



<https://doi.org/10.11646/zootaxa.4350.3.4>

<http://zoobank.org/urn:lsid:zoobank.org:pub:4C67B413-D1A5-44EA-8B0C-4F0379545088>

On the taxonomy of the genus *Sidonis* Mulsant, stat. nov. (Coleoptera: Coccinellidae: Chnoodini) with descriptions of new species from Brazil

JULISSA M. CHURATA-SALCEDO^{1*}, LUCIA M. ALMEIDA¹,
GUILLERMO GONZÁLEZ² & ROBERT D. GORDON³

¹Laboratório de Sistemática e Bioecologia de Coleoptera, Department of Zoology, Universidade Federal do Paraná, Caixa Postal 19030, 81581–980, Curitiba, Paraná, Brazil. E-mail: julissa.cs@gmail.com; lalmeida51@gmail.com

²La Reina, Santiago, Chile. E-mail: willogonzalez@yahoo.com

³Northern Plains Entomology, PO Box 65, Willow City, ND 58384, USA. E-mail: rdgordon@utma.com

Abstract

The subgenus *Sidonis* Mulsant, 1850 is elevated to generic status and two new species from Brazil are described and illustrated: *Sidonis bira* sp. nov. and *Sidonis biguttata* sp. nov. New geographic distribution records are provided. In addition, lectotypes of *Sidonis consanguinea* (Mulsant, 1850) and *S. guttata* (Sicard, 1912) are designated. Illustrations of diagnostic characters from five of six species of the genus, comments on the differences from similar species and a key to all recognized taxa are included.

Key words: *Aulis*, Coccinelloidea, Neotropical, new records

Resumen

El subgénero *Sidonis* Mulsant, 1850 fue elevado a género y dos especies nuevas de Brasil son descritas e ilustradas: *Sidonis bira* sp. nov. y *Sidonis biguttata* sp. nov. Nuevos registros de distribución geográfica son adicionados. Además, lectótipos de *Sidonis consanguinea* (Mulsant, 1850) y *S. guttata* (Sicard, 1912) son designados. Ilustraciones de caracteres diagnósticos de cinco de las seis especies del género, comentarios sobre las diferencias con especies afines y una clave para todos los taxa reconocidos son incluidos.

Palabras clave: *Aulis*, Coccinelloidea, Neotropical, nuevos registros

Introduction

Chnoodini was created by Mulsant (1850) including three branches, “Chnoodaires”, “Azyaires” and “Siolaires”. “Chnoodaires” included only *Chnoodes* Chevrolat, 1849 and *Exoplectra* Chevrolat, 1844. Currently, Chnoodini has 21 genera worldwide, and 10 restricted to the Neotropical Region: *Chnoodes* Chevrolat, 1849; *Coeliaria* Mulsant, 1850; *Dapolia* Mulsant, 1850; *Dioria* Mulsant, 1850; *Exoplectra* Chevrolat, 1844; *Gordonita* González, 2013; *Incurvus* González, 2013; *Neorhizobius* Crotch, 1874; *Sidonis* Mulsant, 1850, **stat. nov.**, *Siola* Mulsant, 1850 and *Vedalia* Mulsant, 1850.

Mulsant (1850) proposed *Aulis* with the subgenera *Aulis* and *Sidonis* and included five species in *Aulis*: *A. annexa*, *A. vestita*, *A. foedata*, *A. consanguinea*, *A. lineatosignata* and *A. aumonti* in the appendix. Two Neotropical species, *A. consanguinea* and *A. lineatosignata* were placed in *Sidonis*, which was characterized by the basally bifid tarsal claws. In 1853, the same author added three species: *Aulis plantaris* and *A. notivestis* from Africa and India, and *A. rufovittata* from Brazil.

Crotch (1874) described two new species, *A. circumcineta* from Brazil and *A. redtenbacheri* from Austria.

Aulis was redescribed by Chapuis (1876) who remarked that the differences between *Aulis* and *Sidonis* were

almost inconspicuous. Gemminger & Harold (1876) listed 10 species of *Aulis* for the world in their catalog and indicated *A. rufovittata* as synonym of *Hazis* (= *Hazisia*) *menouxii* Mulsant, 1850.

Sicard (1912) described *A. guttata* as a new species from Brazil and indicated that the species should belong to the subgenus *Sidonis*.

Korschefsky (1931) included *Aulis* with 16 species in Coccidulini, five from South America, four in *Sidonis*; and Blackwelder (1945) listed *A. circumcincta*, *A. guttata*, *A. lineatosignata* and *A. rufovittata* from Brazil and *A. consanguinea* from Colombia, all of them in the subgenus *Sidonis*.

In the catalog of the Crotch collection of Coccinellidae, Gordon (1987) included *Aulis circumcincta* from Brazil and *A. annexa*, *A. vestita*, *A. plantaris* and *A. notivestis* from Africa and India, and designated the lectotype of *A. rufovittata*.

Extensive study of the Neotropical species revealed characters that differentiate the African species from those of South America resulting in elevation of *Sidonis* to the genus level. In addition, two new species are described here from Brazil and *Sidonis consanguinea* and *S. guttata* are illustrated for the first time.

Material and methods

The specimens examined were provided by California Academy of Sciences, San Francisco, California, United States (CAS); Cambridge University Museum of Zoology, Cambridge, United Kingdom (CUMZ); Coleção Entomológica Pe. J. S. Moure, Department of Zoology, Universidade Federal do Paraná, Curitiba, Paraná, Brazil (DZUP); Musée des Confluences, Lyon, France (MHNL); Museu de Zoologia, Universidade de São Paulo, Brazil (MZSP); Senckenberg Deutsches Entomologisches Institut, Müncheberg, Germany (SDEI); United States National Collection, Smithsonian Institution, Washington, DC, United States (USNM) and the Zoological Museum, University of Copenhagen, Denmark (ZMUC).

Photographs were taken using a Sony Cyber-shot (DSC-W300) digital camera coupled to a Zeiss Stemi SV6 compound stereomicroscope and a Zeiss Stereo Discovery Standard 20 microscope.

Specimens were examined with a TESCAN, VEGA 3 LMU scanning electron microscope in the Electronic Microscopy Center of Universidade Federal do Paraná.

The terminology used in the descriptions follows Ślipiński & Tomaszewska (2010).

Labels of the type specimens are arranged in sequence from top to bottom, where the data for each label are within double quotes (""), a slash (/) separates the rows, and information between brackets ([]) provides additional details written on the labels.

Results

Sidonis Mulsant, 1850, stat. nov.

(Figs. 1–46)

Aulis (*Sidonis*) Mulsant 1850: 933 (original description); Mulsant 1853: 263, 327 (systematics); Chapuis 1876: 223 (systematics); Gemminger & Harold 1876: 3804 (catalog); Sicard 1912: 138 (systematics); Korschefsky 1931: 95 (catalog); Blackwelder 1945:443 (catalog).

Type species: *Aulis consanguinea* Mulsant, 1850, present designation.

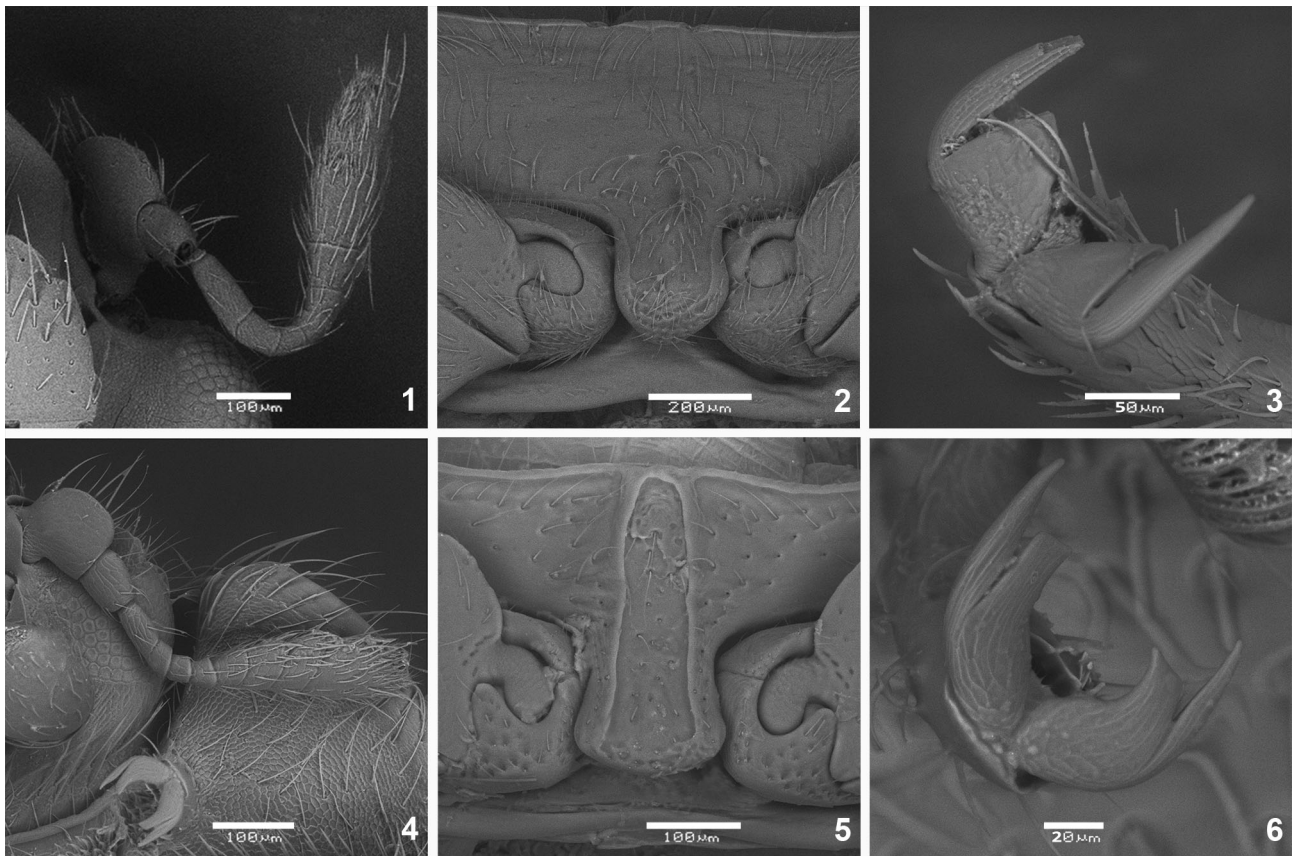
Diagnosis. *Sidonis* is a Neotropical genus that is morphologically similar to *Neorhizobius* Crotch, 1874 and *Chnoodes* Chevrolat, 1849, but differs from them and all other genera of the tribe by the following characters: bristly pubescence, prosternal process sub-quadrangular with two carinae (Fig. 5); antenna composed of 10 antennomeres (Fig. 4) similar to *Aulis* (Fig. 1); postcoxal lines complete (Figs. 10, 16, 30, 42); all tibiae slender, unmodified; tarsal claws bifid (Fig. 6), penis with well developed inner branch and female genitalia with well developed spermatheca (Figs. 17–20, 31–34, 43–45). *Aulis* cannot be confused with *Sidonis* because of its elongate body in dorsal view, prosternal process without carinae (Fig. 2) and tarsal claw with large, quadrate basal tooth (Fig. 3).

Redescription. Body slightly oval in dorsal view, convex, with fine sparse punctation and uniform bristly and long pubescence (Figs. 12–15, 26–29, 38–41). Head sub-quadrangular, embedded in the pronotum, eyes divided by

gena. Clypeus fused to the frons, expanded laterally and emarginate. Labrum transverse, truncated anteriorly. Mandibles asymmetrical, robust with bifid apex. Maxillary terminal palpomere securiform. Labium with short bristles at apex. Antenna composed of 10 antennomeres, the first elongate and enlarged (Fig. 4). Pronotum transverse, slightly narrower than elytra, with anterior margin emarginated, lateral carina straight, and posterior margin subsinuous; hypomeron flat, without fovea (Figs. 13, 27, 39). Prosternal process sub-quadrangular, as wide as long, with complete lateral carinae (Fig. 5). Scutellar shield small and triangular. Elytron with humeral callus conspicuous (Figs. 7, 12, 21, 26, 38). Epipleuron narrow, without foveae for receiving femoral apices. Legs with femora widely excavated for receiving tibiae. Tibiae narrow, without angulation (Figs. 13, 27, 39). Claws bifid (Fig. 6). Abdomen with five ventrites in females and six in males, with complete postcoxal lines, recurved and reaching posterior margin of the first ventrite or not (Figs. 10, 16, 30, 42). Male genitalia: tegmen with penis guide shorter than parameres, symmetrical; penis slender, penis capsule with developed inner arm (Figs. 17–19, 31–33, 43–45). Female genitalia: coxites elongate and subtriangular, spermatheca with recurved cornu, ramus highly developed and sperm duct long (Figs. 20, 34).

Remarks. Gordon (1994) included the genera of Chnoodini as Exoplectrini, except *Aulis*. González (2013) followed this opinion, but he mentioned that the sub-quadrangular basal claws indicate that the American species of *Aulis* should be separated.

Sidonis is elevated here to generic status, since the Neotropical species examined have morphological characters that clearly differentiate them from African and Indian species of *Aulis*.



FIGURES 1–6. Diagnostic characters. 1–3. *Aulis annexa* Mulsant, 1850, 1. antenna, 2. prosternal process, 3. claw; 4–6. *Sidonis guttata* (Sicard, 1912), 4. antenna, 5. prosternal process, 6. claw.

Key to species of *Sidonis* Mulsant, 1850

1. Body yellow with black markings (Figs. 26–37) *Sidonis bira* sp. nov.
- 1'. Body black or greenish black, with or without paler markings 2
2. Body black with greenish reflections, elytron with an oblique reddish spot at apex; pronotum with two reddish rounded lateral spots (Figs. 7–11) *Sidonis consanguinea* (Mulsant)

- 2'. Body black without greenish reflections. 3
 3. Elytron with one spot on the base near the callus and a curved oblique orange red spot, comma shaped on the disc of the elytron (Figs. 24–25) *Sidonis circumcincta* (Crotch)
 3'. Elytron not as described above 4
 4. Elytron black with two small rounded yellow spots, both in middle of elytral length; pronotum black with yellow along lateral margins (Figs. 38–46) *Sidonis biguttata* sp. nov.
 4'. Elytron dark brown with three rounded spots 5
 5. Elytron with three separated spots in longitudinal line *Sidonis lineatosignata* (Mulsant)
 5'. Elytron with three rounded orange yellowish spots, one lateral, second and third in the same row, both equally distant from sutural margin (Figs. 12–20, 21–23) *Sidonis guttata* (Sicard)

***Sidonis consanguinea* (Mulsant, 1850)**

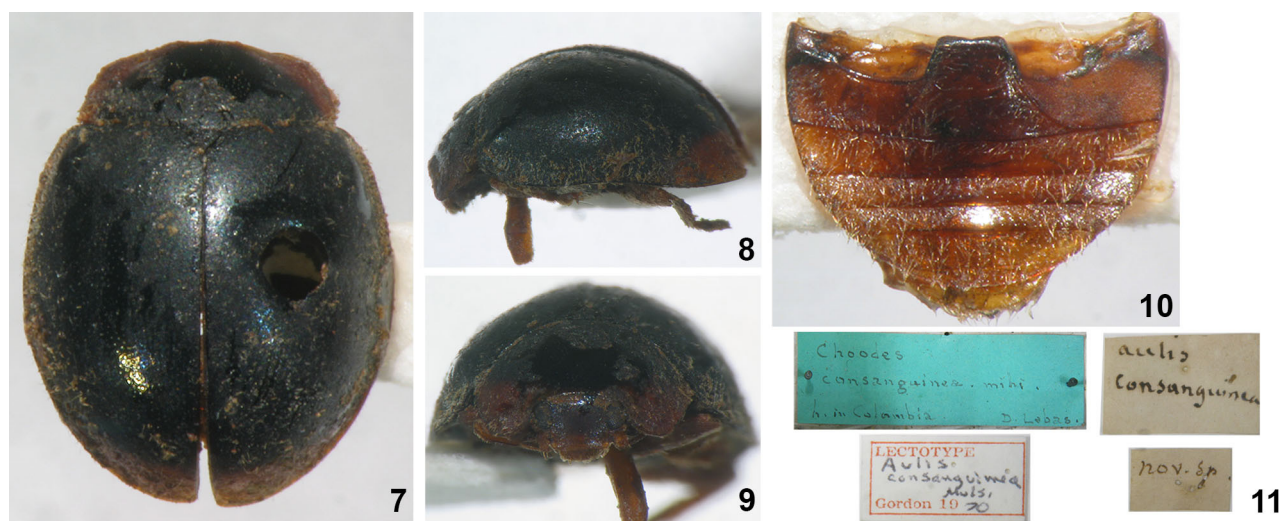
(Figs. 7–11)

Aulis consanguinea Mulsant 1850: 935 (original description); Mulsant 1853: 327 (list); Crotch 1874: 294 (list); Gemminger & Harold 1876: 3805 (catalog); Korschefsky 1931: 95 (catalog); Blackwelder 1945: 443 (checklist).

Diagnosis. Length 3.30 mm, width 2.80 mm. Body slightly oval; with uniform, bristly, long, yellowish pubescence; integument dark, punctation dense (Fig. 7). Head, antennae and mouthparts reddish (Fig. 9). Pronotum dark greenish with two reddish lateral spots (Fig. 9). Scutellar shield triangular, dark greenish. Elytra greenish, with an oblique reddish spot at apex (Figs. 7–8). Differs from *S. biguttata* by the lack of two small spots in middle of elytral length. Legs reddish with flattened femora and narrow tibiae. Abdomen with postcoxal lines reaching the posterior margin of the first ventrite (Fig. 10).

Geographical distribution. Colombia.

Type material. Lectotype was labelled in 1970 by Gordon and deposited in Musée des Confluences, Lyon, France (MHNL). This designation was not published so we now designate this specimen as the lectotype (Figs. 7–11). The lectotype was studied from photographs.



FIGURES 7–11. *Sidonis consanguinea* (Mulsant, 1850). Lectotype from Musée des Confluences, Lyon, France (MHNL), 7. dorsal view, 8. lateral view, 9. frontal view, 10. abdomen, 11. labels.

***Sidonis guttata* (Sicard, 1912)**

(Figs. 12–23)

Aulis guttata Sicard 1912: 137 (original description); Korschefsky 1931: 95 (catalog); Blackwelder 1945: 443 (checklist).
Neorhizobius barrigai González 2013: 66. **Syn. nov.**

Diagnosis. *Sidonis guttata* resembles *S. biguttata* sp. nov. by the number of spots on the elytra and shape of male genitalia, but differs in the size and shape of spots and size of penis guide. It resembles *S. lineatosignata* somewhat, but according to Mulsant’s description that species has spots distributed in a longitudinal line.

Redescription. Length 2.75–3.50 mm, width 2.25–3.08 mm. Male. Body slightly oval; with uniform, bristly, long, yellowish hairs; integument dark brown, punctation dense (Fig. 12). Head, antennae and mouthparts yellow (Fig. 13). Pronotum with two yellow lateral spots (Fig. 14). Scutellar shield triangular, dark brown. Elytra with yellowish margin, extending throughout the length of elytra; each elytron with three rounded orange yellowish spots, one lateral, reaching margin or not; the second and third (anterior and posterior) in the same row, both equally distant from sutural margin; anterior one placed almost in middle of disc; posterior spot placed near the apex (Figs. 12–15). Epipleuron yellowish brown, narrowing to apex (Fig. 13). Meso- and metaventricle brownish. Legs yellowish with flattened femora; tibiae narrow, claws bifid. Abdomen with postcoxal lines moderately deep, extending along about 2/3 length of ventrite; first ventrites and middle region of the ventrites brownish (Fig. 16). Genitalia with tegmen symmetrical, penis guide wide at base and acuminate at apex, 2/3 of the parameres length; parameres slightly enlarged, longer than tegmen, with bristles (Figs. 17–18). Penis sclerotized, J-shaped, with acuminate recurved apex, penis capsule with developed inner arm (Fig. 19).

Female. Similar to male. Genitalia with coxites longer than wide, sub-triangular; spermatheca with recurved cornu, highly developed ramus and sperm duct long (Fig. 20).

Geographical distribution. Brazil, Argentina.

Type material. Photographs of the syntype were studied; it is deposited in the Senckenberg Deutsches Institut Entomologisches, Germany (SDEI) with the following labels: "Brazil / Schaum", "*Aulis / guttata / Sic. / type*", "Coll. Kraatz / Sicard det. "Syntypus" [pink label]. This specimen is here designated as lectotype (Figs. 21–23).

The holotype of *Neorhizobius barrigai* contains the following labels: Pto. Bacetti / 3 km. S. de Iguaz / 30.VI.65 / col. H.G.C., Misiones / Argentina, 17297 / colección / J. E. Barriga / Stgo. Chile, "HOLOTYPE / *Neorhizobius / barrigai* / González 2013.



FIGURES 12–20. *Sidonis guttata* (Sicard, 1912). 12. dorsal view, 13. ventral view, 14. frontal view, 15. lateral view, 16. abdomen; 17–19. Male genitalia. 17. tegmen, dorsal view, 18. tegmen, lateral view, 19. penis; 20. female genitalia (coxites and spermatheca).



FIGURES 21–23. *Sidonis guttata* (Sicard, 1912). Lectotype, Senckenberg Deutsches Entomologisches Institut Collection (SDEI); 21. dorsal view, 22. ventral view, 23. labels.

Remarks. Sicard (1912) in the original description of *Aulis guttata* highlighted the color pattern, referred to the three spots on each elytron, and additionally mentioned that *A. guttata* and *A. lineatosignata* belong to the subgenus *Sidonis*.

González (2013) described a new species of *Neorhizobius*, *N. barrigai*, with morphological characters and genitalia identical to *Sidonis guttata*. Therefore, *N. barrigai* González, 2013 is synonymized here with *S. guttata*, expanding the distribution of this species to Argentina.

Material examined. BRAZIL: Minas Gerais: Lagoas, Rohn col., *Aulis guttata* Sicard, det. Gordon 86, 1 specimen (ZMUC); Lagoa S. R. col., 1 specimen (ZMUC); Serra do Caraça, III. 1963, F. Werner, U. Martins, L. Silva col. (MZSP); III. 1963 F. Werner, U. Martins, L. Silva col., 1 specimen (MZSP); 27.XI a 5. XII. 1972, Exp. Mus. Zool., *Sidonis?* det. R. Gordon, 1 specimen (MZSP); Rio de Janeiro: Itatiaia (sede PNI), 12.VII.60, R. Barth & A. G. Silva col., ♀, 1 specimen (DZUP 188158); Floresta da Tijuca, 29.XI. 1959, M. Alvarenga, ♂, 1 specimen (DZUP 188160); 15.I.61, F. M. Oliveira leg., 1 specimen (DZUP 185630); 15.I.61, F. M. Oliveira leg., 2 specimens (DZUP 188154, 188159); 17. I.61, F. M. Oliveira leg., 1 specimen (DZUP 188156); 22.I.1961, C. A. Campos Seabra col., Coleção M. Alvarenga, 1 specimen (DZUP 188161); I.1961, 2 specimens (DZUP 188162, 228921); II.1961, 2 specimens (DZUP 228922, 228924); 12/I/64, F. M. Oliveira leg., 1 specimen (DZUP 188155); São Paulo: Rep. Rio Grande, Dez. 1960, F. M. Oliveira leg., 1 specimen (DZUP 188151); Boraceia, 5.II.960, F. Lane col., 1 specimen (DZUP 188177); Campos do Jordão, Eug. Lefevre, 1200m, 4–8.IX.1953, Trav F., Pd. Pereira & Medeiros col., ♀, 1 specimen (DZUP 188167); Cantareira, São Paulo, 3.IV.1961, F. Halik, 17290, Brasil, Halik 1966 Collection, 1 specimen (USNM); Cantareira, São Paulo, 4.I.1962/F. Halik/ 18158, “BRASIL/ Halik 1966/ Collection, *Aulis guttata* Sicard (comp. w spec. in Sicard collection), 1 specimen (USNM); Cantareira, São Paulo, 17.II.1962, F. Halik, 19014, Brasil, Halik 1966 Collection, ♀, 1 specimen (USNM); Cantareira, São Paulo, 27.II.1962, F. Halik, 19302, Brasil, Halik 1966 Collection, 1 specimen (USNM); Cantareira, São Paulo, 27.II.1962, F. Halik, 19304, Brasil, Halik 1966, Collection, 1 specimen (USNM); São Paulo, Brasilien, ♀, Nunenmacher Collection, *Aulis gorhami* Sic.; det. R.Korschevsky, 1934, 1 specimen (CAS); Est. Biol. Boraceia, Salesópolis, 30.IV.1973, Jorge & Vanin col., 1 specimen (MZSP); Est. Biol. Boraceia, Salesópolis, 3–8.I.1974, Vanin & Leme col., 1 specimen (MZSP); Paraná: Guarapuava, H. Schneider, 1-58, 7450, Coleção F. Justus Jor, 1 specimen (DZUP 188117), Ponta Grossa, 1-45, 3309, Coleção F. Justus Jor, 2 specimens (DZUP 188230, 228937); P. Grossa, Olaria, 8-46, 3967, Coleção F. Justus Jor, 1 specimen (DZUP 188118); P. Grossa (V. Velha IAPAR) Ganho & Marinoni, 25-IX-2000, malaise 2, 1 specimen (DZUP 084875); São José dos Pinhais, Br277 km54 (Torre-Telepar) 1060m, 2533'18"S 4858'22"W Malaise 25. VIII.1.IX.2015, ACD & RRC leg., 1 specimen (DZUP 189367); [illegible label], 13.9.14, Melgr leg., 6 specimens (DZUP 185689, 185690, 185691, 188174, 228935, 228936); Santa Catarina: Seara (Nova Teutônia) 2711'B. 5223'L, Fritz Plaumann, 25.3.1938, Nunenmacher Collection, 1 specimen (CAS); 10.8.1939, *Aulis guttata* Mulsant, det. R. Gordon 85, 1 specimen (DZUP 188180); XI.1944, 300–500 m (DZUP 188142); 29.II.1945, 1 specimen (DZUP 188170); 3.9.1948, 3–500 m, 1 specimen (DZUP 188152); IX.1956, 300–500 m, 1 specimen (DZUP 188141); XI.1958, 300–500 m, 1 specimen (DZUP 188153); X.1961, 1 specimen (DZUP 188166); VII.1964, 300–500 m, 1 specimen (DZUP 188179); I.1966, 1 specimen (DZUP 188171);

IV.1966, 4 specimens (DZUP 188172, 188173, 188175, 188176); Cocc. 34, *Aulis gorhami* Sic., det. R. Korschevsky, 1936, 1 specimen (DZUP 188157); X.1969, 2 specimens (CAS); XI.1969, ♀, 1 specimen (CAS); Brazil X-70, 5 specimens (CAS); XII.1970, 300–500 m, 2 specimens (CAS); XII.1971, 3 specimens (CAS); IV.71, 3 specimens (CAS); XII-73, 2 specimens (CAS); ♂, 1 specimen (CAS); 5 specimens (CAS); 24 specimens of CAS—Willard H. Nutting, Jr Collection donated to the Calif. Academy of Sciences May 1990; 2711'B. 5223'L, I.1974/300–500 m, 4 specimens (DZUP 185637, 228931, 228932, 228933); I.1974/300–500 m, *Aulis guttata* Sicard det. R. Gordon 85, 4 specimens (DZUP185639, 228925, 228926, 228927); V.1975/300–500 m, 1 specimen (DZUP 188146); VII.1975, 300–500 m, 1 specimen (DZUP 188149).

Sidonis circumcincta (Crotch, 1874)

(Figs. 24–25)

Aulis circumcincta Crotch 1874: 294 (original description); Gemminger & Harold 1876: 3805 (catalog); Korschevsky 1931: 95 (catalog); Blackwelder 1945: 443 (checklist); Gordon 1987: 36 (catalog).

Diagnosis. *Sidonis circumcincta* differs from all species by the presence of one spot on the base near the callus and a curved oblique orange red spot, comma-shaped on the disc of the elytra reaching from the middle to almost apex (Fig. 24).

Remarks. We received the photograph of the holotype from a colleague who was in Cambridge University Museum of Zoology (CUMZ).



FIGURES 24–25. *Sidonis circumcincta* (Crotch, 1874). Holotype from Cambridge University Museum of Zoology (CUMZ); 24. dorsal view, 25. holotype and labels.

Sidonis lineatosignata (Mulsant, 1850)

Aulis lineatosignata Mulsant 1850: 936 (original description); Mulsant 1853: 327 (list); Crotch 1874: 294 (list); Gemminger & Harold 1876: 3805 (catalog); Sicard 1912: 138 (systematics); Korschevsky 1931: 95 (catalog); Blackwelder 1945: 443 (checklist).

Diagnosis. *Sidonis lineatosignata* bears some resemblance to *S. circumcincta*, but the second and third spots, according to Mulsant's description, are separated which differs from *S. circumcincta* (Fig. 24).

Remarks. According to Mulsant (1850), the type material is in the Melly Collection (probably MNHN), but it was not possible to study the material.

Sidonis bira sp. nov.

(Figs. 26–37)

Diagnosis. *Sidonis bira* sp. nov. resembles *Sidonis biguttata* sp. nov. in the male genitalia, but differs in color pattern. It is distinguished by having three large black spots on each elytron.



FIGURES 26–37. *Sidonis bira* sp. nov. Holotype. 26. Dorsal view, 27. ventral view, 28. frontal view, 29. lateral view, 30. abdomen; 31–33. Male genitalia: 31. tegmen, dorsal view, 32. tegmen, lateral view, 33. penis; 34. female genitalia (coxites and spermatheca); 35, 36. Paratype showing spot variation; 37. labels of the holotype.

Description. Length 2.75 mm, width 2.33–2.42 mm. Male. Body slightly oval; with uniform, bristly, long and whitish hairs; integument dark yellow and punctation dense (Fig. 26). Head brownish, antennae and mouthparts yellow (Figs. 27–28). Pronotum widely orange laterally; hypomeron without foveae (Fig. 27). Scutellar shield triangular, black. Elytron orange; each one with three large black spots; the first oval, oblique, extending from the base and reaching the humeral callus until lateral middle part of elytra; the second elongate-trapezoidal, juxtaposed

along suture, not reaching elytral apex; the third spot round and small, placed near lateral margin (Figs. 26–29). Epipleuron yellowish, narrowing towards apex (Fig. 27). Meso- and metaventricle brownish. Legs with flattened and brown femora, tibiae narrow, yellowish, claws bifid (Fig. 27). Abdomen with recurved, complete postcoxal lines, not reaching posterior margin of the first ventrite; first ventrite and middle region of remaining ventrites brownish (Fig. 30). Genitalia with tegmen symmetrical, penis guide short, apex not acuminate, shorter than the parameres; parameres twice longer than the penis guide, slightly extended, with short bristles (Figs. 31–32). Penis sclerotized, J-shaped, recurved, penis capsule with inner arm developed (Fig. 33).

Female. Similar to the male. Genitalia with coxites longer than wide, sub-triangular, mammiform stylus with long bristles; spermatheca with recurved cornu, highly developed ramus and long sperm duct (Fig. 34).

Variation. Posterior elytral spots may be joined and form diffuse spots (Figs. 35, 36).

Etymology. This species is named in honor of the dedicated entomologist Dr. Ubirajara Ribeiro Martins de Souza, an expert in the taxonomy of longhorn beetles (Cerambycidae), who died in 2015.

Geographical distribution. Brazil (São Paulo).

Type material. HOLOTYPE: male—BRAZIL: São Paulo “BR- S. P. Campos do Jordão/ Eug. Lefevre – 1200 m/ 4-8 SET 953 – Prav F./ Pd. Pereira & Medeiros [col.], “Coccidulinae/ M P. *Sidonis*/ det. R. Gordon 1985, ♂, “DZUP/ 188207 [DZUP, genitalia on glycerin] (Fig. 35). PARATYPE: male—BRAZIL: Paraná. “São José dos Pinhais, BR 277 km 54/ (Torre –Telepar) 1060m./ 2533’18”S 4858’22”W,/ malaise, 15–22.IX.2015/ ACD & RRC leg. “♂”, 1 specimen “DZUP/ 228940 [DZUP, genitalia on glycerin]; female—BRAZIL: São Paulo “S. Bocaina 1650 m/ S. J. BARREIRO SP/ Brasil XI-1968/ Alvarenga e Seabra [col.], “Coleção M. Alvarenga, ♀, *Aulis*/ sp./ det. R. Gordon 1985, 1 specimen “DZUP/ 228939 [DZUP, genitalia on glycerin].

Sidonis biguttata sp. nov.

(Figs. 38–46)

Diagnosis. *Sidonis biguttata* sp. nov. resembles *Sidonis bira* in its male genitalia, but differs in color pattern, having two small round yellow spots in middle of the elytron.

Description. Length 2.92 mm, width 2.42 mm. Male. Body slightly oval; with uniform, long and whitish pubescence; integument black and punctation dense (Fig. 38). Head, antennae and mouthparts reddish (Fig. 39). Pronotum black with yellow along lateral margins (Fig. 40). Scutellar shield triangular, black. Elytra black, each elytron with two small rounded yellow spots, both in middle of elytral length; one spot placed near suture and second near lateral margin (Figs. 38–41). Epipleuron black, narrowing to apex (Fig. 39). Meso- and metaventricle black. Legs with flattened and black femora, narrow brownish tibiae, and bifid claws (Fig. 39). Abdomen with recurved, complete postcoxal lines, not reaching posterior margin of the first ventrite (Fig. 42). Genitalia with tegmen symmetrical, penis guide wide at base and slightly acuminate at apex, 1/2 of the parameres length; parameres long, slightly widened, with bristles (Figs. 43–44). Penis sclerotized, J-shaped and penis capsule with highly developed inner arm (Fig. 45).

Female. Unknown.

Etymology. The name of this new species is derived from Latin and refers to the two small spots on each elytron.

Geographical distribution. Brazil (Minas Gerais).

Type material. HOLOTYPE: male—BRAZIL: Minas Gerais “Vila Monte Verde/ Minas Gerais/ 22.9.1969/ F. Halik/ 8469. “♂”, “DZUP/ 228938 [DZUP, genitalia on glycerin] (Fig. 46).

Acknowledgments

We thank CAPES for the award of Master's fellowships to JMCS (1578651/2016) and CNPq for the research fellowship to LMA (309764/2013–0); Paula B. Santos for sending the photograph of *S. circumcineta* from CUMZ; Centro de Microscopia Eletrônica (UFPR) and two anonymous reviewers for critically evaluating the manuscript and providing their valuable suggestions. This is contribution number 1940 of the Department of Zoology, Universidade Federal do Paraná.



FIGURES 38–46. *Sidonis biguttata* sp. nov. Holotype. 38. Dorsal view, 39. ventral view, 40. frontal view, 41. lateral view, 42. abdomen; 43–45. Male genitalia. 43. tegmen, dorsal view, 44. tegmen, lateral view, 45. penis; 46. labels.

References

- Blackwelder, R.E. (1945) Checklist of the coleopterous insects of Mexico, Central America, the West Indies, and South America. *Bulletin of the United States National Museum*, 185 (3), 1–188.
<https://doi.org/10.5479/si.03629236.185.3>
- Chapuis, F. (1876) Famille des phytophages des érotyleiens des endomychides et des coccinellides. Tomo 12. In: Lacordaire, J.T. & Chapuis, F. (Eds.), *Histoire naturelle des insectes. Genera des Coléoptères*. Roret, Paris, pp. 1–424.
- Chevrolat, L.A. (1844) Exoplectra. In: d'Orbigny, C. (Ed.), *Dictionnaire Universel d'Histoire Naturelle, 1861. Tome Cinquième*. A. Pilon et cie, Paris, pp. 545.
- Chevrolat, L.A. (1849) Chnoodes. In: d'Orbigny, C. (Ed.), *Dictionnaire Universel d'Histoire Naturelle, 1861. Tome Troisième*. L. Houssiaux et Cie, Paris, pp. 612.
- Crotch, G.R. (1874) *A revision of the Coleopterous Family Coccinellidae*. E. W. Janson, London, 311 pp.
<https://doi.org/10.5962/bhl.title.8975>
- Gemminger, M. & Harold, B. (1876) *Catalogus Coleopterorum hucusque descriptorum synonymicus et systematicus, Vol. 12*. Sumptu Theodor Ackermann, Monachii, pp. 3479–3822. [Coccinellidae part: 3740–3818]
<https://doi.org/10.5962/bhl.title.9089>
- González, G. (2013) *Gordonita* n. gen. y otros aportes al conocimiento de los Chnoodini de América del Sur (Coleoptera, Coccinellidae). *Boletín de la Sociedad Entomológica Aragonesa*, 53, 63–79.

- Gordon, R.D. (1972) A tribe Noviini in the New World (Coleoptera: Coccinellidae). *Journal of the Washington Academy of Sciences*, 62 (1), 23–31.
- Gordon, R.D. (1987) A catalogue of the Crotch collection of Coccinellidae (Coleoptera). *Occasional Papers on Systematic Entomology*, 3, 1–46.
- Gordon, R.D. (1994) South American Coccinellidae (Coleoptera). Part III: Definition of Exoplectrinae Crotch, Azyinae Musant, and Coccidulinae Crotch; a taxonomic revision of Coccidulini. *Revista Brasileira de Entomologia*, 38, 681–775.
- Korschevsky, R. (1931) Coccinellidae. I. In: Junk, W. & Schenkling, S. (Eds.), *Coleopterorum Catalogus. Pars 118*. W. Junk, Berlin, pp. 1–224.
- Mulsant, E. (1850) Species des Coléoptères trimères sécuripalpes. *Annales des Sciences Physique et Naturelles d'Agriculture et d'Industrie*, 2, 1–1104.
<https://doi.org/10.5962/bhl.title.8953>
- Mulsant, E. (1853) Supplément a la monographie des Coléoptères trimères sécuripalpes. *Annales de la Société Linnéenne de Lyon, Nouvelle Série*, 2 (1), 129–333.
<https://doi.org/10.5962/bhl.title.60609>
- Sicard, A. (1912) Descriptions d'espèces et variétés nouvelles de Coccinellides de la collection du Deutsches Entomologisches Museum de Berlin-Dahlem. *Archiv für Naturgeschichte*, A (6), 78, 129–138.
- Ślipiński, A. & Tomaszewska, W. (2010) Coccinellidae Latreille, 1802. In: Leschen, R.A.B., Beutel R.G. & Lawrence, J.F. (Eds.), *Handbook of Zoology, Coleoptera. Vol. 2*. Walter de Gruyter, Berlin/New York, pp. 454–472.