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The rose chafers (Coleoptera: Scarabaeidae: Cetoniinae) of Angola: a descriptive checklist with new records and synonymic notes

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THE ROSE CHAFERS (COLEOPTERA: SCARABAEIDAE: CETONIINAE) OF ANGOLA: A DESCRIPTIVE CHECKLIST WITH NEW RECORDS AND SYNONYMIC NOTES

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Abstract

An annotated checklist of the species and subspecies of rose chafers (Scarabaeidae: Cetoniinae) hitherto known from Angola is given. This list includes species records from recent entomological trips in that country (2014, 2015 and 2017) and from Portuguese museums and private collections. A total of 177 species and 31 subspecies are recorded for Angola, including 32 endemic species/subspecies (15.4%). Some species are represented by only the holotype specimen (some without locality) or the type series. Others were recorded based on a single specimen. Records for four genera, one subgenus, twenty nine species and four subspecies previously unknown from Angola are given. A new synonymy is established: *Ruteroides* Gomes Alves, 1973 is proposed as a junior synonym of *Pseudinca* Kraatz, 1880. Consequently, *Ruteroides fradei* Gomes Alves, 1973 is transferred to *Pseudinca*. A brief historical review, as well as some considerations on the distribution and conservation status of these beetles in Angola is also presented.

Resumo

Neste trabalho é apresentada uma lista comentada das espécies e subespécies de coleópteros cetoníneos (Scarabaeidae: Cetoniinae) conhecidas até agora de Angola. Nesta lista estão ainda incluídas espécies amostradas durante várias missões entomológicas realizadas recentemente naquele país (2014, 2015 e 2017), assim como cetoníneos depositados em vários museus e coleções privadas portuguesas e estrangeiras. Assim, um total de 177 espécies e 31 subespécies foram compiladas e registados para este país. Dentro deste conjunto há 32 espécies/subespécies endémicas (15.4%). São ainda dados registos novos de quatro géneros, um subgénero, vinte e nove espécies e quatro subespécies para Angola. Uma nova sinonímia é estabelecida: *Ruteroides* Gomes Alves, 1973 é proposto como um sinónimo júnior de *Pseudinca* Kraatz, 1880. Consequentemente *Ruteroides fradei* Gomes Alves, 1973 é transferida para *Pseudinca*. Uma resenha histórica, assim como algumas considerações sobre a distribuição e estado de conservação destes coleópteros em Angola é também apresentada. Tendo em consideração a sua localização em África e a sua enorme diversidade de habitats, uma pesquisa futura direccionada especificamente ao grupo irá certamente resultar em novas descobertas e num melhor conhecimento dos cetoníneos de Angola.

Key words: rose chafers, checklist, new records, synonymy, Angola

Introduction

Rose chafers (Scarabaeidae: Cetoniinae) are a group of Coleoptera for which there is considerable biological, natural history, and distributional information (e.g. Sakai & Nagai 1998; Di Iorio 2014; Malec 2015; Beinhundner 2017a). However, the higher taxonomic status (family or subfamily) of these beetles has been controversial (e.g. Krikken 1984; Krajcik 2008a, 2008b; Micó *et al.* 2008; Smith 2006; Smith *et al.* 2006; Šípek *et al.* 2009; Bouchard *et al.* 2011; Šípek *et al.* 2016). Phylogenetic analysis of the families of Scarabaeoidea (Browne & Scholtz 1999) placed rose chafers within the scarabaeid lineage (Scarabaeidae) as a subfamily. This is supported by more recent preliminary molecular analysis of the classification and evolution of the major scarab beetle clades, placing these beetles within the phytophagous scarab clade (Smith *et al.* 2006) as a subfamily also (but see Micó *et al.* 2008). Molecular data were recently used, including the most recognized subfamilies of Scarabaeidae, to infer their phylogenetic relationships (Šípek *et al.* 2016). Moreover, these authors analysed the phylogeny within Cetoniinae taking into account characters associated with the elytral base structure and linked with flight mode with closed elytra.

Rose chafers due to their singular peculiarities, concerning beauty and colour patterns, behaviour and ecology, have attracted the curiosity and interest of amateur and professional scientists (e.g. Marais & Holm 1992; Sakai & Nagai 1998). The Cetoniinae feed on sap and ripe fruits, flowers and larvae develop in rotten wood or other decayed organic matter (e.g. bird nests, dung) or are associated with social insects (myrmecophilous, termitophilous) (e.g. see Holm & Perissonoto 2010; Mynhardt & Wenzel 2010; Mudge *et al.* 2012; Puker *et al.* 2014). A historical overview on the study of immature stages of Cetoniinae was provided by Šípek & Král (2012).

Angola is the seventh largest country in Africa (1,246,700 km²) and is located in the southwestern part of the continent. Some insights on its orography, climate, major vegetation types (e.g. see Mendes *et al.* 2014, Figs 54–64), and threats to biodiversity can be found in Serrano & Capela (2013) as well as in Mendelsohn & Mendelsohn (2018). Contrary to what happens for Republic of South Africa (Holm & Marais 1992; Holm & Stobbia 1995), there is no monographic work on the rose chafers of Angola. References to Angolan Cetoniinae are scattered over more than ninety works since 1787 until nowadays (see Discussion).

A historical review of zoological and entomological expeditions carried out in Angola from the middle of the 19th century until the independence of the country in 1974 was provided by Crawford-Cabral & Mesquitela (1989). None of these expeditions was devoted to the Cetoniinae. Some historical insect collectors in the country were in the service of Portugal and they included the Austrian botanist Friedrich Welwitsch, the Portuguese army officer Francisco Bayão and the Portuguese naturalist José Anchieta. Most of the insect specimens captured by these collectors were sent to the “Museu de Lisboa” and some to foreign museums. At that time there were no entomologists in that Portuguese museum and its director of zoology, Barbosa du Bocage, sent about 5000 of these specimens to the Museum of Coimbra to be studied by Paulino de Oliveira, a prominent Portuguese entomologist. Part of this material was studied and published by Paulino de Oliveira (1880a, 1880b, 1882). Unfortunately, the insect specimens, including the Cetoniinae studied by Paulino de Oliveira (1882) housed in the entomological collections of the “Museu e Laboratório de Zoologia e Antropologia (Museu Bocage), Lisboa” (MLZA), nowadays “Museu de História Natural e Ciência” (MUHNAC), were destroyed by a catastrophic fire in 1978. However, part of the insect collections sent to the Museum of Coimbra is still housed in this institution and was now analysed by us.

The aim of this work is to present a descriptive checklist with the results of the analysis of the literature where taxonomical descriptions (*e.g.* genera, species, subspecies) and records were done based on Angolan Cetoniinae. Following the study of rose chafers recently collected in Angola and other material deposited in Portuguese institutions (see Material and Methods), it was possible to add faunistic and distributional data to the previous checklist compilation. Moreover, we propose that the genus *Ruteroides* Gomes Alves, 1973 is a junior synonym of *Pseudinca* Kraatz, 1880 and consequently *Pseudinca fradei* (Gomes Alves, 1973) new combination is established.

Material and methods

The checklist was elaborated on the basis of a review of the literature dedicated in part or totally to the rose chafers of Angola (*e.g.* Westwood 1854; Harold 1878, 1879; Paulino de Oliveira 1882; Quedenfeldt 1884; Kolbe 1895; Arrow 1906; Bourgoïn 1925; Basilewsky 1949; Gomes Alves 1959, 1973; Ferreira 1965), on African rose chafers exclusively (*e.g.* Péringuey 1904, 1907; Lachaux 1983; Allard 1985, 1986, 1991; Rigout 1989; Rigout & Allard 1992; Marais & Holm 1992; Beinhundner 2017a) or on world rose chafers (Sakai & Nagai 1998; Krajcik 2008a, 2008b; Schoolmeesters 2018).

Portuguese entomological collections deposited in the “MUHNAC”, namely the “José Passos de Carvalho” collection, “António Bivar de Sousa” collection and the “Instituto de Investigação Científica Tropical” collection and in the “Museu Zoológico da Universidade de Coimbra” were checked for Angolan rose chafers. Unfortunately, most of the register numbers on the specimens label(s) from this latter museum, belonging to the so called “old collection”, have no available information associated (*e.g.* locality, date) due to the lost of the archives during the Civil “Revolution”.

Moreover, a large sample of rose chafers collected during four trips to Angola (2014: two trips; 2015 and 2017: one trip each year) were studied also. These beetles were sampled by means of butterfly traps baited with banana and pineapple (“BT” in the text) (Fig. 1a), yellow chromotropic traps baited with banana (“CT” in the text) (Fig. 1b), light trapping (abbreviation “LT” in the text) (Fig. 1c) and direct observation (abbreviation “DO” in the text) on vegetation (*e.g.* flowers, leafs), under tree bark and in rotten logs with ant and/or termite colonies (*e.g.* Fig. 1d). Data not previously available from the literature and reported by colleagues (New localities reported) are also provided.

Without a consensus on the phylogeny within the entire group of rose chafers (*e.g.* see Šípek & Král 2012) the suprageneric names (tribes and subtribes) are organized by alphabetical order (see Beinhundner 2017a also). The genera, the subgenera and species/subspecies names are organized by alphabetical order too, within the correspondent tribe/subtribe and genus. The genus and species nomenclature within tribes Cetoniini, Diplognathini, Goliathini, Gymnetini and Xiphoscelidini and within tribes Crematocheilini, Trichiini and Valgini follow Beinhundner (2017a) and Krajcik (2008b), respectively, with some additions/alterations which are commented below.

For each species/subspecies taxon, we provide information concerning its description (author and date). The general distribution (given by alphabetical order of country names abbreviations) and for Angola, we indicate previous Province records (1) and new ones (2). The historic records include, when available, information on the locality(ies), Angola Province(s) (abbreviations between parentheses) and reference(s). A list of abbreviations of the Africa countries and the Angolan Provinces used in the text are given (Table 1). A map with the administrative

Provinces of Angola can be found in Mendes *et al.* (2014, Fig. 52). For the material examined in each species/subspecies, the localities [with geographic coordinates and altitude when possible, including the number of the correspondent aerophotogrammetric survey maps of Angola (scale 1:100 000, edited by the Junta de Investigações do Ultramar & Governo Geral de Angola (1948-1963)] (see Fig. 1 in Serrano & Capela 2013)], the Angolan Province (abbreviations between parentheses), the date of capture (as available), the number and sex of specimens (when possible), the sampling method (as available) and the depository collection are also provided. Whenever a species was originally described from Angola, this information is referred in its remarks. Finally, data on the specimens examined and comments regarding biological and ecological notes are included for each taxon, if available. Some species were found in the same place and date (syntopic), and in order to avoid the repetition of this information, it will only be given in the first species of the list in which it occurred. In the subsequent species with the same data it is indicated the query of its remarks. The new records (genus, subgenus and/or species and subspecies) are marked with an asterisk (see also Table 2).



FIGURE 1. a, butterfly trap baited with banana and pineapple, Satschijamba, BIE; b, yellow chromotropic trap baited with banana, Satschijamba, BIE; c, light trapping, Satschijamba, BIE; d, rotten logs (direct observation), Somakwanza, BIE; e, secondary open forest, Satschijamba, BIE; f, secondary moist forest, Calulo, CUS.

TABLE 1. List of African countries and Angolan Provinces abbreviations used in the text.

Countries (Africa)	Abbreviations	Provinces (Angola)	Abbreviations
Angola	ANG	Bengo	BGO
Benin	BEN	Benguela	BGU
Burkina Faso	BFO	Bié	BIE
Botswana	BOW	Cabinda	CAB
Burundi	BUR	Kuando Kubango	CCU
Cameroun / Cameroon	CAM	Kuanza-Norte	CNO
Congo (Brazzaville)	CON	Kuanza-Sul	CUS
Democratic Congo (Kinshasa)	DOC	Cunene	CNN
Equatorial Guinea	EQG	Huambo	HUA
Eritrea	ERI	Huíla	HUI
Ethiopia	ETI	Luanda	LUA
Gabon	GAB	Lunda-Norte	LNO
Gambia	GAM	Lunda-Sul	LSU
Guinea-Bissau	GBI	Malanje	MAL
Ghana	GHA	Moxico	MOX
Guinea	GUI	Namibe	NAM
Kenya	KEN	Uíge	UIG
Liberia	LIR	Zaire	ZAI
Malawi	MAW	---	---
Mali	MLI	---	---
Mozambique	MOZ	---	---
Namibia	NAB	---	---
Niger	NIG	---	---
Nigeria	NRE	---	---
(Republic of) Central Africa (=Centrafrique)	RCA	---	---
(Republic of) Ivory Coast (=Republique de Cote d'Ivoire)	RCI	---	---
(Republic of) Chad	RCH	---	---
(Republic of) Rwanda	RRW	---	---
(Republic of) South Africa	RSA	---	---
Senegal	SEN	---	---
Sierra Leone	SLN	---	---
Somalia	SOM	---	---
São Tomé e Príncipe	STP	---	---
Sudan	SUD	---	---
Tanzania	TAN	---	---
Togo	TOG	---	---
Uganda	UGA	---	---
Zambia	ZAM	---	---
Zimbabwe	ZIM	---	---

TABLE 2. List of genera, species and subspecies of Angola and number of species/subspecies and of endemic forms in each genus/subgenus recorded for Angola. * New genus/subgenus, species and subspecies records to Angola.

Tribe, Subtribe Genera (subgenera) Species/subspecies	Nspp.	Nssp.	Nspp.+Nssp.	Nend spp.	Nend ssp.	Nend spp.+ssp.
Cetoniini, Cetoniina	40	10	50	4	1	5
<i>Anelaphinis</i>	1	0	1	0	0	0
<i>Anelaphinis dominula</i> (Harold, 1879)	---	---	---	---	---	---
<i>Atrichelaphinis</i> (<i>Atrichelaphinis</i>)	2	0	2	0	0	0
* <i>Atrichelaphinis</i> (<i>A.</i>) <i>nigropunctulata</i> (Péringuey, 1896)	---	---	---	---	---	---
<i>Atrichelaphinis</i> (<i>A.</i>) <i>tigrina</i> (Olivier, 1789)	---	---	---	---	---	---
<i>Atrichelaphinis</i> (<i>Eugeaphinis</i>)	0	1	1	0	0	0
<i>Atrichelaphinis</i> (<i>E.</i>) <i>deplanata minettii</i> Rojkoff & Perissinoto, 2015	---	---	---	---	---	---
<i>Cosmesthes</i>	1	0	1	0	0	0
<i>Cosmesthes flavosparsa</i> Moser, 1912	---	---	---	---	---	---
<i>Cosmiophaena</i>	1	0	1	0	0	0
<i>Cosmiophaena impar</i> (Gory & Percheron, 1833)	---	---	---	---	---	---
<i>Dischista</i>	4	0	4	0	0	0
<i>Dischista cincta cincta</i> (DeGeer, 1778)	---	---	---	---	---	---
<i>Dischista impunctata impunctata</i> (Lansberge, 1886)	---	---	---	---	---	---
* <i>Dischista lizleri</i> Beinhundner, 1998	---	---	---	---	---	---
<i>Dischista rufa</i> (DeGeer, 1778)	---	---	---	---	---	---
<i>Dolichostethus</i>	2	0	2	1	0	1
<i>Dolichostethus angolensis</i> Antoine, 1991	---	---	---	---	---	---
<i>Dolichostethus levis</i> (Janson, 1877)	---	---	---	---	---	---
<i>Niphetophora</i>	1	0	1	0	0	0
<i>Niphetophora helota</i> (Kolbe, 1895)	---	---	---	---	---	---
<i>Pachnoda</i>	13	8	21	2	1	3
<i>Pachnoda acutipennis</i> Kolbe, 1914	---	---	---	---	---	---
* <i>Pachnoda ardoini lydiae</i> Rigout, 1987	---	---	---	---	---	---
* <i>Pachnoda bukobensis</i> Moser, 1914	---	---	---	---	---	---
<i>Pachnoda cordata cordata</i> (Drury, 1773)	---	---	---	---	---	---
<i>Pachnoda discolor kolbei</i> (Schürhoff, 1938)	---	---	---	---	---	---
<i>Pachnoda frontalis</i> (Harold, 1878)	---	---	---	---	---	---
<i>Pachnoda katangensis</i> (Burgeon, 1931)	---	---	---	---	---	---

.....Continued on the next page

TABLE 2. (Continued)

Tribe, Subtribe Genera (subgenera) Species/subspecies	Nspp.	Nssp.	Nspp.+Nssp.	Nend spp.	Nend ssp.	Nend spp.+ssp.
<i>Pachnoda kustai hassoni</i> Antoine, 2000	---	---	---	---	---	---
<i>Pachnoda leopoldiana</i> (Burgeon, 1931)	---	---	---	---	---	---
<i>Pachnoda marginata marginata</i> (Drury, 1773)	---	---	---	---	---	---
<i>Pachnoda orphanula nachtigali</i> (Kraatz, 1885)	---	---	---	---	---	---
<i>Pachnoda picturata</i> Boheman, 1860	---	---	---	---	---	---
<i>Pachnoda poggei</i> (Harold, 1878)	---	---	---	---	---	---
<i>Pachnoda rubriventris rubriventris</i> (Moser, 1910)	---	---	---	---	---	---
<i>Pachnoda rubriventris rubrocinctoi-</i> <i>des</i> Ruter, 1958	---	---	---	---	---	---
<i>Pachnoda rubrocincta</i> (Hope, 1847)	---	---	---	---	---	---
<i>Pachnoda rufovirens</i> Quedenfeldt, 1884	---	---	---	---	---	---
<i>Pachnoda sinuata calceata</i> (Harold, 1878)	---	---	---	---	---	---
<i>Pachnoda sinuata flaviventris</i> (Gory & Percheron, 1833)	---	---	---	---	---	---
<i>Pachnoda vethi</i> Lansberge, 1886	---	---	---	---	---	---
<i>Pachnoda viridana karinae</i> Antoine, 2000	---	---	---	---	---	---
<i>Pachnodella</i>	2	0	2	0	0	0
<i>Pachnodella impressa</i> (Goldfuss, 1805)	---	---	---	---	---	---
<i>Pachnodella marginella marginella</i> (Fabricius, 1775)	---	---	---	---	---	---
<i>Phonotaenia</i>	3	0	3	0	0	0
<i>Phonotaenia balteata</i> (De Geer, 1778)	---	---	---	---	---	---
<i>Phonotaenia hassoni</i> (Antoine & Legrand, 2005)	---	---	---	---	---	---
<i>Phonotaenia scalaris scalaris</i> (Gory & Percheron, 1833)	---	---	---	---	---	---
<i>Polystalactica</i> (<i>Polystalactica</i>)	2	0	2	0	0	0
<i>Polystalactica</i> (<i>P.</i>) <i>affinis affinis</i> (Kolbe, 1895)	---	---	---	---	---	---
<i>Polystalactica</i> (<i>P.</i>) <i>stellata</i> (Harold, 1878)	---	---	---	---	---	---
*<i>Polystalactica</i> (<i>Trichocelis</i>)	1	0	1	0	0	0
* <i>Polystalactica</i> (<i>T.</i>) <i>jossoi</i> Rojkoff, 2016	---	---	---	---	---	---

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TABLE 2. (Continued)

Tribe, Subtribe Genera (subgenera) Species/subspecies	Nspp.	Nssp.	Nspp.+Nssp.	Nend spp.	Nend ssp.	Nend ssp.+ssp.
<i>Rhabdotis</i>	2	0	2	0	0	0
<i>Rhabdotis aulica aulica</i> (Fabricius, 1781)	---	---	---	---	---	---
<i>Rhabdotis semipunctata</i> (Fabricius, 1787)	---	---	---	---	---	---
<i>Tephraea</i>	2	0	2	0	0	0
* <i>Tephraea dichroa</i> (Schaum, 1844)	---	---	---	---	---	---
<i>Tephraea leucomelona</i> (Gory & Percheron, 1833)	---	---	---	---	---	---
<i>Trichocephala</i> (<i>Trichocephala</i>)	1	0	1	1	0	1
<i>Trichocephala</i> (<i>T.</i>) <i>angolensis</i> (Kriken, 1983)	---	---	---	---	---	---
<i>Xeloma</i>	2	1	3	0	0	0
<i>Xeloma leprosa</i> (Burmeister, 1842)	---	---	---	---	---	---
<i>Xeloma maura</i> (Boheman, 1860)	---	---	---	---	---	---
<i>Xeloma tomentosa angolensis</i> (Valck Lucassen, 1936)	---	---	---	---	---	---
Cetoniini, Leucocelina	20	2	22	3	1	4
<i>Acrothyrea</i> (<i>Acrothyrea</i>)	1	0	1	0	0	0
<i>Acrothyrea</i> (<i>A.</i>) <i>rufofemorata</i> (Burmeister, 1842)	---	---	---	---	---	---
<i>Amaurina</i>	2	0	2	1	0	1
<i>Amaurina ruteri</i> Antoine, 2000	---	---	---	---	---	---
<i>Amaurina spoliata</i> (Harold, 1879)	---	---	---	---	---	---
<i>Discopeltis</i>	2	0	2	0	0	0
<i>Discopeltis apicalis</i> (Gory & Percheron, 1833)	---	---	---	---	---	---
* <i>Discopeltis tricolor tricolor</i> Burmeister, 1842	---	---	---	---	---	---
<i>Grammopyga</i>	1	0	1	0	0	0
<i>Grammopyga cincticollis</i> (Hope, 1842)	---	---	---	---	---	---
<i>Leucocelis</i> (<i>Amauroleucocelis</i>)	2	0	2	0	0	0
<i>Leucocelis</i> (<i>A.</i>) <i>cognata</i> (Harold, 1878)	---	---	---	---	---	---
<i>Leucocelis</i> (<i>A.</i>) <i>quadriguttata</i> (Westwood, 1874)	---	---	---	---	---	---
<i>Leucocelis</i> (<i>Leucocelis</i>)	9	1	10	2	1	3
* <i>Leucocelis</i> (<i>L.</i>) <i>adspersa adspersa</i> (Fabricius, 1801)	---	---	---	---	---	---
<i>Leucocelis</i> (<i>L.</i>) <i>amethystina</i> (MacLeay, 1938)	---	---	---	---	---	---

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TABLE 2. (Continued)

Tribe, Subtribe Genera (subgenera) Species/subspecies	Nspp.	Nssp.	Nspp.+Nssp.	Nend spp.	Nend ssp.	Nend ssp.+ssp.
<i>Leucocelis</i> (L.) <i>cincticollis</i> Moser, 1908	---	---	---	---	---	---
* <i>Leucocelis</i> (L.) <i>cupricollis</i> Kraatz, 1880	---	---	---	---	---	---
* <i>Leucocelis</i> (L.) <i>haemorrhoidalis</i> (Fabricius, 1775)	---	---	---	---	---	---
<i>Leucocelis</i> (L.) <i>haroldi</i> (Kraatz, 1880)	---	---	---	---	---	---
<i>Leucocelis</i> (L.) <i>maculicollis</i> <i>quentini</i> Antoine, 2006	---	---	---	---	---	---
* <i>Leucocelis</i> (L.) <i>niveoguttata</i> (Blanchard, 1850)	---	---	---	---	---	---
<i>Leucocelis</i> (L.) <i>semicuprea</i> Kraatz, 1883	---	---	---	---	---	---
<i>Leucocelis</i> (L.) <i>triliturata</i> <i>triliturata</i> Quedenfeldt, 1884	---	---	---	---	---	---
<i>Mausoleopsis</i> (<i>Mausoleopsis</i>)	1	1	2	0	0	0
<i>Mausoleopsis</i> (M.) <i>amabilis</i> <i>amabilis</i> (Schaum, 1844)	---	---	---	---	---	---
<i>Mausoleopsis</i> (M.) <i>amabilis</i> <i>ruteri</i> Antoine, 1989	---	---	---	---	---	---
*<i>Oxythyrea</i> (<i>Oxythyrea</i>)	1	0	1	0	0	0
<i>Oxythyrea</i> (<i>Oxythyrea</i>) sp.						
<i>Pseudalleucosma</i>	1	0	1	0	0	0
<i>Pseudalleucosma</i> <i>machatschkei</i> (Ruter, 1960)	---	---	---	---	---	---
Cremastocheilini, Coenochilina	12	1	13	2	0	2
<i>Coenochilus</i>	8	1	9	2	0	2
<i>Coenochilus</i> <i>angolensis</i> (Moser, 1912)	---	---	---	---	---	---
* <i>Coenochilus</i> <i>basilewskyi</i> Schein, 1954	---	---	---	---	---	---
<i>Coenochilus</i> <i>calcaratus</i> <i>vagus</i> (Pé- ringuey, 1907)	---	---	---	---	---	---
<i>Coenochilus</i> <i>kolbei</i> Quedenfeldt, 1884	---	---	---	---	---	---
<i>Coenochilus</i> <i>parrianus</i> Westwood, 1883	---	---	---	---	---	---
<i>Coenochilus</i> <i>procerus</i> Schaum, 1873	---	---	---	---	---	---
<i>Coenochilus</i> <i>strigatus</i> (Bourgoin, 1921)	---	---	---	---	---	---
* <i>Coenochilus</i> <i>turbatus</i> Westwood, 1873	---	---	---	---	---	---
<i>Coenochilus</i> <i>ventricosus</i> (Gyllenhal, 1817)	---	---	---	---	---	---

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TABLE 2. (Continued)

Tribe, Subtribe Genera (subgenera) Species/subspecies	Nspp.	Nssp.	Nspp.+Nssp.	Nend spp.	Nend ssp.	Nend spp.+ssp.
<i>Plagiochilus</i>	4	0	4	0	0	0
<i>Plagiochilus angustatus</i> (Westwood, 1873)	---	---	---	---	---	---
* <i>Plagiochilus crassipes</i> (Westwood, 1873)	---	---	---	---	---	---
* <i>Plagiochilus dupeyi</i> Bourgoïn, 1928	---	---	---	---	---	---
<i>Plagiochilus pilosus</i> Moser, 1913	---	---	---	---	---	---
Cremastocheilini, Cymophorina	3	1	4	1	0	0
<i>Cymophorus (Clydonophorus)</i>	1	0	1	0	0	0
<i>Cymophorus (C.) squamosus squamosus</i> (Kolbe, 1897)	---	---	---	---	---	---
<i>Cymophorus (Eucymophorus)</i>	1	0	1	0	0	0
<i>Cymophorus (E.) spiniventris spiniventris</i> (Gory & Percheron, 1833)	---	---	---	---	---	---
<i>Cymophorus (Neocymophorus)</i>	0	1	1	0	0	0
<i>Cymophorus (N.) flavonotatus col-larti</i> (Burgeon, 1932)	---	---	---	---	---	---
<i>Cymophorus (Syntomopteryx)</i>	1	0	1	1	0	1
<i>Cymophorus (S.) bouyeri</i> Rojkoïff, 2011	---	---	---	---	---	---
Cremastocheilini, Lissogeniina	2	0	2	0	0	0
*<i>Chthonobius</i>	1	0	1	0	0	0
* <i>Chthonobius conspersus</i> Burmeister, 1847	---	---	---	---	---	---
<i>Lissogenius</i>	1	0	1	0	0	0
<i>Lissogenius ertli</i> Moser, 1911	---	---	---	---	---	---
Cremastocheilini, Macromina	3	1	4	0	0	0
<i>Campsiura (Macroma)</i>	3	1	4	0	0	0
<i>Campsiura (M.) angolensis angolensis</i> (Kraatz, 1883)	---	---	---	---	---	---
<i>Campsiura (M.) angolensis latevittata</i> (Moser, 1913)	---	---	---	---	---	---
<i>Campsiura (M.) congoensis</i> (Bates, 1890)	---	---	---	---	---	---
<i>Campsiura (M.) scutellata</i> (Fabricius, 1801)	---	---	---	---	---	---
Cremastocheilini, Oplostomina	7	0	7	4	0	4
<i>Anatonochilus (Anatonochilus)</i>	1	0	1	1	0	1
<i>Anatonochilus (A.) angulicollis</i> Jan-son, 1912	---	---	---	---	---	---
<i>Oplostomus</i>	3	0	3	0	0	0
<i>Oplostomus bicolor</i> (Harold, 1878)	---	---	---	---	---	---
<i>Oplostomus fuliginus</i> (Olivier, 1789)	---	---	---	---	---	---

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TABLE 2. (Continued)

Tribe, Subtribe Genera (subgenera) Species/subspecies	Nspp.	Nssp.	Nspp.+Nssp.	Nend spp.	Nend ssp.	Nend spp.+ssp.
<i>Oplostomus rufiventris</i> (Harold, 1878)	---	---	---	---	---	---
Placodidus	2	0	2	2	0	2
<i>Placodidus simplex</i> Krikken, 1979	---	---	---	---	---	---
<i>Placodidus squamosus</i> Krikken, 1976	---	---	---	---	---	---
Scaptobius	1	0	1	1	0	1
<i>Scaptobius kochi</i> Schein, 1957	---	---	---	---	---	---
Cremastocheilini, Spilophorina	1	0	1	0	0	0
Spilophorus (Spilophorus)	1	0	1	0	0	0
<i>Spilophorus (S.) plagosus plagosus</i> Westwood (<i>in</i> Schaum), 1848	---	---	---	---	---	---
Cremastocheilini, Trogodina	3	0	3	1	0	1
Trogodes (Trogodes)	3	0	3	1	0	1
<i>Trogodes (T.) angolensis</i> Rojkoﬀ, 2011	---	---	---	---	---	---
<i>Trogodes (T.) congoensis</i> Rojkoﬀ, 2011	---	---	---	---	---	---
* <i>Trogodes (T.) rotundicollis</i> West- wood, 1857	---	---	---	---	---	---
Diplognathini	17	1	18	3	0	3
*Anthracophorides	1	0	1	0	0	0
* <i>Anthracophorides capeneri</i> Schein, 1955	---	---	---	---	---	---
Charadronota	1	0	1	0	0	0
<i>Charadronota pectoralis</i> (Bainbridge, 1842)	---	---	---	---	---	---
Diphrontis	1	0	1	0	0	0
<i>Diphrontis gerstaeckeri</i> Quedenfeldt, 1884	---	---	---	---	---	---
Diplognatha (Diplognatha)	4	0	4	0	0	0
* <i>Diplognatha (D.) crampeli</i> Fair- maire, 1893	---	---	---	---	---	---
<i>Diplognatha (D.) gagates</i> (Forster, 1771)	---	---	---	---	---	---
<i>Diplognatha (D.) silicea</i> (MacLeay, 1838)	---	---	---	---	---	---
<i>Diplognatha (D.) pagana pagana</i> (Harold, 1879)	---	---	---	---	---	---
Porphyronota	4	1	5	1	0	1
<i>Porphyronota cinnamomea angolen- sis</i> Holm, 1990	---	---	---	---	---	---
<i>Porphyronota hebraea hebraea</i> (Ol- ivier, 1789)	---	---	---	---	---	---

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TABLE 2. (Continued)

Tribe, Subtribe Genera (subgenera) Species/subspecies	Nspp.	Nssp.	Nspp.+Nssp.	Nend spp.	Nend ssp.	Nend spp.+ssp.
<i>Porphyronota maculatissima maculatissima</i> (Boheman, 1860)	---	---	---	---	---	---
<i>Porphyronota preissi</i> Moser, 1913	---	---	---	---	---	---
<i>Porphyronota tottenhami</i> (Holm, 1990)	---	---	---	---	---	---
<i>Pseudinca</i>	3	0	3	1	0	1
<i>Pseudinca fradei</i> (Gomes Alves, 1973)	---	---	---	---	---	---
<i>Pseudinca horni</i> Valck Lucassen, 1933	---	---	---	---	---	---
<i>Pseudinca incoides</i> (J. Thomson, 1860)	---	---	---	---	---	---
*<i>Tetragonorrhina</i>	1	0	1	0	0	0
* <i>Tetragonorrhina induta</i> (Janson, 1877)	---	---	---	---	---	---
<i>Uloptera</i>	2	0	2	1	0	1
<i>Uloptera planata</i> (Burmeister, 1842)	---	---	---	---	---	---
<i>Uloptera quangensis</i> Holm, 1990	---	---	---	---	---	---
Goliathini, Coryphocerina	54	15	69	6	2	8
<i>Anisorrhina</i> (<i>Anisorrhina</i>)	4	0	4	2	0	2
<i>Anisorrhina</i> (<i>A.</i>) <i>bouyeri</i> Antoine, 2000	---	---	---	---	---	---
<i>Anisorrhina</i> (<i>A.</i>) <i>flavomaculata</i> (Fabricius, 1798)	---	---	---	---	---	---
<i>Anisorrhina</i> (<i>A.</i>) <i>hassoni hassoni</i> Antoine, 2000	---	---	---	---	---	---
* <i>Anisorrhina</i> (<i>A.</i>) <i>laevi-plaga</i> (Raffray, 1877)	---	---	---	---	---	---
<i>Anisorrhina</i> (<i>Melinsthes</i>)	1	0	1	0	0	0
<i>Anisorrhina</i> (<i>M.</i>) <i>umbonata</i> (Gory & Percheron, 1833)	---	---	---	---	---	---
<i>Caelorrhina</i>	5	0	5	1	0	1
<i>Caelorrhina angolensis</i> (Schürhoff, 1942)	---	---	---	---	---	---
<i>Caelorrhina barthi barthi</i> (Harold, 1878)	---	---	---	---	---	---
* <i>Caelorrhina concolor</i> Hope, 1841	---	---	---	---	---	---
* <i>Caelorrhina relucens</i> (Bates, 1881)	---	---	---	---	---	---
<i>Caelorrhina superba superba</i> (Gerstacker, 1883)	---	---	---	---	---	---
<i>Cheirolasia</i>	1	1	2	0	0	0
<i>Cheirolasia burkei burkei</i> (Westwood, 1843)	---	---	---	---	---	---

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TABLE 2. (Continued)

Tribes, Subtribe Genera (subgenera) Species/subspecies	Nspp.	Nssp.	Nspp.+Nssp.	Nend spp.	Nend ssp.	Nend spp.+ssp.
<i>Cheirolasia burkei hopei</i> Bertoloni, 1849	---	---	---	---	---	---
<i>Chlorocala</i>	4	2	6	0	1?	1?
<i>Chlorocala africana africana</i> (Drury, 1773)	---	---	---	---	---	---
<i>Chlorocala africana mutica</i> (Harold, 1878)	---	---	---	---	---	---
* <i>Chlorocala inermis</i> (Burgeon, 1931)	---	---	---	---	---	---
<i>Chlorocala monoceros</i> (Gory & Per- cheron, 1833)	---	---	---	---	---	---
<i>Chlorocala smaragdina angolensis</i> (Schauer, 1941)	---	---	---	---	---	---
<i>Chlorocala viridicyanea</i> (Palisot de Beauvois, 1821)	---	---	---	---	---	---
<i>Chondrorrhina (Chondrorrhina)</i>	2	0	2	0	0	0
<i>Chondrorrhina (C.) picturata</i> (Har- old, 1878)	---	---	---	---	---	---
* <i>Chondrorrhina (C.) trivittata trivit- tata</i> (Schau, 1841)	---	---	---	---	---	---
<i>Chondrorrhina (Plaesiorrhina)</i>	3	1	4	0	0	0
<i>Chondrorrhina (P.) cinctuta cinctuta</i> (Voet, 1779)	---	---	---	---	---	---
<i>Chondrorrhina (P.) cinctuta recurva</i> (Fabricius, 1801)	---	---	---	---	---	---
<i>Chondrorrhina (P.) plana plana</i> (Wiedmann, 1821)	---	---	---	---	---	---
* <i>Chondrorrhina (P.) undulata</i> (Bates, 1881)	---	---	---	---	---	---
<i>Dicronorrhina</i>	2	0	2	0	0	0
<i>Dicronorrhina derbyana derbyana</i> (Westwood, 1843)	---	---	---	---	---	---
<i>Dicronorrhina johnstoni</i> (Waterhouse, 1902)	---	---	---	---	---	---
<i>Eudicella (Cyprolais)</i>	2	1	3	0	1	1
<i>Eudicella (C.) loricata loricata</i> (Jan- son, 1877)	---	---	---	---	---	---
<i>Eudicella (C.) loricata knothi</i> (Schürhoff, 1933)	---	---	---	---	---	---
<i>Eudicella (C.) quadrimaculata</i> (Fa- brius, 1781)	---	---	---	---	---	---
<i>Eudicella (Eudicella)</i>	2	0	2	0	0	0
<i>Eudicella (E.) gralli</i> Buquet, 1836	---	---	---	---	---	---
<i>Eudicella (E.) tetraspilota tetraspi- lota</i> (Harold, 1879)	---	---	---	---	---	---

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TABLE 2. (Continued)

Tribe, Subtribe Genera (subgenera) Species/subspecies	Nspp.	Nssp.	Nspp.+Nssp.	Nend spp.	Nend ssp.	Nend spp.+ssp.
Gnathocera	8	5	13	1	0	1
<i>Gnathocera angolensis angolensis</i> (Westwood, 1854)	---	---	---	---	---	---
<i>Gnathocera bonisi</i> Ruter, 1991	---	---	---	---	---	---
<i>Gnathocera cruda cruda</i> Janson, 1877	---	---	---	---	---	---
<i>Gnathocera cruda gracilis</i> (Janson, 1877)	---	---	---	---	---	---
* <i>Gnathocera cruda leopoldi</i> (Bour- goin, 1929)	---	---	---	---	---	---
<i>Gnathocera cruda lurida</i> (Janson, 1877)	---	---	---	---	---	---
<i>Gnathocera marginata</i> Janson, 1885	---	---	---	---	---	---
<i>Gnathocera overlaeti</i> Burgeon, 1939	---	---	---	---	---	---
<i>Gnathocera trivialis</i> Gerstaecker, 1883	---	---	---	---	---	---
<i>Gnathocera trivittata ardoini</i> Ruter, 1967	---	---	---	---	---	---
<i>Gnathocera trivittata dorsodiscolor</i> (Voet, 1779)	---	---	---	---	---	---
<i>Gnathocera trivittata trivittata</i> Swe- derus, 1787	---	---	---	---	---	---
<i>Gnathocera villosa</i> Janson, 1877	---	---	---	---	---	---
Lansbergia	1	0	1	1	0	1
<i>Lansbergia vanderkelleni</i> (Lansberge, 1886)	---	---	---	---	---	---
Lophorrhina	2	0	2	0	0	0
<i>Lophorrhina penthacordia</i> (Klug, 1835)	---	---	---	---	---	---
* <i>Lophorrhina quinquelineata</i> (Fabri- cius, 1781)	---	---	---	---	---	---
Mecynorrhina (Amaurodes)	1	0	1	0	0	0
<i>Mecynorrhina (A.) passerinii passerii</i> (Westwood, 1844)	---	---	---	---	---	---
Mecynorrhina (Mecynorrhina)	1	1	2	0	0	0
<i>Mecynorrhina (M.) polyphemus poly- phemus</i> (Fabricius, 1781)	---	---	---	---	---	---
* <i>Mecynorrhina (M.) polyphemus</i> <i>confluens</i> (Kraatz, 1890)	---	---	---	---	---	---
Mecynorrhina (Mecynorrhinella)	1	0	1	0	0	0
<i>Mecynorrhina (M.) torquata torquata</i> (Drury, 1782)	---	---	---	---	---	---
Mecynorrhina (Megalorrhina)	1	0	1	0	0	0
<i>Mecynorrhina (M.) harrisii haroldii</i> (J. Thomson, 1880)	---	---	---	---	---	---

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TABLE 2. (Continued)

Tribe, Subtribe Genera (subgenera) Species/subspecies	Nspp.	Nssp.	Nspp.+Nssp.	Nend spp.	Nend ssp.	Nend spp.+ssp.
<i>Pedinorrhina</i>	2	1	3	0	0	0
<i>Pedinorrhina sellata lequeuxi</i> Antoine, 2008	---	---	---	---	---	---
<i>Pedinorrhina subaenea subaenea</i> (Harold, 1878)	---	---	---	---	---	---
<i>Pedinorrhina viridicollis</i> (Burgeon, 1932)	---	---	---	---	---	---
<i>Ptychodesthes</i>	0	1	1	0	0	0
<i>Ptychodesthes bicostata intermedia</i> Schein, 1943	---	---	---	---	---	---
<i>Spelaiorrhina</i>	1	0	1	0	0	0
<i>Spelaiorrhina rufopyga</i> (Lansberge, 1886)	---	---	---	---	---	---
<i>Stephanorrhina</i> (<i>Aphelorrhina</i>)	2	0	2	0	0	0
<i>Stephanorrhina</i> (A.) <i>bella bella</i> (Waterhouse, 1879)	---	---	---	---	---	---
<i>Stephanorrhina</i> (A.) <i>tibialis tibialis</i> (Waterhouse, 1879)	---	---	---	---	---	---
<i>Stephanorrhina</i> (<i>Stephanorrhina</i>)	2	0	2	1	0	1
<i>Stephanorrhina</i> (S.) <i>guttata guttata</i> (Olivier, 1789)	---	---	---	---	---	---
<i>Stephanorrhina</i> (S.) <i>haroldi</i> Kolbe, 1892	---	---	---	---	---	---
<i>Taurhina</i> (<i>Rhamphorrhina</i>)	1	0	1	0	0	0
<i>Taurhina</i> (R.) <i>splendens</i> (Bertoloni, 1855)	---	---	---	---	---	---
<i>Taurhina</i> (<i>Taurhina</i>)	2	0	2	0	0	0
* <i>Taurhina</i> (T.) <i>longiceps longiceps</i> Kolbe, 1892	---	---	---	---	---	---
<i>Taurhina</i> (T.) <i>nireus</i> (Schaum, 1841)	---	---	---	---	---	---
<i>Tmesorrhina</i>	3	2	5	0	0	0
<i>Tmesorrhina iris iris</i> Fabricius, 1781	---	---	---	---	---	---
<i>Tmesorrhina iris saundersi</i> Westwood, 1854	---	---	---	---	---	---
* <i>Tmesorrhina laeta burgeoni</i> Allard, 1991	---	---	---	---	---	---
* <i>Tmesorrhina tridens tridens</i> Duvier, 1891	---	---	---	---	---	---
* <i>Tmesorrhina viridicyanea</i> Moser, 1902	---	---	---	---	---	---
Goliathini, Goliathina	3	0	3	1	0	1
<i>Goliathus</i>	1	0	1	0	0	0
<i>Goliathus goliatus goliatus</i> (Drury, 1770)	---	---	---	---	---	---

.....Continued on the next page

TABLE 2. (Continued)

Tribe, Subtribe Genera (subgenera) Species/subspecies	Nspp.	Nssp.	Nspp.+Nssp.	Nend spp.	Nend ssp.	Nend spp.+ssp.
Hegemus	1	0	1	1	0	1
<i>Hegemus peregrinus</i> (Harold, 1878)	---	---	---	---	---	---
Hypselogenia	1	0	1	0	0	0
<i>Hypselogenia geotrupina geotrupina</i> (Bilberg, 1817)	---	---	---	---	---	---
Gymnetini, Gymnetina	2	0	2	0	0	0
Pseudoclinteria	1	0	1	0	0	0
<i>Pseudoclinteria infuscata</i> (Gory & Percheron, 1833)	---	---	---	---	---	---
Stethodesma	1	0	1	0	0	0
<i>Stethodesma strachani strachani</i> Bainbridge, 1840	---	---	---	---	---	---
Trichiini, Platygeniina	1	0	1	0	0	0
Platygenia	1	0	1	0	0	0
<i>Platygenia barbata</i> (Afzelius, 1817)	---	---	---	---	---	---
Trichiini, Trichiina	6	0	6	2	0	2
Clastocnemis	1	0	1	0	0	0
<i>Clastocnemis quadrimaculatus</i> <i>quadrimaculatus</i> (Afzelius, 1817)	---	---	---	---	---	---
Diploa	1	0	1	0	0	0
<i>Diploa tridens</i> Arrow, 1906	---	---	---	---	---	---
Incala (Incala)	1	0	1	0	0	0
<i>Incala (I.) calabarina</i> (Westwood, 1873)	---	---	---	---	---	---
Myodermum	2	0	2	1	0	1
<i>Myodermum alutaceum</i> (Afzelius, 1817)	---	---	---	---	---	---
<i>Myodermum pusillum</i> (Arrow, 1906)	---	---	---	---	---	---
Pileotrichius	1	0	1	1	0	1
<i>Pileotrichius tristiculus</i> (Kraatz, 1900)	---	---	---	---	---	---
Valgini	2	0	2	0	0	0
Loboalgus	2	0	2	0	0	0
<i>Loboalgus brevicauda</i> Burgeon, 1935	---	---	---	---	---	---
<i>Loboalgus murinus</i> Moser, 1913	---	---	---	---	---	---
Xiphoscelidini	1	0	1	1	0	1
Aporecolpa	1	0	1	1	0	1
<i>Aporecolpa nigra</i> Lansberge, 1886	---	---	---	---	---	---
Subtotal (%)	177-28=149 (71.6%)	31-4= 27 (13.0%)	208 (100%)	28 (13.5%)	4 (1.9%)	32 (15,4%)
TOTAL (%)	177 (85.1%)	31 (14.9%)	208 (100%)	28 (87.5%)	4 (12.5%)	32 (100%)

Some information on the depositary collections (*e.g.* museums) of the species described originally from Angola and synonymies can be found in Marais & Holm (1992), Krajcik (2008a, 2008b), Beinhundner (2017a) and Schoolmeesters (2018). For the taxa described more recently from Angola, not presented in the above mentioned works, the reference for the respective work is provided under “remarks”.

The acronyms used for the entomological collections where the material here examined or reported has been placed are as follows:

ANAC—Armando Nozolino de Azevedo collection, Lisboa, Portugal
ASC—Artur Serrano collection, Lisboa, Portugal
CSFC—Colégio S. Fiel collection, Portugal (in MZUC)
IICT—Instituto de Investigação Científica Tropical, Portugal (in MUHNAC)
JPC—Joaquim Pimentel collection, Portugal (in MZUC)
JPCC—José Passos de Carvalho collection, Portugal (in MUHNAC)
MUHNAC—Museu de História Natural e Ciência, Lisboa, Portugal
MZUC—Museu de Zoologia da Universidade de Coimbra, Coimbra, Portugal
PMC—Petr Malec collection, Brno, Czech Republic
RQC—Rodrigues Queiroz collection, Portugal (in MZUC)
SRC—Sébastien Rojko collection, Lyon, France

Checklist

This study resulted in the register of 208 species/subspecies of Cetoniinae, representing four of them new genera records, one a new subgenus record, twenty nine and four new species and subspecies records, respectively, for Angola (Table 2).

Most rose chafer species found in Angola occur throughout, western, central and southern Africa, namely in the neighbouring countries (*e.g.* BOW, CON, DOC, NAB, RSA, ZAM, ZIM) (Ferreira 1965; Beinhundner 2017a; Schoolmeesters 2018). Thirty two of the known Angolan Cetoniinae have been reported exclusively for this country (15.4 % of the country's Cetoniinae fauna, Table 2). Undoubtedly, the most species rich genus in Angola is *Pachnoda* Burmeister, 1842, followed by the genera *Gnathocera* Kirby, 1825, *Leucocelis* Burmeister, 1842 and *Coenochilus* Schaum, 1841, with 21, 13, 12 and 9 species/subspecies, respectively (Table 2).

Family Scarabaeidae Latreille, 1802

Subfamily Cetoniinae Leach, 1815

Tribe Cetoniini Leach, 1815

Subtribe Cetoniina Leach, 1815

Genus *Anelaphinis* Kolbe, 1912

The genus was revised recently by Rojko & Perissinotto (2015). These authors recognized seven valid species, one of them described from Angola (Harold 1879).

Anelaphinis dominula (Harold, 1879)

(Fig. 2a)

Distribution: ANG.

Distribution in Angola (Provinces): 1) MAL; 2) HUI.

Historic records:

—Pungo Andongo (MAL) (Harold 1879 sub *Cetonia dominula* Harold);

—Angola (without locality) (Ferreira 1965).

New localities reported: Estação Zootécnica da Humpata (18 km W Lubango) (14° 54' 42.8'' S, 13° 19' 25.9'' E, 2073 m alt., 355) (HUI), 3.XII.2017, 1♀, P. Schüle leg., PMC (P. Malec, personal communication).

Material examined: Angola, 1 ex., N° 1907 (blue label), Welwitsch leg., old collection, box n° VI-75; Angola, 1 ex., N° 1907 (blue label), n° 222 (white label), old collection, box XIV-83, MZUC; Angola, 3 exs, N° 1907 (blue label), n° 223 (white label), old collection, box XIV-83, MZUC; Angola, 2 exs, N° 1907 (blue labels), n°s 147 and 148 (white labels), old collection, box n° XIV-83, MZUC; Angola, 1 ex., N° 1907 (blue label), old collection, box XIV-83, MZUC.

Remarks. The species was originally described on the basis of one specimen from Angola (Harold 1879) and until now seems endemic of this country (Rojkoff & Perissinotto 2015). Unfortunately all the adult specimens deposited in MZUC do not present any indication on the localities where they were collected in Angola. Biological and ecological data are not available for the species. It is a new species record for the Huíla Province.

Genus *Atrichelaphinis* Kraatz, 1898

The genus was recently revised by Rojkoff & Perissinotto (2015). They recognized two valid species in the nominal subgenus, three species in the subgenus *Heterelaphinis* Antoine, 2002 and eight species within subgenus *Eugeaphinis* Rojkoff & Perissinotto, 2015. There are one species and one subspecies recorded for Angola, respectively within the nominal and *Eugeaphinis* subgenera (Paulino de Oliveira 1882; Rojkoff & Perissinotto 2015). A new species within the nominal subgenus is added in this work.

**Atrichelaphinis* (*Atrichelaphinis*) *nigropunctulata* (Péringuey, 1896)

(Figs. 2b, c)

Distribution: ANG, RSA.

Distribution in Angola (Provinces): 2) ?

Historic records: none.

Material examined: Angola, 2 exs, N° 1907 (blue labels), n° 144 (white labels), old collection, box n° XIV-83, MZUC.

Remarks. The species is only known from RSA (Rojkoff & Perissinotto 2015), but the adult specimens of MZUC fit very well its description (e.g. pygidium asetose with scattered crescent sculpture and first two elytral striae with single grooves). Unfortunately, both adult specimens do not present any indication on the locality(ies) where they were collected in Angola. Ecological notes were provided by Holm & Marais (1992) and Rojkoff & Perissinotto (2015). It is a new record for Angola.

Atrichelaphinis (*Atrichelaphinis*) *tigrina* (Olivier, 1789)

Distribution: ANG, MOZ, RSA, ZIM.

Distribution in Angola (Provinces): 1) ?

Historic records:

—Angola (without locality) (Paulino de Oliveira 1882 sub *Elaphinis tigrina* Ol.).

Material examined: none.

Remarks. Paulino de Oliveira (1882) recorded the species for Angola without mention to any locality. Eventually, it could be confounded with the previous species. Ecological notes were provided by Holm & Marais (1992) and Rojkoff & Perissinotto (2015). Taking into account how it copes with artificial breeding conditions, Malec & Šípek (2017) included it in their group 1.

Atrichelaphinis (*Eugeaphinis*) *deplanata minettii* Rojkoff & Perissinotto, 2015

Distribution: ANG, CON, DOC, MAW, MOZ, RRW, RSA, ZAM, ZIM.

Distribution in Angola (Provinces): 1) HUI.

Historic records:

—Negola (HUI) (Rojkoff & Perissinotto 2015).

Material examined: none.

Remarks. The subspecies is widespread throughout Central, southwestern and southern Africa (Rojkoff & Perissinoto 2015). According to these authors the nominal subspecies seems to be a flower visitor. Holm & Marais (1992) provided some ecological data on *Atrichelaphinis (Eugeaphinis) rhodesiana* (Péringuey, 1907).

Genus *Cosmesthes* Kraatz, 1880

Recent revision of the genus is badly missing. Two valid species are recognized (Beinhundner 2017a), one of them occurring in Angola (Ferreira 1965; Beinhundner 2017a).

Cosmesthes flavosparsa Moser, 1912

Distribution: ANG, DOC, ZAM.

Distribution in Angola (Provinces): 1) HUA.

Historic records:

—Bailundo (HUA) (Moser 1912);

—Angola (without locality) (Ferreira 1965).

Material examined: none.

Remarks. The species was originally described from Angola (Moser 1912). Some ecological data for the close relative species *Cosmesthes lineatocollis* Kraatz, 1880 was provided by Mudge *et al.* (2012), but nothing is known for *C. flavosparsa*.

Genus *Cosmiophaena* Kraatz, 1899

The genus was revised by Antoine (1987). There are four known species (Beinhundner 2017a), one of them recorded for Angola (Antoine 1987).

Cosmiophaena impar (Gory & Percheron, 1833)

Distribution: ANG, BEN, CAM, GAB, GAM, GUI, LIR, RCI, SEN, SLN.

Distribution in Angola (Provinces): 1) ?

Historic records:

—Angola (without locality) (Antoine 1987).

Material examined: None.

Remarks. As Holm & Marais (1992) refer “little is known about the biology...of the genus in general”. They provided some ecological data on *Cosmiophaena rubescens* (Brancsik, 1914).

Genus *Dischista* Burmeister, 1842

The genus was revised by Rigout (1989), but some species/subspecies were described after this work (*e.g.* Antoine 2004a, 2010; Beinhundner 1998, 2006a). Eleven valid species are recognized (Beinhundner 2017a) of which three were recorded for Angola (Paulino de Oliveira 1882; Ferreira 1965).

Dischista cincta cincta (De Geer, 1778)

(Fig. 2d)

Distribution: ANG, BOW, MOZ, NAB, RSA, ZIM.

Distribution in Angola (Provinces): 1) CNN, HUI.

Historic records:

—Humbe (CNN), Huíla (HUI) (Paulino de Oliveira 1882, sub *Cetonia cincta* De Geer).

Material examined: Humbe (16° 41'S, 14° 54'E, 1100 m alt., 422) (CNN), 1 ♀, N° 1895 (blue label), n° 98 (white label), 1 ♀, N° 2126 (blue label), n° 101 (white label), Anchieta leg., old collection, box VI-75, MZUC.

Remarks. The species was recorded for Angola by Paulino de Oliveira (1882), but not listed to this country in

Ferreira's catalogue (1965) nor in Beinhundner's monograph (2017a). This species is often confused with the next ones. The larvae instars were described by Donaldson (1987). Biological and ecological data on *D. cincta* were provided by Holm & Marais (1992). Taking into account the artificial breeding conditions, Malec & Šípek (2017) included this species in their group 4 (species requiring a special feeding substrate composition).

***Dischista impunctata impunctata* (Lansberge, 1886)**

Distribution: ANG, DOC, ZAM.

Distribution in Angola (Provinces): 1) CCU, HUI, LUA, ZAI.

Historic records:

—Loanda (=Luanda) (LUA) (Harold 1879b sub *Cetonia rufa* var. *frenata* Har.);

—Humpata? (HUI) (Lansberge 1886 sub *Pachnoda impunctata* Lansb.);

—Menong (=Menongue), Lwasingwa River (=Luassingwa River) (CCU) (Bourgoin 1925 sub *Pachnoda impunctata* Lansb.);

—Zaire (ZAI), Humpata? (HUI) (Ferreira 1965 sub *Pachnoda impunctata* Lansb.);

—Angola (without locality) (Rigout 1989).

Material examined: none.

Remarks. Marais & Holm (1992) and Krajcik (2008a) consider this species under the genus *Marmylida*. Antoine (2004a) included the species in the genus *Dischista*, a criterion followed here (see also Beinhundner 2017a). The species was probably recorded for Angola before its description under the name of *Cetonia rufa* var. *frenata* Harold, 1879 (Lansberge 1886). Biological and ecological data are not available for this species.

****Dischista lizleri* Beinhundner, 1998**

(Figs. 2e, f, g)

Distribution: ANG, KEN.

Distribution in Angola (Provinces): 2) CNN.

Historic records: none.

Material examined: Humbe (16° 41' S, 14° 54' E, 1100 m alt., 422) (CNN), 1 ♀, N° 1895 (blue label), n°104a (white label), old collection, box VI-75, Anchieta leg., MZUC.

Remarks. The species was described on the basis of Kenya specimens sampled in Acacia trees from savannahs (Beinhundner 1998). The Humbe specimen fits very well the dorsal and ventral habitus of this species. Unfortunately, this singleton specimen is a female and very old (collected in the second half of the 19th century), precluding a more accurate identification. Taking into account its distribution (only known from Kenya), it is with some caution that we ascribe this specimen to this species. However, this allopatric distribution (western vs eastern) seems more common than expected (e.g. Serrano 1995, Serrano *et al.* 2017). It is a new species record for Angola and Cunene Province.

***Dischista rufa* (De Geer, 1778)**

(Fig. 2h)

Distribution: ANG, BOW, MOZ, NAB, RSA, ZIM.

Distribution in Angola (Provinces): 1) ?; 2) HUI.

Historic records:

—Angola (without locality) (Harold 1879 sub *Pachnoda rufa* var. *frenata* Burmeister);

—Angola (without locality) (Ferreira 1965 sub *Pachnoda rufa* var. *frenata* Burmeister).

Material examined: Huilla (=Lubango) (14° 55' S, 13° 30' E, 1750 m alt., 336) (HUI), 1 ♂, N° 1846 (blue label), n°104 (white label), old collection, box VI-75, Anchieta leg., MZUC; Angola, 2 exs, N° 1907 (blue label), old collection, box n° XIV-83, sub *Cetonia rufa* De Geer, MZUC.

Remarks. The species is misinterpreted sometimes with *D. impunctata* (see Remarks under this species). Beinhundner (2017a) did not include Angola in its distribution. This species is easily differentiated by the parameres conformation, the pygidial spot and the mesometasternal process shape (see Holm & Marais 1992, p. 224–225). Biological and ecological data on *D. rufa* were provided by Holm & Marais (1992). Malec & Šípek (2017) included this species, jointly with *D. cincta*, in their group 4 (species requiring a special feeding substrate composition).

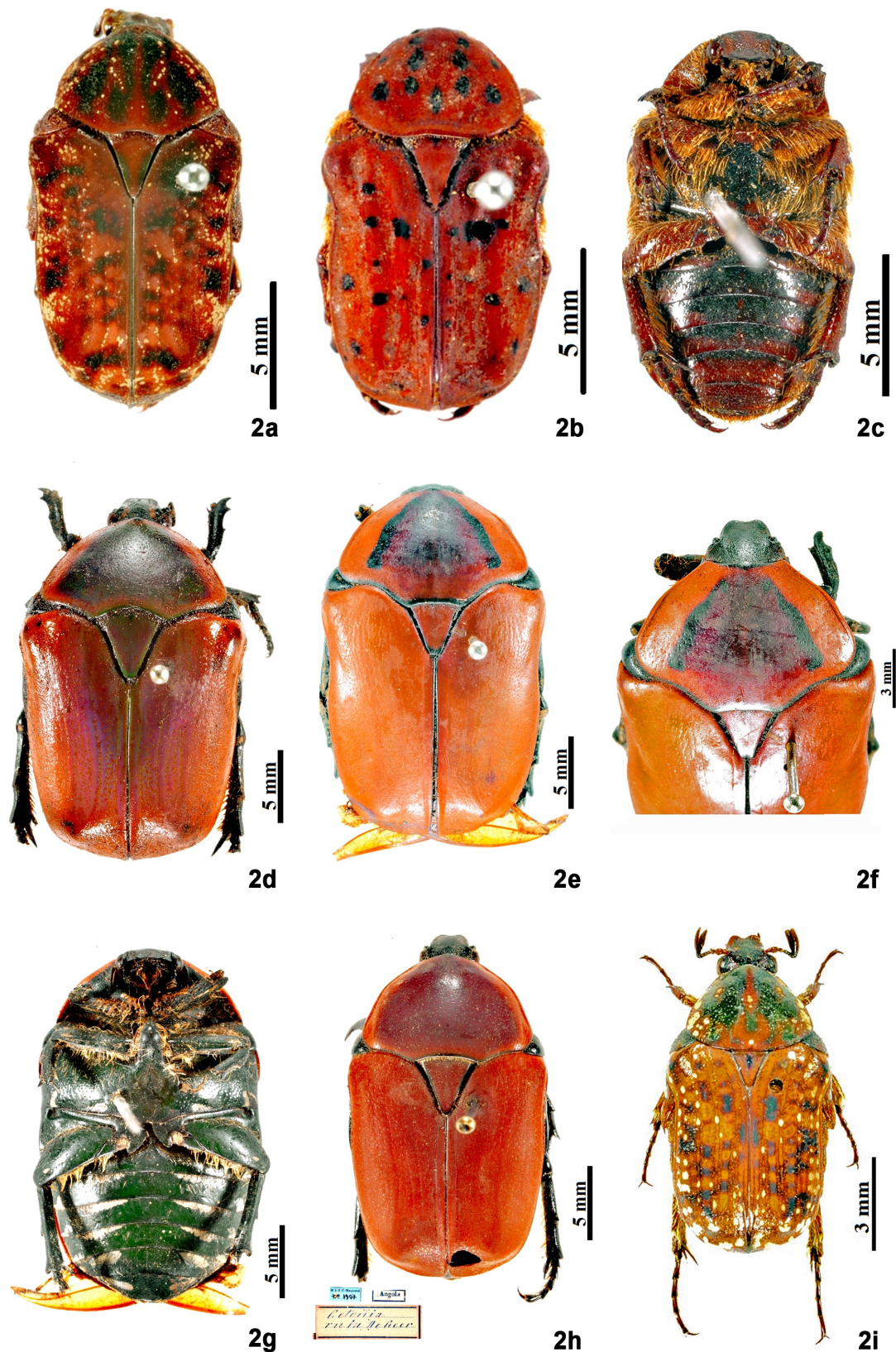


FIGURE 2. Cetoniinae species of Angola. a, *Anelaphinis dominula* (dorsal view), MZUC; b and c, *Atrichelaphinis* (*Atrichelaphinis*) *nigropunctulata* (dorsal and ventral views, respectively), female, MZUC; d, *Dischista cincta cincta* (dorsal view), Humbe, CNN, MZUC; e–g, *Dischista lizleri*, female (dorsal view), head and pronotum (dorsal view) and female (ventral view), respectively, Humbe, CNN, MZUC; h, *Dischista rufa* (dorsal view), and associated labels, MZUC; i, *Dolichosthetus angolensis* (dorsal view), male, Mussulo, LUA, ASC.

Genus *Dolichostethus* Kolbe, 1892

The genus was revised by Antoine (1991a). Five valid species are recognized (Beinhundner 2017a) of which two were reported for Angola (Antoine 1991a).

Dolichostethus angolensis Antoine, 1991

(Fig. 2i)

Distribution: ANG.

Distribution in Angola (Provinces): 1) BGO; 2) LUA.

Historic records:

—Ambriz (BENGO) (Antoine 1991a).

Material examined: Mussulo Island (8° 53' 9.13" S, 13° 8' 4.62" E, 5m alt., 89) (LUA), 31.III.1975, 2♂, DO, A. Serrano leg., ASC.

Remarks. The species is an endemism of Angola (Antoine 1991a). It was known only from the Ambriz specimens (typical series). The adult specimens of Mussulo (Fig. 2i) were collected on flowers (unknown herbaceous plant species). It is a new species record for the Luanda Province.

Dolichostethus levis (Janson, 1877)

(Figs. 3a, b, c)

Distribution: ANG, BOW, MOZ, NAB, RSA, TAN, ZIM.

Distribution in Angola (Provinces): 1) ?

Historic records:

—Angola (without locality) (Antoine 1991a).

Material examined: Angola, 4 exs, N° 1907 (blue label), n°s 152, 160, 188 and 205 (white labels), old collection, box n° IX-78, MZUC.

Remarks. The species is distributed throughout southern and eastern Africa (Antoine 1991a, Beinhundner 2017a). Ecological data were provided by Holm & Marais (1992).

Genus *Niphetophora* Kraatz, 1833

The genus has persistently been placed in the Diplognathini. However, Holm & Marais (1988) excluded it from this tribe, saying that it is a typical Cetoniini. Antoine & Holm (1993) revised the genus, recognising five species. Five other species were recently added (see Di Gennaro 2014a and Beinhundner 2017a). There is one species recorded from Angola (Antoine & Holm 1993).

Niphetophora helota (Kolbe, 1895)

Distribution: ANG, DOC.

Distribution in Angola (Provinces): 1) MAL.

Historic records:

—Pungo Andongo, Malange (=Malanje) (MAL) (Kolbe 1895 sub *Oxyrrhaphia helota* Kolbe);

—Mulange (=Malanje), Pungo Andongo (MAL) (Antoine & Holm 1993).

Material examined: none.

Remarks. The species is known only based on the type series which includes Angolan and DOC ["Mukenge in Baluba-Land (Belgium Congo: Kasai-Occidental Prov.""] specimens (Kolbe 1895, Antoine & Holm 1993). Beinhundner (2017a) considers only Angola in its distribution. Biological and ecological data are not available for this species.

Genus *Pachnoda* Burmeister, 1842

The genus is very speciose with almost 120 species (Beinhundner 2017a). It was revised by Rigout (1989), but against the recommendation done by Holm & Marais (1992) that "In general *Pachnoda* ...is an extremely difficult

genus to deal with, and new descriptions are very inadvisable before the existing relationships and clines are fully understood”, many species/subspecies have been described ever since (e.g. Rigout & Allard 1992; Beinhundner 1992, 1997, 2006b, 2013, 2015; Legrand 1993; Devecis 2001; Antoine 2000, 2009b, 2011; Le Gall 2015; Di Gennaro 2016, 2017). There are twelve species and eight subspecies recorded for Angola (Paulino de Oliveira 1882; Gomes Alves 1959, 1973; Ferreira 1965; Antoine 2000; Beinhundner 2017a; Schoolmeesters 2018). We give one new species record to the Angolan entomofauna in this work.

***Pachnoda acutipennis* Kolbe, 1914**

(Figs. 3d, e, f)

Distribution: ANG, DOC.

Distribution in Angola (Provinces): 1) LNO.

Historic records:

—Dundo (LNO) (Gomes Alves 1973).

Material examined: Dundo (7° 22'S, 20° 50'E, 1470 m alt., 51) (LNO), 2.V.1946, 1♀, N° 651, Junta de Investigações Coloniais (Entomologia), sub *Pachnoda acutipennis* Kolbe (Ruter det. 1968), IICT, MUHNAC.

Remarks. The species is known from Katanga Province in DOC (Rigout 1989; Sakai & Nagai 1998) and was given for the north-eastern LNO Province of Angola by Gomes Alves (1973) based on a determination of the same specimen by Ruter in 1968 (see Fig. 3 d). However, taking into account the elytral drawing pattern (Fig. 3d) of the humeral region the specimen seems closer to one species within the group of *Pachnoda viridiflua* Kraatz, 1900, *P. spinipennis* Moser, 1914, *P. allardi* Ruter, 1969, *P. dargei* Rigout, 1987, *P. knirschi* Rigout, 1984 and *P. pygidiomaculata* Beinhundner, 2013. Nevertheless does not belong to *P. spinipennis* as the pygidium is dull and has six white spots behind the front edge and two near the apical edge (Moser 1914b), nor to *P. allardi* do to its larger length (19 mm vs 15–15.5 mm), different pygidial colour pattern, among other characters, nor to *P. knirschi* by the presence of four white dots on the upper green-blackish part of pygidium (none in *P. knirschi*) (cf. Fig. 13 i vs PII Fig. 6f in Beinhundner 2013), nor to *P. dargei* by the orange tibia (black in *dargei*) and a different pygidial pattern of white dots (cf. Fig. 3f vs Fig. 4f in Beinhundner 2013), nor even to *P. pygidiomaculata* by the absence of metasternum transverse white stripes and the presence of metatibial denticle (cf. Fig. 3e vs Fig. 5b in Beinhundner 2013). It could belong to *P. viridiflua* by the same general elytral colour pattern, the pygidium colour and the white spots pattern in the frontal half of this structure (e.g. see description of *P. schultzei*=*P. viridiflua* in Preiss 1933). However, without a male to check the genitalia it is with some caution and based again on the Ruter's identification that we keep the species *P. acutipennis* for the Angolan fauna. Biological and ecological data are not available for this species.

****Pachnoda ardoini lydiae* Rigout, 1987**

(Fig. 3g)

Distribution: ANG, UGA.

Distribution in Angola (Provinces): 2) ?

Historic records: none.

Material examined: Angola, 1 ♀, N° 1907 (blue label), n° 123 (white label), old collection, box n° XIV-83, MZUC.

Remarks. There are two subspecies within *Pachnoda ardoini* Ruter, 1978. This subspecies was described on the basis of one male from “Mont Labwor” in Uganda (Rigout 1987). One adult female specimen from Angola (Fig. 3g) in the “old collection” of MZUC fits well this subspecies. However, it is with some caution that we ascribe it to this taxon. Biological and ecological data are not available for this subspecies. It is a new subspecies record for Angola.

****Pachnoda bukobensis* Moser, 1914**

(Figs. 3h, i)

Distribution: ANG, DOC, UGA, ZIM.

Distribution in Angola (Provinces): 2) ?

Historic records: none

Material examined: Angola, 1 ♂, N° 1907 (blue label), n° 118 (white label), old collection, box n° XIV-83, MZUC.

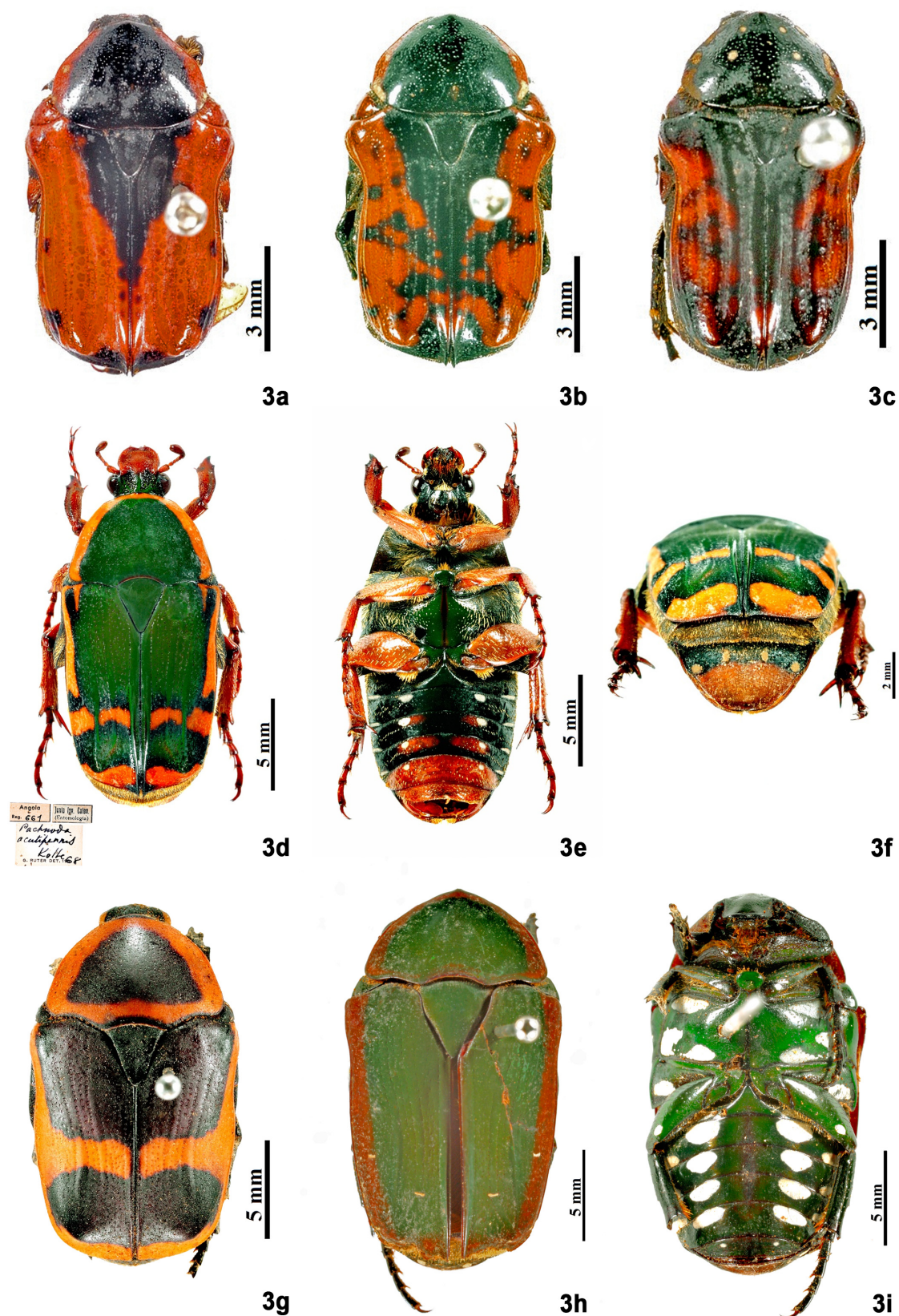


FIGURE 3. Cetoniinae species of Angola. a–c, *Dolichostethus levis* (dorsal views), MZUC; d, *Pachnoda acutipennis* (dorsal view), and associated labels, female, Dundo, LNO, IICT; e and f, *Pachnoda acutipennis*, female (ventral view) and pygidium, female, Dundo, LNO, IICT; g, *Pachnoda ardoini lydae* (dorsal view), female, MZUC; h and i, *Pachnoda bukobensis* (dorsal and ventral views, respectively), male, MZUC.

Remarks. The species was originally described from Bukoba (northeastern Tanzania) (Moser 1914a, Beinhundner 2017a). It is very similar with *Pachnoda rubrocincta* (Hope, 1847), but both taxa are easily segregated by morphological features (Moser 1914a, Ruter 1958) and parameres conformation (Rigout 1989). The male adult specimen of MZUC fits very well this species (Figs. 3h, i). Biological and ecological data are not available for this species. It is a new species record for Angola.

***Pachnoda cordata cordata* (Drury, 1773)**

Distribution: ANG, GHA, GUI, MOZ, RCI, RSA, SLN, TOG.

Distribution in Angola (Provinces): 1) LNO.

Historic records:

—Quango (=Cuango) (LNO) (Quedenfeldt 1884);

—Angola (without locality) (Ferreira 1965).

Material examined: none.

Remarks. The species is polytypic with six to eight known subspecies in Africa (Krajcik 2008a; Beinhundner 2017a; Schoolmeesters 2018). Some biological and ecological data were provided by Holm & Marais (1992).

***Pachnoda discolor kolbei* (Schürhoff, 1938)**

(Figs. 4a, b)

Distribution: ANG, DOC, ZAM.

Distribution in Angola (Provinces): 1) ?; 2) BIE.

Historic records:

—Angola (without locality) (Schoolmeesters 2018).

Material examined: Satchijamba (13° 44' 54.69'' S, 17° 10' 35.03'' E, 1579 m alt., 303) (BIE), 1♂, 3.XI.2014, BT, A. Serrano & R. Capela leg., ASC.

Remarks. Schoolmeesters (2018) includes Angola in the general distribution of this subspecies without reference to any locality. The Satchijamba adult specimen was collected through BT (Fig. 1a) in an open secondary forest (e.g. Fig. 1e) together with *Polystalactica* (*Trichocelis*) *jossoui* Rojkoff, 2016, *Leucocelis* (*Leucocelis*) *amethystina* (MacLeay, 1938), *L. (L.) niveoguttata* (Blanchard, 1850), *Anthracophorides capeneri* Schein, 1955, *Chondrorrhina* (*Chondrorrhina*) *picturata* (Harold, 1878), *C. (Plaesiorrhinella) undulata* (Bates, 1881), *Diphrontis gerstaeckeri* Quedenfeldt, 1884, *Pseudoclinteria infuscata* (Gory & Percheron, 1833) and *Stethodesma strachani* Bainbridge, 1840. Biological and other ecological data are not available for this species. It is a new species record for the Bié Province.

***Pachnoda frontalis* (Harold, 1878)**

(Fig. 4c)

Distribution: ANG, DOC.

Distribution in Angola (Provinces): 1) MAL, ZAI; 2) HUI, MOX.

Historic records:

—“Inneren Guinea” (Angola, without locality) (Harold 1878 sub *Cetonia frontalis* Har.);

—Malauge (=Malanje) (MAL) (Quedenfeldt 1884 sub *Pachnoda* (*Cetonia*) *frontalis* Har.);

—ZAIRE (without locality) (Ferreira 1965);

—Angola (without locality) (Rigout 1989).

New localities reported: Lubango (6 km NW) (14° 52' 10.9'' S, 13° 27' 12.6'' E, 1858 m alt., 335) (HUI), 1-7.XII.2017, 1♂, P. Schüle leg., PMC (P. Malec, personal communication).

Material examined: Huilla (= Huíla=Lubango) (14° 55' S, 13° 30' E, 1750 m alt., 336) (HUI), 1 ♂, N° 1895 (blue label), n° 71 (white label), Anchieta leg., old collection, box n° VI-75, MZUC; Angola, 1 ♀, N° 1901 (blue label), Welwitsch leg., old collection, box n° VI-75, MZUC; Angola, 1 ♂, 1 ♀, N° 1907 (blue labels), n° 68 (white labels), 1 ♀, N° 1907 (blue label), n° 70 (white label), old collection, box n° XIV-83, MZUC; Calombe (riverhead) (11° 50' S, 19° 56' E, 1360 m alt., 218) (MOX), 17.X.1959, 1 ♀, N° 3249, Estudos Apícolas do Ultramar, n° 46, Junta de Investigações Coloniais (Entomologia), sub *Pachnoda sinuata* var. *quinquepunctata* Kraatz, IICT, MUHNAC.

Remarks. Biological and ecological data are not available for this species. It is a new species record for the Huíla and Moxico Provinces.

***Pachnoda katangensis* (Burgeon, 1931)**

(Fig. 4d)

Distribution: ANG, DOC, ZAM.

Distribution in Angola (Provinces): 1) MOX.

Historic records:

—Vila Luso–Lena (=Luena=Léua) (MOX), Fazenda St^a Cruz (Luso=Luena) (MOX) (Gomes Alves 1973 sub *Pachnoda tridentata katangensis* Burgeon).

Material examined: Luso–Lena (=Luena=Léua) (coord. not available, 219) (MOX), 27.IX.1957, 1 ♀, N° 2912, Junta de Investigações Coloniais (Entomologia), sub *Pachnoda tridentata katangensis* Burgeon (Ruter det.), IICT, MUHNAC; Luso (=Luena) (Fazenda St^a Cruz) (11° 46' S, 20° 06' E, 1280 m alt., 219) (MOX), 23.X.1958, 1 ♀, N° 3034, Estudos Apícolas do Ultramar, Junta de Investigações Coloniais (Entomologia), sub *Pachnoda tridentata katangensis* Burgeon (Ruter det.), IICT, MUHNAC.

Remarks. A species described originally from DOC (Burgeon 1931) and later recorded for ANG (Gomes Alves 1973). However, while Schoolmeesters (2018) includes Angola in its general distribution, Beinhundner (2017a) even citing Gomes Alves (1973) does not. Biological and ecological data are not available for this species.

***Pachnoda kustai hassoni* Antoine, 2000**

Distribution: ANG, CAM.

Distribution in Angola (Provinces): 1) CNO.

Historic records:

—Salazar (=Ndalatando) (CNO) (Antoine, 2000).

Material examined: none.

Remarks. A subspecies described from Angola (Antoine 2000), but Beinhundner (2017a) includes also Cameroon in its distribution. Biological and ecological data are not available for this species.

***Pachnoda leopoldiana* (Burgeon, 1931)**

(Figs. 4e, f)

Distribution: ANG, DOC.

Distribution in Angola (Provinces): 1) LNO.

Historic records:

—Dundo (LNO) (Gomes Alves 1959 and Ferreira 1965 sub *Pachnoda tridentata leopoldiana* Burgeon).

Material examined: Angola, 1 ♀, N° 1907 (blue label), n° 84 (white label), old collection, box n° XIV-83, MZUC; Dundo (7° 22' S, 20° 50' E, 1470 m alt., 51) (LNO), 2.V.1946, 1 ♀, N° 653, Junta de Investigações Coloniais (Entomologia), sub *Pachnoda tridentata leopoldiana* Burgeon (Ruter det.), IICT, MUHNAC.

Remarks. Another species described originally from DOC (Burgeon 1931) and recorded later for ANG (Gomes Alves 1959). However, Beinhundner (2017a) and Schoolmeesters (2018) did not report the species for Angola. The adult female specimen from Angola in MZUC (Fig. 4e) fits well this species description. Biological and ecological data are not available for this species.

***Pachnoda marginata marginata* (Drury, 1773)**

(Fig. 4g)

Distribution: ANG, GAM, GHA, GUI, NRE, RCI, SLN, TOG.

Distribution in Angola (Provinces): 1) ?

Historic records:

—Angola (without locality) (Paulino de Oliveira 1882 sub *Cetonia marginata* Drury);

—Angola (without locality) (Ferreira 1965).

Material examined: Angola, 1 ♂, N° 1907 (blue label), Greeff leg., 1 ♀, N° 1907 (blue label), n° 111 (white label), old collection, box n° XIV-83, MZUC.

Remarks. The species is polytypic with eight recognized subspecies in Africa (Krajcik 2008a; Beinhundner 2017a; Schoolmeesters 2018). It was recorded for Angola by Paulino de Oliveira (1882) based on specimens collected by the Portuguese naturalist José de Anchieta. Biological and ecological data are not available for this species.

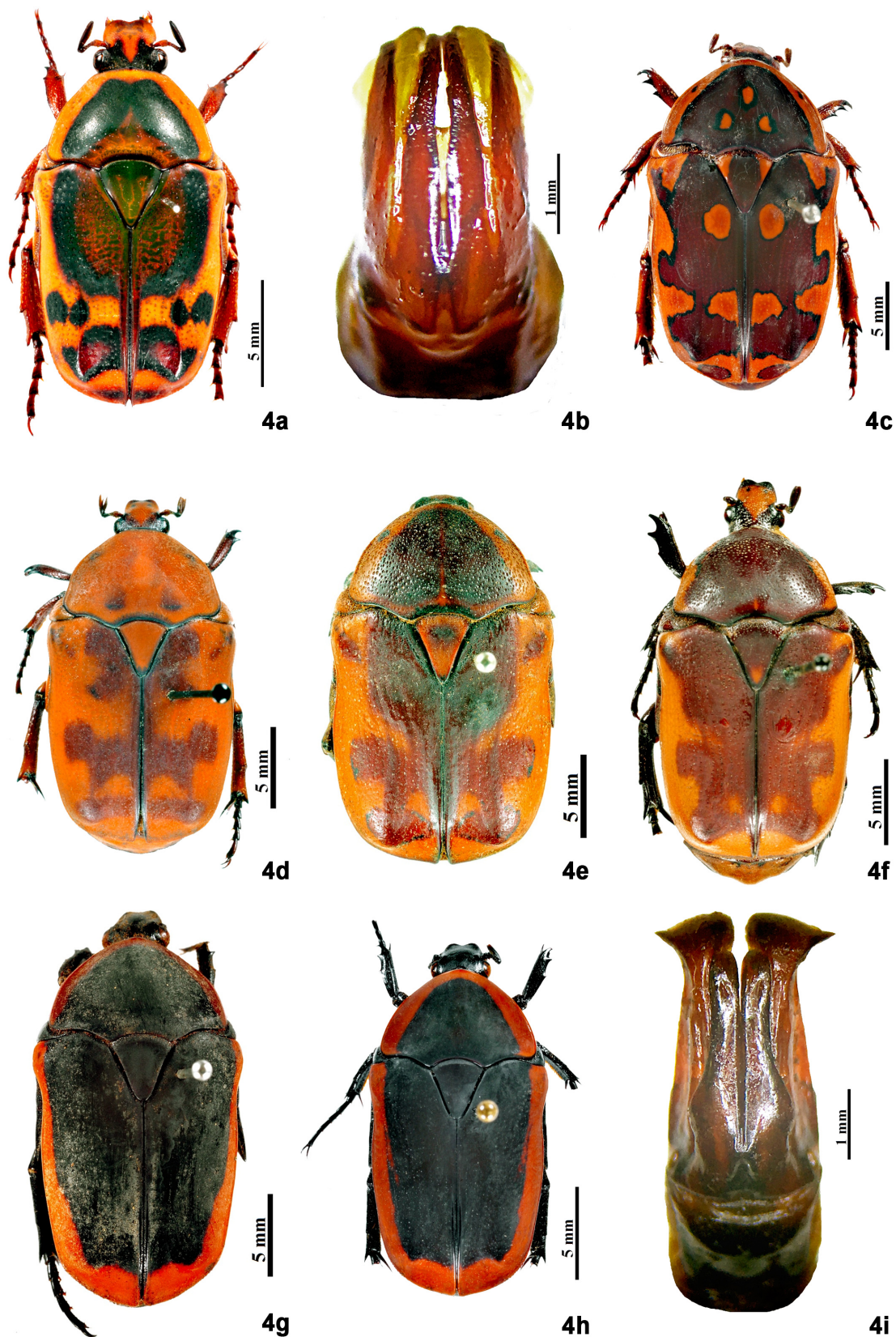


FIGURE 4. Cetoniinae species of Angola. a and b, *Pachnoda discolor kolbei*, male (dorsal view) and parameres (frontal view), respectively, Satchijamba, BIE, ASC; c, *Pachnoda frontalis* (dorsal view), female, MZUC; d, *Pachnoda katangensis* (dorsal view), female, Luso (=Luena), MOX, IICT; e, *Pachnoda leopoldiana* (dorsal view), female, MZUC; f, *Pachnoda leopoldiana* (dorsal view), Dundo, LNO, IICT; g, *Pachnoda marginata marginata* (dorsal view), male, MZUC; h and i, *Pachnoda orphanula nachtigali*, male (dorsal view) and parameres (frontal view), respectively, Dundo, LNO, IICT.

***Pachnoda orphanula nachtigali* (Kraatz, 1885)**

(Figs. 4h, i, 5a)

Distribution: ANG, CON, DOC.

Distribution in Angola (Provinces): 1) LNO.

Historic records:

—Dundo (LNO) (Gomes Alves 1959 and Ferreira 1965 sub *Pachnoda nachtigali* var. *pseudomarginata* Burgeon).

Material examined: Angola, 1 ♂, N° 1907 (blue label), n° 122 (white label), Monteiro leg., old collection, box n° XIV-83, MZUC; Dundo (7° 22'S, 20° 50'E, 1470 m alt., 51) (LNO), -X.1948, 1 ♂, N° 2130, Junta de Investigações Coloniais (Entomologia), IICT, MUHNAC.

Remarks. The species is polytypic, but the number of valid subspecies remains controversial. Marais & Holm (1992), Krajcik (2008a) and Schoolmeesters (2018) recognized five subspecies in Africa, including the nominal one. However, Beinhundner (2017a) recognized also *Pachnoda orphanula pseudomarginata* Burgeon, 1932 as a good subspecies, which is considered a synonym of *P. orphanula nachtigali* by the former authors. The subspecies was recorded for northeastern Angola by Gomes Alves (1959). The adult male specimens of MZUC and MUHNAC fit well this species description, including the parameres conformation (Figs. 4h, i, 5a). The MUHNAC specimen was collected by light trapping. Biological and ecological data are not available for this subspecies.

***Pachnoda picturata* Boheman, 1860**

(Fig. 5b)

Distribution: ANG, BOW, NAB, RSA, TAN.

Distribution in Angola (Provinces): 1) ?

Historic records:

—Angola (without locality) (Paulino de Oliveira 1882 sub *Cetonia picturata* Boh.).

Material examined: Angola, 1 ♀, N° 1907 (blue label) and 139 (white label), old collection, box XIV-83, MZUC.

Remarks. The distribution of this species is not consensual. While Paulino de Oliveira (1882) recorded it to Angola and Holm & Marais (1992) to Botswana and Republic of South Africa, Schoolmeesters (2018) cites it to Tanzania also, but Beinhundner (2017a) only refers Namibia. There is one adult female specimen of Angola (Fig. 5b) deposited in the “old collection” of MZUC which confirms its presence in this country. Some ecological data were provided by Holm & Marais (1992).

***Pachnoda poggei* (Harold, 1878)**

(Fig. 5c)

Distribution: ANG, DOC.

Distribution in Angola (Provinces): 1) LNO.

Historic records:

—“Inneren Guinea” (Angola, without locality) (Harold 1878 sub *Cetonia poggei* Har.);

—Dundo (LNO) (Gomes Alves 1959, Ferreira 1965).

Material examined: None.

Remarks. The species was recorded for Angola by Gomes Alves (1959). Strangely, while the parameres (Fig. 5c) are in the IICT, the correspondent adult specimen, correctly identified by Gomes Alves (1959), was not found. Biological and ecological data are not available for this species.

***Pachnoda rubriventris rubriventris* (Moser, 1910)**

Distribution: ANG, DOC.

Distribution in Angola (Provinces): 1) LNO.

Historic records:

—Dundo (LNO) (Ruter 1958);

—Angola (without locality) (Ferreira 1965 sub *P. rubriventris propinqua* Ruter).

New localities reported: Calulo (5 km N) (coord. not available, 128) (CUS), 23.XI.2013, 1 ♂, P. Schüle leg., PMC (P. Malec, personal communication).

Material examined: None.

Remarks. There are three recognized subspecies in this species. Despite the reference of the nominal subspecies to Angola by Ruter (1958) based on the observation of specimens from Dundo, both Beinhundner (2017a) and Schoolmeesters (2018) only consider its presence in DOC. Biological and ecological data are not available for this species.

***Pachnoda rubriventris rubrocinctoides* Ruter, 1958**

(Figs. 5d, e)

Distribution: ANG, DOC.

Distribution in Angola (Provinces): 1) ?; 2) MAL.

Historic records:

—Angola (without locality) (Ruter 1958);

—Angola (without locality) (Ferreira 1965 sub *P. rubrocinctoides* Ruter).

Material examined: Carima (Cacuso–Pungandongo) (09° 35′ 00″ S, 15° 42′ 01″ E, 1117 m alt., 130) (MAL), 17–21.XI.2017, 1♂, CT, A. Serrano & R. Capela leg., ASC.

Remarks. As the precedent subspecies, this was not reported for Angola by Beinhundner (2017a) and Schoolmeesters (2018). However, Ruter (1958) quotes with some doubt a female specimen of Angola deposited in “Muséum national d’Histoire naturelle de Paris” to this subspecies. The male specimen sampled in Carima (Fig. 5d) fits very well the morphological description, including the parameres features (Fig. 5e) indicated by Ruter (1958) (see also Rigout 1989). It was sampled by CT in an open secondary forest together with *Chlorocala africana mutica* (Harold, 1878), *Chondrorrhina* (*Chondrorrhina*) *picturata* (Harold, 1878) and *Tmesorrhina tridens* Duvier, 1891. Biological and ecological data are not available for this species. It is a new record for the Malanje Province.

***Pachnoda rubrocincta* (Hope, 1847)**

(Figs. 5f, g)

Distribution: ANG, BEN, GAB, GUI, LIR, RCI.

Distribution in Angola (Provinces): 1) MAL.

Historic records:

—Malange (=Malanje) (MAL) (Quedenfeldt 1884);

—Angola (without locality) (Moser 1914a sub *P. dubocagei* Thomson);

—Angola (without locality) (Ferreira 1965 sub *P. dubocagei* Thomson).

Material examined: Angola, 1 ♂, N° 1907 (blue label), n° 90 (white label), 1 ♀, N° 1907 (blue label), n° 92 (white label), 1 ♂, 1 ♀, N° 1907 (blue labels), n° 93 (white labels), old collection, box n° XIV-83, MZUC.

Remarks. Despite the species has been recorded for Angola (*e.g.* Quedenfeldt 1884, Moser 1914a), Beinhundner (2017a) did not report this country in its distribution. Biological and ecological data are not available for this species.

***Pachnoda rufovirens* Quedenfeldt, 1884**

(Figs. 5h, i, 6a)

Distribution: ANG.

Distribution in Angola (Provinces): 1) LNO, MAL; 2) BIE, HUA.

Historic records:

—Malange (=Malanje) (MAL) (Quedenfeldt 1884);

—Dundo (LNO) (Gomes Alves 1959; Ferreira 1965);

—Angola (without locality) (Rigout 1989).

Material examined: Angola, 1 ♂, N° 1907 (blue label), n° 135 (white label), old collection, box n° XIV-83, MZUC; Angola, 1 ♂, N° 2103 (blue label), JPC, box n° I-70, MZUC; Huambo (12° 46′ S, 15° 44′ E, 1650 m alt., 256) (HUA), 1 ♂, X.1934, N° 1984 (blue label), n° 67a (white label, red number), J. Pimentel leg., box n° I-70; Dundo (7° 22′ S, 20° 50′ E, 1470 m alt., 51) (LNO), -X.1948, 1 ♀, N° 2148, Junta de Investigações Coloniais, *Pachnoda rufovirens* Quedenfeldt (Ruter det.), IICT, MUHNAC; Kakande (12° 42′ 50.41″ S, 16° 45′ 33.57″ E, 1716 m alt., 258) (BIE), 30.XI.2017, 1♂, 1♀, DO, A. Serrano leg. ASC.

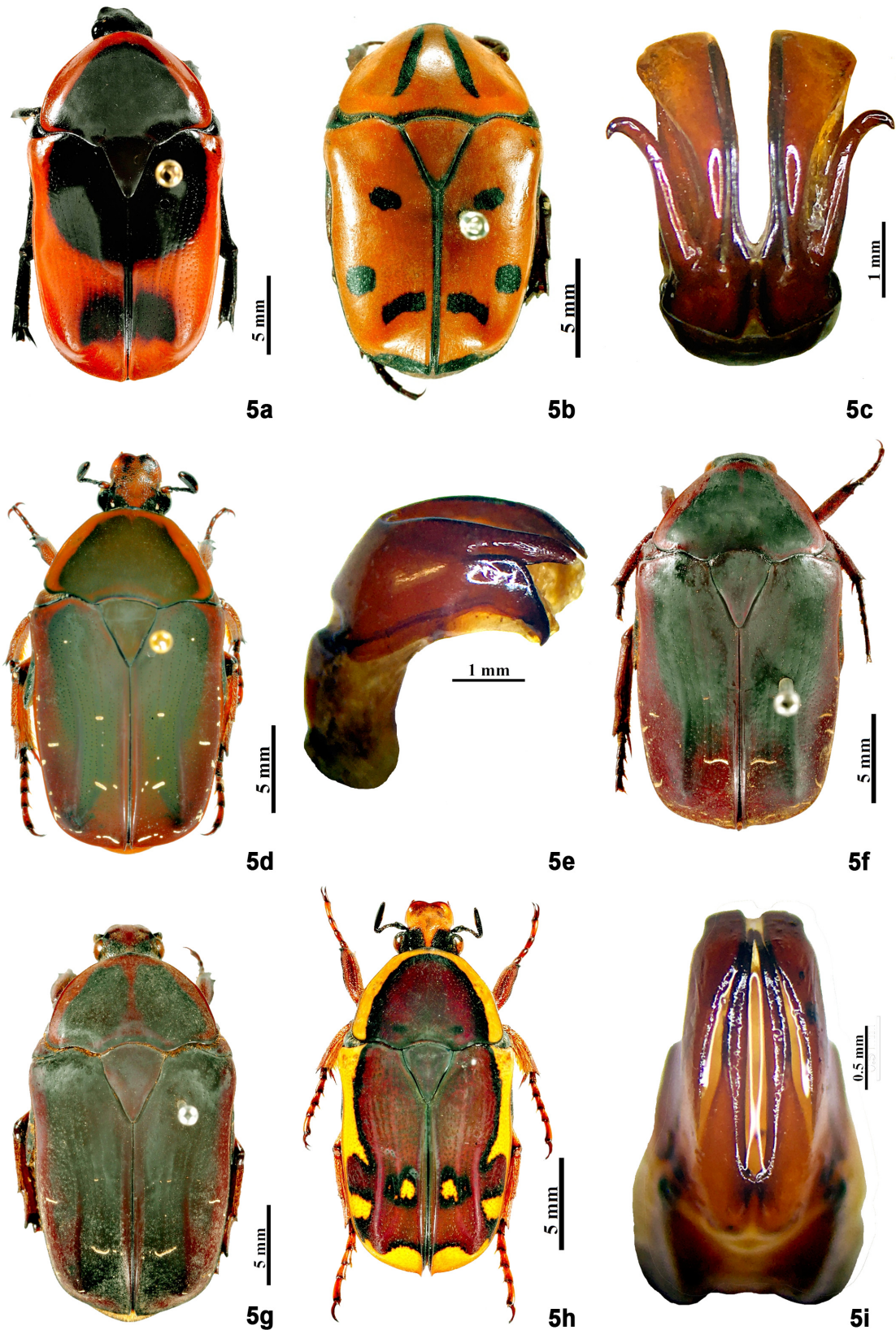


FIGURE 5. Cetoniinae species of Angola. a, *Pachnoda orphanula nachtigali* (dorsal view), male, MZUC; b, *Pachnoda picturata* (dorsal view), female, MZUC; c, *Pachnoda poggei*, parameres (frontal view), Dundo, LNO, ICT; d and e, *Pachnoda rubriventris rubrocinctoides*, male (dorsal view) and parameres (lateral view), respectively, Carima, MAL, ASC; f and g, *Pachnoda rubrocincta* (dorsal views), male and female, respectively, MZUC; h and i, *Pachnoda rufovirens*, male (dorsal view) and parameres (frontal view), respectively, Kakande, BIE, ASC.

Remarks. A species described from Angola (Quedenfeldt 1884) and as far as we know only known from this country (Beinhundner 2017a). Marais & Holm (1992) and Krajcik (2008a) considered this species a synonym of *P. discolor kolbei* Schürhoff, 1938. However, both taxa are easily segregated by the parameres conformation (Rigout 1989). The male adult specimens of MUHNAC and Kakande fit well this species description, including the parameres (e.g. Fig. 5i). The Kakande adult specimens were collected alive on the soil in a secondary open forest, being apparently anesthetized by the consumption of tree saps. Biological and ecological data are not available for this species. It is a new species record for the Bié and Huambo Provinces.

***Pachnoda sinuata calceata* (Harold, 1878)**

Distribution: ANG, NAB, RSA, ZIM.

Distribution in Angola (Provinces): 1) HUI.

Historic records:

—Angola (HUI) (Holm & Marais 1992).

Material examined: none.

Remarks. There are four or five recognized subspecies within *P. sinuata* Fabricius, 1775, depending of the authors (e.g. Krajcik 2008a; Beinhundner 2017a). *Pachnoda sinuata calceata* is known from NAB and ZIM (Beinhundner 2017a) and Eastern Cape (Malec & Šípek 2017), but Holm & Marais (1992) include the south western region of Angola in its distribution. Some biological and ecological data were provided by Holm & Marais (1992).

***Pachnoda sinuata flaviventris* (Gory & Percheron, 1833)**

(Figs. 6b, c, d)

Distribution: ANG, RSA, ZIM.

Distribution in Angola (Provinces): 1) HUI, LNO; 2) LUA, MOX.

Historic records:

—Huila (HUI) (Paulino de Oliveira 1882 sub *Cetonia flaviventris* Gory & Perch.);

—Dundo (LNO) (Gomes Alves 1959 sub *P. sinuata* Kraatz).

Material examined: Angola, 5 ♀, N° 1965 (blue labels), n° 189 (white labels), RQC/CSFC, box n° II-71, MZUC; Angola, 2 ♀, N° 1907 (blue labels), n°s 85 and 87 (white labels), old collection, box n° XIV-83, MZUC; Dundo (7° 22'S, 20° 50'E, 1470 m alt., 51) (LNO), -.XI.1948, 1 ♀, N° 2140, -.XII.1948, 1 ♂, N° 2146, -.I.1949, 1 ♀, N° 2131, Junta de Investigações Coloniais (Entomologia), IICT, MUHNAC; Calombe (riverhead) (11° 50'S, 19° 56'E, 1360 m alt., 218) (MOX), 17.X.1959, 1 ♀, N° 3249, Estudos Apícolas do Ultramar, n° 46, Junta de Investigações Coloniais (Entomologia), IICT, MUHNAC; Luanda (8° 50'S, 13° 15'E, 70 m alt., 89) (LUA), 15.VIII.1970, 4 ex., n°s 4342, 4343, 4344, 4345, A. Bivar de Sousa leg., ABSC, MUHNAC; Luanda (8° 48' 28'' S, 13° 14' 19'' E, 7 m alt., 89) (LUA), 26.XI. 2015, 1 ♀, DO, A. Serrano leg., ASC.

Remarks. Some adult specimens collected in Luanda like the ones deposited in MZUC fit very well the habitus (e.g. Figs. 6b, c) of the nominal species (see p. 221 in Beinhundner 2017a) and others (e.g. Fig. 6d) the habitus of *P. sinuata machadoi* Ruter (in Rigout 1982) (see also Beinhundner 2017a, figs 1–5, p. 224). However, all present the underside yellow, a character associated to *P. sinuata flaviventris*. The larva has been described by Donaldson (1987). Biological and ecological data were provided by Holm & Marais (1992). A basic guideline to captive breeding was also provided by Malec & Šípek (2016) for the nominal species. It is a new species record for the Luanda and Moxico Provinces.

***Pachnoda vethi* Lansberge, 1886**

(Figs. 6e, f, g)

Distribution: ANG.

Distribution in Angola (Provinces): 1) BGU; 2) HUI.

Historic records:

—Benguela (BGU) (Lansberge 1886);

—Angola (without locality) (Schüroff 1938 and Ferreira 1965 sub *P. angolensis* Schürhoff);

—Angola (without locality) (Rigout 1989).

Material examined: Humpata (15° 01'S, 13° 23'E, 1940 m alt., 355) (HUI), 20.XI.1957, 1 ♂, 1 ♀, N° 2965, Estudos Apícolas do Ultramar n° 117, Junta de Investigações Coloniais (Entomologia), IICT, MUHNAC.

Remarks. The species is endemic of Angola (Beinhundner 2017a, Schoolmeesters 2018). It seems a rare species (Rigout 1989). The adult specimens of *Humpata* (IICT) were determined under the name of *Pachnoda rufovi-rens* (Gomes Alves det.). Biological and ecological data are not available for this species. It is a new species record for the Huila Province.

***Pachnoda viridana karinae* Antoine, 2000**

(Fig. 6h)

Distribution: ANG.

Distribution in Angola (Provinces): 1) CUS; 2) HUA.

Historic records:

—Kwanza Sul (without locality) (CUS) (Antoine 2000).

New localities reported: Conda (5 km W) (Serra Cumbira) (11° 8' 21.3'' S, 14° 17' 27.2'' E, 856 m alt., 185) (CUS), 19-20.XI.2017, 2♂, S. Naumann, E. Ott and H. Sulak leg., PMC (P. Malec, personal communication).

Material examined: Huambo (12° 46'S, 15° 44'E, 1650 m alt., 256) (HUA), 1 ♂, IX. 1934, N° 1984 (blue label), J. Pimentel leg., box n° I-70, MZUC.

Remarks. There are four recognized subspecies within *P. viridana* Blanchard, 1850. This subspecies was described by Antoine (2000) and is endemic of Angola (Beinhundner 2017a; Schoolmeesters 2018). The two specimens of Conda were captured in a coffee plantation (P. Malec, personal communication). Biological and other ecological data are not available for this subspecies. It is a new species record for the Huambo Province.

Genus *Pachnodella* Stichel, 1922

This is a controversial genus. The genus *Marmylida* Thomsom, 1880 genus was synonymized with it by Rigout (1989). However, it was recognized later as valid by Holm & Marais (1992). Despite this, Krajcik's catalogue (2008a) considers *Pachnodella* as a synonym of *Marmylida*. However, Antoine (2004a) and Beinhundner (2017a) recognize both genera valid. Here we follow Antoine (2004a) and Beinhundner (2017a) which include three species within each genus. Two species of *Pachnodella* are represented in Angola (Paulino de Oliveira 1882).

***Pachnodella impressa* (Goldfuss, 1805)**

(Fig. 6i)

Distribution: ANG, BOW, DOC, MOZ, RSA, ZAM, ZIM.

Distribution in Angola (Provinces): 1) BIE, CCU, CNN, HUI, MAL; 2) HUA, UIG.

Historic records:

—Humbe (CNN), Huila (HUI) (Paulino de Oliveira 1882 sub *Cetonia impressa* Goldfuss);

—Malange (=Malanje) (MAL) (Quedenfeldt 1884 sub *Pachnoda impressa* Goldf.);

—Dongo (HUI), Mukuva (=Mocuva), Menong (=Menongue) (CCU) (Bourgoin 1925 sub *Conostethus impressus* Goldf.);

—Silva Porto (=Kuito=Cuito) (BIE) (Gomes Alves 1973 sub *Conostethus impressus* Goldf.).

New localities reported: Lubango (6 km NW) (14° 52' 10.9'' S, 13° 27' 12.6'' E, 1858 m alt., 335) (HUI), 1-7.XII.2017, 1♀, P. Schüle leg., PMC (P. Malec, personal communication).

Material examined: Angola, 3 ♂, 2 ♀, without n°s, 1 ♂, 1 ♀, N° 2110 (blue label), JPC, box n° I-70, MZUC; Huambo (12° 46'S, 15° 44'E, 1650 m alt., 256) (HUA), 2 ♀, II.1934, N° 2190 (blue labels), n° 59 (white labels, red n°s), 2 ♂, 1 ♀, X.1934, N° 1984 (blue labels), n° 67a (white labels, red n°s), 1 ♀, X.1934, N° 1989 (blue label), n° 67a (white label, red n°), 3 ♂, X.1934, N° 1989 (blue labels), n° 77a (white labels, red n°s), J. Pimentel leg., JPC, box n° I-70, MZUC; Angola, 1 ♂, N° 1907 (blue label), 1 ♀, N° 1907 (blue label), n° 88 (white label), 1 ♂, N° 1907 (blue label), n° 114 (white label), old collection, box n° XIV-83, MZUC; Silva Porto (=Kuito=Cuito) (12° 23'S, 16° 57'E, 1450 m alt., 234) (BIE), 25.X.1957, 1 ♀, N° 2946, Estudos Apícolas do Ultramar n° 98, Junta de Investigações Coloniais (Entomologia), sub *Conostethus impressus* Goldf. (Ruter det.), IICT, MUHNAC; C. E. Humpata (coords not available, 335) (HUI), 17.XII.1965, 1 ex., N° E.7291, n° 609, H. Rodrigues leg., JPCC, MUHNAC; Quipedro (07° 53'S, 14° 31'E, 690 m alt., 58) (UIG), 1969, 1♀, n° 4346, A. Bivar de Sousa leg., ABSC, MUHNAC.

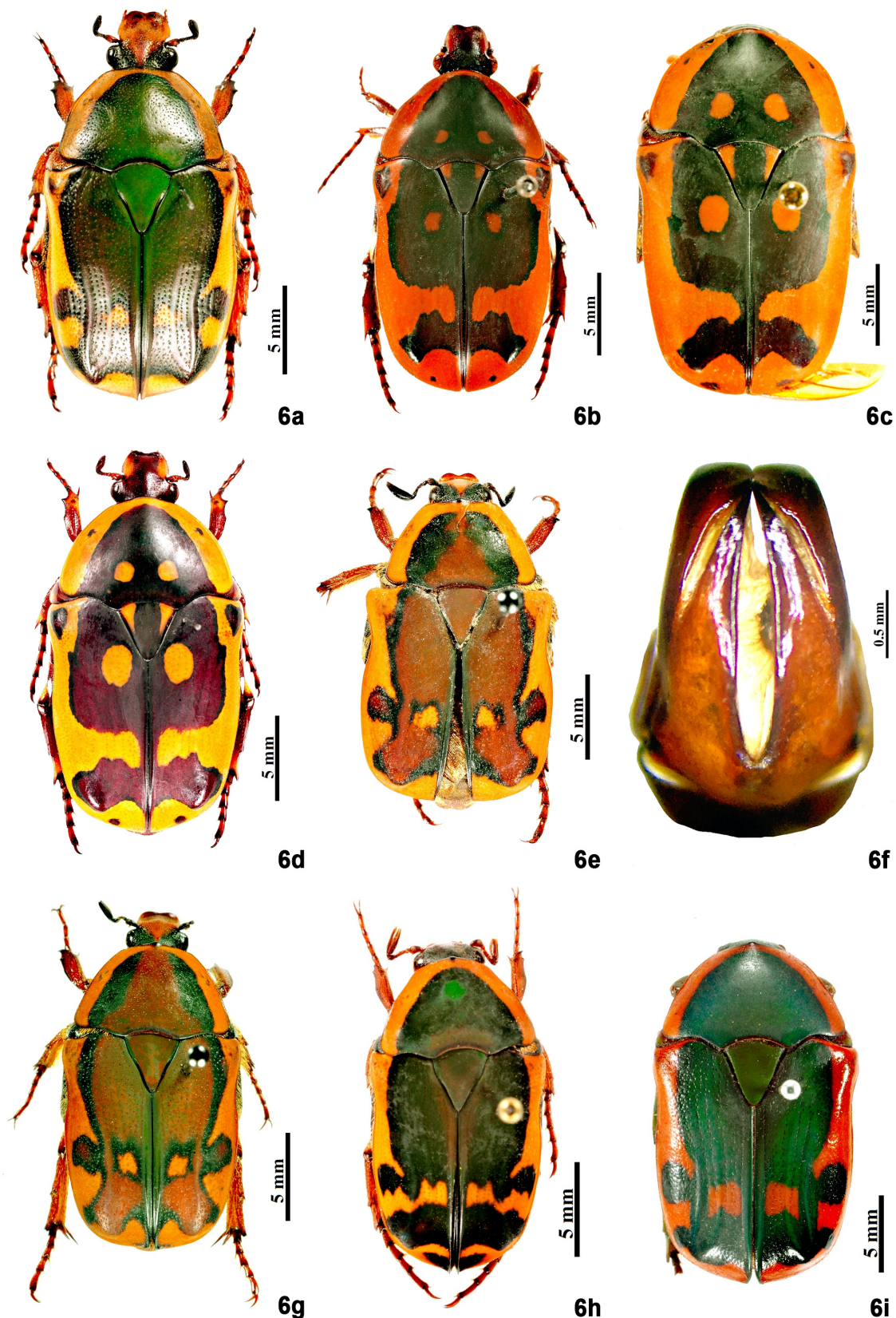


FIGURE 6. Cetoniinae species of Angola. a, *Pachnoda rufovirens* (dorsal view), female, Kakande, BIE, ASC; b–d) *Pachnoda sinuata flaviventris* (dorsal views), females of MZUC, Luanda, LUA, ABSC and Luanda, LUA, ASC, respectively; e and f, *Pachnoda vethi*, male (dorsal view) and parameres (frontal view), respectively, Humpata, HUI, IICT; g, *Pachnoda vethi* (dorsal view), female, Humpata, HUI, IICT; h, *Pachnoda viridana karinae* (dorsal view), male, Huambo, HUA, MZUC; i, *Pachnodella impressa* (dorsal view), female, MZUC.

Remarks. The species is widespread throughout central, southwestern and southern Africa (Gomes Alves 1973; Beinhundner 2017a; Schoolmeesters 2018). Curiously, despite the records to Angola (see “Historic records”) the species is not referred for this country in the Ferreira’s catalogue (1965) and Beinhundner’s monograph (2017a). Considering both the old and recent records, it seems a common species with a wide distribution in the central and southern provinces of Angola. The larvae instars were described by Donaldson (1987) and ecological data were provided by Holm & Marais (1992). It is a new record for the Huambo and Uíge Provinces.

***Pachnodella marginella marginella* (Fabricius, 1775)**

(Fig. 7a)

Distribution: ANG, BEN, CAM, CON, DOC, GUI, RCI, SEN, SLN.

Distribution in Angola (Provinces): 1) LNO.

Historic records:

—Angola (without locality) (Paulino de Oliveira 1882 sub *Cetonia marginella* Fal. ?);

—Dundo (LNO) (Gomes Alves 1959 sub *Pachnoda marginella* Fabricius).

Material examined: Dundo (7° 22′ S, 20° 50′ E, 1470 m alt., 51) (LNO), -XI.1948, 1 ♂, N° 2140, ICT, MUH-NAC.

Remarks. The species is widely distributed throughout western and southwestern Africa (Gomes Alves 1959; Schoolmeesters 2018). Tchiboza *et al.* (2008) and Touroult & Le Gall (2013) provided biodiversity information (abundance, habitat preference) of this species for Benin. There is also a reference citing this species from a remnant moist Afromontane forest in Ethiopia (Kebede & Isotalo 2016). *Pachnodella marginella* was not referred for Angola in the Ferreira’s catalogue (1965). However, Gomes Alves (1959) provided some biological comments on this species for Guinea-Bissau and Angola. Larvae in the former country were found associated with *Oryctes* larvae in decaying trunks of *Olaea* palms. The species is considered a pest of citrus orchards in Ghana due to its economic impact (Aidoo *et al.* 2016). The third instar larva was described by Jerath & Unny (1965).

Genus *Phonotaenia* Kraatz, 1880

There is some controversy on this genus. Krikken (1984) synonymized it with *Polybaphes* Kirby, 1827, but it was re-established by Antoine & Legrand (2005) and then revised by Antoine (2005a). However, *Polybaphes* Holm & Marais, 1992 became available, having *Cetonia aequinoctialis* Olivier, 1789 as type species. *Polybaphes* is still kept valid by Krajcik (2008a) catalogue, but Beinhundner (2017a) and Schoolmeesters (2018) follow the criterion of Antoine (2005a), including *C. aequinoctialis* in the genus *Phonotaenia*. The genus has 17 species (Beinhundner 2017a) of which three were previously recorded for Angola (Paulino de Oliveira 1882; Antoine 2005a; Antoine & Legrand 2005).

***Phonotaenia balteata* (De Geer, 1778)**

(Figs. 7b, c, d, e)

Distribution: ANG, BEN, BOW, DOC, MAW, MOZ, NAB, RSA, ZAM, ZIM.

Distribution in Angola (Provinces): 1) MAL; 2) LUA.

Historic records:

—Duque de Bragança (=Calandula or Kalandula) (MAL) (Paulino de Oliveira 1882 sub *Gametis aequinoctialis* Ol.).

Material examined: Angola, 2 exs, N° 1907 (blue labels), n°s 149 and 151 (white labels), 2 exs, N° 1907 (blue labels), sub *Gametis aequinoctialis* Oliv., old collection, box n° IX-78, MZUC; Luanda (8° 50′ S, 13° 15′ E, 70 m alt., 89) (LUA), 15.VII.1972, 1 ex., n°4356, A. Bivar de Sousa leg., ABSC, MUHNAC.

Remarks. Paulino de Oliveira (1882) registered *Gametis aequinoctialis* for Angola, but probably was a misinterpretation with *P. balteata*. The four specimens of Angola deposited in the “old collection” of MZUC belong to this species. The specimens present some variation in the general elytral drawing pattern colour, some looking *Phonotaenia balteata zanzibarica* (Raffray, 1877) or even *Phonotaenia camiadei* Antoine, 2005, with the pronotum always black with white lateral margins (Figs. 7b–e). Unfortunately, the specimens are very old, precluding the extraction of the parameres. Ecological data are available in Holm & Marais (1992) and Malec & Šípek (2016). A

basic guideline to captive breeding was provided by Malec & Šípek (2016). It is a new species record for the Luanda Province.

***Phonotaenia hassoni* (Antoine & Legrand, 2005)**

Distribution: ANG, CAM, DOC, GAB, RCA.

Distribution in Angola (Provinces): 1) CUS.

Historic records:

—Kwanza Sul (without locality) (CUS) (Antoine & Legrand 2005, Antoine 2005a).

Material examined: none.

Remarks. The species mimics *Phonotaenia scalaris scalaris* Gory & Percheron, 1833 with which can be mistaken (Antoine & Legrand 2005). Only the holotype specimen of the typical series is known from Angola. Biological and ecological data are not available for this species.

***Phonotaenia scalaris scalaris* (Gory & Percheron, 1833)**

(Fig. 7f)

Distribution: ANG, BEN, CAM, CON, DOC, GAB, GHA, KEN, RCA, RRW, TOG, UGA.

Distribution in Angola (Provinces): 1) CUS, LNO.

Historic records:

—Angola (without locality) (Paulino de Oliveira 1882 sub *Gametis scalaris* Gory & Perch.);

—Luanda: rio Muka (not LUA, but LNO) (Gomes Alves 1959; Ferreira 1965; see Remarks);

—Kwanza Sul (without locality) (CUS), Dundo (LNO) (Antoine 2005a).

Material examined: Muita River (Luembe) (07° 48' S, 21° 26' E, 1260 m alt., 69) (LNO), -.VI.1948, 1 ex., N° 2137, Junta de Investigações Coloniais (Entomologia), IICT, MUHNAC.

Remarks. The adult specimen of Luembe was sampled in a forest (registered information). Gomes Alves (1959) recorded this specimen for River Muka (Luanda Province), but it was an erroneous interpretation of the register book of IICT which gives the following information: “Rio Muka (afluente do Luembe—Lunda NE)”= [Muka River (tributary of Luembe—Lunda NE)]. The true tributary of Luembe (River) is Muita River, not Muka River. Moreover, the reference to Lunda NE reinforces this interpretation. Some ecological remarks were provided for the subspecies *Phonotaenia scalaris latefasciata* Moser, 1910 in Sierra Leone by Malec (2015).

Genus *Polystalactica* Kraatz, 1882

There are three subgenera recognized in the genus, including the nominal one (Beinhundner 2017a). A synopsis of the African species was done by Beinhundner (2001). Holm & Marais (1992) and later Antoine (2002b) revised the subgenus *Leptothyrea* Kraatz, 1882. Antoine (2010) relegated the genus *Trichocelis* Moser, 1908 to the level of subgenus of *Polystalactica*. Later, Rojkoff (2016b) reviewed this subgenus. There are two species recorded previously for Angola, all in the nominal subgenus (Beinhundner 2017a). A new species record in the subgenus *Trichocelis* is reported to the Angolan entomofauna in this work.

***Polystalactica (Polystalactica) affinis affinis* (Kolbe, 1895)**

(Fig. 7g)

Distribution: ANG, CON, DOC, ZAM.

Distribution in Angola (Provinces): 1) HUA; 2) HUI.

Historic records:

—Bailundo (HUA) (Schein 1958);

—Angola (without locality) (Antoine 2010).

New localities reported: HUI, SRC (S. Rojkoff, personal communication); 75 km N Caconda (near Cuima) (13° 26' S, 15° 21' E, 1587 m alt., 279) (HUA), 8.XI.2011, 1♂, P. Schüle leg., PMC (P. Malec, personal communication).

Material examined: Cuima—Cusse (13° 20' 45'' S, 15° 34' 22'' E, 1633 m alt., 280) (HUA), 5.XI.2015, 1♂, DO, A. Serrano & R. Capela leg., ASC.

Remarks. There are two recognized subspecies in the nominal species (Beinhundner 2017a). The Cuima–Cusse adult specimen was sampled on tree leaves in an open secondary forest. Other biological and ecological data are not available for this species. It is a new species record for the Huíla Province.

***Polystalactica (Polystalactica) stellata* (Harold, 1878)**

Distribution: ANG, BEN, CAM, DOC, EQG, GHA, NRE, RCI, TOG.

Distribution in Angola (Provinces): 1) ?

Historic records:

—Angola (without locality) (Schein 1958).

Material examined: none.

Remarks. A widespread species in western and southwestern Africa (Beinhundner 2017a; Schoolmeesters 2018). Biological and ecological data are not available for this species.

****Polystalactica (Trichocelis) jossoi* Rojkoff, 2016**

(Fig. 7h)

Distribution: ANG, ZAM.

Distribution in Angola (Provinces): 2) BIE.

Historic records: none.

Material examined: Satchijamba (13° 44' 54.69'' S, 17° 10' 35.03'' E, 1579 m alt., 303) (BIE), 3.XI.2014, 1♀, BT, A. Serrano leg. & R. Capela, ASC.

Remarks. The species was only known until now from ZAM (Rojkoff 2016b, Beinhundner 2017a). The Satchijamba adult specimen fits well the original description of this species (Rojkoff 2016b). It was sampled by BT (Fig. 1a) in a secondary open forest. See also the remarks under *Chlorocala africana mutica*. Additional ecological data are available in Rojkoff (2016b). It is a new subgenus and species record for Angola and Bié Province.

Genus *Rhabdotis* Burmeister, 1842

A diagnosis of the genus, a key to the nine species hitherto known, their types and distribution patterns were given by Holm (1991a). Since this date more sixteen species were described, as well as four subspecies from different African countries (see updates in Beinhundner 2017a). Within this assemblage, only two species were recorded for Angola with certitude (Paulino de Oliveira 1882; Rigout & Allard 1992; Beinhundner 2017a; Schoolmeesters 2018).

***Rhabdotis aulica aulica* (Fabricius, 1781)**

Distribution: ANG, RSA, TAN.

Distribution in Angola (Provinces): 1) MOX.

Historic records:

—Zambeze (=Luena River) (MOX) (Paulino de Oliveira 1882 sub *Rhabdotis aulica* Ol.).

Material examined: none.

Remarks. There are three subspecies recognized in this species (Beinhundner 2017a). The nominal subspecies was recorded for Angola by Paulino de Oliveira (1882). The Zambeze locality given by Paulino de Oliveira (1882) is close to the Luena River near the Zambia border in Moxico Province. The larvae instars of *R. aulica* were described by Donaldson (1987). Biological and ecological data were provided by Holm & Marais (1992).

***Rhabdotis semipunctata* (Fabricius, 1787)**

(Fig. 7i)

Distribution: ANG, BOW, NAB, RSA, ZIM.

Distribution in Angola (Provinces): 1) CNN.

Historic records:

—Angola (without locality) (Fabricius 1787 sub *Cetonia semipunctata* F.);

—Merero (CNN) (Paulino de Oliveira 1882);

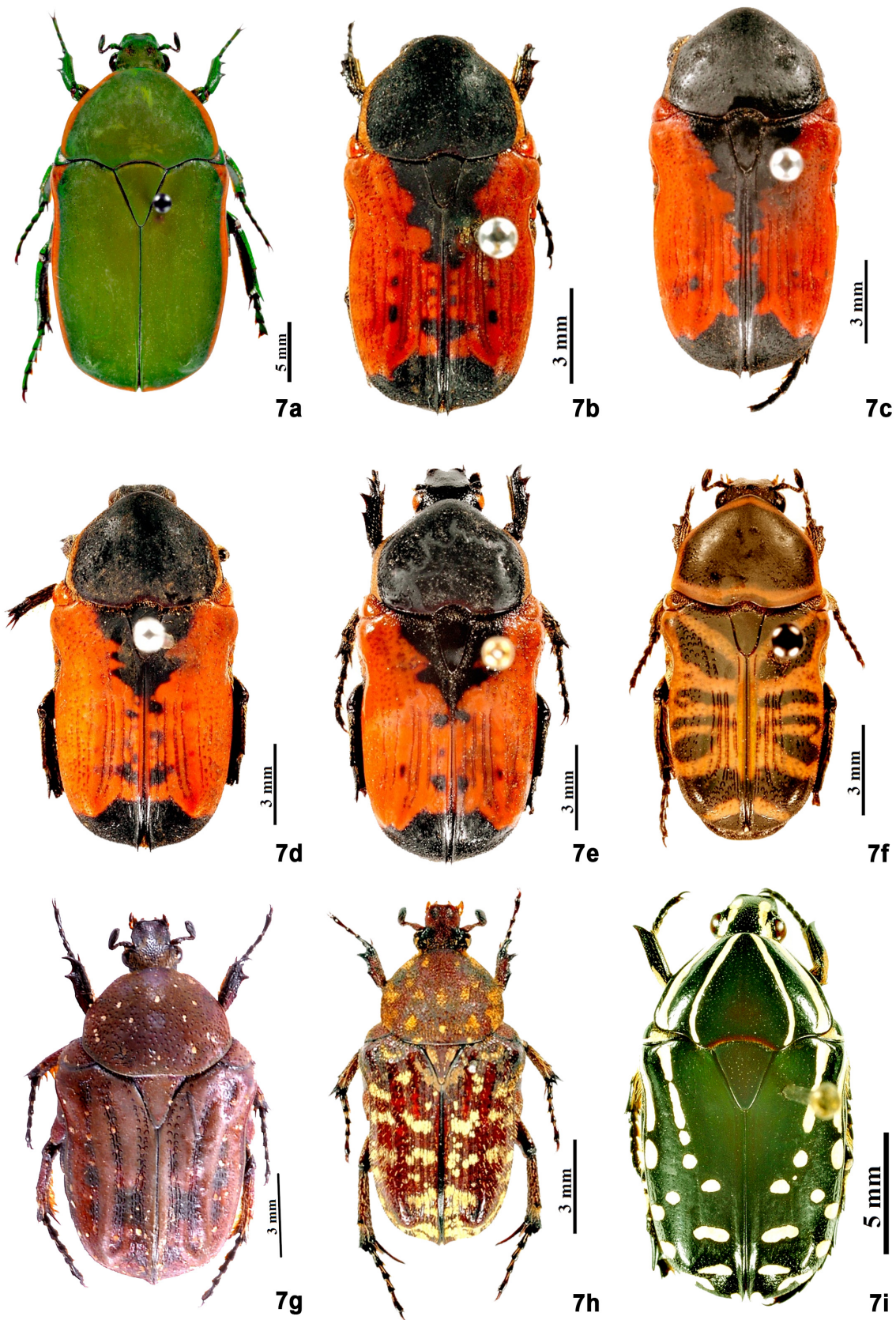


FIGURE 7. Cetoniinae species of Angola. a, *Pachnodella marginella marginella* (dorsal view), male, Dundo, LNO, IICT; b–e) *Phonotaenia balteata* (dorsal views), MZUC; f, *Phonotaenia scalaris* (dorsal view), female, Rio Muita, LNO, IICT; g, *Polystalactica* (*Polystalactica*) *affinis affinis* (dorsal view), male, Cuima–Cusse, HUA, ASC; h, *Polystalactica* (*Trichocelis*) *jossoi* (dorsal view), female, Satchijamba, BIE, ASC; i, *Rhabdotis semipunctata* (dorsal view), male, MZUC.

—Angola (without locality) (Rigout & Allard 1992).

Material examined: Angola, 1 ♂, 1 ex., N° 1975 (blue labels), n° 210 (white labels), RQC/CSFC, box n° II-71, MZUC.

Remarks. The species is known from Angola since Fabricius (1787). The larvae instars of *R. semipunctata* were described by Donaldson (1987). Ecological data were provided by Holm & Marais (1992).

Genus *Tephraea* Burmeister, 1842

The genus was revised by Holm (1992) and includes sixteen species (Beinhundner 2017a). Within this assemblage, one species was previously recorded for Angola (Beinhundner 2017a, Schoolmeesters 2018). A new species record for this country is given in this work.

**Tephraea dichroa* (Schaum, 1844)

(Figs. 8a, b)

Distribution: ANG, BOW, MOZ, NAB, RSA, ZIM.

Distribution in Angola (Provinces): 2) HUI.

Historic records: none.

New localities reported: Cacula (10 km SW) (coord. not available, ? alt., 317) (HUI), 4-6.XI.2011, 1 ex., P. Schüle leg., PMC (P. Malec, personal communication).

Material examined: Angola, 1 ♂, N° 1907 (blue label), 152 (white label), Welwitsch leg., Old collection, box n° VI-75, MZUC; Angola, 1 ♀, N° 1907 (blue label), n° 153 (white label), old collection, box n° IX-78, MZUC.

Remarks. The species is strongly polychromatic (Beinhundner 2017a). The adult specimens of MZUC fit very well this species (Figs. 8a, b) and it is probably that at least the male specimen had been collected in the south of Angola, a territory well explored by Welwitsch. This assumption is supported by the Cacula specimen. Unfortunately, the MZUC specimens do not present any reference (label or register) to the locality from where were the specimens were captured in Angola. It is a new species record for Angola and Huíla Province.

Tephraea leucomelona (Gory & Percheron, 1833)

Distribution: ANG, BOW, MOZ, NAB, RSA, TAN, ZIM.

Distribution in Angola (Provinces): 1) BIE, CNN.

Historic records:

—Bihe (=Bié) (without locality) (BIE) (Gory & Percheron 1833);

—Merero (CNN) (Paulino de Oliveira 1882 sub *Cetonia leucomelana* Gory & Perch.).

Material examined: none.

Remarks. The species was originally described from Angola (Gory & Percheron 1833). The larvae instars of *T. leucomelona* were described by Donaldson (1987) and oviposition by Donaldson & Todner (1992). Biological and ecological data were provided by Holm (1992) and Holm & Marais (1992).

Genus *Trichocephala* Moser, 1916

The genus (*s. str.*) was revised by Krikken (1983) and more recently by Rojko (2008). There are eight recognized species in this genus (Beinhundner 2017a), but only one reported for Angola (Krikken 1983).

Trichocephala (Trichocephala) angolensis (Krikken, 1983)

(Fig. 8c)

Distribution: ANG.

Distribution in Angola (Provinces): 1) ?

Historic records:

—Angola (without locality) (Krikken 1983 and Rojko 2008).

Material examined: Angola, 1 ♂, N° 1907 (blue label), n° 184 (white label), old collection, box n° XIV-83, MZUC.

Remarks. The species was only known from Angola by the male holotype (Krikken 1983). The adult specimen of MZUC (Fig. 8c) fits very well this species description. Ecological data were provided for other species of the genus by Holm & Marais (1992) and Rojko (2008).

Genus *Xeloma* Kraatz, 1881

Holm (1988) provided a diagnosis of the genus, a key to the eight known species and information on their types and distribution patterns. Since this date more five species were described, as well as three subspecies (see updates in Beinhundner 2017a). Beinhundner (1999) makes a synonymic revision of the genus. Three species/subspecies were recorded previously for Angola (Holm 1988).

Xeloma leprosa (Burmeister, 1842)

(Fig. 8d)

Distribution: ANG, BOW, NAB, RSA, ZIM.

Distribution in Angola (Provinces): 1) ?

Historic records:

—Angola (without locality) (Kraatz 1889 sub *Pseudoprotactia puncticollis* Kraatz);

—Angola (without locality) (Ferreira 1965 sub *Pseudoprotactia puncticollis* Kraatz);

—Angola (lectotype, without locality) (Holm 1988).

Material examined: Angola, 10 exs, N° 1907 (blue labels), n° 143a (white labels), old collection, box n° XIV-83, MZUC.

Remarks. The species was recorded for Angola, but no precise localities are known (e.g. Ferreira 1965, Holm 1988). Biological and ecological notes are available in Holm & Marais (1992).

Xeloma maura (Boheman, 1860)

Distribution: ANG, BOW, MOZ, NAB, RSA, ZIM.

Distribution in Angola (Provinces): 1) HUI; 2) CNN.

Historic records:

—Angola (Huila, without locality) (HUI) (Holm 1988).

New localities reported: Ondjiva (40 km NW) (16° 48' 28.7'' S, 15° 25' 54.3'' E, 1124 m alt., 423) (CNN), 18.XII.2017, 1 ex., P. Schüle leg., PMC (P. Malec, personal communication).

Material examined: none.

Remarks. The distribution of this species for southern Africa given by Holm (1988, Fig. 74) indicates a non named locality in the south of Angola (Huila Province, black circle). Biological and ecological notes are available in Holm & Marais (1992). Taking into account the artificial breeding conditions, Malec & Šípek (2017) included this species in their group 3. It is a new record for the Cunene Province.

Xeloma tomentosa angolensis (Valck Lucassen, 1936)

(Figs. 8e, f)

Distribution: ANG, DOC.

Distribution in Angola (Provinces): 1) BIE, CCU, HUA, HUI.

Historic records:

—Bihe (=Bié) (without locality) (BIE), Huilla (=Huila) (without locality) (HUI) (Arrow 1906 sub *Sisyrphora cicatricosa* Burmeister);

—Sanguéve (HUI), Bié (without locality) (BIE) (Valck Lucassen 1936 and Ferreira 1965 sub *Sisyrphora angolensis* Valck Lucassen);

—Nova Lisboa (=Huambo) (HUA), Chianga (HUA), Ganga (CCU), Bié (without locality) (BIE) (Holm 1988);

—Angola (without locality) (Beinhundner 1999).

New localities reported: (HUA) (S. Rojko, personal communication).

Material examined: Angola, 2 exs, N° 1907 (blue labels), n° 173 (white labels), old collection, box n° XIV-83, MZUC; Chianga (12° 44' S, 15° 50' E, 1740 m alt., 256) (HUA), 16.I.1964, 1 ex., N° E.3823, n° 615, E. Fonseca leg., JPCC, MUHNAC.

Remarks. This subspecies was treated as a variety of *Xeloma tomentosa tomentosa* (Gory & Percheron, 1832) by Beinhundner (2017a), a designation without taxonomic value. *Xeloma tomentosa angolensis* presents the white tomentose spots in elytra much smaller and evenly scattered than in the nominal form (Holm 1988). The Chianga specimen was sampled on a shrub (label information). Biological and ecological notes are available in Holm & Marais (1992) for the typical species.

Subtribe Leucocelina Kraatz, 1882

Genus *Acrothyrea* Kraatz, 1882

The genus was revised by Bourgoïn (1921) and a revised list of the genera close to the *Leucocelis* Burmeister, 1842 and *Oxythyrea* Mulsant, 1842 was given by Antoine (1997). There are five accepted species in the genus *Acrothyrea* distributed in two subgenus, the nominal one and *Acrothyrea (Cyclophorellus)* Krikken, 1982 (Beinhundner 2017a). One species was recorded for Angola (Harold 1879).

Acrothyrea (Acrothyrea) rufofemorata (Burmeister, 1842)

(Figs. 8g, h)

Distribution: ANG, KEN, RSA.

Distribution in Angola (Provinces): 1) MAL.

Historic records:

—Pungo Andongo (MAL) (Harold 1879 sub *Leucocelis rufofemorata* Burmeister);

—Angola (without locality) (Ferreira 1965).

Material examined: Angola, 1 ♀, N° 1907 (blue label), n° 170 (white label), old collection, box n° IX-78, MZUC.

Remarks. The species has a scattered known distribution throughout southern and eastern Africa (Ferreira 1965, Beinhundner 2017a). Some ecological notes were given by Holm & Marais (1992). Taking into account the artificial breeding conditions, Malec & Šípek (2017) included this species in their group 3.

Genus *Amaurina* Kolbe, 1895

The genus *Amaurina* was revised by Ruter (1967a) which stated it as a subgenus of *Leucocelis*. It was re-elevated to genus level by Antoine (1997). There are two species recorded for the Angolan fauna (Beinhundner 2017a).

Amaurina ruteri Antoine, 2000

Distribution: ANG.

Distribution in Angola (Provinces): 1) BGU, HUA.

Historic records:

—Benguela (BGU), Serra do Moco, Luimbale (HUA) (Antoine, 2000).

Material examined: none.

Remarks. The species was originally described on the basis of specimens from Angola (Antoine 2000) from where it seems to be endemic. Biological and ecological data are not available.

Amaurina spoliata (Harold, 1879)

(Figs. 8i, 9a)

Distribution: ANG, DOC.

Distribution in Angola (Provinces): 1) HUI, MAL; 2) BGU, BIE, HUA.

Historic records:

—Pungo Andongo (MAL) (Harold 1879 sub *Leucocelis spoliata* Har.);

—Angola (without locality) (Ferreira 1965);

—Sá da Bandeira (=Lubango) (HUI) (Gomes Alves 1973 sub *Leucocelis spoliata* Har.).

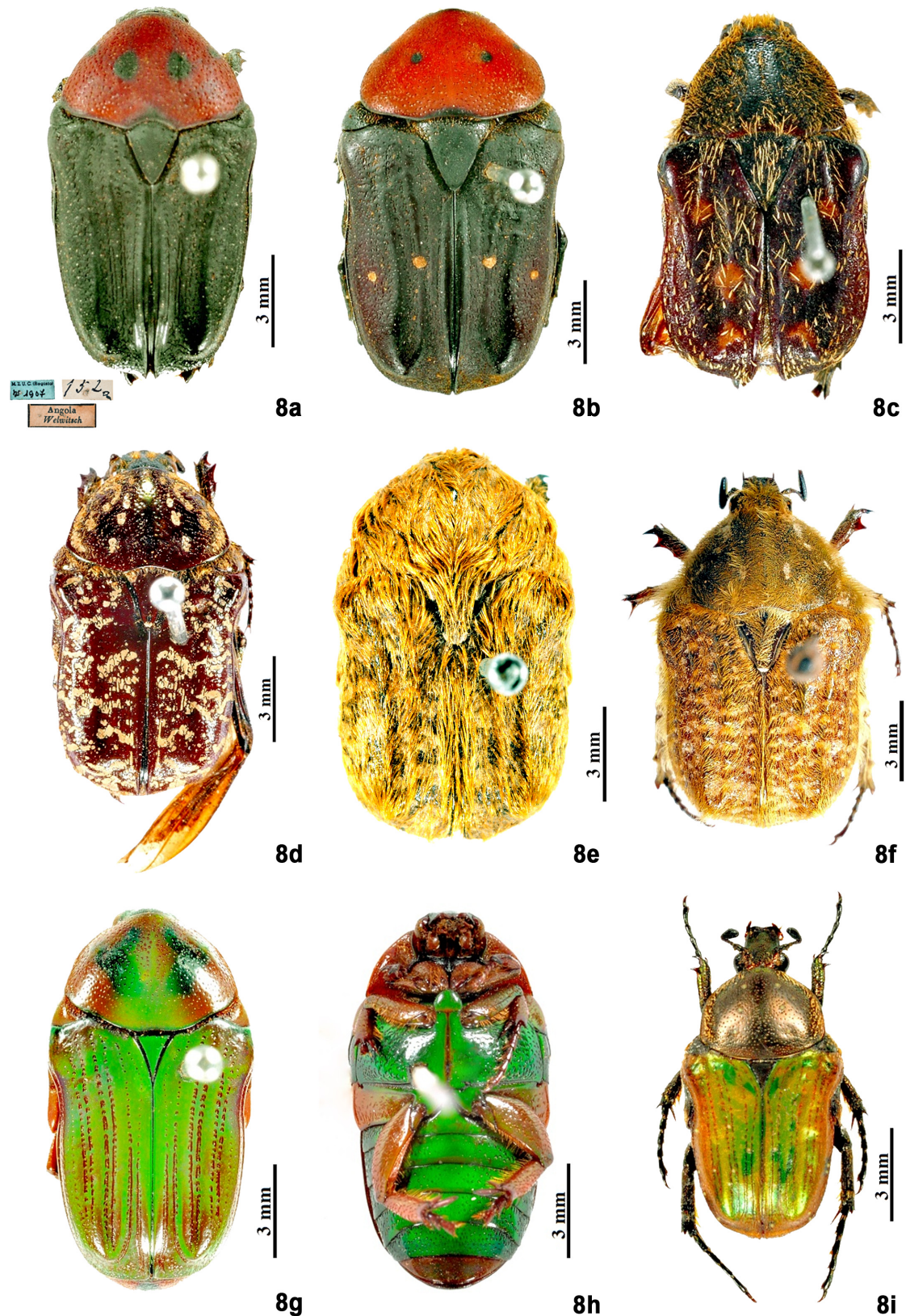


FIGURE 8. Cetoniinae species of Angola. a) *Tephraea dichroa* (dorsal view), and associated labels, male, MZUC; b) *Tephraea dichroa* (dorsal view), female, MZUC; c) *Trichocephala (Trichocephala) angolensis* (dorsal view), MZUC; d) *Xeloma leprosa* (dorsal view), MZUC; e and f, *Xeloma tomentosa angolensis* (dorsal views), MZUC and Chianga, HUA, JPCC, respectively; g and h, *Acrothyrea rufofemorata* (dorsal and ventral views, respectively), female, MZUC; i, *Amaurina spoliata* (dorsal view), male, Capingana–Satchijamba, BIE, ASC.

New localities reported: Lubango (10 km W) (14° 50' 32.5'' S, 13° 24' 06.2'' E, 2103 m alt., 335) (HUI), 1.XII.2017, 1 ♂, P. Schüle leg., PMC (P. Malec, personal communication).

Material examined: Angola, 10 exs, N° 1907 (blue labels), n°s 155 (2 exs), 161, 162, 163, 210, 215, 216, 217 and 218 (white labels), old collection, box n° IX-78, MZUC; Sá da Bandeira (=Lubango) (14° 55' S, 13° 30' E, 1750 m alt., 336) (HUI), 25.XI.1957, 1 ex., N° 2970, *Leucocelis spoliata* Harold, Estudos Apícolas do Ultramar n° 122, Junta de Investigações Coloniais (Entomologia), IICT, MUHNAC; Chianga (12° 44' S, 15° 50' E, 1740 m alt., 256) (HUA), 26.IX.1964, 1 ex., N° E.5695, n° 606, 22.X.1964, 1 ex., N° E.5729, n° 605, E. Fonseca leg., JPCC, MUHNAC; Chioa (coords not available) (BGU), 22.X.1964, 1 ex., N° E.5728, n° 607, C. Matos leg., JPCC, MUHNAC; Capingana–Satchijamba (13° 42' 47.18'' S, 17° 05' 23.81'' E, 1507m alt., 303) (BIE), 8.IV.2014, 1 ♂, DO, A. Serrano leg., ASC; Carima (Cacuso–Pungandongo) (09° 35' 00'' S, 15° 42' 01'' E, 1117 m alt., 130) (MAL), 17.XI.2017, 9 ♂, 5 ♀, 20.XI.2017, 16 ♂, 4 ♀, 21.XI.2017, 2 ♂, 1 ♀, DO, A. Serrano & R. Capela leg., ASC.

Remarks. The species was originally described on the basis of specimens from Angola (Harold 1879; Antoine 2000), but is also known from DOC (Beinhundner 2017a). The adult specimens from Chianga were found on *Pandiaka welwitschii* (Amaranthaceae) and *Monotes calomerus* (label information). The adult specimen of Capingana–Satchijamba was captured on a yellow flower and the Carima adult specimens were sampled feeding on the basis of tomentose leaf of spontaneous herbaceous plants (Fig. 9a), all from secondary open forests. In the latter locality (Fig. 10a), the species was abundant and syntopic with *Leucocelis* (*Leucocelis*) *haemorrhoidalis* (Fabricius, 1775), *Plagiochilus angustatus* (Westwood, 1873) and *Cymophorus* sp. It is a new species record for the Benguela, Bié and Huambo Provinces.

Genus *Discopeltis* Burmeister, 1842

Holm (1991c) provided a diagnosis of the genus, a key to the eight known species, information on their types and distribution patterns. Since this date some species were restablished as *bona species* and a total of sixteen species are now recognized (see updates in Beinhundner 2017a). Only one species was recorded for Angola until now (Ferreira 1965, Beinhundner 2017a) and another one is recorded here for the first time.

Discopeltis apicalis (Gory & Percheron, 1833)

Distribution: ANG, BEN, CAM, ERI, KEN, SEN, SUD, TAN, ZAM, ZIM.

Distribution in Angola (Provinces): 1) MAL.

Historic records:

—Angola (without locality) (Janson 1878 and Ferreira 1965 sub *Discopeltis aberrans* Janson);

—Malange (=Malanje) (MAL) (Quedenfeldt 1884 sub *Discopeltis aberrans* Janson).

Material examined: none.

Remarks. The general distribution of this species is controversial (cf. Holm 1991c; Beinhundner 2017a; Schoolmeesters 2018). Le Gall (2015) lists the species for several localities in Benin. *Discopeltis apicalis* mimics Lycidae species (Holm 1991b), but other biological and ecological data are not available for this species.

**Discopeltis tricolor tricolor* Burmeister, 1842

(Figs. 9b, c)

Distribution: ANG, BOW, MOZ, RSA, ZAM, ZIM.

Distribution in Angola (Provinces): 2) ?

Historic records: None.

Material examined: Angola, 1 ex., N° 1907 and 181, old collection, box n° XIV-83, MZUC.

Remarks. There are four subspecies recognized in this species (Holm 1991c). An adult specimen (Figs. 9b, c) deposited in the “old collection” of Angola of MZUC fits well this species. There is another specimen (female) housed in the “old collection” of Angola of MZUC [Angola, N° 1907 (blue label), n° 204 (white label), box n° IX-78] very similar to this species, but with slight differences on the conformation of pronotum and its colour. Without a male specimen it is difficult to confirm the species identity (R. Perissinotto and S. Rojko, personal communications). Ecological data are available in Holm (1991a) and Holm & Marais (1992). It is a new species record for Angola.

Genus *Grammopyga* Kolbe, 1895

The genus was briefly analysed in the systematic revision of the close genera *Oxythyrea* Mulsant, 1842 and *Leucocelis* Burmeister, 1842 (Antoine 1997). Beinhundner (2017b) provided the habitus, mesosternal lobe and parameres of all known species. There are four recognized species, one of them recorded for Angola (Beinhundner 2017a).

Grammopyga cincticollis (Hope, 1842)

Distribution: ANG, CAM, CON, DOC, GHA, GUI, LIR, RCI, TAN, UGA.

Distribution in Angola (Provinces): 1) ?

Historic records:

—Angola (without locality) (Beinhundner 2017a, 2017b).

Material examined: none.

Remarks. Beinhundner (2017a, 2017b) recorded the species for Angola without any precise locality. Jerath & Unny (1965) described the larvae of this species. Joly (2018) provided some biodiversity information (abundance, habitat preference) of this species for Ghana.

Genus *Leucocelis* Burmeister, 1842

This is one of the most speciose genus in Africa with almost 100 described species in three subgenera (Beinhundner 2017a). The genus was treated by Ruter (1967a) and later Antoine (1997, 2002a, 2006b) re-arranged its systematic, giving numerous synonymies. A total of six species/subspecies were given for Angola within *Leucocelis* (*Leucoceles*) and two species within *Leucocelis* (*Amauroleucocelis*) Bourgoïn, 1913 subgenera (Beinhundner 2017a). We add four new records in *Leucocelis* (*Leucocelis*) for this country.

Leucocelis (*Amauroleucocelis*) *cognata* (Harold, 1878)

(Fig. 9d)

Distribution: ANG, EQG.

Distribution in Angola (Provinces): 1) MAL; 2) CUS.

Historic records:

—“Inneren Guinea” (Angola, without locality) (Harold 1878 sub *Oxythyrea cognata*);

—Pungo Andongo (MAL) (Harold 1879 sub *Leucocelis cognata*);

—Angola (without exact locality) (Ferreira 1965 sub *Amaurina cognata* Harold).

New localities reported: Mussussu (25 km S) (10° 25' 29'' S, 14° 51' 53'' E, 1398 m alt., 147) (CUS), 4-5.XII.2017, 1 ♂, P. Schüle leg., PMC (P. Malec, personal communication).

Material examined: Angola, 6 exs, N° 1907 (blue labels), n°s 164, 190, 191, 198, 219 and 220 (white labels), 1 ex., N° 1907 (blue label), old collection, box n° IX-78, MZUC.

Remarks. The species was described originally from Angola in the *Oxythyrea* genus (Harold 1878). Curiously, in addition to Angola, it is only known from EQG (Beinhundner 2017a). Biological and ecological data are not available for this species. It is a new species record for the Kwanza Sul Province.

Leucocelis (*Amauroleucocelis*) *quadriguttata* (Westwood, 1874)

Distribution: ANG, CON.

Distribution in Angola (Provinces): 1) ?

Historic records:

—Angola (without locality) (Westwood 1874 sub *Stalagmosoma quadriguttata* Westwood);

—Angola (without locality) (Moser 1903 sub *Amaurina viridipennis* Moser);

—Angola (without locality) (Ferreira, 1965 sub *Amaurina quadriguttata* Westwood and *Stalagmosoma quadriguttata* Westwood).

Material examined: none.

Remarks. The species was originally described from Angola (Westwood 1874) and afterward recorded for CON (Burgeon 1932, Beinhundner 2017a). Biological and ecological data are not available for this species.

****Leucocelis (Leucocelis) adspersa adspersa* (Fabricius, 1801)**

(Figs. 9e, f)

Distribution: ANG, BOW, RSA.

Distribution in Angola (Provinces): 2) ?

Historic records: none.

Material examined: Angola, 1 ♀, N° 1907 (blue label), n° 203 (white label), old collection, box n° IX-78, MZUC.

Remarks. Despite its more southern-eastern known distribution, the adult specimen of MZUC fits well this species description (Figs. 9e, f). It could be confused with *Oxythyrea marginalis* (Swartz, 1817), but its green sheen is very noticeable. Biological and ecological data were provided by Holm & Marais (1992). It is a new species record for Angola.

***Leucocelis (Leucocelis) amethystina* (MacLeay, 1938)**

(Fig. 9g)

Distribution: ANG, BOW, MOZ, NAB, RSA.

Distribution in Angola (Provinces): 1) LNO, MAL; 2) BIE, HUI.

Historic records:

—Malange (=Malanje) (MAL), Quango=Cuango (LNO) (Quedenfeldt 1884 sub *Leucocelis dysenterica* Boh.).

Material examined: Angola, 3 exs, N° 1907 (blue labels), n°s 165, 172 and 196 (white labels), 1 ex., N° 1907 (blue label), old collection, box n° IX-78, MZUC; Tchivinguiro (Chão da Cela) (15° 10'S, 13° 18'E, 1600 m alt., 355) (HUI), 23.XI.1957, 1 ex., N° 2969, *Leucocelis amethystina* MacLeay (Gomes Alves det.), Estudos Apícolas do Ultramar n°121, Junta de Investigações do Ultramar (Entomologia), IICT, MUHNAC; Satchijamba (13° 44' 54.69'' S, 17° 10' 35.03'' E, 1579 m alt., 303) (BIE), 3.XI.2014, 1♀, BT, A. Serrano leg. & R. Capela, ASC.

Remarks. The Satchijamba adult specimen was sampled by BT (Fig. 1a) in a secondary open forest. See also the remarks for *Pachnoda discolour kolbei*. Donaldson (1987) described the larvae. Biological and ecological data were provided by Holm & Marais (1992). It is a new species record for the Bié and Huíla Provinces.

***Leucocelis (Leucocelis) cincticollis* Moser, 1908**

Distribution: ANG, CON, DOC, TAN.

Distribution in Angola (Provinces): 1) ?

Historic records:

—Angola (without locality) (Beinhundner 2017a).

Material examined: none.

Remarks. The species was originally described from “Deutsch Ost-Afrika” (Moser 1908), but curiously Schoolmeesters (2018) refers only East Africa for its distribution. Beinhundner (2017a) indicates Angola in its distribution without reference to any locality. Biological and ecological data are not available for this species.

****Leucocelis (Leucocelis) cupricollis* Kraatz, 1880**

(Fig. 9h)

Distribution: ANG, MAW, ZIM.

Distribution in Angola (Provinces): 2) ?

Historic records: none.

Material examined: Angola, 1 ex., N° 1907 (blue label), n° 197 (white label), old collection, box n° IX-78, MZUC.

Remarks. The species is very polychromatic (Beinhundner 2017a). The adult specimen of MZUC (Fig. 19h) fits well this species description. Some ecological data were provided by Holm & Marais (1992). It is a new species record for Angola.

****Leucocelis (Leucocelis) haemorrhoidalis* (Fabricius, 1775)**

(Fig. 9i)

Distribution: ANG, NAB, RSA, ZIM.

Distribution in Angola (Provinces): 2) HUA, MAL.

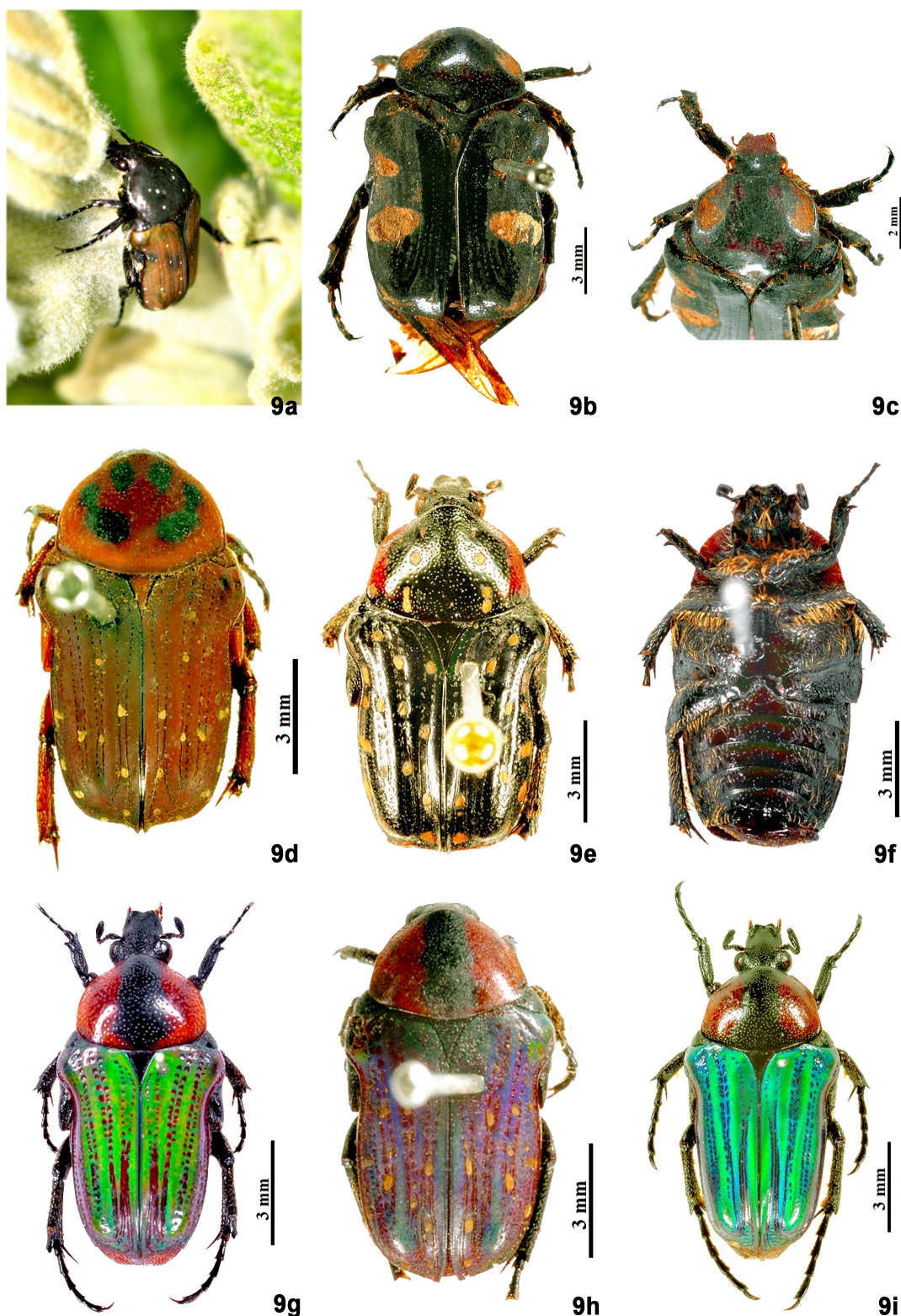


FIGURE 9. Cetoniinae species of Angola. a, *Amaurina spoliata*: adult feeding in a tomentose herbaceous plant, Carima, MAL; b and c, *Discopeltis tricolor tricolor* (dorsal views), habitatus and head and pronotum, respectively, MZUC; d, *Leucocelis* (*Amuroleucocelis*) *cognata* (dorsal view), MZUC; e and f, *Leucocelis* (*Leucocelis*) *adspersa adspersa* (dorsal and ventral views, respectively), female, MZUC; g, *Leucocelis* (*Leucocelis*) *amethystina* (dorsal view), female, Satchijamba, BIE, ASC; h, *Leucocelis* (*Leucocelis*) *cupricollis* (dorsal view), MZUC; i, *Leucocelis* (*Leucocelis*) *haemorrhoidalis* (dorsal view), male, Carima, MAL, ASC.

Historic records: none.

Material examined: Nova Lisboa (=Huambo) (12° 46' S, 15° 44' E, 1650 m alt., 256) (HUA), 20.XII.1974, 1 ♀, DO, A. Serrano leg., ASC; Mutubanzamba (09° 47' 20'' S, 16° 30' 55'' E, 1136 m alt., 132) (MAL), 21.XI.2015, 1 ♂, DO, A. Serrano & R. Capela leg., ASC; Carima (Cacuso–Pungandongo) (09° 35' 00'' S, 15° 42' 01'' E, 117 m alt., 130) (MAL), 20.XI.2017, 6 ♂, 21.XI.2017, 1 ♂, DO, A. Serrano & R. Capela leg., ASC.

Remarks. All the specimens fit well the description and parameres of this species (Holm & Marais 1992). The Huambo adult specimen was collected on a flower in a meadow. See the remarks under *Amaurina spoliata* for Carima locality (e.g. see Figs. 9a, 10a). The larvae instars were described by Donaldson (1987). Biological and ecological data were provided by Holm & Marais (1992) and Malec & Šípek (2016). Taking into account artificial breeding conditions, Malec & Šípek (2017) includes it in their group 1. It is a new species record for Angola and Huambo and Malanje Provinces.

***Leucocelis (Leucocelis) haroldi* (Kraatz, 1880)**

(Figs. 10c, d)

Distribution: ANG.

Distribution in Angola (Provinces): 1) HUI; 2) HUA.

Historic records:

—Humpata (HUI) (Kraatz 1880 sub *Oxythyrea haroldi* Kraatz);

—Angola (without locality) (Ferreira 1965).

New localities reported: Cacula (10 km SW) (coord. not available, ? alt., 317) (HUI), 4-6.XI.2011, 1 ♂, P. Schüle leg., PMC (P. Malec, personal communication).

Material examined: Angola, 2 exs, N° 1907 (blue labels), n° 171 e 195 (white labels), old collection, box n° IX-78, MZUC; Tchivinguiro (Chão da Cela) (15° 10' S, 13° 18' E, 1600 m alt., 355) (HUI), 25.XI.1957, 1 ♂, 1 ♀, N° 2970, *Leucocelis amethystina* MacLeay (Gomes Alves det.), Estudos Apícolas do Ultramar n°122, Junta de Investigações do Ultramar (Entomologia), IICT, MUHNAC; Nova Lisboa (=Huambo) (12° 46' S, 15° 44' E, 1650 m alt., 256) (HUA), 15.XII.1974, 2 ♂, 2 ♀, DO, A. Serrano leg., ASC.

Remarks. The species was described from Angola (Kraatz 1880; Beinhundner 2017a; Schoolmeesters 2018) and is endemic of this country. The Huambo adult specimens were sampled on flowers in a meadow. The adult specimens of Huambo and Tchivinguiro present the pronotum totally black (e.g. Fig. 10d). Biological and ecological data were provided by Holm & Marais (1992). It is a new species record for the Huambo Province.

***Leucocelis (Leucocelis) maculicollis quentini* Antoine, 2006**

Distribution: ANG.

Distribution in Angola (Provinces): 1) HUI.

Historic records:

—Huilla (HUI) (Antoine 2006b).

Material examined: none.

Remarks. An endemic subspecies of Angola (Antoine 2006b; Beinhundner 2017a). The nominal species is proper of DOC and ZAM (Beinhundner 2017a). Biological and ecological data are not available for this subspecies.

****Leucocelis (Leucocelis) niveoguttata* (Blanchard, 1850)**

(Figs. 10e, f)

Distribution: ANG, BOW, MOZ, NAB, RSA, ZIM.

Distribution in Angola (Provinces): 2) BIE, HUI.

Historic records: none.

New localities reported: Chiapepe (coord. not available, 1280 m alt., 378) (HUI), 10.XII.2012, 1 ♂, P. Schüle leg., PMC (P. Malec, personal communication).

Material examined: Angola, 1 ex., N° 1907 (blue label), n° 201 (white label), old collection, box n° IX-78, MZUC; Satchijamba (13° 44' 54.69'' S, 17° 10' 35.03'' E, 1579 m alt., 303) (BIE), 3.XI.2014, 1 ♂, 1 ♀, BT, 29.X.-3.XI.2014, 1 ♀, CT, A. Serrano leg. & R. Capela, ASC.

Remarks. The species was reestablished by Antoine (2006b). The adult female specimen of Satchijamba fits

very well with the description given by Antoine (2006b) and the parameres of the adult male specimen conforms with the same structures of *L. vitticollis* (Boheman, 1857) given by Holm & Marais (1992), a species which was synonymized with *L. niveoguttata* by Antoine (2006b). The Satchijamba adult specimens were sampled by BT and CT (Figs. 1a, b) in an open secondary forest. See also remarks under *Pachnoda discolour kolbei*. Ecological data were provided for the species (under the name of *L. vitticollis*) by Holm & Marais (1992). It is a new species record for Angola and Bié and Huíla Provinces.

***Leucocelis (Leucocelis) semicuprea* Kraatz, 1883**

(Fig. 10g)

Distribution: ANG.

Distribution in Angola (Provinces): 1) HUI.

Historic records:

—Angola (without locality) (Quedenfeldt 1884);

—Between Kapelongo (=Capelongo) and Cubango River (HUI) (Bourgoin 1925 sub *L. semicuprea* var. *rohani* Bourg.);

—Angola (without locality) (Ferreira 1965).

Material examined: Angola, 1 ex., ° 1907 (blue label), n° 202 (white label), old collection, box n° IX-78, MZUC.

Remarks. The species was described originally from “Congo” (Kraatz 1883), but Beinhundner (2017a) refers only Angola in its distribution. Bourgoin (1925) recorded the species in the “Districts de Huilla et de Benguella: entre Kapelongo et le Poste militaire de la rivière Kubango”. The « Kapelongo » locality belongs to the Huíla Province, rather far away of the Benguela Province. Unfortunately, the MZUC specimen (Fig. 10g) is very old, precluding its dissection and it is with some caution that we ascribe it to this species. Biological and ecological data are not available for this species.

***Leucocelis (Leucocelis) triliturata triliturata* Quedenfeldt, 1884**

(Fig. 10h)

Distribution: ANG, DOC.

Distribution in Angola (Provinces): 1) MAL, MOX; 2) BIE, HUA, HUI.

Historic records:

—Malauge (=Malanje) (MAL) (Quedenfeldt 1884);

—Angola (without locality) (Ferreira 1965).

—Vila Luso (=Luena) (MOX) (Gomes Alves 1973).

New localities reported: Leba pass top (15° 04' 19.48'' S, 13° 14' 39.43'' E, 1690 m alt., 355) (HUI), 4-5.XII.2017, 1 ♂, P. Schüle leg., PMC (P. Malec, personal communication).

Material examined: Vila Luso (=Luena) (Luena River edge) (coord. not available, 218) (MOX), 20.IX.1957, 1 ex., N° 2896, Junta de Investigações Coloniais (Entomologia), ICT, MUHNAC; Nova Lisboa (=Huambo) (12° 46' S, 15° 44' E, 1650 m alt., 256) (HUA), 22.V.1969, 1 ex., N° 6536, Lonete leg., JPCC, MUHNAC; Capingana-Satchijamba (13° 42' 47.18'' S, 17° 05' 23.81'' E, 1507m alt., 303) (BIE), 8.IV.2014, 1♂, 3♀, DO, A. Serrano leg., ASC; Lumbanje (Morro Lubiri) (12° 07' 55'' S, 15° 30' 59'' E, 1424 m alt., 232) (HUA), 31.X.2015, 3♂, 1♀, DO, A. Serrano & R. Capela leg., ASC.

Remarks. The species is polytypic with four recognized subspecies. The adult specimens of Capingana-Satchijamba and Lumbanje were sampled on yellow flowers of unidentified plants from meadows (Fig. 10b). Biological and ecological data are not available for this species. It is a new species record for the Huambo, Huíla and Bié Provinces.

Genus *Mausoleopsis* Lansberg, 1882

Holm & Marais (1992) and Antoine (1997) refer that the genus is justified itself by the prominently protruding last abdominal spiracles (=“élévation des stigmates propygidiaux”). Among the twelve species recognized in the nominotypical subgenus (Beinhundner 2017a), there are one species and one subspecies recorded for Angola (Paulino de Oliveira 1882; Antoine 1989a).

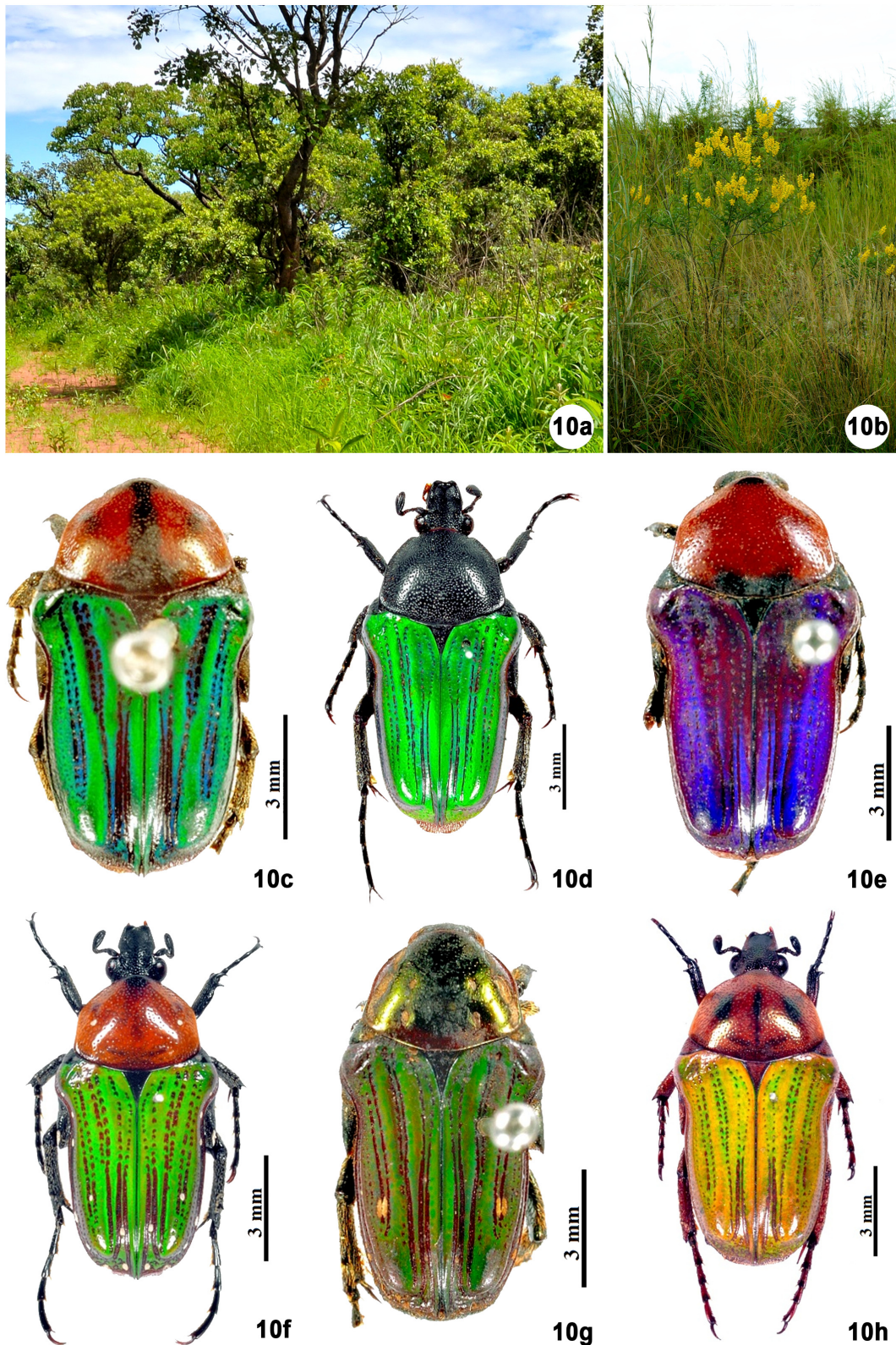


FIGURE 10. Cetoniinae species of Angola. a, Habitat of *Leucocelis* (*Leucocelis*) *haemorrhoidalis*, *Plagiochilus angustatus* and *Cymophorus* sp., Carima, MAL; b, Plant where *Leucocelis* (*Leucocelis*) *triliturata triliturata* adult specimens were found feeding on its yellow flowers, Capingana–Satchijamba, BIE; c and d, *Leucocelis* (*Leucocelis*) *haroldi* (dorsal views), MZUC and male, Nova Lisboa (=Huambo), HUA, ASC, respectively; e and f, *Leucocelis* (*Leucocelis*) *niveoguttata* (dorsal views), MZUC and male, Satchijamba, BIE, ASC, respectively; g, *Leucocelis* (*Leucocelis*) *semicuprea* (dorsal view), MZUC; h, *Leucocelis* (*Leucocelis*) *triliturata triliturata* (dorsal view), Capingana–Satchijamba, BIE, ASC.

***Mausoleopsis (Mausoleopsis) amabilis amabilis* (Schaum, 1844)**

(Figs. 11a, b, c)

Distribution: ANG, BOW, KEN, MOZ, NAB, RSA, ZIM.

Distribution in Angola (Provinces): 1) CNN; 2) LSU.

Historic records:

—Humbe (CNN) (Paulino de Oliveira 1882 sub *Oxythyrea amabilis* Schaum).

Material examined: Humbe (16° 41'S, 14° 54'E, 1100 m alt., 422) (CNN), 1 ex., N° 2126 (blue label), Anchieta leg., old collection, box n°VI-75, MZUC; Angola, 1 ♂, N° 1907 (blue label), P.O. leg.?, old collection, box n°XIV-83, MZUC; Zumbo (coords not available) (LSU), 1 ♂, 1908, N° 1781 (blue label), RQC/CSFC, box n° II-71, MZUC.

Remarks. Taking into account its distribution near the borders of Angola, in NAB and BOW (see Fig. 142i in Holm & Marais 1992), the Paulino de Oliveira's record for the southern territory of Angola (Cunene Province) is very plausible. Moreover, we confirm its presence in Angola by checking three adult specimens deposited in the old collection of MZUC (Figs. 11a, b, c). Antoine (2004a), regarding the description of *Mausoleopsis (Mausoleopsis) lerui* Antoine, 2004, tried to clarify the distribution of the two subspecies of *M. (M.) amabilis* on the basis of the size, coalescence and/or number of pronotal and elytral white maculae. Even the description of *M. (M.) amabilis ruteri* Antoine, 1989 was based only on these maculae features, which seems a weak argument to validate this taxon without the support of other morphological character(s). Also, on the comment of its description, Antoine (1989a) states “sans différer autrement de la forme typique”. On the other hand, the weakness of the separation of these two subspecific taxa is reinforced by the fact that there are sites where both forms overlap. The larva of this species was described by Donaldson (1987). Biological and ecological data are available in Holm & Marais (1992). Taking into account artificial breeding conditions, Malec & Šípek (2017) includes the species in their group 1. It is a new species record for the Lunda Sul Province.

***Mausoleopsis (Mausoleopsis) amabilis ruteri* Antoine, 1989**

Distribution: ANG, BEN, BFO, CAM, NRE.

Distribution in Angola (Provinces): 1) BGU.

Historic records:

—Morro do Pundo (BGU) (Antoine, 1989a).

Material examined: none.

Remarks. This subspecies was originally described based on specimens from Angola Burkina Faso and Nigeria (Antoine 1989a). However, see also the remarks of the nominal subspecies. Biological and ecological data are not available for this subspecies, but probably are similar to the nominal form.

***Genus *Oxythyrea* Mulsant, 1842**

The genus was redefined by Antoine (1997) taking into account the structure of the male genitalia. This author listed all the African species known so far in the four subgenera of this genus. A total of ten species are recognized in the nominal subgenus (Beinhundner 2017a). The genus had never been registered for Angola so far.

****Oxythyrea (Oxythyrea)* sp.**

(Figs. 11d, e, f, g)

Distribution: ANG, GAM, GBI, SEN, SLN.

Distribution in Angola (Provinces): 2) ?

Historic records: none.

Material examined: Angola, 1 ♂, N° 1907 (blue label), old collection, box n° XIV-83, MZUC.

Remarks. The habitus and parameres conformation of the Angolan male adult specimen deposited in MZUC fit well some features of *Oxythyrea (Oxythyrea) petit* (Gory & Percheron, 1833) (e.g. cf. Antoine 1997, Fig. 27 with Fig. 11f). However, taking into account the advised of S. Rojko (personal communication) for the possibility that the specimen should belong to a new species under description we do not ascribe its identification to that species. Once again, unfortunately we have no information on the localization in Angola of this specimen. Ecological data

were provided by Holm & Marais (1992) for the closer species *Oxythyrea marginallis* (Swartz, 1817) and *Oxythyrea testaceoguttata* (Blanchard, 1850). It is a new genus record for Angola.

Genus *Pseudalleucosma* Antoine, 1989

The genus was established by Antoine (1989b) under the revision of the genus *Alleucosma* Schenkling, 1921. There are four recognized species (Beinhundner 2017a), one of them recorded for Angola (Ruter 1960).

Pseudalleucosma machatschkei (Ruter, 1960)

Distribution: ANG, DOC.

Distribution in Angola (Provinces): 1) ?

Historic records:

—Angola (without locality) (Ruter 1960);

—Angola (without locality) (Ferreira, 1965).

Material examined: none.

Remarks. The species was originally described from Angola based on one male specimen (Ruter 1960). Biological and ecological data are not available for this species.

Tribe Cremastocheilini Burmeister and Schaum, 1841

Subtribe Coenochilina Burmeister, 1842

Genus *Coenochilus* Schaum, 1841

Some Cremastocheilini to which this and other genera belong (e.g. *Anatonochilus* Péringuey, 1907, *Cymophorus* Kirby, 1827, *Plagiochilus* Wasmann, 1900, *Trogodes* Westwood in Boheman, 1857, *Spilophorus* Westwood in Schaum, 1848) are a group of Cetoniinae that are reported to be myrmecophilous or termitophilous (e.g. Schein 1954a) and, as adults, with some exceptions, are mainly active at night (Holm & Perissinotto 2010). Some species are also predators of ant larvae (e.g. see Ghorpade 1975; Mynhardt & Wenzel 2010). The genus *Coenochilus* is the most speciose with about 100 species distributed throughout the Afrotropical, Oriental and Palaearctic Regions (Krajcik 2008b). Schein (1954a) revised the 41 African species known by that time and defined seven groups within the genus. There are about 48 species recognized for the former Region (Schoolmeesters 2018), eight of them previously recorded for Angola (Schein 1954a; Ferreira 1965). We give two new species records for this country.

Coenochilus angolensis (Moser, 1912)

Distribution: ANG.

Distribution in Angola (Provinces): 1) HUA; 2) BIE.

Historic records:

—Angola (without locality) (Moser 1912 sub *Xenogenius angolensis* Moser);

—Angola (without locality) (Ferreira 1965);

—Bailundo, Caconda (HUA) (Schein 1954a).

New localities reported: Calucinga (coord. not available, 1766 m alt., 189) (BIE), 17.XI.2013, 1 ♂, P. Schüle leg., PMC (P. Malec, personal communication).

Material examined: none.

Remarks. A species within the *C. glabratus* group (*sensu* Schein 1954a). It was described from Angola (Moser 1912) and is endemic of this country (Schein 1954a; Krajcik 2008b). Biological and ecological data are not available for the species, but see Mudge *et al.* (2012) for general comments on habitat preference and abundance of some species of this genus in Ghana. See also general comments in Schein (1954a) and the remarks under the genus *Coenochilus*. It is a new species record for the Bié Province.

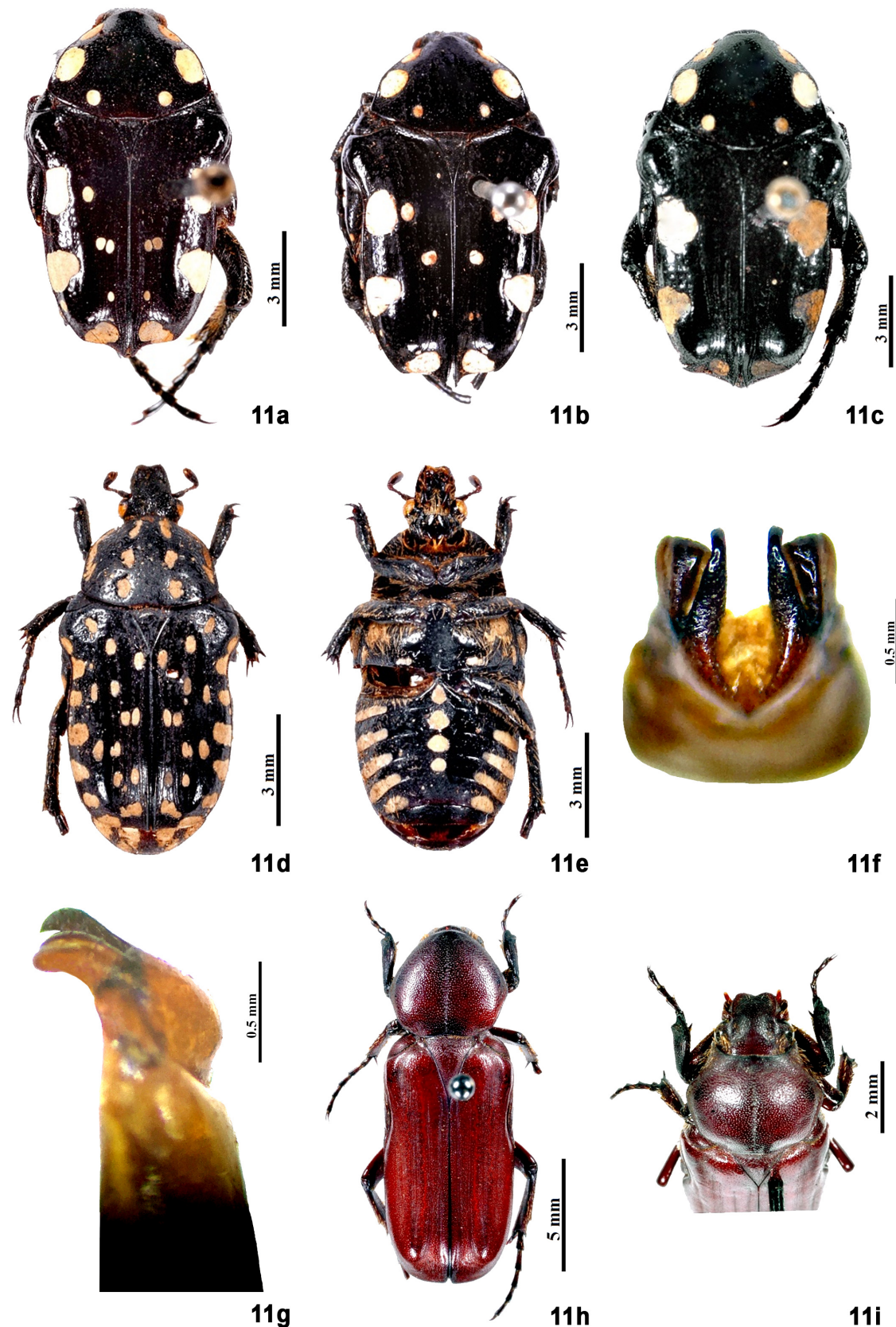


FIGURE 11. Cetoninae species of Angola. a–c, *Mausoleopsis (Mausoleopsis) amabilis amabilis* (dorsal views), male, MZUC, Humbe, CNN, MZUC and Zumbo, LSU, MZUC, respectively; d and e, *Oxythyrea (Oxythyrea)* sp. (dorsal and ventral views, respectively), male, MZUC; f and g, *Oxythyrea (O.)* sp., parameres (frontal and lateral views, respectively), MZUC; h and i, *Coenochilus basilewskyi* (dorsal views), female, habitus and head and pronotum, respectively, Dundo, LNO, IICT.

****Coenochilus basilewskyi* Schein, 1954**

(Figs. 11h, i, 12a)

Distribution: ANG, DOC.

Distribution in Angola (Provinces): 2) LNO.

Historic records: none

Material examined: Dundo (7° 22' S, 20° 50' E, 1470 m alt., 51) (LNO), 2.V.1946, 1 ♀, N° 663, Junta de Investigações Coloniais (Entomologia), IICT, MUHNAC.

Remarks. A species belonging to the *C. sulcatus* group (*sensu* Schein 1954a). It was described based on one female from DOC (Schein 1954a) and was known until now only for this country (Schein 1954a; Krajcik 2008b). The adult female specimen of IICT fits well this species description. Biological and ecological data are not available for the species, but see Mudge *et al.* (2012) for general comments on habitat preference and abundance of some species of this genus in Ghana. See also general comments in Schein (1954a) and the remarks under the genus *Coenochilus*. It is a new species record for Angola and Lunda Norte Province.

***Coenochilus calcaratus vagus* (Péringuey, 1907)**

(Fig. 12b)

Distribution: ANG, DOC, MOZ, ZIM.

Distribution in Angola (Provinces): 1) HUA; 2) CUS, HUI.

Historic records:

—Bailundo (HUA) (Schein 1954a);

—Angola (without locality) (Ferreira 1965);

—Angola (without locality) (Sakai & Nagai 1998 sub *Coenochilus calcaratus* Westwood).

New localities reported: Negola (3,5 km SW) (14° 08' 53'' S, 14° 28' 16'' E, 1613 m alt., 317) (HUI), 11-12.XI.2013, 1 ♂, P. Schüle leg., PMC (P. Malec, personal communication).

Material examined: Calulo (Faz. Belo Horizonte) (9° 56' 41'' S, 14° 56' 35'' E, 882 m alt., 128) (CUS), 3.XII.2015, 1 ♂, DO, A. Serrano & R. Capela leg., ASC.

Remarks. A polytypic species with three subspecies within the *C. calcaratus* group (*sensu* Schein 1954a). The Calulo adult specimen was collected on the soil in a countryroad located in a secondary open forest. Ecological data on abundance and habitat preferences was given for the nominal subspecies for Ghana (Mudge *et al.* 2012). See also general comments in Schein (1954a) and the remarks under the genus *Coenochilus*. It is a new record for the Huila and Kwanza Sul Provinces.

***Coenochilus kolbei* Quedenfeldt, 1884**

Distribution: ANG, CON, DOC, ZIM.

Distribution in Angola (Provinces): 1) HUA, LNO.

Historic records:

—Quango (=Cuango) (LNO) (Quedenfeldt 1884);

—Bailundo (HUA) (Schein 1954a);

—Angola (without locality) (Ferreira 1965).

Material examined: none

Remarks. A species within the *C. glabratus* group (*sensu* Schein 1954a) like *C. angolensis*. Schein (1954a) suggested that *C. kolbei* could be a junior synonym of *C. parriani* Westwood, 1883, a proposal not followed in the catalogues of Marais & Holm (1992) and Krajcik (2008a). Biological and ecological data are not available for the species, but see general comments in Schein (1954a) and the remarks under the genus *Coenochilus*.

***Coenochilus parriani* Westwood, 1883**

Distribution: ANG.

Distribution in Angola (Provinces): 1) ?

Historic records:

—Angola (without locality) (Westwood 1883).

Material examined: none

Remarks. The species was described from Angola (Westwood 1883). It is considered a controversial species

and an *incertae sedis* (Schein 1954a). Schein (1954a) in the “general comments” (“I. Allgemeines”) referred to *Coenochilus parrianus* based in Schenkling (1921) catalogue (“*parrianus* Westwood Tijdschr. voor Ent. 26 Seite 65 Angola”). Taking into account this reference, it seems that the species considered by Schein (1954a) is indeed that which was described by Westwood (1883), i.e. *Coenochilus parrianus* from Angola. The same author stated also that the type of *C. parrianus* was unfortunately lost, concluding that “The *Parrianus* not mentioned in the Junk Schenkling catalog should therefore remain omitted” (“Der im Junk-Schenkling-Katalog ausgelassene *Parrianus* muß also weiter im Dunklen bleiben”). Biological and ecological data are not available, but see general comments in Schein (1954a) and the remarks under the genus *Coenochilus*.

***Coenochilus procerus* Schaum, 1873**

(Figs. 12c, d)

Distribution: ANG, DOC, ZIM.

Distribution in Angola (Provinces): 1) CAB, HUA, LNO; 2) HUI, MOX.

Historic records:

—Loanga (=Luango?) (CAB), Bailundo (HUA), Lunda reich (LNO) (Schein 1954a);

—Angola (without locality) (Ferreira, 1965).

New localities reported: Negola (3,5 km SW) (14° 08' 53'' S, 14° 28' 16'' E, 1613 m alt., 317) (HUI), 8.XII.2013, 1♂, P. Schüle leg., PMC (P. Malec, personal communication).

Material examined: Moxico Velho (=Moxico) (11° 51' S, 20° 03' E, 1270 m alt., 219) (MOX), 22.IX.1957, 1 ♀, N° 2902, Estudos Apícolas do Ultramar n° 54, Junta de Investigações Coloniais (Entomologia), IICT, MUHNAC; Bembua–Camenhe (12° 16' 53'' S, 15° 27' 01'' E, 1686 m alt., 231) (HUA), 1.XI.2015, 4♂, 6♀, 2.XI.2015, 1♂, 1♀, DO, A. Serrano & R. Capela leg., ASC; Longonjo–Catabola (13° 01' 15'' S, 15° 13' 18'' E, 1528 m alt., 279) (HUA), 4.XI.2015, 2♂, 1♀, DO, A. Serrano & R. Capela leg., ASC; Cuima–Cusse (13° 22' 52'' S, 15° 30' 15'' E, 1583 m alt., 280) (HUA), 5.XI.2015, 1♂, 1♀, DO, A. Serrano & R. Capela leg., ASC.

Remarks. A species within the *C. calcaratus* group (*sensu* Schein 1954a). The adult specimens of Huambo localities were found during day in footpaths in secondary open forests walking on reddish soil (Bembua–Camenhe) or whitish soil (Longonjo–Catabola and Cuima–Cusse). Some specimens of Bembua–Camenhe had phoretic acarina connected with some parts of the body (e.g. legs, pygidium). Biological and ecological data are not available for the species, but see general comments in Schein (1954a) and the remarks under the genus *Coenochilus*. It is a new species record for the Huila and Moxico Provinces.

***Coenochilus strigatus* (Bourgoin, 1921)**

Distribution: ANG, COM, DOC, ZIM.

Distribution in Angola (Provinces): 1) LNO.

Historic records:

—Dundo (LNO) (Rojkoff 2012).

Material examined: none

Remarks. A species within the *C. strigatus* group (*sensu* Schein 1954a). Rojkoff (2012) reviewed this group, adding one more species to it. Biological and ecological data are not available for the species, but see general comments in Schein (1954a) and the remarks under the genus *Coenochilus*.

****Coenochilus turbatus* Westwood, 1873**

(Fig. 12e)

Distribution: ANG, DOC, KEN, RSA, ZIM.

Distribution in Angola (Provinces): 2) CUS, HUI.

Historic records: none

New localities reported: Negola (3,5 km SW) (14° 08' 53'' S, 14° 28' 16'' E, 1613 m alt., 317) (HUI), 8.XII.2013, 1♂, P. Schüle leg., PMC (P. Malec, personal communication).

Material examined: Calulo (9° 59' 55'' S, 14° 53' 35'' E, 999m alt., 128) (CUS), 27.XI-5.XII.2015, 1♂, DO, A. Serrano leg., ASC.

Remarks. A species within the *C. sulcatus* group (*sensu* Schein 1954a). The adult male specimen of Calulo fits very well the original description, including the typical paramers conformation of the species (see Schein 1954a).

The Calulo singleton adult specimen was found on the ground during night near public lights. Biological and ecological data are not available for the species, but see general comments in Schein (1954a) and the remarks under the genus *Coenochilus*. It is a new species record for Angola and the Huíla and Kwanza Sul Provinces.

***Coenochilus ventricosus* (Gyllenhal, 1817)**

(Fig. 12f)

Distribution: ANG, CAM, DOC, EQG, GAB, GAM, KEN, MOZ, NAB, RCI, RSA, SEN, SLN, TAN, TOG, ZIM.

Distribution in Angola (Provinces): 1) LNO, MAL; 2) CNN.

Historic records:

—Quango (=Cuango) (LNO) (Quedenfeldt 1884 and Ferreira 1965);

—Malange (MAL) (Schein 1954a).

New localities reported: Cahama (20 km NE) (coord. not available, 1315 m alt., 399) (CNN), 8.XII.2013, 1♂, P. Schüle leg., PMC (P. Malec, personal communication).

Material examined: Cacuso (9° 25′ 28.03″ S, 15° 44′ 37.63″ E, 1078m alt., 112) (MAL), 16–18.XI.2017, 1♂, DO, A. Serrano leg., ASC; Quitota (9° 37′ 32.39″ S, 15° 25′ 22.57″ E, 898m alt., 129) (MAL), 20.XI.2017, 1♀, LT, A. Serrano & R. Capela leg., ASC.

Remarks. It is the type species of a group with its own name (*C. ventricosus* group *sensu* Schein 1954a). The Cacuso adult specimen was found on the ground during night near public lights. Like some *C. procerus* specimens, the Cacuso specimen had phoretic acarina on some parts of the body (e.g. legs). The Quitota adult specimen was collected by LT (e.g. Fig. 1c) in an open secondary forest. Joly (2018) provided biodiversity information (abundance, habitat preference) on this species for Ghana. Other biological and ecological data are not available for the species, but see also general comments in Schein (1954a) and the remarks under the genus *Coenochilus*. It is a new species record for the Cunene Province.

Genus *Plagiochilus* Wasmann, 1900

Ruter & Leleup (1977) considered this genus synonym of *Aspilus* Westwood, 1874, a criterion followed by Marais & Holm (1992) which included in it all the sixteen species recognized then from both genera. Antoine (2010), taking into account the presence of *Aspilus angustatus* (Westwood, 1874) in Zambia, made some comments on this genus and *Plagiochilus*, recommending its synonymization also. However, Rojkoff (2013) revised partially both genera, referring that this synonymy can not be maintained since the genera exhibit some characteristics of their own and recommend that they need to be thoroughly reviewed. Krajcik (2008b) followed this criterion keeping both genera. There are three species recorded for Angola (Quedenfeldt 1884; Ferreira 1965; Antoine 2010). We give a new species record for this country.

***Plagiochilus angustatus* (Westwood, 1873)**

(Figs. 12g, h)

Distribution: ANG, BEN, CAM, GAB, CON, DOC, SLN, TAN, UGA, ZAM, ZIM.

Distribution in Angola (Provinces): 1) LNO; 2) MAL.

Historic records:

—Quango (=Cuango) (LNO) (Quedenfeldt 1884 sub *Anoplocarpus marginatus* Quedenfeldt).

—Angola (without locality) (Antoine 2010).

Material examined: Carima (Cacuso–Pungandongo) (09° 35′ 00″ S, 15° 42′ 01″ E, 1117 m alt., 130) (MAL), 20.XI.2017, 1♂, DO, A. Serrano & R. Capela leg., ASC.

Remarks. The species was first described from SLN and UGA and given later for other countries, including Angola (e.g. Antoine 2010). Basilewsky (1956) referred for *Aspilus gambiensis* Burmeister, 1842 that “Selon BOURGOIN, *Anoplocarpus marginatus* QUEDENFELDT, d’Angola, serait la même espèce”. However, there are not references to this synonymy in any African Catalogue. The adult specimen of Carima was collected feeding on the basis of tomentose leaf of spontaneous herbaceous plants (Fig. 12h) in a secondary open forest (Fig. 10a). See also *Amaurina spoliata* remarks. Biological and ecological data are not available for the species, but see the general comments on the genus *Coenochilus*. It is a new species record for the Malanje Province.

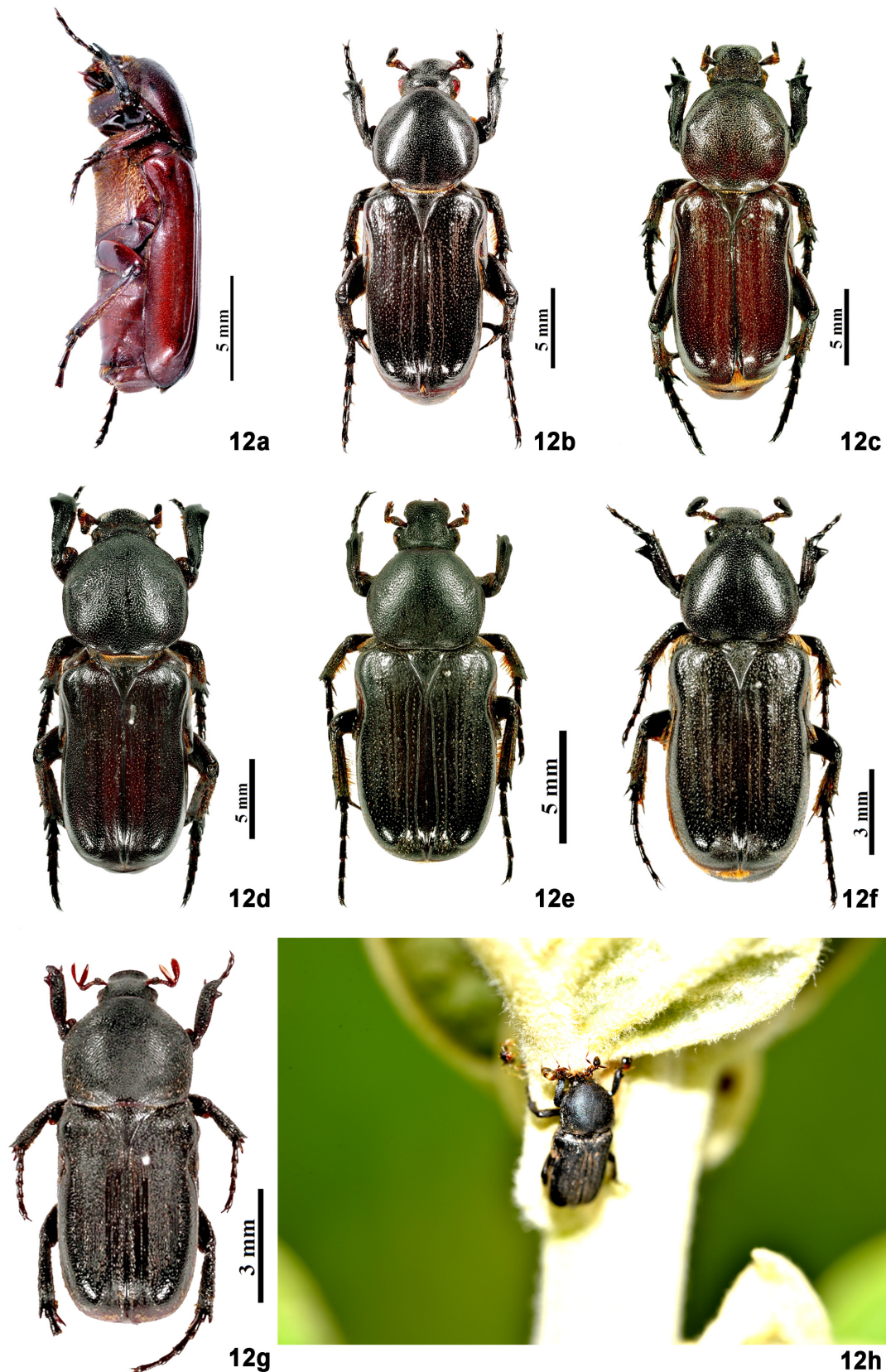


FIGURE 12. Cetoniinae species of Angola. a, *Coenochilus basilewskyi* (lateral view), female, Dundo, LNO, IICT; b, *Coenochilus calcaratus vagus* (dorsal view), male, Calulo, CUS, ASC; c and d, *Coenochilus procerus* (dorsal views), male and female, respectively, Bembua–Camenhe, HUA, ASC; e, *Coenochilus turbatus* (dorsal view), male, Calulo, CUS, ASC; f, *Coenochilus ventricosus* (dorsal view), male, Cacuso, MAL, ASC; g, *Plagiochilus angustatus* (dorsal view), male, Carima, MAL, ASC; h, *Plagiochilus angustatus*: adult feeding in a tomentose herbaceous plant, Carima, MAL.

****Plagiochilus crassipes* (Westwood, 1873)**

(Fig. 13a)

Distribution: West and Central Africa, TAN.

Distribution in Angola (Provinces): 2) CUS, HUI, MAL.

Historic records: none

New localities reported: Negola (3,5 km SW) (14° 08' 53'' S, 14° 28' 16'' E, 1613 m alt., 317) (HUI), 8.XII.2012, 1♂, P. Schüle leg., PMC (P. Malec, personal communication).

Material examined: Kibundi (08° 54' 33.31'' S, 16° 03' 15.71'' E, 1170m alt., 95) (MAL), 19.XI.2017, 1♂, 3♀, LT, A. Serrano & R. Capela leg., ASC; Cabuta (9° 50' 38.39'' S, 14° 51' 22.28'' E, 814m alt., 128) (CUS), 9.XII.2017, 1♂, 1♀, LT, A. Serrano & R. Capela leg., ASC.

Remarks. The species is widespread throughout West and Central Africa (Schoolmeesters 2018). The adult specimens were collected by LT (e.g. Fig. 1c) in open secondary forest (Kibundi) and moist secondary forest (Cabuta). Other biological and ecological data are not available for the species, but see general comments on the genus *Coenochilus*. It is a new species record for Angola and Huíla, Kwanza Sul and Malanje Provinces.

****Plagiochilus dupeyi* Bourgoïn, 1928**

(Figs. 13b, c, d)

Distribution: ANG, COM.

Distribution in Angola (Provinces): 1) LNO.

Historic records:

—Dundo (LNO) (Gomes Alves 1959 sub *Coenochilus emarginatus* Westwood).

Material examined: Dundo (7° 22'S, 20° 50'E, 1470 m alt., 51) (LNO), -X.1948, 1♂, 1♀, N° 2148, Junta de Investigações Coloniais (Entomologia), *Coenochilus emarginatus* Westwood Gomes Alves det. 1956, IICT, MUH-NAC.

Remarks. The species was described from CON (Bourgoïn 1928). The species reported for Angola by Gomes Alves (1959) under *Coenochilus emarginatus* Westwood, 1873 name should belong to *Plagiochilus dupeyi* (S. Rojkoïff, personal communication). However, some features of this species do not conform to the IICT specimens [e.g. the posterior angles of the pronotum are largely round, not “obtus mais à sommet vif” (Bourgoïn 1928)]. The dorsal view of the parameres of the Dundo male specimen (Fig. 26c) fit well the figure given by Schein (1954a, Fig. 43) for *Coenochilus impressus* (Moser, 1911), but not the lateral view (fig. 26d). Schein (1954a) postulated also that *C. impressus* could be synonym of *Coenochilus emarginatus* (“Es wäre möglich, daß *impressus* identisch ist mit dem mir in natura unbekannten *emarginatus* Westwood 1873”), considering this species an *incertae sedis*. The adult specimens of IICT fit well the figure 1 (dorsal habitus) given by Westwood (1873) in plate XII for *Coenochilus emarginatus*, but without the study of the type of Westwood, it is impossible to confirm this identification. It is with some caution that we ascribe these two specimens to *Plagiochilus dupeyi*. Biological and ecological data are not available for the species, but see the general comments on the genus *Coenochilus*. It is a new species record for Angola and the Lunda Norte Province.

***Plagiochilus pilosus* Moser, 1913**

(Fig. 13e)

Distribution: ANG, DOC.

Distribution in Angola (Provinces): 1) Huambo.

Historic records:

—Bailundo (HUAMBO) (Moser 1913a);

—Angola (without locality) (Ferreira 1965).

Material examined: Alto Hama–Bailundo (9 km) (12° 11' 27.62''S, 15° 35' 58.56''E, 1450 m alt., 232) (HUAMBO), 4.XII.2017, 1♀, DO, A. Serrano leg., ASC.

Remarks. The species was described from Angola (Moser 1913a), but later recorded for DOC also (Basilewsky 1956). Basilewsky (1956) remarked that it is a true termitophilic species. The Alto Hama–Bailundo adult specimen was collected in a yellow flower of a spontaneous herbaceous plant in a secondary open forest. Biological and other ecological data are not available for the species, but see general comments on the genus *Coenochilus*.

Subtribe Cymophorina Krikken, 1984

Genus *Cymophorus* Kirby, 1827

The genus was revised by Schein (1954b) and is distributed throughout the Afrotropical and Oriental Regions. There are seven recognized subgenera; four of them (*Clydonophorus* Kraatz, 1899, *Eucymophorus* Schein, 1954, *Neocymophorus* Schein, 1954 and *Syntomopteryx* Kraatz, 1900) were recorded for Angola, each one with one species (Quedenfeldt 1884; Schein 1954b; Rojkoff 2011a). The subgenus *Cymophorus* (*Syntomopteryx*) was briefly treated by Rojkoff (2011a). There are five adult specimens of this genus from Angola (without localities) deposited in the “old collections” of MZUC collected by the Portuguese Explorers Hermenegildo Capelo and Roberto Ivens and probably by the naturalist José Anchieta in the second half of the 19th century. Unfortunately, due to their damaged external morphological conditions (e.g. partial absence of scales, missing or incomplete legs), we can not ascribe them with certainty to any species.

Cymophorus (Clydonophorus) squamosus squamosus (Kolbe, 1897)

(Fig. 13f)

Distribution: ANG, CAM, DOC, EQG, GHA, KEN, TOG.

Distribution in Angola (Provinces): 1) HUA; 2) BIE.

Historic records:

—Bailundo (HUA) (Schein 1954b).

New localities reported: 75 km N Caconda (near Cuima) (13° 26′ 19″ S, 15° 22′ 55″ E, 1587 m alt., 279) (HUA), 5.XII.2012, 1♂, P. Schüle leg., PMC (P. Malec, personal communication).

Material examined: Cassoco (Kuito–Cachingues) (12° 48′ 56.43″ S, 16° 45′ 05.43″ E, 1717 m alt., 258) (BIE), 2.XII.2017, 1♂, 2♀, DO, A. Serrano & R. Capela leg., ASC.

Remarks. Joly (2018) provided biodiversity information (abundance, habitat preference) of this species for Ghana. The Cassoco adult specimens were captured flying in an open secondary forest. Other biological and ecological data are not available for the species, but see general comments in Schein (1954b) and the remarks under the genus *Coenochilus*. It is a new species record for the Bié Province.

Cymophorus (Eucymophorus) spiniventris spiniventris (Gory & Percheron, 1833)

Distribution: ANG, CAM, EQG, NIG, SEN, SLN, TOG.

Distribution in Angola (Provinces): 1) LNO.

Historic records:

—Quango (=Cuango) (LNO) (Quedenfeldt 1884).

Material examined: none.

Remarks. The species is polytypic with four recognized subspecies (Schein 1954b; Holm & Marais 1992; Krajcik 2008a). The nominal subspecies is distributed in West Africa (Schein 1954b) and the Quedenfeldt (1884) record for Angola could be a misidentification of one of the other known subspecies which have a more southern distribution [*Cymophorus (Eucymophorus) spiniventris quadrimaculatus* Raffray, 1899 or *Cymophorus (Eucymophorus) spiniventris rubronotatus* Péringuey, 1885]. Biological and ecological data are not available for the species, but see general comments in Schein (1954b) and the remarks under the genus *Coenochilus*.

Cymophorus (Neocymophorus) flavonotatus collarti (Burgeon, 1932)

Distribution: ANG, DOC, GAB, TOG.

Distribution in Angola (Provinces): 1) HUA.

Historic records:

—Bailundo (HUA) (Schein 1954b).

Material examined: none.

Remarks. Krajcik (2008a) recognized two subspecies in *Cymophorus flavonotatus* Kolbe, 1892, but Schein (1954b) postulated that *C. flavonotatus collarti* could be only a colour form. Biological and ecological data are not available for the subspecies, but see also general comments in Schein (1954b) and the remarks under the genus *Coenochilus*.

***Cymophorus (Syntomopteryx) bouyeri* Rojkoff, 2011**

Distribution: ANG.

Distribution in Angola (Provinces): 1) CUS.

Historic records:

—Cassoco (CUS) (Rojkoff 2011a).

Material examined: none

Remarks. An endemic species of Angola (see also Pl. 1, Fig. 1 in Rojkoff 2011a). The two females of the typical series are until now the only specimens known (Rojkoff 2011a). Biological and ecological data are not available for the species, but see also Schein (1954b) for general comments and the remarks under the genus *Coenochilus*.

Subtribe Lissogeniina Krikken, 1984

***Genus *Chthonobius* Burmeister, 1847**

The genus was not revised and has three recognized species (Krajcik 2008b, Schoolmeesters 2018). The genus had never been registered for Angola so far.

****Chthonobius conspersus* Burmeister, 1847**

(Fig. 13g)

Distribution: ANG, DOC, RSA, TAN, ZAM.

Distribution in Angola (Provinces): 2) ?

Historic records: none.

Material examined: Angola, 1 ex., N° 1907 (blue label), old collection, box n° IX-78, MZUC.

Remarks. The adult specimen of MZUC despite be very old and damaged (Fig. 13g), fits well this species description. The adults are generally associated with ants or termites, but the larvae can be found on decaying organic matter. Malec & Šípek (2016) refer that it is possible to rear adults from wild larvae. It is a new genus/species record for Angola.

Genus *Lissogenius* Schaum, 1844

The genus was not revised and has seven recognized species (Krajcik 2008b). The species of this genus are myrmecophilous. There is only one species recorded for Angola (Moser 1911).

***Lissogenius ertli* Moser, 1911**

(Fig. 13h)

Distribution: ANG, DOC.

Distribution in Angola (Provinces): 1) HUA; 2) BIE, MAL.

Historic records:

—Bailundo (HUA) (Moser 1911).

—Angola (without locality) (Ferreira 1965, Sakai & Nagai 1998).

New localities reported: Calucinga (coord. not available, 1766 m alt., 189) (BIE), 17.XI.2013, 1 ex., P. Schüle leg., PMC (P. Malec, personal communication).

Material examined: Angola, 1 ex., N° 1907 (blue label), old collection, box n° XIV-83, MZUC; Mumbué (5 km SE) (13° 53' 55.86'' S, 17° 23' 12.68'' E, 1622 m alt., 303) (BIE), 5.IV.2014, 2♀, DO, A. Serrano leg., ASC; Kibundi (08° 54' 33.31'' S, 16° 03' 15.71'' E, 1170m alt., 95) (MAL), 19.XI.2017, 1♂, LT, A. Serrano & R. Capela leg., ASC.

Remarks. The species was originally described from Angola based on one specimen (Moser 1911), but later was recorded for DOC (Basilewsky 1956). Sakai & Nagai (1998) recorded the species for Cameroon and provided a photo of a specimen (Pl. 142, Fig. 32). However, considering the conformation of pronotum, it seems that the identification is incorrect. Our adult specimens fit very well the original description. While the Mumbué specimens were captured in rotten wood (e.g. Fig. 1d) with Formicidae (not identified), *Zygentoma* (not identified) and the ant nest

beetle *Paussus* (*Crenatopaussus*) *scaliger* Reichensperger, 1926, the Kibundi specimen was collected by LT, all in secondary open forests. Basilewsky (1956) provided some ecological remarks on *Lissogenius* which are according with our observations. Biological data are not available. It is a new record for the Malanje and Bié Provinces.

Subtribe Macromina Burmeister and Schaum, 1840

Genus *Campsiura* Hope, 1831

The genus is distributed throughout Afrotropical, Oriental and Palaearctic Regions (Krajcik 2008a). In the former Region there are fourteen or fifteen recognized species, depending of the authors (cf. Marais & Holm 1992 and Krajcik 2008a). However, two additional species [*Campsiura* (*Macroma*) *pavlae* Legrand & Malec, 2006 and *Campsiura* (*Macroma*) *kerleyi* Antoine, 2006], are not listed in these catalogues. Antoine (2006a) recognized four subgenera and provided an identification key for them, as well as a key to the species of the *Campsiura* (*Macroma*) *scutellaris* group. There are four species recorded for Angola (Paulino de Oliveira 1882, Ferreira 1965, Antoine 2006a, Krajcik 2008a), all in the subgenus *Macroma*.

Campsiura (*Macroma*) *angolensis angolensis* (Kraatz, 1883)

(Figs. 13i, 14a)

Distribution: ANG, COM, DOC, GAB.

Distribution in Angola (Provinces): 1) CAB, LNO; 2) CUS, HUA.

Historic records:

—Angola (without locality), Cabinda (CAB) (Paulino de Oliveira 1882 sub *Macroma confusa* Schaum);

—Angola (without locality) (Kraatz 1883 and Ferreira 1965 sub *Macroma angolensis* Kraatz);

—Congo (LNO), Loango (=Luango) (CAB) (Antoine 2006a).

Material examined: Huambo (12° 46' S, 15° 44' E, 1650 m alt., 256) (HUA), X.1934, 5 ♂, 5 ♀, N° 1984 (blue labels), n° 67a (white labels, red number) (box n° I-70), J. Pimentel leg., MZUC; Angola, 2 ♀, N° 1907 (blue labels), n° 80 (white labels), 2 ♀, N° 1907 (blue labels), n° 149a (white labels), 1 ♂, N° 1907 (blue label), n° 150a (white label), old collection, box n° IX-78, MZUC; Nova Lisboa (=Huambo) (12° 46' S, 15° 44' E, 1650 m alt., 256) (HUA), 5.V.1958, 1 ♂, M. Fernanda leg., N° E.2505, n° 613, JPCC, MUHNAC; Nova Lisboa (=Huambo) (12° 46' S, 15° 44' E, 1650 m alt., 256) (HUA), 14.IX.1964, 1 ex., A. N. de Azevedo leg., ANAC; Calulo–Cabuta (12,1 km) (09° 53' 59'' S, 14° 54' 26'' E, 831 m alt., 128) (CUS), 9.XII.2017, 3 ♂, 2 ♀, DO, A. Serrano & R. Capela leg., ASC.

Remarks. Paulino de Oliveira (1882) recorded *M. confusa* Schaum ? [= *Campsiura scutellaris* (Gory & Percheron, 1833)] for Cabinda, but it surely corresponds to this species. The Calulo–Cabuta adult specimens were sampled by DO on the basis of flowers of small guavas trees (*Psidium guajava*) in a secondary moist forest. Biological data concerning the breeding association with elephant dung were provided by Legrand & Malec (2006) for some other species of *Campsiura* [e.g. *Campsiura* (*Macroma*) *circe* (Kolbe, 1914), *Campsiura* (*Macroma*) *exclamationis* (Kolbe, 1892), *Campsiura* (*Macroma*) *lutescens* (Westwood, 1874), *Campsiura* (*Calocampsiura*) *trivittata* (Moser, 1907)]. Predatory habits were assigned for *Campsiura* (*Macroma*) *cognata* (Schaum, 1841), which has been recorded feeding on scale insects (Holm & Perissinotto 2010). The description of larvae was also done, but only for *C. trivittata* by Lumaret & Cambefort (1985). It is a new record for the Huambo and Kwanza Sul Provinces.

Campsiura (*Macroma*) *angolensis latevittata* (Moser, 1913)

Distribution: ANG, NAB.

Distribution in Angola (Provinces): 1) BIE, HUA, HUI.

Historic records:

—Huilla (=Huila) (HUI) (Paulino de Oliveira 1882 sub *Macroma confusa* Schaum?);

—Angola (without locality) (Moser 1913b and Ferreira 1965 sub *Macroma latevittata* Moser);

—Caconda (HUA), Bihe (=Bié) (BIE) (Antoine 2006a).

New localities reported: Cacula (20 km NW) (coord. not available, ? alt., 317) (HUI), 15.XI.2013, 2 ♂, P. Schüle leg., PMC (P. Malec, personal communication).

Material examined: none.

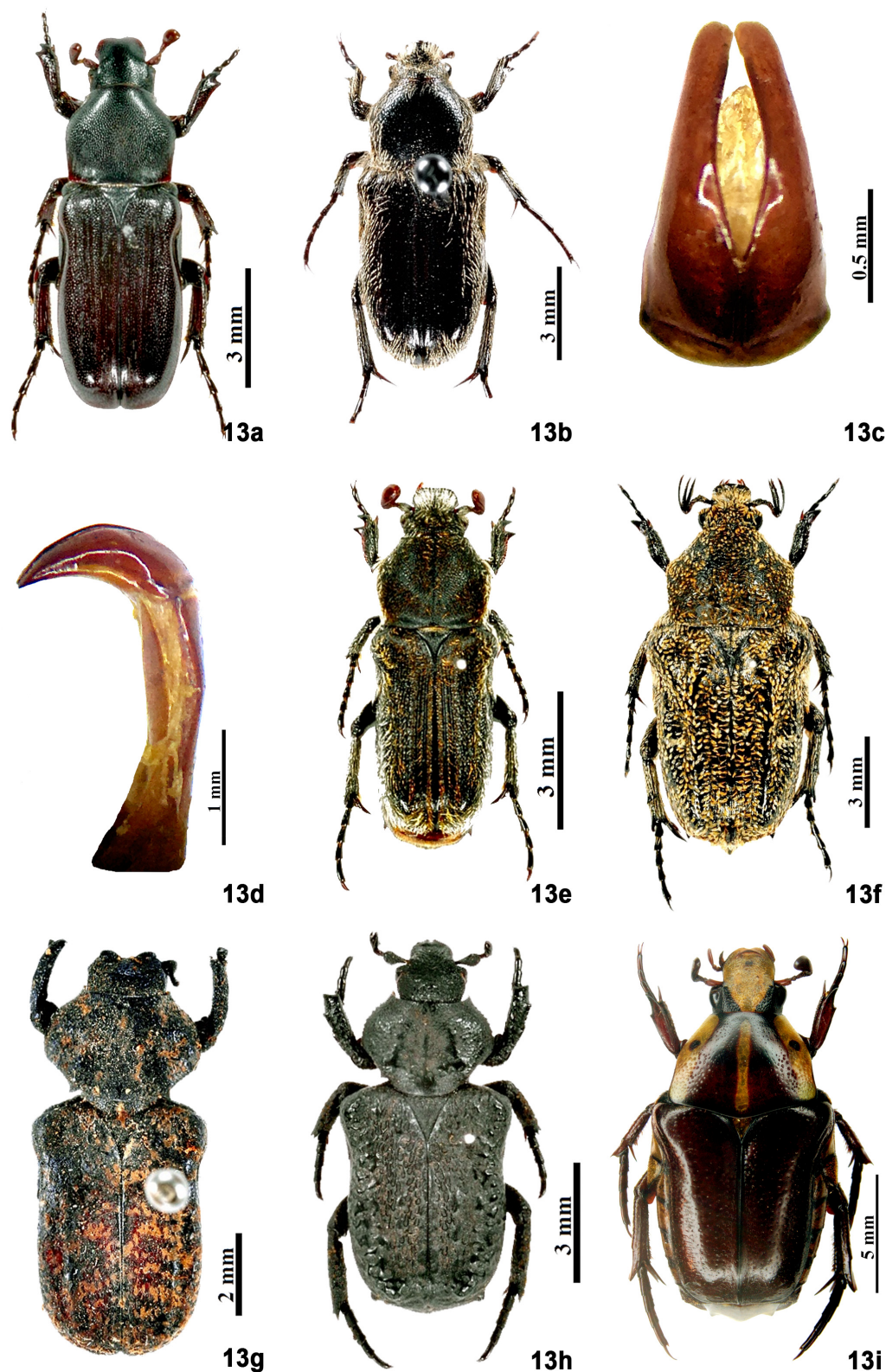


FIGURE 13. Cetoniinae species of Angola. a, *Plagiochilus crassipes* (dorsal view), male, Cabuta, CUS, ASC; b, *Plagiochilus dupeyi* (dorsal view), male, Dundo, LNO, IICT; c and d, *Plagiochilus dupeyi*, parameres (frontal and lateral views, respectively), Dundo, LNO, IICT; e, *Plagiochilus pilosus* (dorsal view), female, Alto Hama–Bailundo, HUA, ASC; f, *Cymophorus (Clydonophorus) squamosus squamosus* (dorsal view), female, Cassoco, BIE, ASC; g, *Chtonobius conspersus* (dorsal view), MZUC; h, *Lissogenius ertli* (dorsal view), male, Kibundi, MAL, ASC; i, *Campsiura (Macroma) angolensis angolensis* (dorsal view), male, Calulo–Cabuta, CUS, ASC.

Remarks. According to Antoine (2006a) this subspecies is segregated from the nominal one based only in the colour of clypeus and the width of the yellow pronotum bands. However, without any study on the stability of these characters throughout the distribution area of the species, it seems a weak argument to validate this taxon. Antoine himself (2006a) said: "On trouve en Angola diverses formes de transitions". So, it is with some caution that we follow the Antoine (2006a) nomenclature. The record of *M. confusa* Schaum ? [= *Campsiura* (*Macroma*) *scutellaris* (Gory & Percheron, 1833)] for Huilla by Paulino de Oliveira (1882) corresponds surely to this subspecies. Biological and ecological data are not available, but see remarks under *C. angolensis angolensis*.

***Campsiura* (*Macroma*) *congoensis* (Bates, 1890)**

Distribution: ANG, CON, DOC, TOG, UGA.

Distribution in Angola (Provinces): 1) LNO.

Historic records:

—Dundo (LNO) (Antoine 2006a).

Material examined: none

Remarks. The habitus of this species is very similar with the precedent species. However, both are well segregated by the parameres conformation (Antoine 2006a). Biological and ecological data are not available.

***Campsiura* (*Macroma*) *scutellata* (Fabricius, 1801)**

Distribution: ANG, GBI, GUI, SEN.

Distribution in Angola (Provinces): 1) Malanje.

Historic records:

—Malange (=Malanje) (MAL) (Quedenfeldt 1884 sub *Macroma scutellata* F.).

Material examined: none

Remarks. Taking into account its distribution, the record for Malanje in Angola given by Quedenfeldt (1884) must be considered with some caution. Biological and ecological data are not available.

Subtribe Oplostomina Krikken, 1984

Genus *Anatonochilus* Péringuey, 1907

The genus was revised by Rojkoff (2015). Taking into account this work there are two subgenera (the nominal and *Laurentina* Ruter, 1952) in it with a total of four recognized species. One of them is proper of Angola (Ferreira 1965).

***Anatonochilus* (*Anatonochilus*) *angulicollis* Janson, 1912**

Distribution: ANG.

Distribution in Angola (Provinces): 1) HUI.

Historic records:

—Humpata (HUI) (Janson 1911, Ferreira 1965);

—Huila (HUI) (Rojkoff 2015).

Material examined: none

Remarks. The species is endemic of Angola (Janson 1911; Ferreira 1965; Rojkoff 2015). Biological and ecological data are not available for the species, but see also Schein (1954a), Juhel (2010) and Rojkoff (2015) for general comments and the remarks under the genus *Coenochilus*.

Genus *Oplostomus* MacLeay, 1838

The genus was not revised. There are ten recognized species (Holm & Marais 1992, Krajcik 2008a), three of them already recorded for Angola (Ferreira 1965).

***Oplostomus bicolor* (Harold, 1878)**

(Fig. 14b)

Distribution: ANG, DOC, TAN, ZIM.

Distribution in Angola (Provinces): 1) BIE, HUA, LSU, MAL, MOX; 2) BGU.

Historic records:

—“Inneren Guinea” (Angola, without locality) (Harold 1878 sub *Goniochilus bicolor* Har.);

—Pungo Andongo (MAL) (Harold 1879 and Ferreira 1965 sub *Goniochilus bicolor* Harold);

—Silva Porto (=Kuito=Cuito) (BIE); Dala (=Lunda) (LSU); Nova Lisboa (=Huambo) (HUA); Caconda (HUI); Luso (=Luena) (Fazenda Stª Cruz) (MOX) (Gomes Alves 1973 sub *Goniochilus rufiventris* Har. var. *bicolor* Har.).

Material examined: Angola, 1 ♂, 2 ♀, N° 1907 (blue label), n°s 78 and 79 (white labels), *Goniochilus bicolor* Har. (det. ?), old collection, box n° IX-78, MZUC; Huambo (12° 46'S, 15° 44'E, 1650 m alt., 256) (HUA), N° 1987 (blue label), n° 72f (white label, red numbers), J. Pimentel leg., box n° I-70, MZUC; Silva Porto (=Kuito=Cuito) (12° 23'S, 16° 57'E, 1450 m alt., 234) (BIE), 19.X.1957, 5 ♂, 13 ♀, N° 2937, Estudos Apícolas do Ultramar n° 89, 21.X. 1957, 2 ♂, 2 ♀, N°2939, Estudos Apícolas do Ultramar n°91, 25.X.1957, 1 ♂, N° 2946, Estudos Apícolas do Ultramar n° 98, Junta de Investigações do Ultramar (Entomologia), IICT, MUHNAC; Nova Lisboa (=Huambo) (12° 46'S, 15° 44'E, 1650 m alt., 256) (HUA), 6.XI.1957, 2 ♂, 1 ♀, N° 2954, Estudos Apícolas do Ultramar n° 106, 6 and 8.XI.1957, 2 ♂, N° 2956, Estudos Apícolas do Ultramar, Junta de Investigações do Ultramar (Entomologia), IICT, MUHNAC; Dala (=Lunda) (11° 02'S, 20° 12' E, 1180 m alt., 197) (LSU), 10.X.1957, 1 ♂, N° 2929, Estudos Apícolas do Ultramar, Junta de Investigações do Ultramar (Entomologia), IICT, MUHNAC; Ganda (13° 02'S, 14° 38' E, 1260 m alt., 278) (BGU), 12.XI.1957, 1 ♂, N° 2957, Estudos Apícolas do Ultramar n° 109, Junta de Investigações do Ultramar (Entomologia), IICT, MUHNAC; Caconda (13° 44'S, 15° 04'E, 1700 m alt., 209) (HUI), 15.XI.1957, 3 ♀, N° 2961, Estudos Apícolas do Ultramar n° 113, Junta de Investigações do Ultramar (Entomologia), IICT, MUHNAC; Luso (=Luena) (Fazenda Stª Cruz) (11° 46'S, 20° 06' E, 1280 m alt., 219) (MOX), 2.X.1958, 1 ♀, N° 3083, 11.X.1958, 1 ♂, N° 3029, 23.X.1958, 1 ♂, 3 ♀, N° 3034, Estudos Apícolas do Ultramar, Junta de Investigações do Ultramar (Entomologia), IICT, MUHNAC.

Remarks. The species was described originally from Angola (Harold 1878). The adults, like happens with other species of *Oplostomus*, are associated with bees, preying on broods (e.g. Oldroyd & Allsopp 2017). This behaviour is confirmed by the notes associated with the IICT adult specimens, referring that all were captured in beehives (see also Gomes Alves 1973, pp. 48–49). It is a new species record for the Benguela Province.

***Oplostomus fuliginus* (Olivier, 1789)**

(Fig. 14c)

Distribution: ANG, DOC, KEN, MOZ, NAB, NIG, RSA, SEN, ZAM, ZIM.

Distribution in Angola (Provinces): 1) ?

Historic records:

—Angola (without locality) (Ferreira 1965).

Material examined: Angola, 1 ♀, N° 1907 (blue label), old collection, box n° XIV-83, MZUC.

Remarks. The species seems to present a wide distribution in Africa (e.g. Schenkling 1921, Gomes Alves 1959, see Oldroyd & Allsopp 2017 also) and is known as the “Large Hive Beetle”. The adults are associated with honey bees and paper wasps, while larvae and pupae live in dung (Péringuey 1907; Scholtz & Holm 1985; Oldroyd & Allsopp 2017). The larvae description and life cycle were provided by Donaldson (1989) and Oldroyd & Allsopp (2017). A review on several aspects of its biology was also provided by these authors. The species seems to have potential to become invasive and highly damaging to beekeeping worldwide (Oldroyd & Allsopp 2017).

***Oplostomus rufiventris* (Harold, 1878)**

(Fig. 14d)

Distribution: ANG, DOC, KEN, RSA, TAN.

Distribution in Angola (Provinces): 1) BIE, HUI, MOX; 2) HUA.

Historic records:

—“Inneren Guinea” (Angola, without locality) (Harold 1878 sub *Goniochilus rufiventris* Har.);

—Huilla (HUI) (Schoch 1896 sub *Macromoides vittata* Schoch);

—Angola (without locality) (Ferreira 1965 sub *Macromoides vittula* Schoch);

—Silva Porto (=Kuito=Cuito) (BIE), Luso (=Luena) (Fazenda St^a Cruz), Lago Dilolo (MOX) (Gomes Alves 1973 sub *Goniochilus rufiventris* Har. and *Goniochilus rufiventris* var. *niger* Kraatz).

New localities reported: Cacula (20 km NW) (coord. not available, ? alt., 317) (HUI), 15.XI.2013, 2 ♂, P. Schüle leg., PMC (P. Malec, personal communication).

Material examined: Angola, 1♂, N° 1907 (blue label), n° 151a (white label), old collection, box n° IX-78, MZUC; Huambo (12° 46'S, 15° 44'E, 1650 m alt., 256) (HUA), N° 1987 (blue label), n° 72f (white label, red numbers), J. Pimentel leg., box n° I-70, MZUC; Silva Porto (=Kuito=Cuito) (12° 23'S, 16° 57'E, 1450 m alt., 234) (BIE), 19.X.1957, 1 ♂, 2 ♀, N° 2937, Estudos Apícolas do Ultramar n° 89, Junta de Investigações Coloniais (Entomologia), IICT, MUHNAC; Lago Dilolo (11° 30'S, 22° 01'E, 1100 m alt., 223) (MOX), 25.IX.1958, 1 ♂, 1 ♀, N° 3080, Estudos Apícolas do Ultramar, Junta de Investigações Coloniais (Entomologia), IICT, MUHNAC; Luso (=Luena) (Fazenda St^a Cruz) (11° 46'S, 20° 06'E, 1280 m alt., 219) (MOX), 23.X.1958, 1 ♀, N° 3034, 31.X.1958, 1 ♂, N° 3040, Estudos Apícolas do Ultramar, Junta de Investigações Coloniais (Entomologia), IICT, MUHNAC.

Remarks. Little is known about the biology and ecology of this species, but probably like the precedent species the adults are associated with bees and paper wasps, feeding on pollen and broods. For instance, Gomes Alves (1973) referred that the Silva Porto (=Cuito) specimens were collected in a honey bee hive. It seems a common species in Angola. It is a new species record for the Huambo Province.

Genus *Placodidus* Péringuey, 1900

The genus was revised by Krikken (1976) which recognized six species. Later, Krikken (1979b) described one more species. The species are myrmecophilous, presenting a very flat body conformation adapted to this habit. There are two species recorded for Angola (Krikken 1976, 1979b).

Placodidus simplex Krikken, 1979

Distribution: ANG.

Distribution in Angola (Provinces): 1) HUI.

Historic records:

—Sá da Bandeira (= Lubango) (HUI) (Krikken 1979b).

Material examined: none.

Remarks. The species is endemic of Angola (Krikken 1979b). Biological and ecological data are not available. Presumably it presents the same myrmecophilic habits of the other species of this genus.

Placodidus squamosus Krikken, 1976

Distribution: ANG.

Distribution in Angola (Provinces): 1) HUI.

Historic records:

—Mukoti, Bimbe (HUI) (Krikken 1976).

Material examined: none

Remarks. Another endemic species of Angola (Krikken 1976). Biological and ecological data are not available. Presumably it presents the same myrmecophilic habits of the other species of this genus.

Genus *Scaptobius* Schaum, 1841

The genus was revised by Schein (1957) which recognized ten species. Later Holm & Marais (1992) and Krajcik (2008b) added one more species. The species of this genus are myrmecophilous. There is one species recorded for Angola (Schein 1957).

Scaptobius kochi Schein, 1957

Distribution: ANG.

Distribution in Angola (Provinces): 1) NAM; 2) HUI.

Historic records:

- Ongueria (=Namibe) (NAM) (Schein 1957);
- Hunguéria (=Namibe) (NAM) (Ferreira 1965).

New localities reported: Kipungo (40 km W) (coord. not available, ? alt., 338) (HUI), 26.XI.2013, 1 ex., P. Schüle leg., PMC (P. Malec, personal communication).

Material examined: none

Remarks. The species is endemic of Angola (Schein 1957). Biological and ecological data are not available. Presumably it presents the same myrmecophilic habits of the other species of this genus. It is a new species record for the Huíla Province.

Subtribe Spilophorina Krikken, 1984**Genus *Spilophorus* Westwood in Schaum, 1848**

The Afrotropical members of this genus were revised by Holm & Perissinotto (2010). There are eight recognized species distributed in two subgenera, one of them recorded for Angola (Paulino de Oliveira 1882).

***Spilophorus (Spilophorus) plagosus plagosus* Westwood in Schaum, 1848**

(Figs. 14e, f)

Distribution: ANG, BOW, MOZ, NAB, RSA, ZIM.

Distribution in Angola (Provinces): 1) CNN; 2) HUI.

Historic records:

- Humbe (CNN) (Paulino de Oliveira 1882 sub *Spilophorus plagosus* Boheman, 1857).

Material examined: Humbe (16° 41'S, 14° 54'E, 1100 m alt., 422) (CNN), 2 exs, N° 2126 (blue labels), n°s 1 and 179 (white labels), Anchieta leg., old collection, box n° VI-75, MZUC; Gambos (=Chiange=Chibemba) (15° 46' S, 14° 06'E, 1316 m alt., 378) (HUI), 1 ex., N° 2188 (blue label), Anchieta leg., old collection, box n° VI-75, MZUC.

Remarks. Two subspecies are recognized: the nominal and *Spilophorus (Spilophorus) plagosus vrystaati* Holm & Perissinotto, 2010. Some biological and ecological data were provided by Holm & Perissinotto (2010). It is a new species record for the Huíla Province.

Subtribe Trogodina Krikken, 1984**Genus *Trogodes* Westwood in Boheman 1857**

Rojkoff (2011b) redefined and revised the genus, describing a new subgenus (*Phaenetrogodes* Rojkoff, 2011) and providing a key for its species. There are six and three recognized species in the nominal and *Phaenetrogodes* subgenera, respectively (Rojkoff 2011b). Two species of the nominal subgenus were recorded for Angola (Rojkoff 2011b). We give a new species record for this country belonging to the nominal subgenus.

***Trogodes (Trogodes) angolensis* Rojkoff, 2011**

Distribution: ANG.

Distribution in Angola (Provinces): 1) BIE.

Historic records:

- Chitengue (BIE) (Rojkoff 2011b).

Material examined: none.

Remarks. An endemic species of Angola (see Figs 9–11 and Photo 2 in Rojkoff 2011b). Biological and ecological data are not available.

***Trogodes (Trogodes) congoensis* Rojkoff, 2011**

Distribution: ANG, DOC, ZAM.

Distribution in Angola (Provinces): 1) MOX.

Historic records:

—Angola (MOX, without locality) (Rojkoff 2011b).

Material examined: none.

Remarks. According to Rojkoff (2011b) the known distribution of this species straddles the D. R. Congo and the extreme northwestern Zambia near the Angola border. One female of the typical series was got in Kamapanda in Zambia, a locality eight km far away of the Moxico Province border (Angola). The two Angolan villages closest to Kamapanda are Mambeca and Sabonete (about 22km). We include provisionally Angola in its distribution based on the Rojkoff (2011b) remark “On peu donc parler d’une aire réelle à cheval sur les trois pays”. Biological and ecological data are not available for the species, but see general comments on the genus *Coenochilus*.

****Trogodes (Trogodes) rotundicollis* Westwood, 1857**

(Figs. 14g, h, i)

Distribution: ANG, RSA, DOC, TAN, ZAM, ZIM.

Distribution in Angola (Provinces): 2) BIE, HUI.

Historic records: none.

Material examined: Huilla (= Huíla) (15° 05' S, 13° 33' E, 1720 m alt., 356) (HUI), 1 ex., Lobo d'Avila leg., old collection, box n° VI-75, MZUC; Trumba (12° 11' 50.47'' S, 17° 00' 7.22'' E, 1674 m alt., 235) (BIE), 28.XI.2017, 1♀, DO, A. Serrano leg., ASC.

Remarks. The adult specimen of MZUC and the adult female specimen of Trumba fit well the description of the species, presenting in each side of the pronotal disk one small smooth plate and the absence of posterior angles. However, the schematic outline of pronotum with the anterior angles obtuse (dorsal view) given by Rojkoff (2011b, Fig. 6) does not conform with the same structure of our specimens (anterior angles acute, Fig. 14i). The adult specimen of Trumba was captured on sandy whitish soil in a secondary open forest. Biological and ecological data are not available for the species, but see general comments on the genus *Coenochilus*. It is a new species record for Angola and the Bié and Huíla Provinces.

Tribe Diplognathini Burmeister, 1842

*** Genus *Anthracophorides* Moser, 1918**

The genus was revised by Holm (1990a) and it is represented by two species. The genus had never been registered for Angola so far.

****Anthracophorides capeneri* Schein, 1955**

(Fig. 15a)

Distribution: ANG, DOC, ZAM, ZIM.

Distribution in Angola (Provinces): 2) BIE.

Historic records: none

Material examined: Satchijamba (13° 44' 54.69'' S, 17° 10' 35.03'' E, 1579 m alt., 303) (BIE), 3.XI.2014, 1♂, BT, 29.X.-3.XI.2014, 3♂, CT, A. Serrano leg. & R. Capela, ASC.

Remarks. The Satchijamba adult specimens fit very well with the description and parameres features (Holm 1990a; Holm & Marais 1992) of this species. They were sampled by BT and CT (Figs. 1a, b) in an open secondary forest. See also the remarks under *Pachnoda discolour kolbei*. Biological and ecological data are not available for this species. It is a new genus/species record for Angola and the Bié Province.

Genus *Charadronota* Burmeister, 1842

The genus was treated by Rigout & Allard (1992). There are six valid species (Beinhundner 2017a), one of them recorded previously for Angola (Quedenfeldt 1884).

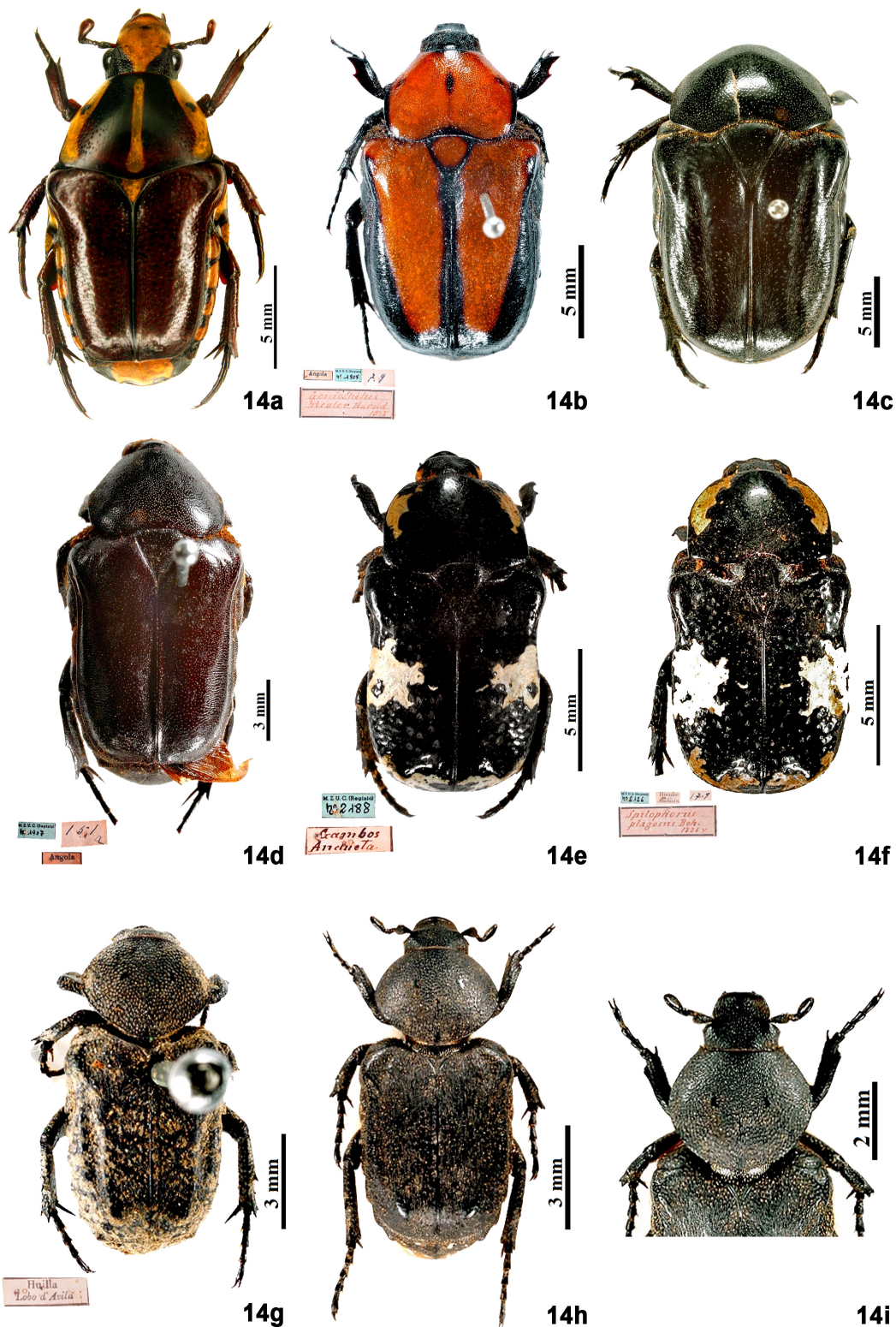


FIGURE 14. Cetoniinae species of Angola. a, *Campsiura* (*Macroma*) *angolensis angolensis* (dorsal view), female, Calulo-Cabuta, CUS, ASC; b, *Oplostomus bicolor* (dorsal view), and associated labels, female, MZUC; c, *Oplostomus fuligineus* (dorsal view), female, MZUC; d, *Oplostomus rufiventris* (dorsal view), and associated labels, male, MZUC; e and f, *Spilophorus* (*Spilophorus*) *plagosus plagosus* (dorsal views), and associated labels, Gambos, HUI, MZUC and Humbe, CNN, MZUC, respectively; g, *Trogodes* (*Trogodes*) *rotundicollis* (dorsal view), and associated labels, HUI, MZUC; h and i, *Trogodes* (*T.*) *rotundicollis* (dorsal views), female and head and pronotum, respectively, Trumba, BIE, ASC.

***Charadronota pectoralis* (Bainbridge, 1842)**

Distribution: ANG, BEN, CAM, DOC, GBI, GHA, KEN, SEN, SLN, TOG.

Distribution in Angola (Provinces): 1) LNO.

Historic records:

—Quango (=Cuango) (LNO) (Quedenfeldt 1884).

Material examined: none.

Remarks. The species is a forest habitat generalist species, but not common (see Mudge *et al.* 2012). It seems rare in Angola also. Some ecological notes were given by Malec (2015).

Genus *Diphrontis* Gerstaecker, 1882

The genus was revised by Holm (1990c). There are seven species within it (Beinhundner 2017a), one of them recorded for Angola (Quedenfeldt, 1884).

***Diphrontis gerstaeckeri* Quedenfeldt, 1884**

(Figs. 15b, c)

Distribution: ANG, BOW, DOC, TAN, ZAM.

Distribution in Angola (Provinces): 1) MAL; 2) BIE.

Historic records:

—Malange (=Malanje) (MAL) (Quedenfeldt 1884);

—Angola (without locality) (Ferreira, 1965);

—Angola (without locality) (Holm 1990c).

Material examined: Satchijamba (13° 44' 54.69'' S, 17° 10' 35.03'' E, 1579 m alt., 303) (BIE), 3.XI.2014, 4♂, 3♀, BT, A. Serrano leg. & R. Capela, ASC.

Remarks. A polychromatic species originally described from Angola (Quedenfeldt 1884). The adult specimens from Satchijamba were collected by BT (Fig. 1a) in an open secondary forest. See also the remarks under *Pachnoda discolour kolbei*. Some ecological notes were given by Holm & Marais (1992). It is a new species record for the Bié Province.

Genus *Diplognatha* Gory & Percheron, 1833

The genus was treated by Rigout & Allard (1992), but Holm & Marais (1992) referred that it needs a “serious revision”. Beinhundner (2017a) recognizes fourteen species in *Diplognatha* (*Diplognatha*), two of them recorded for Angola (Ferreira 1965). We add one more species for the country.

****Diplognatha* (*Diplognatha*) *crampeli* Fairmaire, 1893**

(Fig. 15d)

Distribution: ANG, BEN, CON, DOC, RCA.

Distribution in Angola (Provinces): 2) ?

Historic records: none.

Material examined: Angola, 1 ex., N° 1907 (blue label), n° 55 (white label), old collection, box XIV-83, MZUC.

Remarks. The Angola adult specimen deposited in MZUC fits well this species description. However, without a revision of the genus, this identification must be considered with some caution. Biological and ecological data are not available for this species. It is a new species record for Angola.

***Diplognatha* (*Diplognatha*) *gagates* (Forster, 1771)**

(Fig. 15e)

Distribution: Africa south of Sahara.

Distribution in Angola (Provinces): 1) CAB, CNN, HUI, LNO, LUA, MAL.

Historic records:

- Angola (without locality) (Harold 1879 sub *Diplognatha gagates* F.);
- Cabinda (CAB), Humbe (CNN), Gambos (=Chibemba) (HUI) (Paulino de Oliveira 1882 sub *Diplognatha gagates* F.);
- Malange (=Malanje) (MAL), Quango (=Cuango) (LNO) (Quedenfeldt 1884);
- Dundo (LNO) (Gomes Alves 1959);
- Luanda (LUA) (Ferreira, 1965).

Material examined: Angola, 4 exs, 1906, N° 1907 (blue label), P. Gregorio leg., RQC/CSFC, box n° II-71, MZUC; Angola, 1 ex., 1906, N° 1722 (blue label), P. Gregorio leg., RQC/CSFC, box n° II-71, MZUC; Dundo (7° 22'S, 20° 50'E, 1470 m alt., 51) (LNO), 2.V.1946, 1 ♀, N° 649, -.X.1948, 1 ♂, 1 ♀, N° 2130, 1 ♀, N° 2148, -.XII.1948, 1 ♂, 1 ♀, N° 2146, -.I.1949, 1 ♂, 1 ♀, N° 2131, -.III.1949, 3 ♂, 2 ♀, N° 2132, 1 ♀, N° 2151, Junta de Investigações Coloniais (Entomologia), IICT, MUHNAC.

Remarks. Two subspecies were recognized within *D. gagates*, the nominal and *Diplognatha (Diplognatha) gagates silicea* MacLeay, 1838 (Holm & Marais 1992; Beinhundner 2017a). However, Basilewsky (1956) and Rigout & Allard (1992) considered these subspecies as species (a criterion followed here), stating that they differ by the number of mesotibial teeth (two vs. one) and other minor morphologic pronotal characters (lateral punctuation and crenulation). These authors, Krajcik (2008a) and Schoolmeesters (2018) considered also that *Diplognatha (Diplognatha) gagates holosericea* Bainbridge, 1842 is a subspecies within this taxon, but Holm (1990b) synonymized it with *Porphyronota cinnamomea* (Afzelius, 1817). All the examined specimens exhibit two mesotibial teeth. Unfortunately, the studied adult specimens of MZUC do not present labels with the indication of the sampling localities. Comparing the available data for both species it seems that *Diplognatha (Diplognatha) gagates* occurs predominantly in the Northern Provinces of Angola and *Diplognatha (Diplognatha) silicea* in the central and southern-eastern Provinces. The larva (L₃) was described by Šípek (2005) and ecological data were provided by Holm & Marais (1992).

***Diplognatha (Diplognatha) silicea* (MacLeay, 1838)**

(Fig. 15f)

Distribution: ANG, BOW, MAW, MOZ, NAB, RSA, TAN, ZAM, ZIM.

Distribution in Angola (Provinces): 1) CCU, HUI, LNO, MAL; 2) BIE, CUS, HUA, LSU, MOX.

Historic records:

- Pungo Andongo (MAL) (Harold 1879);
- Malange (=Malanje) (MAL), Quango (=Cuango) (LNO) (Quedenfeldt 1884);
- Kapelongo (=Capelongo), Dongo (HUI), Luiana (CCU) (Bourgoin 1925);

Material examined: Angola, 5 exs, N° 1907 (blue labels), old collection, box n° XIV-83, MZUC; Angola, 1 ex., N° 1907 (blue label), n° 22 (white label), old collection, box VI-75, MZUC; Angola, 2 exs, N° 1975 (blue label), n° 208 (white label), RQC / CSFC, box n° II-71, MZUC; Angola, 1 ex., N° 2110 (blue label), J. Pimentel leg., box n° I-70, MZUC; Huambo (12° 46'S, 15° 44'E, 1650 m alt., 256) (HUA), VIII.1934, 2 exs, N°s 1984 and 1989 (blue labels), n° 67a (white label, red number), J. Pimentel leg., X.1934, 1 ex., N° 1987 (blue label), n° 72 (white label, red number), J. Pimentel leg., X.1934, 3 exs, N° 1989 (blue labels), n° 77 (white labels, red numbers), J. Pimentel leg., XI.1934, 16 exs, N° 1989 (blue labels), n° 77c (white labels, red numbers), J. Pimentel leg., XII.1934, 1 ex., N° 1991 (blue label), n° 88 (white label, red number), J. Pimentel leg., box n° I-70, MZUC; Huambo (12° 46'S, 15° 44'E, 1650 m alt., 256) (HUA), 20 exs, N° 1989 (white labels), J. Pimentel leg., box n° 97, MZUC; Luma–Cassai (Dala) (coord. not available, 197) (LSU), 9.X.1957, 1 ♂, N° 2927, Estudos Apícolas do Ultramar n° 79, Junta de Investigações do Ultramar (Entomologia), IICT, MUHNAC; Dala (=Lunda) (11° 02'S, 20° 12' E, 1180 m alt., 197) (LSU), 10.X.1957, 1 ♂, N° 2929, Estudos Apícolas do Ultramar n° 82, Junta de Investigações do Ultramar (Entomologia), IICT, MUHNAC; Silva Porto (=Kuito=Cuito) (12° 23'S, 16° 57'E, 1450 m alt., 234) (BIE), 19.X.1957, 1 ♂, 1 ♀, N° 2946, Estudos Apícolas do Ultramar n° 89, Junta de Investigações Coloniais (Entomologia), IICT, MUHNAC; Vouga (Qtª Vista Alegre) (12° 14'S, 16° 47'E, 1766 m alt., 234) (HUA), 25.X.1957, 1 ♂, N° 2948, Estudos Apícolas do Ultramar n° 2948, Junta de Investigações Coloniais (Entomologia), IICT, MUHNAC; Mutumbo (13° 10'S, 17° 23'E, 1457 m alt., 283) (BIE), 30.X.1957, 1 ♀, N° 3087, Estudos Apícolas do Ultramar, Junta de Investigações Coloniais (Entomologia), IICT, MUHNAC; Nova Lisboa (=Huambo) (12° 46'S, 15° 44'E, 1650 m alt., 256) (HUA), 6.XI.1957, 1 ♂, N° 2956, Estudos Apícolas do Ultramar n° 106, Junta de Investigações Coloniais (Entomologia),

IICT, MUHNAC; Calombe (=Calomba) (11° 50'S, 19° 55'E, 1360 m alt., 218) (MOX), 1.XII.1959, 1 ♀, N° 3277, Estudos Apícolas do Ultramar n° 74, Junta de Investigações Coloniais (Entomologia), IICT, MUHNAC; Chianga (12° 44'S, 15° 50'E, 1740 m alt., 256) (HUA), 25.X.1963, 1 ex., N° E.3472, n° 611, E. Fonseca leg., 12.XI.1964, 1 ex., N° E.5818, n° 610, José 5° leg., JPCC, MUHNAC; Lumeje (P.N. Cameia) (11° 33'S, 20° 47'E, 1150 m alt., 220) (MOX), 15.IV.1965, n° 4353, A. Bivar de Sousa leg., ABSC, MUHNAC; Ciclotroco (Nova Lisboa=Huambo) (coords not available, 256) (HUA), 15.XII.1974, 3 ♀, DO, A. Serrano leg., ASC; Dundo–Chitato (7° 22' 41.93'' S, 20° 50' 04.81'' E, 733 m alt., 51) (LNO), 26.X.–7.XI.1995, 1 ♀, L. Mendes leg., IICT, MUHNAC; Mussende (Calulo) (CUS) (9° 57' 00'' S, 14° 47' 36'' E, 905m alt., 128), 5.XII.2015, 1 ♀, BT, A. Serrano & R. Capela leg., ASC.

Remarks. Despite the species be known for Angola since a long time ago (*e.g.* Bourgoïn 1925), both Beinhundner (2017a) and Schoolmeesters (2018) do not consider its presence in that country. All the examined specimens fit the mesotibial character (only one tooth on the external margin) proper of this species (Rigout & Allard 1992). The adult specimens from Chianga were collected on bean plants (label information). The Mussende adult specimen was sampled by BT in a secondary moist forest together with *Lophorrhina quinquelineata* (Fabricius, 1791), *Tmesorrhina laeta burgeoni* Allard, 1991 and *Myodermum alutaceum* (Afzelius, 1817). The larva of this species was described by Oberholzer (1959). Ecological data were provided by Holm & Marais (1992), but see Malec & Šípek (2016) for breeding habits also. It is a new record for the Bié, Huambo, Kwanza Sul, Lunda Sul and Moxico Provinces.

***Diplognatha (Diplognatha) pagana pagana* (Harold, 1879)**

(Fig. 15g)

Distribution: ANG, DOC.

Distribution in Angola (Provinces): 1) HUI, CNO, CUS, MAL.

Historic records:

—Pungo Andongo (MAL) (Harold 1879, Ferreira 1965);

—W Kuvango (=Cubango), Hunguéria (HUI), 20 km W N'Dalatando (CNO), 5 km N Calulo (CUS) (Rojkoff 2016a).

New localities reported: Conda (5 km W) (Serra Cumbira) (11° 8' 21.3'' S, 14° 17' 27.2'' E, 856 m alt., 185) (CUS), 19-20.XI.2017, 1 ♂, 1 ♀, S. Naumann, E. Ott and H. Sulak leg., PMC (P. Malec, personal communication).

Material examined: Angola, 1 ex., N° 1907 (blue label), old collection, box n° IX-78, MZUC; Cateculo (Calulo) (9° 57' 19.75'' S, 14° 47' 31.37'' E, 812m alt., 128) (CUS), 5.XI.2014, 1 ♂, DO, A. Serrano leg., ASC.

Remarks. Two subspecies are recognized, the nominal and *Diplognatha (Diplognatha) pagana punctata* Rojkoff, 2016. The former was originally described from Angola (Harold 1879). The Cateculo adult specimen was captured flying in an open secondary forest. Biological and ecological data are not available for this species.

Genus *Porphyronota* Burmeister, 1842

The genus was revised by Holm (1990b) who recognized ten valid species and five subspecies. Beinhundner (2017a) elevated some subspecies to the species level and three species were described after revision (*e.g.* see Rigout & Allard 1992, Antoine 1999, 2004a), given a total of eighteen species in the genus (Beinhundner 2017a). Four species/subspecies were recorded for Angola (Paulino de Oliveira 1882, Ferreira 1965, Beinhundner 2017a).

***Porphyronota cinnamomea angolensis* Holm, 1990**

(Fig. 15h)

Distribution: ANG, ZAM.

Distribution in Angola (Provinces): 1) LNO, HUA.

Historic records:

—Dundo (LNO) (Gomes Alves 1959 sub *Poecilophila hebraea* Olivier);

—Angola (without locality) (Ferreira 1965 sub *Porphyronota cinnamomea* (Afzel);

—Bimbi (=Bimbe) (HUA) (Holm 1990b).

New localities reported: Kuito (=Cuito) (90 km W, near Cachiungo) (coord. not available, ? alt., 257) (HUA), 15.XI.2013, 1 ex., P. Schüle leg., PMC (P. Malec, personal communication).

Material examined: Dundo (7° 22'S, 20° 50'E, 1470 m alt., 51) (LNO), 2.V.1946, 1 ♀, N° 658, -.III.1949, 1 ♂, N° 2151, Junta de Investigações Coloniais (Entomologia), IICT, MUHNAC.

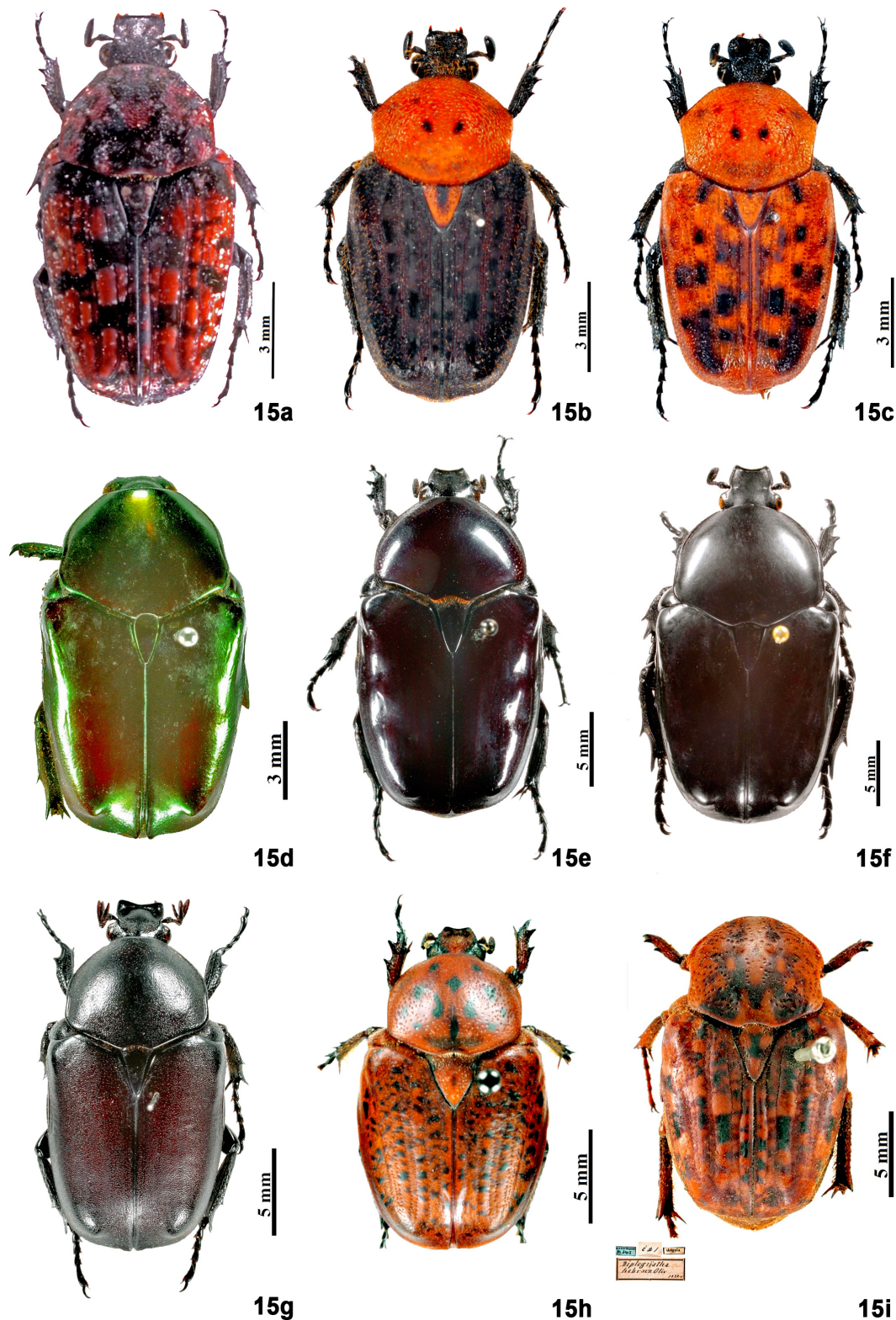


FIGURE 15. Cetoniinae species of Angola. a, *Anthracophorides capeneri* (dorsal view), male, Satchijamba, BIE, ASC; b and c, *Diphrontis gerstaeckeri* (dorsal views), male and female, respectively, Satchijamba, BIE, ASC; d, *Diplognatha* (*Diplognatha*) *crampeli* (dorsal view), MZUC; e, *Diplognatha* (*D.*) *gagates* (dorsal view), female, Dundo, LNO, IICT; f, *Diplognatha* (*D.*) *silicea* (dorsal view), female, Mussende, CUS, ASC; g, *Diplognatha* (*D.*) *pagana* (dorsal view), male, Cateculo (Calulo), CUS, ASC; h, *Porphyronota cinnamomea angolensis* (dorsal view), male, Dundo, LNO, IICT; i, *Porphyronota hebraea hebraea* (dorsal view), and associated labels, MZUC.

Remarks. This subspecies was described from Angola and Zambia specimens (Holm 1990b). The adult specimens of IICT fit well this subspecies description and were identified as *Poecilophila hebraea* (Olivier, 1789) by Gomes Alves (1959). Biological and ecological data are not available for this species.

***Porphyronota hebraea hebraea* (Olivier, 1789)**

(Figs. 15i, 16a)

Distribution: ANG, MOZ, NAB, RSA, TAN, ZIM, ZAM.

Distribution in Angola (Provinces): 1) MAL; 2) HUA.

Historic records:

—Malange (=Malanje) (MAL) (Quedenfeldt 1884 sub *Diplognatha hebraea* Ol.);

—Angola (without locality) (Holm 1990b);

—Angola (without locality) (Holm & Marais 1992).

Material examined: Angola, 1 ex., N° 1975 (blue label), n° 209 (white label), RQC/CSFC, box n° II-71, MZUC; Angola, 4 exs, N° 1907 (blue labels), n° 221 (white labels), old collection, box n° XIV-83, MZUC, sub *Diplognatha hebrae* Oliv. (white label marginated by black line); Chianga (12° 44'S, 15° 50'E, 1740 m alt., 256) (HUA), 27.XI.1965, 1 ex., M. de Fátima leg., N° E.7169, n° 616, 16.X.1967, 1 ex., on *Ficus* sp., H. Cardoso leg., N° E.9937, n° 617, JPCC, MUHNAC; Ciclotroco (Nova Lisboa=Huambo) (coord. not available, 256) (HUA), 15.XII.1974, 1ex., DO, A. Serrano leg., ASC.

Remarks. Beinhundner (2017a) does not record the species for Angola, despite several citations since a long time ago (e.g. Quedenfeldt 1884; Holm 1990b, Fig. 68; Holm & Marais 1992, Fig. 73f). However, the reference to this species by Gomes Alves (1959) and Ferreira (1965) is erroneous (see *P. cinnamomea angolensis* remarks). The Chianga adult specimens were collected on *Ficus* sp. (label information). The larva was described by Donaldson (1987) and biological and ecological data were provided by Holm & Marais (1992). It is a new species record for the Huambo Province.

***Porphyronota maculatissima maculatissima* (Boheman, 1860)**

(Fig. 16b)

Distribution: ANG, MAW, MOZ, RSA, TAN, ZIM, ZAM.

Distribution in Angola (Provinces): 1) HUI, LNO, MAL, MOX.

Historic records:

—Huila (HUI), Zambeze (=Luena River) (MOX) (Paulino de Oliveira 1882 sub *Diplognatha maculatissima* Boh.);

—Malange (=Malanje) (MAL) (Quedenfeldt 1884 sub *Diplognatha maculatissima* Boh.);

—Dundo (LNO) (Gomes Alves 1959 and Ferreira 1965 sub *Poecilophila maculatissima* Boh.).

Material examined: Dundo (7° 22'S, 20° 50'E, 1470 m alt., 51) (LNO), -.X.1948, 1 ♂, 2 ♀, N° 2145, -.XI.1948, 1 ♂, N° 2140, -.XII.1948, 1 ♀, N° 2146, -.III.1949, 1 ♀, N° 2132, Junta de Investigações Coloniais (Entomologia), IICT, MUHNAC.

Remarks. Holm (1990b, Fig. 69), Holm & Marais (1992, Fig. 74g) and Beinhundner (2017a) did not include Angola in its distribution. However, the species is known for Angola since a long time ago (e.g. Paulino de Oliveira 1882; Quedenfeldt 1884; Gomes Alves 1959). Some adult specimens of IICT (Dundo) were attracted by light (registered information). Some biological and ecological data were provided by Holm & Marais (1992).

***Porphyronota preissi* Moser, 1913**

(Fig. 16c)

Distribution: ANG, ZIM.

Distribution in Angola (Provinces): 1) MOX.

Historic records:

—Calombe (=Calomba) (MOX) (Gomes Alves 1973 sub *Porphyronota ruteri* Gomes Alves).

Material examined: Calombe (=Calomba) (11° 50'S, 19° 55'E, 1360 m alt., 218) (MOX), 4.XI.1954, 1 ♂, N° 3264, Holotypus (red label), *Porphyronota ruteri* Gomes Alves, 1973 det., Estudos Apícolas do Ultramar n° 61, Junta de Investigações Coloniais (Entomologia), IICT, MUHNAC.

Remarks. The species was originally described from Rhodesia (=Zimbabwe) (Moser 1913a). Gomes Alves (1973) sixty years later described the same species from Angola under the name *Porphyronota ruteri*, which was synonymized with *P. preissi* by Holm (1990b). Biological and ecological data are not available for this species.

***Porphyronota tottenhami* (Holm, 1990)**

Distribution: ANG.

Distribution in Angola (Provinces): 1) ?

Historic records:

—Angola (without locality) (Holm 1990b sub *P. carnifex tottenhami* Holm);

—Angola (without locality) (Perissinotto 2012).

Material examined: none.

Remarks. An endemic species of Angola firstly described as a subspecies of *Porphyronota carnifex* (Fabricius, 1781) by Holm (1990b) and later elevated to species level (Perissinotto 2012). Only the type series is currently known for this species. Some ecological data were only provided for *P. carnifex* by Holm & Marais (1992).

Genus *Pseudinca* Kraatz, 1880

The genus was revised by Valck Lucassen (1933) and later by Rigout & Allard (1992). Beinhundner (2017a) recognized nineteen valid species; two of them recorded for Angola (Paulino de Oliveira 1882, Valck Lucassen 1933). We had the opportunity to study the type of the genus *Ruteroides* Gomes Alves, 1973 deposited in IICT. Careful examination of clypeus, pronotum, elytra, underside (e.g. mesosternal lobe) and the parameres type (see Figs. 16g, h), revealed that the characteristics of *Ruteroides* were similar to *Pseudinca*. So, we propose *Ruteroides* as a junior synonym of *Pseudinca* Kraatz, 1880.

***Pseudinca fradei* (Gomes Alves, 1973), new combination**

(Figs. 16d, e, f, g, h)

Distribution: ANG.

Distribution in Angola (Provinces): 1) MOX.

Historic records:

—Fazenda St^a Cruz (Luso=Luena) (MOX) (Gomes Alves 1973 sub *Ruteroides fradei* Gomes Alves).

Material examined: Luso (=Luena) (Fazenda St^a Cruz) (11° 46'S, 20° 06' E, 1280 m alt., 219) (MOX), 24.X.1958, 1 ♂, N° 3035, Holotypus (red label), *Ruteroides fradei* Gomes Alves det. 1973, Estudos Apícolas do Ultramar, Junta de Investigações Coloniais, IICT, MUHNAC.

Remarks. An endemic species of Angola whose original description was based on a male specimen, under the genus *Ruteroides* (Gomes Alves 1973). This author referred that the specimen was observed by Ruter, who postulated that probably it should belong to a new genus near *Porphyronota*. However, we conclude that *Ruteroides* is similar to *Pseudinca* (see comments on this genus). *Pseudinca fradei* new combination is close to *Pseudinca rufulus* Kolbe, 1914, *Pseudinca variatus* Bourgoin, 1921 and *Pseudinca striatus* Valck Lucassen, 1933, but can be segregated from them by some morphological characters such as clypeus without longitudinal ridge, the shape of clypeal anterior edge (slightly raised and straight) (Fig. 16e), the discal punctuation of pronotum (distinct and sparse) (Fig. 16e), the sutural round angle (not acute) of elytra (Fig. 16d), the shape of mesosternal apophysis and the punctuation of abdominal segments (Fig. 16f), among others. In Beinhundner's monograph (2017a: 594), the authorship of names *Ruteroides* and *Ruteroides fradei* is incorrect (Gómez Alvéz must be spelled as Gomes Alves). Moreover, in the same monograph (p. 594, lines 9 and 13), just before the Gomes Alves (1973) references and after the genus and the species "Description", the names *Myodermidius* and *Myodermidius rohani* are given, respectively. However, both taxa are not mentioned anywhere in Gomes Alves (1973) work. Beinhundner (2017a) indicates Republic Guinea for the distribution of this species, which is incorrect also. Biological and ecological data are not available for this species.

***Pseudinca horni* Valck Lucassen, 1933**

Distribution: ANG, DOC.

Distribution in Angola (Provinces): 1) BGU.

Historic records:

—Benguella (=Benguela) (BGU) (Valck Lucassen 1933);

—Angola (without locality) (Ferreira 1965).

Material examined: none.

Remarks. The species was originally described based on one specimen from Angola (Valck Lucassen 1933). Biological and ecological data are not available for this species.

***Pseudinca incoides* (J. Thomson, 1860)**

Distribution: ANG, BEN, CAM, CON, DOC, EQG, GAB, GHA, RCA, RCI, NRE, TOG.

Distribution in Angola (Provinces): 1) CAB, ZAI.

Historic records:

—Cabinda (CAB) (Paulino de Oliveira 1882 sub *Diplognatha incoides* Thoms.);

—S. Salvador (ZAI) (Valck Lucassen 1933).

Material examined: none.

Remarks. The species in Angola seems restricted to its northwesternmost territory. Tchibozo *et al.* (2008) and Joly (2018) provided biodiversity information (abundance, habitat preference) of this species for Benin and Ghana, respectively.

***Genus *Tetragonorrhina* Kraatz, 1896**

There are two species in this genus (Krajcik 2008a; Beinhundner 2017a; Schoolmeesters 2018). An identification key was provided by Holm & Marais (1992). The genus had never been registered for Angola so far.

****Tetragonorrhina induta* (Janson, 1877)**

(Figs. 16i, 17a)

Distribution: ANG, KEN, MAW, MOZ, RSA, TAN.

Distribution in Angola (Provinces): 2) CNN.

Historic records: none.

Material examined: Humbe (16° 41' S, 14° 54' E, 1100 m alt., 422) (CNN), 2 ♂, N° 1895 (blue labels), Anchieta leg., old collection, box n° VI-75, MZUC; Angola, 1 ♀, N° 1907 (blue label), n° 157 (white label), old collection, box n° XIV-83, MZUC.

Remarks. The adult specimens of MZUC fit very well this species (*e.g.* all costae are very discernible and well marked cretaceous spots on elytra are present) (Figs. 16i, 17a). Taking into account its occurrence near the south-eastern border of Angola, it is not strange its presence in the southernmost territory of this country (Humbe). The species is replaced in Namibia by other species of the genus (*Tetragonorrhina peringueyi* Holm & Marais, 1992). Holm & Marais (1992) provided some ecological data for the species. It is a new genus/species record for Angola and the Cunene Province.

Genus *Uloptera* Burmeister, 1842

The genus was revised by Holm (1990a) and it is represented by seven species (Beinhundner 2017a). There are two species recorded for Angola (Holm 1990a; Beinhundner 2017a).

***Uloptera planata* (Burmeister, 1842)**

Distribution: ANG, BEN, BOW, CON, DOC, ETI, KEN, NAB, MOZ, RSA, SOM, TAN, ZAM, ZIM

Distribution in Angola (Provinces): 1) ?

Historic records:

—Angola (without locality) (Holm 1990a).

Material examined: none.

Remarks. The species is widespread in Africa (Le Gall 2015; Beinhundner 2017a). Some ecological data were provided by Holm (1990a) and Holm & Marais (1992).

***Uloptera quangensis* Holm, 1990**

Distribution: ANG.

Distribution in Angola (Provinces): 1) LNO.

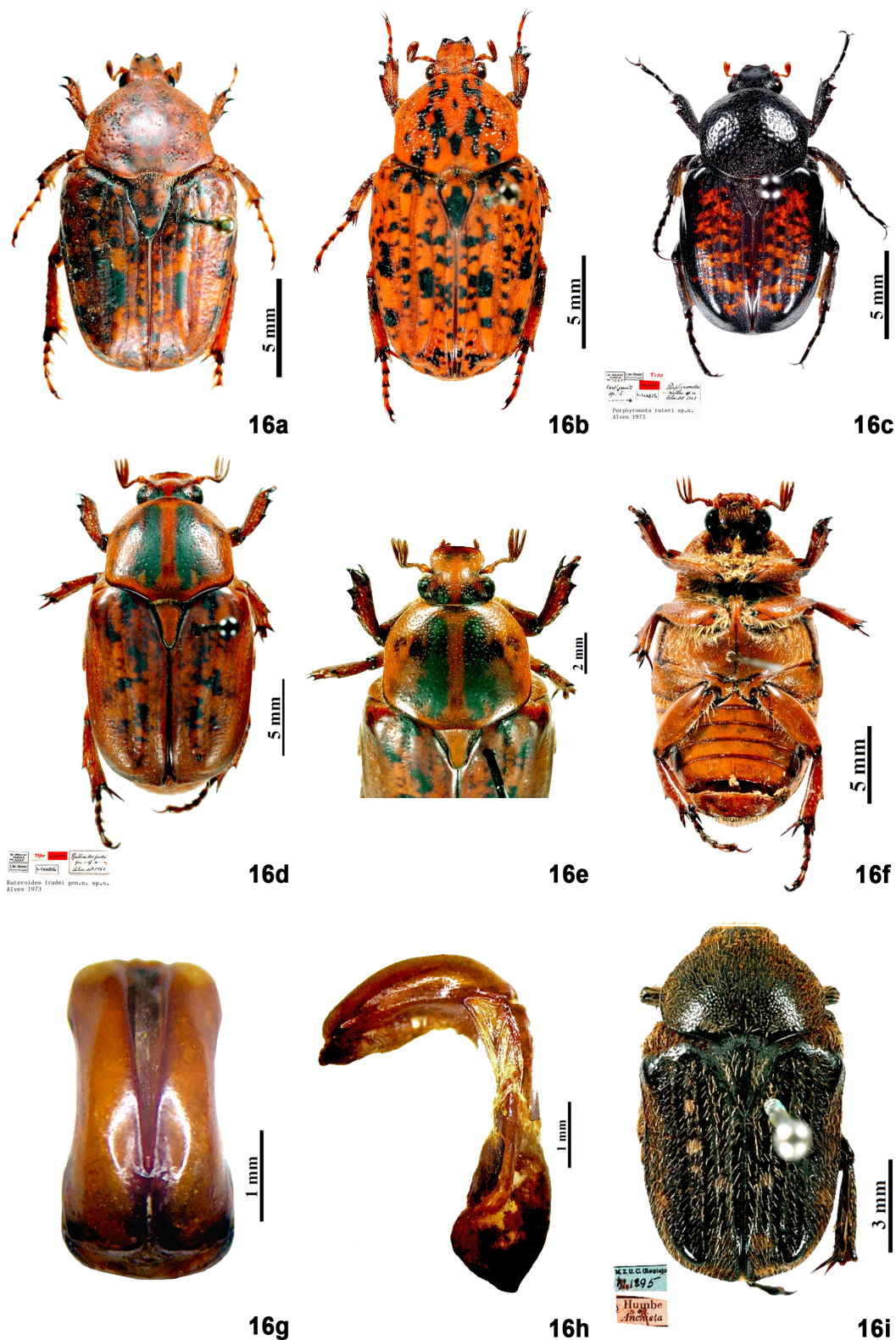


FIGURE 16. Cetoniinae species of Angola. a, *Porphyrionota hebraea hebraea* (dorsal view), Chianga, HUA, JPCC; b, *Porphyrionota maculatissima maculatissima* (dorsal view), female, Dundo, LNO, IICT; c) *Porphyrionota preissi* (dorsal view), and associated labels, male, Calombe, MOX, IICT. *Pseudinca fradei*, holotype male, Faz^a St^a Cruz, Luso (=Luená), MOX, IICT: d, habitus (dorsal view), and associated labels; e, head and pronotum (dorsal view); f, habitus (ventral view); g and h, parameres (frontal and lateral views, respectively). i, *Tetragnorrhina induta* (dorsal view), and associated labels, male, Humbe, CNN, MZUC.

Historic records:

—Quango (LNO) (Holm 1990a).

Material examined: none.

Remarks. An endemic species of Angola (Holm 1990a, Beinhundner 2017a). The species was described originally based on one male from “Quango”. Beinhundner (2017a) presents six photos of different specimens of this taxon, probably collected in Angola too. Biological and ecological data are not available for this species.

Tribe Goliathini Latreille, 1829

Beinhundner (2017a, Overview, p. 7), without any explanation and contrary to what followed in the other tribes, he did not list the subtribes within Goliathini in alphabetical order. This criterion was not followed here (see Material and Methods).

Subtribe Coryphocerina Burmeister, 1842**Genus *Anisorrhina* Westwood, 1843**

The genus was revised by Holm (1993a). Antoine (2000) provided an identification key for the *Anisorrhina* (*Anisorrhina*) species and later (Antoine 2009a) provided some taxonomic remarks on the subgenus *Melinsthes* Kraatz, 1880. Beinhundner (2017a) recognized eight species in the nominal subgenus and nine in *Melinsthes* subgenus. Until now, there are three species recorded in the former and one in the latter subgenus for Angola. *Anisorrhina flavomaculata* (Fabricius, 1798) probably was misinterpreted with one of the other two species (see remarks under *A. flavomaculata*). A new species record is given in this work.

***Anisorrhina* (*Anisorrhina*) *bouyeri* Antoine, 2000**

Distribution: ANG.

Distribution in Angola (Provinces): 1) CUS.

Historic records:

—Angola (without locality) (CUS) (Antoine 2000).

Material examined: none.

Remarks. An endemic species of Angola (Antoine 2000; Beinhundner 2017a). Ecological data are not available for this species.

***Anisorrhina* (*Anisorrhina*) *flavomaculata* (Fabricius, 1798)**

Distribution: ANG (?), RSA.

Distribution in Angola (Provinces): 1) MOX.

Historic records:

—Zambeze (=Luena River) (MOX) (Paulino de Oliveira 1882 sub *Heterorrhina flavomaculata* F.).

Material examined: none.

Remarks. The species is distributed throughout RSA (Holm & Marais 1992; Beinhundner 2017a) and recorded for Angola by Paulino de Oliveira (1882). Its known distribution is more southern and eastern than the other species of the genus. The Zambeze locality given by Paulino de Oliveira (1882) is close to the Luena River near the Zambia border in Moxico Province. Eventually, the species was misinterpreted with the next species. The larvae of all instars of this species were described by Donaldson (1987). Ecological data were provided by Holm & Marais (1992) and Malec & Šípek (2017) referred that the species is easily reproduced in captivity.

***Anisorrhina* (*Anisorrhina*) *hassoni hassoni* Antoine, 2000**

(Fig. 17b)

Distribution: ANG.

Distribution in Angola (Provinces): 1) CUS.

Historic records:

—Angola (without locality) (CUS) (Antoine 2000).

Material examined: Angola, 1 ♀, N° 1907 (blue label), old collection, box n° IX-78, MZUC.

Remarks. A species known from Angola, but Antoine (2000) postulated that some minor specimens from Rwanda and Tanzania could belong also to this species. Curiously, this was corroborated by Beinhundner (2014a) which described a new subspecies (*A. hassoni sexmaculata*) of this species from Tanzania. No ecological data are available for this species. See also the remarks under *Anisorrhina (Anisorrhina) flavomaculata*.

****Anisorrhina (Anisorrhina) laeviplaga laeviplaga* (Raffray, 1877)**

(Figs. 17c, d)

Distribution: ANG, DOC, KEN, MAW, TAN, ZAM, ZIM.

Distribution in Angola (Provinces): 2) BIE.

Historic records: none.

Material examined: Mumbué (Cuanza riverhead) (13° 49' 39.97'' S, 17° 19' 20.32'' E, 1524 m alt., 303) (BIE), 3–9.IV.2014, 1 ♀, CT, A. Serrano & R. Capela leg., ASC; Mumbué (13° 52' 39.54'' S, 17° 17' 23.16'' E, 1535m alt., 303) (BIE), 7.IV.2014, 1 ♀, 9.IV.2014, 1 ♂, BT, A. Serrano & R. Capela leg., ASC.

Remarks. Three subspecies are recognized in this taxon. Our specimens from Mumbué region fit very well the description and the parameres given by Holm (1993a) and Antoine (2000) for this species (Figs. 17c, d). The habitus is similar to the ones given in figures 21–25 of Beinhundner (2017a, p. 740). Holm (1993a) considered the species as a subspecies of *A. flavomaculata*, but Antoine (2000) elevated it to the species level rank, a criterion followed here. The adult specimens were collected by BT and CT in secondary open forests together with *Cyprolais loricata* (Janson, 1877) (Cuanza riverhead). See also the remarks under *Anisorrhina (Anisorrhina) flavomaculata*. It is a new species record for Angola and the Bié Province.

***Anisorrhina (Melinesches) umbonata* (Gory & Percheron, 1833)**

Distribution: ANG (?), RSA.

Distribution in Angola (Provinces): 1) CUS (?), MOX.

Historic records:

—Angola (without locality) (Gory & Percheron 1833 sub *Gnathocera umbonata*);

—Zambeze (=Luena River) (MOX) (Paulino de Oliveira 1882, sub *Heterorrhina umbonata* Perch.);

—Angola (without locality) (Krikken 1987 sub *Melinesches umbonata* Gory & Percheron).

Material examined: none.

Remarks. A species distributed in RSA (Holm & Marais 1992), but recorded for Angola also (Paulino de Oliveira 1882). Other records for Angola did not give exact locality(ies) (Gory & Percheron 1833; Krikken 1987). It could be misinterpreted with some other close species. Ecological data are available in Holm & Marais (1992) and Malec & Šípek (2016). A basic guideline to captive breeding was also provided by Malec & Šípek (2016, 2017).

Genus *Caelorrhina* Hope, 1841

The genus is close to *Anisorrhina* and *Tmesorrhina*, sharing some characters with them (see Holm & Marais 1992). According to Holm & Marais (1992) the genus was never revised since Bourgoïn (1921), thus modern revision is urgently needed. Most of the species were treated under the genus *Eccoptocnemis* (e.g. see Allard 1991). Beinhundner (2017a) recognized eleven valid species, three of them recorded for Angola, one being endemic (Ferreira 1965). We give two new species records for this country.

***Caelorrhina angolensis* (Schürhoff, 1942)**

Distribution: ANG.

Distribution in Angola (Provinces): 1) HUA; 2) HUI.

Historic records:

—Caconda (HUA) (Schürhoff 1942 sub *Eccoptocnemis angolensis*);

—Angola (without locality) (Ferreira 1965 sub *Eccoptocnemis angolensis* Schürhoff);

—Angola (without locality) (Allard 1991 sub *Eccoptocnemis barthi angolensis* Schürhoff).

New localities reported: (HUI) (S. Rojko, personal communication sub *Caelorrhina barthi angolensis*).

Material examined: none.

Remarks. An Angolan endemic species described based on one male and one female specimens from Caconda (Schürhoff 1942). Allard (1991) considered this taxon as a subspecies of *Caelorrhina barthi*, a criterion not followed by Krajcik (2008a) (but see New localities reported). No ecological data are available for this species. It is a new record for the Huíla Province.

***Caelorrhina barthi barthi* (Harold, 1878)**

(Fig. 17e)

Distribution: ANG, DOC, TAN.

Distribution in Angola (Provinces): 1) MOX.

Historic records:

—“Inneren Guinea” (Angola, without locality) (Harold 1878 sub *Tmesorrhina barthi* Har.);

—Angola (without locality) (Ferreira 1965 sub *Eccoptocnemis barthi* Har.);

—Vila Luso (= Luena) (MOX) (Gomes Alves 1973 sub *Eccoptocnemis barthi* Har.).

Material examined: Vila Luso (= Luena) (11° 47' S, 19° 55' E, 1300 m alt., 218) (MOX), 20.IX.1957, 1 ♀, N° 2896, Estudos Apícolas do Ultramar, Junta de Investigações Coloniais (Entomologia), IICT, MUHNAC.

Remarks. Four subspecies are recognized in this taxon. The nominal subspecies was described by Harold (1878) based on specimen(s) “im inneren Guinea, insbesondere bei Kabebe”. The Ferreira (1965) record seems based on Harold (1878) work. Gomes Alves (1973) confirmed the occurrence of this species in Angola. Holm & Marais (1992) summarized some ecological remarks on the subspecies *C. barthi mashuna* Arrow, 1909.

****Caelorrhina concolor* Hope, 1841**

(Figs. 17f, g)

Distribution: ANG, RCI, SLN.

Distribution in Angola (Provinces): 2) ?

Historic records: none.

Material examined: Angola, 1 ♂, N° 1907 (blue label), n° 58 (white label), old collection, box n° IX-78, MZUC.

Remarks. The male specimen of the MZUC specimen fits well this species description, despite the missing genitalia; the conformation of metafemora and the slight inner dilatation of metatibia support its identification. However, it is with some caution that we ascribe the identification to this species. Unfortunately, there is no information on the Angolan locality where it was collected. It is a new species record for Angola.

****Caelorrhina relucens* (Bates, 1881)**

(Figs. 17h, i, 18a)

Distribution: ANG, KEN, MAW, MOZ, RSA, TAN, ZIM.

Distribution in Angola (Provinces): 2) ?

Historic records: none.

Material examined: Angola, 1 ♂, N° 1907 (blue label), old collection, box n° IX-78, MZUC.

Remarks. The species is polychromatic presenting some body colour variations (see Beinhundner (2017a). The adult male specimen of MZUC (Figs. 17h, i, 18a) fits very well the description of this species (e.g. see Allard 1991 and Holm & Marais 1992). The specimen was probably collected by Anchieta or Welwitsch in the 19th century, but unfortunately there is no information on the locality. Some ecological data for this species were provided by Holm & Marais (1992). It is a new species record for Angola.

***Caelorrhina superba superba* (Gerstaecker, 1883)**

Distribution: ANG, CAM, CON, DOC.

Distribution in Angola (Provinces): 1) LNO.

Historic records:

—Quango (=Cuango) (LNO) (Quedenfeldt 1884 and Ferreira 1965 sub *Eccoptocnemis superba* Gerst.).

Material examined: none.

Remarks. A species that seems common and probably presents similar ecological data as the other representatives of the genus (e.g. see Holm & Marais 1992).

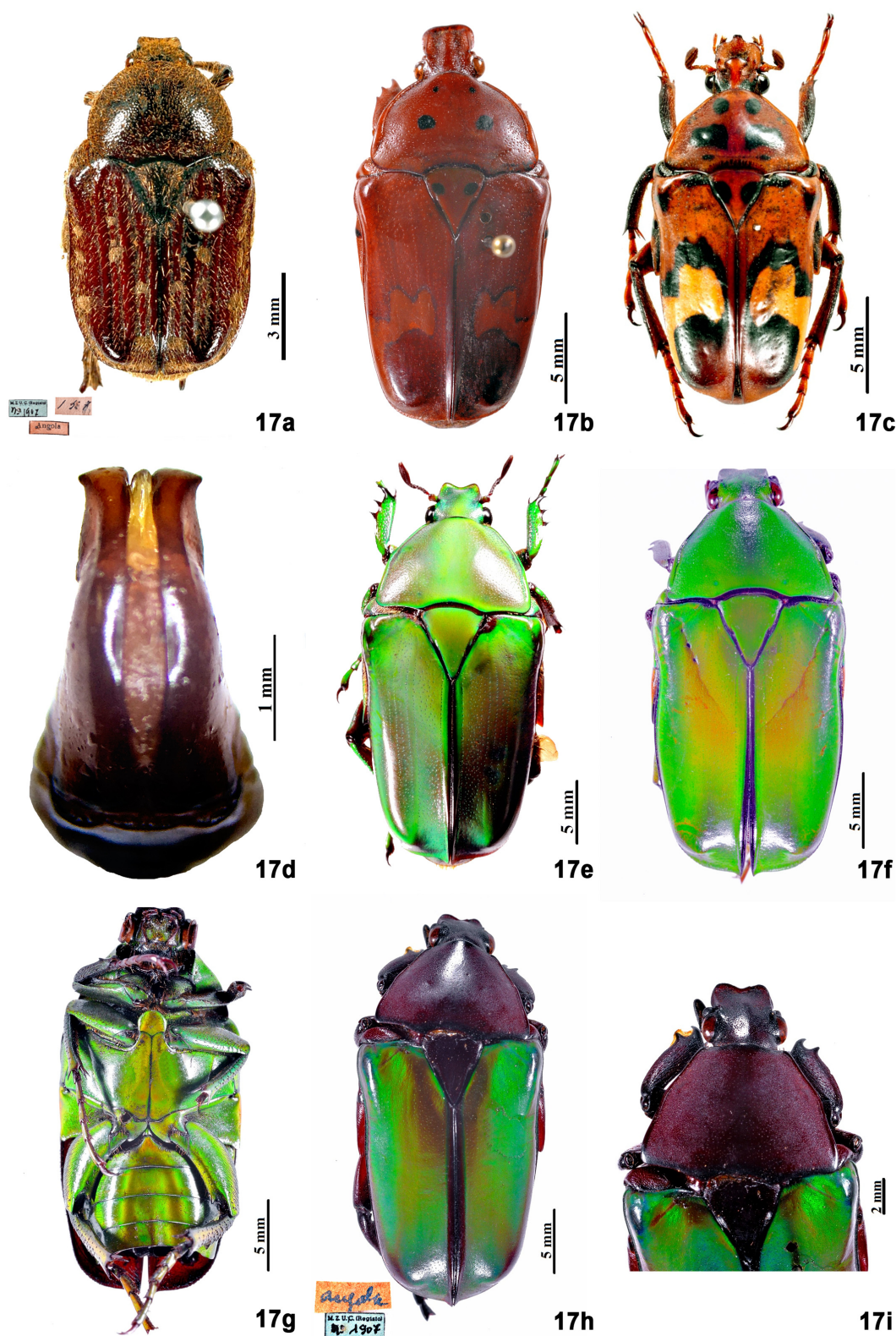


FIGURE 17. Cetoniinae species of Angola. a, *Tetragonorrhina induta* (dorsal view), and associated labels, female, MZUC; b, *Anisorrhina* (*Anisorrhina*) *hassoni hassoni* (dorsal view), female, MZUC; c and d, *Anisorrhina* (*A.*) *laeviplaga laeviplaga*, male (dorsal view) and parameres (frontal view), respectively, Mumbué, BIE, ASC; e, *Caelorrhina barthi barthi* (dorsal view), Vila Luso (=Luená), MOX, IICT; f and g, *Caelorrhina concolor* (dorsal and ventral views, respectively), male, MZUC; h, *Caelorrhina relucens* (dorsal view), and associated labels, male, MZUC; i, *Caelorrhina relucens*, head and pronotum (dorsal view), male, MZUC.

Genus *Cheirolasia* Westwood, 1843

The genus is monotypic and was revised by Holm (1993a). It is represented in Angola by two subspecies (e.g. Paulino de Oliveira 1882; Bourgoin 1925).

Cheirolasia burkei burkei (Westwood, 1843)

(Fig. 18b)

Distribution: ANG, NAB, RSA.

Distribution in Angola (Provinces): 1) CCU, CNN; 2) HUI.

Historic records:

—Humbe (CNN) (Paulino de Oliveira 1882 sub *Cerathorrhina burkei* West.);

—Mukoya (=Mucoia) (CCU) (Bourgoin 1925).

New localities reported: Negola (3,5 km SW) (14° 08' 53'' S, 14° 28' 16'' E, 1613 m alt., 317) (HUI), 11-12.XI.2013, 1♂, P. Schüle leg., PMC (P. Malec, personal communication).

Material examined: Calai (Cuangar) (coord. not available, 465) (CCU), 12.XII.1965, 1♀, N° E.7268, n° 608, H. Ribeiro leg., JPCC, MUHNAC.

Remarks. Five subspecies are recognized in this species (Beinhundner 2017a). While Beinhundner (2017a) recognized the subspecies listed by Allard (1985), Krajcik (2008a) did not. Beinhundner (2017a) considers *C. burkei hopei* as a valid taxon and includes Angola in its distribution. The adult specimen from JPCC fits well the nominal subspecies (Fig. 3h). The larva of the third instar of this species was described by Šípek (2005). Biological and ecological data are available in Holm & Marais (1992). It is a new species record for the Huíla Province.

Cheirolasia burkei hopei Bertoloni, 1849

Distribution: ANG, DOC.

Distribution in Angola (Provinces): 1) ?

Historic records:

—Angola (without locality) (Allard 1985);

—Angola (without locality) (Beinhundner 2017a).

Material examined: none.

Remarks. See remarks under the precedent taxon.

Genus *Chlorocala* Kirby, 1828

Schauer (1941) had revised the representatives of *Chlorocala* under the name *Smaragdesthes* Kraatz, 1880 and Allard (1991) followed the same criterion. Beinhundner (2017a) recognized fourteen species in the genus. There are four species/subspecies recorded for Angola (Paulino de Oliveira 1882; Schauer 1941; Ferreira 1965). *Chlorocala viridicyanea* (Palisot de Beauvois, 1821) was probably misinterpreted (see remarks under *C. viridicyanea*). We add one more species to the Angolan entomofauna in this work.

Chlorocala africana africana (Drury, 1773)

(Fig. 18c)

Distribution: ANG, GHA, GUI, RCA, SEN, TOG.

Distribution in Angola (Provinces): 1) LNO.

Historic records:

—Dundo (LNO) (Gomes Alves 1959 and Ferreira 1965 sub *Smaragdesthes africana* Drury).

Material examined: Angola, 1 ♀, N° 1907 (blue label), n° 54 (white label), Creeceff leg. (label information), sub *Heterorrhina africana* Drury, old collection, box n° IX-78, MZUC.

Remarks. There are several subspecies in this taxon (e.g. 26 in Beinhundner 2017a), probably some of them without taxonomic value. The larva of the third instar of *C. africana* was described by Kühbander & Carl (1994). Ecological data were provided by Holm & Marais (1992) for *C. africana subsuturalis* (Kraatz, 1891).

***Chlorocala africana mutica* (Harold, 1878)**

(Figs. 18d, e)

Distribution: ANG, CAM, CON, DOC, EQG, TAN, UGA.

Distribution in Angola (Provinces): 1) CAB, LNO; 2) BIE, HUI, KUS, MAL.

Historic records:

—“Inneren Guinea” (Angola, without locality) (Harold 1878 sub *Heterorrhina mutica* Har.);

—Quilo river (CAB) (Paulino de Oliveira 1882 sub *Heterorrhina africana* Drury);

—Quango (=Cuango) (LNO) (Quedenfeldt 1884 sub *Heterorrhina mutica* Har.);

—Angola (without locality) (Schauer 1941 sub *Smaragdesthes africana mutica* Har.);

New localities reported: Negola (3,5 km SW) (14° 08' 53'' S, 14° 28' 16'' E, 1613 m alt., 317) (HUI), 11-12.XI.2013, 1ex., P. Schüle leg., PMC (P. Malec, personal communication).

Material examined: Cabinda (coord. not available) (CAB), 1 ♀, n° 1821 (blue label), n° 42 (white label), Anchieta leg., old collection, box n° VI-75, MZUC; Quilo River (=Chiloango River Mouth) (05° 11' S, 12° 08' E, sea alt., 5) (CAB), 1 ♀, N° 1882 (blue label), n° 42 (white label), Anchieta leg., sub *Heterorrhina africana* Drury, old collection, box n° VI-75, MZUC; Angola, 1 ♂, N° 1907 (blue label), n° 42 (white label), Welwitsch leg., sub *Heterorrhina africana* Drury, old collection, box n° VI-75, MZUC; Angola, 1 ♂, 1 ♀, N° 1907 (blue labels), n° 44 (white labels), 1 ♂, N° 1907 (blue label), n° 45 (white label), old collection, box n° IX-78, MZUC; Dundo (7° 22' S, 20° 50' E, 1470 m alt., 51) (LNO), 2.V.1946, 1 ♀, N° 659, ?.XI.1948, 1 ♀, N° 2140, Junta Investigações Coloniais (Entomologia), IICT, MUHNAC; Satchijamba (13° 44' 54.69'' S, 17° 10' 35.03'' E, 1579 m alt., 303) (BIE), 29.X-3.XI.2014, 1 ♂, CT, A. Serrano & R. Capela leg., ASC; Carima (Cacuso-Pungo Andongo) (09° 35' 00'' S, 15° 42' 01'' E, 1117 m alt., 130) (MAL), 17-21.XI.2017, 1 ♂, CT, A. Serrano & R. Capela leg., ASC; Pungo Andongo (09° 40' 38.04'' S, 15° 34' 45.15'' E, 1068m alt., 130) (MAL), 21.XI.2017, 1 ♂, 1 ♀, CT, A. Serrano & R. Capela leg., ASC; Calulo (Faz. Klein) (10° 02' 14'' S, 14° 54' 38'' E, 1059 m alt., 147) (CUS), 6-11.XII.2017, 2 ♀, CT, A. Serrano & R. Capela leg., ASC.

Remarks. A subspecies with a wide distribution (Ferreira 1965; Sakai & Nagai 1998; Beinhundner 2017a). Some adult specimens (Satchijamba, Carima, Pungo Andongo and Calulo) were collected by CT (e.g. Fig. 1b). See remarks under *Pachnoda discolour kolbei* and *Pachnoda rubriventris rubrocinctoides*, respectively for Satchijamba and Carima localities. In Calulo, the adults were sampled in a secondary moist forest together with *Lophorrhina quinquelineata* (Fabricius, 1781) and *Tmesorrhina laeta burgeoni* Allard, 1991. Ecological data were provided by Holm & Marais (1992) for *C. africana subsuturalis*. It is a new species record for the Bié, Huíla, Kwanza Sul and Malanje Provinces.

****Chlorocala inermis* (Burgeon, 1931)**

(Fig. 18f)

Distribution: ANG, DOC, RCH, TAN, UGA.

Distribution in Angola (Provinces): 2) CUS.

Historic records: none.

Material examined: Mussende (Calulo) (cords: 09° 57' 00'' S, 14° 47' 36'' E, 905 m alt., 128) (CUS), 28.XI.-5.XII. 2015, 1 ♀, CT, A. Serrano & R. Capela leg., ASC.

Remarks. The species presents a scattered distribution (Beinhundner 2017a). Single adult female was collected by CT (e.g. Fig. 1b) in a patch of secondary moist forest together with *Chondrorrhina* (*Chondrorrhina*) *trivittata* (Schaum, 1841), *L. quinquelineata*, *Pedinorrhina sellata lequexi* Antoine, 2008 and *T. laeta burgeoni*. It is a new species record for Angola and the Kwanza Sul Province.

***Chlorocala monoceros* (Gory & Percheron, 1833)**

(Fig. 18g)

Distribution: ANG, CON.

Distribution in Angola (Provinces): 1) BGU, CAB, CNN, LUA; 2) BGO, CUS.

Historic records:

—Benguela (BGU) (Gory & Percheron 1833 sub *Gnathocera monoceros* G.&P.);

—Loanda (=Luanda) (LUA) (Harold 1879 sub *Heterorrhina monocerus* Gory & Percheron);

—Angola (without locality) (Paulino de Oliveira 1882 sub *Heterorrhina monocerus* Gory & Percheron);

—Chinchoxo (CAB), Angola (without localities) (LUA, BGU) (Schauer 1941 sub *Smaragdesthes monocerus* G. & P.);

—Camba (CNN) (Schauer 1941 sub *Smaragdesthes monocerus chinchoxa* Schauer);

—Luanda (LUA) (Gomes Alves 1959 *Smaragdesthes monocerus* G. & P.);

—Angola (without localities) (CAB, LUA, BGU) (Ferreira 1965 sub *Smaragdesthes monocerus* G. & P.).

New localities reported: Sumbe (in the beach) (11° 11' 55" S, 13° 50' 03" E, 4 m alt., 184) (CUS), 21.XI.2013, 1♂, P. Schüle leg., PMC (P. Malec, personal communication).

Material examined: Angola, 3 ♂, 2 ♀, N° 1695 (blue labels), RQC/CSFC, box n° II-71, MZUC; Angola, 1 ♂, RQC/CSFC, box n° II-71, MZUC; Angola, 3 ♂, N° 1907 (blue labels), n° 77 (white labels), old collection, box IX-78, 3 ♀, N° 1907 (blue labels), n° 76 (white labels), old collection, box IX-78, 3 ♀, MZUC; Luanda (8° 50' S, 13° 15' E, 70 m alt., 89) (LUA), -XII.1948, 1 ♀, N° 1542, Luanda Island (8° 50' S, 13° 15' E, sea level, 89) (LUA), 2.IX.1959, 1 ♀, N° 3290, Junta Investigação Coloniais (Entomologia), IICT, MUHNAC; Cacuo (8° 47' S, 13° 21' E, 50 m alt., 89) (BGO), 26.VII.1957, 1 ♂, 1 ♀, N° 2854, Luanda Island (8° 50' S, 13° 15' E, sea level, 89) (LUA), 2.IX.1959, 3 ♂, 2 ♀, N° 3290, Estudos Apícolas do Ultramar, Junta Investigação Coloniais (Entomologia), IICT, MUHNAC; Luanda (8° 50' S, 13° 15' E, 70 m alt., 89) (LUA), 15.I.1952, 1♂, N° E.54, n° 612, E.M. Matos leg., JPCC, MUHNAC; Luanda (8° 50' S, 13° 15' E, 70 m alt., 89) (LUA), 15.XII.1970, 3♂, n°s 4350, 4351, 4352, A. Bivar de Sousa leg., ABSC, MUHNAC; Palmeirinhas (9° 6' 19.76" S, 13° 0' 11.08" E, 1m alt., 107) (LUA), 23.III.1974, 3♀, DO, A. Serrano leg., ASC; Mussulo Island (8° 53' 9.13" S, 13° 8' 4.62" E, 6m. alt., 89) (LUA), 14.IV.1974, 2♂, DO, A. Serrano leg., ASC; Luanda (Nova Vida) (8° 54' 30.11" S, 13° 13' 29.75" E, 61m alt., 89) (LUA), 22.III.2014, 2♂, DO, A. Serrano leg., ASC; Barra Cuanza (River Mouth) (9° 19' 9.10" S, 13° 9' 57.68" E, 13m alt., 107) (LUA), 28.IV.2014, 1♀, DO, A. Serrano leg., ASC; Baixo Pundo (12° 20' 22.31" S, 13° 50' 21.98" E, 275 m alt., 227/8) (BGU), 28.X.2013, 1♂, DO, R. Capela leg., ASC.

Remarks. A species distributed throughout of southwestern Africa (Ferreira 1965; Allard 1991; Holm & Marais 1992; Beinhundner 2017a). It seems to be a common species in the coastal lowland of Angola, namely in the proper Luanda city and neighbouring localities. Some adult specimens in Luanda (Nova Vida neighbourhood) were collected on the leaves of trees (e.g. Mango trees) feeding on aphid honeydew. More biological and ecological data were provided by Holm & Marais (1992). It is a new species record for the Bengo and Kwanza Sul Provinces.

Chlorocala smaragdina angolensis (Schauer, 1941)

Distribution: ANG.

Distribution in Angola (Provinces): 1) BGO.

Historic records:

—Dembos (BGO) (Schauer 1941 and Ferreira 1965 sub *Smaragdesthes smaragdina angolensis* Schauer).

Material examined: none.

Remarks. This is an enigmatic taxon. We did not find any record in Marais & Holm (1992), Sakai & Nagai (1998), Krajcik (2008a) or Beinhundner (2017a). The subspecies was briefly described by Schauer (1941) in a key of the representatives of the genus *Smaragdesthes*. While Beinhundner (2017a) considers *C. smaragdina* as a subspecies of *C. africana*, Schoolmeesters (2018) lists it as a valid species. *Chlorocala smaragdina angolensis* seems to be an endemic subspecies of Angola (Schauer 1941), but the validity of the taxon is dubious. The larva of the third instar of *C. smaragdina* was described by Jerath & Unny (1965). Ecological data are not available for this subspecies.

Chlorocala viridicyanea (Palisot de Beauvois, 1821)

Distribution: ANG (?), SLN, STP.

Distribution in Angola (Provinces): 1) ?

Historic records:

—Angola (without locality) (Paulino de Oliveira 1882 sub *Heterorrhina viridicyanea* P. Beauv.).

Material examined: none.

Remarks. The species was probably misinterpreted by Paulino de Oliveira (1882) with *Chlorocala africana africana* or even with *C. africana mutica*. It is known from Sierra Leone and Principe Island (Krajcik 2008a; Beinhundner 2017a) and it is with some doubts that we include this species in the Angolan entomofauna.

Genus *Chondrorrhina* Kraatz, 1880

This is a controversial taxon. The genus was treated as a subgenus of *Plaesiorrhinella* Krikken by Holm & Marais (1992). Later, Holm (1994) ranked *Chondrorrhina* as a subgenus under *Pedinorrhina* Kraatz, 1880. Antoine (2008) ranked the taxon to the genus level with two subgenera (*Chondrorrhina* and *Plaesiorrhinella*). *Plaesiorrhinella* was revised by Holm (1994) who synonymized it with *Pedinorrhina* [see also remarks in Holm & Sttobia (1995)], but Antoine (2008) reestablished it again as a subgenus under the genus *Chondrorrhina*, a criterion followed also by Beinhundner (2017a) (see also the comments on *Pedinorrhina* in this work). However, Krajcik (2008a) treated this taxon at the genus level. The genus *Dyspilophora* Kraatz, 1880, as well as *Taeniesthes* Kraatz, 1880, was synonymized with *Chondrorrhina* (Holm 1994). However, the ranking of this taxon remains controversial (e.g. Krajcik 2008a; Camiade 2015) and in need of revision, jointly with subgeneric taxa (e.g. Krajcik 2008a). Here we follow Beinhundner (2017a) criterion. This author recognized eleven species in this taxon. More two species were added recently (Garnier *et al.* 2018). There are five species/subspecies recorded for Angola previously (Paulino de Oliveira 1882; Ferreira 1965) and we provide a new species record for the country.

Chondrorrhina (Chondrorrhina) picturata (Harold, 1878)

(Fig. 18h)

Distribution: ANG, MAW, TAN, ZIM.

Distribution in Angola (Provinces): 1) ?; 2) BIE, MAL.

Historic records:

—“Inneren Guinea” (Angola, without locality) (Harold 1878 sub *Heterorrhina picturata* Har.);

—Angola (without locality) (Ferreira 1965).

Material examined: Somakwanza (13° 31' 38.60" S, 17° 22' 50.91" E, 1366m alt., 303) (BIE), 4.IV.2014, 1♂, 2♀, DO, A. Serrano leg., ASC; Satchijamba (13° 44' 54.69" S, 17° 10' 35.03" E, 1579 m alt., 303) (BIE), 3.XI.2014, 1♂, 16♀, BT, 1♂, 10♀, CT, A. Serrano leg. & R. Capela, ASC; Mumbué (Cuanza riverhead) (13° 49' 39.97" S, 17° 19' 20.32" E, 1524 m alt., 303) (BIE), 8-17.XI.2015, 1♀, CT, A. Serrano & R. Capela leg., ASC; Carima (Cacuso-Pungo Andongo) (09° 35' 00" S, 15° 42' 01" E, 1117 m alt., 130) (MAL), 17-21.XI.2017, 2♀, CT, A. Serrano & R. Capela leg., ASC.

Remarks. Our specimens conform well to the Holm (1994) redescription. Adult specimens were collected on yellow flowers (Somakwanza) and by CT and BT (Figs. 1a, b) in secondary open forests (Satchijamba and Mumbué). See also the remarks under *Pachnoda discolour kolbei*. Considering the large series of specimens obtained, it seems to be a common species. Additional ecological data are available in Holm & Marais (1992). It is a new record for the Bié and Malanje Provinces.

**Chondrorrhina (Chondrorrhina) trivittata trivittata* (Schaum, 1841)

(Figs. 18i, 19a, b, c, d, e)

Distribution: ANG, BOW, CON, MAW, MOZ, NAB, RSA, TAN, ZIM.

Distribution in Angola (Provinces): 2) CAB, CNO, CNN, CUS, HUI.

Historic records: none.

New localities reported: Cacula (10 km SW) (coord. not available, ? alt., 317) (HUI), 4-6.XI.2011, 1♂, P. Schüle leg., PMC (P. Malec, personal communication).

Material examined: Cabinda (coord. not available) (CAB), 1 ex., N° 1821 (blue label), n° 129 (white label), Anchieta leg., old collection, box n° VI-75, MZUC; Humbe (16° 41' S, 14° 54' E, 1100 m alt., 422) (CNN), 2 exs, N° 1895 (blue labels), n°s 128 and 131 (white labels), 2 exs, N° 2126 (blue labels), Anchieta leg., old collection, box n° VI-75, MZUC; Angola, 1 ex., N° 1907 (blue label), n° 136 (white label), old collection, box n° IX-78, MZUC; Cassoalala (9° 29' S, 14° 22' E, < 50 m alt. 109) (CNN), 15.XII.1973, 1♀, n° 4355, A. Bivar de Sousa leg., ABSC, MUHNAC; Mussende (Calulo) (9° 57' 00" S, 14° 47' 36" E, 905 m alt., 128) (CUS), 28.XI—5.XII.2015, 5♂, 2♀, CT, A. Serrano & R. Capela leg., ASC.

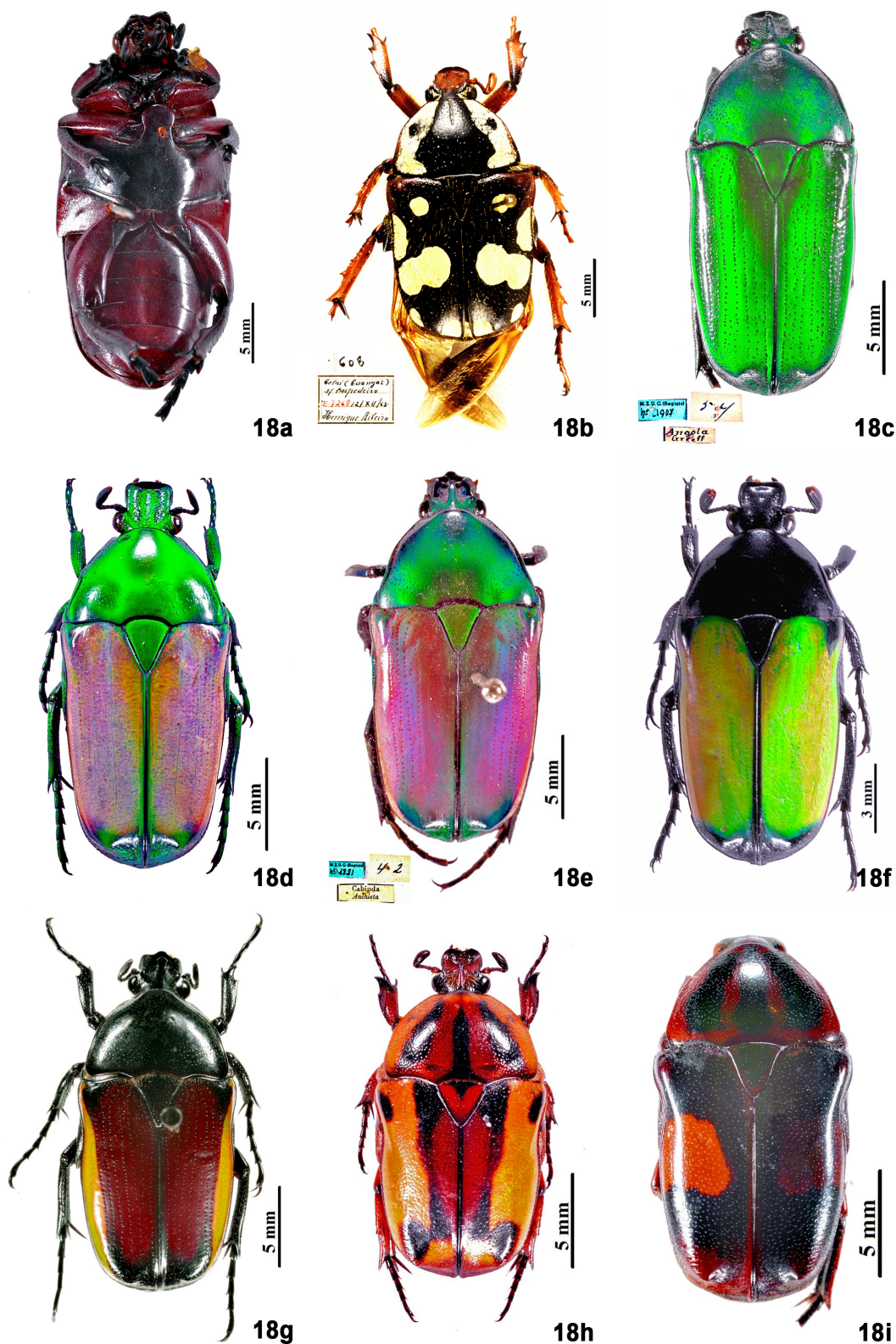


FIGURE 18. Cetoniinae species of Angola. a, *Caelorrhina relucens* (ventral view), male, MZUC; b, *Cheirolasia burkei burkei* (dorsal view), and associated label, Calai, CCU, JPCC; c, *Chlorocala africana africana* (dorsal view), and associated labels, female, MZUC; d, *Chlorocala africana mutica* (dorsal view), male, Pungandongo, MAL, ASC; e, *Chlorocala africana mutica* (dorsal view), and associated labels, female, Cabinda, MZUC; f, *Chlorocara inermis* (dorsal view), female, Mussende, CUS, ASC; g, *Chlorocala monoceros* (dorsal view), female, Luanda, LUA, IICT; h, *Chondrorrhina* (*Chondrorrhina*) *picturata* (dorsal view), female, Somakwanza, BIE, ASC; i, *Chondrorrhina* (*C.*) *trivittata trivittata* (dorsal view), Cabinda, MZUC.

Remarks. Beinhundner (2017a) treated this species under the genus *Chondrorrhina*, recognising three subspecies. The species is very polychromatic (see figures in Beinhundner 2017a). The specimens deposited in MZUC of the “old collection” of Angola are polychromatic also (Figs. 18i, 19a, b). All specimens fit very well with its description, including the parameres features (Figs. 19d, e) (see Holm & Marais 1992; Holm 1994). The adult specimens of Mussende were collected by means of CT in a secondary moist forest. See also the remarks under *Chlorocala inermis*. The larvae of all instars of this species were described by Donaldson (1987). Biological and ecological data are provided by Holm & Marais (1992). It is a new species record for Angola and the Cabinda, Cunene, Huíla, Kwanza Norte and Kwanza Sul Provinces.

***Chondrorrhina (Plaesiorrhinella) cinctuta cinctuta* (Voet, 1779)**

(Figs. 19f, g)

Distribution: ANG, CAM, CON, DOC, ETI, SEN, UGA.

Distribution in Angola (Provinces): 1) CAB, MAL.

Historic records:

—Quilo River (CAB), Duque de Bragança (=Calandula) (MAL) (Paulino de Oliveira 1882 sub *Heterorrhina cincta* Voet);

Material examined: Duque de Bragança (=Calandula) (09° 08'S, 15° 57'E, 1110 m alt., 112) (MAL), 1 ♂, N° 2131 (blue label), old collection, box n° VI-75, MZUC; Quilo River (=Chiloango River Mouth) (05° 11'S, 12° 08'E, sea alt., 5) (CAB), 1 ♂, N° 1895 (blue label), n° 119 (white label), Anchieta leg., old collection, box n° VI-75, MZUC; Angola, 1 ♂, N° 1907 (blue label), n° 63 (white label), Anchieta leg., old collection, box n° VI-75, MZUC.

Remarks. A controversial polytypic species with several polychromatic forms (e.g. Allard 1991; Sakai & Nagai 1998; Krajcik 2008a). Curiously, Krajcik (2008a) recognize only the nominal form and one subspecies, but Beinhundner (2017a) lists six subspecies. Holm & Marais (1992) in relation to this species and close congeners referred “whether these are good species or a subspecies cline must still be resolved”. The nominal *C. (P.) cinctuta cinctuta* seems to occur from Cameroon to Angola (Allard 1991; Le Gall 2015; Beinhundner 2017a), but Schoolmeesters (2018) presents a quite different distribution (ERI, ETI, SEN, UGA). Two polychromatic forms of adult specimens from MZUC are given (Figs. 19f, g). Ecological data are not available for this species.

***Chondrorrhina (Plaesiorrhinella) cinctuta recurva* (Fabricius, 1801)**

(Fig. 19h)

Distribution: ANG (?), CAM, GBI, GHA, GUI, RCI, TOG.

Distribution in Angola (Provinces): 1) ?

Historic records:

—Angola (without locality) (Ferreira 1965 sub *Plaesiorrhina recurva* F.).

Material examined: none.

Remarks. Another controversial taxon, sometimes treated as a valid species (Krajcik, 2008a), or as a subspecies of *C. (P.) cinctuta* (e.g. Allard 1991; Camiade 2015; Beinhundner 2017a). Taking into account its known distribution (Allard 1991; Beinhundner 2017a; Schoolmeesters 2018), the Angolan record (Ferreira 1965) should be considered with some caution. We confirm the species record for Guinea-Bissau given by Brivio (1958) with the capture of a specimen in that country also [Mampatá-Guilegue (TOMBALI), 3.VII.1995, 1 ♀, DO, A. Serrano leg., ASC] (Fig. 19h).

***Chondrorrhina (Plaesiorrhinella) plana plana* (Wiedmann, 1821)**

(Fig. 19i)

Distribution: ANG (?), RSA, ZIM.

Distribution in Angola (Provinces): 1) ?

Historic records:

—Angola (without locality) (Ferreira 1965 sub *Plaesiorrhina recurva* var. *plana* Wiedmann).

Material examined: Angola, 1 ♂, N° 1907 (blue label), n° 120 (white label), Welwitsch leg., old collection, box n° VI-75, MZUC.

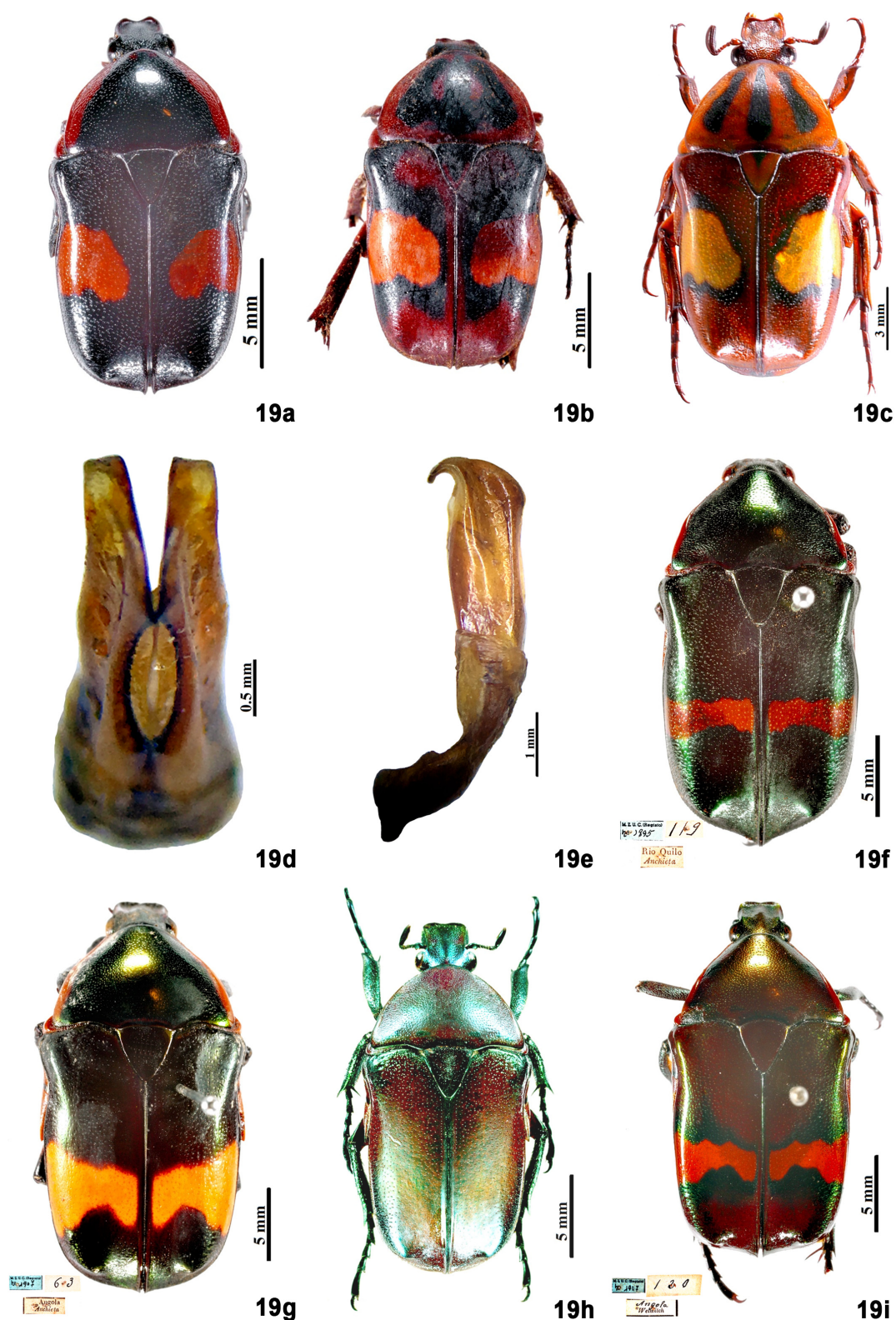


FIGURE 19. Cetoniinae species of Angola. a and b, *Chondrorrhina* (*Chondrorrhina*) *trivittata trivittata* (dorsal views), Humbe, CNN, MZUC; c, *Chondrorrhina* (*C.*) *trivittata trivittata* (dorsal view), male, Mussende, CUS, ASC; d and e, *Chondrorrhina* (*C.*) *trivittata trivittata*, parameres (frontal and lateral views, respectively), Mussende, CUS, ASC; f, *Chondrorrhina* (*Plaesiorrhinella*) *cinctuta cinctuta* (dorsal view), and associated labels, male, Rio Quilo, CAB, MZUC; g, *Chondrorrhina* (*P.*) *cinctuta cinctuta* (dorsal view), and associated labels, male, MZUC; h, *Chondrorrhina* (*P.*) *cinctuta recurva* (dorsal view), female, Mampatá, Guinea-Bissau, ASC; i, *Chondrorrhina* (*P.*) *plana plana* (dorsal view), and associated labels, male, MZUC.

Remarks. Beinhundner (2017a) lists three subspecies in this taxon, but Krajcik (2008a) only considers the nominal. Taking into account its distribution (Allard 1991; Holm & Marais 1992), the Angolan record (Ferreira 1965) should be considered with some caution. However, we checked one adult specimen from Angola deposited in the old collection of MZUC which can be ascribed to this species (Fig. 19i). Biological and ecological data were provided by Donaldson (1987), Donaldson & van Todner (1992) and Holm & Marais (1992). Taking into account the artificial breeding conditions, Malec & Šípek (2017) included this species in their group 2.

****Chondrorrhina (Plaesiorrhinella) undulata* (Bates, 1881)**

(Figs. 20a, b)

Distribution: ANG, DOC, MAW, TAN, UGA, ZAM.

Distribution in Angola (Provinces): 2) BIE, HUA, LNO, MAL.

Historic records:

—Dundo (LNO) (Gomes Alves 1959, Ferreira 1965 sub *Plaesiorrhina cinctuta* Voet).

New localities reported: Nova Monção (10 km SW) (coord. not available, ? alt., 279) (HUA), 13.XI.2013, 1♂, P. Schüle leg., PMC (P. Malec, personal communication).

Material examined: Dundo (7° 22' S, 20° 50' E, 1470 m alt., 51) (LNO), 2.V.1946, 1 ♂, N° 650, *Plaesiorrhina cinctuta* Voet (Gomes Alves det.), Junta de Investigações do Ultramar (Entomologia), IICT, MUHNAC; Satchijamba (13° 44' 54.69'' S, 17° 10' 35.03'' E, 1579m alt., 303) (BIE), 3.XI.2014, 11♂, 7♀, BT, 29.X–3.XI.2014, 7♂, 6♀, CT, A. Serrano & R. Capela leg., ASC; Chingueia (13° 36' 59'' S, 16° 57' 49'' E, 1628m, 302) (BIE), 12.XI.2015, 1♂, BT, A. Serrano & R. Capela leg., ASC; Carima (Cacuso-Pungo Andongo) (09° 35' 00'' S, 15° 42' 01'' E, 1117 m alt., 130) (MAL), 17–21.XI.2017, 1♂, 1♀, CT, A. Serrano & R. Capela leg., ASC.

Remarks. Like the precedent species/subspecies this is another controversial taxon, sometimes treated as a valid species (Marais & Holm 1992; Holm 1994; Krajcik, 2008a), or as a subspecies of *C. (P.) plana* (e.g. Allard 1991). The Satchijamba, Chingueia and Carima adult specimens were collected by means of BT and CT, or only CT, respectively, in open secondary forests. See also the remarks under *Chlorocala africana mutica*. It is a new species record for Angola and the Bié, Huambo, Lunda Norte and Malanje Provinces.

Genus *Dicronorhina* Hope, 1837

The genus was revised by Lekkerkerk & Krikken (1986). Beinhundner (2017a) recognized five valid species, two of them recorded for Angola (Ferreira 1965; Lekkerkerk & Krikken 1986).

***Dicronorhina derbyana derbyana* (Westwood, 1843)**

(Fig. 20c)

Distribution: ANG, BOW, MAW, NAB, RSA, ZIM.

Distribution in Angola (Provinces): 1) CNN.

Historic records:

—Humbe, Merero (CNN) (Paulino de Oliveira 1882 and Lekkerkerk & Krikken 1986).

Material examined: Angola, 1 ♂, N° 1907 (blue label), n° 34 (white label), old collection, box n° IX-78, MZUC.

Remarks. Four subspecies are recognized by Beinhundner (2017a). By the recorded locality, it seems to occur in the most southern territory of Angola. The larva of the third instar was described by Carl & Kühbänder (1993). Biological and ecological data were provided by Holm & Marais (1992). Taking into account artificial breeding conditions, Malec & Šípek (2017) included this species in their group 1.

***Dicronorhina johnstoni* (Waterhouse, 1902)**

(Figs. 20d, e)

Distribution: ANG, BUR, CON, DOC, KEN, NRE, RCA, RRW, SUD, TAN, UGA, ZAM.

Distribution in Angola (Provinces): 1) CAB, BGU, CNN, LNO, MAL.

Historic records:

—Pungo Andongo (MAL) (Harold 1879 sub *Dicranorrhina micans* Drury);

—Quilo river (CAB), Humbe (CNN) (Paulino de Oliveira 1882 sub *Ceratorrhina micans* Drury);
 —Quango (=Cuango) (LNO) (Quedenfeldt 1884 sub *Dicranorrhina micans* Drury);
 —Angola (without locality) (Ferreira 1965 and Ruter 1967a sub *D. micans* Drury);
 —Chinchoxo, Luango (CAB); Kimbundo, Pungandongo (MALANJE); Benguela (BGU) (Lekkerkerk & Kriken 1986 sub *D. micans* (Drury);
 —Northwestern Angola (without localities) (De Palma & Franz 2011).

Material examined: Angola, 1 ♂, N° 1907 (blue label), n° 32 (white label), Welwitsch leg., old collection, box n° VI-75, MZUC; Angola, 1 ♀, N° 1907 (blue label), n° 33 (white label), old collection, box n° IX-78, MZUC.

Remarks. For long time, this species was considered a synonym of *D. micans* (Drury, 1773) (e.g. Lekkerkerk & Kriken 1986; Marais & Holm 1992; Krajcik 2008a), but recently De Palm & Frantz (2011) clarified the true status of *D. johnstoni*, elevating it to a valid species. The localities recorded for Angola suggested that it seems to be widespread in the territory. The larva of the third instar was described by Carl & Kühbänder (1993) under the name *D. micans*. A synthesis of ecological data were provided by De Palm & Frantz (2011).

Genus *Eudicella* White, 1839

The genus in the strict sense was revised by De Palma (2009), who provided an identification key. One year after, De Palma (2010) provides a new dichotomic key to all *Eudicella sensu stricto*. According to this work fourteen species and two subspecies remain valid. However, Beinhundner (2017a) recognized nineteen species as valid. The genus *Cyprolais* J. Thomson, 1880 was revised by Holm (1993b) who relegated it to the level of subgenus of *Eudicella*, a status followed by De Palma (2009) and Beinhundner (2017a). Oram (2015) says "Cyprolais J. Thomson, 1880 is usually treated as a subgenus of *Eudicella* (e.g. Krajcik, 2008...)". However, Krajcik (2008a) raised the taxon to the genus level. Beinhundner (2017a) recognized fifteen species in *Cyprolais* subgenus. Two species of *Eudicella* (*Eudicella*) were recorded for Angola (Ferreira 1965; Beinhundner 2017a) and other two species of *Eudicella* (*Cyprolais*) (Paulino de Oliveira 1882; Ferreira 1965), but one must be considered with caution.

Eudicella (*Cyprolais*) *loricata loricata* (Janson, 1877)

(Figs. 20f, g)

Distribution: ANG, DOC, MAW, RCA, TAN, ZAM.

Distribution in Angola (Provinces): 1) HUI, 2) BIE.

Historic records:

—Angola (HUI) [Oram 2015, syntype].

Material examined: Angola, 1 ♂, N° 1907 (blue label), n° 60 (white label), Welwitsch leg., 1 ♂, N° 1907 (blue label), n° 64 (white label), old collection, box n° IX-78, MZUC; Angola, 1 ♀, N° 1907 (blue label), old collection, box n° IX-78, MZUC; Mumbué (Cuanza riverhead) (13° 49' 39.97'' S, 17° 19' 20.32'' E, 1524 m alt., 303) (BIE), 3–9.IV.2014, 1 ♂, CT, A. Serrano & R. Capela leg., ASC.

Remarks. The species was originally described from Angola based on a specimen collected by Welwitsch among a dozen taken in a cluster on a flower (Janson 1877a). Eight subspecies are recognized in this species (Beinhundner 2017a). Antoine (1996b) and Oram (2015) gave some morphological details of head and parameres of this species. Single male of Mumbué (Fig. 20g) was collected by means of CT (e.g. Fig. 1b) in an open secondary forest together with *A. picturata*. Some ecological data are provided by Holm & Marais (1992). It is a new species record for the Bié Province.

Eudicella (*Cyprolais*) *loricata knothi* (Schürhoff, 1933)

Distribution: ANG.

Distribution in Angola (Provinces): 1) ?

Historic records:

—Angola (without locality) (Schürhoff 1933 sub *Coelorrhina knothi* Schürhoff);

—Angola (without locality) (Ferreira 1965 sub *Coelorrhina knothi* Schürhoff and *Coelorrhina loricata* Janson).

Material examined: None

Remarks. An Angolan endemic subspecies (Schürhoff 1933; Oram 2015; Beinhundner 2017a). No precise locality is known. Probably presents the same natural history as the nominal form.

Eudicella (Cyprolais) quadrimaculata (Fabricius, 1781)

Distribution: ANG (?), CAM, GUI, RCA, RCI.

Distribution in Angola (Provinces): 1) ?

Historic records:

—Angola (without locality) (Paulino de Oliveira 1882 sub *Cerathorrhina 4-maculata* F.).

—Angola (without locality) (Ferreira 1965 sub *Coelorrhina pythia* Kolbe).

Material examined: none.

Remarks. The species was well characterized (head and parameres) by Antoine (1996b). Ferreira (1965) reported the species for Angola under the name of *Coelorrhina pythia* Kolbe, 1899. Probably this species was misinterpreted by Paulino de Oliveira (1882) and Ferreira (1965) with *C. loricata* and its occurrence in Angola must be considered with some caution.

Eudicella (Eudicella) gralli Buquet, 1836

(Figs. 20h, i)

Distribution: ANG, BUR, CAM, CON, DOC, GAB, KEN, RCA, RRW, RSA, SUD, TAN, ZAM.

Distribution in Angola (Provinces): 1) ?; 2) CNO.

Historic records:

—Angola (without locality) (Quedenfeldt 1880 and Ferreira 1965 sub *Eudicella gralli* Buquet var. *mechowi* Quedenfeldt);

—Angola (without locality) (Paulino de Oliveira, 1882 sub *Cerathorrhina ignita* West.);

—Angola (without locality) (Ruter 1967a, De Palma 2009).

Material examined: Angola, 1 ♂, N° 1907 (blue label), n° 21 (white label), Welwitsch leg., old collection, box n° VI-75, MZUC; C. E. Salazar (=Ndalatando) (9° 18'S, 14° 55'E, 790 m alt., 110) (CNO), 17.V.1966, 1 ♂, A. Quisongo leg., N° E.8093, n°621, JPCC, MUHNAC.

Remarks. The species is known as the flamboyant flower beetle or striped love beetle. According to De Palma (2009), many of the “old” subspecies (e.g. see Allard 1985) are simple colour varieties, having overlapped distributions. Unfortunately, the Historic records for Angola do not provided precise localities of this species. Its biology and ecology is presumably similar to other *Eudicella* species. It is a new species record for the Kwanza Norte Province.

Eudicella (Eudicella) tetraspilota tetraspilota (Harold, 1879)

(Figs. 21a, b, c, d, e, f, g, h)

Distribution: ANG, BUR, COM, DOC, GAB, KEN, MOZ, NAB, RRW, RSA, TAN, UGA, ZAM, ZIM.

Distribution in Angola (Provinces): 1) MAL, CCU; 2) HUA, MOX.

Historic records:

—Pungo Andongo (MAL) (Harold 1879, Quedenfeldt 1884);

—Angola (without locality) (Paulino de Oliveira 1882 sub *Cerathorrhina tetraspilota* Harold);

—Angola (without locality) (Ferreira 1965 sub *Eudicella smithi* MacLeay var. *tetraspilota* Harold);

—Tunda do Bieli Cutato (CCU?) (De Palma 2009 sub *Eudicella (E.) tetraspilota tetraspilota* Harold).

Material examined: Angola, 2 ♂, N° 1907 (blue label), n°s 68+73 (white labels), sub *Cerathorrhina* and *Cerathorrhina tetraspilota* Har. 1278, old collection, box n° IX-78, MZUC; Angola, 1 ♂, N° 1907 (blue label), old collection, box n° IX-78, MZUC; Angola, 1 ♂, N° 1907 (blue label), n° 74 (white label), old collection, box n° IX-78, MZUC; Angola, 1 ♀, N° 1759 (blue label), J. Pimentel leg., box n° I-70, MZUC; Angola, 1 ♂, 1 ♀, F.C. Mendes leg., FCMC, MUHNAC; Nova Lisboa (=Huambo) (12° 46'S, 15° 44'E, 1650 m alt., 256) (HUA), 25.IV.1965, 1 ♀, A.N. de Azevedo leg., ANAC; Lumeje (P. N. Cameia) (11° 33'S, 20° 47'E, 1150 m alt., 220) (MOX), -.IV.1965, 1 ♂, N° 20574, 1 ♀, N° 20575, ?.V.1965, 2 ♂, N°s 20572, 20573, A. Bivar de Sousa leg., ABSC, MUHNAC; Londuimbali-Tinguita (12° 18' 10'' S, 15° 21' 15'' E, 1633m alt., 231) (HUA), 2.XI.2015, 1 ♀, DO, A. Serrano leg., ASC.

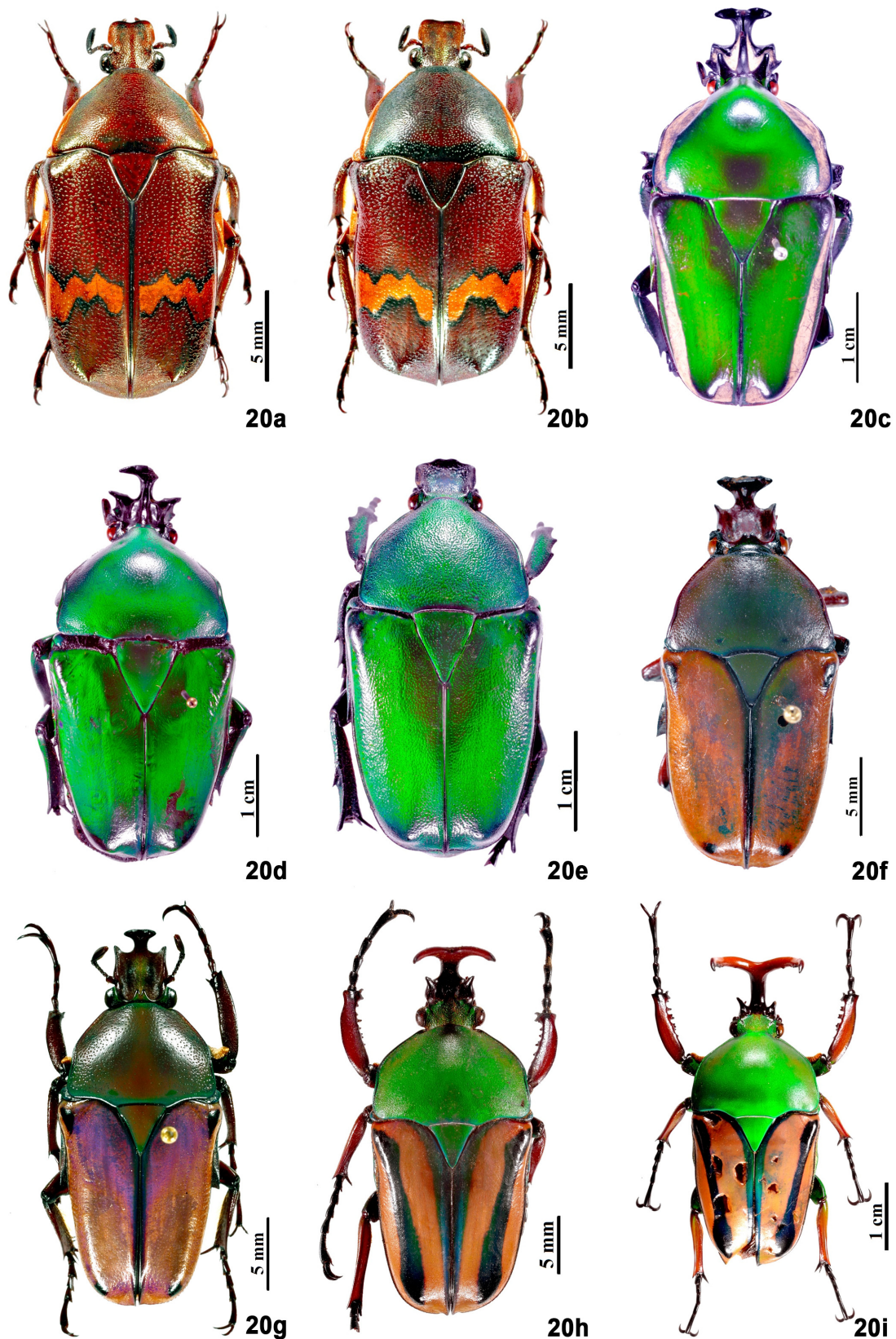


FIGURE 20. Cetoniinae species of Angola. a and b, *Chondrorrhina* (*Plaesiorrhinella*) *undulata* (dorsal views), male and female, respectively, Satchijamba, BIE, ASC; c, *Dicronorrhina derbyana derbyana* (dorsal view), male, MZUC; d and e, *Dicronorrhina johnstoni* (dorsal views), male and female, respectively, MZUC; f and g, *Eudicella* (*Cyprolais*) *loricata loricata* (dorsal views), males, MZUC and Mumbué, BIE, ASC, respectively; h and i, *Eudicella* (*Eudicella*) *gralli* (dorsal views), males, MZUC and Salazar (=Ndalatando), CNO, JPCC, respectively.

Remarks. De Palma (2009) studied material from Tunda do Bieli Cutato, which seems a locality near Cuchi in Cuando Cubango Province. Single female of Londuimbali–Tinguita was captured flying in an open secondary forest. Taking into account the artificial breeding conditions, Malec & Šípek (2017) included the subspecies *E. tetraspilota euthalia* (Bates, 1881) in their group 1. The species is newly recorded for the Huambo and Moxico Provinces.

Genus *Gnathocera* Kirby, 1825

This is one of the most species rich genera in Africa with more than 70 species/subspecies described (e.g. see Krajcik 2008a), but probably many of them without validity as was already pointed out by Holm & Marais (1992). For instance, Beinhundner (2017a) recognized thirty nine species in the nominal subgenus and one in the subgenus *Gnathocerida*. This subgenus is treated as a synonym of *Gnathocera* in Krajcik's (2008a) catalogue, a criterion not followed by Beinhundner (2017a). Some nomenclatural changes were done by Antoine (2002a) in the *G. cruda* complex, but were not adopted by Krajcik (2008a). The genus is represented in Angola by thirteen species/subspecies (Ferreira 1965; Ruter 1967b; Allard 1991; Antoine 2002a). We add one more species in this work.

Gnathocera angolensis angolensis (Westwood, 1854)

(Fig. 21i)

Distribution: ANG, CAM, CON, DOC, KEN, RCA, UGA.

Distribution in Angola (Provinces): 1) MAL, LNO.

Historic records:

- Angola (without locality) (Westwood 1854);
- Malange (=Malanje) (MAL) (Quedenfeldt 1884 sub *Gnathocera trivialis* Gerst.);
- Angola (without locality) (Basilewsky 1949);
- Muita/Luembe (LNO) (Gomes Alves 1959, Ferreira 1965).

Material examined: Angola, 1 ♂, N° 1907 (blue label), n° 137 (white label), old collection, box n° IX-78, MZUC; Muita (Luembe) (7° 48'S, 21° 26'E, 700 m alt., 69) (LNO), 6.VI.1948, 6 ♂, N° 2125, 5.VI.1948, 2 ♂, 1 ♀, N° 2126, Junta de Investigações Coloniais, IICT, MUNHAC.

Remarks. A species described originally from Angola, but with a wider distribution throughout Central, western and eastern Africa (Ferreira 1965; Allard 1991; Rohwedder 2011; Beinhundner 2017a; Schoolmeesters 2018). The IICT adult specimens of this species and of *Gnathocera trivialis* Gerstaecker, 1883 were found in the same date and site in Muita (syntopic) (see also the remarks under *G. trivialis*). Although common (Allard 1991), little is known about its biology and ecology.

Gnathocera bonisi Ruter, 1991

Distribution: ANG.

Distribution in Angola (Provinces): 1) ?

Historic records:

- Angola (without locality) (Allard 1991).

Material examined: none.

Remarks. Apparently a very rare species described from Angola (Allard 1991). Ecological data are not available for this species.

Gnathocera cruda cruda Janson, 1877

Distribution: ANG, DOC, KEN, MAW, TAN.

Distribution in Angola (Provinces): 1) MAL.

Historic records:

- Angola (without locality) (Janson 1877b);
- Malange (=Malanje) (MAL) (Quedenfeldt 1884);
- Angola (without locality) (Ferreira 1965);
- Angola (without locality) (Antoine 2002a).

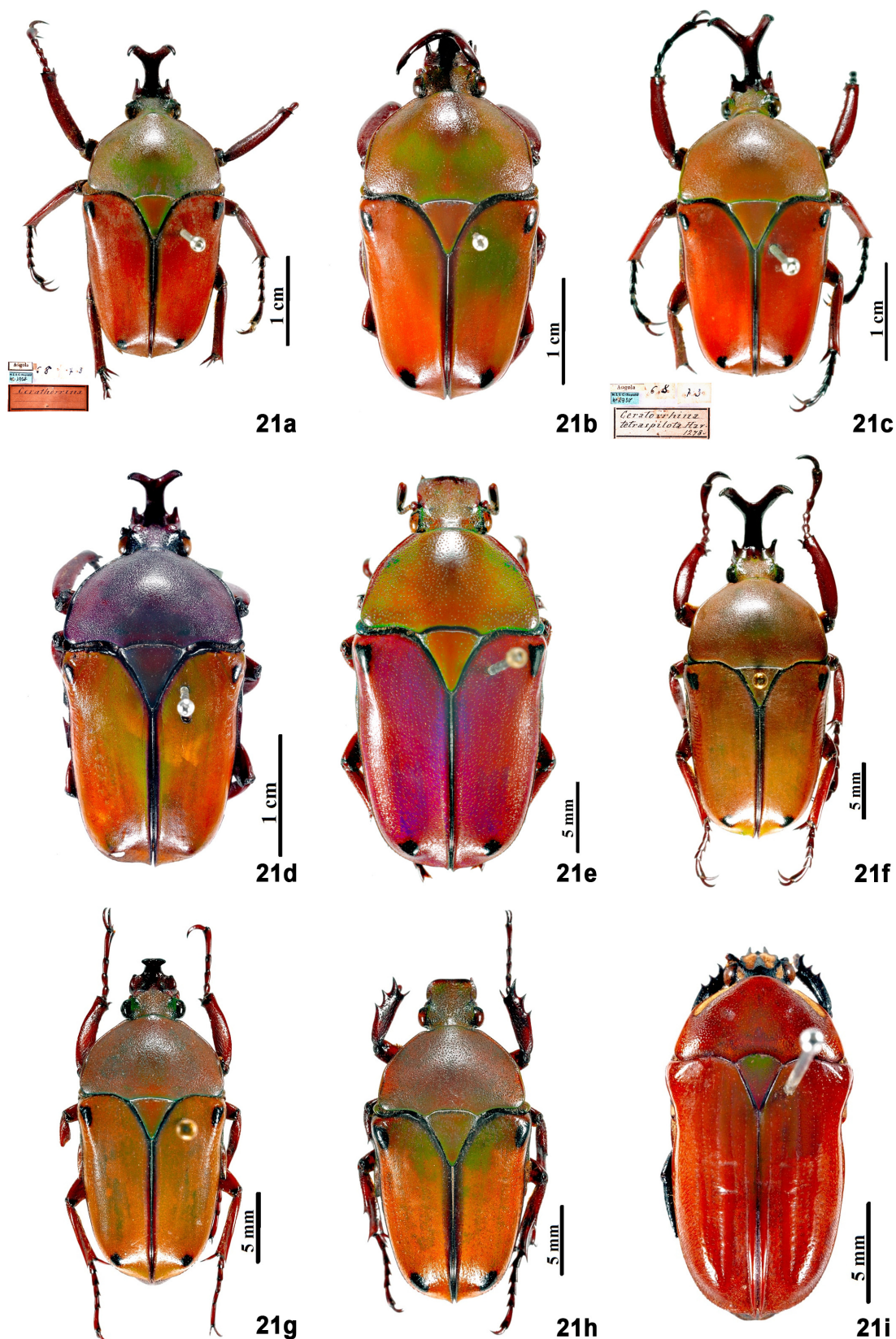


FIGURE 21. Cetoniinae species of Angola. a, *Eudicella* (*Eudicella*) *tetraspilota tetraspilota* (dorsal view), and associated labels, male, MZUC; b, *Eudicella* (*E.*) *tetraspilota tetraspilota* (dorsal view), male, MZUC; c, *Eudicella* (*E.*) *tetraspilota tetraspilota* (dorsal view), and associated labels, male, MZUC; d, *Eudicella* (*E.*) *tetraspilota tetraspilota* (dorsal view), female, MZUC; f and g, *Eudicella* (*E.*) *tetraspilota tetraspilota* (dorsal views), males, Lumeje, MOX, ABSC; h, *Eudicella* (*E.*) *tetraspilota tetraspilota* (dorsal view), female, Lumeje, MOX, ABSC; i, *Gnathocera angolensis angolensis* (dorsal view), male, MZUC.

Material examined: none.

Remarks. Krajcik (2008a) recognized five subspecies, but this is not consensual. For instance, Beinhundner (2017a) listed nine subspecies. Janson (1877b) described the species based on specimens from “Livingstonia, Lake Nyassa”. The synonymization of *G. cruda cruda* with *G. cruda* var. *major* Kolbe, 1897 is probably erroneous (see Antoine 2002a). The latter taxon was described on the basis of a misinterpreted *G. cruda*, but similar to *G. cruda leopoldi* Bourgoïn, 1929. The presence of *G. cruda cruda* in Angola must be considered with some caution (S. Rojkoff, personal communication) (but see remarks under next taxa). Ecological data are not available for this species.

***Gnathocera cruda gracilis* (Janson, 1877)**

(Fig. 22a)

Distribution: ANG, CON, DOC.

Distribution in Angola (Provinces): 1) LNO, UIG.

Historic records:

- Angola (without locality), Bembe (UIG) (Janson 1877b);
- Dundo (LNO) (Gomes Alves 1959 sub *Gnathocera lurida* Janson);
- Dundo, Chicapa (LNO), Angola (LNO, without locality) (Antoine 2002a).

Material examined: Angola, 2 ♂, N° 1907 (blue labels), n° 146a (white labels), 1 ♀, N° 1907 (blue label), n° 147a (white label), 1 ♂, N° 1907 (blue label), n° 148a (white label), old collection, box n° IX-78, MZUC; Dundo (7° 22'S, 20° 50'E, 1470 m alt., 51) (LNO), -.III.1949, 5 ♂, 4 ♀, N° 2132, 2 ♀, N° 2151, Junta de Investigações Coloniais (Entomologia), IICT, MUHNAC.

Remarks. The status of this taxon is very controversial. Its validity was established by Antoine (2002a), a criterion followed by Beinhundner (2017a). However, Krajcik (2008a) as well as Schoolmeesters (2018) keep it as a synonym of *G. lurida* Janson, 1877 [the name *lucida* used by Krajcik (2008a) is a misspelling of *lurida*, since Janson (1877b) did not describe any taxon named *lucida*]. *Gnathocera cruda gracilis* was described based on one specimen from Angola, but Janson (1877b) referred that “there are also specimens in Mr. Higgins’s collection found by Monteiro, at Bembe”, a municipality within the Uíge Province. The adult specimens of IICT were collected by light (registered information) probably at the same time of *G. trivittata ardoïni* (see remarks under this taxon). Ecological data are not available for this subspecies.

****Gnathocera cruda leopoldi* (Bourgoïn, 1929)**

(Fig. 22b)

Distribution: ANG, DOC.

Distribution in Angola (Provinces): 1) LNO.

Historic records: none.

Material examined: Angola, 1 ♀, N° 1907 (blue label), n° 142 (white label), 2 ♂, N° 1907 (blue labels), n° 143 (white labels), 1 ♂, N° 1907 (blue label), old collection, box n° IX-78, MZUC.

Remarks. This subspecies of *G. cruda* was established by Antoine (2002a), but Krajcik (2008a) and Beinhundner (2017a) raised it to the species level without any explanation. Its presence in Angola is suggested by Antoine (2002a) based on Ruter’s notes under the invalid name *G. cruda machadoi*, a form never described by Ruter (see Allard 1991), which fits very well the description of *G. cruda leopoldi* (Antoine 2002a). However, this author (Antoine 2002a) studied many specimens and segregated *G. cruda gracilis* and *G. cruda leopoldi* by its geographic distribution [the former in ANG, CON and DOC and the later in DOC (“Haut Zaire et Shaba=Katanga”)]. The MZUC specimens fit well the description of *G. cruda leopoldi*, but we can not precise their localization in Angola. Biological or ecological data are not available for this subspecies. It is a new subspecies record for Angola.

***Gnathocera cruda lurida* (Janson, 1877)**

Distribution: ANG, CON, DOC, TAN.

Distribution in Angola (Provinces): 1) LNO.

Historic records:

- Angola (without locality) (Janson 1877b sub *G. lurida*);
- Angola (without locality) (Basilewsky 1949 sub *G. lurida*);

—Dundo (LNO) (Gomes Alves 1959 and Ferreira 1965 sub *G. lurida* Janson).

Material examined: none.

Remarks. Antoine (2002a) treated this taxon as a subspecies of *G. cruda* while Krajcik (2008a), Beinhundner (2017a) and Schoolmeesters (2018) elevated it to the species level, recognising three subspecies. *Gnathocera lurida* was described originally from Angola based in specimens of “Dr. Welwitsch who found it in considerable numbers” Janson (1877b). Gomes Alves (1959) recorded the subspecies for Angola (Dundo) based on specimens of *G. cruda gracilis* (see Historic records under this subspecies). Biological or ecological data are not available for this species.

***Gnathocera marginata* Janson, 1885**

(Figs. 22c, d)

Distribution: ANG, CON.

Distribution in Angola (Provinces): 1) LNO.

Historic records:

—Dundo (LNO) [Gomes Alves 1959 and Ferreira 1965 sub *Gnathocera (Gnathocerida) marginata* ssp.].

Material examined: Angola, 1 ♂, N° 1907 (blue label), old collection, box n° XIV-83, MZUC; Dundo (7° 22'S, 20° 50'E, 1470 m alt., 51) (LNO), 2.V.1946, 1 ♂, N° 655, Junta de Investigações Coloniais, IICT, MUHNAC.

Remarks. The species was described originally from “Congo District, West Africa” (Janson 1885) nowadays Congo-Brazaville, where it seems common (Allard 1991). The species was recorded by Gomes Alves (1959) under the subgenus *Gnathocerida* Péringuey, 1907 for LNO in Angola. According to Holm & Marais (1992) “there are several *Gnathocerida* species” which “apparently differ only in details of colouration, and may turn out to form a subspecies cline [e.g. *G. villosa* (Janson); *G. pubescens* (Janson); *G. marginata* (Janson); *G. bourgoini* Burgeon; and *G. overlaeti* Burgeon]”. Biological or ecological data are not available for this species.

***Gnathocera overlaeti* Burgeon, 1939**

(Fig. 22e)

Distribution: ANG, DOC.

Distribution in Angola (Provinces): 1) LNO.

Historic records:

—Dundo (LNO) [Gomes Alves 1959 and Ferreira 1965 sub *Gnathocera (Gnathocerida) overlaeti* Burgeon].

Material examined: Dundo (7° 22'S, 20° 50'E, 1470 m alt., 51) (LNO), 2.V.1946, 1 ♂, N° 654, Junta de Investigações Coloniais (Entomologia), sub *Gnathocera (Gnathocerida) overlaeti* Burgeon (Ruter det.), IICT, MUHNAC.

Remarks. The species was described originally from “Kapanga, Katanga (Zaire)” by Burgeon (1939), nowadays DOC, where it seems to be rare (Allard 1991). Like the precedent species it was recorded by Gomes Alves (1959) under the subgenus *Gnathocerida* Péringuey, 1907 for LNO Province also. Biological or ecological data are not available for this species.

***Gnathocera trivialis* Gerstaecker, 1883**

(Fig. 22f)

Distribution: ANG, DOC, TAN.

Distribution in Angola (Provinces): 1) LNO, UIG (?).

Historic records:

—Muita (Luembe) (LNO) (Gomes Alves 1959 sub *G. angolensis trivialis* Gerst., Ferreira 1965 sub *G. angolensis* var. *trivialis* Gerst.).

Material examined: Muita (Luembe) (7° 48'S, 21° 26'E, 700 m alt., 69) (LNO), 6.VI.1948, 4 ♂, 2 ♀, N° 1125, Junta de Investigações Coloniais (Entomologia), IICT, MUNHAC.

Remarks. The species was described for Malimbe in West Africa without references to any particular country, but to von Mechow sendings (Gerstaecker 1883). Malimbe seems to be a village located in the Uíge Province of Angola. *Gnathocera trivialis* was considered a synonym of *G. angolensis* (Krajcik 2008a; Schoolmeesters 2018), but Marais & Holm (1992) and more recently Beinhundner (2017a) recognized it as a valid species. The presence of adult specimens of *G. angolensis* and of *G. trivialis* in the same date and site in Muita (syntopic) justify the species

status of the latter taxon (see also the remarks under *G. angolensis*). Biological or ecological data are not available for this species.

***Gnathocera trivittata ardoini* Ruter, 1967**

(Figs. 22g, h)

Distribution: ANG, BEN, CON, DOC, GAB.

Distribution in Angola (Provinces): 1) LNO; 2) HUA.

Historic records:

—Dundo (LNO) (Gomes Alves 1959 and Ferreira 1965 sub *Gnathocera trivittata transitiva* Kolbe, 1919);

—Dundo (LNO) (Ruter 1967b);

—Quango Strom (von Mechow) Angola ? (LNO?) (Ruter 1967b).

Material examined: Dundo (7° 22'S, 20° 50'E, 1470 m alt., 51) (LNO), -III.1949, 17 ♂, 15 ♀, N° 2132, 1 ♂, 1 ♀, N° 2151, Junta de Investigações Coloniais (Entomologia), IICT, MUHNAC; Cambiote (Huambo) (coords not available) (HUA), 19.III.1965, 1 ♂, 1 ♀, on corn cob, E. Marçal leg., JPCC, MUHNAC.

Remarks. This subspecies was recorded for Angola (Dundo) before its description under the name *Gnathocera trivittata transitiva* (Gomes Alves 1959). The adult specimens of IICT were collected by light (registered information), probably at the same time of *G. cruda gracilis* (see remarks under this taxon). We found two adult specimens in JPCC from Huambo with information that they were collected on corn cobs. Biological or ecological data are not available for this subspecies. It is a new species record for the Huambo Province.

***Gnathocera trivittata dorsodiscolor* (Voet, 1779)**

(Figs. 22i, 23a)

Distribution: ANG, BEN, CON, DOC, GAB.

Distribution in Angola (Provinces): 1) CNN; 2) CUS.

Historic records:

—Angola (without locality), Humbe, Merero (CNN) (Paulino de Oliveira 1882 sub *Gnathocera trivittata* Swederus);

—Angola (without locality) (Allard 1991).

Material examined: Angola, 2 ♂, N° 1907 (blue labels), n°s 140 and 141 (white labels), Welwitsch leg., old collection, box n° VI-75; Angola, 1 ♂, N° 1907 (blue label), old collection, box n° IX-78, MZUC; Munenga (10° 02'S, 14° 40'E, 400 m alt., 147) (CUS), 30.III.1964, 1 ♂, A.J. Duarte leg., n° 4159, JPCC, MUHNAC.

Remarks. A subspecies with the same distribution as the precedent subspecies (Allard 1991), which put the question if they are not only colour forms without taxonomic value. Allard (1991) considered both subspecies synonyms. As the species *G. trivittata* is very much variable it is necessary to define geographically more properly both forms, a scope out of this work. Biological or ecological data are not available for this subspecies. It is a new subspecies record for Kwanza Sul Province.

***Gnathocera trivittata trivittata* Swederus, 1787**

Distribution: GHA, GUI, RCI, SEN, TOG.

Distribution in Angola (Provinces): 1) CNN.

Historic records:

—Angola (without locality), Humbe (CNN) (Paulino de Oliveira 1882);

—Angola (without locality) (Ferreira 1965).

Material examined: none.

Remarks. A polymorphic species with many subspecies (12 to 16, e.g. Allard 1991; Krajcik 2008a; Beinhundner 2017a) distributed throughout western and eastern Africa since Senegal–Sudan–Egypt to the Republic of South Africa (Allard 1991; Krajcik 2008a; Rohwedder 2011; Beinhundner 2017a). The distribution of the nominal subspecies makes implausible its presence in Angola. Probably, the Humbe specimen(s) belong to another subspecies (e.g. see remarks under *Gnathocera trivittata dorsodiscolor*). The larva of the third instar was described by Jerath & Unny (1965). Holm & Marais (1992) provided some ecological data on *G. trivittata costata* Ancey, 1883.

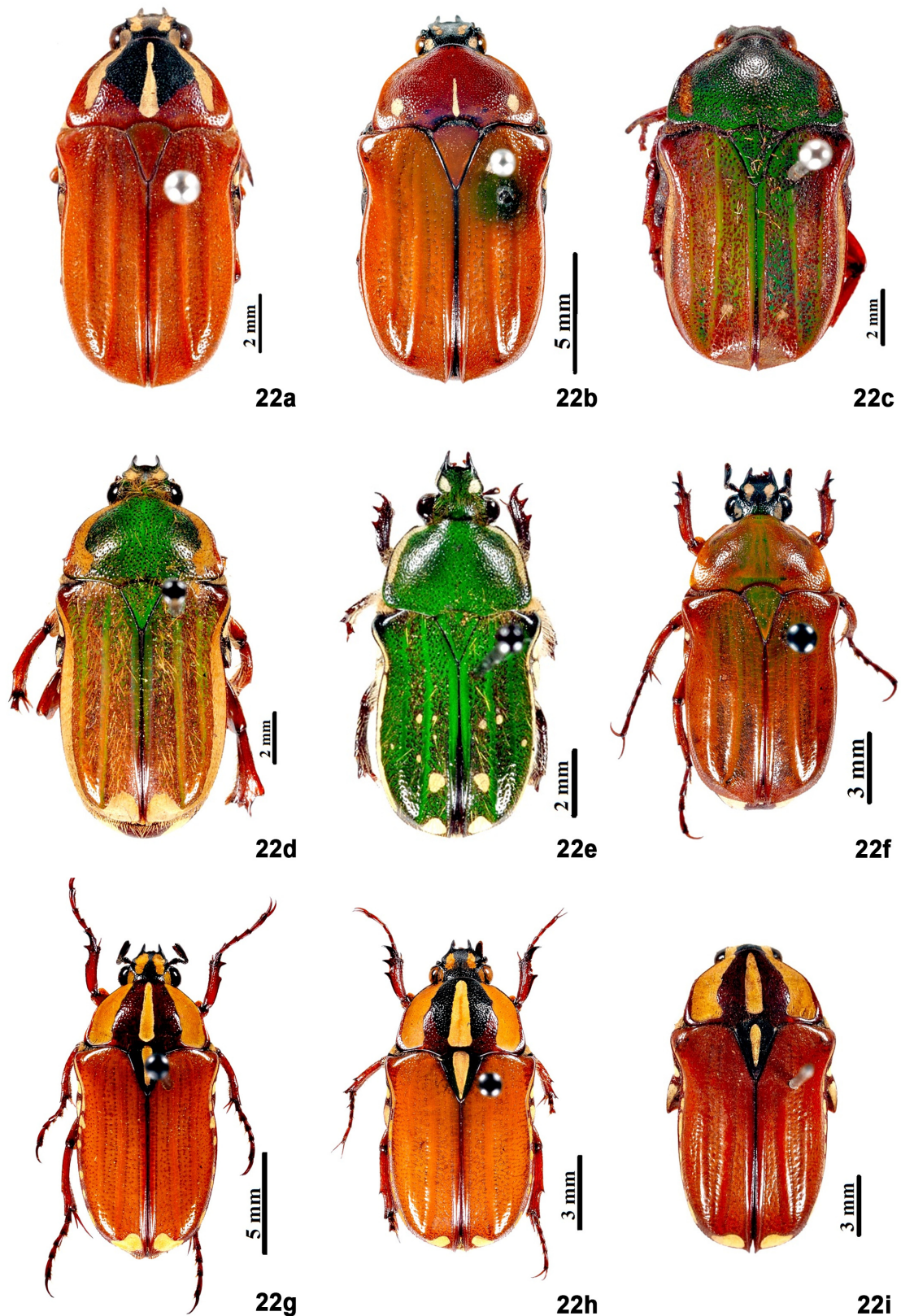


FIGURE 22. Cetoniinae species of Angola. a, *Gnathocera cruda gracilis* (dorsal view), male, MZUC; b, *Gnathocera cruda leopoldi* (dorsal view), male, MZUC; c and d, *Gnathocera marginata* (dorsal views), males, MZUC and Dundo, LNO, IICT, respectively; e, *Gnathocera overlaeti* (dorsal view), male, Dundo, LNO, IICT; f, *Gnathocera trivialis* (dorsal view), male, Muita, LNO, IICT; g and h, *Gnathocera trivittata ardoini* (dorsal views), male and female, respectively, Dundo, LNO, IICT; i, *Gnathocera trivittata dorsodiscolor* (dorsal view), male, MZUC.

***Gnathocera villosa* Janson, 1877**

(Figs. 23b, c)

Distribution: ANG, CAM, DOC.

Distribution in Angola (Provinces): 1) MAL.

Historic records:

—Angola (without locality) (Janson 1877b);

—Malange (=Malanje) (MAL) (Quedenfeldt 1884);

—Angola (without locality) (Basilewsky 1949 and Ferreira 1965).

Material examined: Angola, 1 ♀, N° 1907 (blue label), n°182 (white label), 1 ♂, N° 1907 (blue label), n° 178 (white label), 1 ♂, N° 1907 (blue label), n° 158 (white label), old collection, box n° IX-78, MZUC; Angola, 1 ex., N° 1907 (blue label), n° 159 (white label), old collection, box n° XIV-83, MZUC.

Remarks. The species was originally described on Angolan specimens (Janson 1877b), but was found later in CAM and DOC (Krajcik 2008a; Beinhundner 2017a). It seems a rare species and biological and ecological data are not available.

Genus *Lansbergia* Ritsema, 1888

The genus was revised by Krajcik (2001), but there is some controversy on the number of valid species (see Drumont 2001). This author, taking into account the Krajcik's (2001) work, registered four species. However, curiously Krajcik's catalogue (2008a) recognized only two species, and the *Masoe* Péringuey, 1896 and *Trapezorrhina* Hauser, 1904 subgenera are considered synonyms of *Lansbergia*. Later Beinhundner (2013) added one new subspecies to *Lansbergia* (*Trapezorrhina*) *sordida* Hauser, 1904, a species synonymized with *L. albonotata* (Péringuey, 1885) by Krajcik (2008a). Whatever the number of species considered valid, one of them occurs in Angola (Lansberge 1886; Ferreira 1965; Krajcik 2008a).

***Lansbergia vanderkelleni* (Lansberge, 1886)**

(Figs. 23d, e)

Distribution: ANG.

Distribution in Angola (Provinces): 1) HUI.

Historic records:

—Humpata (HUI) (Lansberge 1886 sub *Endodonta vanderkelleni* Lansb., Ferreira 1965);

—Angola (without locality) (Kraatz 1897 sub *Grypocnemis angolensis* Kraatz).

New localities reported: Humpata (HUI), 23.XI.2013, 1 ♂, SRC (S. Rojkoff, personal communication); Humpata (15 km SW), Leba Pass on top (15° 04' S, 13° 14' E, alt?, 355) (HUI), 4-5.XII.2017, 2 ♂, 2 ♀, P. Schüle leg., PMC (P. Malec, personal communication).

Material examined: Angola, 1 ex., N° 1907 (blue label), n° 199 (white label), old collection, box n° XIV-83, MZUC.

Remarks. This apparently rare species was described originally from Angola (Lansberge 1886) from where it seems to be endemic. Holm & Marais (1992) only refer that it appears in November, but it can appear in December also (see New localities reported).

Genus *Lophorrhina* Westwood, 1842

Most of the representatives of this genus were described under genera *Daedycorrhina* Bates, 1880 and *Chordodera* Burmeister, 1842 (e.g. see Allard 1985; Marais & Holm 1992; Krajcik 2008a), nowadays synonyms of *Lophorrhina* together with *Aphanesthes* Kolbe, 1892, *Aphanochroa* Kolbe, 1893 and *Pseudoheteromorpha* Allard, 1990 (Krikken 1984; Marais & Holm 1992; Krajcik 2008a). Beinhundner (2017a) recognized thirteen valid species. It is represented by two species in Angola (Paulino de Oliveira 1882) one of them a new record for this country.

***Lophorrhina penthacordia* (Klug, 1835)**

Distribution: ANG, CAM, DOC, GHA, RCI, SEN.

Distribution in Angola (Provinces): 1) ?

Historic records:

—Angola (without locality) (Paulino de Oliveira 1882 sub *Chordodera penthacordia* Klug).

Material examined: none.

Remarks. A species apparently very common (Allard 1985; Le Gall 2015; Schoolmeesters 2018) and recorded to Angola by Paulino de Oliveira (1882). Eventually, it was misinterpreted by Paulino de Oliveira (1882) with *C. quinquelineata* (Fabricius, 1781) and its occurrence in Angola must be considered with some caution (see next species remarks).

****Lophorrhina quinquelineata* (Fabricius, 1781)**

(Figs. 23f, g)

Distribution: ANG, BEN, CAM, CON, DOC, GHA, GUI, RCI, SEN, SLN.

Distribution in Angola (Provinces): 2) CUS.

Historic records: none.

Material examined: Mussende (9° 57' 00'' S, 14° 47' 36'' E, 905 m alt., 128) (CUS), 30.XI.2015, 1♂, 1♀, 2.XI.2015, 1♂, 1♀, 5.XI.2015, 1♀, BT, 28.XI.–5.XII.2015, 6♂, CT, A. Serrano & R. Capela leg., ASC; Calulo (Fazenda Klein) (10° 02' 14'' S, 14° 54' 38'' E, 1059 m alt., 147) (CUS), 8.XII.2017, 1♀, 11.XII.2017, 2♂, 2♀, LT, 6–11.XII.2017, 38♂, 12♀, CT, A. Serrano & R. Capela leg., ASC; Calulo (Faz. Monte Café) (09° 59' 15'' S, 14° 50' 12'' E, 1086 m alt., 128) (CUS), 6–11.XII.2017, 13♂, 1♀, CT, A. Serrano & R. Capela leg., ASC.

Remarks. According to Allard (1985), it is another common species. Beinhundner (2015) listed all the *Lophorrhina* species with its general distribution, recording *L. quinquelineata* for Angola, but without any precise locality or reference. Paulino de Oliveira (1882) eventually misinterpreted *L. penthacordia* with *C. quinquelineata*. This species is very abundant in Calulo region (see material examined) and adult specimens were sampled by means of BT and CT (e.g. Figs. 1a, b) in secondary moist forest (e.g. Fig. 1f). See also the remarks under *Diplognatha siliacea*, *Chlorocala africana mutica* and *C. inermis*. Tchiboza *et al.* (2008), Touroult & Le Gall (2013) and Joly (2018) provided biodiversity information (abundance, habitat preference) of this species for Benin and Ghana, respectively. Without any accurate published locality information in Angola, we consider that it is a new species record for this country and to the Kwanza Sul Province.

Genus *Mecynorhina* Hope, 1837

The genus was revised by Holm (1993b) and more recently by De Palma & Frantz (2010). There is some controversy on the species belonging to this genus or to *Megalorhina* Westwood, 1847 (e.g. see Krajcik 2008a; De Palma & Frantz 2010; Beinhundner 2014b). On the other hand, *Megalorhina* as well as *Amaurodes* Westwood, 1844 are sometimes treated under the genus level (e.g. Krajcik 2008a) or under the subgenus level within *Mecynorhina* (De Palma & Frantz 2010; Beinhundner 2014b). The genus *Mecynorhinella* was established by Marais & Holm (1992), but Beinhundner (2017a) treated it under the subgenus level in *Mecynorhina* genus. Here we follow the last criterion. There are four species/subspecies recorded for Angola (Paulino de Oliveira 1882; Ferreira 1965). One subspecies is recorded for the first time for this country.

***Mecynorhina (Amaurodes) passerinii passerinii* (Westwood, 1844)**

(Fig. 23h)

Distribution: ANG, MOZ, RSA, TAN.

Distribution in Angola (Provinces): 1) ?; 2) LNO.

Historic records:

—Angola (without locality) (Paulino de Oliveira 1882 sub *Cerathorrhina passerini* Westwood).

Material examined: Dundo–Chitato (7° 22' 41.93'' S, 20° 50' 04.81'' E, 733 m alt., 51) (LNO), 26.X–7.XI.1995, 1 ♀, N° 4829, L. Mendes leg., IICT, MUHNAC.

Remarks. The species is very polychromatic. The melanic adult female specimen from Dundo (Fig. 23h) was collected close to the Dundo Regional Museum near public light. The larva of the third instar of this species was

described by Kühbander & Carl (1994). Ecological data were provided by Holm & Marais (1992). It is a new species record for the Lunda Norte Province.

***Mecynorhina (Mecynorhina) polyphemus polyphemus* (Fabricius, 1781)**

Distribution: ANG, BEN, CAM, CON, DOC, GHA, RCA, RCI, TOG.

Distribution in Angola (Provinces): 1) CAB, CNO, LNO.

Historic records:

—Cabinda (CAB), Cazengo (CNO) (Paulino de Oliveira 1882 sub *Ceratorrhina polyphemus* F.);

—Dundo (LNO) (Ferreira 1965 sub *Chelorrhina polyphemus* F.).

Material examined: none.

Remarks. There is some controversy on the distribution of this species (see Beinhundner 2017a; Schoolmeesters 2018). It seems represented in the northern territory of Angola (Paulino de Oliveira 1882; Ferreira 1965). The species is well-known and biological data were recently provided by Šípek (2010) and Christiansen (2013).

****Mecynorhina (Mecynorhina) polyphemus confluens* (Kraatz, 1890)**

(Fig. 23i)

Distribution: ANG, CON, RRW, UGA.

Distribution in Angola (Provinces): 2) ?

Historic records: none

Material examined: Angola, 1 ♀, N° 1907 (blue label), n°36 (white label), Welwitsch leg., old collection, n° VI-75, MZUC.

Remarks. The adult female specimen deposited in MZUC fits well the habitus of this subspecies (cf. Fig. 3 in Beinhundner 2017a, p. 1002, with Fig. 23i). See also the remarks under the precedent species. It is a new subspecies record for Angola.

***Mecynorhina (Mecynorhinella) torquata torquata* (Drury, 1782)**

Distribution: ANG, CAM, COM, DOC, GHA, RCA, RCI, SLN.

Distribution in Angola (Provinces): 1) CAB.

Historic records:

—Cabinda (CAB) (Paulino de Oliveira 1882 sub *Ceratorrhina torquata* Drury);

—Angola (without locality) (Ruter 1967a).

Material examined: none.

Remarks. The species is polytypic with two to four subspecies recognized, depending of the authors (see Marais & Holm 1992; Krajcik 2008a; Beinhundner 2017a; Schoolmeesters 2018). It was recorded for CAB, the northernmost Province of Angola (Paulino de Oliveira 1882). This species has been used in insect flight studies like remote radio control or the role of the stretched forelegs in flight (Sato *et al.* 2009; Li *et al.* (2017).

***Mecynorhina (Megalorrhina) harrisii haroldii* (J. Thomson, 1880)**

Distribution: ANG, DOC, TAN, ZAM.

Distribution in Angola (Provinces): 1) LNO, MAL.

Historic records:

—Angola (without locality) (J. Thomson 1880 sub *Mecynorhinus haroldii* Thoms.);

—Angola (without locality) (Ferreira 1965 sub *Megalorrhina harrisi* var. *haroldi* Thomson);

—Angola (LNO=Lunda-Reich) (De Palma & Frantz 2010);

—Kimbundo (= Mona Quimbundo) (09° 51' S, 19°58' E) (MAL) (De Palma & Frantz 2010).

Material examined: none.

Remarks. Seven subspecies are recognized in the species (Beinhundner 2017a). This subspecies was originally described from Angola, but curiously Beinhundner (2014b, 2017a) does not include Angola in its distribution. Krajcik (2008a) treated it as a synonym of *Mecynorhina (Megalorrhina) harrisi* Westwood, 1847, but both De Palma & Frantz (2010) and Beinhundner (2014b, 2017a) regard it as a valid taxon. The larva of the third instar of nominal subspecies was described by Šípek (2005). Ecological data were provided by De Palma & Frantz (2010).

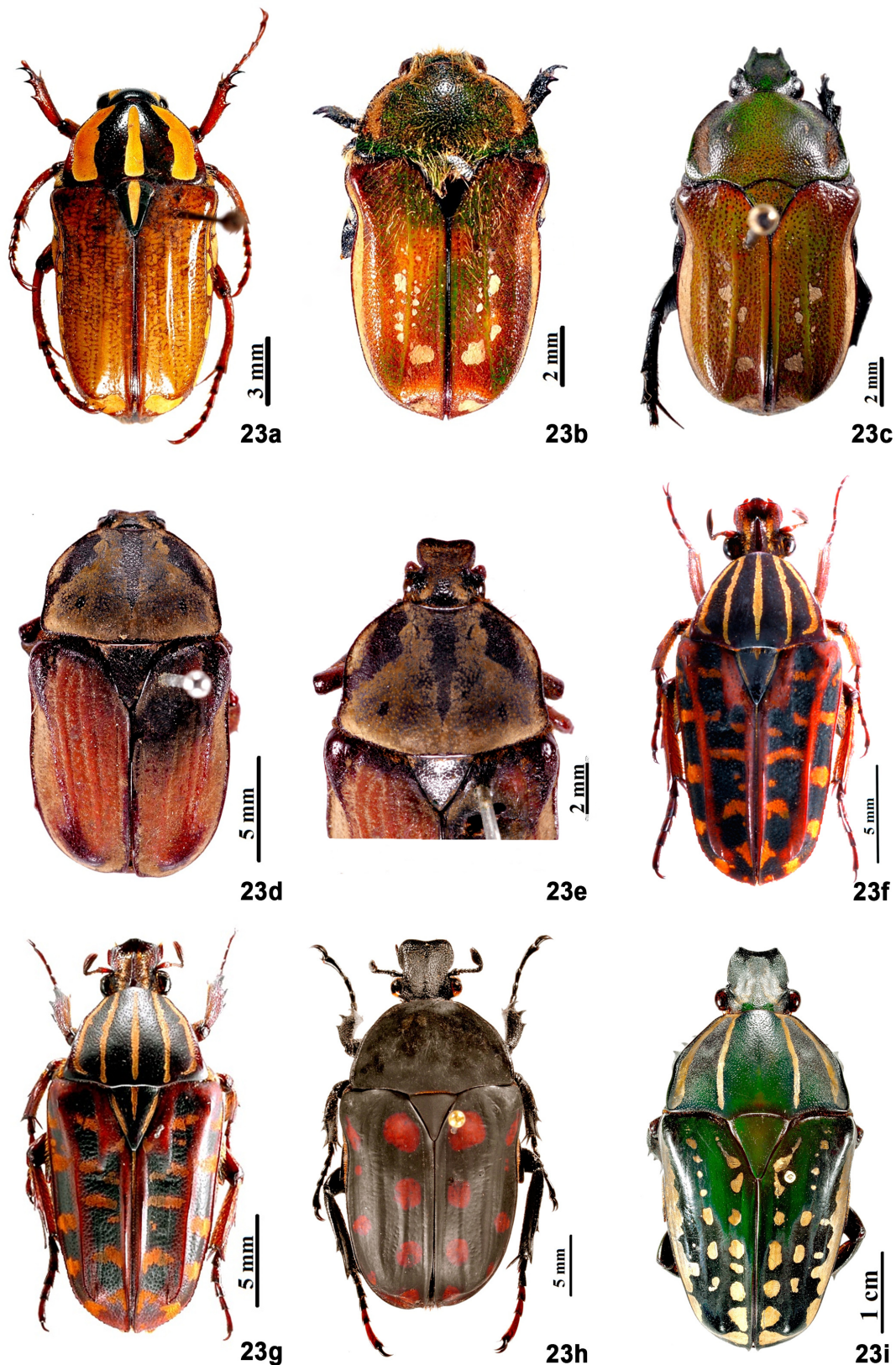


FIGURE 23. Cetoniinae species of Angola. a, *Gnathocera trivittata dorsodiscolor* (dorsal view), male, Munenga, CUS, JPCC; b and c, *Gnathocera villosa* (dorsal views), females, MZUC; d and e, *Lansbergia vanderkelleni* (dorsal views), habitus and head and pronotum, respectively, MZUC; f and g, *Lophorrhina quinquelineata* (dorsal views), male and female, respectively, Mus-sende, CUS, ASC; h, *Mecynorhina (Amaurodes) passerinii passerinii* (dorsal view), female, Dundo, LNO, IICT; i, *Mecynorhina (Mecynorhina) polyphemus confluens* (dorsal view), female, MZUC.

Genus *Pedinorrhina* Kraatz, 1880

The genus was revised by Holm (1994). However, there are some controversies on this taxon. It was treated as a synonymy of *Plaesiorrhinella* Krikken by Holm & Marais (1992). Later on, Holm (1994) recognized *Pedinorrhina* and Holm & Stobbia (1995) provided an addenda and corrigenda for the Holm & Marais (1992) publication, given the replacement of *Plaesiorrhinella* by *Pedinorrhina*. Antoine (2008) and Krajcik (2008a) recognized also this genus (see also our remarks under the genus *Chondrorrhina*). Beinhundner (2017a) listed seven valid species. Three of them were reported for Angola (Antoine 2008).

Pedinorrhina sellata lequeuxi Antoine, 2008

(Fig. 24a)

Distribution: ANG, DOC, UGA.

Distribution in Angola (Provinces): 1) HUA; 2) CUS.

Historic records:

—(HUA) (Antoine 2008).

Material examined: Mussende (Calulo) (9° 57' 00'' S, 14° 47' 36'' E, 905m alt., 128) (CUS), 28.XI—5.XII.2015, 1♂, 2♀, CT, A. Serrano & R. Capela leg., ASC.

Remarks. The Mussende adult specimens fit very well this subspecies, including the parameres conformations (Antoine 2008). They were collected by means of CT in a secondary moist forest. See also the remarks under *C. africana mutica* and *C. inermis*. Other ecological data are not available for this subspecies. It is a new record for the Kwanza Sul Province.

Pedinorrhina subaenea subaenea (Harold, 1878)

(Fig. 24b)

Distribution: ANG, CAM, DOC, RCA.

Distribution in Angola (Provinces): 1) CAB, CUS, LNO, MAL.

Historic records:

—Pungo Andongo (=Pungandongo) (MAL) (Harold 1878 sub *Heterorrhina subaenea* Harold);

—(CAB) (Paulino de Oliveira 1882 sub *Heterorrhina subaenea* Harold);

—Angola (without locality) (Ferreira 1965);

—Dundo (LNO), (CUS, without locality) (Antoine 2008).

Material examined: Angola, 3 exs, N° 1907 (blue label), n°s 81, 82 and 83 (white labels), 1 ex., N° 1907, (blue label), old collection, box n° IX-78, MZUC.

Remarks. Two subspecies are recognized in this species (Antoine 2008; Beinhundner 2017a). Taking into account the recorded localities, it seems restricted to the northern territory of Angola. Ecological data are not available for the species.

Pedinorrhina viridicollis (Burgeon, 1932)

Distribution: ANG, CAM, DOC, RCA.

Distribution in Angola (Provinces): 1) LNO.

Historic records:

—Dundo (LNO) (Antoine 2008).

Material examined: none.

Remarks. A species recorded for Dundo region in Angola where it seems overlap in some localities with the precedent species (Antoine 2008). Ecological data are not available for the species.

Genus *Ptychodesthes* Kraatz, 1883

The last revision of the genus was done by Schein (1943). There are four recognized species (Krajcik 2008a, Beinhundner 2017a) and a subspecies of one of them was recorded for Angola (Schein 1943, Ferreira 1965).

***Ptychodesthes bicostata intermedia* Schein, 1943**

(Figs. 24c, d)

Distribution: ANG, DOC?

Distribution in Angola (Provinces): 1) ZAI.

Historic records:

—Portugiesisch Congo (ZAI) (Schein 1943);

—Angola (without locality) (Ferreira 1965).

Material examined: Angola, 1 ♂, N° 1907 (blue label), n° 56 (white label), 1 ♀, N° 1907 (blue label), n° 57 (white label), old collection, box n° IX-78, MZUC.

Remarks. The subspecies was described on the basis of one female from “Portugiesisch Congo” (Schein 1943). It occurs in Angola (Krajcik 2008a; Beinhundner 2017a), but Schoolmeesters (2018) considers DOC also in its distribution. Some ecological remarks were provided for *Ptychodesthes alternata alternata* (Klug, 1855) by Holm & Marais (1992).

Genus *Spelaiorrhina* Lansberge, 1886

The genus was revised by Allard (1991) who validated two species (*S. lateralis* Kolbe, 1892 and *S. similis* Moser, 1902) that were not recognized by the subsequent authors (e.g. Holm & Marais 1992; Krajcik 2008a). The genus is considered monotypic and the single species was recorded for Angola (Lansberge 1886; Ferreira 1965).

***Spelaiorrhina rufopyga* (Lansberge, 1886)**

Distribution: ANG, CAM, DOC, TAN, ZIM.

Distribution in Angola (Provinces): 1) HUI.

Historic records:

—Humpata (HUI) (Lansberge 1886, Ferreira 1965, Krajcik 2008a).

Material examined: none.

Remarks. Brief ecological data were provided by Holm & Marais (1992).

Genus *Stephanorrhina* Burmeister, 1842

The genus was revised by Schürhoff (1942). Allard (1986) superficially treated this genus under the names *Stephanorrhina* and *Aphelorrhina* Westwood, 1843. Beinhundner (2017a) considers *Aphelorrhina* as a subgenus of *Stephanorrhina*. Following Krajcik (2008a) there are eleven valid species, almost half of them polytypic. Four species were recorded for Angola (Paulino de Oliveira 1882; Ferreira 1965).

***Stephanorrhina* (*Aphelorrhina*) *bella bella* (Waterhouse, 1879)**

(Figs. 24e, f)

Distribution: ANG, CAM, CON, DOC, GAB, NRE, RCA, SEN, SLN,

Distribution in Angola (Provinces): 1) HUI, LNO, MAL.

Historic records:

—Pungo Andongo (MAL) (Harold 1879 sub *Coelorrhina excavata* Harold);

—Huilla (HUI) (Paulino de Oliveira 1882 sub *Cerathorrhina excavata* Har.);

—Angola (without locality) (Quedenfeldt 1884 sub *Aphelorrhina bella* Waterhouse);

—Angola int. aut Lunda (without locality) (LNO) (Kolbe 1892b sub *Stephanorrhina excavata* Har.);

—Dundo (LNO) (Gomes Alves 1959).

Material examined: Angola, 1 ♂, N° 1907 (blue label), n° 6 (white label), 1 ♀, N° 1907 (blue label), n° 2 (white label), old collection, box n° IX-78, MZUC; Dundo (7° 22'S, 20° 50'E, 1470 m alt., 51) (LNO), 2.V.1946, 1 ♀, N° 651, Junta de Investigações do Ultramar (Entomologia), IICT, MUHNAC.

Remarks. A polytypic species with two to three subspecies (Krajcik 2008a; Beinhundner 2017a). The nominal subspecies presents a large distribution throughout western and southwestern Africa (Allard 1986; Beinhundner

2017a; Schoolmeesters 2018). It seems to have a widespread distribution in Angola. Ecological data are not available for this species.

***Stephanorrhina (Aphelorrhina) tibialis tibialis* (Waterhouse, 1879)**

(Figs. 24g, h)

Distribution: ANG, CAM, KEN, UGA.

Distribution in Angola (Provinces): 1) ?

Historic records:

—Angola (without locality) [Waterhouse 1879 sub *Cerathorrhina (Aphelorrhina) tibialis*];

—Angola (without locality) (Ferreira 1965).

Material examined: Angola, 1 ♂, N° 1907 (blue label), n° 47 (white label), old collection, box n° IX-78, MZUC.

Remarks. A polytypic species with three recognized subspecies (Krajcik 2008a; Beinhundner 2017a). It was described originally from Angola and presents a scattered distribution throughout Africa (Krajcik 2008a; Beinhundner 2017a; Schoolmeesters 2018). The male specimen of MZUC (Fig. 24g) fits well this species description. Ecological data are not available for this species.

***Stephanorrhina (Stephanorrhina) guttata guttata* (Olivier, 1789)**

(Figs. 24i, 25a, b)

Distribution: ANG, CAM, CON, DOC, GHA, SEN, TOG.

Distribution in Angola (Provinces): 1) CAB, HUI; 2) LUA.

Historic records:

—Quilo River (CAB), Huilla (HUI) (Paulino de Oliveira 1882 sub *Cerathorrhina guttata* Oliv.).

Material examined: Cabinda (CAB), 1 ♂, N° 1821 (blue label), n° 1 (white label), Anchieta leg., old collection, box n° VI-75, MZUC; Luanda (08° 50' S, 13° 15' E, 70 m alt., 89) (LUA), 1 ♀, 24.V.1957, N° E.11002, n° 614, V. V. Pinto leg., sub *Coelorrhina* (det. ?), on *Coffea* sp., JPCC, MUHNAC.

Remarks. A polytypic species with a complex of five to eight subspecies (Antoine 2004b; Krajcik 2008a; Beinhundner 2017a). It is known by the common name of “Spotted Flower Beetle”. Its distribution overlaps in some localities with *S. bella* (Allard 1986). Some biodiversity data (abundance and habitat preference) was provided for *Stephanorrhina (Stephanorrhina) guttata aschantica* Schüroff, 1942 in Benin and Ghana (Le Gall 2015; Joly 2018). It is a new species record for the Luanda Province.

***Stephanorrhina (Stephanorrhina) haroldi* Kolbe, 1892**

Distribution: ANG.

Distribution in Angola (Provinces): 1) LNO.

Historic records:

—Angola int. aut Lunda (without locality) (LNO) (Kolbe 1892b);

—Angola (without locality) (Ferreira 1965).

Material examined: none.

Remarks. An endemic species of Angola whose description was based on one female collected by Pogge (Kolbe 1892b). It was considered *incertae sedis* by Beinhundner (2017a).

Genus *Taurhina* Burmeister, 1842

The genus was revised together with related genera (e.g. *Eudicella*, *Cyprolais*, *Mecynorrhina*, *Amaurodes*) by Holm (1993b). *Taurhina*, as defined by this author, includes three subgenera (*Neptunides* Thomson, 1878, *Rhamphorrhina* Klug, 1855 and *Taurhina*). These taxa sometimes are treated at the subgenus level as was established by Holm (1993b) (e.g. Antoine & Minetti 2005; Beinhundner 2017a) or at the genus level (e.g. Krajcik 2008a). Here we follow the former criterion. Two species were previously recorded for Angola (Paulino de Oliveira 1882; Ferreira 1965). A new species record is given in this work.

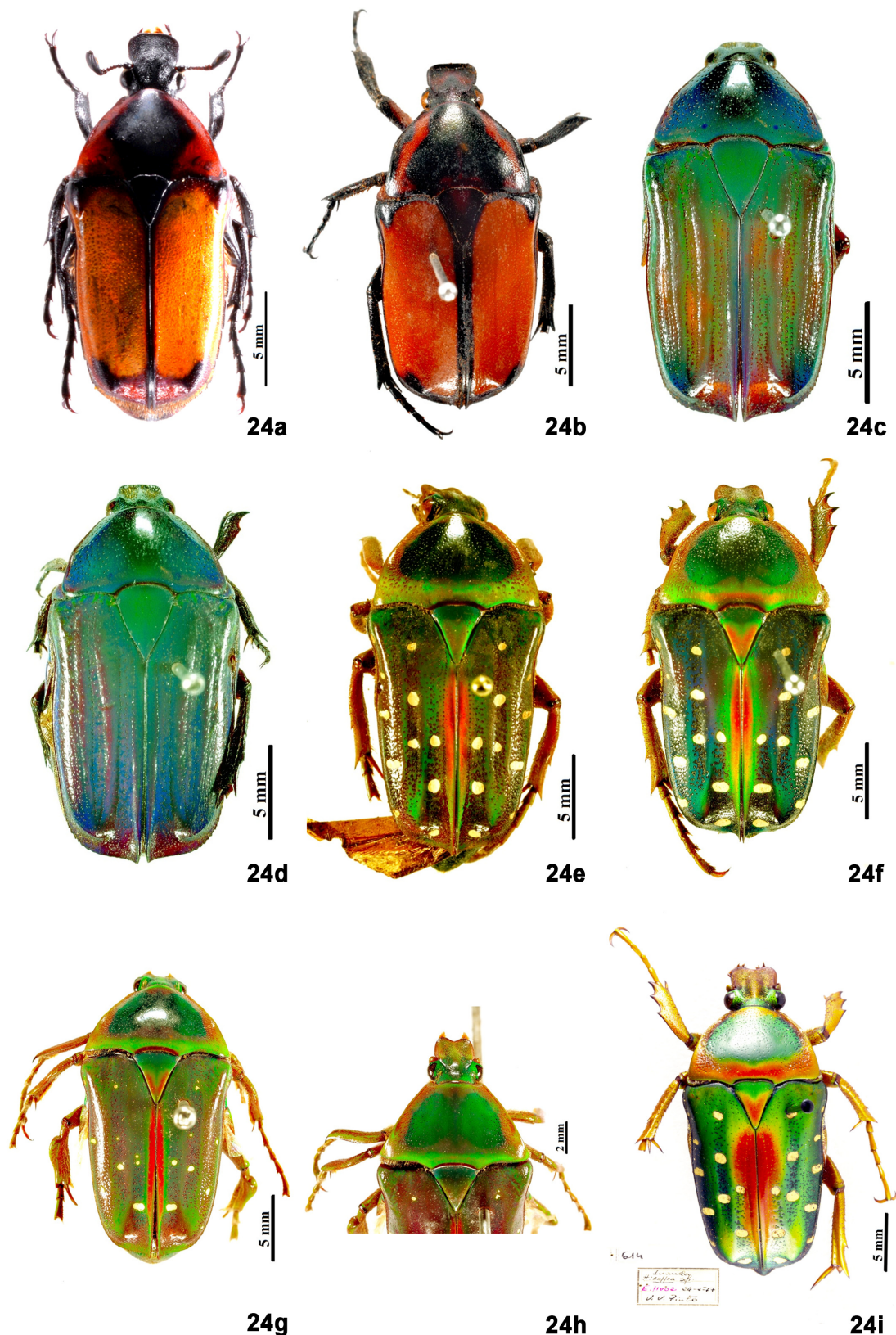


FIGURE 24. Cetoniinae species of Angola. a, *Pedinorrhina sellata lequeuxi* (dorsal view), male, Mussende, CUS, ASC; b, *Pedinorrhina subaenea subaenea* (dorsal view), MZUC; c and d, *Ptychodesthes bicostata intermedia* (dorsal views), male and female, respectively, MZUC; e and f, *Stephanorrhina* (*Aphelorrhina*) *bella bella* (dorsal views), male and female, respectively, MZUC; g and h, *Stephanorrhina* (*A.*) *tibialis tibialis* (dorsal views), male, habitus and head and pronotum, respectively, MZUC; i, *Stephanorrhina* (*Stephanorrhina*) *guttata guttata* (dorsal view), and associated labels, female, Luanda, LUA, JPCC.

***Taurhina (Rhamphorrhina) splendens* (Bertoloni, 1855)**

(Fig. 25c)

Distribution: ANG, MAW, MOZ, RSA, ZIM.

Distribution in Angola (Provinces): 1) ZAI.

Historic records:

—Angola (without locality) (Paulino de Oliveira 1882 sub *Cerathorrhina petersiana* Klug).

Material examined: Angola, 1 ♀, N° 1907 (blue label), n° 38 (white label), old collection, box n° IX-78, MZUC.

Remarks. A species well recognized by the shape of the male clypeus. We checked one female specimen from Angola deposited in the old collection of MZUC which seems to be the same adult specimen studied by Paulino de Oliveira (1882) and fits well this species description. Ecological data for this species were provided by Holm & Marais (1992).

****Taurhina (Taurhina) longiceps longiceps* Kolbe, 1892**

(Figs. 25d–f)

Distribution: ANG, BUR, CON, RCA.

Distribution in Angola (Provinces): 2) CNO.

Historic records: none

Material examined: Angola, 1 ♂, N° 1907 (blue label), n° 48 (white label), 1 ♂, N° 1907 (blue label), n° 51 (white label), 1 ♀, N° 1907 (blue label), n° 53 (white label), old collection, box n° IX-78, MZUC; Angola, 1 ♂, N° 1907 (blue label), n° 50 (white label), Welwitsch leg., old collection, box n° VI-75, MZUC; Salazar (=Ndalatando) (9° 18'S, 14° 55'E, 790 m alt., 110) (CNO), 1.IV.1973, 1 ♂, n° 20576, A. Bivar de Sousa leg., ABSC, MUHNAC.

Remarks. A polytypic species with five recognized subspecies (Krajcik 2008a; Beinhundner 2017a). The male adult specimen of ABSC fits well this species description as well as the adult specimens of MZUC (Figs. 25d–f). It is possible that the adult specimens deposited in MZUC had been misinterpreted by Paulino de Oliveira with next species. Ecological data are not available for this species. It is a new species record for Angola and the Kwanza Norte Province.

***Taurhina (Taurhina) nireus* (Schaum, 1841)**

Distribution: ANG, GUI, RCI,

Distribution in Angola (Provinces): 1) LUA.

Historic records:

—Angola (without locality) (Schaum 1841 sub *Dicranorrhina nireus* Schaum);

—Angola (without locality) (Paulino de Oliveira 1882 sub *Ceratorrhina nireus* Schaum);

—Angola (Loanza: indeterminable) (Moser 1916 sub *Taurhina angolensis* Moser, 1916);

—Angola (without locality) (Ferreira 1965 and sub *Taurhina angolensis* Moser);

—Luanda (LUA) (Sakai & Nagai 1998 sub *Taurhina angolensis* Moser).

Material examined: none.

Remarks. The species presents a scattered distribution in Africa (Krajcik 2008a; Beinhundner 2017a). It is known for Angola, but without precise localities for the majority of records (Paulino de Oliveira 1882; Moser 1916; Ferreira 1965). Eventually, “Loanza” name was a spelling mistake by Moser (1916) for “Luanda”.

Genus *Tmesorrhina* Westwood, 1842

A genus close to *Caelorrhina* with which shares some characters (see Holm & Marais 1992). According to Holm & Marais (1992) the genus was never revised since Burgeon (1944). Allard (1991) and Antoine (1995, 1996a) provided figures of the parameres for some species. Some taxonomical remarks were added by Antoine (2002a). Krajcik (2008a) and Beinhundner (2017a) recognized fifteen species, but there are some disagreements on the validity of some subspecies. One species and one subspecies were previously recorded for Angola (Quedenfeldt 1884; Burgeon 1944). We give three new species/subspecies records for the Angolan entomofauna in this work.

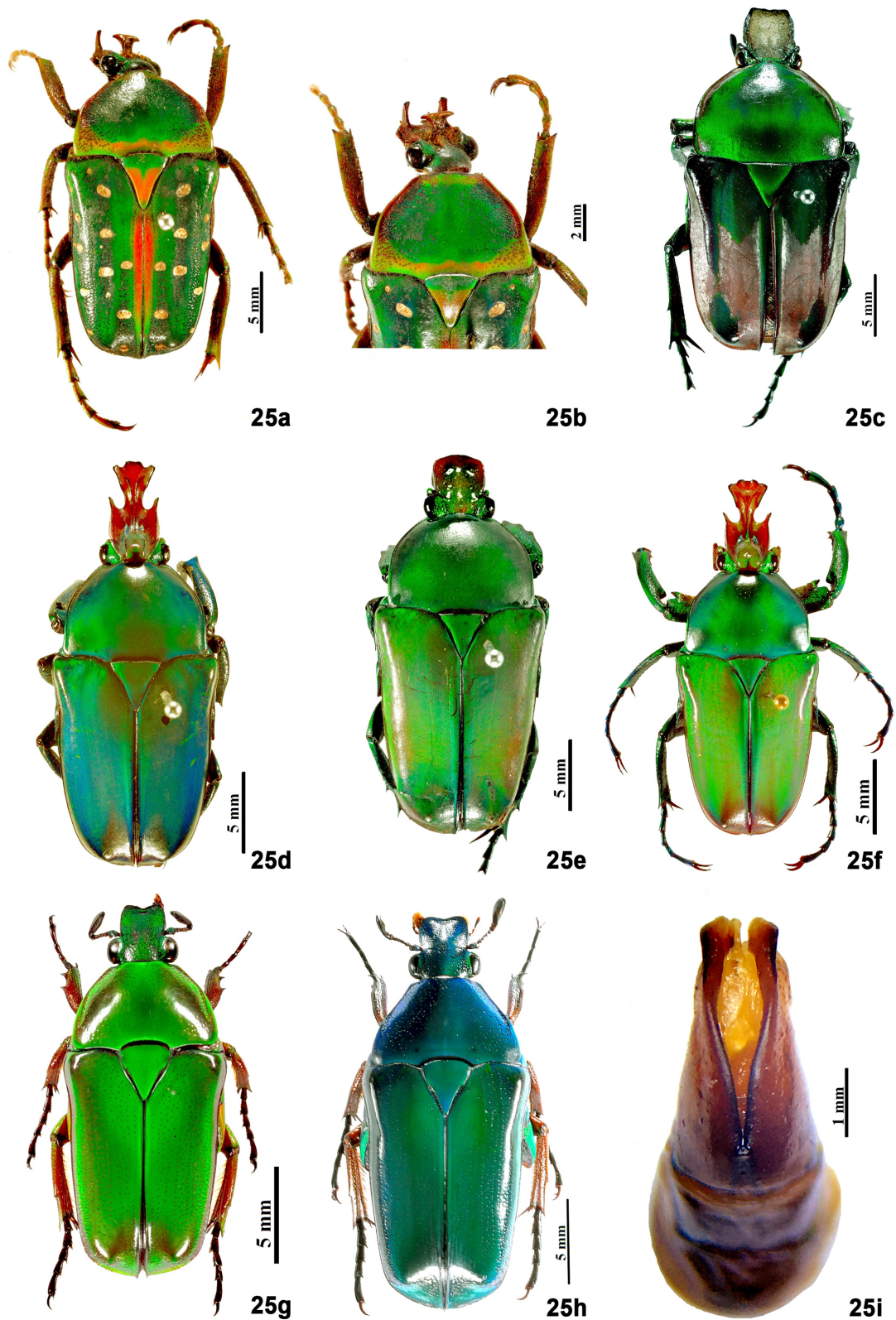


FIGURE 25. Cetoniinae species of Angola. a and b, *Stephanorrhina* (*Stephanorrhina*) *guttata guttata* (dorsal views), male, habitus and head and pronotum, respectively, MZUC; c, *Taurhina* (*Rhamphorrhina*) *splendens* (dorsal view), female, MZUC; d and e, *Taurhina* (*Taurhina*) *longiceps longiceps* (dorsal views), male and female, respectively, MZUC; f, *Taurhina* (*T.*) *longiceps longiceps* (dorsal view), male, Salazar (=Ndalatando), CNO, ABSC; g, *Tmesorrhina iris saundersi* (dorsal view), female, Kibundi, MAL, ASC; h and i, *Tmesorrhina laeta burgeoni*, male (dorsal view) and parameres (frontal view), respectively, Mus-sende, CUS, ASC.

***Tmesorrhina iris iris* Fabricius, 1781**

Distribution: ANG?, BEN, GHA, RCI.

Distribution in Angola (Provinces): 1) LNO.

Historic records:

—Quango (=Cuango) (LNO) (Quedenfeldt 1884).

Material examined: none.

Remarks. A polytypic species with four subspecies (Beinhundner 2017a). Quedenfeldt (1884) recorded the species for “Quango-Strom” (Angolan territory), based on material collected by Major von Mechow. However, taking into account the general distribution of the nominal species, it will be necessary to confirm its presence in this country. See also the remarks under the following subspecies.

***Tmesorrhina iris saundersi* Westwood, 1854**

(Fig. 25g)

Distribution: ANG, CAM, CON, DOC, RCI, UGA.

Distribution in Angola (Provinces): 1) ZAI; 2) MAL.

Historic records:

—S. Salvador (= M’banza-Kongo) (ZAI) (Burgeon 1944).

Material examined: Kibundi (08° 54’ 33.31’’ S, 16° 03’ 15.71’’ E, 1170m alt., 95) (MAL), 19.XI.2017, 1♀, DO, A. Serrano leg., ASC.

Remarks. Burgeon (1944) recorded the subspecies for S. Salvador, nowadays M’banza Congo (also spelled Mbanza Congo, M’banza Kongo, or Mbanza Kongo), a city located in northwestern Angola, based on material deposited in the actual “Muséum des sciences naturelles de Belgique”. The nominal subspecies could be misinterpreted with this subspecies. The Kibundi adult specimen was captured by DO on a white flower of a tree in an open secondary forest. It is a new subspecies record for the Malanje Province.

****Tmesorrhina laeta burgeoni* Allard, 1991**

(Figs. 25h, i, 26a)

Distribution: ANG, DOC.

Distribution in Angola (Provinces): 2) CUS.

Historic records: none.

Material examined: Mussende (Calulo) (9° 57’ 00’’ S, 14° 47’ 36’’ E, 905m alt., 128) (CUS), 28.XI.-5.XII.2015, 10♂, 1♀, CT, 30.XI.2015, 1♀, BT, A. Serrano & R. Capela leg., ASC; Calulo (Fazenda Klein) (10° 02’ 14’’ S, 14° 54’ 38’’ E, 1059 m alt., 147) (CUS), 6–11.XII.2017, 7♂, 2♀, CT, A. Serrano & R. Capela leg., ASC; Calulo (Faz. Monte Café) (09° 59’ 15’’ S, 14° 50’ 12’’ E, 1086 m alt., 128) (CUS), 6–11.XII.2017, 5♂, 1♀, CT, A. Serrano & R. Capela leg., ASC.

Remarks. Two subspecies are recognized in *T. laeta*. Both are known from DOC (Krajcik 2008a, Beinhundner 2017a). The adult specimens of Calulo (Figs. 25h, i, 26a) fit very well the mesosternal process and parameres conformations of this subspecies (Figs. 7, 8 in Antoine 2002a). *Tmesorrhina laeta burgeoni* presents coloration darker than the nominal subspecies. The adult specimens could be ascribed to *T. garnieri* Allard, 1993, but the parameres are slightly different. Moreover, Calulo specimens present the elytra almost smooth, not deeply striated punctuated as in the latter species (Allard 1993). The adult specimens were sampled by means of BT and CT within secondary moist forest. See also the remarks under *Chlorocala africana mutica*. It is a new species/subspecies record for Angola and the Kwanza Sul Province.

****Tmesorrhina tridens tridens* Duvier, 1891**

(Figs. 26b, c, d)

Distribution: ANG, DOC, EQG, RCI.

Distribution in Angola (Provinces): 2) MAL.

Historic records: none.

Material examined: Carima (Cacuso-Pungo Andongo) (09° 35’ 00’’ S, 15° 42’ 01’’ E, 1117 m alt., 130) (MAL), 17–21.XI.2017, 1♂, 1♀, CT, A. Serrano & R. Capela leg., ASC.

Remarks. A polytypic species with four subspecies. The Carima adult specimens were collected by CT in an

open secondary forest. See also the remarks under *C. africana mutica*. It is a new species record for Angola and the Malanje Province.

****Tmesorrhina viridicyanea* Moser, 1902**

(Fig. 26e)

Distribution: ANG, BOW, RSA, MAW, TAN.

Distribution in Angola (Provinces): 2) BIE.

Historic records: none.

Material examined: Mumbué (Cuanza riverhead) (13° 49' 41'' S, 17° 19' 26'' E, 1511 m alt., 303) (BIE), 8-17.XI.2015, 1♀, CT, A. Serrano & R. Capela leg., ASC; Chingueia-Mandongue (13° 35' 46'' S, 16° 58' 59'' E, 1648 m alt., 301) (BIE), 9.XI.2015, 1♀, BT, A. Serrano & R. Capela leg., ASC.

Remarks. A polychromatic species. The two adult specimens from Bié were collected by BT and CT (*e.g.* Figs 1a, b) in open secondary forests together with *C. picturata*. Despite the specimens fit well the species description, it is with some caution that we ascribe them to this taxon, as both are females. It is a new record for Angola and the Bié Province.

Subtribe Goliathina Latreille, 1829

Genus *Goliathus* Lamarck, 1801

The genus was revised by Lachaume (1983) and very recently by De Palma *et al.* (2020). Beinhundner (2017a) and De Palma *et al.* (2020) recognized five valid species. There is one species known from Angola (Paulino de Oliveira 1882), but curiously since Paulino de Oliveira's work it was not mentioned for this country in any catalogue (*e.g.* Ferreira 1965; Lachaume 1983; Krajcik 2008a; Beinhundner 2017a).

***Goliathus goliatus goliatus* (Drury, 1770)**

(Figs. 26f, g)

Distribution: ANG, BEN, CAM, CON, DOC, GAB, KEN, NRE, RCA, RCH, RRW, UGA.

Distribution in Angola (Provinces): 1) CAB.

Historic records:

—Cabinda (CAB) (Paulino de Oliveira 1882 sub *Goliathus giganteus* Lam., 1817).

Material examined: Cabinda (coords not available) (CAB), 1♂, 1♀, 27.VI.1967, DAF, n° 9425, JPCC, MUH-NAC.

Remarks. The species was recorded for Angola (Paulino de Oliveira 1882) based on specimen(s) deposited in the old entomological collections of the “Museu e Laboratório de Zoologia e Antropologia (Museu Bocage)”, Lisboa. The two adult specimens from Cabinda in MUH-NAC confirm its presence in Angola. The larva was described by Vendl & Šípek (2016). Biological and ecological notes on this species are summarized in Wiebes (1968). De Palma *et al.* (2020) ranked subspecifically *Goliathus meleagris* Sjöstedt, 1927 under *G. goliatus*, referring that this new subspecies occurs in the Miombo woodlands of southern D. R. of Congo, and neighbouring areas of Angola (northeast) and Zambia. However, in this work they do not studied any Angolan specimen, as well as they did not indicate any locality where the subspecies was found in Angola.

Genus *Hegemus* J. Thomson, 1881

There are three species in the genus treated and illustrated by Lachaume (1983, but see also Wiebes 1968). An identification key for the species was given by Wiebes (1968). One species is known from Angola (Ferreira 1965; Beinhundner 2017a).

***Hegemus peregrinus* (Harold, 1878)**

(Figs. 26h, i, 27a)

Distribution: ANG.

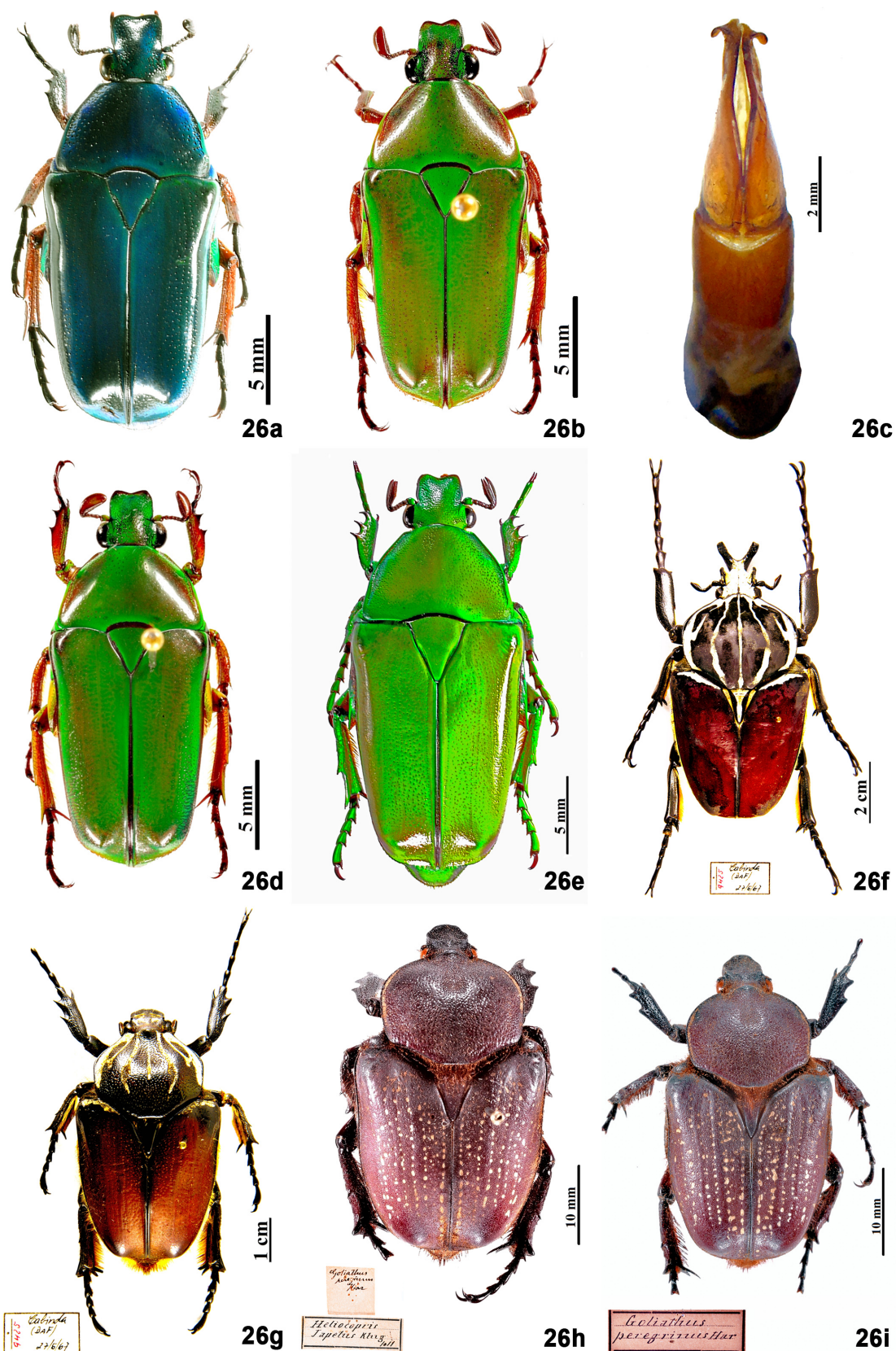


FIGURE 26. Cetoniinae species of Angola. a, *Tmesorrhina laeta burgeoni* (dorsal view), female, Mussende, CUS, ASC; b–d, *Tmesorrhina tridens tridens*, male (dorsal view), parameres (frontal view) and female (dorsal view), respectively, Carima, MAL, ASC; e, *Tmesorrhina viridicyanea* (dorsal view), female, Mumbué, BIE, ASC; f and g, *Goliathus goliatus* (dorsal views), and associated labels, male and female, respectively, Cabinda, JPCC; h and i, *Hegemus peregrinus* (dorsal views), and associated old identification labels, females, MZUC.

Distribution in Angola (Provinces): 1) HUA, MAL; 2) HUI.

Historic records:

- “Inneren Guinea” (Angola, without locality) (Harold 1878 sub *Fornasinius peregrinus* Har.);
- Pungo Andongo (MAL) (Ferreira 1965);
- Malanje, Pungo Andongo (MAL), Caconda (HUA) (Sakai & Nagai 1998).

Material examined: Angola, 1 ♀, N° 1907 (blue label), old collection, box n° XIV-83, sub *Hegemus peregrinus* Har. (white label) and *Heliocopriss japedus* Klub (white label marginated by black line), MZUC; Angola, 1 ♀, n° 1907 (blue label), n° 28 (white label), old collection, box n° XIV-83, sub *Goliathus peregrinus* Har., MZUC; Tchivinguiro (15° 10' S, 13° 18' E, 1600 m alt., 355) (HUI), 1 ♀, ? .XI.1961, M. Cabral leg., n° 1966, JPCC, MUHNAC.

Remarks. An Angolan endemic species described by Harold (1878) based on specimen(s) from Pungo Andongo (Sakai & Nagai 1998; Krajeck 2008a; Beihundner 2017a). Di Gennaro (2014b) provided some data on the biology and ecology of this genus namely on the species *Hegemus pluto* (Raffray, 1880). It is a new species record for the Huila Province.

Genus *Hypselogenia* Burmeister, 1840

The genus was revised by Krikken (1979a) and includes four species, one of them recorded for Angola. An identification key for the species was given in that work also. Antoine (2003) gave some notes on the similarities and mimicry of representatives of this genus with the genera *Leucocelis* and *Mausoleopsis*. Beinhundner & Perissinotto (2018) updated the species and subspecies checklist of this genus and its general distribution.

Hypselogenia geotrupina geotrupina (Bilberg, 1817)

(Fig. 27b)

Distribution: ANG, MOZ, RSA, ZIM.

Distribution in Angola (Provinces): 1) HUI.

Historic records:

- Humpata (HUI) (Krikken 1979a).

Material examined: Angola, 1 ♀, n° 1907 (blue label), old collection, box n° XIV-83, MZUC.

Remarks. In Angola the species is only known from the southwestern territory. Some ecological data are available in Holm & Marais (1992).

Tribe Gymnetini Kirby, 1827

Subtribe Gymnetina Kirby, 1827

Genus *Pseudoclinteria* Kraatz, 1882

The genus was revised by Holm (1991b). There are two species in the genus, one of them recorded for Angola (Paulino de Oliveira 1882).

Pseudoclinteria infuscata (Gory & Percheron, 1833)

(Figs. 27c, d)

Distribution: ANG, DOC, ETI, KEN, MAW, MOZ, RSA, SEN, TAN, ZIM, ZAM.

Distribution in Angola (Provinces): 1) HUI; 2) BIE.

Historic records:

- Angola (without locality) (Paulino de Oliveira 1882 sub *Clinteria infuscata* Gory & Percheron);
- Huilla (without locality) (HUI) (Schoch 1896 and Holm 1991b sub *Clinteria maculicollis* Schoch);
- “Port. O. Afr.” (Angola?, without locality) (Kuntzen 1930 and Holm 1991b sub *Clinteria infuscata goetzei* v. *peringueyi* Kuntzen);
- Huila (without locality) (HUI) [Ferreira, 1965 sub *Clinteria infuscata* (Gory & Percheron) ab. *maculicollis* Schoch].

New localities reported: Negola (3,5 km SW) (14° 08' 53'' S, 14° 28' 16'' E, 1613 m alt., 317) (HUI), 11-12.XI.2013, 1♂, P. Schüle leg., PMC (P. Malec, personal communication).

Material examined: Angola, 3 exs, N° 1907 (blue labels), n°s 154, 187 and 200 (white labels), old collection, box n° IX-78, MZUC; Satchijamba (13° 44' 54.69'' S, 17° 10' 35.03'' E, 1579 m alt., 303) (BIE), 3.XI.2014, 3♂, 3♀, BT, 29.X.-3.XI.2014, 1♂, 3♀, CT, A. Serrano leg. & R. Capela, ASC; Mumbué (Kwanza River spring) (13° 49' 41'' S, 17° 19' 26'' E, 1511 m alt., 303) (BIE), 8-17.XI.2015, 1♂, CT, A. Serrano leg. & R. Capela, ASC.

Remarks. The species is very polychromatic. The adult specimens in Satchijamba were collected by BT and CT (Figs. 1a, b) in an open secondary forest (Fig. 1e). See also the remarks under *Pachnoda discolour kolbei*. Some ecological data were provided by Holm & Marais (1992). It is a new species record for the Bié Province.

Genus *Stethodesma* Bainbridge, 1840

The genus is monotypic and was revised by Holm (1991b). There are two valid subspecies, one of them recorded for Angola (Gomes Alves 1973).

Stethodesma strachani strachani Bainbridge, 1840

(Fig. 27e)

Distribution: ANG, BEN, BUR, CAM, DOC, EQG, GAB, GHA, GUI, KEN, RCA, RCI, RRW, SLN, SUD, TOG, UGA.

Distribution in Angola (Provinces): 1) MOX; 2) BIE.

Historic records:

—Vila Luso (=Luená) (MOX) (Gomes Alves 1973 sub *Stethodesma servillei* White, 1856).

Material examined: Vila Luso (=Luená) (11° 47' S, 19° 55' E, 1300 m alt., 218) (MOX), 8.IX.1957, 1 ♀, N° 2881, *Stethodesma servillei* White, Estudos Apícolas do Ultramar n° 33, Junta de Investigações Coloniais (Entomologia), IICT, MUHNAC; Satchijamba (13° 44' 54.69'' S, 17° 10' 35.03'' E, 1579 m alt., 303) (BIE), 29.X.-3.XI.2014, 1♂, CT, A. Serrano leg. & R. Capela, ASC.

Remarks. There are two recognized subspecies in this taxon (Holm 1991b; Beinhundner 2017a). The nominal is predominantly distributed throughout western and central Africa (Gomes Alves 1973; Beinhundner 2017a). The species was recorded for Angola by Gomes Alves (1973) under the name *S. servillei*, which represents the other subspecies of this taxon (*Stethodesma strachani servillei* White, 1856). The adult specimen in Satchijamba was collected by CT (Fig. 1b) in an open secondary forest. See also the remarks under *Pachnoda discolour kolbei*. Some ecological notes were provided by Holm & Marais (1992) and Malec (2015). It is a new species record for the Bié Province.

Tribe Trichiini Fleming, 1821

Subtribe Platygeniina Krikken, 1984

Genus *Platygenia* MacLeay, 1819

The genus was revised by Antoine & Camiade (1995), who recognized four valid species. There is one species recorded for Angola (Paulino de Oliveira 1882).

Platygenia barbata (Afzelius, 1817)

(Figs 27f, g)

Distribution: ANG, CAM, CON, DOC, GHA, NIG, RCI, SLN.

Distribution in Angola (Provinces): 1) CAB, LNO, MAL.

Historic records:

—Quilo river (CAB) (Paulino de Oliveira 1882);

—Malange (=Malanje) (MAL) (Quedenfeldt 1884);

—Dundo (LNO) (Gomes Alves 1973).

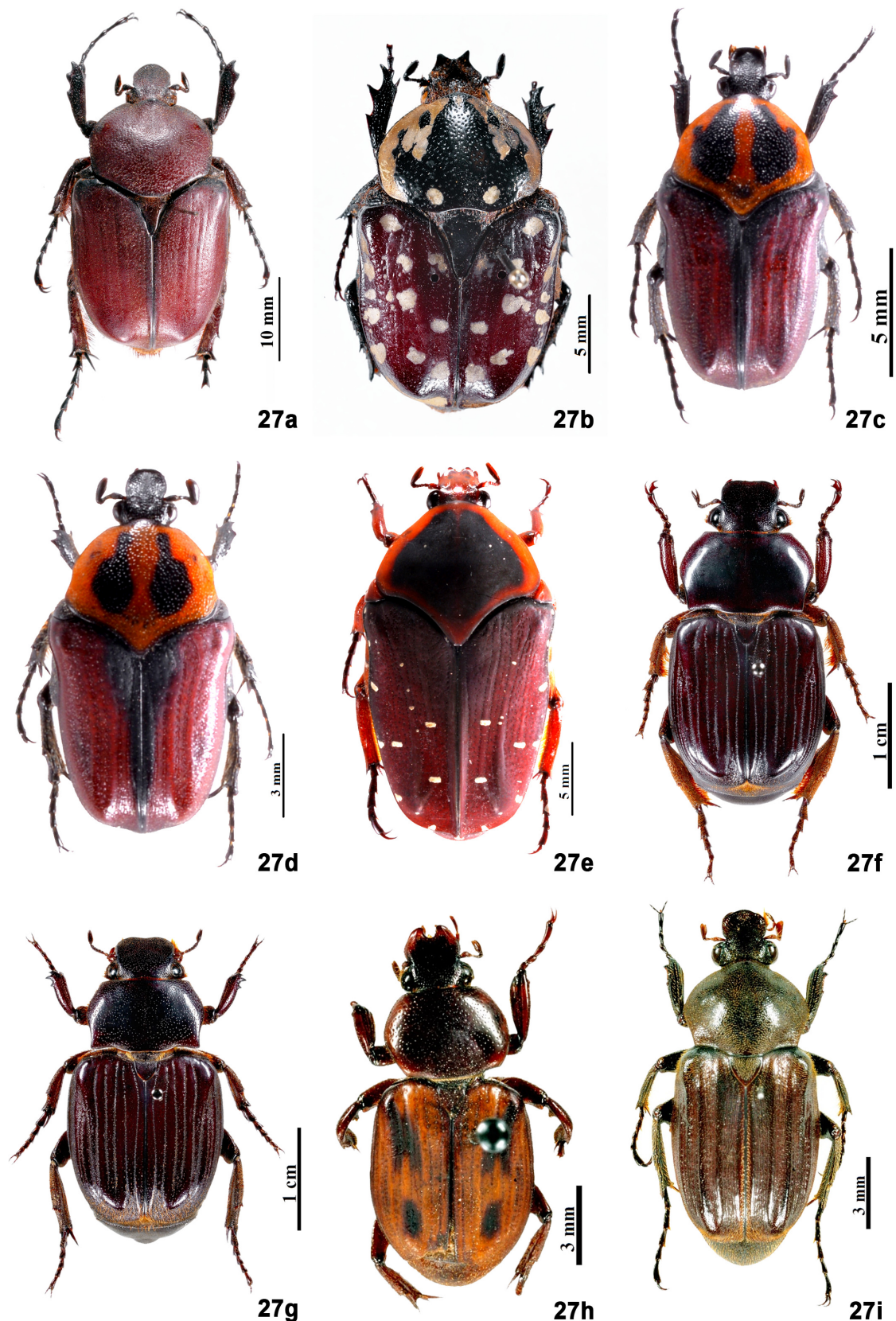


FIGURE 27. Cetoniinae species of Angola. a, *Hegemus peregrinus* (dorsal view), female, Huíla, HUI, JPCC; b, *Hypselogenia geotrupina geotrupina* (dorsal view), female, MZUC; c and d, *Pseudoclinteria infuscata* (dorsal views), male and female, respectively, Satchijamba, BIE, ASC; e, *Stethodesma strachani strachani* (dorsal view), male, Satchijamba, BIE, ASC; f and g, *Platygenia barbata* (dorsal views), male and female, respectively, Dundo, LNO, IICT; h, *Clastocnemis quadrimaculatus quadrimaculatus* (dorsal view), male, Dundo, LNO, IICT; i) *Myodermum alutaceum* (dorsal view), male, Mussende, CUS, ASC.

Material examined: Quilo River (=Chiloango River Mouth) (05° 11'S, 12° 08'E, sea alt., 5) (CAB), 1♂, 1♀, N° 1882 (blue label), Anchieta leg., old collection, box n° VI-75, MZUC; Dundo (7° 22'S, 20° 50'E, 1470 m alt., 51) (LNO), -III.1949, 2♂, 1♀, N° 2132, Junta de Investigações Coloniais (Entomologia), IICT, MUHNAC.

Remarks. The species is widespread throughout West and Central Africa being associated to the palm *Elaeis guineensis* (Antoine & Camiade 1995; Schoolmeesters 2018). Jerath & Unny (1965) gave a very scanty description of *P. barbata* larvae. One adult female collected by the first author (AS) in Jemberem (Guinea-Bissau, 13.VII.2009) in a moist primary forest (Cambeque) by LT had several phoretic Pseudoscorpionida. Some ecological data were provided by Antoine & Camiade (1995) and, more recently, Joly (2018) gave novel biodiversity information (abundance, habitat preference) of this species for Ghana.

Subtribe Trichiina Fleming, 1821

Genus *Clastocnemis* Burmeister & Schaum, 1840

The genus was not revised. There are five recognized species (Antoine 2005b; Krajcik 2008a; Schoolmeesters 2018), one of them recorded for Angola (Harold 1879).

Clastocnemis quadrimaculatus quadrimaculatus (Afzelius, 1817)

(Fig. 27h)

Distribution: ANG, DOC, GUI, GBI, NIG, RCI, SEN, SLN.

Distribution in Angola (Provinces): 1) LNO, MAL.

Historic records:

—Pungo Andongo (MAL) (Harold 1879 sub *Agenius quadrimaculatus* Afzel.);

—Angola (without locality) (Paulino de Oliveira 1882 sub *Agenius 4-maculatus* Afzel.);

—Malange (=Malanje) (MAL) (Quedenfeldt 1884 sub *Agenius quadrimaculatus* Afzel.);

—Dundo (LNO) [Gomes Alves 1959 sub *Agenius (Clastocnemis) quadrimaculatus* Afzel].

Material examined: Angola, 2 exs, N° 1907 (blue labels), old collection, box n° VI-75, MZUC; Dundo (7° 22'S, 20° 50'E, 1470 m alt., 51) (LNO), -X.1948, 1♂, N° 2149, Junta de Investigações Coloniais (Entomologia), IICT, MUHNAC.

Remarks. Biogeographic remarks on the complex of this species were provided by Antoine (2005b) and Le Gall *et al.* (2010). Jerath & Unny (1965) gave a very scanty description of *C. quadrimaculatus* larvae.

Genus *Diploa* Kolbe, 1892

The genus was described by Kolbe (1892a) from Salisbury (old Rhodesia) specimens. It has never been revised. There are five recognized species (Krajcik 2008a; Schoolmeesters 2018), one of them recorded for Angola (Arrow 1906).

Diploa tridens Arrow, 1906

(Figs. 28a, b, c, d)

Distribution: ANG, DOC.

Distribution in Angola (Provinces): 1) BIE.

Historic records:

—Bihe (BIE) (Arrow 1906).

Material examined: Chitembo (10 km N) (13° 22' 40.78'' S, 16° 41' 58.07'' E, 1666 m alt., 282) (BIE), 1.XI.2014, 1♂, 1♀, LT, A. Serrano & R. Capela leg., ASC.

Remarks. The species was originally described from Angola and D.R. of the Congo (Katanga: Garenganze) (Arrow 1906). The adult specimens from Chitembo were collected by LT in an open secondary forest. Biological and other ecological data are not available.

Genus *Incala* J. Thomson, 1857

A speciose genus with twenty six species recognized in two subgenera (the nominal one and *Incalidia* Janson, 1907). The genus has never been revised, but Antoine (1991b) reviewed the *Incala lineola* group. There is only one species recorded for Angola (Quedenfeldt 1884).

Incala (Incala) calabarina (Westwood, 1873)

Distribution: ANG, CON, DOC, NIG, RCA, RCI.

Distribution in Angola (Provinces): 1) LNO.

Historic records:

—Quango (=Cuango) (LNO) (Quedenfeldt 1884 sub *Incala calabarica* Westw.).

Material examined: none.

Remarks. The species is widespread throughout West and Central Africa (Schoolmeesters 2018). Biological and ecological data are not available.

Genus *Myodermus* Burmeister & Schaum, 1840

The genus was not revised. Ricchiardi & Gyll (2009) provided some preliminary notes for its revision. These authors listed seventeen valid species, but Schoolmeesters (2018) recognizes nineteen species. Two of them were recorded for Angola (Paulino de Oliveira 1882; Arrow 1906).

Myodermus alutaceus (Afzelius, 1817)

(Fig. 27i)

Distribution: ANG, CAM, CON, DOC, EQG, GAB, GBI, GHA, GUI, NIG, RCA, RCI, SEN, SLN, TOG, UGA.

Distribution in Angola (Provinces): 1) LNO; 2) CUS.

Historic records:

—Angola (without locality) (Paulino de Oliveira 1882: sub *Myoderma alutacea* Afzel.);

—Quango (=Cuango) (LNO) (Quedenfeldt 1884 sub *Myoderma alutacea* Afzel.).

Material examined: Angola, 1 ex., N° 1907 (blue label), old collection, box n° XIV-83, MZUC; Angola, 1 ex., N° 1907 (blue label), Welwitch leg., sub *Myoderma alutacea* Afzel, old collection, box n° VI-75, MZUC; Mussende (Calulo) (9° 57' 00'' S, 14° 47' 36'' E, 905 m alt., 128) (CUS), 30.XI.2015, 1♂, BT, 28.XI–5.XII.2015, 2♂, CT, A. Serrano & R. Capela leg., ASC.

Remarks. The species is widespread throughout West and Southwest Africa (Schoolmeesters 2018). The Mussende adult specimens were collected by BT and CT (e.g. Figs. 1a, b) in a fragment of moist secondary forest. See also the remarks under *Diplognatha silicea* and *Chlorocala inermis*. Burgeon (1946) captured the species frequently at Kindu in the flowers of a Zingiberaceae. Joly (2018) provided biodiversity information (abundance, habitat preference) of this species for Ghana. The species like others of this genus seems to be crepuscular or even nocturnal (e.g. Ricchiardi & Gyll 2009). It is a new species record for the Kwanza Sul Province.

Myodermus pusillum (Arrow, 1906)

Distribution: ANG.

Distribution in Angola (Provinces): 1) BIE, MAL.

Historic records:

—Pungo Andongo (MAL), Bihe (BIE) (Arrow 1906 sub *Myoderma pusilla*).

Material examined: none.

Remarks. The species is endemic of Angola and by the Arrow (1906) comments it seems to be abundant. However, it is known only by the typical series. Biological and ecological data are not available.

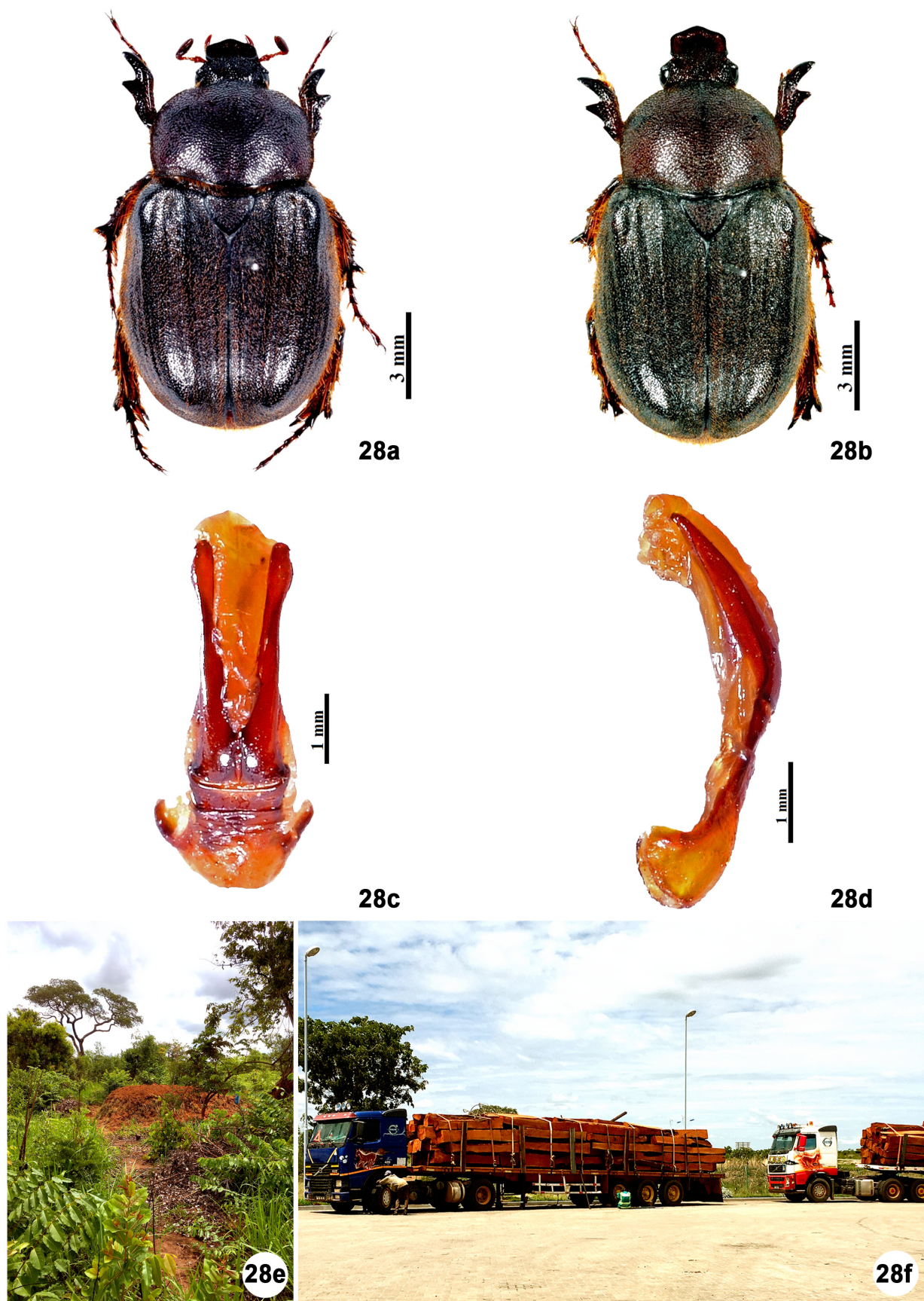


FIGURE 28. *Diploa tridens*, Chitembo, BIE, ASC. a, male (dorsal view); b, female (dorsal view); c and d, parameres (dorsal and lateral views, respectively); e, Artesanal charcoal production, Cangandala–Camaça, MAL; f, logging trucks near Kuito, BIE.

Genus *Pileotrichius* Bourgoïn, 1921

The genus was never revised. There are four recognized species (Krajcik 2008a; Schoolmeesters 2018), one of them recorded for Angola (Ferreira 1965).

Pileotrichius tristiculus (Kraatz, 1900)

Distribution: ANG.

Distribution in Angola (Provinces): 1) LUA.

Historic records:

—Loanda (=Luanda) (LUA) (Kraatz 1900 and Ferreira 1965 sub *Trichius tristiculus* Kraatz).

Material examined: none.

Remarks. The species is endemic of Angola (Kraatz 1900; Schoolmeesters 2018). Burgeon (1946) stated that the species of this genus are diurnal and flower visitors. Other biological and ecological data are not available.

Tribe Valgini Mulsant, 1842

Genus *Loboalgus* Kolbe, 1897

Within the Valgini, *Loboalgus* is the only genus with representatives known for Angola (Antoine 2002c). The genus was revised by Antoine (2002c), who added twelve new species to the five previously known (Krajcik 2008a). There are two species recorded for Angola (Antoine 2002c).

Loboalgus brevicauda Burgeon, 1935

Distribution: ANG, DOC.

Distribution in Angola (Provinces): 1) ?

Historic records:

—Angola (without locality) (Antoine 2002c).

Material examined: none.

Remarks. The species is only known for ANG and DOC (Antoine 2002c). Biological and ecological data are not available, but the species, like the other representatives of Valgini, is probably a flower visitor.

Loboalgus murinus Moser, 1913

Distribution: ANG, DOC.

Distribution in Angola (Provinces): 1) ?

Historic records:

—Angola (without locality) (Antoine 2002c).

Material examined: none.

Remarks. As the precedent, the species is only known for ANG and DOC (Antoine 2002c). Biological and ecological data are not available, but like the other representatives of Valgini, is probably a flower visitor.

Tribe Xiphoscelidini Burmeister, 1842

Genus *Aporecolpa* Lansberge, 1886

The genus is monotypic and primitive (Krikken 1984). It is endemic of Angola and a key for the *Aporecolpa* genera group was provided by Krikken (1982).

Aporecolpa nigra Lansberge, 1886

Distribution: ANG.

Distribution in Angola (Provinces): 1) HUI.

Historic records:

—Humpata (HUI) (Lansberge 1886, Ferreira 1965).

New localities reported: (HUI), 2 exs, SRC (S. Rojkoff, personal communication).

Material examined: none.

Remarks. An endemic species of Angola whose description was based on one female specimen (Lansberge 1886). Beinhundner (2017a) presents two specimen photos of the SRC without sex indication (S. Rojkoff, personal communication). Biological and ecological data are not available.

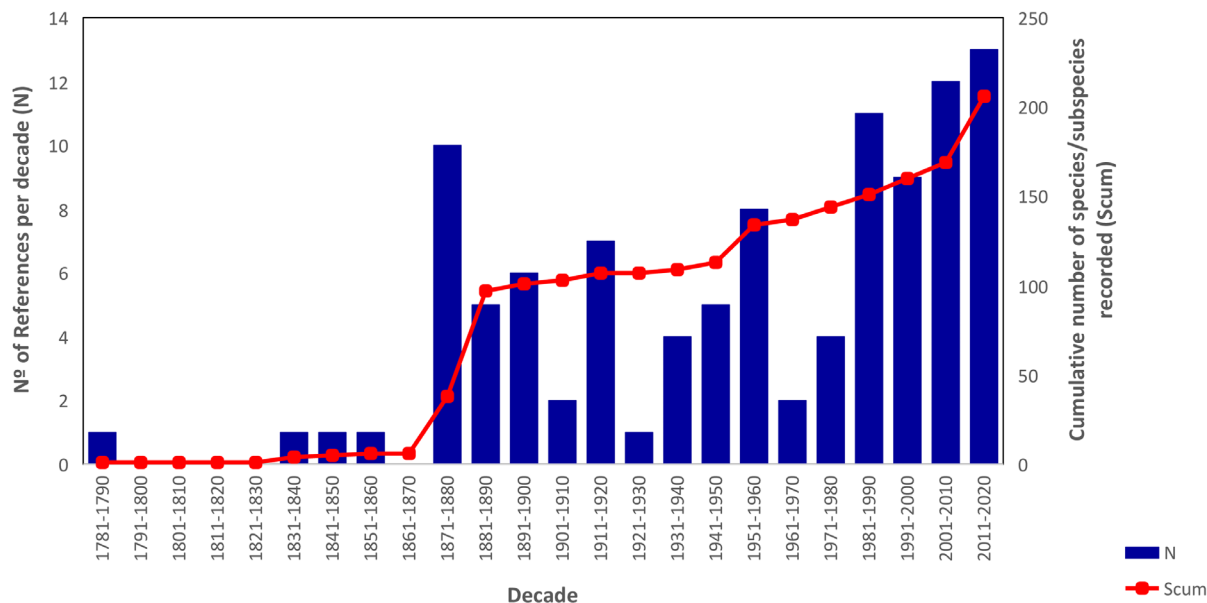


FIGURE 29. Cumulative number of species/subspecies recorded per decade in Angola (red line) and number of references for Angola per decade (columns).

Discussion

The knowledge of the rose chafers of Angola started in the late 19th century with the works of Westwood (1874, 1879, 1883), Janson (1877a, 1877b, 1878), Harold (1878, 1879), Waterhouse (1879), J. Thomson (1880), Kraatz (1880, 1883, 1897, 1899, 1900), Quedenfeldt (1880, 1884), Paulino de Oliveira (1882), Lansberge (1886), Kolbe (1892b, 1895) and Scholch (1896). Minor contributions were made earlier by Fabricius (1787), Gory & Percheron (1833), Schaum (1841) and Westwood (1854). A total of about 100 species were described and/or recorded for Angola in this century (Fig. 29). If we analyse the cumulative number of species records by decades, since 1831 to nowadays (Fig. 29), it is obvious that there are four major periods of advancements in the knowledge of the rose chafer beetles of Angola: (1 and 2) the eighth and the ninth decades of the 19th century, respectively, (3) the sixth decade of the 20th century (the number of taxa increased 21) and (4) the second decade of the 21st century; With the exception of the seventh decade of the 20th century (only three forms added), in all the subsequent decades and the first decade of the 21st century the number of species/subspecies described or recorded for the first time for Angola was more or less the same (7 to 9 species/subspecies). The number of taxa increased by 43 species/subspecies in the second decade of the present century (fourth period) taking into account the new records here reported. This fourth period is associated with the contributions of De Palma & Frantz (2011), Perissinoto (2012), Rojkoff (2011a, 2011b, 2012, 2015, 2016), Rojkoff & Perissinoto (2015), Oram (2015) and Beinhundner (2017a, 2017b). The third period is associated to the contributions of Schein (1954a, 1954b, 1957, 1958), Basilewsky (1956), Ruter (1958, 1960) and Gomes Alves (1960). The first Portuguese who contributed to the knowledge of the Cetoniinae of Angola was Paulino de Oliveira (1882) who based his work on specimens collected by the insect collectors at the service of Portugal (see Introduction). Interestingly, taking into account the Paulino de Oliveira's published list (1882) and the results of our study of the same collection at the MZUC (see Results), we found that Paulino de Oliveira could not identify many of those specimens (see Table 3). At the time, some of those specimens' belonged to undescribed species/subspecies that were described by other entomologists (see Table 3). Finally, it is important to highlight

the contribution made by the great specialist of rose chafer beetles, the French Philippe Antoine (e.g. 1987, 1989a, 1991a, 2000, 2002a, 2002c, 2005a, 2006a, 2006b, 2008, 2010) to the knowledge of Angolan fauna during the last two decades of the last century and the first decade of the present century.

TABLE 3. Species/subspecies described before the Paulino de Oliveira's work (1882) (A) and after 1882 (B) deposited in the MZUC and studied in this work (see checklist also).

A		B
<i>Anelaphinis dominula</i> (Harold, 1879)	<i>Trogodes (Trogodes) rotundicollis</i> Westwood, 1857	<i>Atrichelaphinis (Atrichelaphinis) nigropunctulata</i> (Péringuey, 1896)
<i>Dischista rufa</i> (DeGeer, 1778)	<i>Diplognatha (Diplognatha) silicea</i> (MacLeay, 1838)	<i>Dischista lizleri</i> Beinhundner, 1998
<i>Dolichostethus levis</i> (Janson, 1877)	<i>Diplognatha (Diplognatha) pagana pagana</i> (Harold, 1879)	<i>Pachnoda ardoini lydiae</i> Rigout, 1987
<i>Pachnoda frontalis</i> (Harold, 1878)	<i>Porphyronota hebraea hebraea</i> (Olivier, 1789)	<i>Pachnoda bukobensis</i> Moser, 1914
<i>Pachnoda rubrocincta</i> (Hope, 1847)	<i>Tetragonorrhina induta</i> (Janson, 1877)	<i>Pachnoda leopoldiana</i> (Burgeon, 1931)
<i>Tephraea dichroa</i> (Schaum, 1844)	<i>Caelorrhina concolor</i> Hope, 1841	<i>Pachnoda orphanula nachtigali</i> (Kraatz, 1885)
<i>Xeloma leprosa</i> (Burmeister, 1842)	<i>Caelorrhina relucens</i> (Bates, 1881)	<i>Pachnoda rufovirens</i> Quedenfeldt, 1884
<i>Acrothyrea (Acrothyrea) rufofemorata</i> (Burmeister, 1842)	<i>Chondrorrhina (Chondrorrhina) trivittata</i> (Schaum, 1841)	<i>Trichocephala (Trichocephala) angolensis</i> (Krikken, 1983)
<i>Amaurina spoliata</i> (Harold, 1879)	<i>Chondrorrhina (Plaesiorrhinella) plana plana</i> (Wiedmann, 1821)	<i>Xeloma tomentosa angolensis</i> (Valck Lucassen, 1936)
<i>Discopeltis tricolor tricolor</i> Burmeister, 1842	<i>Eudicella (Cyprolais) loricata loricata</i> (Janson, 1877)	<i>Leucocelis (Leucocelis) amethystina</i> (MacLeay, 1938)
<i>Leucocelis (Amauroleucocelis) cognata</i> (Harold, 1878)	<i>Gnathocera angolensis angolensis</i> (Westwood, 1854)	<i>Leucocelis (Leucocelis) semicuprea</i> Kraatz, 1883
<i>Leucocelis (Leucocelis) adspersa adspersa</i> (Fabricius, 1801)	<i>Gnathocera cruda gracilis</i> (Janson, 1877)	<i>Lissogenius ertli</i> Moser, 1911
<i>Leucocelis (Leucocelis) cupricollis</i> Kraatz, 1880	<i>Gnathocera villosa</i> Janson, 1877	<i>Diplognatha (Diplognatha) crampeli</i> Fairmaire, 1893
<i>Leucocelis (Leucocelis) haroldi</i> (Kraatz, 1880)	<i>Stephanorrhina tibialis tibialis</i> (Waterhouse, 1879)	<i>Anisorrhina (Anisorrhina) hassoni hassoni</i> (Antoine, 2000)
<i>Leucocelis (Leucocelis) niveoguttata</i> (Blanchard, 1850)	<i>Hypselogenia geotrupina geotrupina</i> (Bilberg, 1817)	<i>Gnathocera cruda leopoldi</i> (Bourgoin, 1929)
<i>Chthonobius conspersus</i> Burmeister, 1847	-----	<i>Gnathocera marginata</i> Janson, 1885
<i>Oplostomus bicolor</i> (Harold, 1878)	-----	<i>Lansbergia vanderkelleni</i> (Lansberge, 1886)
<i>Oplostomus fuliginus</i> (Olivier, 1789)	-----	<i>Ptychodesthes bicostata intermedia</i> Schein, 1943
<i>Oplostomus rufiventris</i> (Harold, 1878)	-----	<i>Taurhina (Taurhina) longiceps longiceps</i> Kolbe, 1892

The total number of rose chafer beetles recorded for Angola is 208 species and subspecies, belonging to 73 genera (Table 2). In this assemblage of genera, *Pachnoda* is the more speciose (twenty one species/subspecies) followed by *Gnathocera* (thirteen species/subspecies), *Leucocelis* (sensu lato) (twelve species/subspecies), *Coenochilus* (nine species/subspecies), *Chlorocala* and *Chondrorrhina* (sensu lato) (six species), *Porphyronota*, *Anisorrhina* (sensu lato), *Caelorrhina*, *Eudicella* (sensu lato), *Mecynorrhina* (sensu lato), and *Tmesorrhina* (five species/subspecies each one), *Dischista*, *Plagiophilus*, *Cymophorus* (sensu lato), *Campsiura* (*Macroma*), *Diplognatha* and *Stepha-*

norrhina (sensu lato) (four species/subspecies each one), *Atrichelaphinis* (sensu lato), *Phonotaenia*, *Polystalactica* (sensu lato), *Xeloma*, *Oplostomus*, *Trogodes*, *Pseudinca*, *Pedinorrhina* and *Taurhina* (sensu lato) (three species each one) and *Dolichostethus*, *Pachnodella*, *Rhabdotis*, *Tephraea*, *Amaurina*, *Discopeltis*, *Mausoleopsis*, *Placodidus*, *Uloptera*, *Cheiolasia*, *Dicronorrhina*, *Lophorrhina*, *Myodermum* and *Lobovalgus* (two species/subspecies each one). The remaining thirty two genera are represented in Angola by one species only. About 15.4% of the species/subspecies now known to this country are endemic (Table 2), conferring primary importance to their conservation and management. However, the majority of the faunistic data found in the literature are rather old and poor concerning the precise localities where the species were found in Angola (e.g., Harold 1878, 1879; Waterhouse 1879; J. Thomson 1880; Kraatz 1880, 1883, 1897, 1899, 1900; Quedenfeldt 1880, 1884; Paulino de Oliveira 1882). On other hand, many species have been described or recorded to Angola without indication of the locality or just to a single locality on the basis of one or very few specimens. Moreover, there are no works dealing exclusively with the rose chafer beetles of Reserves or Natural Parks of Angola. The lack of systematic population studies and demographic monitoring makes unfeasible the assessment of the conservation status of the Angola rose chafer beetles. We can make only a few assertions. Taking into account the threats to biodiversity in Angola (e.g. see Serrano & Capela 2013; Serrano *et al.* 2015, 2017, 2019), attention should be paid to the fact that some species could be potentially in danger of local or even national extinction. The fragmentation and/or destruction of forests in Angola as a result of charcoal production (e.g. Fig. 28e), fuelwood extraction, excessive logging (e.g. Fig. 28f) and land farming (e.g. see Mendelsohn & Mendelsohn 2018) remains one of the major conservation concerns that surely affect local or regional populations of many species associated with these habitats as is the case of many rose chafer beetles. As was pointed out on previous works (e.g. Serrano *et al.* 2015; Serrano *et al.* 2017, 2019), the current protected area “system” in Angola does not include the afro–montane cloud forests or the semi-deciduous humid forests of Angola’s northwestern or southwestern highlands (Uíge, Cuanza Norte, Bengo, Huambo, Namibe and Huíla Provinces), surely the most biodiverse ecosystems in the country. The majority of rose chafer beetle species found in Angola occur throughout central and southern Africa (West–Africa, West–Central Africa or West–Central–East Africa) (see checklist). However, other species seem to have more restricted distributions, namely those occurring only in Angola and Democratic Republic of the Congo, in Angola and Namibia, or in Angola, Zambia and/or Republic of South Africa (see checklist). Some species have never been found since their original description or their first record in the country. This lack of records does not mean that the species are rare or in danger, but without more data it is impossible to know their regional distribution and conservation status. However, with the present research a significant improvement on the knowledge of the regional distribution of many species in Angola was achieved (see Results). According to Tchiboze *et al.* (2008), Touroult & Le Gall (2013), Le Gall (2015) and Joly (2018) rose chafers may exhibit some resilience to local extinctions. The knowledge of species biology, ecology and habitat confidence is fundamental to protect and/or manage local or even regional Cetoniinae populations (e.g. Holm & Marais 1992; Šípek 2005, 2010; Šípek & Král 2012; Malec 2015; Kebede & Isotalo 2016; Malec & Šípek 2016, 2017; Joly 2018). For instance, our samplings (BT and CT) in some fragments of open and moist secondary forests (e.g. figs 1e, f) indicated that there are Cetoniinae communities associated to each type of habitat (see *Pachnoda discolour kolbei*, *Pachnoda rubriventris rubrocinctoides*, *Chlorocala africana mutica* and *Chlorocala inermis*/*Diplognatha silicea* Remarks) and the dominant species in each habitat are quite different [*Chondrorrhina* (*Chondrorrhina*) *picturata*+*Chondrorrhina* (*Plaesiorrhinella*) *undulata* in the open secondary forest and *Lophorrhina quinquelinea ta*+*Tmesorrhina laeta burgeoni* in the moist secondary forest] (see Material examined for these species). With the actual data and assuming a conservative strategy, it is highly recommended that the fragmentation and/or destruction of forests and woodlands should be stopped in the Reserves and Natural Parks and the most pristine afro–montane cloud forests and the semi-deciduous humid forests of Angola. Unfortunately, these areas suffer from the same processes of habitat loss as it happens all over country (e.g. see chapter 5 in Mendelsohn & Mendelsohn 2018). The severe deforestation has immediate or medium-term negative impacts on the Angolan biodiversity (fauna and flora), including higher vulnerability to climate changes (e.g. Keith *et al.* 2008; Beaumont *et al.* 2011). Without a clear effort to stop this deforestation and habitat loss, not only biodiversity that still exists will be gradually lost, as well as the effects of climate change will be worse with serious consequences (e.g. droughts, soil erosion) for the human populations (Mendelsohn & Mendelsohn 2018). The extinction of the large mammals (e.g. elephants, buffalo, reedbuck, blue wildebeest, zebra) in many regions of Angola (Mendelsohn & Mendelsohn 2018) could have as a consequence the decrease or even disappearance of some species of Cetoniinae whose life cycle is associated with the dung of these animals (e.g. see Juhel 2010). As recommended previously (e.g. Serrano *et al.* 2015, 2017,

2019), inventorying/monitoring studies on some insect target groups, like ground beetles, tiger beetles, rose chafer beetles, butterflies, dragonflies, among others, in the more pristine areas of Angola in association with traditional botanical and vertebrate surveys is urgently needed to allow integrative recommendations and proposal measures which surely would contribute to a better protection/management of the Angola biodiversity. The total number of species of rose beetles known from Angola has been updated from 175 to 208 in this work (Tables 2, 3). It is quite possible that in the near future some genera and species of some genera can be added, by using direct search in dung of birds and mammals and on plants (leaves, flowers, sap flows, underbark) and various other complementary sampling techniques (e.g. fruit-baited traps, yellow-fruit chromotropic traps) (e.g. see Holm & Marais 1992). On the other hand, to obtain more faunistic and ecological data on the rose chafer beetles, it is necessary to expand field work to sites poorly prospected or not visited yet. For instance, most of the northwestern and southeastern regions of Angola remain to be explored. Taking into account the considerable area and the climatic, orographic, and edaphic variability of the country which interact to generate great habitat diversity, future research targeting the Cetoniinae fauna will surely result in new interesting findings on the biodiversity of Angola.

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