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A new species of *Platyauchenia* Stürm, 1843 (Coleoptera: Chrysomelidae: Cassidinae) from Brazil

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Abstract. The genus *Platyauchenia* Stürm, 1843 is reviewed. *Platyauchenia quinquemaculata* Pic, 1921 is a synonym of *P. latreillei* (Castelnau 1840), new synonymy. *Platyauchenia ruficollis* new species is described from Brazil. Each species is illustrated and a key to the species is provided.

Key words: *Platyauchenia*, Chrysomelidae, Cassidinae, new species.

Introduction

The genus *Platyauchenia* was erected by Stürm (1843) for the new species *Platyauchenia limbata* from Brazil. Guérin-Méneville (1844) erected *Sphaeropalpus* for the new species S. *cincta* from Brazil. Boheman (1850) synonymized *S. cincta* Guérin-Méneville with *P. limbata* Stürm. Baly (1866) described *Sphaeropalpus deyrollei* from Brazil. Dohrn (1880) described *Platyauchenia titubans* from Brazil. Spaeth (1917) transferred *Cassida latreillei* Castelnau 1840 to *Platyauchenia* and synonymized *P. limbata* Sturm and *P. titubans* Dohrn with *Platyauchenia latreillei* (Castelnau). Pic (1921) described *Platyauchenia quinquemaculata* from Brazil. Maulik (1933) synonymized *S. deyrollei* Baly with *P. latreillei* (Castelnau).

For this study, measurements were taken with an ocular micrometer. Pronotal length and width were measured along the midlines. Elytral width was measured at the humeri. Elytral length was measured from the base to the apex along the midline. Total length was measured from the base of the antennae to the apex of the elytra. In recording label data from type specimens, a slash (/) separates data on different labels; brackets ([ ]) include explanatory or label color information. Collection acronyms are from Arnett et al. (1993).

Genitalia were extracted and examined. No taxonomic characters were found on genitalia.

Platyauchenia Stürm 1843

Platyauchenia Stürm 1843: 358. Type species: *Cassida latreillei* Castelnau (= *Platyauchenia limbata* Stürm), by monotypy. Spaeth 1914: 4 (catalog), 1917: 24 (nomenclatural note); Maulik 1933: 669 (immatures); Blackwelder 1946: 733 (faunal list); Uhmann 1957: 48 (catalog); Staines 2002: 745 (key to genera).

Sphaeropalpus Guérin-Méneville 1844: 285. Type species *Sphaeropalpus cincta* Guérin-Méneville, by monotypy. Boheman 1850: 6 (synonymy); Chapuis 1875: 360 (generic treatment).

Diagnosis. Head: clypeus transverse, deeply sulcate; maxillary palp with 4 palpomeres, palpomeres 1 to 3 short, equal in length and width, cylindrical, IV large, rounded, truncate. Antenna: filiform, apical antennomere widest. Pronotum: nearly as wide as base of elytra, widest at base, narrowing anteriorly; lateral margin evenly arcuate from base to apex; disc highly convex, depressed laterally on each side of disc; basal and anterior margins bisinuate. Scutellum: triangular, rounded at apex. Elytron: convex; punctate; widest in middle, narrowing anteriorly and posteriorly; margined laterally; basal and sutural margins yellowish.

Platyauchenia latreillei (Castelnau 1840)

Figure 1, 3, 4

Figure 1-2. Habitus of *Platyauchenia* adults. **1)** *Platyauchenia latreillei*. **2)** *Platyauchenia ruficollis*.

Cassida latreillei Castelnau 1840: 510 [Brazil, type depository unknown].
Himatidium latreillei (Castelnau). Spaeth 1914: 14 (catalog).
Imatidium latreillei (Castelnau). Papp 1953: 125 (catalog).
Platyauchenia latreillei (Castelnau). Spaeth 1917: 24 (distribution), 1935: 65 (distribution); Maulik 1933: 669 (immatures), 1937: 133 (host plants), 1940: 256 (host plants); Bondar 1940a: 98 (biology), 1940b: 27 (note), 1940c: 37 (note), 1940d: 847 (note); Blackwelder 1946: 733 (faunal list); Costa Lima 1955: 205 (faunal list); Uhmann 1957: 48 (catalog); Godofredo d'Araújo e Silva et al. 1968: 450 (faunal list); Jolivet and Hawkeswood 1995: 145 (host plants); Mariau 1999: 233 (host plant), 2004: 605 (biology); Cox 1996: 212 (pupa).
Sphaeropalpus cincta Guérin-Méneville 1844: 285 [Brazil, type depository unknown]. Boheman 1850: 7 (synonym); Baly 1866: 7 (note); Maulik 1933: 669 (synonymy).
Sphaeropalpus deyrollei Baly 1866: 6 [Brazil, BMNH]. Spaeth 1914: 4 (catalog), 1935: 65 (nomenclatural note); Maulik 1933: 669 (synonymy); Lepesme 1947: 529 (biology).
Platyauchenia deyrollei (Baly). Pic 1921: 2 (comparative note); Costa Lima 1928: 188 (faunal list), 1936: 317 (faunal list); Blackwelder 1946: 733 (faunal list); Lepesme 1947: 529 (biology); Mariau 1999: 233 (host plant).
Platyauchenia deyrollei (Guérin-Méneville). Bondar 1924: 111 (biology), 1925: 48 (biology).
Platyauchenia limbata Stürm 1843: 359 [Brazil, type depository unknown]. Boheman 1850: 7 (redescription); Spaeth 1914: 4 (catalog), 1917: 24 (synonymy); Maulik 1933: 669 (nomenclature).

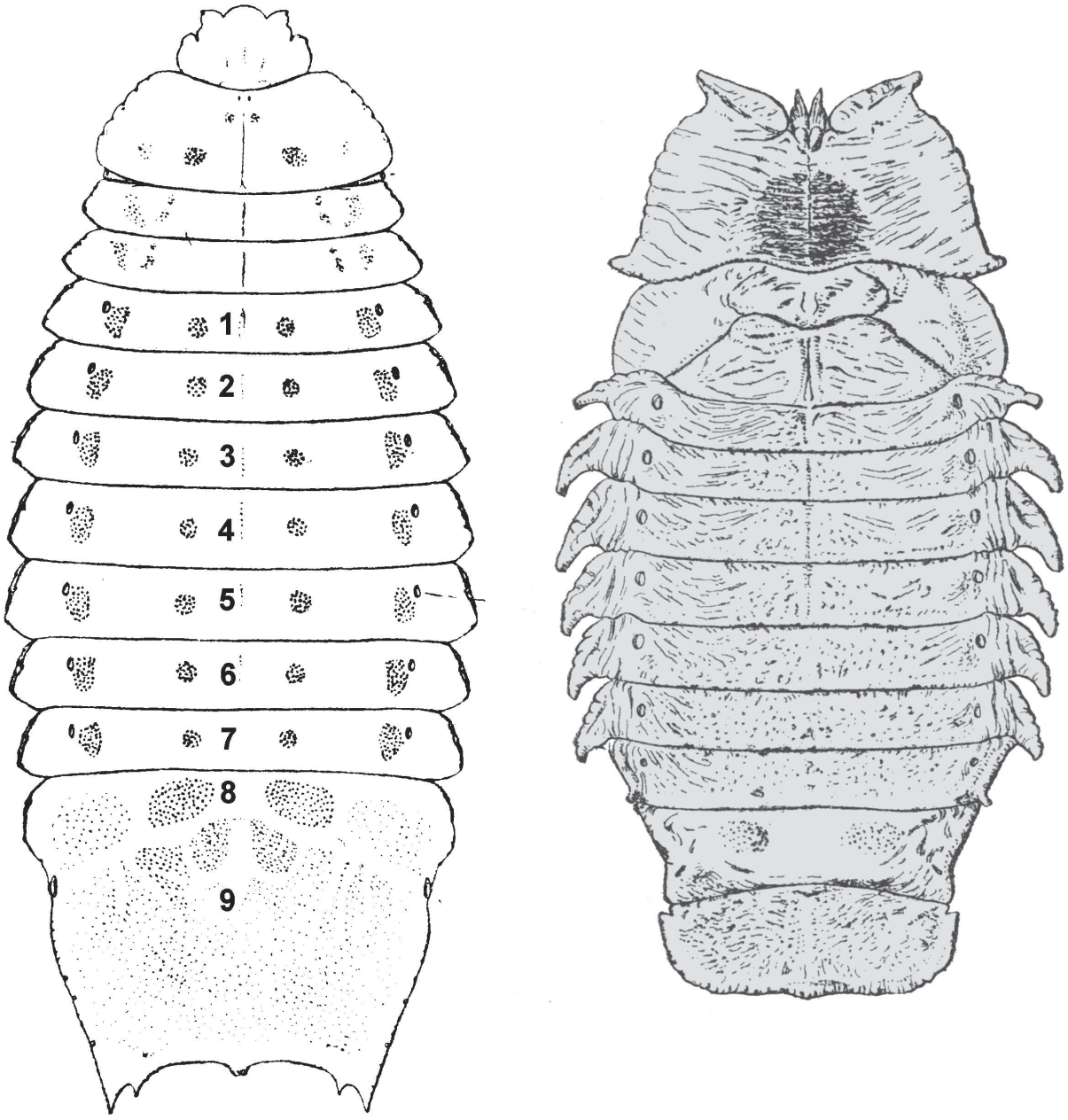

Figure 3-4. Immature stages of *Platyauchenia latreillei* (from Maulik 1933). **3)** Larva. **4)** Pupa.

Platyauchenia titubans Dohrn 1880: 153 [Brazil, type depository unknown]. Spaeth 1914: 5 (catalog), 1917: 24 (nomenclatural note), 1935: 66 (synonymy); Maulik 1933: 670 (nomenclature); Blackwelder 1946: 733 (faunal list).

Platyauchenia quinquemaculata Pic 1921: 2 [Brazil, MNMH?]. Blackwelder 1946: 733 (faunal list); Uhmann 1957: 49 (catalog). **New synonymy**.

Description. Oblong-ovate; moderately convex. Vertex of head black, interocular space brownish (blackish in some specimens); antennae and mouthparts black; pronotum brown with medial black macula on raised area from anterior margin to posterior margin near scutellum, the size and development of the macula variable; scutellum black; elytra margined in black, with black markings along suture and lateral margins, but never completely black, sutural vitta narrow to apex, some specimens with transverse

brown band which may be well defined or obscure; venter brown; tarsi and tibio-tarsal joint black, some specimens having black patches on femora and tibiae. Head: vertex punctate; medial sulcus present; slightly depressed between eyes. Antenna: less than ¼ length of body; antennomere I cylindrical, twice as long as II; II short, transverse; III cylindrical, as long as I & II combined; IV-VI cylindrical, decreasing in length; VII-X cylindrical subequal in length; XI as long as X, rounded at apex. Pronotum: more than twice as wide as long; widest at base; lateral margin broadly rounded, converging from base to apex; anterior angle with obtuse tooth; posterior angle acute; apical margin notched behind head; coarsely, sparsely punctate; base convex medially, with some rugose punctures; remainder depressed; pronotal length 4 mm; pronotal width 9-10 mm. Scutellum: subovate; with few scattered punctures. Elytron: slightly expanding posteriorly; lateral margin smooth, slightly rimmed; exterior apical angle rounded; apical margin smooth; elytral apices individually rounded; densely, coarsely punctate, punctures not in regular rows; extra punctures present in middle between basal rows 7-8; short sutural row present; three slight costae present, 1st between puncture rows 3-4 from near base to just beyond middle, 2nd between rows 6-7 from just behind humerus to apical ¼, 3rd between rows 10-11 in middle; humerus slightly produced, rounded; elytral length 14-19 mm; elytral width 10-11 mm. Venter: pro-, meso-, and metasterna punctate; abdominal sterna punctate. Leg: femur punctate. Total length: 17-20 mm.

Larva (from Maulik 1933)**.** Mature length 36 to 38 mm. Ovate, narrowing posteriorly and anteriorly, flat (not exceeding 1 mm in thickness); smooth and shining. Head: elliptical, posterior margin uniformly curved, anterior margin in five lobes, one medial and four lateral (two on each side); medial lobe narrowed in front, completely covering labrum; first lateral lobe rounded on inner margin, sinuate on outer margin, anterior margin ending in sharp point with a little cavity containing the antenna; lateral lobe 2 less pronounced, outer margin with three or four rounded "bumps", dorsal surface smooth with scattered pits and with fine striations in a longitudinal direction; labrum thick, deeply excavated on underside; mandible without well defined teeth, front margin curving to a point, slightly notched at apex; maxillary palp with 2 palpomeres. Antenna: held in cavity; with 3-antennomeres; basal antennomere large, cylindrical, with four setae; II smaller, cylindrical, with 2 setae; III with pointed projection on outer margin. Thorax: suture between head and prothorax slightly emarginate; prothorax narrowed anteriorly, lateral margins rounded toward venter; mesothorax narrowest in middle; laterally with triangular projection which is backward directed; metathorax similar to mesothorax but larger. Abdomen: segments (except 8 and 9) well defined; segments 1-7 similar in shape and structure; 8 partially fused with 9; 9 shovel-shaped, wider at base, narrower at apex, sides slightly sinuate, upper surface slightly concave, apical margin divided into 2 parts by a blunt projection; apical corner with two sharp spines. Leg: 2-segmented; basal segment larger; with 1 claw. Length 36-38 mm, width 12-13 mm.

Pupa (from Maulik 1933). Oblong-ovate; widest in middle, narrowed anteriorly and posteriorly; dark brown dorsally, lighter ventrally; thorax with large dark spot; surface with numerous transverse wrinkles. Thorax: narrowed anteriorly; lateral margin slanting from base to apex, margin scalloped; basal margin bisinuate; each angle slightly produced, posterior angle more so; anterior margin divided into two parts with margin rounded at base then obliquely straight to apex, surface longitudinally wrinkled dorsally, transversely wrinkled ventrally; at base of division two small, well separated lobes; mesonotum small, short, anterior margin sinuate, posterior margin produced medially into small lobe; metanotum narrowed anteriorly, margin emarginate in middle to receive medial lobe of mesonotum, sides straight, oblique, basal margin nearly straight, but slightly sinuate at each side; head with medially impressed line. Abdomen: segments 1-7 similar in structure, each produced into a process; lateral process directly posteriorly with apex bluntly pointed, darker in color; segment 8 without lateral process, longer than preceding, narrower at apex than base, surface more wrinkled laterally, depressed laterally; segment 9 rectangular, wider than long, sides rounded, apical margin nearly straight but slightly emarginate in middle, edge scalloped, with deep notch in middle of apical margin. Total length: 28 mm; width 15 mm.

Host plants. *Cocos nucifera* L., *Diplothemium* (Arecaceae) (Maulik 1933, 1940; Bondar 1924). Maulik (1933, 1937) incorrectly listed the host plant as *Theobroma cacao* L. (Maulik 1940).

Life history. Bondar (1924, 1925, 1940a) published life history notes on this species. Larvae feed in young buds and axils of new leaves of *Cocos*. They feed on the epidermal layer of the plant resulting in the excavation of a flat gallery in the leaves and trunk. Mature leaves exhibit a 5-15 mm dark patch on the surface. Pupation occurs in dried leaves of the host plant and occurs in the last larval exuvium. Adults feed on the same plants as the larvae.

Discussion. *Platyauchenia latreillei* is extremely variable in coloration. Pic (1921) described *P. quinquemaculata* based totally on coloration. Repeated requests to the Museum National d'Histoire Naturelle, Paris, which houses the Pic type, failed to receive a response. Based on Pic's description, the species is treated as a synonym of *P. latreillei*.

Distribution. Brazil.

Specimens examined. Ex. Musaeo E. Allard 1899 (USNM, 1; CLS, 1). **Brazil**: Rio de Janeiro (USNM, 2); Sao Paulo, Jan. 1949 (USNM, 1). Total: 5.

***Platyauchenia ruficollis* Staines, new species**
Figure 2

Holotype (female): [Brazil] Goyaz, Coiquna (?), I. M. Sousa, X. 1938/ F. Monros Collection 1959/ Holotype Platyauchenia ruficollis Staines (red label). Deposited in USNM.

Description. Head, antennae, scutellum, legs, and venter black; pronotum red with two black transverse bands on disc; elytra black with red spot on basal ¼ along suture. Head: depressed between eyes; vertex punctate. Antenna: barely reaching base of pronotum; antennomere I twice as long as II; II transverse; III longest, more than twice length of II; IV-XI decreasing in length. Pronotum: widest at base, lateral margin notched just before posterior angle, rounded to apex; anterior angle with acute tooth; posterior angle with small obtuse tooth; densely coarsely punctate, punctures larger laterally; disc convex; pronotal length 3 mm; pronotal width 7 mm. Scutellum: punctate; depressed apically. Elytron: lateral and apical margins smooth, explanate; apical angle slightly emarginate; sutural angle with small tooth; humerus produced; densely coarsely punctate; additional puncture rows present between rows 7 and 8 after middle; four costae present, 1st beginning at base along suture, obsolete on apical ¼; 2nd between rows 3 and 4 at base, slightly sinuate, continuing to apical ¼; 3rd starting at humerus, curving toward suture around additional puncture rows, obsolete on apical ¼; 4th between humerus and lateral margin on base; elytral length 11 mm; elytral width 8 mm. Venter: abdominal sterna yellowish apically; pro-, meso-, and metasterna punctate and rugose laterally. Leg: femur punctate. Total length: 14 mm.

Etymology. A combination of *rufi* (Latin = red) and *collis* (Latin = neck) for the reddish pronotum.

Comparative notes. *Platyauchenia ruficollis* differs from *P. latreillei* by the following combination of characters: each elytron with four costae; sutural angle of elytra with small tooth; apical angle of elytra slightly emarginate; pro-, meso-, and metasterna punctate medially and rugose laterally.

Key to the known species of *Platyauchenia* Stürm

1. Each elytron with three costae; sutural angle of elytra without tooth; apical angle of elytra rounded; pro-, meso-, and metasterna punctate; Brazil..... ***P. latreillei* (Castelnau)**
— Each elytron with four costae; sutural angle of elytra with small tooth; apical angle of elytra slightly emarginate; pro-, meso-, and metasterna punctate medially, rugose laterally; Brazil . ..... ***P. ruficollis* Staines, new species**

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Literature Cited

Arnett, R. H., G. A. Samuelson, and G. M. Nishida. 1993. The insect collections of the World. Flora and Fauna Handbook No. 11. Sandhill Crane Press; Gainesville, Florida. 308 p.

Baly, J. S. 1866 [1863]. Descriptions of new species of Cassididae, together with a list of all the species belonging to the same family collected by the late M. Mouhot in Siam and Cambodia. Journal of Entomology 1: 6-14.

Blackwelder, R. E. 1946. Checklist of the Coleopterous insects of Mexico, Central America, the West Indies, and South America. United States National Museum Bulletin 185: 551-763.

Boheman, C. H. 1850. Monographia cassididarum. Volume 1. Holmiae. 452 p.

Bondar, G. 1924. Insectos damninhos e molestias das planta e dos animaes. Correio Agricola Bahia 2: 111-112.

Bondar, G. 1925. Insectos damninhos e molestias das plantas culturaes. Boletim do Laboratorio de Pathologia Vegetal do Estado da Bahia 8: 41-57.

Bondar, G. 1940a. Insectos nocivos e molestias do coqueiro (*Cocos nucifera*) no Brasil. Boletim do Instituto Central de Fomento Economico de Bahia 8. 160 p.

Bondar, G. 1940b. Novas observações sobre *Himatidium neivai* Bondar, praga do coqueiro. O Campo 11(129): 26-27.

Bondar, G. 1940c. A posição do genero *Himatidium* da familla dos Crisomelideos e descrição de uma especie nova. O Campo 11(130): 37-38.

Bondar, G. 1940d. Notas entomologicas da Bahia. VI. Revista de Entomologia Rio de Janeiro 11: 842-861.

Castelnau, F. L. 1840. Histoire naturelle et iconographie des insectes Coléoptères. P. Duménil; Paris.

Chapuis, F. 1875. *In:* J. T. Lacordaire. Histoire naturelle des insectes. Genera des Coléoptères, Vol. 11, Famille des Phytophages. Librairie encyclopédique de Roret; Paris. 420 p.

Costa Lima, A. 1928. Segundo catálogo systemático dos insectos que vivem nas plantas do Brasil e ensalo de bibliographia entomologica brasileira. Archivos da Escola Superior de Agricultura e Medicina Veterinaria 8: 69-301.

Costa Lima, A. 1936. Terceiro catálogo dos insetos que vivem nas plantas do Brasil. Ministerio da Agricultura Departamento Nacional da Prodicção Vegetal, Escola Nacional Agronomia Rio de Janeiro. 460 p.

Costa Lima, A. 1955. Insectos do Brasil. 9th Tomo, Coleópteros, 3a parte. Séries Didàtica 11: 1-289.

Cox, M. L. 1996. The pupae of Chrysomeloidea. p. 119-265. *In*: P. H. A. Jolivet and M. L. Cox (eds.). Chrysomelidae Biology. Vol. 1: The classification, phylogeny and genetics. SPB Academic Publishing; Amsterdam. 444 p.

Dohrn, C. A. 1880. Exotisches. Stettiner Entomologische Zeitung 41: 149-157.

Godofredo d'Araújo e Silva, A., C. R. Gonçalves, D. M. Galvâo, A. J. L. Gonçalves, J. Gomes, M. do Mascimento Silva, and L. de Simoni. 1968. Quarto catálogo dos insetos que vivem nas plantas do Brasil seus parasitos e predadores. Ministério da Agricultura, Departmento de Defesa e Inspeção Agropecuária; Rio de Janeiro. 622 p.

Guérin-Méneville, F. E. 1844. Iconographie du regne animal de G. Cuvier. vol. 7. Insects. J. B. Baillière; Paris. 576 p., 104 pl.

Jolivet, P., and T. J. Hawkeswood. 1995. Host-plants of Chrysomelidae of the world. Backhuys Publishers; Leiden. 281 p.

Lepesme, P. 1947. Les insectes des palmiers. P. Lechevalier; Paris. 903 p.

Mariau, D. 1999. Les Coleopteres Chrysomelidae infeodes au palmier a huile et au cocotier et leurs parasitoids. Annals de la Société entomologique de France (n.s.) 35(supplement): 230-237.

Mariau, D. 2004. Leaf beetles of oil palm (*Elaeis guineensis*) and coconut palm (*Cocos nucifera*). p. 603-612. *In*: P. Jolivet, J. A. Santiago-Blay, and M. Schmitt (eds.). New developments in the biology of Chrysomelidae. SPB Academic Publishing; The Hague, The Netherlands. 803 p.

Maulik, S. 1933. On the structure of larvae of hispine beetles-III. Proceedings of the Zoological Society of London 1933: 669-680.

Maulik, S. 1937. Distributional correlation between hispine beetles and their host plants. Proceedings of the Zoological Society of London Ser. A: 129-159.

Maulik, S. 1940. The food plant of *Platyauchenia latreillei* (Castelnau) (Hispinae, Chrysomelidae, Coleoptera). The Annals and Magazine of Natural History (11)5: 256.

Papp, C. S. 1953. The Hispinae of America. Third contribution for promoting the scientific results of the International Hylean Amazon Inst. in Manaos, Brazil. Portugaliae Acta Biologica (B)4: 1-147.

Pic, M. 1921. Nouveautes diverses. Mélanges Exotico-Entomologiques 34: 1-32.

Spaeth, F. 1914. Chrysomelidae: Cassidinae. Coleopterorum Catalogus, Pars 62: 1-182.

Spaeth, F. 1917. Beiträge zur Kenntnis der süd- und zentralamerikanischen Cassidinen. Coleopterologische Rundschau 6: 24-31.

Spaeth, F. 1935. Mitteilungen über neue oder bemerkenswerte Cassidinen aus dem Senckenberg-Museum (Ins. Col.). Entomologische Rundschau 53: 65-69.

Staines, C. L. 2002. The New World tribes and genera of hispines (Coleoptera: Chrysomelidae: Cassidinae). Proceedings of the Entomological Society of Washington 104: 721-784.

Stürm, J. 1843. Catalog der Kaefer-Sammlung von Jacob Sturm. Verfasser; Nürnberg. 386 p.

Uhmann, E. 1957. Chrysomelidae: Hispinae, Hispinae Americanae. Coleopterorum Catalogus Supplementa, Pars 35(1): 1-153.

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