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KEYS TO ADULTS OF ALL GENERA AND LARVAE OF 19 SPECIES OF GYMNETINI (COLEOPTERA: SCARABAEIDAE: CETONIINAE) IN THE NEW WORLD, WITH A SPECIES CHECKLIST AND DESCRIPTIONS OF TWO NEW GENERA AND SPECIES FROM MEXICO AND MARTINIQUE

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ABSTRACT

Keys to adults of all 27 genera and larvae of 19 species in 10 genera of Gymnetini that occur in the New World are presented. Supplementing the key to adults is a checklist of all species, their synonyms, and all literature citations associated with the nomenclatural epithets. Two **new genera**, *Gymnephoria* Ratcliffe and *Madiana* Ratcliffe and Romé, with one **new species** each, are described from Mexico and Martinique, respectively.

Key Words: flower chafers, taxonomy, new species, identification, nomenclature, synonyms

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*Our generation is the first to fully appreciate the
threats facing millions of species,
and the last generation with the opportunity to explore,
describe and classify life on Earth so
completely. Species that are literally ours for the
taking will soon be inaccessible
to science at any cost. What we accomplish in
taxonomic work in this century
will be a priceless legacy to all the generations
of scientists, natural historians and educated
humans that follow.*

— Q. D. Wheeler (2004)

All New World genera of Gymnetini have now been completely revised or reviewed by me since 1978 (see references), although two new genera are described herein. This taxonomic effort resulted in significant changes in the list of valid genera, species, and their synonyms since the catalogs of Schenkling (1921), Blackwelder (1944), and Krajčák (1998). While these catalogs may be useful for tracking the history of specific epithets, they are of little value to show the correct assignment of names, their synonyms, and their distributions since these are often incorrect.

A key is provided for the first time for the adults of all 27 genera of New World Gymnetini. The key is supplemented with a new checklist of all species names, their synonyms, and literature associated with each epithet that reflects the recent revisions or synopses. The key and checklist herein serve as a capstone summary of these revisions. An additional

key is provided for 19 species in 10 genera of the known New World larval Gymnetini.

MATERIAL AND METHODS

The key characters and new generic and species descriptions were based on the following characteristics: length from apex of pronotum to apex of elytra (the head may or may not be deflexed and, if measured, could give a misleading length); width across humeri; color and markings; interocular width (number of transverse eye diameters across the frons); form and sculpturing of the head, pronotum, elytra, and pygidium; form of the protibial and mesometasternal processes; sculpturing and color of the abdominal sternites; and form of the male parameres. Punctures are considered simple unless otherwise noted. Minute punctures are generally not seen with 12.5X magnification but are easily seen with 50X magnification. Small punctures are easily seen with 12.5X magnification and can be seen with the naked eye. Large punctures are easily seen without the aid of instruments. Sparse punctures are characterized by numerous puncture diameters among them. Punctures moderate in density have 3–5 puncture diameters among them. Dense punctures have only ≤ 1 –2 puncture diameters among them. I use the phylogenetic species concept as outlined by Wheeler and Platnick (2000). This concept defines species as the smallest aggregation of (sexual) populations diagnosable by a unique combination of character states.

Some morphological characters are illustrated to clarify specific statements in the identification key. The habitus images are meant to represent exemplars of each genus of New World Gymnetini since illustrating all species in the tribe is beyond the scope of this work.

The authors and dates following generic and species epithets in the checklist are considered as literature citations in this work and not simply taxonomic data as implied by the punctuation.

KEY TO THE ADULTS OF THE GENERA OF GYMNETINI IN THE NEW WORLD

1. Basomedian lobe of pronotum covers less than half of scutellum (Fig. 17) ... 2 1'. Basomedian lobe of pronotum strongly produced posteriorly, covering all but extreme tip of scutellum (Fig. 23).....5 2(1). Metafemur greatly enlarged in both sexes (Figs. 15, 17). Metatibial apex in male elongated into stout, acute spine and with 1 articulated spur (Fig. 16). Southern South America; 2 species <i>Blaesia</i> Burmeister (Fig. 17) 2'. Metafemur not enlarged. Metatibial apex lacking elongated spine 3 3(2'). Elytral surface strongly striate, rugopunctate, lacking cretaceous marks (Fig. 34). Northern Mexico; 2 species <i>Halfferinetis</i> Morón and Nogueira (Fig. 34) 3'. Elytral surface not strongly striate, nearly smooth, with or without punctures, nearly always with cretaceous marks 4 4(3'). Length from apex of pronotum to apex of elytra 18 mm or longer. Elytra shiny black with transverse, bright cretaceous bands or spots at about middle (Fig. 27) or with small, cretaceous spot on lateral margin just behind middle. Mesometasternal process moderately long, extending past mesocoxae in lateral view. Southwestern USA to Guatemala; 6 species <i>Gymnetina</i> Casey (Fig. 27) 4'. Length from apex of pronotum to apex of elytra less than 12.5 mm. Elytra opaque dark reddish brown or piceous with numerous, transverse, dull cretaceous flecks. Mesometasternal process short, virtually obsolete, not extending past mesocoxae in lateral view. Northeastern and central Mexico; 1 species <i>Gymnephoria</i> Ratcliffe, new genus (Fig. 26)	5(1'). Surface of head, pronotum, and elytra distinctly setose 6 5'. Dorsal surface not distinctly setose, head and anterior angles of pronotum occasionally with short setae 7 6(5). Clypeal apex with marginal bead. Male protibia tridentate. Male abdominal sternites longitudinally sulcate at center (Fig. 40). Female tarsomeres slender. Southern Brazil, Bolivia; 2 species <i>Hoplopygothrix</i> Schürhoff (Fig. 41) 6'. Clypeal apex lacking marginal bead. Male protibia bidentate. Male abdominal sternites normal, planar, not longitudinally sulcate. Female tarsomeres short, compact (Fig. 50). Southern South America; 3 species <i>Neocorvicoana</i> Ratcliffe and Micó (Fig. 51) 7(5'). Head with clypeal apex and/or frons with horn, keel, lobe, or prominence (Figs. 2, 18, 20) (only <i>Allorhina</i> and <i>Argyripa</i> females lack armature) 8 7'. Head in both sexes lacking armature of any kind 14 8(7). Head and/or pronotum and elytra with scales or scale-like setae (Fig. 13). Mexico, Central America; 4 species ... <i>Balsameda</i> Thomson (Fig. 14) 8'. Dorsal surface lacking scales or scale-like setae 9 9(8'). Frons on each lateral margin above antennal insertion with short, pointed, anteriorly projecting horn, acute tooth, or laterally compressed ridge in at least males (Figs. 9, 18) 10 9'. Frons on each lateral margin lacking anteriorly projecting horn, acute tooth, or laterally compressed horn or ridge 11 10(9). Frons, clypeus, and pygidium with long, dense, reddish brown setae (Fig. 18). Frons on lateral margin above antennal insertion with short, pointed, anteriorly projecting horn or acute tooth in both sexes (Fig. 18). Clypeal apex in both sexes with short horn. Length greater than 28 mm. Panama, Costa Rica; 1 species <i>Chiriquibia</i> Bates (Fig. 19) 10'. Frons, clypeus, and pygidium lacking long, dense setae. Male frons on lateral margin above antennal insertion with vertical, attenuate, laterally compressed horn or ridge (Fig. 9); clypeal apex lacking armature. Female lacking armature on frons or clypeus. Length less than 26 mm. Central America, northern South America; 5 species <i>Argyripa</i> Thomson (Fig. 10)

- 11(9'). Pronotum at center apex in males slightly produced, females with erect tubercle followed usually by shallow fovea. Cuba; 1 species ***Tiarocera* Burmeister** (Fig. 52)
- 11'. Pronotum at center apex in males not noticeably produced, females never with tubercle and fovea 12
- 12(11'). Antennal scape as long as next 4 antennomeres combined (Fig. 35). Southern South America; 2 species ***Heterocotinis* Martínez** (Fig. 36)
- 12'. Antennal scape short, less than length of next 4 antennomeres combined 13
- 13(12'). Males with clypeal horn or protuberance and process on frons (Figs. 1–2); females lacking both of these (Fig. 3). Males with frontal process dorsoventrally flattened and free at its apex. South America; 9 species ***Allorrhina* Burmeister** (Fig. 1)
- 13'. Both sexes with clypeal horn or protuberance and process on frons. Males with frontal process dorsoventrally flattened or not, apex free or fused to head (Fig. 20). USA south to Colombia and Venezuela; 27 species ***Cotinis* Burmeister** (Fig. 21)
- 14(7'). Apex of clypeus emarginate or bilobed (Figs. 4, 23) 15
- 14'. Apex of clypeus truncate, broadly rounded, or produced medially 19
- 15(14). Mesometasternal process nearly flat, extending forwards in same plane as ventral axis of body, weakly or strongly produced (Fig. 6) 16
- 15'. Mesometasternal process extending obliquely downwards from ventral axis of body (Fig. 22) or extending forwards and then recurving upwards apically (Fig. 24) 17
- 16(15). Antennal club subequal in length to entire stem (Fig. 43). Lateral margin of elytra completely, broadly chalky white. Ecuador, possibly French Guiana; 1 species ... ***Jansonia* Schürhoff** (Fig. 43)
- 16'. Antennal club shorter than entire stem but longer than antennomeres 2–7. Elytra lacking broad, chalky white band on lateral margin, instead lacking any contrasting coloration (Fig. 5) or with white spots or small, transverse bands (Fig. 8). Central Mexico to northwestern South America, West Indies; 14 species ***Amithao* Thomson** (Figs. 5–8)
- 17(15'). Mesometasternal process extending obliquely downwards from ventral axis of body (Fig. 22). Panama to Argentina; 3 species ***Desicasta* Thomson** (Fig. 23)
- 17'. Mesometasternal process extending forwards and then recurving upwards apically (Fig. 24) 18
- 18(17'). Dorsal color bright green with numerous small, black spots. Panama, Costa Rica; 1 species ***Hadrosticta* Kraatz** (Fig. 33)
- 18'. Dorsal color black or dark reddish brown with pale yellow or ochre markings on lateral margins of elytra. Mexico to northwestern South America; 2 species ***Guatemalica* Neervoort van de Poll** (Figs. 24–25)
- 19(14'). Sutural apices of elytra usually prolonged into spines (Fig. 39). Clypeal apex narrowly reflexed. Each elytron usually with complete, mediodiscal costa and a laterodiscal costa that is depressed on mediodiscal area; occasionally with indistinct elytral costae or 2 weakly raised, complete costae. Surface with large, n-shaped punctures arranged longitudinally in striae in depressions between costae (Fig. 39); occasionally n-shaped punctures not in rows but enclosed in a reddish brown to black spot, giving elytra a spotted appearance. Mexico to Argentina, West Indies; 21 species ***Hoplopyga* Thomson** (Fig. 39)
- 19'. Sutural apices of elytra usually not prolonged into spines. Clypeal apex not noticeably reflexed. Each elytron usually with indistinct elytral costae or 2 nearly obsolete costae. Surface usually lacking large, n-shaped punctures arranged longitudinally in striae (some *Gymnetis* species with these punctures) 20
- 20(19'). Mesometasternal process usually large, extending moderately to strongly obliquely downwards from ventral axis of body, apex narrowly or broadly subquadrate or bluntly rounded (Fig. 28). Southern USA to Argentina; 56 species ***Gymnetis* MacLeay** (Figs. 28–31)
- 20'. Mesometasternal process small, nearly flat, extending forwards in same plane or nearly so as ventral axis of body, apex slightly recurved or not 21
- 21(20'). Dorsal surface bright metallic green with large, black vittae. Colombia; 1 species ***Howdenypa* Arnaud** (Fig. 42)

- 21'. Dorsal surface velutinous or opaque, not bright green 22
- 22(21'). Mesometasternal process with long, recumbent, yellow setae on metasternal part (Fig. 44). Southern Brazil, Paraguay; 1 species
 Macrocranius Schürhoff (Fig. 45)
- 22'. Mesometasternal process glabrous or with only short, sparse setae 23
- 23(22'). Dorsal surface completely black or reddish brown with (Fig. 12) or without small, sparse, black speckles 24
- 23'. Dorsal surface with contrasting pattern of cretaceous, ochre, orange, or yellow bands on black ground color or dark "cloudings" on brown, piceous, grey, ochre, or yellowish green ground color, usually not with black speckles. If with black speckles (2 species), then speckles dense (Fig. 48), size smaller, length less than 21 mm 25
- 24(23). Dorsal surface velutinous black or reddish brown. Size large, length 22–29 mm. Brazil, Paraguay; 2 species
 Badelina Thomson (Fig. 12)
- 24'. Dorsal surface shiny black. Size small, length 16–17 mm. Martinique; 1 species
 Madiana Ratcliffe and Romé, new genus (Fig. 46)
- 25(23'). Elytra with contrasting pattern of slender, transverse, ochre bands radiating from midline on black ground color (Fig. 11). Entire dorsal surface usually densely, coarsely punctate. Southern Brazil; 1 species
 Astros cara Schürhoff (Fig. 11)
- 25'. Elytra with or without contrasting pattern of transverse bands; if with contrasting bands, then bands broad (Figs. 47, 49) and entire dorsal surface not densely, coarsely punctate 26
- 26(25'). Prosternum with distinct "throat spur" (as in Fig. 32). Elytra with transverse, black bands or vittae on ochre, yellow, or orange ground color (Figs. 47, 49) or dense, black speckles on ochre ground color (Fig. 48). Southern Mexico to Argentina; 5 species
 Marmarina Kirby (Figs. 47–49)
- 26'. Prosternum lacking distinct "throat spur" (Fig. 37). Elytra with dark "cloudings" on brown, piceous, grey, ochre, or yellowish green ground color or, if with transverse bands (1 species), then cretaceous bands on black ground color. Southwestern USA to Guatemala and southern South America; 8

species
 Hologymnetis Martínez (Fig. 38)

KEY TO THE KNOWN THIRD INSTARS OF NEW WORLD GYMNETINI

(Modified from Micó *et al.* 2001, Morón and Arce 2002, and Ibarra-Polesel *et al.* 2017)

1. Palidia present 2
- 1'. Palidia absent. Southwestern USA to northwestern Mexico
 Gymnetina cretacea (LeConte)
2. Raster with each palidium consisting of 2 or more irregular rows of pali. Terminal antennomere with 3–7 dorsal sensory spots. Haptomeral process absent 3
- 2'. Raster with palidia monostichous. Other characters not as above 5
3. Tarsungulus with 7 setae. Maxillary stridulatory area with 5 teeth. Terminal antennomere with 3 ventral sensory spots. Southwestern USA to Honduras *Hologymnetis cinerea* (Gory and Percheron)
- 3'. Tarsungulus with 10–12 setae. Maxillary stridulatory area with 7–9 teeth. Terminal antennomere with 5–13 ventral sensory spots (*Cotinis* species) 4
4. Raster with inner row of each palidium having 9–10 pali slightly larger than those in outer row. Southeastern USA
 Cotinis nitida (Linnaeus)
- 4'. Raster with inner row of each palidium having 7–10 pali much stouter and larger than those in outer row. Southwestern USA to northern South America
 Cotinis mutabilis (Gory and Percheron)
5. Dorsum of abdominal segment VII with 3 annulets 6
- 5'. Dorsum of abdominal segment VII with 2 annulets 10
6. Terminal antennomere with 10–20 sensory spots 7
- 6'. Terminal antennomere with 5–8 sensory spots 8
7. Stemmata present, well-defined. Haptomeral region with 14–16 heli in a transverse row. Each palidium consisting of a row of 17–20 pali. Mexico to Panama
 Amithao haematopus (Schaum)
- 7'. Stemmata absent. Haptomeral region with 10–15 heli in a transverse row. Each palidium consisting of a row of 23–26 pali. Southern Mexico to Ecuador
 Argyripa lansbergei (Sallé)
8. Terminal antennomere with 8 sensory spots. Maxillary stridulatory area with 7 teeth.

- Septula very narrow, elongate, length 9 times width. Argentina, Brazil, Paraguay, and Uruguay ***Blaesia atra* Burmeister**
- 8'. Terminal antennomere with 5–6 sensory spots. Maxillary stridulatory area with 5 teeth. Septula oval or elongate, length 2.5–3.5 times width (***Gymnetis* species**, in part) 9
9. Terminal antennomere with 6 sensory spots. Haptomeral region with a transverse row of 19–20 heli. Septula oval, length 2.5 times width. Argentina, Brazil, Peru, Paraguay and Uruguay ***Gymnetis chalcipes* (Gory and Percheron)**
- 9'. Terminal antennomere with 5 sensory spots. Haptomeral region with a transverse row of 14 heli. Septula elongated, length 3.5 times its width. Peru and Brazil ***Gymnetis rufilatis* (Illiger)**
10. Tarsungulus with 5–7 setae 11
- 10'. Tarsungulus with 8–15 setae 13
11. Distance between 2 lobes of respiratory plate of spiracles slightly less than dorsoventral diameter of bulla, or as long as such diameter. Right mandible with 2 scissorial teeth. Terminal antennomere with 5 sensory spots. Argentina, Brazil, Paraguay, Peru, and Uruguay ***Neocorvicoana reticulata* (Kirby)**
- 11'. Distance between 2 lobes of respiratory plate of spiracles much less than dorsoventral diameter of bulla, or almost surrounding it. Right mandible with 3 scissorial teeth. Terminal antennomere with 5–10 sensory spots (***Marmarina* species**) 12
12. Terminal antennomere with 10 sensory spots. Maxillary stridulatory area with row of 9 acute teeth. Each palidium consisting of an irregular row of 12–13 pali. Argentina, Brazil, Paraguay, and Uruguay ***Marmarina tigrina* (Gory and Percheron)**
- 12'. Terminal antennomere with 5–7 sensory spots. Maxillary stridulatory area with row of 6 acute teeth. Each palidium consisting of an irregular row of 19–20 pali. Southern Mexico to the Amazon regions of Brazil, Colombia, Peru, and Bolivia ***Marmarina maculosa* (Olivier)**
13. Distance between 2 lobes of respiratory plate of spiracles subequal to dorsoventral diameter of bulla (***Hoplopyga* species**) 14
- 13'. Distance between 2 lobes of respiratory plate of spiracles much less than dorsoventral diameter of bulla, or almost surrounding it (***Gymnetis* species**, in part) 16
14. Right mandible with 3 scissorial teeth. Haptomeral region with a transverse row of 12–19 heli. Each palidium consisting of an irregular row of 14–18 pali 15
- 14'. Right mandible with 2 scissorial teeth. Haptomeral region with a transverse row of 8–11 heli. Each palidium consisting of an irregular row of 18–25 pali. Argentina, Brazil, Paraguay, and Colombia ***Hoplopyga singularis* (Gory and Percheron)**
15. Tarsungulus with 9–10 setae. Haptomeral region with a transverse row of 12 heli. Terminal antennomere with 4 dorsal sensory spots. Mexico to northern Argentina ***Hoplopyga liturata* (Olivier)**
- 15'. Tarsungulus with 11–12 setae. Haptomeral region with a transverse row of 17–19 heli. Terminal antennomere with 3 dorsal sensory spots. South America ***Hoplopyga brasiliensis* (Gory and Percheron)**
16. Each palidium consisting of an irregular row of 18–23 pali 17
- 16'. Each palidium consisting of an irregular row of 10–16 pali 18
17. Anterior frontal setae absent. Tarsungulus with 9–13 setae. Spiracles of abdominal segments I–VIII similar in size. Panama to northern Argentina. ***Gymnetis pantherina* (Blanchard)**
- 17'. Anterior frontal setae present. Tarsungulus with 8 setae. Spiracles of abdominal segments I–VIII increasing in size towards posterior segments. Mexico and Guatemala ***Gymnetis difficilis* Burmeister**
18. Stemmata absent. Anterior frontal setigerous punctures absent. Haptomeral region with a transverse row of 12–14 heli. Septula narrow, elongated, length 5 times width. Brazil, Bolivia, Ecuador, Colombia, French Guiana, and Peru ***Gymnetis holosericea* (Olivier)**
- 18'. Stemmata present. Anterior frontal setigerous punctures present. Haptomeral region with a transverse row of 10–12 heli. Septula oval, length 2.5 times width. Mexico to Panama ... ***Gymnetis sallei* Schaum**

***Gymnephoria* Ratcliffe, new genus**

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Type Species. *Gymnephoria spilota* Ratcliffe, new species, here designated.

Description. Form: Body form elongate, subrectangular, dorsal surface flattened. Length 11.5–12.5 mm. Ground color dull black or dark reddish brown with chalky white vittae, flecks, and spots variably present on head, pronotum, elytra, mesepimeron, pygidium, metathorax, procoxae, meso- and metafemora, metasternum, and sternites

Figs. 1–8. New World Gymnetini. 1) *Allorrhina scabriuscula*; 2) *Allorrhina menetriesii*, male head; 3) *A. menetriesii*, female head; 4) *Amithao anthracinus*, male head; 5) *A. anthracinus*; 6) *Amithao haematopus*, mesometasternal process (arrow); 7) *Amithao tristis*; 8) *Amithao marginicollis*.

Figs. 9–17. New World Gymnetini. 9) *Argyripa anomala*, male head; 10) *Argyripa subfasciata*; 11) *Astroscara flavoradiata*; 12) *Badelina pygidialis*; 13) *Balsameda pulverulenta*, pronotum; 14) *B. pulverulenta*; 15) *Blaesia atra*, male hind leg; 16) *B. atra*, metatibia; 17) *B. atra*.

Figs. 18–26. New World Gymnetini. 18) *Chiriquibia insignis*, male head; 19) *C. insignis*; 20) *Cotinis mutabilis*, male head, clypeal and frontal horns (arrows); 21) *C. mutabilis*; 22) *Desicasta reichei*, mesometasternal process (arrow); 23) *Desicasta lobata*; 24) *Guatemala hueti*, mesometasternal process (arrow); 25) *G. hueti*; 26) *Gymnephoria spilota*, holotype.

Figs. 27–34. New World Gymnetini. 27) *Gymnetina cretacea cretacea*; 28) *Gymnetis buckleyi*; 29) *Gymnetis flaveola*; 30) *Gymnetis flavomarginata*; 31) *Gymnetis goryi*; 32) *Gymnetis holosericea*, throat spur (arrow); 33) *Hadrosticta viridiflua*; 34) *Halfferinetis gonzaloi*.

Figs. 35–43. New World Gymnetini. 35) *Heterocotinis semiopaca*, head; 36) *Heterocotinis terminata*; 37) *Hologymnetis cinerea*, throat spur absent (arrow); 38) *H. cinerea*; 39) *Hoplopyga liturata*; 40) *Hoplopygothrix atropurpurea*, abdominal sulcus (arrow); 41) *H. atropurpurea*; 42) *Howdenypa gloriosa*; 43) *Jansonina anceps*.

Figs. 44–52. New World Gymnetini. **44)** *Macrocranius similis*, mesometasternal process; **45)** *M. similis*; **46)** *Madiana brigitteae*, holotype; **47)** *Marmarina argentina*; **48)** *Marmarina insculpta*; **49)** *Marmarina tigrina*; **50)** *Neocorvicoana reticulata*, female metatarsus; **51)** *N. reticulata*, dorsal and ventral views; **52)** *Tiarocera cornuta*.

1–5. **Head:** Lacking armature. Clypeus subquadrate, apex truncate. Antenna with 10 antennomeres, club long, distinctly longer than antennomeres 2–7. **Pronotum:** Basomedian lobe projecting posteriorly, covering about half of scutellum. **Elytra:** Sutural and 2 discal costae elevated, moderately large, shallow punctures between costae. **Pygidium:** Surface weakly convex. **Venter:** Prosternal process minute, virtually obsolete. Mesometasternal process short, nearly obsolete, not extending past mesocoxae, apex rounded. **Legs:** Protibia weakly tridentate. **Parameres:** Form simple, subrectangular in caudal view with bluntly rounded apex.

Distribution. Northeastern and central Mexico.

Diagnosis. In *gestalt*, *Gymnephoria* resembles some specimens of *Euphoria* Burmeister (Cetoniini) because of size, color, and markings, especially *E. lurida* (Fabricius) or *E. sepulchralis* (Fabricius). *Gymnephoria* is distinguished from other Gymnetini that occur sympatrically, namely species of *Balsameda*, *Cotinis*, *Guatemalica*, *Gymnetina*, *Gymnetis*, *Halfpferineta*, *Hologymnetis*, and *Hoplopyga*, by its small size (less than 12.5 mm), opaque, dark reddish brown or black elytra with dull, cretaceous flecks, scutellum partly exposed, and nearly obsolete mesometasternal process. Its size is similar to that of the smallest species of *Hoplopyga*, *Hoplopygothrix*, and *Neocorvicoana*.

Etymology. The epithet *Gymnephoria* is a combination of the Greek combining forms *gymnos*, meaning “bare or naked” in reference to the glabrous dorsal surface, and *phero*, meaning “to bear” in reference to bearing a glabrous dorsum. It is also a play on the names *Gymnetis* and *Euphoria* since *Gymnephoria* is clearly a member of the Gymnetini (produced pronotal basal lobe) but appears similar to some species of *Euphoria* in the Cetoniini by virtue of size, color, and cretaceous markings. The gender is feminine. It has nothing to do with, and is spelled differently than, the psychological term *gymnophoria*, meaning to be mentally undressed.

Gymnephoria spilota Ratcliffe, new species

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70C1EBCB-DC27-48F3-A352-816036582DE5
(Figs. 53–55)

Type Material. Holotype male, labeled “Mexico Monterrey / Siesta Trailer Park / 10-VII-69 // Coll: Ward, / Tenorio and / Bennett” and with my red holotype label. Paratype male labeled: “Mexico Km 1226 / Hwy 45, S. of / La Rosalana / 16-VII-69 // Coll: Ward, / Tenorio and / Bennett” and with my yellow paratype label. Holotype deposited at USNM, paratype in BCRC.

Description. Holotype Male. Length 11.5 mm; width across humeri 6.3 mm. Ground color black,

weakly shiny, and with chalky white vittae, flecks, or spots as follows: Head with 2 broad, longitudinal, parallel vittae extending from mesad of each eye to middle of clypeus. Pronotum with broad vitta along each lateral margin. Elytra with flecks, spots, and broken bands (Fig. 53). Mesepimeron chalky white on posterior half. Pygidium with suboval vitta on each side. Procoxa with small spot on side. Meso- and metafemora each with small spot on posterior margin on venter near apex. Metasternum with small spot on posterolateral corner. Sternites 1 (left side only) to 3 each with small spot on posterolateral corner; slightly larger spot on anterior margin of sternites 3–5 either side of middle. **Head:** Entire surface with moderately large, dense punctures, those on frons with moderately long, black setae. Clypeus subquadrate, apex truncate and distinctly reflexed. Interocular width equals about 6.0 transverse eye diameters. Antenna with 10 antennomeres, club distinctly longer than antennomeres 2–7. **Pronotum:** Surface with punctures moderate in size and density. Basomedian lobe distinct but covering less than half of scutellum. **Elytra:** Sutural and 2 discal costae each strongly elevated, apices of discal costae merging just before apical umbone. Surface between costae and on sides with punctures moderate in size and density. Apices at suture subquadrate. **Pygidium:** Surface with punctures moderate in size and density, some setigerous; seta minute, black; lateral angles and apex rugulose. Surface weakly convex in lateral view. **Venter:** Metasternum with large, dense, round, setigerous punctures; setae long, dark brown. Mesometasternal process short, not extending past mesocoxae, apex rounded. Abdominal sternites 1–6 each with moderately large, dense, setigerous punctures on lateral fifths; setae short, dense, dark brown. **Legs:** Protibia weakly tridentate, basal tooth nearly obsolete. **Parameres:** Form elongate in caudal view, subrectangular, lateral margins constricted at middle, apices bluntly rounded (Figs. 54–55).

Variation. Male (1 paratype). Length 12.2 mm; width across humeri 6.7 mm. As holotype except in the following respects: Dorsal surface with dark reddish brown ground color. **Elytra:** Apices each weakly produced into small, acute angle. **Pygidium:** Setae short, not minute. **Venter:** Metasternum on posterolateral corner with large, chalky white spot. Sternites 2–5 on lateral thirds each with large, transverse, chalky white vitta. Female remains unknown.

Etymology. The epithet is adjectival and derived from the Greek *spilotos*, meaning “flecked or spotted” in reference to the numerous, small, cretaceous flecks on the elytra. It is feminine to agree with the gender of the genus.

Distribution. *Gymnephoria spilota* is known only from Monterrey in northeastern Mexico and

Figs. 53–55. *Gymnephoria spilota*. **53)** Holotype, dorsal habitus; **54–55)** Parameres, caudal and lateral views, respectively.

Aguascalientes in central Mexico. I am unable to find a “La Rosalana” near km 1226 just south of Aguascalientes, although there is a short street named “Resolana” and a Pemex gas station at km 1226. I was unable to locate any of the collectors from 50 years ago to seek additional data.

Locality Records. MEXICO (2): AGUASCALIENTES (1): Hwy 45 S. of La Rosalana [sic] (km 1226). NUEVO LEÓN (1): Monterrey.

Temporal Distribution. July (2).

Diagnosis. In *gestalt*, *G. spilota* resembles some specimens of *E. lurida* or *E. sepulchralis* (both Cetoniini) because of size, color, and markings. *Gymnephoria spilota* is the only known species in its genus, and the generic characters will distinguish it from other Gymnetini that occur sympatrically, namely species of *Balsameda*, *Cotinis*, *Guatemalica*, *Gymnetina*, *Gymnetis*, *Halffterinetis*, *Hologymnetis*, and *Hoplopyga* (see key to genera). Its small size (less than 12.5 mm), opaque, dark reddish brown or black elytra

with dull, cretaceous flecks, partly exposed scutellum, and nearly obsolete mesometasternal process will distinguish it from other New World Gymnetini.

Natural History. There are no data associated with the specimens to indicate how they were collected or possibly on what, if any, flowers.

***Madiana* Ratcliffe and Romé, new genus**

Zoobank.org/urn:lsid:zoobank.org:act:0BCA66BA-B066-487C-93DC-DF9534F19CB6

Type Species. *Madiana brigitteae* Ratcliffe and Romé, new species, here designated.

Description. Form: Rhomboidal, sides slightly tapering from humeri towards apex of elytra, dorsum nearly flat. Color black, partially shiny, partially opaque. Length 16–17 mm. **Head:** Clypeal apex truncate and narrowly reflexed. Antenna with 10 antennomeres. **Pronotum:** Basomedian lobe strongly produced, lobe covering all but tip of

scutellum. Sides with broad marginal bead, anterior and basal margins lacking bead. **Elytra:** Widest at base, posthumeral emargination distinct. Bead present on lateral margins. Surface with rows of moderately large punctures and raised, parallel costae at suture and 2 on disc. **Pygidium:** Surface transversely strigose in males, concentrically rugose in females, weakly convex in both sexes. **Venter:** Mesometasternal process (lateral view) short, bluntly rounded and bulbous, projecting only slightly obliquely from ventral axis of body. **Legs:** Protibia tridentate in both sexes. Metatibia at apex subtruncate and with 2 long, slender spurs. **Parameres:** Form subrectangular in caudal view, flared on lateral edge at mid-shaft, with small angle or tooth apicolaterally, apices rounded.

Diagnosis. When Daniel Romé and his wife, Brigitte, first collected what is now the allotype of this species, they could not readily place it to a genus of cetonini. When I received the specimen for examination in March 2018, I could not place it to a known genus due, in part, because Daniel fell on the parcel on the way to the post office, and so the specimen was flattened and disarticulated. The discovery of a second specimen (the male holotype) led to further research to determine the identity of these specimens, including the possibility that they might have originally been from Africa or Asia and accidentally introduced into Martinique. My examination revealed a unique combination of character states for New World Gymnetini that were indicative of a new, undescribed genus and species that Romé and I describe here.

The only known species of *Madiana* is distinguished from species in other genera of New World Gymnetini by the following combination of characters: prominent basomedian pronotal lobe present (lobe covering less than half of scutellum in *Blaesia*, *Halffterinetis*, and *Gymnetina*; surface of head glabrous (setose in *Hoplopygothrix* and *Neocorvicoana*); head unarmed (head with horns, keel or lobes in *Balsameda*, *Chiriquibia* Bates, *Argyripa*, *Tiarocera*, *Heterocotinis*, *Allorrhina*, and *Cotinis*); clypeal apex truncate (emarginate or bilobed in *Jansonia*, *Amithao*, *Desicasta*, *Hadrosticka*, and *Guatemalica*); sutural apices of elytra quadrate (apices spinose in *Hoplopyga*); mesometasternal process short, bulbous, projecting only slightly from ventral axis of body (mesometasternal process usually large, extending moderately to strongly obliquely downwards from ventral axis of body in *Gymnetis* or process small, nearly flat and extending forwards in same plane or nearly so as ventral axis of body in *Howdenypa*); mesometasternal process with sparse setae (mesometasternal process with long, recumbent, yellow setae on metasternal part in *Macrocranius*); prosternum with distinct “throat spur” (lacking “throat spur” in *Hologymnetis*);

dorsal surface completely black (dorsal surface with contrasting pattern of cretaceous, ochre, orange, or yellow bands or dark “cloudings” on brown, piceous, grey, ochre, or yellowish green ground color in *Astroscara* and *Marmarina*); size small, length less than 20 mm (size large, greater than 22 mm in *Badelina*).

Only a few New World Gymnetini occur in the West Indies: *Hoplopyga antilliana* Ratcliffe (Grenada), *Gymnetis guadalupensis* Gory and Percheron (Guadeloupe), *Gymnetis lanius* (Linnaeus) (Jamaica, Cayman Islands), *Gymnetis marmorea* (Olivier) (possibly Dominica), *Gymnetis puertoricensis* Ratcliffe (Puerto Rico), *Gymnetis rudolphi* (Frölich) (St. Lucia, the Grenadines, Dominica), *Gymnetis stellata* (Latreille) (République Dominicaine), *Gymnetis sternalis* Chevrolat (Cuba), and *Gymnetis undata* (Olivier) (Hispaniola), but no gymnetine has ever been found in Martinique.

Etymology. Martinique may be a corruption of the Carib Indian name Madiana or Madinina, meaning “the Island of Flowers” (Cornevin 2018). The new generic name, *Madiana*, reflects this heritage and is feminine in gender.

***Madiana brigittae* Ratcliffe and Romé,
new species**

Zoobank.org/urn:lsid:zoobank.org:act:
96702B33-BBB3-4F0A-A7C3-D3A11B4299CA
(Figs. 56–59)

Type Material. Holotype male labeled “MARTINIQUE / Montagne du Vauclin / 60°52'49.05W, 14°33'27.98N / III-15-2018 / D. & B. Romé” and with our red holotype label. Allotype female with same data but III-1-2018 and with our red allotype label. Holotype and allotype deposited at the Museum National d'Histoire Naturelle, Paris, France.

Description. Holotype Male. Length 16.6 mm; width across humeri 9.8 mm. Color shiny black everywhere (Figs. 56–57) except basomedian pronotal lobe, elytra, and pygidium, which are dull black (almost with a “bloom”). **Head:** Surface glabrous, with large, dense, glabrous punctures. Clypeus (dorsal view) nearly square, lateral margins constricted inwards at base, apex truncate with apical rim narrowly reflexed. Eyes large, interocular width equals 2.5 transverse eye diameters. Antenna with 10 antennomeres, club slightly longer than antennomeres 2–7. **Pronotum:** Surface glabrous with large, moderately dense punctures. Sides with thick marginal bead. **Elytra:** Surface with distinct rows of large, glabrous, ocellate, u-shaped, round, or irregularly shaped punctures and elevated sutural costa and 2 elevated costae on disc. Discal costae parallel, terminating at prominent apical umbone; sutural costa distinct for its entire length. Surface behind and mesad of apical umbone rugose. Apices

Figs. 56–59. *Madiana brigitteae*. **56–57)** Holotype, dorsal and lateral habitus, respectively; **58–59)** Parameres, caudal and lateral views, respectively.

at suture quadrate. **Pygidium:** Surface with large, moderately dense, setigerous, transverse strigae; setae minute, pale. Profile weakly convex in lateral view. **Venter:** Setae tawny. Mesometasternal process (lateral view) short, bulbous, broadly rounded, slightly protruding obliquely from ventral plane of body (Fig. 57); apex (ventral view) broadly rounded. Abdominal sternites nearly smooth on central third, lateral thirds with punctures moderate in size and density. **Legs:** Protibia tridentate, teeth subequally spaced from one another. **Parameres:** Form subrectangular in caudal view, flared on lateral edge at mid-shaft, with small, laterally projecting angle (almost a tooth) just before apices, apices rounded (Figs. 58–59).

Allotype. Female. Length 17.0 mm; width across humeri 9.9 mm. As holotype except in the following respects: **Head:** Interocular width equals 2.0 transverse eye diameters. **Pygidium:** Surface completely, concentrically rugose. **Legs:** Protibia tridentate, basal tooth removed from other teeth. The allotype is severely broken and in several pieces.

Etymology. This species is named in honor of Brigitte Romé, co-collector of the type specimens of this new species and spouse of Daniel.

Distribution. *Madiana brigitteae* is known only from the island of Martinique in the Lesser Antilles.

Locality Records. **MARTINIQUE** (2): Montagne du Vauclin (Fig. 60).

Temporal Distribution. March (2).

Natural History. Martinique is a composite of four originally separate volcanic cones that now comprise a single island but only since the late Pliocene or Pleistocene (Bouysson *et al.* 1985; Maury *et al.* 1990). Martinique is surrounded by deep oceanic waters and never had a dry land connection

Fig. 60. Montagne du Vauclin, Martinique, type locality for *Madiana brigitteae*.

to other islands, even during the Pleistocene when there was a sea-level depression of 130 m (Donnelly 1988; Hedges 2001; Clark *et al.* 2009). Most biotic colonization occurred during the past three million years by overwater dispersal (Peck 2011), and pioneering organisms then maintained themselves or evolved in isolation.

The male holotype was found in a rotting tree trunk, and the female paratype was found in a tree stump (300 m elevation), thus suggesting that the larvae probably complete their life cycle in dead and decaying wood. Mount Vauclin (Fig. 60) is an old volcano that rises 504 m in elevation and covers 56 hectares. It is isolated in southern Martinique near the village of Le Vauclin. The mesophyllic forest on its slopes is stratified into different zones as a result of increasing elevation that influences temperature and rainfall. A number of endemic and rare plants are found here, which reflects their geographic isolation. *Madiana brigitteae* is an insect example of evolution in isolation resulting in a unique organism.

CHECKLIST OF THE NEW WORLD GYMNETINI

- Allorrhina Burmeister, 1842** [last revision: Ratcliffe 2015a]
Allorrhina carmelita (Burmeister, 1842)
Cotinis carmelita Burmeister, 1842
Cotinis amazonica Thomson, 1857
Cotinis brasiliensis Kraatz, 1898
Allorrhina cincta (Gory and Percheron, 1833)
Gymnetis cincta Gory and Percheron, 1833
Gymnetis cincta versicolor Moser, 1908
Allorrhina denotata Abadie and Ratcliffe, 2015a
Allorrhina menetriesii (Mannerheim, 1829) (Figs. 2–3)
Gymnetis menetriesii Mannerheim, 1829
Gymnetis rhinoceros Gory and Percheron, 1833
Gymnetis cornifrons Gory and Percheron, 1833
Gymnetis episcopalis Gory and Percheron, 1833
Allorrhina baeri Bourgoïn, 1911a
Allorrhina gounellei Bourgoïn, 1911b
Allorrhina nickerli Moser, 1911a
Allorrhina nigerrima (Burmeister, 1842)
Cotinis nigerrima Burmeister, 1842
Gymnetis lugubris Thomson, 1878
Allorrhina scabriuscula (Swederus, 1787) (Fig. 1)
Cetonia scabriuscula Swederus, 1787
Gymnetis concolor Gory and Percheron, 1833
Allorrhina soror Moser, 1911b
Allorrhina tridentata Moser, 1908
- Amithao Thomson, 1878** [last revision: Ratcliffe 2013a]
Melisictes Thomson, 1880
Hologymnia Schoch, 1895
Amithao albopictus Neervoort van der Poll, 1886b
Amithao anthracinus Ratcliffe, 2013 (Figs. 4–5)
Amithao cavifrons (Burmeister, 1842)
Cotinis cavifrons Burmeister, 1842
Amithao cotopaxicus Ratcliffe, 2017
Amithao decemguttatus (Waterhouse, 1876)
Gymnetis decemguttata Waterhouse, 1876
Amithao decemguttatus beinlingi Nonfried, 1894
Amithao erythropus (Burmeister, 1842)
Cotinis erythropus Burmeister, 1842
Cotinis moreleti Blanchard, 1850
Amithao splendens Nonfried, 1894
Desicasta nonfriedi Schoch, 1896a
Amithao erici Mitter, 2007
Amithao haematopus (Schaum, 1848) (Fig. 6)
Stethodesma haematopus Schaum, 1848
Amithao thomsoni (Janson, 1878)
Amithao incertus (Gory and Percheron, 1833)
Gymnetis incerta Gory and Percheron, 1833
Amithao lafertei (Thomson, 1860)
Cotinis lafertei Thomson, 1860
Amithao niveosparsus Moser, 1913
Amithao sparsus Casey, 1915
Amithao marginicollis (Burmeister, 1842) (Fig. 8)
Gymnetis marginicollis Burmeister, 1842
Clinteria undulata Schoch, 1895
Amithao metallicus (Janson, 1885)
Desicasta metallica Janson, 1885
Amithao pyrrhonotus (Burmeister, 1842)
Gymnetis pyrrhonota Burmeister, 1842
Amithao staudingeri Schürhoff, 1935
Amithao tristis (Fabricius, 1775) (Fig. 7)
Cetonia tristis Fabricius, 1775
Amithao spence (Gory and Percheron, 1833)
- Argyripa Thomson, 1878** [last revision/synopsis: Ratcliffe 1978; Arnaud 1988]
Argyripa anomala (Bates, 1872) (Fig. 9)
Allorrhina anomala Bates, 1872
Argyripa lansbergei (Sallé, 1857)
Allorrhina lansbergei Sallé, 1857
Allorrhina hypoglaucia Westwood, 1874
Argyripa moroni Arnaud, 1988
Argyripa porioni Arnaud, 1988
Argyripa subfasciata Ritsema, 1885 (Fig. 10)
Argyripa subfasciata purpurascens Schoch, 1897
- Astroscara Schürhoff, 1937** [last synopsis: Ratcliffe 2014b]
Astroscara flavoradiata (Moser, 1918) (Fig. 11)
Gymnetis flavoradiata Moser, 1918
- Badelina Thomson, 1880** [last revision: Ratcliffe 2014a]
Badelina aterrima (Gory and Percheron, 1833)
Gymnetis aterrima Gory and Percheron, 1833
Badelina pygidialis (Thomson, 1878) (Fig. 12)
Gymnetis pygidialis Thomson, 1878

- Balsameda Thomson, 1880** [last revision: Ratcliffe 2014a])
Balsameda adpersa (Sharp, 1877)
Cotinis adpersa Sharp, 1877
Balsameda monzoni Ratcliffe, 2014a
Balsameda porioni Ratcliffe, 2014a
Balsameda pulverulenta (Burmeister, 1842)
 (Figs. 13–14)
Cotinis pulverulenta Burmeister, 1842
Cotinis gracilis Sharp, 1877
Gymnetis auropecta Nonfried, 1891
- Blaesia Burmeister, 1842** [last synopsis: Ratcliffe 2010]
Blaesia atra Burmeister, 1842 (Figs. 15–17)
Blaesia subrugosa Moser, 1905
- Chiriquibia Bates, 1889** [last synopsis: Ratcliffe 2014b]
Chiriquibia insignis (Janson, 1888) (Figs. 18–19)
Allorhina insignis Janson, 1888
- Cotinis Burmeister, 1842** [last revision/synopsis: Goodrich 1966; Gasca-Álvarez and Deloya 2015; Gasca-Álvarez 2017]
Latemnis Thomson, 1880
Cotinorrhina Schoch, 1895
Cotinis aliena Woodruff, 2008
Cotinis antonii Dugés, 1878
Cotinis senex Janson, 1880
Cotinis barthelemyi (Gory and Percheron, 1833)
Gymnetis barthelemyi Gory and Percheron, 1833
Cotinis beraudi Delgado, 1998
Cotinis boylei Goodrich, 1966
Cotinis columbica Burmeister, 1842
Cotinis fuscopicea Goodrich, 1966
Cotinis ibarra Deloya and Ratcliffe, 1988
Cotinis impia (Fall, 1905)
Gymnetis impia Fall, 1905
Cotinis laticornis Bates, 1889
Cotinis latifrons Schoch, 1895
Cotinis lebasii (Gory and Percheron, 1833)
Gymnetis lebasii Gory and Percheron, 1833
Cotinis lebasii panamensis Casey, 1915
Cotinis mutabilis (Gory and Percheron, 1833)
 (Figs. 20–21)
Gymnetis mutabilis Gory and Percheron, 1833
Gymnetis atrata Gory and Percheron, 1833
Gymnetis nigrobrunnea Gory and Percheron, 1833
Gymnetis mexicana Gory and Percheron, 1833
Gymnetis palliata Gory and Percheron, 1833
Cotinis sobrina Gory and Percheron, 1833
Cotinis malinus Janson, 1880
Cotinis mutabilis var. *aurantiaca* Bates, 1889
Cotinis mutabilis var. *cuprascens* Bates, 1889
Cotinis mutabilis var. *cuprascens* Bates, 1889
Cotinis mutabilis var. *intergenae* Bates, 1889
Cotinis mutabilis var. *robusta* Bates, 1889
Cotinis mutabilis var. *subcastanea* Bates, 1889
Cotinis sobrina var. *schafraneki* Nonfried, 1894
Cotinis mutabilis var. *atra* Kraatz, 1898
Cotinis mutabilis var. *atropurpurea* Kraatz, 1898
Cotinis mutabilis var. *cuprea* Kraatz, 1898
Cotinis mutabilis var. *nigrovariegata* Kraatz, 1898
Cotinis abdominalis abdominalis Casey, 1915
Cotinis abdominalis discolor Casey, 1915
Cotinis arizonica Casey, 1915
Cotinis capito Casey, 1915
Cotinis mutabilis ovicornuta Casey, 1915
Cotinis mutabilis var. *piciventris* Kraatz, 1898
Cotinis obliqua obliqua Casey, 1915
Cotinis obliqua coahuilae Casey, 1915
Cotinis obliqua commiscens Casey, 1915
Cotinis obliqua viridacauda Casey, 1915
Cotinis texana Casey, 1915
Cotinis lemoulti Antoine, 2007
- Cotinis nitida** (Linnaeus, 1764)
Scarabaeus nitidus Linnaeus, 1764
Cotinis angustula Casey, 1915
Cotinis debiliceps Casey, 1915
Cotinis longitarsis Casey, 1915
Cotinis longitarsis seriella Casey, 1915
Cotinis longula Casey, 1915
Cotinis nitida ornata Casey, 1915
Cotinis nitida pygidialis Casey, 1915
Cotinis nitida tibialis Casey, 1915
Cotinis parvula Casey, 1915
Cotinis nitida brunnea Hatch, 1930
- Cotinis olivia** Bates, 1889
Cotinis orientalis Deloya and Ratcliffe, 1988
Cotinis patricialvarezae Gasca-Álvarez and Deloya, 2015a
Cotinis pauperula Burmeister, 1847
Cotinis pokornyii Deloya, 1995
Cotinis polita Janson, 1876
Cotinis producta Bates, 1889
Cotinis pueblensis Bates, 1889
Cotinis punctatostriata Bates, 1889
Cotinis rufipennis Bates, 1889
Cotinis sinitoc Deloya, Ibáñez-Bernal, and Nogueira, 2000
Cotinis sphyracera Deloya and Ratcliffe, 1988
Cotinis subviolacea (Gory and Percheron, 1833)
Gymnetis subviolacea Gory and Percheron, 1833
Cotinis plicatipennis Blanchard, 1850
Cotinis viridicyanea (Perbosc, 1839)
Gymnetis viridicyanea Perbosc, 1839
- Desicasta Thomson, 1878** [last revision: Ratcliffe 2013b]
Moscheuma Thomson, 1880

- Desicasta lobata* (Olivier, 1789)** (Fig. 23)
Cetonia lobata Olivier, 1789
Cetonia coracina Herbst, 1790
Desicasta sculptilis Thomson, 1878
Moscheuma sebosa Neervoort van de Poll, 1886b
Moscheuma opaca Kraatz, 1898
***Desicasta purpurascens* (Schoch, 1898)**
Moscheuma purpurascens Schoch, 1898
***Desicasta reichei* (Thomson, 1860)** (Fig. 22)
Stethodesma reichei Thomson, 1860
Moscheuma laevicostata Neervoort van de Poll, 1886b
- Guatemalica* Neervoort van de Poll, 1886a** [last synopsis: Ratcliffe 2014a]
***Guatemalica fuliginosa* (Nonfried, 1894)**
Gymnetis fuliginosa Nonfried, 1894
***Guatemalica hueti* (Chevrolat, 1870)** (Figs. 24–25)
Allorrhina hueti Chevrolat, 1870
- Gymnephoria* Ratcliffe, 2019**
***Gymnephoria spilota* Ratcliffe, 2019** (Figs. 26, 53–55)
- Gymnetina* Casey, 1915** [last revision: Ratcliffe and Warner 2011]
***Gymnetina alboscipita* (Janson, 1878)**
Gymnetis alboscipita Janson, 1878
***Gymnetina borealis* Warner and Ratcliffe, 2011**
***Gymnetina cretacea cretacea* (LeConte, 1863)** (Fig. 27)
Gymnetis cretacea LeConte, 1863
***Gymnetina cretacea sundbergi* Warner and Ratcliffe, 2011**
***Gymnetina grossepunctata* Ratcliffe and Warner, 2011**
***Gymnetina howdeni* Warner and Ratcliffe, 2011**
***Gymnetina salicis* (Bates, 1889)**
Cotinis salicis Bates, 1889
Amithao distigma Schoch, 1898
- Gymnetis* MacLeay, 1819** [last revision: Ratcliffe 2018]
***Gymnetis albomaculata* Blanchard, 1850**
***Gymnetis amazona* Ratcliffe, 2018**
***Gymnetis aurantivittae* Ratcliffe, 2018**
***Gymnetis aureotorquata* Bourgoin, 1912**
Gymnetis luctuosa Bourgoin, 1916
***Gymnetis bajula bajula* (Olivier, 1789)**
Cetonia bajula Olivier, 1789
Gymnetis perplexa Dejean, 1833, *nomen nudum*
Gymnetis glauca Gory and Percheron, 1833
Gymnetis perplexa Burmeister, 1842
Gymnetis vermiculea Burmeister, 1842
Gymnetis banghaasi Schürhoff, 1937
- Gymnetis bajula wollastonii* Schaum, 1848**
***Gymnetis balzarica* Janson, 1880**
***Gymnetis bomplandi* Schaum, 1844**
***Gymnetis bouvieri* Bourgoin, 1912**
***Gymnetis bruchi* Moser, 1910**
Aemilus wagneri Le Mout, 1939
***Gymnetis buckleyi* (Janson, 1879)** (Fig. 28)
Cetonia buckleyi Janson, 1879
***Gymnetis carbo* (Schürhoff, 1937)**
Paragymnetis carbo Schürhoff, 1937
***Gymnetis cerdai* Antoine, 2001**
***Gymnetis chalcipes* Gory and Percheron, 1833**
Scarabaeus tonkaea Voet, 1779, *nomen nudum*
Gymnetis irregularis Gory and Percheron, 1833
Gymnetis similis Gory and Percheron, 1833
***Gymnetis chevrolati* Gory and Percheron, 1833**
Gymnetis catharinae Schürhoff, 1937
***Gymnetis cordobana* Schürhoff, 1937**
***Gymnetis coturnix* Burmeister, 1842**
Gymnetis chontalensis Janson, 1875
Gymnetis nigrina Bates, 1889
***Gymnetis cupriventris cupriventris* Janson, 1880**
***Gymnetis cupriventris kerremansi* Neervoort van de Poll, 1886b**
Gymnetis guntheri Schürhoff, 1937
***Gymnetis difficilis* Burmeister, 1842**
***Gymnetis drogoni* Ratcliffe, 2018**
***Gymnetis flava* (Weber, 1801)**
Cetonia flava Weber, 1801
Gymnetis cincta Perty, 1830
Gymnetis pallidipennis Blanchard, 1850
Gymnetis limbolaniata Pouillaude, 1913
***Gymnetis flaveola* (Fabricius, 1801)** (Fig. 29)
Cetonia flaveola Fabricius, 1801
Gymnetis shistacea Burmeister, 1847
Gymnetis batesii Thomson, 1857
Gymnetis scapularis Janson, 1880
Gymnetis waehneri Schürhoff, 1937
Gymnetis flavinotus Schürhoff, 1937
***Gymnetis flavocincta* Bates, 1891**
Gymnetis bogotensis Pouillaude, 1913
Gymnetis limbata Pouillaude, 1913
Gymnetis ecuadoriensis Pouillaude, 1913
***Gymnetis flavomarginata* Blanchard, 1842** (Fig. 30)
***Gymnetis goryi* Janson, 1877** (Fig. 31)
***Gymnetis guadalupensis* Gory and Percheron, 1833**
***Gymnetis hebraica* (Drapiez, 1820)**
Cetonia hebraica Drapiez, 1820
Gymnetis depauperata Gory and Percheron, 1833
***Gymnetis hepatica* Di Iorio, 2013**
***Gymnetis hieroglyphica* Vigors, 1825**
***Gymnetis holosericea* (Olivier, 1789)** (Fig. 32)
Scarabaeus holosericus Voet, 1779, *nomen nudum*

- Cetonia holosericea* Olivier, 1789
Cetonia circumdata Schönherr, 1817
Gymnetis magnifica Gory and Percheron, 1833
Gymnetis sexmaculata Blanchard, 1850
Gymnetis xanthospila Schaum, 1844
Gymnetis mathani Pouillaude, 1913
Gymnetis olivina Pouillaude, 1913
Gymnetis distincta Pouillaude, 1913
Gymnetis chanchamayensis Pouillaude, 1913
***Gymnetis immunda* Schaum, 1844**
***Gymnetis lanius* (Linnaeus, 1767)**
Scarabaeus lanius Linnaeus, 1767
Scarabaeus pullus Voet, 1779, *nomen nudum*
***Gymnetis litigiosa* Gory and Percheron, 1833**
Gymnetis inquinata Thomson, 1878
***Gymnetis margineguttata* Gory and Percheron, 1833**
Gymnetis schaueri Schürhoff, 1937
Gymnetis scheini Schürhoff, 1937
***Gymnetis marmorea* (Olivier, 1789)**
Scarabaeus pulcher Swederus, 1787, *nomen oblitum*
Cetonia marmorea Olivier, 1789
Cetonia tristis Olivier, 1789
Cetonia picta Olivier, 1789
Gymnetis dysoni White, 1847, *nec* Schaum 1848
Gymnetis nigricollis Kraatz, 1888
***Gymnetis merops* Ratcliffe, 2018**
***Gymnetis pantherina* Blanchard, 1842**
Gymnetis alauda Burmeister, 1842
Gymnetis meleagris Burmeister, 1842
Gymnetis lyncea Erichson, 1847
Gymnetis lutulenta Kirsch, 1870
Gymnetis pelochroma Kirsch, 1873
Gymnetis fabaria Janson, 1880
Gymnetis granadensis Kraatz, 1888
Gymnetis candida Kraatz, 1888
Gymnetis pallescens Kraatz, 1888
Gymnetis zikani Moser, 1921
Paragymnetis rubrocincta Schürhoff, 1937
***Gymnetis pardalis* Gory and Percheron, 1883**
Gymnetis crypturus Burmeister, 1842
***Gymnetis phasianus* Burmeister, 1842**
***Gymnetis poecila* Schaum, 1848**
***Gymnetis pudibunda* Burmeister, 1866**
Gymnetis pudibunda var. *porteri* Dallas, 1930
***Gymnetis puertoricensis* Ratcliffe, 2018**
***Gymnetis punctipennis* Burmeister, 1844**
Gymnetis cervina Schaum, 1845, *nomen nudum*
Paragymnetis theresana Schürhoff, 1937
***Gymnetis radiicollis* Burmeister, 1847**
Gymnetis radiosicollis Schürhoff, 1937
***Gymnetis ramulosa* Bates, 1872 (1869)**
Gymnetis radícula Schoch, 1896b
Gymnetis ramifera Schaeffer, 1905
Gymnetis colombiana Pouillaude, 1913
Gymnetis balteata Casey, 1915
***Gymnetis rhaegali* Ratcliffe, 2018**
***Gymnetis rudolphi* (Frölich, 1792)**
Cetonia rudolphi Frölich, 1792
Gymnetis luciae Blanchard, 1850, *nomen nudum*
***Gymnetis rufilatrix* (Illiger, 1800)**
Cetonia rufilatrix Illiger, 1800
***Gymnetis sallei* Schaum, 1849** [not 1843]
Gymnetis callispila Bates, 1889
***Gymnetis stellata* (Latreille, 1813)**
Cetonia stellata Latreille, 1813
Macronota radiata Wiedemann, 1824
***Gymnetis sternalis* Chevrolat, 1865**
***Gymnetis strigosa* (Olivier, 1789)**
Scarabaeus histrio ruber Voet, 1779, *nomen nudum*
Cetonia strigosa Olivier, 1789
Gymnetis fulgurata Gory and Percheron, 1833
Gymnetis mediana Kraatz, 1888
***Gymnetis subpunctata* Westwood, 1874**
Gymnetis dispersa Janson, 1880
Gymnetis discolor Janson, 1880
Gymnetis variabilis Moser, 1921
Gymnetis kuntzeni Schürhoff, 1937
***Gymnetis thula* Ratcliffe, 2018**
***Gymnetis undata* (Olivier, 1789)**
Cetonia undata Olivier, 1789
Macronota geographica Sturm, 1826, *nomen nudum*
Gymnetis similis Burmeister, 1843 [published as a synonym]
Paragymnetis burmeisteri Schürhoff, 1937
***Gymnetis vandepolli* Bates, 1889**
***Gymnetis viserioni* Ratcliffe, 2018**
***Hadrosticta* Kraatz, 1892** [last synopsis: Ratcliffe 2014b]
***Hadrosticta viridiflua* Kraatz, 1892** (Fig. 33)
***Halffterinetis* Morón and Nogueira, 2007** [last synopsis: Ratcliffe 2010]
***Halffterinetis gonzaloi* Morón and Nogueira, 2007** (Fig. 34)
***Halffterinetis violetae* Morón and Nogueira, 2007**
***Heterocotinis* Martínez, 1948** [last synopsis: Ratcliffe 2014a]
***Heterocotinis semiopaca* (Moser, 1907)** (Fig. 35)
Cotinis semiopaca Moser, 1907
Gymnetis platensis Brèthes, 1925
Gymnetis platensis var. *tandilensis* Brèthes, 1925
***Heterocotinis terminata* (Gory and Percheron, 1833)** (Fig. 36)
Gymnetis terminata Gory and Percheron, 1833
Gymnetis smaragdinea Gory and Percheron, 1833
Gymnetis klugi Gory and Percheron, 1833
Cotinis nitidicollis Moser, 1907

- Hologymnetis Martínez, 1949** [last revision/synopsis: Ratcliffe and Deloya 1992; Gasca and Deloya 2015]
Cineretis Krikken, 1984
- Hologymnetis argenteola (Bates, 1889)**
Gymnetis argenteola Bates, 1889
Gymnetis argenteola laetula Casey, 1915
- Hologymnetis cinerea (Gory and Percheron, 1833)** (Figs. 37–38)
Gymnetis cinerea Gory and Percheron, 1833
Gymnetis punctata Blanchard, 1850
Gymnetis uniformis Blanchard, 1850
Gymnetis cuneata Casey, 1915
Gymnetis lobiculata Casey, 1915
Gymnetis simulans Casey, 1915
Gymnetis aequalis Casey, 1915
- Hologymnetis kinichahau Ratcliffe and Deloya, 1992**
- Hologymnetis margaritis (Bates, 1889)**
Gymnetis margaritis Bates, 1889
- Hologymnetis moroni Ratcliffe and Deloya, 1992**
- Hologymnetis reyesi Gasca-Álvarez and Deloya, 2015b**
- Hologymnetis undulata (Vigors, 1825)**
Cetonia undulata Vigors, 1825
Gymnetis consularis Gory and Percheron, 1833
- Hologymnetis vulcanorum Ratcliffe and Deloya, 1992**
- Hoplopyga Thomson, 1880** [last revision: Shaughney and Ratcliffe 2015]
Hoplopyga aequatorialis (Moser, 1918)
Gymnetis aequatorialis Moser, 1918
- Hoplopyga albiventris (Gory and Percheron, 1833)**
Gymnetis albiventris Gory and Percheron, 1833
Gymnetis fusciorubra Gory and Percheron, 1833
- Hoplopyga antilliana Ratcliffe, 2012**
- Hoplopyga boliviensis (Moser, 1918)**
Gymnetis boliviensis Moser, 1918
- Hoplopyga brasiliensis (Gory and Percheron, 1833)**
Gymnetis brasiliensis Gory and Percheron, 1833
Gymnetis prothoracica Thomson, 1878
- Hoplopyga cerdani Antoine, 1998**
- Hoplopyga foeda (Schaum, 1848)**
Gymnetis foeda Schaum, 1848
Gymnetis lucidiventris Thomson, 1878
- Hoplopyga gosseti Antoine, 2008**
- Hoplopyga liturata (Olivier, 1789)** (Fig. 39)
Scarabaeus pennicrusta Voet, 1776, *nomen nudum*
Cetonia liturata Olivier, 1789
Gymnetis spinosa Fischer von Waldheim, 1823
Gymnetis hamata Fauvel, 1860
Gymnetis spurca Janson, 1880
- Hoplopyga marginesignata (Gory and Percheron, 1833)**
Gymnetis marginesignata Gory and Percheron, 1833
Gymnetis fumata Janson, 1880
- Hoplopyga miliaris (Gory and Percheron, 1833)**
Gymnetis miliaris Gory and Percheron, 1833
Gymnetis fodina Gory and Percheron, 1833
Gymnetis suasa Gory and Percheron, 1833
- Hoplopyga miniata (Blanchard, 1847)**
Gymnetis miniata Blanchard, 1847
- Hoplopyga multipunctata (Gory and Percheron, 1833)**
Gymnetis multipunctata Gory and Percheron, 1833
Hoplopyga [sic] *multiguttata* Schoch, 1895
- Hoplopyga ocellata (Gory and Percheron, 1833)**
Gymnetis ocellata Gory and Percheron, 1833
- Hoplopyga peruana (Moser, 1912)**
Gymnetis peruana Moser, 1912
- Hoplopyga pseudomiliaris Shaughney and Ratcliffe, 2015**
- Hoplopyga ravidia (Janson, 1881)**
Gymnetis ravidia Janson, 1881
- Hoplopyga riparia Shaughney and Ratcliffe, 2015**
- Hoplopyga sculptiventris (Thomson, 1878)**, *incertae sedis*, possibly melanistic *H. boliviensis*
Gymnetis sculptiventris Thomson, 1878
- Hoplopyga singularis (Gory and Percheron, 1833)**
Gymnetis singularis Gory and Percheron, 1833
Gymnetis monacha Gory and Percheron, 1833
Gymnetis rubida Gory and Percheron, 1833
Hoplopyga corumbana Schürhoff, 1942
- Hoplopyga suilla (Janson, 1881)**
Gymnetis suilla Janson, 1881
- Hoplopygothrix Schürhoff, 1933** [last revision: Ratcliffe 2005, 2011]
Hoplopygothrix atropurpurea (Schaum, 1841) (Figs. 40–41)
Gymnetis atropurpurea Schaum, 1841
Gymnetis fulvohirta Moser, 1910
Gymnetis atropurpurea nigroscutellaris Moser, 1910
Gymnetis rugosa Bourgoin, 1916
- Hoplopygothrix boliviensis Ratcliffe, 2011**
- Howdenypa Arnaud, 1993** [last revision/synopsis: Ratcliffe 1978; Arnaud 1988, 1993]
Howdenia Arnaud, 1988 (preoccupied)
- Howdenypa gloriosa (Ratcliffe, 1978)** (Fig. 42)
Argyripa gloriosa Ratcliffe, 1978
- Jansonia Schürhoff, 1937** [last synopsis: Ratcliffe 2014b]

- Jansonella* Blackwelder, 1944
***Jansonia anceps* (Janson, 1875)** (Fig. 43)
Gymnetis anceps Janson, 1875
- Macrocranius* Schürhoff, 1935** [last synopsis: Ratcliffe 2014b]
***Macrocranius similis* Schürhoff, 1935** (Figs. 44–45)
- Madiana* Ratcliffe and Romé, 2019**
***Madiana brigitteae* Ratcliffe and Romé, 2019** (Figs. 46, 56–59)
- Marmarina* Kirby, 1827** [last revision: Ratcliffe 2015b]
Maculinetis Schürhoff, 1937
***Marmarina argentina* (Moser, 1917)** (Fig. 47)
Gymnetis argentina Moser, 1917
***Marmarina insculpta* (Kirby, 1819)** (Fig. 48)
Cetonia insculpta Kirby, 1819
Cetonia margaratacea Germar, 1824
Cetonia scutellata Perty, 1830
Marmarina nigrorubra Schürhoff, 1937
***Marmarina maculosa* (Olivier, 1789)**
Cetonia maculosa Olivier, 1789
Cetonia irrorata Olivier, 1789
Cetonia graculus Fabricius, 1792
Gymnetis apiata Burmeister, 1842
Gymnetis punctatissima Burmeister, 1842
Gymnetis meticulosa Thomson, 1878
Gymnetis submaculosa Thomson, 1878
***Marmarina parvula* Ratcliffe, 2015**
***Marmarina tigrina* (Gory and Percheron, 1833)** (Fig. 49)
Gymnetis tigrina Gory and Percheron, 1833
Gymnetis albosparsa Blanchard, 1847
Gymnetis touchardi Blanchard, 1847
Gymnetis strobili Burmeister, 1866
Marmarina litorea Schürhoff, 1937
- Neocorvicoana* Ratcliffe and Micó, 2001** [last revision: Ratcliffe and Micó 2001]
Heteropodia Schürhoff, 1933, *nomen nudum*
Corvicoana Strand, 1934, *nomen nudum*
Heteropodetis Schürhoff, 1937, *nomen nudum*
***Neocorvicoana chalybea* (Blanchard, 1850)**
Gymnetis chalybea Blanchard, 1850
Heteropodia suavis Schürhoff, 1933
Heteropodia castanea Schürhoff, 1933
***Neocorvicoana reticulata* (Kirby, 1818)** (Figs. 50–51)
Cetonia reticulata Kirby, 1818
Gymnetis anoguttata Gory and Percheron, 1833
Gymnetis carbonaria Gory and Percheron, 1833
Gymnetis varia Gory and Percheron, 1833
***Neocorvicoana tricolor* Schürhoff, 1933**
- Tiarocera* Burmeister, 1842** [last synopsis: Ratcliffe 2014b]

- Tiarocera cornuta* (Gory and Percheron, 1833)** (Fig. 52)
Gymnetis cornuta Gory and Percheron, 1833

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REFERENCES CITED

- Antoine, P. 1998.** Quelques espèces nouvelles ou peu connues de la famille des Cetoniidae VI (Coleoptera, Cetoniidae). *Coléoptères* 4: 65–84.
- Antoine, P. 2001.** Contribution à la connaissance des Gymnetini (Coleoptera, Cetoniidae). *Coléoptères* 7: 113–136.
- Antoine, P. 2007.** Un nouveau *Cotinis* Burmeister, 1842, du Panama (Coleoptera, Cetoniidae). *Coléoptères* 13: 47–50.
- Antoine, P. 2008.** Contribution à la connaissance du genre *Hoplopyga* J. Thomson (Coleoptera, Cetoniidae). *Coléoptères* 14: 241–256.
- Arnaud, P. 1988.** Les espèces du genre *Argyripa* Thomson (Col. Cetoniinae). *Sciences Nat* 57: 25–28.
- Arnaud, P. 1993.** Note rectificative. *Sciences Nat* 78: 28.
- Bates, H. W. 1872 [1869].** New species of Coleoptera from Chontales, Nicaragua. *Transactions of the Entomological Society of London* 1869: 383–389.
- Bates, H. W. 1889.** Fam. Dynastidae (continued), Fam. Cetoniidae, Supplement [pp. 337–416]. *In: Biologia Centrali-Americana*. Insecta, Coleoptera. Volume 2, Part 2 (F. D. Godman and O. Salvin, editors). Taylor and Francis, London, UK.
- Bates, H. W. 1891.** Coleoptera [pp. 7–39]. *In: Supplementary Appendix to Travels Amongst the Great Andes of the Equator* (E. Whymper, editor). John Murray, London, UK.
- Blackwelder, R. E. 1944.** Checklist of the coleopterous insects of Mexico, Central America, the West Indies, and South America, part 2. *Bulletin of the United States National Museum* 185: 189–341.
- Blanchard, E. 1842.** Voyage dans l'Amerique Méridionale (le Brésil, la République Orientale de l'Uruguay, la République de Chili, la République de Bolivie, la

- République du Pérou), Exécuté Pendant les Années 1826, 1827, 1828, 1829, 1830, 1831, 1832 et 1833, par Alcide d'Orbigny. Volume 6, Part 2 (Insectes). Plates 11–12. Paris, France.
- Blanchard, E. 1847.** Famille des Cétoniens [pp. 193–194]. *In*: Voyage dans l'Amérique Méridionale (le Brésil, la République Orientale de l'Uruguay, la République du Chili, la République de Bolivie, la République du Pérou), Exécuté Pendant les Années 1826, 1827, 1828, 1829, 1830, 1831, 1832 et 1833, par Alcide d'Orbigny. Volume 6, Part 2 (Insectes) (E. Blanchard and E. Brullé, editors). Levrault, Paris, France.
- Blanchard, E. 1850.** Ordre des Coloptera. 1^{re} Famille – Scarabaeidae. 1^{re} Tribu – Cetoniinae [pp. 1–51]. *In*: Museum d'Histoire Naturelle de Paris. Catalogue de la Collection Entomologique. Classe des Insectes. Ordre des Coleopteres, Tome 1 (H. Milne-Edwards, E. Blanchard, and H. Lucas, editors). Gide et Baudry, Paris, France.
- Bourgoin, A. 1911a.** Description de deux espèces nouvelles appartenant au genre *Allorrhina* (Col., Scarabaeidae). Bulletin de la Société Entomologique de France 1911: 133–135.
- Bourgoin, A. 1911b.** Description d'une espèce nouvelle du genre *Allorrhina* Burm. (Col., Scarabaeidae). Bulletin de la Société Entomologique de France 1911: 230–231.
- Bourgoin, A. 1912.** Description d'une espèce nouvelle du genre *Gymnetis* MacLeay (Col., Scarabaeidae). Bulletin de la Société Entomologique de France 1912: 42–44.
- Bourgoin, A. 1916.** Description de deux *Gymnetis* nouveaux du Brésil. Bulletin de la Société Entomologique de France 1916: 198–200.
- Bouysse, P., D. Westercamp, P. Andreieff, J. C. Baubron, and G. Scholari. 1985.** Le volcanisme sous-marin Néogène récent au large des côtes Caraïbes des Antilles françaises. Relations avec le volcanisme à terre de évolution du front volcanique. Service Géologique National 1985 (Géologie de la France, Orleans, France): 101–114.
- Brèthes, J. 1925.** Nouveaux coléoptères sudaméricains. Nunquam Otiosus 4: 11–16.
- Burmeister, H. 1842.** Handbuch der Entomologie, Volume 3. T.E.F. Enslin, Berlin, Germany.
- Burmeister, H. 1844.** Handbuch der Entomologie, Volume 4. T.E.F. Enslin, Berlin, Germany.
- Burmeister, H. 1847.** Handbuch der Entomologie, Volume 5. T.E.F. Enslin, Berlin, Germany.
- Burmeister, D. G.[sic]. 1866.** Coleópteros lamellicornes melitófidos de las provincias Argentinas. Revista del Sociedad de Farmacéutica de Argentina 1866: 573–577.
- Casey, T. L. 1915.** Memoirs on the Coleoptera 6: 1–394.
- Chevrolat, A. 1865.** Notes, synonymies et descriptions d'espèces nouvelles. Annales de la Société Entomologique de France (Series 4) 5: 21–36.
- Chevrolat, A. 1870.** Description de six coléoptères exotiques. Annales de la Société Entomologique de Belgique 14: 5–8.
- Clark, P. U., A. S. Dyke, J. D. Shakun, A. E. Carlson, J. Clark, B. Wohlfarth, J. X. Mitrovica, S. W. Hoestetter, and A. M. McCabe. 2009.** The last glacial maximum. Science 325: 710–714.
- Cornevin, R. 2018.** Martinique. Overseas Department, France. Encyclopedia Britannica online. www.britannica.com/place/Martinique (accessed 24 April 2018).
- Dallas, E. D. 1930.** *Gymnetis pudibunda* Burm. var. *porteri*, nov. var. Revista Chilena de Historia Natural 34: 11–12.
- Dejean 1833.** Catalogue de la collection de coléoptères de M. le Baron Dejean. Livraison 2, pp. 97–176. Méquignon-Marvis Père et Fils, Paris, France.
- Delgado, L. 1998.** A new Mexican species of *Cotinis* (Coleoptera, Melolonthidae). Revista Brasileira de Entomologia 41: 451–452.
- Deloya, C. 1995.** A new species of *Cotinis* (*Cotinis*) Burmeister from Mexico (Coleoptera: Melolonthidae, Cetoniinae) The Coleopterists Bulletin 49: 149–152.
- Deloya, C., S. Ibáñez-Bernal, and G. Nogueira. 2000.** A new species of *Cotinis* (*Cotinis*) (Coleoptera: Melolonthidae) and a key for the identification of Mexican species. Entomological News 111: 171–176.
- Deloya, A. C., and B. C. Ratcliffe. 1988.** A synopsis of the genus *Cotinis* in Mexico with description of three new species (Coleoptera: Scarabaeidae: Cetoniinae). Acta Zoológica Mexicana 28: 1–52.
- Di Iorio, O. 2013.** A review of the Cetoniinae (Coleoptera: Scarabaeidae) from Argentina and adjacent countries: Systematics and geographic distributions. Zootaxa 3668: 1–87.
- Donnelly, T. W. 1988.** Geologic constraints on Caribbean biogeography [pp. 15–37]. *In*: Zoogeography of Caribbean Insects (J. K. Liebherr, editor). Comstock Publishing Associates, Cornell University Press, Ithaca, NY.
- Drapiez, P. A. J. 1820.** Description de huit espèces d'insectes nouveaux. Annales Générales des Sciences Physiques 5: 117–123, plate 72.
- Dugés, E. 1878.** Descripción de coleópteros indígenas. La Naturaleza 4: 169–188.
- Erichson, W. F. 1847.** *Conspectus insectorum coleopterorum quae in Republica Peruana observata sunt*. Archiv für Naturgeschichte 13: 67–185.
- Fabricius, J. C. 1775.** *Systema Entomologiae*. Flensburg and Leipzig, Germany.
- Fabricius, J. C. 1792.** *Entomologia Systematica*, Volume 1, part 2. Copenhagen, Denmark.
- Fabricius, C. 1801.** *Systema Eleutheratorum Secundum Ordines, Genera, Species Adiectis Synonymis, Locis, Observationibus, Descriptionibus Tomus 1*. Bibliopolii Academici Novi, Kiel, Germany.
- Fall, H. C. 1905.** New species of Coleoptera from the Southwest. The Canadian Entomologist 37: 270–276.
- Fauvel, M. A. 1860.** Catalogue des insectes recueillis a la Guyane Française par M. E. Déplanche, chirurgien auxiliaire de la marine impériale, pendant la campagne de l'avisoir à vapeur le Rapide, années 1854–55–56. Bulletin de la Société Linnéenne de Normandie 5: 305–306.
- Fischer von Waldheim, G. 1823.** *Coleoptera quaedam exotica descripta*. Mémoires de la Société Naturalistes de Moscou 6: 254–267.

- Frölich, J. A. 1792.** Bermerkungen über eine seltene Käfer aus der Insecten-Sammlung des Hr. Rudolph in Erlangen. Naturforscher, Part 26: 68–165.
- Gasca-Álvarez, H. J. 2017.** El género americano *Cotinis* Burmeister (Coleoptera: Scarabaeidae: Cetoniinae): Morfología, taxonomía y relaciones filogenéticas. PhD dissertation, Instituto de Ecología A. C., Xalapa, Mexico.
- Gasca-Álvarez, H. J., and C. Deloya. 2015a.** A new species and first record of *Cotinis* Burmeister (Coleoptera: Scarabaeidae: Cetoniinae) for Venezuela. *Zootaxa* 3948: 125–136.
- Gasca-Álvarez, H. J., and C. Deloya. 2015b.** A new Mexican species of *Hologymnetis* Martínez (Coleoptera: Scarabaeidae: Cetoniinae: Gymnetini). *Florida Entomologist* 98: 100–103.
- Germer, E. F. 1824.** *Insectorum Species. Novae aut Minus Cognitae, Descriptionibus Illustratae*. Volume 1. Coleoptera. Halle, Germany.
- Goodrich, M. A. 1966.** A revision of the genus *Cotinis* (Coleoptera: Scarabaeidae). *Annals of the Entomological Society of America* 59: 550–568.
- Gory, H., and A. Percheron. 1833.** Monographie des cétoines et genres voisins, formant, dans les familles naturelles de Latreille, la division des scarabées méliothiles. J.-B. Baillière, Paris, France.
- Hatch, M. H. 1930.** Records and new species of Coleoptera from Oklahoma and western Arkansas, with subsidiary studies. Publications of the University of Oklahoma Biological Survey 2: 15–26.
- Hedges, S. B. 2001.** Biogeography of the West Indies: An overview [pp. 15–33]. In: *Biogeography of the West Indies. Patterns and Perspectives*, Second Edition (C. A. Woods and F. E. Sergile, editors). CRC Press, Boca Raton, FL.
- Herbst, J. F. W. 1790.** *Cetonia*. In: *Jablonsky, C. G. Natursystem aller bekannten in- und ausländischen Insekten als eine Fortsetzung der von Büffonschen Naturgeschichte: Nach dem System des Ritters Carl von Linne bearbeitet von Carl Gustav Jablonsky, fortgesetzt von Johann Friedrich Wilhelm Herbst. Der Käfer dritter Theil. Mit sechzehn illuminierten Kupfer tafeln* (C. G. Jablonsky). Joachim Pauli, Berlin, Germany.
- Ibarra-Polesel, J. C., Neita-Moreno, D. D., Larrea, and M. P. Damborsky. 2017.** Description of the larva and pupa of *Neocorvicoana reticulata* (Kirby, 1819) (Coleoptera: Scarabaeidae: Cetoniinae: Gymnetini). *Zootaxa* 4358: 430–440.
- Illiger, K. 1800.** Vierzig neue Insekten aus der Hellwigenischen Sammlung in Braunschweig. *Archiv für Zoologie und Zootomie* 1: 103–150.
- Janson, O. E. 1875.** Description of three new species of American Cetoniidae. *Cistula Entomologica* 1: 373–376.
- Janson, O. E. 1876.** Notices of new or little known Cetoniidae. No. 1. *Cistula Entomologica* 2: 133–140.
- Janson, O. E. 1877.** Notices of new or little known Cetoniidae. No. 3. *Cistula Entomologica* 2: 247–264.
- Janson, O. E. 1878.** Notices of new or little known Cetoniidae. No. 4. *Cistula Entomologica* 2: 299–304.
- Janson, O. E. 1879.** Notices of new or little known Cetoniidae. No. 6. *Cistula Entomologica* 2: 537–539.
- Janson, O. E. 1880.** Descriptions of new American Cetoniidae. *Cistula Entomologica* 2: 575–580.
- Janson, O. E. 1881.** Descriptions of new American Cetoniidae. Part II. *Cistula Entomologica* 2: 581–585.
- Janson, O. E. 1885.** Notices of new or little known Cetoniidae. No. 10. *Cistula Entomologica* 3: 139–152.
- Janson, O. E. 1888.** On the male sex of *Argyripa subfasciata* Rits., and description of a new species of the cetoniid genus *Allorhina* [sic]. Notes from the Leyden Museum 10: 118–120.
- Kirby, W. 1819 (1818).** A century of insects, including several new genera described from his cabinet. *Transactions of the Linnaean Society of London* 12: 375–453.
- Kirby, W. 1827.** A description of some new genera and species of petalocerous Coleoptera. *Zoological Journal* 3: 145–158.
- Kirsch, T. 1870.** Beiträge zur Kenntniss Käferfauna von Bogotá. *Berliner Entomologische Zeitschrift* 14: 353–378.
- Kirsch, T. 1873.** Beiträge zur Kenntniss der Peruanischen Käferfauna auf Dr. Abendroth's Sammlungen basirt. *Berliner Entomologische Zeitschrift* 17: 339–418.
- Kraatz, G. 1888.** Ueber die sudamerikanische *Gymnetis pantherina* Burm. und die mit ihr verwechselten und verwandten Arten. *Deutsche Entomologische Zeitschrift* 32: 295–300.
- Kraatz, G. 1892.** *Hadrosticta* nov. gen. Cetonidarum aus Central Amerika, neben *Argyripa lansbergii* Sallé. *Deutsche Entomologische Zeitschrift* 36: 378–379.
- Kraatz, G. 1898.** *Stenolomaptera* nov. gen. Cetonidarum. *Deutsche Entomologische Zeitschrift* 1898: 95–96.
- Kraatz, G. 1898.** Bemerkungen zum Nachtrag VI von Schoch's "Genera und Species meiner Cetoniden-Sammlung." *Deutsche Entomologische Zeitschrift* 1898: 217–224.
- Krajčák, M. 1998.** Cetoniidae of the World. Catalogue – Part 1. Published by the author, Most, Czech Republic.
- Krikken, J. 1984.** A new key to the suprageneric taxa in the beetle family Cetoniidae, with annotated lists of the known genera. *Zoologische Verhandlungen* 210: 3–75.
- Latreille, P. A. 1813.** Insectes de l'Amérique Équinoxiale, Recueillis Pendant le Voyage de Mm. de Humboldt et Bonpland, et décrits, Seconde Partie [pp. 1–64]. In: *Voyage de Humboldt et Bonpland. Deuxième Partie. Observations de Zoologie et Anatomie Comparée* (A. Humboldt and A. J. A. G. Bonpland, editors). F. Schöell and Dufour, Paris, France.
- Le Mout, E. 1939.** Description d'un nouveau genre et d'une nouvelle espèce de Gymnetini (Coleop., Cetoniinae) de la République Argentine. *Novitates Entomologicae* 10: 79–80.
- LeConte, J. L. 1863.** New species of North American Coleoptera. Part 1. *Smithsonian Miscellaneous Collections* 167: 1–92.
- Linnaeus, C. 1764.** *Museum Ledoricae Ulrica Reginae Svecorum*. . . . Stockholm, Sweden.
- Linnaeus, C. 1767.** *Systema Naturae, Tome 1, Pars 2, Editio Duodecima Reformata*. Stockholm, Sweden.

- MacLeay, W. S. 1819.** *Horae Entomologicae*: or Essays on the Annulose Animals, Volume 1, Part 1. Printed for S. Bagster by Richard and Arthur Taylor, London, UK.
- Mannerheim C. G. 1829.** Description de quarante nouvelles espèces de scarabéides du Bresil. Nouveaux Memoires de la Société Imperiale des Naturalistes de Moscou 1(7): 29–80.
- Martínez, A. 1948.** Insectos nuevos o poco conocidos VI. (Col., Scarabaeidae) Revista de la Sociedad Entomologica Argentina 14: 3–11.
- Martínez, A. 1949.** Notas coleopterológicas II. Cambios necesarios en la nominación de algunos géneros de Gymnetini (Coleoptera Scarabaeidae, Cetoninae). Anales de la Sociedad Científica Argentina 147: 13–15.
- Maurý, R. C., G. K. Westbrook, P. E. Baker, P. Bouysse, and D. Westercamp. 1990.** Geology of the Lesser Antilles [pp. 141–166]. In: The Caribbean Region. The Geology of North America, Volume H (G. Dengo and J. E. Case, editors). The Geological Society of America, Boulder, CO.
- Micó, E., W. E. Hall, and B. C. Ratcliffe. 2001.** Descriptions of the larvae of *Hoplopyga singularis* (Gory and Percheron) and *Hologymnetis cinerea* (Gory and Percheron) with a revised key to the larvae of New World Gymnetini (Coleoptera: Scarabaeidae: Cetoninae). The Coleopterists Bulletin 55: 205–217.
- Micó, E., M. A. Morón, P. Sipek, and E. Galante. 2008.** Larval morphology enhances phylogenetic reconstruction in Cetoninae (Coleoptera: Scarabaeoidea) and allows the interpretation of the evolution of larval feeding habits. Systematic Entomology 33: 128–144.
- Mitter, H. 2007.** *Amithao erici* nov. sp. – eine neue Rosenkäferart aus Nicaragua (Coleoptera, Scarabaeidae, Cetoninae). Linzer Biologische Beiträge 39: 519–520.
- Morón, M. A., and R. Arce. 2002.** Descriptions of the immatures stages of five Mexican species of Gymnetini (Coleoptera: Scarabaeidae: Cetoninae). Proceedings of the Entomological Society of Washington 104: 1036–1054.
- Morón, M. A., and G. Nogueira. 2007.** *Halffterinetis*, nuevo género mexicano de Cetoninae (Coleoptera: Scarabaeoidea). Monografías 3er Milenio M3M (Sociedad Entomológica Aragonesa) 7: 51–61.
- Moser, J. 1905.** Neue Cetoniden-Arten. Annales de la Société Entomologique de Belgique 49: 210–216.
- Moser, J. 1907.** Beitrag zur Kenntnis der Cetoniden. Annales de la Société Entomologique de Belgique 51: 141–151.
- Moser, J. 1908.** Beitrag zur Kenntnis der Cetoniden. Annales de la Société Entomologique de Belgique 52: 85–96.
- Moser, J. 1910.** Beitrag zur Kenntnis der Cetoniden. (Col.). VII. Deutsche Entomologische Zeitschrift 1910: 293–301.
- Moser, J. 1911a.** Beitrag zur Kenntnis der Cetoniden. Annales de la Société Entomologique de Belgique 55: 119–129.
- Moser, J. 1911b.** Beitrag zur Kenntnis der Cetoniden (Col.) X. Deutsche Entomologische Zeitschrift 1911: 529–547.
- Moser, J. 1912.** Beitrag zur Kenntnis der Cetoniden (Col.) XI. Deutsche Entomologische Zeitschrift 1912: 560–574.
- Moser, J. 1913.** Beitrag zur Kenntnis der Cetoniden. XII. Annales de la Société Entomologique de Belgique 57: 155–169.
- Moser, J. 1917.** Beitrag zur Kenntnis der Cetoniden. (Col.). Deutsche Entomologische Zeitschrift 1917: 1–22.
- Moser, J. 1918.** Beitrag zur Kenntnis der Cetoniden. (Col.). XVII. Stettiner Entomologische Zeitung 79: 168–190.
- Moser, J. 1921.** Neue Cetoniden-Arten (Col.). Stettiner Entomologische Zeitung 82: 183–187.
- Neervoort van de Poll, J. R. H. 1886a.** Note XIX. *Novum genus gymnetinorum*. Notes from the Leyden Museum 8: 138.
- Neervoort van de Poll, J. R. H. 1886b.** Note XXXIX. Four new Cetoninae from Central- and South-America. Notes from the Leyden Museum 8: 231–237.
- Nonfried, A. F. 1891.** Beiträge zur Kenntniss einiger neuen exotischen Coleopterenspezies. Deutsche Entomologische Zeitschrift 1891: 257–276.
- Nonfried, A. F. 1894.** Beschreibungen neuer Lamellicornier, Buprestiden und Cerambyciden aus Central- und Süd America. Entomologische Nachrichten 20 (8): 113–142.
- Olivier, A. G. 1789.** Entomologie, ou Histoire Naturelle des Insectes, avec leurs Caractères Génériques et Spécifiques, leur Description, leur Synonymie, et leur Figure Enluminée. Coléoptères, Volume 1 [genera separately paged]. Paris, France.
- Peck, S. B. 2011.** The beetles of Martinique, Lesser Antilles (Insecta: Coleoptera); diversity and distributions. Insecta Mundi 0178: 1–57.
- Perbosc, M. 1839.** Insectes nouveaux découverts au Mexique. Revue Zoologique 1839: 261–264.
- Perty, M. 1830.** *Delectus Animalium Articulatorum, quae in Itinere per Brasiliam Annis MDCCCXVII–MDCCCXX Jussu et Auspiciis Maximiliani Josephi I. Bavariae Regis Augustissimi Peracto Collegierunt Dr. J. B. de Spix et Dr. C. F. Ph. de Martius. Digessit, Descripsit, Pingenda Curavit Dr. Maximilianus Perty, Praefatus es et Edidit Dr. C. F. Ph. de Martius.* Impensis Editoris, Munich, Germany.
- Pouillaude, I. 1913.** Description de nouvelles espèces du genre *Gymnetis* MacLeay. Insecta 3: 236–239, 281–283, 371–375, 391–394.
- Ratcliffe, B. C. 1978.** A review of the genus *Argyripa* (Coleoptera: Scarabaeidae). Systematic Entomology 3: 371–378.
- Ratcliffe, B. C. 2005.** A review of the South American genus *Hoplopygothrix* Schürhoff (Coleoptera: Scarabaeidae: Cetoninae: Gymnetini). The Coleopterists Bulletin 59: 136–142.
- Ratcliffe, B. C. 2010.** A review of the Blaesiina (Coleoptera, Scarabaeidae, Cetoninae, Gymnetini). Zookeys 34: 105–128.
- Ratcliffe, B. C. 2011.** *Hoplopygothrix* Schürhoff revisited: A new species and country record for Bolivia (Coleoptera: Scarabaeidae: Cetoninae: Gymnetini). The Coleopterists Bulletin 65: 63–66.

- Ratcliffe, B. C. 2012.** First reported occurrence and description of a new species of *Hoplopyga* (Coleoptera: Scarabaeidae: Cetoniinae: Gymnetini) from the West Indies. The Coleopterists Bulletin 66: 111–115.
- Ratcliffe, B. C. 2013a.** A revision of the Neotropical genus *Amithao* Thomson, 1878 (Coleoptera: Scarabaeidae: Cetoniinae: Gymnetini). The Coleopterists Bulletin 67: 265–292.
- Ratcliffe, B. C. 2013b.** A revision of the Neotropical genus *Desicasta* (Coleoptera: Scarabaeidae: Cetoniinae: Gymnetini). The Coleopterists Bulletin 67: 447–456.
- Ratcliffe, B. C. 2014a.** A review of the Neotropical genera *Badelina* Thomson, 1880, *Balsameda* Thomson, 1880, *Guatemalica* Neervoort van de Poll, 1886, and *Heterocotinis* Martínez, 1948 (Coleoptera: Scarabaeidae: Cetoniinae: Gymnetini). The Coleopterists Bulletin 68: 241–262.
- Ratcliffe, B. C. 2014b.** A review of the Neotropical genera *Astrosicara* Schürhoff, 1937, *Chiriquibia* Bates, 1889, *Hadrosticta* Kraatz, 1892, *Jansonia* Schürhoff, 1937, *Macrocranius* Schürhoff, 1935, and *Tiarocera* Burmeister, 1842 (Coleoptera: Scarabaeidae: Cetoniinae: Gymnetini). The Coleopterists Bulletin 68: 363–376.
- Ratcliffe, B. C. 2015a.** A revision of the Neotropical genus *Allorrhina* Burmeister, 1842 (Coleoptera: Scarabaeidae: Cetoniinae: Gymnetini). The Coleopterists Bulletin 69: 91–113.
- Ratcliffe, B. C. 2015b.** A review of the Neotropical genus *Marmarina* Kirby, 1827 with description of a new species from Argentina (Coleoptera: Scarabaeidae: Cetoniinae: Gymnetini). The Coleopterists Bulletin 69: 183–201.
- Ratcliffe, B. C. 2017.** The fourteenth *Amithao* Thomson, 1878: A remarkable new species from Ecuador (Coleoptera: Scarabaeidae: Cetoniinae: Gymnetini). The Coleopterists Bulletin 71: 655–660.
- Ratcliffe, B. C. 2018.** A monographic revision of the genus *Gymnetis* MacLeay, 1819 (Coleoptera: Scarabaeidae: Cetoniinae). Bulletin of the University of Nebraska State Museum 31: 1–250.
- Ratcliffe, B. C., and C. Deloya. 1992.** The biogeography and phylogeny of *Hologymnetis* (Coleoptera: Scarabaeidae: Cetoniinae) with a revision of the genus. The Coleopterists Bulletin 45: 161–202.
- Ratcliffe, B. C., and E. Micó. 2001.** A review of the Neotropical genus *Neocorvicoana* Ratcliffe and Micó, new genus (Coleoptera: Scarabaeidae: Cetoniinae: Gymnetini). The Coleopterists Bulletin 55: 279–296.
- Ratcliffe, B. C., and W. B. Warner. 2011.** A revision of the genus *Gymnetina* Casey, 1915 (Coleoptera: Scarabaeidae: Cetoniinae: Gymnetini). Insecta Mundi 0173: 1–28.
- Ritsema, C. 1885.** Four new species of exotic Coleoptera. Notes from the Leiden Museum 7: 39–46.
- Sallé, M. A. 1857.** Description d'un Gymnéide provenant des environs de Santa-Fé de Bogota. Annales de la Société Entomologique de France (Series 3) 5: 617–618.
- Schaeffer, C. 1905.** Some additional new genera and species of Coleoptera found within the limit of the United States. The Museum of the Brooklyn Institute of Arts and Sciences, Science Bulletin 1: 141–179.
- Schaum, H. R. 1841.** *Analecta Entomologica (Dissertatio Inauguralis)*. Halle, Germany.
- Schaum, H. R. 1844.** Observations critiques sur la famille des lamellicornes méliophiles. Annales de la Société Entomologique de France (Series 2) 2: 333–426.
- Schaum, H. R. 1845.** Catalogue des espèces-connues qui entrent dans la famille des lamellicornes méliophiles. Annales de la Société Entomologique de France (Series 2) 3: 37–56.
- Schaum, H. R. 1848.** Two decades of new Cetoniidae. Transactions of the Royal Entomological Society of London 5: 64–76.
- Schaum, H. R. 1849.** Observations critiques sur la famille des lamellicornes méliophiles. 2^e Partie (1). Annales de la Société Entomologique de France (Series 2) 7: 241–295.
- Schenkling, S. 1921.** *Coleopterorum Catalogus*, pars 72. Scarabaeidae: Cetoniinae. W. Junk, Berlin, Germany.
- Schoch, G. 1895.** Die Genera und Species meiner Cetoniden-Sammlung. I. Teil: Trib. Goliathidae, Gymnetidae, Madagassae, Schizorrhinidae. Zürcher and Furrer, Zurich, Switzerland.
- Schoch, G. 1896a.** Einige neue Cetoniden. Entomologische Nachrichten 22: 84–87, 179–181, 328–332.
- Schoch, G. 1896b.** Nachtrag zu: [sic] Schoch, Genera und Species meiner Cetoniden-Sammlung. Mitteilungen der Schweizerischen Entomologischen Gesellschaft 9: 358–370.
- Schoch, G. 1897.** Nachtrag V zu Schoch: Genera und Species meiner Cetoniden-Sammlung. Mitteilungen der Schweizerischen Entomologischen Gesellschaft 10: 37–60.
- Schoch, G. 1898.** Nachtrag VII zu Schoch: Genera und Species meiner Cetoniden-Sammlung. Mitteilungen der Schweizerischen Entomologischen Gesellschaft 10: 101–119.
- Schönherr, C. J. 1817.** *Synonymia Insectorum oder Versuch einer Synonymie aller bisher bekannten Insekten; nach Fabricii Systema Eleutheratorum etc. geordnet*. Volume 1, Part 3. E. Bruzelius, Upsala, Sweden.
- Schürhoff, P. N. 1933.** Beiträge zur Kenntnis der Cetoniden III. Entomologisches Nachrichtenblatt 7: 89–96.
- Schürhoff, P. N. 1935.** Beiträge zur Kenntnis der Cetoniden (Col.). VII. Mitteilungen der Deutschen Entomologischen Gesellschaft 6: 21–28.
- Schürhoff, P. N. 1937.** Beiträge zur Kenntnis der Cetoniden (Col.). VIII. Revision der Gattung *Gymnetis* MacLeay. Deutsche Entomologische Zeitschrift 1937: 56–80.
- Schürhoff, P. N. 1942.** Beiträge zur Kenntnis der Cetoniden (Col.) IX. Mitteilungen der Münchner Entomologischen Gesellschaft 32: 279–293.
- Sharp, D. 1877.** Description of some new species of beetles (Scarabaeidae) from Central America. Journal of the Linnean Society of London, Zoology 13: 129–138.
- Shaughney, J. M., and B. C. Ratcliffe. 2015.** A monographic revision of the Neotropical genus

- Hoplopyga* Thomson (Coleoptera: Scarabaeidae: Cetoniinae: Gymnetini). The Coleopterists Bulletin 69: 579–638.
- Strand, E. 1934.** *Miscellanea nomenclatorica zoologica et palaeontologica*. Folia Zoologica et Hydrobiologica 6: 271–277.
- Sturm, J. 1826.** Catalog meiner Insekten-Sammlung, Erster Theil, Käfer. Published by the Author, Nürnberg, Germany.
- Swederus, N. S. 1787.** Et nytt genus, och femtio nya species as Insecter, beskrisne. Kungliga Vetenskaps Akademiens nya Handlingar 8: 181–201.
- Thomson, J. 1857.** Description de quatorze espèces nouvelles. Archives Entomologiques 1: 129–136.
- Thomson, J. 1860.** Cetonides [pp. 30–38]. Musée Scientifique ou Recueil d'Histoire Naturelle. Published by the author, Paris, France.
- Thomson, J. 1878.** *Typi Cetonidarum suis de Typi Monommidarum et de Typi Nilionidarum Musaei Thomsoniani*. E. Deyrolle, Paris, France.
- Thomson, J. 1880.** Diagnoses de genres nouveaux de la famille des cétonides. Naturaliste 2: 268–269, 277–278.
- Vigors, N. A. 1825.** Descriptions of some rare, interesting, or hitherto uncharacterized subjects of zoology. The Zoological Journal 1: 409–418.
- Voet, J. E. 1779.** *Catalogus Systematicus Coleopterorum. Tomus 1*. Bakhuysen, The Hague, Netherlands.
- Waterhouse, C. O. 1876.** Descriptions of two new species of Cetoniidae. Annals and Magazine of Natural History (series 4) 18: 422–423.
- Weber, F. 1801.** *Observationes Entomologicae, Continentes Novorum quae Condidit Generum Characteres, et Nuper Detectarum Specierum Descriptiones*. Impensis Bibliopolii Academici Novi, Kiel, Germany.
- Westwood, J. O. 1874.** Description of some new species of exotic Cetoniidae. Transactions of the Entomological Society of London 1874: 473–481.
- Wheeler, Q. 2004.** Taxonomic triage and the poverty of phylogeny. Philosophical Transactions of the Royal Society London B 359: 571–583.
- Wheeler, Q. 2013.** The Westwood Medal, revisionary taxonomy, and the R.E.S. Antenna 37: 208–209.
- Wheeler, Q. D., and N. I. Platnick. 2000.** The phylogenetic species concept (*sensu* Wheeler and Platnick) [p. 55–69]. In: Species Concepts and Phylogenetic Theory. A Debate (Q. D. Wheeler and R. Meier, editors). Columbia University Press, New York, NY.
- White, A. 1847.** Remarks on some Cetoniidae (sic), with the description of a new Australian species. Annals and Magazine of Natural History (Series 1) 20: 264–267.
- Wiedemann, C. R. W. 1824.** *Munus rectoris in Academia Christiana Albertina aditurus Analecta entomologica ex Museo Regio Havniens: maxime congesta profert iconibusque illustrat*. Regio Topographeo Scholarum, Kiel, Germany.
- Woodruff, R. E. 2008.** The genus *Cotinis* Burmeister in the eastern United States, with description of a new species from the Florida Keys, including a checklist of the genus (Coleoptera: Scarabaeidae: Cetoniinae). Insecta Mundi 0051: 1–13.

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