The differences between populations of *C. gratiosus* from a great part of the distribution area (KwaZulu Natal, Mpumalanga, Maputo) and the montane population from Ogalweni Forest and Cathedral Peak in Drakensberg Mountains are so noticeable that I have decided to describe the montane population as a new subspecies, *C. gratiosus drakensis*. It is possible that with more material this montane population may become a candidate for a new species, which needs to be tested by a DNA analysis. The last description by Basilewsky also indicates that new species can be expected in the region of the Rift, parts of which remain to be adequately explored.

The last species and group treated in this part is *C. benoiti* species group (nov.) consisting of a single species *C. benoiti* (Basilewsky, 1953).

CATALOGUE AND DISTRIBUTION OF SPECIES

Craspedophorus Hope, 1838

a) *C. reflexus* species group Häckel, 2016 (7 species)

- C. bonnyi* Bates, 1890. Congo (Brazzaville), DR Congo: Orientale, Nord-Kivu Provinces; Gabon.
- C. buettneri* Kolbe, 1889. DR Congo: Bandundu Province.
- C. carbonarius* (Harold, 1879), as *Eudema*. Ethiopia: Oromiya; Kenya: Coast Province; Tanzania: Morogoro, Zanzibar Isl.
- C. impictus* (Boheman, 1848), as *Panagaeus*. Angola: Lunda Norte Province; DR Congo: Kasai-Occidental, Katanga, Nord-Kivu, Sud-Kivu Provinces; Malawi; Mosambique: Maputo Province; South Africa: Eastern Cape, Gauteng, Kwa-Zulu Natal, Limpopo, Mpumalanga, North West, Western Cape Provinces; Tanzania: Rukwa; Uganda; Zambia; Zimbabwe.
- C. reflexus reflexus* (Fabricius, 1781), as *Carabus*. Cameroon: Northwest Province; Ghana, Guinea, Guinea-Bissau, Ivory Coast, Liberia, Nigeria: Oyo; Sierra Leone.
- C. reflexus crampeli* (Alluaud 1915) as *Eudema*. Cameroon: Central Province; Central African Republic.
- C. reflexus megamacula* Häckel, 2016. Burkina Faso, Gambia, Senegal.
- C. reflexus rugatus* Häckel, 2017a. Cameroon: Central, Extreme North, West Provinces.
- C. reflexus uelensis* Burgeon, 1930. DR Congo: Orientale Province; Ethiopia: Gambela, Oromiya; Kenya, South Sudan.
- C. ruvumanus* Häckel, 2016. Tanzania: Iringa, Ruvuma, Singida, Tanga.
- C. stanleyi* Alluaud, 1930. Congo (Brazzaville), DR Congo: Équateur, Orientale Provinces; Tanzania: Iringa, Mbeya; Uganda.

b) *C. leprieuri* species group Häckel, 2017a (4 species)

- C. cameronus* Bates, 1886. Cameroon, DR Congo: Orientale, Sud-Kivu Provinces; Equatorial Guinea, Gabon, Guinea, Nigeria: Cross River State.
- C. leprieuri leprieuri* (Laporte de Castelnau, 1835), as *Panagaeus*. Cameroon, Guinea, Guinea-Bissau, Ivory Coast, Senegal, Togo.
- C. leprieuri claspilus* (Alluaud 1915), as *Eudema*. Northern, central Cameroon, Central Africa, northern Congo, northeastern DR Congo: northern Orientale Province.
- C. leprieuri guineensis* Basilewsky, 1987. Coast of Guinea-Bissau and Senegal.
- C. leprieuri peringueyi* Csiki, 1929. Mozambique: Niassa Province; Tanzania: Morogoro, Ruvuma; eastern Zambia, eastern Zimbabwe.

- C. lepriouri zambianus* Häckel, 2017a. Angola: Lunda Norte Province; Burundi, Congo, DR Congo: Bandundu, Bas-Congo, Kasai-Occidental, Katanga, Kinshasa, Sud-Kivu Provinces; Rwanda, Zambia.
- C. merus merus* Péringuey, 1904. DR Congo: Kasai-Occidental, Kasai-Oriental, Katanga, Maniema, Orientale Provinces; Tanzania: Iringa, Ruvuma; Zimbabwe.
- C. merus lundanus* Häckel, 2017a. Angola: Lunda Norte Province; Democratic Congo: Kasai-Oriental, Katanga Provinces.
- C. merus pseudofestivus* Burgeon, 1930. Burundi, DR Congo: Katanga, Orientale, Sud-Kivu Provinces; Rwanda, Tanzania: Kagera; Uganda.
- C. pretiosus* (Chaudoir, 1837), as *Panagaeus*. South Africa: KwaZulu-Natal, Western Cape Provinces.

c) *C. regalis* species group Häckel, 2017a (4 species)

- C. bouvieri bouvieri* Rousseau, 1905. Central Cameroon, Central African Republic, Congo.
- C. bouvieri iturianus* Basilewsky, 1956. DR Congo: Orientale Province.
- C. imperialis imperialis* Burgeon, 1930. Benin, Burkina Faso, Ghana, Ivory Coast, Togo.
- C. imperialis dux* Basilewsky, 1951. Northern Cameroon.
- C. regalis regalis* (Gory, 1833), as *Panagaeus*. Northern, central Guinea, Guinea-Bissau, Senegal.
- C. regalis sayersii* (Hope, 1842), as *Panagaeus*. Ghana, south-eastern Guinea, Ivory Coast, Liberia, Togo.
- C. unicolor* Chaudoir, 1879. Angola, Lunda Norte Province; DR Congo: Katanga, Maniema Provinces; Malawi, Mozambique: Sofala Province; Tanzania: Kigoma, Lindi, Morogoro, Ruvuma, Singida, Tabora, Zanzibar Island; Zambia, Zimbabwe.

d) *C. strachani* species group Häckel, 2017b (23 species)

da) *C. strachani* subgroup

- C. chevalieri* (Alluaud, 1915), as *Eudema*. Central Cameroon, Central African Republic, Gabon.
- C. congoanus* Kolbe, 1889. Central African Republic, DR Congo: Équateur, Kasai-Occidental, Kasai-Oriental, Maniema, Orientale Provinces.
- C. cuneatus cuneatus* (Alluaud, 1915), as *Eudema*. Central Cameroon, Central African Republic.
- C. cuneatus paromius* Basilewsky, 1987. DR Congo: Orientale Province.
- C. cuneatus rotundatus* Häckel, 2017b. Central African Republic.
- C. dicranothorax* (Alluaud, 1915), as *Eudema*. Congo (Brazzaville), Central African Republic, DR Congo: Bas-Congo; Gabon.
- C. dicranulothorax* Häckel, 2017b. Southwestern Cameroon.
- C. glaber* Bates, 1886. Central, southwestern Cameroon; Gabon, southeastern Nigeria: Cross River State.

- C. klugii* (Hope, 1842), as *Panagaeus*. Southern Ivory Coast, southeastern Liberia.
- C. lafertei* Murray, 1857. Southeastern Nigeria: Cross River State.
- C. latemaculatus* Alluaud, 1930. Central Cameroon.
- C. latipennis* Burgeon, 1930. Central, southwestern Cameroon, southeastern Nigeria: Cross River State.
- C. lemariiei* Häckel, 2017b. Gabon.
- C. phenacoides* Häckel, 2017b. Central, eastern, littoral Cameroon.
- C. phenax* Basilewsky, 1987. Central, western, southwestern Cameroon; Democratic Congo: Bandundu, Équateur, Kasai-Oriental Provinces.
- C. ruficroides ruficroides* Häckel, 2017b. Guinea, Ivory Coast.
- C. ruficroides thomsoni* Häckel, 2017b. Cameroon, Central Africa, Gabon.
- C. ruficrus* (Chaudoir, 1861), as *Epicosmus*. Gabon, Guinea Equatorial.
- C. strachani strachani* (Hope, 1842), as *Panagaeus*. Guinea, Ivory Coast, Liberia, Sierra Leone.
- C. strachani bamendanus* Häckel, 2017b. Northwestern Cameroon.
- C. strachani grossus* (Hope, 1842), as *Panagaeus*. Benin, Ghana, Ivory Coast, Nigeria: Cross River State, Togo.
- C. strachani monardi* Basilewsky, 1951. Northern Cameroon.
- C. tetrastigma tetrastigma* (Chaudoir, 1850). Guinea, Guinea-Bissau, Senegal.
- C. tetrastigma milzi* Duvivier, 1891. Central African Republic, DR Congo: Équateur, Orientale Provinces.
- C. tetrastigma morettoii* Häckel, 2017b. Ivory Coast, Nigeria: Kaduna State.
- C. tetrastigma* ssp. DR Congo: Mai-Ndombe (Bandundu) Province.

db) *C. muata* subgroup

- C. hanangensis* **sp. nov.** Tanzania: Manyara.
- C. kaboboanus* Basilewsky, 1987. DR Congo: Katanga Province; Tanzania: Kigoma.
- C. magnicollis magnicollis* (Quedenfeldt, 1883), as *Eudema*. Angola: Huila, Malanje Provinces; DR Congo: Katanga Province.
- C. magnicollis discrepans* Basilewsky, 1987. DR Congo: Kasai-Occidental, Katanga Provinces; northern Zambia.
- C. magnicollis inquilinus* Basilewsky, 1987. DR Congo: Bas-Congo Province.
- C. montivagus* Basilewsky, 1976. Tanzania: Morogoro.
- C. muata* (Harold, 1879), as *Eudema*. Angola: Cabinda, Cuanza Sul, Huila, Malanje Provinces.
- C. simplicicollis* Burgeon, 1930. Malawi, northern Zambia.

e) *C. brevicollis* group Häckel, 2017b (3 species)

- C. abnormis* Bates, 1886. Angola: Benguela; DR Congo: Katanga; Kenya: North-eastern Province; Malawi, South Africa: KwaZulu-Natal, Limpopo; Tanzania: Dodoma, Iringa, Mbeya, Shinyanga; Zambia, Zimbabwe.
- C. brevicollis brevicollis* (Dejean, 1831), as *Panagaeus*. Northern Benin, Burkina Faso, Gambia, Guinea, Guinea-Bissau, Mali, Senegal.
- C. brevicollis beninensis* Häckel, 2017b. Southern Benin
- C. latifrons* (Chaudoir, 1876), as *Eudema*. Ethiopia: Oromiya, S.N.N.P.R., Tigray; Kenya: Coast Province; Somaliland, Yemen.

g) *C. nobilis* group nov. (6 species)

- C. bonvouloirii* (Chaudoir, 1861), as *Epicosmus*. Botswana, Mozambique: Maputo Province; South Africa: KwaZulu-Natal, Limpopo, Mpumalanga; Swaziland.
- C. gratosus gratosus* (Chaudoir, 1879), as *Epicosmus*. Mozambique: Maputo Province; South Africa: KwaZulu-Natal, Northwest, Mpumalanga.
- C. gratosus drakensis* **ssp. nov.** South Africa: KwaZulu-Natal, Drakensberg Mts.
- C. nobilis* (Dejean, 1826), as *Panagaeus*. South Africa: Eastern, Western Cape, KwaZulu-Natal, Mpumalanga.
- C. opulentus* (Péringuey, 1898), as *Eudema*. South Africa: KwaZulu-Natal.
- C. subgratosus* Basilewsky, 1987. South Africa: Limpopo.
- C. volana* (Alluaud, 1895), as *Eudema*. Eastern, southern Madagascar.

h) *C. benoiti* group nov. (1 species)

- h) *C. benoiti* (Basilewsky, 1953), as *Epigraphus*. DR Congo: Katanga, northwestern Zambia.

i) *C. erichsoni* group nov. (7 species)

- C. erichsoni erichsoni* (Hope, 1842), as *Panagaeus*. Central, northwestern, southwestern Cameroon, Central Africa, Ghana, Ivory Coast, Nigeria: Nasarawa, Taraba States.
- C. erichsoni difficilis* (Chaudoir, 1879), stat. nov., as *Epicosmus*. DR Congo: Katanga Province, Tanzania: Iringa, Morogoro, Mtwara, Tanga; northern, northwestern Zambia.
- C. ghesquierei* Burgeon, 1930. Democratic Congo: Équateur, Kasai-Oriental Province.
- C. nigrita* (Künckel d'Hercule, 1891), as *Eudema*. Central Madagascar.
- C. ornatus ornatus* (Boheman, 1848), as *Panagaeus*. Angola: Benguela Province; DR Congo: Katanga Province; South Africa: Eastern Cape, KwaZulu-Natal; Ethiopia: Oromiya; South Sudan, Tanzania: Pwani, Ruvuma; northwestern Zambia.
- C. ornatus occidentalis* **ssp. nov.** Western Cameroon, Central Africa, Guinea.
- C. oxygenus* (Chauoir, 1861), as *Epicosmus*. Northwestern, southwestern, western Cameroon, DR Congo: Orientale (Tshopo) Province; Gabon.

C. pungens (Alluaud, 1895), as *Eudema*. Northern Madagascar: Amber Mts.
C. rikatlensis (Péringuey, 1896), as *Eudema*. DR Congo: Katanga; Mozambique, central,
 eastern Zambia.

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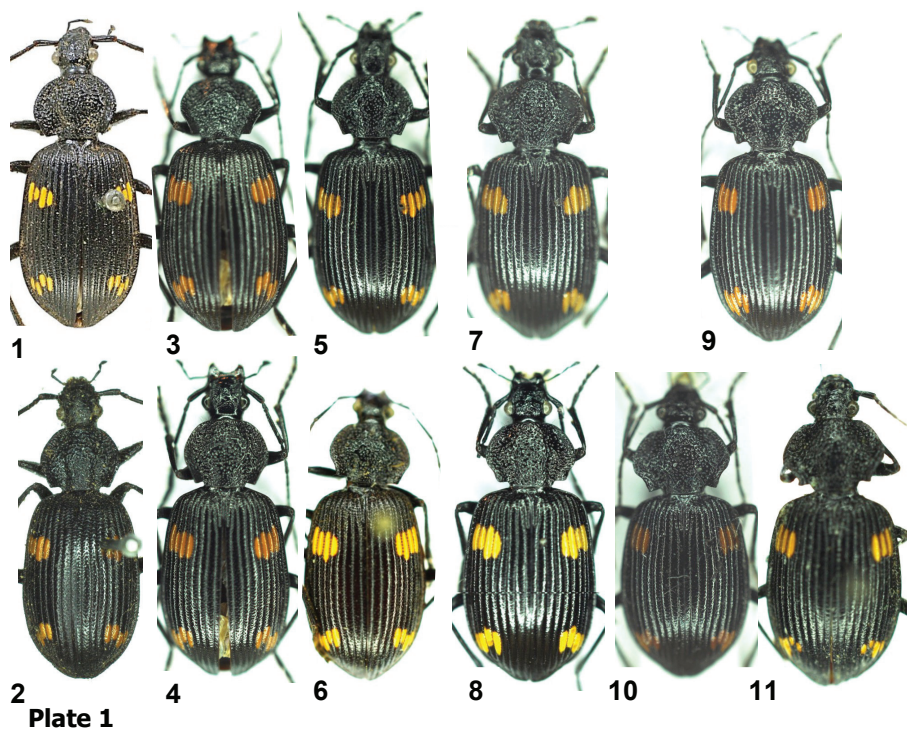


Plate 1. Figs 1-11. *Craspedophorus erichsoni* group I. (Scale bar: 10 mm): 1- *C. erichsoni erichsoni* (Hope, 1842): habitus of lectotype (♀), dorsal aspect; 2- *C. erichsoni erichsoni* (Hope, 1842): habitus of paralectotype (♂) from “Circa Palmas” (= Liberia/Ivory Coast), dorsal aspect; 3- *C. erichsoni erichsoni* (Hope, 1842): habitus of ♂ from Ivory Coast, dorsal aspect; 4- *C. erichsoni erichsoni* (Hope, 1842): habitus of ♀ from Ivory Coast, dorsal aspect; 5- *C. erichsoni erichsoni* (Hope, 1842): habitus of ♀ from Cameroon, Centre, dorsal aspect; 6- *C. erichsoni erichsoni* (Hope, 1842): habitus of ♂ from Guinea (comparative type of Basilewsky’s collection in MRAC 1954); 7- *C. erichsoni difficilis* (Chaudoir, 1879): habitus of ♂ from DR Congo, Katanga, dorsal aspect; 8- *C. erichsoni difficilis* (Chaudoir, 1879): habitus of ♀ from Zambia, Northwest, dorsal aspect; 9- *C. oxygonus* (Chaudoir, 1861): habitus of ♂ from Gabon, dorsal aspect; 10- *C. oxygonus* (Chaudoir, 1861): habitus of ♀ from Cameroon, Southwest, dorsal aspect; 11- *C. oxygonus* (Chaudoir, 1861): habitus of ♀ from Gabon (comparative type of Basilewsky’s collection in MRAC 1954), dorsal aspect.

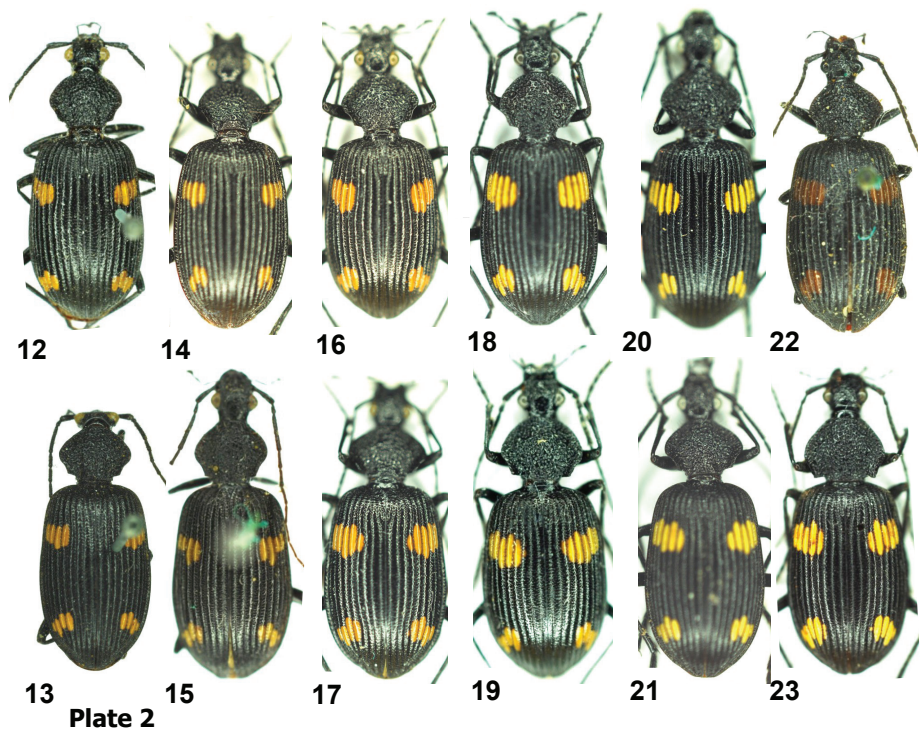


Plate 2. Figs 12-23. *Craspedophorus erichsoni* group II. (Scale bar: 10 mm): 12- *C. ornatus ornatus* (Boheman, 1848): habitus of ♂ from South Africa, KwaZulu Natal (det. Bates, MNHN), dorsal aspect; 13- *C. ornatus ornatus* (Boheman, 1848): habitus of ♀, (“cotype” of Bates in MNHN), dorsal aspect; 14- *C. ornatus ornatus* (Boheman, 1848): habitus of ♂ from Zambia, Northwestern, dorsal aspect; 15- *C. ornatus ornatus* (Boheman, 1848): habitus of ♀ from Tanzania, Ruvuma (comparative type of Basilewsky’s collection in MRAC 1954), dorsal aspect; 16- *C. ornatus ornatus* (Boheman, 1848) trans ad *C. o. occidentalis* ssp. nov.: habitus of ♂ from South Sudan, dorsal aspect; 17- *C. ornatus ornatus* (Boheman, 1848) trans ad *C. o. occidentalis* ssp. nov.: habitus of ♂ from South Sudan, dorsal aspect; 18- *C. o. occidentalis* ssp. nov.: habitus of HT (♂), dorsal aspect; 19- *C. o. occidentalis* ssp. nov.: habitus of PT (♀) from Central Africa, dorsal aspect; 20- *C. o. occidentalis* ssp. nov.: habitus of PT (♂) from Cameroon, West, dorsal aspect; 21- *C. o. occidentalis* ssp. nov.: habitus of PT (♀) from Cameroon, West, dorsal aspect; 22- *C. o. occidentalis* ssp. nov.: habitus of PT (♂) from Benin (MNHN), dorsal aspect; 23- *C. o. occidentalis* ssp. nov.: habitus of PT (♀) from Guinea, dorsal aspect.

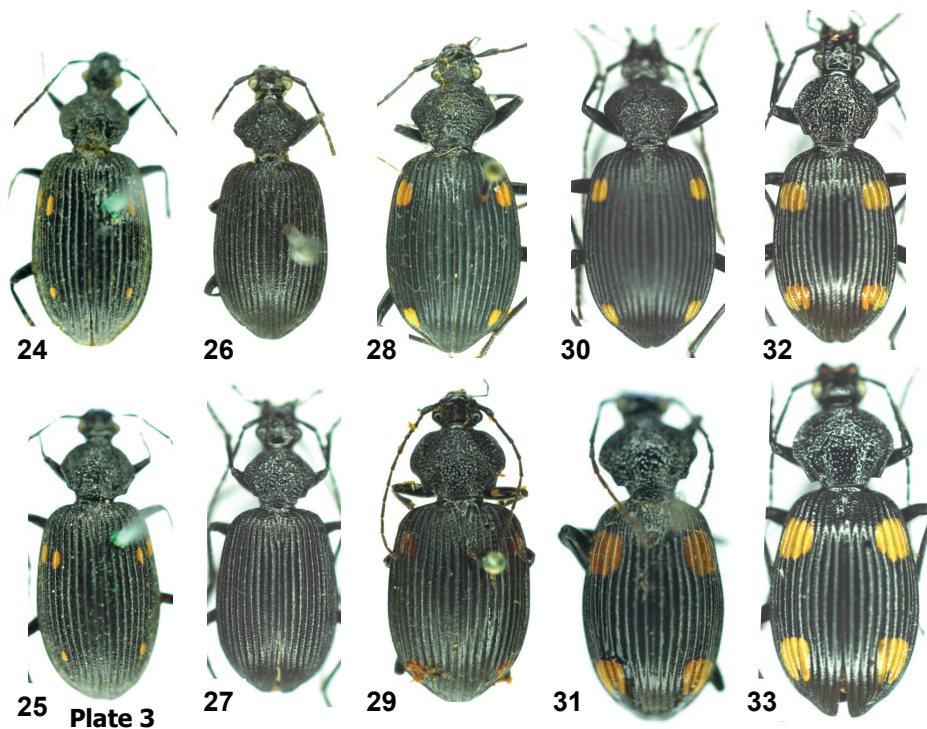


Plate 3. Figs 24-33. *Craspedophorus erichsoni* group III. (Scale bar: 10 mm): 24- *C. rikatlensis* (Péringuey, 1896): habitus of HT (♂), dorsal aspect; 25- *C. rikatlensis* (Péringuey, 1896): habitus of PT (♀) from Mosambique, Maputo, dorsal aspect; 26- *C. nigrita* (Künckel d'Herculais, 1891): habitus of HT (♂), dorsal aspect; 27- *C. nigrita* (Künckel d'Herculais, 1891): habitus of ♀ from Madagascar, Toamasina, dorsal aspect; 28- *C. pungens* (Alluaud, 1895): habitus of ♂ from Madagascar, Antsiranana, dorsal aspect; 29- *C. pungens* (Alluaud, 1895): habitus of HT (♀), dorsal aspect; 30- *C. pungens* (Alluaud, 1895): habitus of ♂ from Madagascar, Antsiranana; 31- *C. ghesquierei* Burgeon, 1930: habitus of HT (♀), dorsal aspect; 32- *C. ghesquierei* Burgeon, 1930: habitus of ♂ from Guinea, dorsal aspect; 33- *C. ghesquierei* Burgeon, 1930: habitus of ♀ from DR Congo, Kasai-Occidental, dorsal aspect.

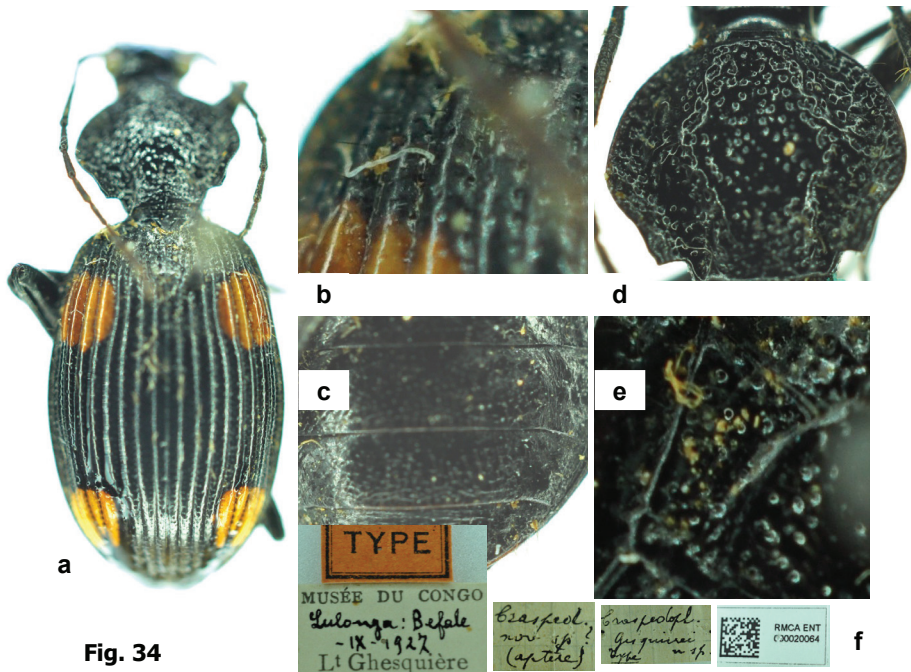


Fig. 34

Fig. 34. *C. ghesquierei* Burgeon, 1930: a- habitus of HT (♀), dorsal aspect; b- habitus of HT (♀), sculpture of elytral humerus, dorsal aspect; c- habitus of HT (♀), ventrites, ventral aspect; d- habitus of HT (♀), pronotum, dorsal aspect, e- habitus of HT (♀), right metepisternum, oblique ventral aspect, f- labels.

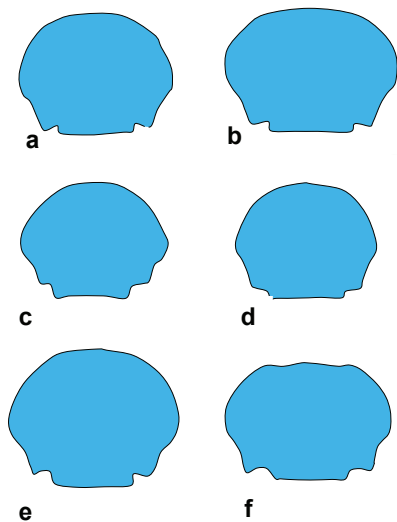


Fig. 35

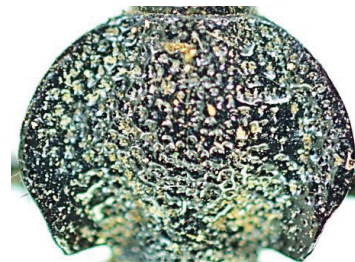


Fig. 36

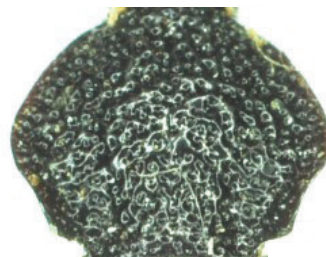


Fig. 37

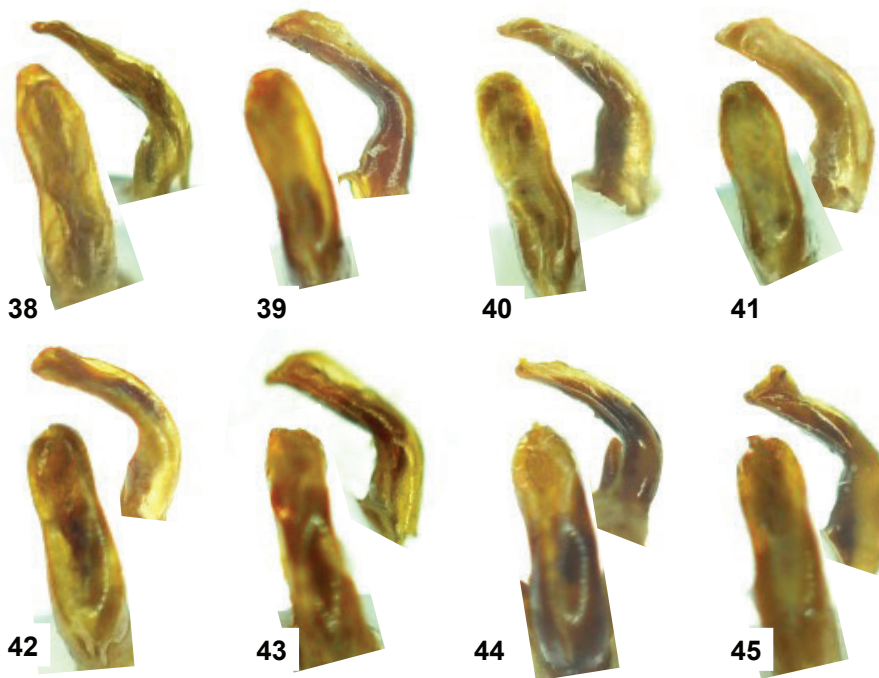


Plate 4

Plate 4. Figs 38-45. *Craspedophorus erichsoni* group. Aedeagus in frontal and right lateral aspects: 38- *C. erichsoni erichsoni* (Hope, 1842) from Ivory Coast; 39- *C. erichsoni difficilis* (Chaudoir, 1879) from DR Congo, Katanga; 40- *C. ornatus ornatus* (Boheman, 1848) from Angola, Benguela; 41- *C. ornatus occidentalis* ssp. nov., HT; 42- *C. rikatlensis* (Péringuey, 1896) from Zambia, Central; 43- *C. ghesquierei* Burgeon, 1930 from Guinea; 44- *C. pungens* (Alluaud, 1895) from Madagascar, Antsiranana; 45- *C. oxygenus* (Chaudoir, 1861) from Gabon.

←
 Fig. 35. *C. erichsoni* group. Design of pronotum, dorsal aspect: a- *C. erichsoni erichsoni* (Hope, 1842); b- *C. erichsoni difficilis* (Chaudoir, 1879); c)- *C. ornatus* (Boheman, 1848); d- *C. rikatlensis* (Péringuey, 1896); e- *C. ghesquierei* Burgeon, 1930; f- *C. oxygenus* (Chaudoir, 1861).

Fig. 36. *C. erichsoni erichsoni* (Hope, 1842): habitus lectotype (♀): pronotum, dorsal aspect.

Fig. 37. *C. ornatus ornatus* (Boheman, 1848): habitus of male from Natal (det. Bates, MNHN): pronotum, dorsal aspect.

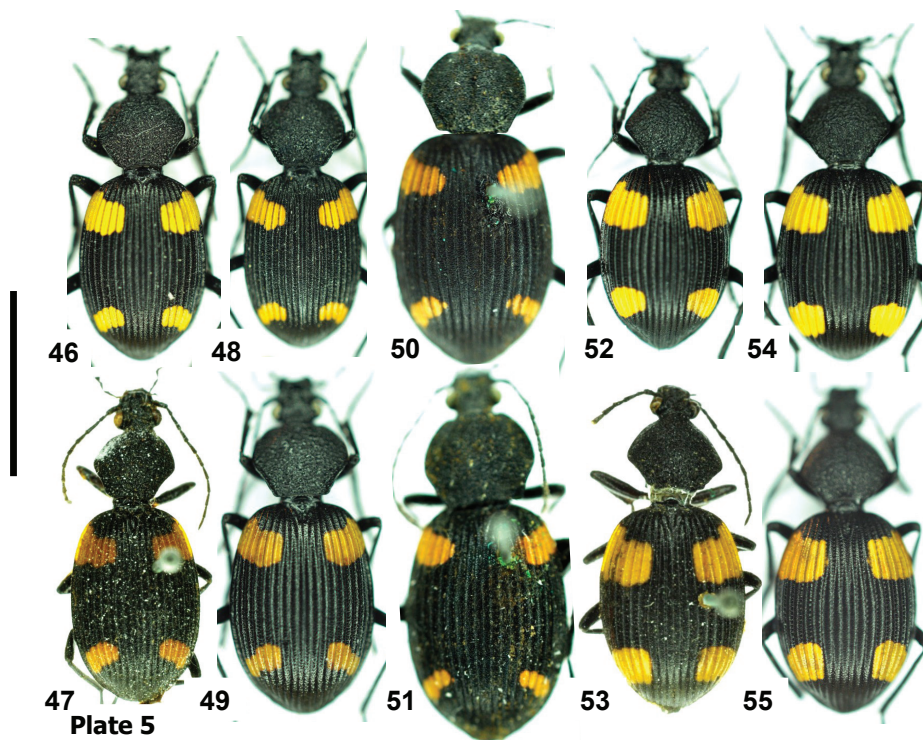


Plate 5. Figs 46-55. *Craspedophorus nobilis* group I. (Scale bar: 10 mm): 46- *C. nobilis* (Dejean, 1829): habitus of ♂ form South Africa, Eastern Cape, dorsal aspect; 47- *C. nobilis* (Dejean, 1829) habitus of lectotype (♂, established by Chaudoir 1861), dorsal aspect; 48- *C. nobilis* (Dejean, 1829): habitus of ♂ from South Africa, KwaZulu Natal, dorsal aspect; 49- *C. nobilis* (Dejean, 1829): habitus of ♀ from South Africa, Mpumalanga, dorsal aspect; 50- *C. opulentus* (Péringuey, 1898): habitus of HT (♂), dorsal aspect; 51- *C. opulentus* (Péringuey, 1898): habitus of PT (♀) from South Africa, KwaZulu Natal, dorsal aspect; 52- *C. bonvouloirii* (Chaudoir, 1861): habitus of ♂ from Swaziland, dorsal aspect; 53- *C. bonvouloirii* (Chaudoir, 1861): habitus of HT (♀), dorsal aspect; 54- *C. bonvouloirii* (Chaudoir, 1861): habitus of ♂ from South Africa, Mpumalanga, dorsal aspect; 55- *C. bonvouloirii* (Chaudoir, 1861): habitus of ♀ from South Africa, Mpumalanga, dorsal aspect.

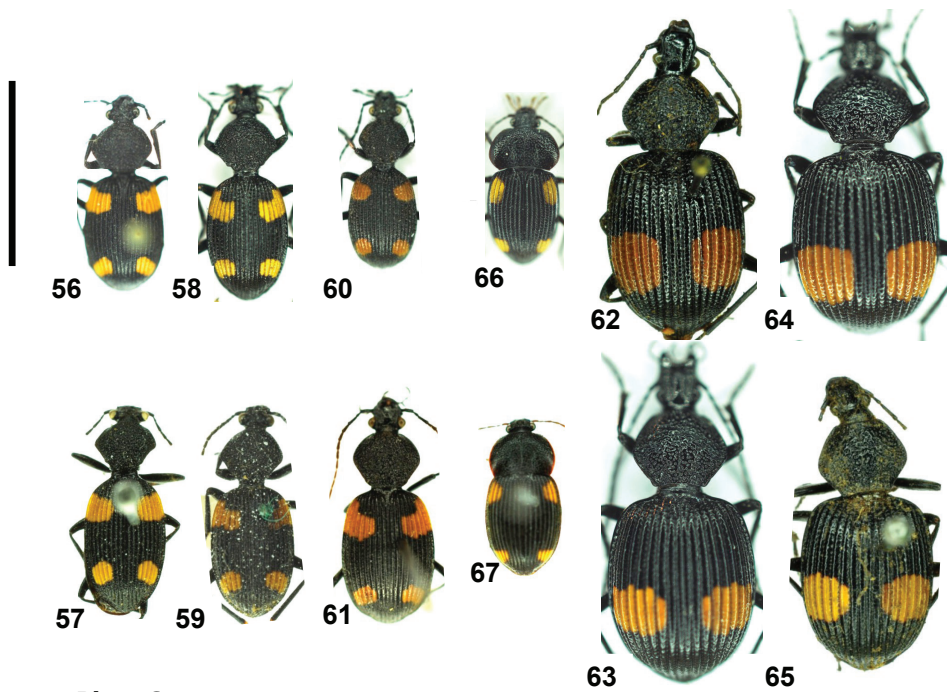


Plate 6

Plate 6. Figs 46-55. *Craspedophorus nobilis* group II. (Scale bar: 10 mm): 56- *C. graciosus graciosus* (Chaudoir, 1879), habitus of ♂ from South Africa, KwaZulu Natal (designated as comparative type Basilewsky 1954 in MRAC), dorsal aspect; 57- *C. graciosus graciosus* (Chaudoir, 1879): habitus of HT (♀), dorsal aspect; 58- *C. graciosus graciosus* (Chaudoir, 1879): habitus of ♂ from South Africa, Mpumalanga, dorsal aspect; 59- *C. graciosus graciosus* (Chaudoir, 1879): habitus of ♀ from South Africa, “Transvaal, det. Bates, MNHN” (= Mpumalanga); 60- *C. graciosus drakensis* ssp. nov.: habitus of HT (♂), dorsal aspect; 61- *C. subgraciosus* Basilewsky, 1987: habitus of HT (♂), dorsal aspect; 62- *C. volana* (Alluaud, 1895): habitus of ♂ from Madagascar (established as HT of *C. bilunifer* by Jeannel 1949 in MNHN), dorsal aspect; 63- *C. volana* (Alluaud, 1895): habitus of ♀ from Madagascar, Toliara, dorsal aspect; 64- *C. volana* (Alluaud, 1895): habitus of ♂ from Madagascar, Toliara, dorsal aspect; 65- *C. volana* (Alluaud, 1895): habitus of HT (♂), dorsal aspect; 66- *C. benoiti* (Basilewsky, 1953): habitus of ♂ from Zambia, dorsal aspect; 67- *C. benoiti* (Basilewsky, 1953): habitus of HT (♀), dorsal aspect.

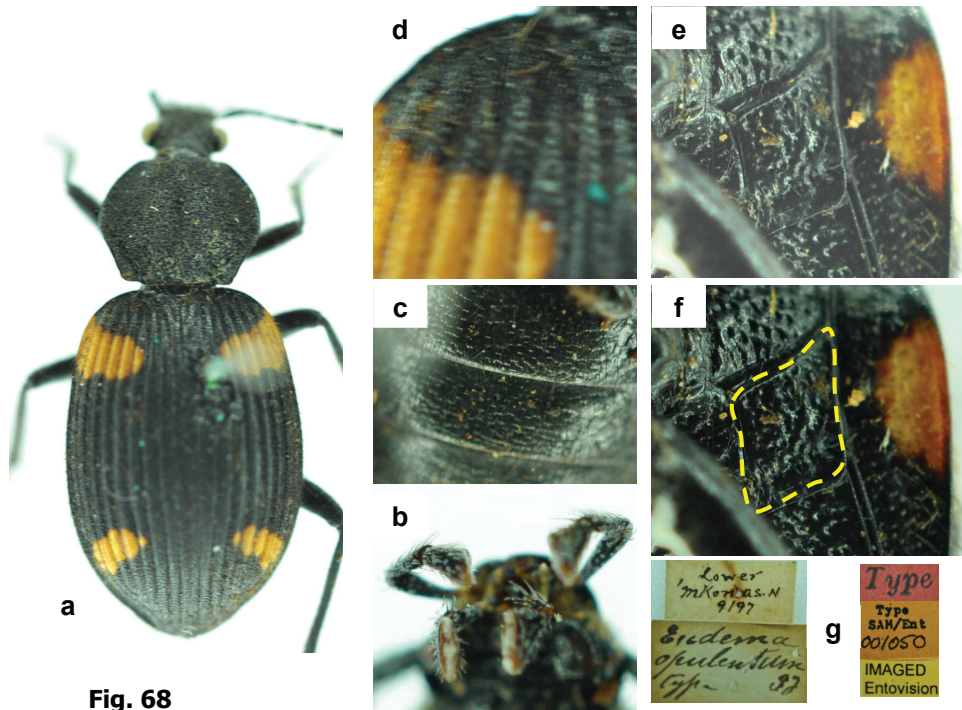


Fig. 68

Fig. 68. *C. opulentus* (Péringuey, 1898): habitus of lectotype established by Chaudoir 1879 (♂, diagnosis of sex based on palps): a- dorsal aspect, b- palps, ventral aspect; c- ventrites, ventral aspect; d- sculpture of elytral humerus, dorsal aspect; e- left metepisternum, oblique ventral aspect; f- left metepisternum (outlined in yellow), oblique ventral aspect; g- labels.

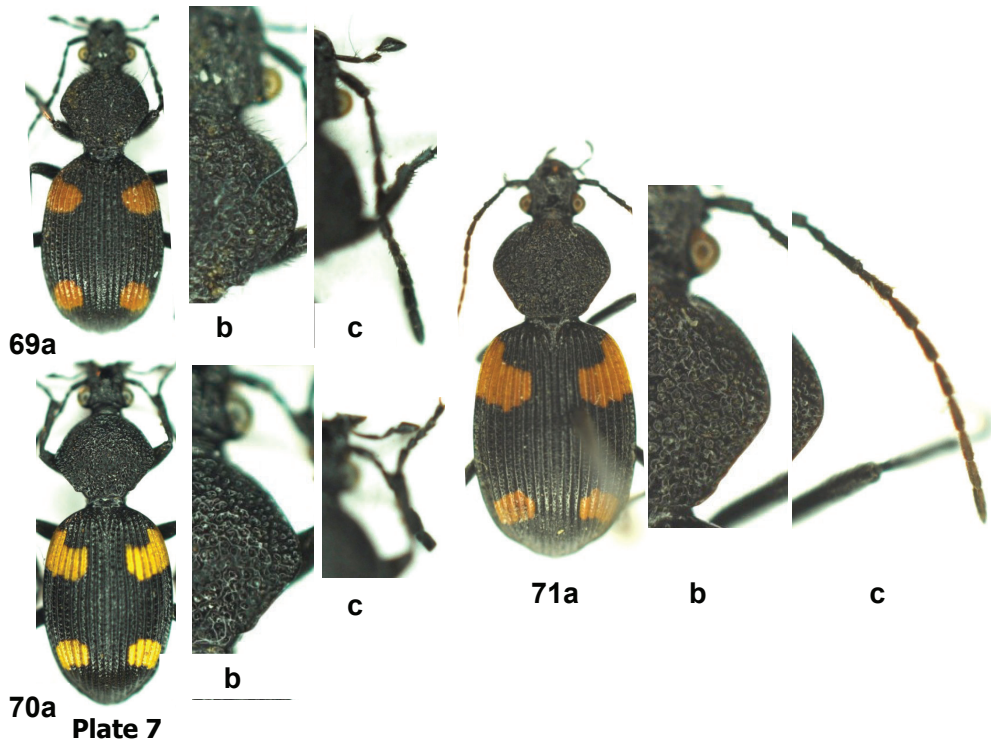


Plate 7. Figs 69-71. *Craspedophorus nobilis* group: 69- *C. gratiosus drakensis* ssp. nov.: a- habitus of HT (♂), dorsal aspect, b- pronotum in detail (hind angle), dorsal aspect, c- right antenna, dorsal aspect; 70- *C. gratiosus gratiosus* (Chaudoir, 1879): a- habitus of ♂ from South Africa, Mpumalanga, dorsal aspect, b. pronotum in detail (hind angle), dorsal aspect, c- right antenna (part), dorsal aspect; 71- *C. subgratiosus* Basilewsky, 1987: habitus of HT (♂), dorsal aspect, b- pronotum in detail (hind angle), dorsal aspect, c- right antenna, dorsal aspect.



Plate 8

Plate 8. Figs 72-77. *Craspedophorus nobilis* group. Aedeagus in frontal and right lateral aspects: 72- *C. bonvouloiri* (Chaudoir, 1861) from Swaziland; 73- *C. nobilis* (Dejean, 1829) from South Africa, Eastern Cape; 74- *C. graciosus drakensis* ssp. nov., HT; 75- *C. graciosus graciosus* (Chaudoir, 1879) from South Africa, Mpumalanga; 76- *C. subgraciosus* Basilewsky, 1987, HT; 77- *C. volana* (Alluaud, 1895) from Madagascar.

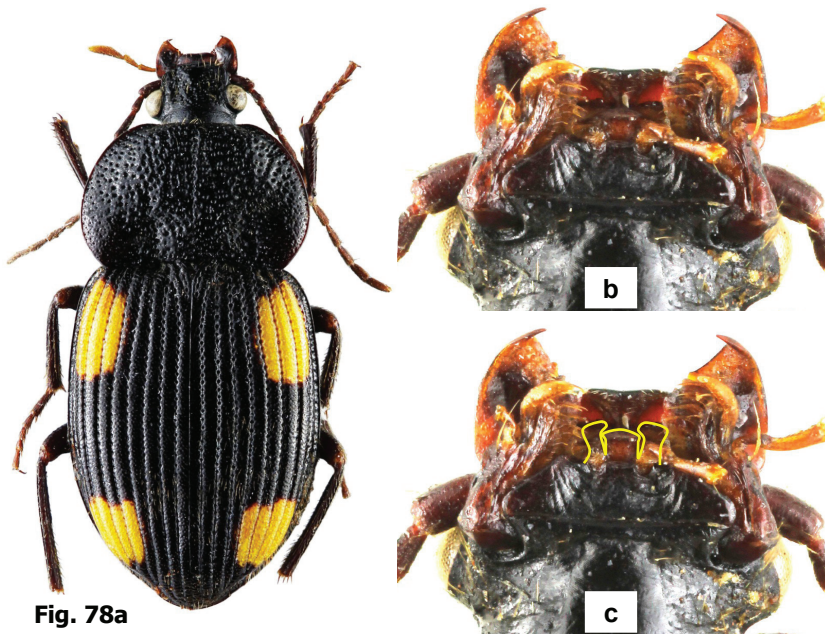


Fig. 78a

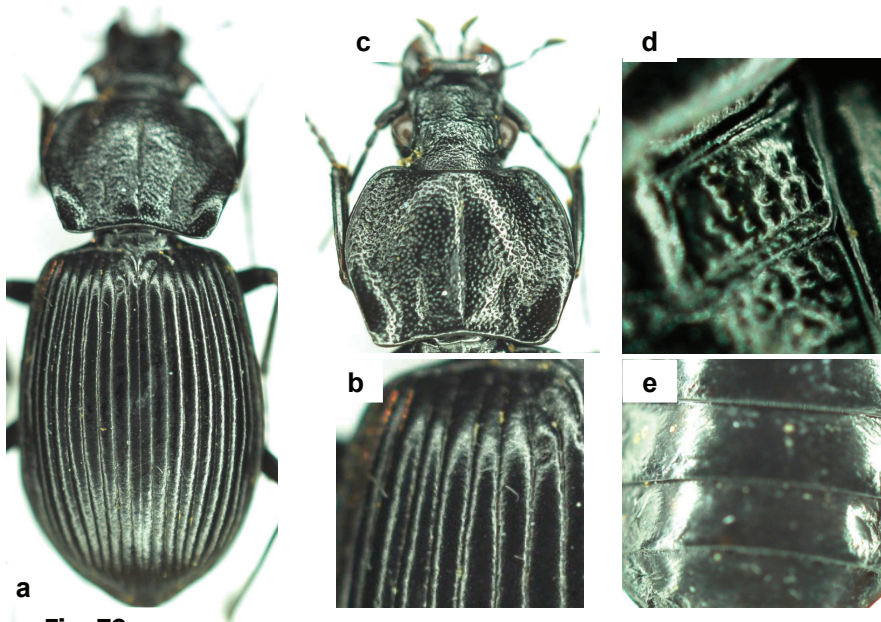


Fig. 79

Fig. 79. *C. hanangensis* sp. nov.: habitus of HT (♀): a- dorsal aspect; b- sculpture of elytral humerus, dorsal aspect; c- head and pronotum, dorsal aspect; d- left metepisternum, oblique ventral aspect; e- ventrites, ventral aspect.

← Fig. 78. *C. benoiti* (Basilewsky, 1953): habitus of ♀ from DR Congo, Katanga: a- dorsal aspect; b- head, ventral aspect; c- head, ventral aspect (glossa and paraglossae outlined in yellow).

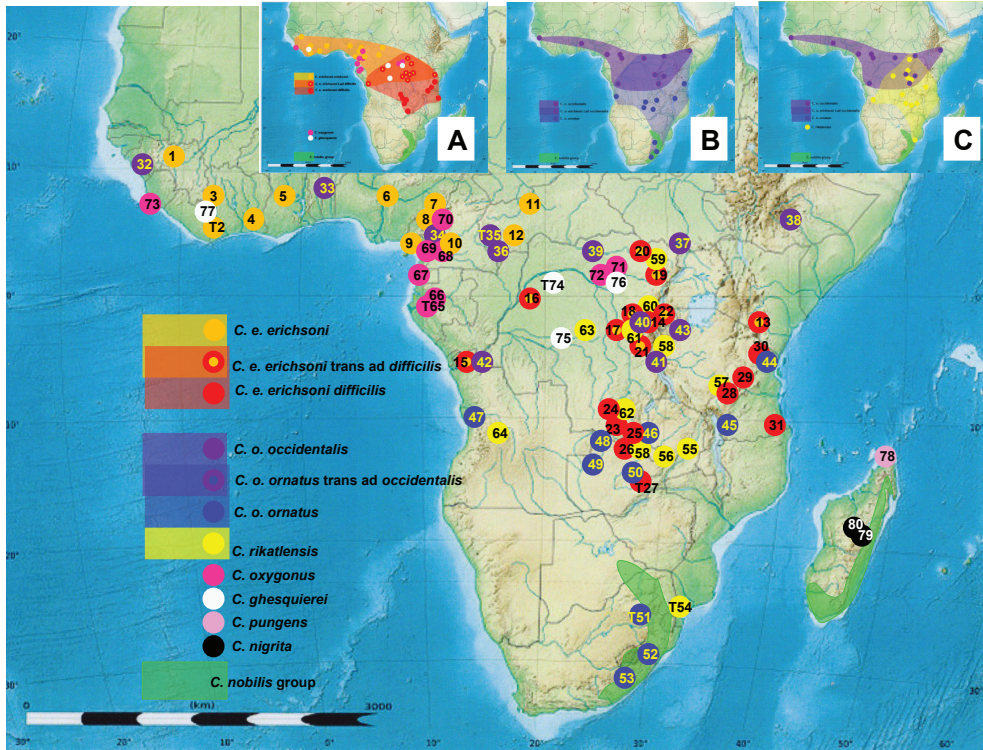


Fig. 80. Distribution of the *Craspedophorus erichsoni* group in the Afrotropical Region.

A [*C. erichsoni* (Hope, 1842), dark yellow and red, map A, upper left]:

1-12 *C. erichsoni erichsoni* (Hope, 1842): 1- “Guinea” (Paralectotype); 2- Circa Palmas (= Liberia/Ivory Coast, HT); 3- Ivory Coast: Touba, Biemasso; 4- Akresi, Sud-Comoé Region; 5- Ghana: Aschanti; 6- Nigeria: Abuja, Nasarawa; 7- Taraba: Gashaka Gumti NP; 8- Cameroon, Northwestern: Bamenda; 9- Southwestern: Monts Bamboutos; 10- Yaoundé, Mont Fébé; 11- Central Africa, Bamingui-Bandoran: 45 km ssw Bamingui; 12- Ombella-M’Poko: Bangui, Kongo. 13-22 *C. e. erichsoni trans ad C. e. difficilis*: 13- Kenya; 14- Burundi: Rumonge; 15- DR Congo, Bas-Congo: Mayidi; Kisantu (= Inkisi); 16- Équateur: Flandria; 17- Maniéma: Kindu; 18- Nord-Kivu: Beni; 19- Orientale: Mawambi; 20- Garamba PN; 21- Sud-Kivu: nw of Tanganyika lake; 22- Rwanda: Dendezi. 23-30 *C. erichsoni difficilis* (Chaudoir, 1879): 23- Katanga: Moera; 24- PN Upemba; 25- Lubumbashi; 26- Zambia, Northern: “Abercorn” (= Mbala); 27- “Zambéze” (=Zambia/Zimbabwe border) (HT); 28- Tanzania: “Manow, D.O.A.” (= Tanzania, Iringa); 29- Morogoro: Uluguru Mts., forêt de Toelo; 30- Tanga; 31- Mtwara: Masasi.

B [*C. ornatus* (Boheman, 1848), violet and blue, map B, upper centre]:

32-36 *C. ornatus occidentalis* ssp. nov.: 32- Guinea: Kindia; 33- Benin: Agoué; 34- Cameroun, Western: Dschang; 35- Central Africa, Mambéré-Kadeï: Boda (HT); 36- Sangha-Mbaéré: Nola. 37-43 *C. o. ornatus trans ad C. o. occidentalis*: 37- South Sudan, East Equatoria: Akotos; 38- Ethiopia, Oromiya: Dolomena; 39- DR Congo, Orientale: Bas-Uele; 40- Nord-Kivu: “région des lacs”; 41- Sud-Kivu: Kadjudju; 42- Bas-Congo: Mayidi; 43- Burundi: “Usumbara” (= Bujumbura). 44-53 *C. ornatus ornatus* (Boheman, 1848): 44- Tanzania, Pwani: Bagamoyo; 45- Ruvuma: Ungani; 46- Katanga: Lubumbashi; 47- Angola, Benguela: Alto-Catumbela; 48- Zambia, Northwestern: Kabompo; 49- Ikelenge; 50- Lusaka; 51- “Caffraria interior” (northeastern South African Rep., (HT)); 52- South Africa, KwaZulu Natal: Durban; 53- Eastern Cape: Umtata (= Mtatha).

C [*C. rikatlensis* (Péringuey, 1896), light yellow, map C, upper right]:

54-64 *C. rikatlensis* (Péringuey, 1896): 54) Mozambique, Maputo: Rikatla Lake (HT); 55- Zambia, Eastern: Mukuku; 56- Central: Serenje; 57- Tanzania: “Manow, D.O.A.” (= Iringa); 58) Burundi: Rugari; 59- DR Congo,

Orientale (Haut-Uelé): Doruma; 60- Nord-Kivu: Butembo; 61- Sud-Kivu: Bulira; 62- Katanga: Lusinga, Upemba NP; 63- Kasai-Oriental: Sankuru; 64) Angola: “Nova Lisboa” (= Huambo).
 D 65-73 *C. oxygenus* (Chaudoir, 1861): 65- Gabon, Moyen-Ogooué: Lambaréné (HT); 66- “Lac Zonanghè” (= Onague Lake); 67- Guinea Equatorial: Mongo; 68- Cameroon, West: Dschang, Fontem env.; 69- Southwest: Douala; 70- Northwest: Bamenda; 71- DR Congo: Orientale (Tshopo): Aruwimi River; 72- Kisangani env., Likenga; 73- Sierra Leone: Sherbro Island. E 74-77 *C. ghesquierei* Burgeon, 1930: 74- DR Congo, Équateur: Lulonga, Befale (HT); 75- Kasai-Occidental: Dekese; 76- Orientale (Tshopo): “Stanleyville” (= Kisangani), Banguru; 77- Guinea: Kéoulenta, Nimba Mt. F 78- *C. pungens* (Alluaud, 1895): Madagascar, Antsiranana: Amber Mts. G 79-80 *C. nigrita* (Künckel d’Herculais, 1891); 79- Madagascar (HT), Toamasina: “Andasibe-Mantadia NP, Analamazaotra; 80- Mahajanga: Tananarive env., Mahatsinjo.
 H (green area): Distribution of the *Craspedophorus nobilis* group in the Afrotropical Region (see also detail in next figure).

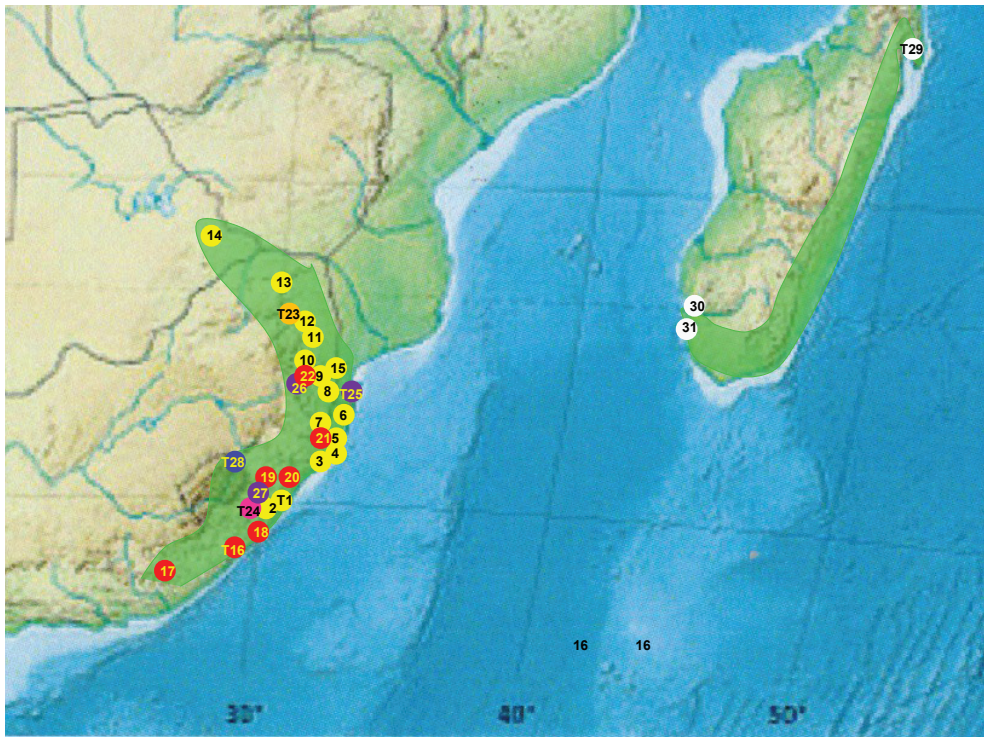


Fig. 81. Distribution of the *Craspedophorus nobilis* group in the Afrotropical Region. A 1- 12 *C. bonvouloirii* (Chaudoir, 1861): 1- South Africa, KwaZulu Natal: “Port Natal” (= Durban) (HT); 2- Dumisa; 3- Richards Bay; 4- False Bay, St. Lucia; 5- Hluhluhwe NR; 6- Mkuzi River, 25 km sw of Mbazwana; 7- Magudu; 8- Swaziland: Mlawula Nature Reserve; 9- “Eranchi” (= Tjaneni); 10- Mpumalanga: 20 km sw Kaapmuiden, Three Sisters; 11- Mariepskop; 12- Limpopo: “Shilouvane, près Leydsdorp” (= Shiluvane Mission); 13- “Blouberg, Leipzig. Miss. Station” (= w of Makhado, Vivo); 14- Botswana, Central: 50 km nw Selebi Phikwe; 15- Mozambique, Maputo: Namaacha. B 16-22 *C. nobilis* (Dejean, 1829); 16- South Africa, Eastern Cape (HT): Port St. Johns, Silaka NR; 17- “Beaufort District” (= Amatola), Katberg; 18- KwaZulu Natal: 35 km n Port Edward; 19- uMgungundlovu: Karkloof Forest; 20- Ingwavuma District, “Gwaliweni” (= Hlatikhulu) Forest; 21- Ntendeka Wilderness Area, Ngomi Forest; 22- Mpumalanga: Barberton env. C 23- *C. subgratiosus* Basilewsky, 1987: “Transvaal: Pietersburg District, Woodbush Forest. D 24 *Craspedophorus opulentus* (Péringuey, 1898): South Africa, KwaZulu Natal: “Lower M’Komas” (= Umkomazi River) (HT). E 25-27 *C. gratiosus gratiosus* (Chaudoir, 1879): 25- Mozambique,

Maputo: “Delagoabay” (= Maputo Bay) (HT); 26- South Africa, Mpumalanga: Barberton; 27- KwaZulu Natal: “Umkommas” (= Umkomazi) River, distr. Richmond”. F 28- *C. graciosus drakensis* ssp. nov.: KwaZulu Natal: Cathedral Peak, Drakensberg Mts. (HT). G 29-32 *C. volana* (Alluaud, 1895); 29- Madagascar (HT), Antsiranana: “Antalaba” (= Antalaha); 30- Toliara: s of Tulear; 31- Tsimanampetsotsa NP, Mitoho Camp.

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