Valid name

Adetus sp.

Synonymy/catalog
Adetus sp. EGR 1: Bender et al., 2005:773

Classification
Family: Cerambycidae
Subfamily: Lamiinae
Tribe: Adetini
Linsley and Chemsak (1985) removed *Adetus* from the Old World tribe Apomecynini and reinstated the tribe Adetini. Older works and catalogs treat *Adetus* in the Apomecynini.

Diagnostic remarks
The genus *Adetus* is large with upwards of 70 species occurring throughout much of the Neotropical Region (Monné and Giesbert 1993). A complete revision of the group is lacking and current taxonomy is difficult (Heffern et al., pers. comm., 2008). This beetle species has been known to North American cerambycid specialists for several years, but it has yet to be positively identified to species. It seems to have been first discovered in the field at about the time the work of Hovore et al. (1987) was published, thus it is not mentioned in that work. Some specimens examined during the present study carry identification labels which read "*Adetus* sp., nr. *bacillarius* Bates or new." *Adetus bacillarius* is recorded from "Guatemala-Panama, Venezuela" (Monné and Giesbert 1993). *Adetus* sp. (subject of this report) is elongate with a body length of ca. 4.5-7.1 mm and greatest body width at the elytral humeri of 1.2-1.8 mm. The body is cylindrical and parallel-sided. The underlying color of the cuticle is dark reddish-brown and the cuticle is covered with lighter colored scales of various shades of brown to grey. Coverage of hairs is incomplete producing a speckled pattern where dark underlying cuticle color is visible. There is a very weakly discernable pattern on the elytra consisting of pale postscutellar and subapical bands, and the hairs on each side of the pronotum form a broad longitudinal band that is lighter in color than the pronotal disc. The pronotal disc and elytral surface are densely irregularly punctate with large to moderate punctures. The antennae are fairly short, not reaching much beyond the middle of the elytra in the male. As a member of the subfamily Lamiinae, the face of the head is strongly vertical. As a member of the tribe Adetini, it has the following combination of characters: tarsal claws simple and divergent, the antennal scape is without a cicatrix, and the eyes are completely divided.

This *Adetus* sp. could be confused with a few other lamiine longhorn beetles of the Lower Rio Grande Valley (LRGV). *Parmenonta wickhami* Schaeffer is perhaps most similar in having short antennae, but can be distinguished by the more stout body form and the unique dark terminal spot on the elytra. *Spalacopsis texana* Casey is similar in general appearance but the antennae extend to or past the elytral apices in both sexes. *Dorcasta cinerea* (Horn) is similar in size and shape but is easily distinguished by long erect black hairs on the elytra. In addition to the *Adetus* species which is the subject of this report, a second unidentified species of *Adetus* and *A. brousi* (Horn) have been

discovered or reported in the LRGV. Both can be separated from the present *Adetus* sp. in being more robust in body form. The second undetermined species is a fairly uniform reddish-brown coloration (due to color of appressed hairs) with a sharply defined, subapical patch of whitish hairs near the side of each elytron. *Adetus brousi* can be further distinguished by its pale sandy dorsal color (due to color of appressed hairs) that forms a variegated pattern.

The genus is keyed in the standard works on North American Cerambycidae (Linsley and Chemsak 1985, Turnbow and Thomas 2002). Color images of *Adetus* sp. are available on the web [http://bugguide.net/node/view/270468] (last accessed on 6/24/2009).

Historic Occurrence Records

1) From literature: none.

2) From specimens examined: See "specimen records" on attached Excel spreadsheet.

3) From communicated records: See "communicated records" on attached Excel spreadsheet.

Known Range

Texas, area east of Brownsville (Cameron County).

Biology, Host, Substrate, Habitat Data

1) From literature: None.

2) From specimens: Several specimens carry labels indicating an association with *Croton humilis* L. (Euphorbiaceae).

3) From communicated records: This species is collected by sweeping living *Croton humilis* found growing on "loma habitat /lomas" east of Brownsville (E. G. Riley, D. J. Heffern and R. H. Turnbow, pers. obser./comm., 2009).

Biology, Host, Substrate, Habitat Data by Inference (based on knowledge of related species)

Little is known of the habits of *Adetus* species, except for *A. brousi* (Horn), a species occurring in the central and southwestern United States. This species is well-known to longhorn beetle collectors as being found on living plants of wild gourd (*Cucurbita foetidissima* Kunth [Cucurbitaceae]), an association first noted by Knaus (1909). Adults are found on living vines and can be reared from the dead dried stems the following year (D. J. Heffern, R. H. Turnbow, pers. comm., 2009). Label data cited by Linsley and Chemsak (1985) indicated that *A. lewsi* Linsley & Chemsak from Arizona has also been reared from the stems of this plant species.

J. E. Wappes (pers. comm., 2009) provided the insightful comments about collecting *Adetus* species: "I don't recall collecting the croton inhabiting *Adetus* sp. you refer to but I do know that both *brousi* and *lewisi* can be reared from the ground gourd vines found throughout SW US. Appears the vines are attacked while alive but the beetle larvae are prevalent enough to desiccate them by late summer and they are easy to rear just by collecting the dying vines. In the tropics there are a number of *Adetus* sp. that attack all kinds of "fresh/living" vines but there is an even larger group of species that

inhabit woody vines. Of the approximately 50 species of *Adetus* I've collected, about 3/4 of the species are associated with these woody vines. In Mexico and Central America I have collected at least 6-8 species which are only taken by beating fast growing fleshy vines. Typically you find them along forest or roadside edge with the vines virtually covering the understory plants. In this situation I've taken as many as a half dozen specimens in the same "beat." For the woody vine species many are taken also by beating trail or road edge that has been trimmed resulting in lots of cut woody vines. Again it's not unusual to take multiple specimens in the same “beat”. Not had the chance to rear from such materials so I can't comment on that. I do know the specimens of the Palm Grove sp. [this is a reference to the second undetermined species of *Adetus* known in the LRGV (Note added by EGR)] that I've taken were associated with tangles of woody vines.”

Adult Phenology in Texas

1) Number of compiled Texas collecting events by month: April (3), May (6), October (6).

2) Year of most recent known collection in the Lower Rio Grande Valley: 1993.

Literature Cited

Bender, S., S. Shelton, K. C. Bender, and A. Kalmbach (eds.). 2005. Texas Comprehensive Wildlife Strategy, 2005-2010. Texas Parks and Wildlife, Austin. xv + 1131 pp.

Hovore, F. T., R. L. Penrose, and R. W. Neck. 1987. The Cerambycidae, or longhorned beetles, of southern Texas: a faunal survey (Coleoptera). Proceedings of the California Academy of Sciences 44(13): 283-334.

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Turnbow, R. H., Jr. and M. C. Thomas. 2002. Cerambycidae Leach, 1815, pp. 568-601, *in* Arnett, R. H., M. C. Thomas, P. E. Skelley, and J. H. Frank (eds.). American Beetles. Polyphaga: Scarabaeoidea through Curculionoidea. Volume 2. CRC Press. xiv + 1-861 pp.

Valid name

Agallissus lepturoides (Chevrolat)

Synonymy/catalog
Aplectrus lepturoides Chevrolat in d'Orbigny, 1844:12 [NAME NOT CHECKED]
Cryptopleura grata Haldeman, 1853:363
Agallissus clytoides Lacordaire, 1869:134
Agallissus gratus: LeConte, 1873a:204
Agallissus gratus: LeConte, 1873b:321
Agallissus clytoides: Bates, 1879-1886 (1880):68
Agallissus gratus: Bates, 1879-1886 (1880):68
Agallissus clytoides: Bates, 1879-1886 (1885):314
Agallissus gratus: LeConte & Horn, 1883:306
Agallissus gratus: Leng, 1890:9
Agallissus gratus: Hamilton, 1896:173
Agallissus lepturoides: Aurivillius, 1912:445
Agallissus lepturoides: Leng, 1920:278
Agallissus lepturoides: Blackwelder, 1946:586
Agallissus lepturoides: Linsley, 1964:195
Agallissus lepturoides: Chemsak et al., 1980:32
Agallissus lepturoides: Chemsak & Linsley, 1982:49
Agallissus lepturoides: Hovore, Penrose, & Neck, 1987:308
Agallissus lepturoides: Monné & Giesbert, 1993:131
Agallissus lepturoides: Turnbow & Thomas, 2002:595
Agallissus lepturoides: Bender et al., 2005:773

Classification
Family: Cerambycidae
Subfamily: Cerambycinae
Tribe: Agallissini
The classification of *Agallissus* is not controversial.

Diagnostic remarks
This is a very distinctive species easily recognized by its general habitus and not likely to be confused with other Cerambycidae found in the Lower Rio Grande Valley. As a member of the subfamily Cerambycinae, the face of the head is not vertical but rather somewhat horizontal in repose. Body length is ca. 11.5-17.3 mm, and the width across the elytral humeri is ca. 3.3-5.6 mm. Body is widest across elytral humeri with the elytra evenly tapered to apex. The pronotum is markedly narrower than the elytral base and densely covered with short brownish appressed hairs and sparsely covered with long erect brownish hairs. The antennae are black to brownish, and the legs range in color from entirely orange to entirely black or are bicolored. Elytra are black, each elytron usually with three to four conspicuous yellow spots, three discal in a row and one lateral. The anterior-most discal spot of an elytron is elongated, and the lateral spot is sometimes

joined to the median discal spot. The elytral surface is shining and uniformly covered with sparse punctation and long erects brownish hairs.

The genus is keyed in the standard works on North American Cerambycidae (Linsley 1962, Turnbow and Thomas 2002). Images of this species are available on the web [http://bugguide.net/index.php?q=search&keys=Agallissus&search=Search] (last accessed 6/24/2009).

Historic Occurrence Records

1) From literature: See "literature records" on attached Excel spreadsheet.

2) From specimens examined: See "specimen records" on attached Excel spreadsheet.

3) From communicated records: See "communicated records" on attached Excel spreadsheet.

Known Range

Brownsville area of Texas to Mexico (Quintana Roo, Oaxaca, Tamaulipas, Veracruz, and Yucatán) to Belize, Guatemala, and Honduras.

Biology, Host, Substrate, Habitat Data

1) From literature: none.

2) From specimens: Specimens were seen with the following labels,…" with *Chamaedorea* fronds," "at blacklight," and "with pineapple". The pineapple record is likely based on border interception with produce.

3) From communicated records: "beaten from palm frond" (pers. comm., Mike Brattain via D. J. Heffern, 2008).

Biology, Host, Substrate, Habitat Data by Inference (based on knowledge of related species)

Two other genera of the tribe Agallissini (*Osmopleura* Linsley and *Zagymnus* LeConte) are known to breed in palms (Linsley 1964).

Adult Phenology in Texas

1) Number of compiled Texas collecting events by month: April (1).

2) Year of most recent known collection in the Lower Rio Grande Valley: LeConte 1873b was the first to report this species from Texas (with no further data). Bates (1880, 1885) repeated that record. The only modern specimen record from Texas was taken in 1998 (pers. comm., Mike Brattain via D. J. Heffern, 2008).

Literature Cited

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LeConte, J. L. 1873b. Classification of the Coleoptera of North America. Prepared for the Smithsonian Institution. Part II. Smithsonian Miscellaneous Collections 11(265): 279-348.

LeConte, J. L. and G. H. Horn. 1883. Classification of the Coleoptera of North America. Smithsonian Miscellaneous Collections 26(507): xxxviii + 1-567.

Leng, C. W. 1890. Synopses of Cerambycidae. Entomologica Americana 6: (1): 9-13, (4): 65-69, (5): 97-98, (6): 104-110, (8): 156-160, (10): 185-200, (11): 213-214.

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Linsley, E. G. 1964. The Cerambycidae of North America part V. Taxonomy and classification of the subfamily Cerambycinae, tribes Callichromini through Ancylocerini. University of California Publications in Entomology 22: viii + 1-197.

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Valid name

Ataxia tibialis Schaeffer

Synonymy/catalog
Ataxia tibialis Schaeffer, 1908:348
Ataxia tibialis: Leng, 1920:284
Ataxia tibialis: Aurivillius, 1922:292
Ataxia tibialis: Linsley & Martin, 1933:183
Ataxia tibialis: Breuning, 1961:47
Ataxia tibialis: Chemsak & Linsley, 1982:81
Ataxia tibialis: Linsley & Chemsak, 1985:132
Ataxia tibialis: Hovore, Penrose, & Neck, 1987:312, fig. 7
Ataxia tibialis: Monné & Giesbert, 1993:208
Ataxia tibialis: Bender et al., 2005:773

Classification
Family: Cerambycidae
Subfamily: Lamiinae
Tribe: Ataxiini
The genus *Ataxia* was placed in the Pteropliini of the Old World in some early classifications. Linsley and Chemsak (1985) reinstated the tribe Ataxiini.

Diagnostic remarks
Although this is a relative small and drab-colored longhorn beetle, it is easy to recognize among the Lower Rio Grande Valley Cerambycidae. It is dark reddish-brown and covered with brownish-gray mottled coloration due to the color of the appressed hairs that coat the body. The body is subcylindrical, about 3.5 times as long as wide, and ca. 13 mm in length. It is broadest across the elytral humeri. The grayish-colored hairs of each elytron form a vague oblique paler mark that extends from the humerus to the middle of the elytral suture. The antennal scape possesses a cicatrix, the metasternum is not deeply longitudinally sulcate, the elytra are not costate, and the elytral apices lack acute spines and are oblique, forming a conjoint apical emargination. This species is not likely to be confused with the two common *Ataxia* species found in the Lower Rio Grande Valley of Texas because of its smaller size and the unusually broad and flattened tibiae which are unique to this species. It has been suggested that when the entire group of genera to which *Ataxia* belongs is better understood, *A. tibialis* may well be assigned to a separate new genus (J. E. Wappes, pers. comm., 2009).

The genus is keyed relative to other genera found in America north of Mexico in the standard works on North American Cerambycidae (Linsley and Chemsak 1985, Turnbow and Thomas 2002). Linsley and Chemsak (1985) key the species relative to other *Ataxia* occurring in America north of Mexico. A color image of the type specimen is available on the Web at the American Museum of Natural History Type Specimens Database [http://research.amnh.org/invertzoo/types_db/details.php?specimen_id=171] (last accessed 6/24/2009), and at http://plant.cdfa.ca.gov/byciddb/details.asp?id=9144 (last accessed 6/24/2009).

Historic Occurrence Records

1) From literature: See "literature records" on attached Excel spreadsheet.

2) From specimens examined: None.

3) From communicated records: See "communicated records" on attached Excel spreadsheet.

Known Range

Brownsville area of Texas (Cameron County).

Biology, Host, Substrate, Habitat Data

1) From literature: Hovore et al. (1987) state: "We know of only 7 specimens, all from the palm grove; some specimens were collected from dead *Zanthoxylum*, some by miscellaneous beating and some at lights." They cite the adult activity period as May and June.

2) From specimens: none.

3) From communicated records: The one specimen I collected was taken by sweeping the understory vegetation near the front of the Sabal Palm Grove Preserve (E. G. Riley, pers. obser.). James Wappes provides the following (pers. comm., 2009): "As I recall, I've collected 2 specimens with both taken beating low on tangles of mixed dead and living vines/shrubs. Impossible to tell exactly what they were on. The specimen in my collection is simply labeled TX, Cameron Co., Sabal Palm Grove, June 5, 1982. It was collected right where you come over the levy, SE side of the road in a tangle of woody plants along the ditch. Nothing special about the habitat and not in the "grove" proper."

Biology, Host, Substrate, Habitat Data by Inference (based on knowledge of related species)

Two common and widespread North American *Ataxia* apparently breed in what are considerably different circumstances, suggesting that there may be quite a range of larva habits within the genus. *Ataxia hubbardi* Fisher attacks living herbaceous plants, mostly genera of the Asteraceae, whereas *A. cryptica* (Say) bores in dead or rarely living branches of woody plants (Linsley and Chemsak 1985). *Ataxia falli* Breuning develops in the seeds of mangroves (Linsley and Chemsak 1985). Hovore et al. (1985) report taking *A. cryptica* by beating dead *Yucca*. Rogers (1977) reported on the biology of *A. hubbardi*, and Craighead (1923) reported on the biology of *A. cryptica*. Both species are reported to have a single generation per year with pupation in the fall (*A. cryptica*) or during late spring (*A. hubbardi*).

Adult Phenology in Texas

1) Number of compiled Texas collecting events by month: May (4), June (1).

2) Year of most recent known collection in the Lower Rio Grande Valley: 1982.

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Valid name

Baliosus sp. 1

This is apparently an undescribed species and is most similar to an unidentified *Baliosus* species found in Tamaulipas, Mexico (present study).

Synonymy/catalog
Baliosus sp. EGR 1: Bender et al., 2005:773

Classification
Family: Chrysomelidae
Subfamily: Cassidinae
Tribe: Chalepini
The classification of the genus *Baliosus* Weise as a member of the Cassidinae is somewhat controversial in that not all workers in chrysomelid systematics accept the collapsed subfamily classification proposed by Reid (1995). Reid proposed the first broadly-based morphological analysis of leaf beetle subfamily relationships using modern techniques and lumped various formerly recognized chrysomelid subfamilies to form more cohesive defendable subfamily groups. In that work, a single subfamily was recognized for the former "cryptostome" chrysomelid subfamilies of Hispinae and Cassidinae. Reid (1995) and Riley et al. (2002) used the name Hispinae for the combined subfamily; however, for strict nomenclatural reasons as noted by Staines (2002), the subfamily name Cassidinae takes precedence over Hispinae for the joint family group. In all older classifications that recognized two "cryptostome" subfamilies, *Baliosus* was classified in the Hispinae. This report follows the leaf beetle subfamily concepts as proposed by Reid (1995). *Baliosus* has long been recognized as a member of the tribe Chalepini (Weise 1911a, 1911b; Uhmann 1957).

Diagnostic remarks
This species is elongate and depressed with the dorsum deeply punctate. The body length is 3.0-3.4 mm and the greatest width is 1.3-1.5 mm across the posterolateral angles of the elytra. The pronotum is markedly narrower than the base of the elytra, and the elytra are nearly parallel-sided with their margins weakly serrate. The ground color is pale yellowish-brown suffused with brownish. The darker brown maculae on the elytra often display faint aeneous reflections. The antennae are dark brown to nearly black, and the legs are entirely yellowish-brown. The antennae are weakly clavate and composed of eleven freely articulated antennomeres. The elytra are coarsely punctate, with the punctation more-or-less aligned in ten rows which are geminate (paired) between the sutural and first two discal costae and the third discal costa and the lateral margin. There are four rows of punctures between the second and third discal costae, but these are reduced to only two rows for most of the elytral mid-length with four rows only evident in an irregular form anteriorly and distally. Each elytron has a short post-scutellar stria of from two to three punctures.

Staines (2006) did not treat this species. It is apparently an undescribed species and is most similar to an unidentified *Baliosus* species seen from Tamaulipas, Mexico

(present study). Superficially, it will be readily confused with members of the genus *Sumitrosis* Butte. Several "genera" of the tribe Chalepini are quite poorly defined and *Baliosus* is such a genus. It seems to be a dumping ground for chalepines that have more-or-less a base number of ten rows of elytral punctures, comparatively broad body, and eleven freely articulating antennomeres but do not otherwise fit into the more clearly defined genera. It is with some hesitation that the present species is placed in *Baliosus* as it further pushes the limits of variation in the elytral punctation included in the genus, but presently there is not a better generic placement for it (present study).

The genus is keyed relative to other "hispine" genera found in America north of Mexico by Riley et al. (2002) and Staines (2006). The genus is keyed relative to Western Hemisphere "hispine" genera by Staines (2002). Images of *Baliosis* sp. 1 are not presently available.

Historic Occurrence Records

1) From literature: none.

2) From specimens examined: See "specimen records" on attached Excel spreadsheet.

3) From communicated records: none.

Known Range

Brownsville area of Texas (Cameron County).

Biology, Host, Substrate, Habitat Data

1) From literature: none.

2) From specimens: Most specimens examined carry labels that read "on *Randia rhagocarpa*" and "beating *Randia rhagocarpa*."

3) From communicated records: All specimens I have collected east of Brownsville were taken by beating *Randia rhagocarpa*. This species was never abundant (E. G. Riley, pers. obser.).

Biology, Host, Substrate, Habitat Data by Inference (based on knowledge of related species)

General biology of members of the tribe Chalepini is fairly uniform across many genera for which some biology is known. As a member of the Chalepini, the larva of *Baliosis* sp. 1 will be a leaf-miner in the same plant on which adults will feed, although the adult stage may feed on additional plant species that are not used as larval hosts. In general, the hispines are monophagous or oligophagous, feeding on one plant species or on a group of closely related plant species (Jolivet and Hawkswood 1995). Known larvae of the Chalepini are leaf miners consuming the mesophyll layer of the leaf to create a blotch or trial-type mine. If a single leaf or leaflet is too small to allow for complete larval development, the larvae of some genera are known to exit their original host leaf and enter another to complete development. Larvae will pupate within the mines. Hispinae beetles in Maryland (USA) probably have only a single generation per year (Ford and Cavey 1985), but this may not be the case with hispine beetles with tropical and semi-tropical affinities such as this unusual *Baliosus* species.

Larvae of *Baliosus* species utilize a range of host plant taxa. The species found in the United States use the unrelated genera *Alnus* Mill. (Betulaceae), *Malus* Mill. (Rosaceae) and various species of *Quercus* L. (Fagaceae) (Staines 2006) and probably various species of *Ceanothus* L. (Rhamnaceae) (Clark et al. 2004). Adults have been associated with these and other plants. Larvae of Neotropical *Baliosus* species have been associated with *Banisteria* (Malpighiaceae), *Guaiacum* (Zygophyllaceae) (Maulik 1937, Uhmann 1937) and *Odontonema* (Acanthaceae), *Urera* (Urticaceae), and an undetermined Bignoniaceae (Hespenheide and Dang 1999).

The biology of the wide-ranging eastern North American species, *B. nervosus* (Panzer) [=*Baliosus ruber* (Weber)], has been well studied. Hodson (1942) reported the following general biology based on field observations of a population on basswood (*Tilia americana* L.) in Minnesota. Adults overwinter under soil surface debris beneath their host trees and become active with the appearance of new leaves (mid-May). Later, as the warm season progressed, adults skeletonized the leaves of the host trees to a point where their damage became quite conspicuous. The first eggs were observed the first week of July. Females inserted eggs singly into the epidermis at the edges of adult feeding scars and covered them with feces to form brownish, elliptical patches of excrement. Larvae created blotch type mines with the mine typically embracing the margin of the leaf. Mines started out with single larvae but by the time of the later larval instars, as many as three mature larvae could be found occupying a single mine. Larvae were present for four to five weeks. Pupae were first observed on the first day of August and nearly all larvae had pupated by the middle of August. The pupal staged lasted from eight to twelve days. Newly emerged adults fed on leaves until forced to seek hibernation sites. Nicolay and Weiss (1918) report larva mines common in the leaves of various species of oaks in New Jersey.

Adult Phenology in Texas

1) Number of compiled Texas collecting events by month: May (2), October (4).

2) Year of most recent known collection in the Lower Rio Grande Valley: 2002.

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Valid name

Brucita marmorata (Jacoby)

Synonymy/catalog
Galerucella marmorata Jacoby, 1880-1888 (1886):491; pl. xxviii, fig. 3
Galerucella marmorata: Linell, 1898:484
Galerucella marmorata: Townsend, 1902:85
Galerucella marmorata: Leng, 1920:296
Galerucella marmorata: Weise, 1924:57
Galerucella marmorata: Blackwelder, 1946:688
Brucita marmorata: Wilcox, 1965:43, fig. 17, 20
Brucita marmorata: Wilcox, 1971:108
Brucita marmorata: Wilcox, 1975:77
Brucita marmorata: Riley et al., 2002:655
Brucita marmorata: Riley, Clark, & Seeno, 2003:72
Brucita marmorata: Clark et al., 2004:28
Brucita marmorata: Bender et al., 2005:773

Classification
Family: Chrysomelidae
Subfamily: Galerucinae
Tribe: Galerucini, section "Schematizites"
This species has always been classified as a member of the Galerucinae (*s. str*.).
The classification of *Brucita* in the tribe Galerucini is not controversial. This report follows the tribes and informal "sections" of Galerucinae (*s. str*.) as proposed by Wilcox (1965) and followed by Seeno and Wilcox (1982) and Riley et al. (2002, 2003).

Diagnostic remarks
This is a highly distinctive chrysomelid not likely to be confused with other Lower Rio Grande Valley species. The body is stout, depressed, broadly elongate-ovoid, with the elytra parallel-sided for most of their length. The pronotum is slightly narrower than the base of the elytra. Body length is ca. 5 to 6 mm, and the greatest width is at about mid-length of the elytra. The dorsal surfaces are densely covered with fine appressed hairs. The ground color of the body is of various shades of brown, with that of the pronotum showing strong red or pinkish tones and with three moderate sized blackish spots in a transverse row. The elytra appear longitudinally "streaked" due to a combination of ground coloration and color of the dense pubescence which is angled in such as way that it accentuates the pale portions of the pattern. The second elytral interval usually has three vague darker brownish to blackish elongated spots. The tarsal claws are bifid (split) and the aedeagus of male genitalia has well developed basal spurs (typical of Galerucini). Males have a small glabrous tubercle on the ventral surface at the base of first protarsal segment, a unique character not found in any other North American members of the Galerucini.

The genus *Brucita* is keyed in Wilcox (1965) and Riley et al. (2002). *Brucita marmorata* is the only species assigned to the genus but it is likely that additional

Neotropical species belong to the genus (Riley 2002). A black-and-white habitus illustration and a figure of the male genitalia are given in Wilcox (1965). A color habitus image is given with the original description (Jacoby 1886). A color image of a living adult specimen is available on the web [http://bugguide.net/node/view/270422] (last accessed 6/24/2009).

Historic Occurrence Records

1) From literature: See "literature records" on attached Excel spreadsheet.

2) From specimens examined: See "specimen records" on attached Excel spreadsheet.

3) From communicated records: See "communicated records" on attached Excel spreadsheet.

Known Range

Brownsville area of Texas (Cameron County) south to Mexico (Oaxaca and Tamaulipas) and Guatemala.

Biology, Host, Substrate, Habitat Data

1) From literature: "feeds on *Ehretia anacua* (Mier and Berland.) I. M. Johnst. (Boraginaceae)" (Clark et al. 2004), "beaten from palmetto leaves in palmetto jungle," "on elm," and "on *Erythrina* in garden" (Townsend 1902).

2) From specimens: There are numerous references to "anacua" [=*Ehretia anacua* (Mier and Berland.) I. M. Johnst. (Boraginaceae)] on specimen labels: "anacua, *Ehretia anacua*," "ex "anachus" (sic)," "on Anacua plant," "on *Ehretia anacua*," and "on *Ehretia anacua* Ehretiaceae," also "with pineapple" and "banana" [from Mexico, i. e., likely border interceptions], "Riverbank," "beating sheet," and "at night."

3) From communicated records: Taken many times by beating *Ehretia anacua* at the Palm Grove. It seems beetles like the new growth which is often riddled with feeding damage either done by these beetles or by the *Psalidonota* cassidine which is often collected together with *Brucita*. On at least one occasion I found blackish-colored galerucine-like larvae in very low number with *Brucita* adults at a time when the anacua trees were blooming (E. G. Riley, pers. obser.).

Biology, Host, Substrate, Habitat Data by Inference (based on knowledge of related species)

Leaf beetles (Chrysomelidae) feed on tissues of living plants in both the larval and adult stages. Most adults consume foliage. Many species are highly specialized and feed on only one plant species or a few closely related plant species. The larval feeding habits in the family are quite diverse attacking many different plant parts; however, members of the tribe Galerucini are folivorous (leaf eating), and some can be contemporaneous with the adult stage on their food plants (Wilcox 1965, Jolivet and Petitpierre 1981, Clark et al. 2004).

Adult Phenology in Texas

1) Number of compiled Texas collecting events by month: February (2), March (1), April (7), May (22), June (11), July (3), August (4), September (1), October (21).

2) Year of most recent known collection in the Lower Rio Grande Valley: 2002.

Literature Cited

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each page of the body of this work. This has led some authors to cite 1974 as the year of publication. The cover bears the date “January 1975”.]

Valid name

Cacostola lineata (Hamilton)

Synonymy/catalog
Aportaxia (sic) *lineata* Hamilton, *in* Leng & Hamilton, 1896:142
Aporataxia lineata: Wickham, 1898:41
Aporataxia lineata: Townsend, 1902:79
Aporataxia lineata: Schaeffer, 1908:328
Aporataxia lineata: Leng, 1920:284
Aporataxia lineata: Aurivillius, 1922:291
Aportaxia (sic) *lineata*: Linsley & Martin, 1933:183
Aporataxia lineata: Linsley, 1934:185
Cacostola lineata: Turnbow & Wappes, 1981:78
Cacostola lineata: Chemsak & Linsley, 1982:87
Cacostola lineata: Linsley & Chemsak, 1985:226
Cacostola lineata: Hovore, Penrose, & Neck, 1987:315, fig. 14
Cacostola lineata: Monné & Giesbert, 1993:195
Cacostola lineata: Bender et al., 2005:773

Classification
Family: Cerambycidae
Subfamily: Lamiinae
Tribe: Onciderini
The classification of *Cacostola* as a member of the tribe Onciderini is not controversial.

Diagnostic remarks
The body is slender, cylindrical, parallel-sided to slightly tapering posteriorly, about 3.75 times as long as wide, and ranges in length from ca. 9 to 12 mm with the greatest width across the elytral humeri. The head is broad, as wide as the pronotum, and displays the broad vertical face that is typical of members of the Lamiinae. The coloration of the integument is dark reddish-brown and is almost obscured by a coating of dense grayish and brownish hairs. The grayish colored hairs of the elytra form vague narrow pale vittae, and those on the pronotum form a narrow median and a lateral longitudinal line on each side. The antennal scape lacks a cicatrix, the upper and lower lobes of the eye are connected, the lower lobe of eye is longer than broad, genal space is equal to the vertical length of the lower lobe of the eye, the antennal tubercles are prominent, the third antennal segment is slightly bowed and with long erect hairs below, the elytra lacks asperities at the base, and the tarsal claws are simple (without basal dilation).

This lamiine longhorn beetle is fairly easy to recognize and not likely to be confused with other Lamiinae occurring in the Lower Rio Grande Valley except perhaps it congener, *C. salicicola* (Linsley). The latter species displays a narrower body form that is weakly constricted at elytral mid-length, the pale vittae of the elytra are more distinct and extend for a greater length, and the genal space is shorter than the vertical length of the lower lobe of the eye. The genus *Cacostola* is keyed in the standard works on North

American Cerambycidae (Linsley and Chemsak 1985, Turnbow and Thomas 2002), and the species is keyed in Linsley and Chemsak (1985).

Color images of both *C. lineata* and *C. salicicola* are available on the web [http://plant.cdfa.ca.gov/byciddb/details.asp?id=8552 (last accessed on 6/24/2009), and http://bugguide.net/index.php?q=search&keys=Cacostola (last accessed on 6/24/2009)].

Historic Occurrence Records

1) From literature: See "literature records" on attached Excel spreadsheet.

2) From specimens examined: See "specimen records" on attached Excel spreadsheet.

3) From communicated records: See "communicated records" on attached Excel spreadsheet.

Known Range

Brownsville area of Texas (Cameron County) to Mexico (Chiapas, Oaxaca, and Yucatán). The records from Mexico cited in this report appear to be the first mention of this species from Mexico.

Biology, Host, Substrate, Habitat Data

1) From literature: There are multiple mentions of various plant associations for this species in the literature: "low hills, numerous adults collected on dead *Baccharis*" and "specimens beat from *Salix, Celtis, Condalia*, and tangles of vines and shrubs, adults active from April to October" (Hovore et al. 1987); "beaten from tangles of *Clematis drummondii* in palmetto jungle" (Townsend 1902); "rather rare in the thickets" (Wickham 1898); "beating jungle vines; beaten from dead branches of *Celtis* L., *Salix* L., and *Pithecellobium flexicaule* (Benth.) Coult., and blossoming *Zizyphus*" (Turnbow & Wappes 1981); "from *Baccharis* sp." (Turnbow and Wappes 1981); and "Adults have been beaten from dead branches of *Celtis*, *Salix*, *Pithecellobium*, flowering *Zizyphus* and *Baccharis*, flight period from May to July" (Linsley and Chemsak 1985). Some of these reports appear to be repeat citations of earlier reported information.

2) From specimens: "on *Celtis laevigata,* reared from Tepehuaje, and beating *Baccharis*." The mention of tepeguaje [= *Leucaena pulverulenta* (Schltdl.) Benth. (Fabaceae)] appears to be the only rearing record for this species, but given the amount of effort at rearing longhorn beetles from tepeguaje in the Lower Rio Grande Valley of Texas (Hovore and Penrose 1982), it seems unlikely that this is a common host for this species.

3) From communicated records: "on *Celtis laevigata*" and "beating *Baccharis*" are data found on specimen labels from communicated records.

Biology, Host, Substrate, Habitat Data by Inference (based on knowledge of related species).

Some members of the Onciderini are classic limb girdlers (Solomon 1995), but there is no mention of this behavior for *Cacostola* species. *Cacostola* species are likely to breed in recently dead limbs of a wide range of woody plants. A second species of *Cacostola* from southern Texas, *C. salicicola* Linsley, has a close association with *Salix* having been

beaten and reared from the dead limbs (Linsley 1934; Hovore et al. 1987; D. J. Heffern, pers. comm., 2009). Turnbow and Wappes (1981) report that larvae of this species bore in the small branch tips of their hosts. Like, *C. lineata*, *C. salicicola* has also been reared from *Leucaena pulverulenta* (Schltdl.) Benth. (Hovore et al. 1987, p. 323).

Adult Phenology in Texas

1) Number of compiled Texas collecting events by month: April (1), May (16), June (13), July (1), August (2), September (2).

2) Year of most recent known collection in the Lower Rio Grande Valley: 1993.

Literature Cited

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Turnbow, R. H. Jr. and J. E. Wappes. 1981. New host and distributional records for Texas Cerambycidae (Coleoptera). The Southwestern Entomologist 6(2): 75-80.

Turnbow, R. H., Jr. and M. C. Thomas. 2002. Cerambycidae Leach, 1815, pp. 568-601, *in* Arnett, R. H., M. C. Thomas, P. E. Skelley, and J. H. Frank (eds.). American Beetles. Polyphaga: Scarabaeoidea through Curculionoidea. Volume 2. CRC Press. xiv + 1-861 pp.

Wickham, H. F. 1898. Recollections of old collecting grounds. III. - The Lower Rio Grande Valley (Continued). Entomological News 9: 39-41.

Valid name

Callipogonius cornutus (Linsley)

Synonymy/catalog
Ecyrus cornutus Linsley, 1930:86; figs. 1, 2
Ecyrus cornutus: Linsley & Martin, 1933:182
Callipogonius cornutus: Linsley, 1935:81
Callipogonus (sic) *cornutus*: Vogt, 1949:183
Callipogonius cornutus: Breuning, 1975:46
Callipogonius cornutus: Chemsak & Linsley, 1975:274
Callipogonius cornutus: Hovore, Penrose, & Giesbert, 1978:95
Callipogonius cornutus: Chemsak & Linsley, 1982:85
Callipogonius cornutus: Linsley & Chemsak, 1985:168, fig. 35
Callipogonius cornutus: Hovore, Penrose, & Neck, 1987:313
Callipogonius cornutus: Monné & Giesbert, 1993:210
Callipogonius cornutus: Bender et al., 2005:773

Classification
Family: Cerambycidae
Subfamily: Lamiinae
Tribe: Pogonocherini
The classification of *Callipogonius* is not controversial.

Diagnostic remarks
This species is easy to distinguish among the other lamiine longhorn beetles of the Lower Rio Grande Valley. The body is elongate and subparallel with the pronotum slightly narrower than the elytral base. The body length is 5.5-6.5 mm with the greatest width across the elytral humeri. The pronotum is weakly angled at the middle and conspicuously marked above with a rather sharply delineated diamond-shaped median macula of dense appressed white hairs. Each side of the white diamond-shaped macula is bounded by an elongate, triangular elevation. The elytra are clothed with short appressed hairs of various shades of brownish and gray. Each elytral disc has a median basal triangular elevation and two elongate longitudinal carinae that extend for part of the elytral length. The most distinctive character that sets this species apart from all other Lamiinae found in the Lower Rio Grande Valley is the exceptionally long “flying” hairs that arise from most parts on the body. These hairs are especially conspicuous on the elytra and legs. The antennal scape lacks a cicatrix, the elytral humeri are prominent, the elytra have many long erect hairs (i. e., flying hairs), the legs are covered with long conspicuous erect hairs, the middle tibia has a distinct external emargination, and the tarsal claws are simple and divaricate.

Two species comprise the genus *Callipogonius*; only *C. cornutus* is found in the United States. The second species (*C. hircinus* (Bates) occurs in Veracruz, Mexico. Hovore et al. (1987) suggest that these two species are very closely related and may prove to be conspecific. The genus is keyed in the standard works on North American Cerambycidae (Linsley and Chemsak 1985, Turnbow and Thomas 2002) and in Linsley

(1935). The species is keyed by Linsley (1935). A black-and-white habitus illustration is given in Linsley (1935) and Linsley and Chemsak (1985). Color habitus images are available on the web [http://plant.cdfa.ca.gov/byciddb/details.asp?id=9231, and http://bugguide.net/index.php?q=search&keys=callipogonius] (last accessed on 6/24/2009).

Historic Occurrence Records

1) From literature: See "literature records" on attached Excel spreadsheet.

2) From specimens examined: See "specimen records" on attached Excel spreadsheet.

3) From communicated records: See "communicated records" on attached Excel spreadsheet.

Known Range

Southernmost Texas (Cameron, Hidalgo, and Zapata Counties) south to Mexico (Jalisco, San Luis Potosí, and Veracruz).

Biology, Host, Substrate, Habitat Data

1) From literature: Willow [= *Salix*] is the common element in all the biological notes published on this species: "beaten from dead willow branches" (Linsley 1930), "beaten from dead *Salix*" (Linsley and Martin 1933), "host plant: *Salix*" (Linsley 1935), "...taken in flight near decadent willow branches" (Vogt 1949), "abundant on fresh broken willow during spring and early summer, and adults were later reared from this host" (Hovore et al. 1987), and "reared from dead willow branches" (Hovore et al. 1978). Hovore et al. (1978) report rearing this species from dead *Salix*: "Larvae tunnel parallel with the grain in the heartwood of small to medium-sized (20-40 mm dia.) branches. Pupation takes place in an oval cell beneath the bark or in the sapwood. Most individuals apparently require only one year to complete development, although adults continue to emerge in decreasing numbers for three years following branch collection."

2) From specimens: All plant associations on specimen labels referred to *Salix*: "r'd from *Salix*," "emerged: July 1977, on dead *Salix*," "in flight near willow branch," "beating *Salix*," and "dead *Salix*." Other notations include "at lights" and "taken at lights."

3) From communicated records: Taken by beating *Salix* that grows at the Sabal Palm Grove resaca (E. G. Riley, pers. obser.). Various longhorn beetle collectors noted an association with *Salix* (D. J. Heffern, R. H. Turnbow, and J. E. Wappes, pers. comm., 2009).

Biology, Host, Substrate, Habitat Data by Inference (based on knowledge of related species)

Linsley (1935) provides the following excellent overview on the biology of the Pogonocherini. "In so far as known, the life histories of the various members of the Pogonocherini are rather similar. The species are nocturnal, resting during the day on their host plants, where they are very inconspicuous because of their protective coloration. During the night, the adult beetles are attracted to recently dead or dying

branches, preferably those broken by storm and still hanging upon the tree. On these branches mating takes place and later the eggs are deposited. The larvae burrow in the dry sapwood and heartwood (*Poliaenus*, *Lophopogonius*, *Ecyrus*, and *Callipogonius*), or beneath the bark (*Pogonocherus*). The larvae period is usually a single year, or rarely (*Lophopogonius*) two years. The pupal cell is constructed in the heartwood in *Poliaenus* and *Lophopogonius* and in the sapwood in *Pogonocherus*. In the latter case the cell is plugged at both ends with fibrous chips in a manner similar to that of *Monochamus*."

Adult Phenology in Texas

1) Number of compiled Texas collecting events by month: March (1), April (3), May (15), June (5), July (1), August (1), September (1), October (5), November (2), December (1).

2) Year of most recent known collection in the Lower Rio Grande Valley: 1999.

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Linsley, E. G. and J. A. Chemsak. 1984 (1985). Cerambycidae of North America. Part VII, no. 1. Taxonomy and classification of the subfamily Lamiinae, tribes Parmenini through Acanthoderini. University of California Pubications in Entomology 102: xi + 1-258 pp.

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Monné, M. A. and E. F. Giesbert. 1993. Checklist of the Cerambycidae and Disteniidae (Coleoptera) of the Western Hemisphere. Wolfsgarden Books, Burbank, California. xiv + 1-410 pp.

Turnbow, R. H., Jr. and M. C. Thomas. 2002. Cerambycidae Leach, 1815, pp. 568-601, *in* Arnett, R. H., M. C. Thomas, P. E. Skelley, and J. H. Frank (eds.). American

Beetles. Polyphaga: Scarabaeoidea through Curculionoidea. Volume 2. CRC Press. xiv + 1-861 pp.

Vogt, G. B. 1949. Notes on Cerambycidae from the Lower Rio Grande Valley, Texas. Pan-Pacific Entomologist 25(3): 137-144; (4): 175-184.

Valid name

Chaetocnema rileyi White

Synonymy/catalog
Chaetocnema rileyi White, 1996:107; figs. 48, 144
Chaetocnema rileyi: Riley, Clark, & Seeno, 2003:119
Chaetocnema rileyi: Clark et al., 2004:42
Chaetocnema rileyi: Bender et al., 2005:773

Classification
Family: Chrysomelidae
Subfamily: Galerucinae
Tribe: Alticini
The classification of the genus *Chaetocnema* as a member of the Galerucinae is somewhat controversial in that not all workers in chrysomelid systematics accept the collapsed subfamily classification proposed by Reid (1995). Reid proposed the first broadly based morphological analysis of leaf beetle subfamily relationships using modern techniques and combined various formerly recognized subfamilies into more cohesive, defendable subfamily groups. In that work, a single subfamily was recognized for the former "trichostome" chrysomelid subfamilies of Galerucinae and Alticinae, with the name Galerucinae taking priority for the joint family group. In all older classifications that recognized two "trichostome" subfamilies, *Chaetocnema* was classified in the Alticinae. This report follows the leaf beetle subfamily concepts as proposed by Reid (1995).

Although some relationships among flea beetle genera based on morphology appear to be fairly clear and are generally recognized by chrysomelid systematists, satisfactory delineation of alticine tribes/subtribes does not exist. This report follows Seeno and Wilcox (1982) and Riley et al. (2002, 2003) in not recognizing formal family groups below the tribe level within the Alticini.

Diagnostic remarks
As a member of the tribe Alticini, this small compact leaf beetle is a "flea beetle" with exceptionally enlarged hind femora and the ability to jump. The body is a small 2.3-3.5 mm long, stout and fusiform in shape, and without a constriction between the pronotal and elytral bases. A pre-basal transverse groove is lacking on the pronotum, and the elytra are strongly punctate-striate. The striae are regular throughout. The body is everywhere brassy in color with the legs and antennae partially brownish. The outer margin of the hind tibia is emarginated subapically. This emargination possesses a row of short erect hairs and is bound above by a short tooth. The apex of the articulated apical spur of the metatibia is simple.

There are other *Chaetocnema* species found in the Lower Rio Grande Valley. *Chaetocnema rileyi* can be distinguished from these based on a combination of the vertex of head with a few punctures above each eye, the pronotal punctures distinct and evenly distributed, the pronotal margin posterior to the anterior pronotal angle lacking an

irregularity, lateral margins of body not constricted at the junction of elytra and pronotum, and the shape of the male genitalia.

The genus is keyed in Konstantinov and Vandenberg (1996) relative to Palearctic flea beetle genera, and in Riley et al. (2002) relative to the North American flea beetle genera. The species is keyed relative to other species found in America north of Mexico by White (1996). Color habitus images are available on the web [http://bugguide.net/node/view/257833] (last accessed 6/24/2009).

Historic Occurrence Records

1) From literature: See "literature records" on attached Excel spreadsheet.

2) From specimens examined: See "specimen records" on attached Excel spreadsheet.

3) From communicated records: None.

Known Range

Boca Chica Beach area east of Brownsville, Texas (Cameron County).

Biology, Host, Substrate, Habitat Data

1) From literature: "The series was taken from *Fimbristylus castanea* (Michx.) Vahl. (Cyperaceae)" (White 1996). This record is repeated in Clark et al. (2004).

2) From specimens: Some specimens examined are labeled "swept behind sand dunes, on *Fimbristylus castanea* (Michx.) Vahl.", and "night sweep behind sand dunes."

3) From communicated records: I found this species just behind the sand dunes at Boca Chica beach over a fairly wide area on either side of the highway terminus. It occurred fairly close to the mud/salt flats where the dense vegetation gave way to only a few salt tolerant species. Beetles were repeatedly swept from a distinct looking sedge which was collected, pressed and later identified as *Fimbristylus castanea* by the TAMU botanical staff. In the field, one could look closely at the *Fimbristylus* plants and see the small dark-colored beetles resting on the stems. On one occasion, I caged a few beetles on stems of the plant, but over the course of a few days they apparently never fed (E. G. Riley, pers. obser.).

Biology, Host, Substrate, Habitat Data by Inference (based on knowledge of related species).

As a leaf beetle, this species will be phytophagous, and it is likely monophagous or stenophagous, feeding on one species or on a few closely related plant species. Plant associations for the numerous species of the genus *Chaetocnema* are diverse (Clark et al. 2004). *Chaetocnema* larvae are known to be subterranean, feeding on the underground portions of their host plants (Jolivet and Hawkeswood 1995). There are several references to *Chaetocnema* species being associated with sedges and grasses, but several species are known to attack broad-leaf plant families (Clark et al. 2004, Riley et al. 2002, White 1996). Adult feeding damage is sometimes quite characteristic in that beetles tend to "etch" the leaf surfaces (E. G. Riley, pers. obser.) without actually perforating the leaf material.

Adult Phenology in Texas

1) Number of compiled Texas collecting events by month: May (2), October (5).

2) Year of most recent known collection in the Lower Rio Grande Valley: 1992.

Literature Cited

Bender, S., S. Shelton, K. C. Bender, and A. Kalmbach (eds.). 2005. Texas Comprehensive Wildlife Strategy, 2005-2010. Texas Parks and Wildlife, Austin. xv + 1131 pp.

Clark, S. M., D. G. LeDoux, T. N. Seeno, E. G. Riley, A. J. Gilbert, and J. M. Sullivan. 2004. Host plants of leaf beetle species occurring in the United States and Canada (Coleoptera: Megalopodidae, Orsodacnidae, Chrysomelidae, excluding Bruchinae). Coleopterists Society Special Publication no. 2: 476 pp.

Jolivet, P. and T. J. Hawkeswood. 1995. Host-plants of Chrysomelidae of the World: An essay about the relationships between the leaf-beetles and their food-plants. Backhuys Publishers, Leiden, The Netherlands. xiv + 281 pp.

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Riley, E. G., S. M. Clark, R. W. Flowers, and A. J. Gilbert. 2002. Chrysomelidae Latreille, 1802, pp. 617-691, *in* Arnett, R. H., M. C. Thomas, P. E. Skelley, and J. H. Frank (eds.). American Beetles. Polyphaga: Scarabaeoidea through Curculionoidea. Volume 2. CRC Press. xiv + 1-861 pp.

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Seeno, T. N. and J. A. Wilcox. 1982. Leaf beetle genera (Coleoptera: Chrysomelidae). Entomography 1: 1-221.

White, R. E. 1996. A revision of the genus *Chaetocnema* of America north of Mexico (Coleoptera: Chrysomelidae). Contributions of the American Entomological Institute 29(1): 1-158.

Valid name

Chlamisus maculipes (Chevrolat)

Synonymy/catalog
Chlamys maculipes Chevrolat, 1835: no. 120
Chlamys maculipes: Jacoby, 1880-1888 (1881):78; pl. v, fig. 10
Chlamys maculipes: Jacoby, 1888-1892 (1889):157
Chlamys maculipes: Townsend, 1902:81
Chlamys maculipes: Leng, 1920:288
Chlamisus maculipes: Blackwelder, 1946:649
Chlamisus maculipes: Moldenke, 1971:109
Chlamisus maculipes Karren, 1972:924; figs. 119-123
Chlamisus maculipes: Wilcox, 1975:34, 35
Chlamisus maculipes: Maes & Staines, 1991:7
Chlamisus maculipes: Riley, Clark, & Seeno, 2003:183
Chlamisus maculipes: Clark et al., 2004:46
Chlamisus maculipes: Bender et al., 2005:773

Classification
Family: Chrysomelidae
Subfamily: Cryptocephalinae
Tribe: Chlamisini
The classification of the genus *Chlamisus* Rafinesque as a member of the Cryptocephalinae is somewhat controversial in that not all workers in chrysomelid systematics accept the collapsed subfamily classification proposed by Reid (1995). Reid proposed the first broadly based morphological analysis of leaf beetle subfamily relationships using modern techniques and combined various formerly recognized subfamilies into more cohesive, defendable subfamily groups. In that work, the former "camptosome" subfamilies (Clytrinae, Chlamisinae and Cryptocephalinae) were merged to form a single subfamily with each of the three former subfamilies recognized as tribes. This report follows the collapsed subfamily classification for Chrysomelidae proposed by Reid (1995). Under the narrower concept of the Cryptocephalinae, when chlamisines were classified as a separate subfamily, the genus *Chlamisus* was been classified in the Chlamisinae.

Chlamisus is a large genus occurring in both the New and Old Worlds with most species occurring in the tropical regions. Generic concepts in this group are poorly refined on a worldwide basis. This is especially true of the genus *Chlamisus*, which in being one of the earliest named genera, has been the taxonomic dumping ground for almost all species. The Nearctic Chlamisinae were reviewed by Karren (1966, 1972) who introduced modern generic concepts for the limited fauna of the region. Unfortunately, these generic concepts have yet to be extended to the World fauna. Only eight species of *Chlamisus* are found in America north of Mexico, and even this small number of species forms a very heterogeneous group.

Diagnostic remarks

This species is the most distinctive of the Chlamisini found in America north of Mexico, and it is unlikely to be confused with other beetles of the Lower Rio Grande Valley. It is a typical chlamisine in that its body is short and compact with the antennae and legs fitting neatly into grooves and depressions on the ventral surface of the body. The head is deeply inserted into the prothorax and when retracted is not visible from directly above. This species is large for a chlamisine, with a body length of from 3.6 to 6.0 mm and 2.5 to 3.9 mm in width. The upper surface of the integument is blackish and covered by short grayish hairs except for two conspicuously smooth polished spots on the frontal slope of the pronotum. The head, antennae, and most of the ventral surfaces and legs are bright orange. The elytral disc has several conspicuous glabrous tubercles, and the suture is serrate for most of its length. This species exhibits pronounced sexual dimorphism of a type which is not seen in other North American Chlamisini. The males have distinctly longer antennae than females, and the male prosternum is densely clothed with long pale hairs whereas that of the female is clothed with a few short inconspicuous hairs.

The genus *Chlamisus* is keyed relative to other North American genera by Karren (1972) and Riley et al. (2002). The species is keyed by Karren (1972) relative other *Chlamisus* species recorded from America north of Mexico. Color images of a live adult male are available on the web [http://bugguide.net/node/view/289268] (last accessed 6/24/2009).

Historic Occurrence Records

1) From literature: See "literature records" on attached Excel spreadsheet.

2) From specimens examined: See "specimen records" on attached Excel spreadsheet.

3) From communicated records: See "communicated records" on attached Excel spreadsheet.

Known Range

Brownsville area of Texas (Cameron County) south to Mexico (Campeche, Chiapas, Colima, Guerrero, Morelos, Nayarit, Oaxaca, Puebla, San Luis Potosí, Tabasco, Veracruz, and Yucátan), south to Belize, Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua.

Biology, Host, Substrate, Habitat Data

1) From literature: Townsend (1902) states, … "taken on *Malvaviscus drummondii* in palmetto thicket." Karren (1972) states … "individual beetles have been collected on a number of unidentified plants. One, together with larvae, was collected on *Ipomoea pedicellaris*, and one female was observed ovipositing on *Verbesina fraseri*. The species probably feeds on a variety of plants." *Ipomoea pedicellaris* is a member of the Convolvulaceae, and *Verbesina fraseri* is a member of the Asteraceae.

2) From specimens: A specimen seen from Costa Rica is labeled "'Barbasco" *Jacquinia*? *aurantica*" which is likely a reference to *Jacquinia barbasco* Mez or *J. aurantica* W. T. Aiton (Theophrastaceae).

3) From communicated records: The few specimens I collected were from in the interior of the palm grove at the Sabal Palm Grove Preserve and were taken by random sweeping without any particular plant association (E. G. Riley, pers. obser.).

Biology, Host, Substrate, Habitat Data by Inference (based on knowledge of related species)

Adult Chlamisini have been associated with a wide range of plants, a trait that is ubiquitous among Chrysomelidae (Clark et al. 2004). Larval habits of *Chlamisus* species are much less understood. As a member of the Cryptocephalinae, their larvae will be case bearers, i. e., constructing and living inside an open-ended case composed of bits or organic debris and its own feces. Larval habits and biology of the "Camptosomata" (=Cryptocephalinae) were reviewed by Erber (1988), but this work provides very little specific information on the Chlamisini. There is clear evidence from several sources that the larvae of most Nearctic chlamisine species (most species of *Exema* and probably all species of *Neochlamisus*) feed on green living plants (Karren 1966, 1972; LeSage 1982, 1984), and larvae are often found together with the adults on foliage (E. G. Riley, pers. obser.). However, *Chlamisus* larvae and their feeding habits are largely unknown for the few species found in the United States. It is possible that their larvae exhibit some unusual feeding habits, perhaps similar to that of *Exema gibber* (Fabricius) which feeds on the bark of its host (Dekle 1957). Both the larvae and adults of the South American *Chlamisus mimosae* Karren are said to graze on the bark of its mimosa host (Flanagan and Julien 2004). The larva of the large South American chlamisine, *Fulcidax monstrosa* (Fabricius), is adapted for life on stems where it feeds on bark of its host, *Brysonima sericea* DC. (Malpighiaceae), producing girdles that eventually kill small twigs (Flinte et al. 2003). Jolivet and Hawkeswood (1995) list fifteen plant families that serve as food plants for *Chlamisus* species worldwide (Asteraceae, Convolvulaceae, Corylaceae, Ericaceae, Euphorbiaceae, Fabaceae, Fagaceae, Malpighiaceae, Malvaceae, Melastomataceae, Myrtaceae, Rosaceae, Sapindaceae, Sterculiaceae, and Theaceae).

Adult Phenology in Texas

1) Number of compiled Texas collecting events by month: May (3), June (6), July (2).

2) Year of most recent known collection in the Lower Rio Grande Valley: 1991.

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Flanagan, G. and M. Julien. 2004. Biological control of *Mimosa pigra* and its role in 21st century mimosa management, pp. 164-166, *in* Julien, M., Flanagan, G., Heard, T., Hennecke, B., Paynter, Q. and Wilson, C. (eds.). Research and management of *Mimosa pigra*. CSIRO Entomology, Canberra, Australia. 173 pp.

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Riley, E. G., S. M. Clark, R. W. Flowers, and A. J. Gilbert. 2002. Chrysomelidae Latreille, 1802, pp. 617-691, *in* Arnett, R. H., M. C. Thomas, P. E. Skelley, and J. H.

Frank (eds.). American Beetles. Polyphaga: Scarabaeoidea through Curculionoidea. Volume 2. CRC Press. xiv + 1-861 pp.

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Townsend, C. H. T. 1902. Contribution to a knowledge of the coleopterous fauna of the lower Rio Grande valley in Texas and Tamaulipas, with biological notes and special reference to geographical distribution. Transactions of the Texas Academy of Science 5: 51-101.

Wilcox, J. A. 1975. Checklist of the beetles of Canada, United States, Mexico, Central America and the West Indies. Vol. 1, pt. 7. The leaf beetles (red version). [inside title: Checklist of the Chrysomelidae of Canada, United States, Mexico, Central America and the West Indies, family no. 104]. Biological Research Institute of America. New York. 166 pp. [The date "VIII-1-74" appears on the header of each page of the body of this work. This has led some authors to cite 1974 as the year of publication. The cover bears the date "January 1975".]

Valid name

Coelocephalapion aculeatum (Fall)

Synonymy/catalog
Apion aculeatum Fall, 1898:171 [NAME NOT CHECKED]
Apion aculeatum: Townsend, 1902:94
Apion aculeatum: Mitchell & Pierce, 1911:48
Apion aculeatum: Leng, 1920:310
Apion *aculeatum*: Kissinger, 1959:32
Apion aculeatum: Kissinger, 1963:122, fig. 4
Apion (*Coelocephalapion*) *aculeatum*: Kissinger, 1968:171, 261; figs. 118 a-c, 119 k-m, 124 e-k, 128 d, 133 a
Apion aculeatum: O'Brien & Wibmer, 1982:20
Apion aculeatum: Heard, 1991:135-136
Coelocephalapion aculeatum: Kissinger, 1992:74, 75
Coelocephalapion aculeatum: Forno, Heard, & Day, 1994:147-153
Coelocephalapion aculeatum: Heard, 1995a:195-201
Coelocephalapion aculeatum: Heard, 1995b:203-209
Apion aculeatum: Carlow, 1997:32
Coelocephalapion aculeatum: Julien & Griffiths, 1998:77
Apion aculeatum: Bender et al., 2005:772

Classification
Family: Brentidae
Subfamily: Apioninae, *incertae sedis*

Diagnostic remarks
Coelocephalapion aculeatum is quite typical in general appearance to that of most species of the *Apion*-like genera. Its body is moderately robust and narrowed anteriorly through the conical prothorax and long drawn-out rostrum of the head to form an elongate tear-drop shape. Body length (excluding rostrum) is 1.43-1.61 mm and the greatest width from .62 -.75 mm (Kissinger 1968). Color of integument of the body is dark, nearly black, and the legs are usually paler. The dorsal vestiture is composed of sparse yellowish hairs. The lateral thoracic areas are sparsely covered with whitish hairs. Hairs of elytra are sparse and not clumped at base to form denser patches. The legs and antennae are dark reddish-brown to nearly black. The rostrum is moderately long and sexually dimorphic, in males, from 1.14 to 1.26 times as long as prothorax; in females from 1.39 to 1.51 as long as prothorax (Kissinger 1968). The antennae are straight (i. e., not geniculate with an elongate scape) which is typical of the Brentidae and other "primitive" weevil families. The pronotum is densely punctate and the elytral have deep regular striae. More technical characters important for recognizing this species include the front femur of male without smooth polished area, the pygidium of males with deep transverse preapical sulcus, the male genitalia with the prostegium of tegmen fused with the free ring, and the male metasternum not tuberculate (Anderson and Kissinger 2002).

Anderson and Kissinger (2002) provides the latest key to the *Apion*-like genera of America north of Mexico. Kissinger (1959) provided a key to separate the then recognized genera and species groups of *Apion*-like genera occurring in North and Central America, and he assigned *Apion aculeatum*, with five other species, to the "*spretissimum* Group" of *Apion*. Kissinger (1963) keyed this species relative to the five other included members of the group. Kissinger (1968) again keyed this species relative to the same five members of the group, this time as a member of the "*spretissimum* Group" of *Apion* (subgenus *Coelocephalapion*). Finally, Kissinger (1992) elevated *Coelocephalapion* to generic status, added two additional new species to the *spretissimum* Group, and made relevant comparative remarks. For *C. aculeatum*, Kissinger (1968) provided line drawings of important tarsal and genitalia structures (figs. 118 a-c, 133 a), black and white photographs of male genitalia (119 k-m, 128 d), and black and white photographs of important body detail (124 e-k).

This species can be distinguished from other species of the *Apion*-like genera recorded from the Lower Rio Grande Valley by the combination of its comparatively small size, dark reddish legs, the lack of clumped hairs on the elytra, pronotum acutely flared at base, yellowish color of the elytral hairs, and the biserial hairs of second elytral interval.

The genera and species of the *Apion*-genera are difficult to identify. The following artificial key is offered to aid in the recognition of *C. aculeatum* relative to the limited number of species of the *Apion*-like genera recorded from the LRGV (Cameron, Hidalgo, Starr, and Willacy Counties).

1. Dorsal vestiture more or less hair-like, of one color ……..…. 2
   Dorsal vestiture of multi-colored broad scales … *Neotropion xanthoxyli* (Fall)
2. Legs entirely or in part dark reddish, red, or reddish-orange ……..… 3
   Legs dark, not reddish, same color as body:
   Coelocephalapion frontellum (Fall)
   Coelocephalapion subornatum (Fall)
   Coelocephalapion tellum (Kissinger)
   Fallapion spp. (5 species)
   Kissingeria amaurum (Kissinger)
   Trichapion importunum (Fall)
   Trichapion subtinctum (Fall)
3. Hairs on base of elytral formed into small clumps (sometimes loose clusters) behind and/or lateral to scutellum:
   Alocentron attenuatum (Smith)
   Alocentron relictum (Sharp)
   Coelocephalapion fumitarse (Fall)
   Coelocephalapion buchanani (Kissinger)
   Hairs on base of elytra not formed into clumps, no more dense than elsewhere …… 4
4 Prothorax cylindrical at base, without basal lateral expansion …….
   ……... *Coelocephalapion curticorne* (Fall)
   Prothorax with a definite acute basal lateral expansion ……..……. 5
5 Hairs on second elytral interval biserial, yellowish ……
   ……..... *Coelocephalapion aculeatum* (Fall)
   Hairs on second elytral interval uniserial, whitish .. *Coelocephalapion persimile* (Fall)

Historic Occurrence Records

1) From literature: See "literature records" on attached Excel spreadsheet.

2) From specimens examined: See "specimen records" on attached Excel spreadsheet.

3) From communicated records: none.

Known Range

Southern Texas (Cameron and Victoria counties) to Mexico (San Luis Potosí, Tabasco, Tamaulipas, and Veracruz).

Biology, Host, Substrate, Habitat Data

1) From literature: "bred from flower-head of huisache (*Vachellia farnesiana*)" (Mitchell and Pierce 1911), "was reared from the blooms of *Mimosa pigra* L.; also from blooms of huisache, *Acacia farnesina* (L.) Willd." (Kissinger 1968), "ex blooms of *Mimosa pigra*" (Kissinger 1963), "feeds on the buds and open flowers of *Mimosa pigra*" (Heard 1991). This association of *Mimosa pigra* has resulted in its release in Australia where it has become established as a biocontrol agent for *Mimosa pigra* (Julien and Griffiths 1998). *Coelocephalapion aculeatum* seems to be highly specialized for life in the rapidly developing inflorescences on *Mimosa pigra* L. (Fabaceae). Both adults and larvae feed exclusively on the inflorescences of the plant (Heard 1995a). The developing inflorescence of *M. pigra* is a short-lived resource, lasting approximately twelve days, with the bloom lasting only one day. Inflorescences then wither and desiccate; most do not form seed pods. Development from egg through larva is approximately eight days. The larva completes development in dead flowers, not in seed pods (Heard 1995a). Forno et al. (1994) in choice tests, tested 92 plant species from 19 families including 68 species of Fabaceae and found larvae of *C. aculeatum* in only two other species of Fabaceae, *Bauhinia galpinii* E. Br. (one larva vs. 19 for *M. pigra*) and *Neptunia dimorphantha* Domin. (two larvae vs. 38 for *M. pigra*). Based on these results, they concluded that this species used only *M. pigra* as a larval host. The data provided by Mitchell and Pierce (1911), supported by specimens in the USNM collection examined and identified by David Kissinger, indicate that the blooms of at least one other mimosoid shrub, the nearly ubiquitous, *Acacia smallii* Isley, is used as a developmental host in Texas (Victoria County).

2) From specimens: Specimens were seen with the following label data, "bred *Mimosa* head," "bred *Vachelia farnesiana* head," "bred Vachelia farnesiana pod," "in flower *Mimosa pigra* var. *berlandieri*," and "on *Mimosa pigra*." *Vachelia farnesiana* is an out-dated name for *Acacia smallii* Isley (Fabaceae).

3) From communicated records: None.

Biology, Host, Substrate, Habitat Data by Inference (based on knowledge of related species): Larval hosts for several other *Coelocephalapion* species are the buds and flowers of Fabaceae of the genera *Acacia* Mill., *Astragalus* L., *Clitoria* L., *Desmodium* Willd., *Lespedeza* Michx., *Prosopis* L., *Strophostyles* Ell., and *Tephrosia* Pers., also *Croton* L. (Euphorbiaceae), and *Mikania* Willd. and *Verbesina* L. (Asteraceae). Some

species have been reared from galls caused by flies (Ceciomyiidae and Tephritidae) on various Asteraceae. Adults are sometimes found on flowers (Kissinger 1968).

Adult Phenology in Texas

1) Number of compiled Texas collecting events by month: May (3), June (6), July (2).

2) Year of most recent known collection in the Lower Rio Grande Valley: 1991

Literature Cited

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Mitchell, J. D. and W. D. Pierce. 1911. The weevils of Victoria County, Texas. Proceedings of the Entomological Society of Washington 13: 45-62.

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Townsend, C. H. T. 1902. Contribution to a knowledge of the coleopterous fauna of the lower Rio Grande valley in Texas and Tamaulipas, with biological notes and special reference to geographical distribution. Transactions of the Texas Academy of Science 5: 51-101.

Valid name

Coelocephalapion buchanani (Kissinger)

Synonymy/catalog
Apion buchanani Kissinger, 1958:73
Apion buchanani: Kissinger, 1959:30
Apion (*Coelocephalapion*) *buchanani*: Kissinger, 1968:192, 262; figs. 138 j-o, 145 a-d
Apion buchanani: O'Brien & Wibmer, 1982:21
Apion buchanani: Carlow, 1997:34
Apion buchanani: Bender et al., 2005:772

Classification
Family: Brentidae
Subfamily: Apioninae, *incertae sedis*

The genus *Apion* Herbst has had a long and convoluted history, the last chapter of which has yet to be written. Most of the older species of the group were originally described in "*Apion*" which has subsequently been divided into various species groups, subgenera and genera. Most of North American subgenera treated by Kissinger are now accorded full generic rank (i. e., *Coelocephalapion* Wagner, *Fallapion* Kissinger *Trichapion* Wagner, and several others that contain considerably fewer species). As reviewed briefly by Anderson and Kissinger (2002), the family-group placement of the *Apion*-like genera is still unresolved. They are either placed at family level within the Curculionoidea or as a subfamily within the Brentidae. This report follows that latter case which was also adopted by Anderson and Kissinger (2002). The *Apion*-like genera composed a large and complex group, world-wide in distribution and for which a comprehensive internal classification is still not available. The classification presented by Anderson and Kissinger (2002) for the fauna of America north of Mexico is based largely on the classification of Palearctic members of the group (Alonso-Zarazaga 1990) and on Kissinger (1968) who treated the taxonomy of the North and Central American species. Some currently recognized New World genera are of uncertain taxonomic position, including *Coelocephalapion* (Anderson and Kissinger 2002, p. 718.).

Diagnostic remarks
Coelocephalapion buchanani is quite typical in general appearance to that of most species of the *Apion*-like genera. Its body is robust and narrowed anteriorly through the conical prothorax and the long drawn-out rostrum of the head to form an elongate tear-drop shape. Body length (excluding rostrum) is 1.81-2.41 mm and the greatest width from 0.85 -1.16 mm (Kissinger 1968). Color of integument of the body is dark, nearly black, the legs reddish-orange. The dorsal vestiture is composed of sparse white to yellowish hairs. The lateral thoracic areas are densely covered with white hairs. Elytral intervals immediately behind scutellum are with a patch of more densely placed hairs that form a short white clump. These hairs and a few hairs on intervals to each side of scutellum are broader and more scale-like than hairs on disc of elytra. Legs and antennae are entirely reddish to orange. The rostrum is long and sexually dimorphic, in males from

1.30 to 1.41 times as long as prothorax; in females from 1.95 to 2.05 as long as prothorax (Kissinger 1968). The antennae are straight (i. e., not geniculate with an elongate scape) which is typical of Brentidae and other "primitive" weevil families. The pronotum is densely punctate and the elytra have deep regular striae. Technical characters important for recognizing this species include the middle coxae separated (not touching), the front femur of male without smooth polished area, the pygidium of males with deep transverse, preapical sulcus, male genitalia with tegmen with prostegium fused with free ring, and the male metasternum not tuberculate (Anderson and Kissinger 2002).

Anderson and Kissinger (2002) provide the latest key to the *Apion*-like genera of America north of Mexico. Kissinger (1958) described *A. buchanani* in the "*nodicorne* Group" of *Apion*, and keyed it relative to the other five species he assigned to that group. Kissinger (1959) provided a key to separate the then-recognized genera and species groups of *Apion*-like genera occurring in North and Central America, and again recognized *A. buchanani* along with the same five species in the *nodicorne* Group of *Apion*. Kissinger (1968) again keyed this species relative to the same five members of the group, this time as a member of the *nodicorne* Group of *Apion* (subgenus *Coelocephalapion*). Kissinger (1992) elevated *Coelocephalapion* to generic rank. Kissinger (1968) provided black and white photographs of the male genitalia (145 a-d) and black and white photographs of important body detail (138 j-o).

This species can be distinguished from other species of the *Apion*-like genera recorded from the Lower Rio Grande Valley (LRGV) by its comparatively large size, reddish-orange legs and antennae, and the clumped white hairs located directly posterior to the scutellum on the first elytral interval. It will most likely be confused with *C. fumitarse* (Fall) which is commonly encountered in the region but can be easily distinguished by the reddish-orange antennae.

The genera and species of the *Apion*-genera are difficult to identify. The following artificial key is offered to aid in the recognition of *C. buchanani* relative to the limited number of species of the *Apion*-like genera recorded from the LRGV (Cameron, Hidalgo, Starr, and Willacy counties).

1. Dorsal vestiture more-or-less hair-like, of one color ……..…..… 2
   Dorsal vestiture of multi-colored broad scales ……. *Neotropion xanthoxyli* (Fall)
2. Legs entirely or in part dark reddish, red, or reddish-orange ……..... 3
   Legs dark of same color as body (not reddish):
   Coelocephalapion frontellum (Fall)
   Coelocephalapion subornatum (Fall)
   Coelocephalapion tellum (Kissinger)
   Fallapion spp. (5 species)
   Kissingeria amaurum (Kissinger)
   Trichapion importunum (Fall)
   Trichapion subtinctum (Fall)
3. Hairs on base of elytral formed into small clumps (sometimes loose clusters) behind and/or lateral to scutellum ……..... 4
   Hairs on base of elytral not formed into clumps, no more dense than elsewhere:
   Coelocephalapion aculeatum (Fall)
   Coelocephalapion persimile (Fall)
   Coelocephalapion curticorne (Fall)

4. Clumps of hair on base of elytra located in part on first elytral interval directly posterior to scutellum …….. 5
   Clumps of hair on base of elytral located only lateral to scutellum:
   Alocentron attenuatum (Smith)
   Alocentron relictum (Sharp)
5. Frons (between eyes) with longitudinal median carina; antennae dark brownish to black, significantly darker than legs, tarsi tinged with blackish ……..…… *Coelocephalapion fumitarse* (Fall)
   Frons (between eyes) flat to weakly impressed; legs and antennae reddish-orange, tarsi entirely reddish-orange …….. *Coelocephalapion buchanani* (Kissinger)

Historic Occurrence Records

1) From literature: See "literature records" on attached Excel spreadsheet.
2) From specimens examined: See "specimen records" on attached Excel spreadsheet.
3) From communicated records: none.

Known Range

Brownsville area of Texas (Cameron County) south to Mexico (San Luis Potosí, Tamaulipas, and Vera Cruz).

Biology, Host, Substrate, Habitat Data

1) From literature: Nothing specific has been published on the life history of this species. Some plant associations are published: "Adults have been found from December through July; G. B. Vogt (unpublished) collected adults on *Croton punctatus* Jacq., the probable host plant; in addition adults have been found on corn, orange foliage, cotton, and pepper" (Kissinger 1968).
2) From specimens: Specimens have been examined that carry labels which read: "ex *A. hypoleucum*, on *Malvaviscus drummondii*, on *Chrysanthemum*, on pepper, on on Easter lilies, on cotton, on Blackeyed pea leaves and stems, and on *Croton punctatus* Jacq." [the *Croton* record is from Vogt's material]. With the exception of the *Croton* record, the plants cited on these labels should not be accepted as true host plants as they appear on USNM material and were probably interceptions or submitted for identification as part of agriculture-related surveys. Note, however, that Kissinger (1968) stated that the *Croton* record probably represented a true host. Additional specimens are labeled as "taken at lights."
3) From communicated records: none.

Biology, Host, Substrate, Habitat Data by Inference (based on knowledge of related species)

Larvae and adults of the closely related species, *C. fumitarse* (Fall), have been taken in the seeds of *Croton glandulosus* L. (Euphorbiaceae) (Burke 1963). In comments under the *Apion nodicorne* Group, Kissinger (1968) states that three species of the group are associated with *Croton* including two that were reared from the seeds of this plant genus. The two reared species are *C. fumitarse* (based on the account of Burke 1963) and *C. delta* Buchanan of the southeastern United States (based on the account of Bissell 1940).

Larval hosts for several other *Coelocephalapion* species are the buds and flowers of Fabaceae of the genera *Acacia* Mill., *Astragalus* L., *Clitoria* L., *Desmodium* Willd., *Lespedeza* Michx., *Prosopis* L., *Strophostyles* Ell., and *Tephrosia* Pers., also *Mikania* Willd. and *Verbesina* L. (Asteraceae). Some species have been reared from galls caused by flies (Ceciomyiidae and Tephritidae) on various Asteraceae. Adults are sometimes found on flowers (Kissinger 1968).

Adult Phenology in Texas

1) Number of compiled Texas collecting events by month: January (1), March (2), April (4), June (2), July (2), August (1), November (3), December (4).

2) Year of most recent known collection in the Lower Rio Grande Valley: 1950.

Literature Cited

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Valid name

Desmiphora aegrota Bates

Synonymy/catalog
Desmiphora aegrota Bates, 1879-1886 (1880):116
Desmiphora aegrota: Aurivillius, 1922:304
Desmiphora aegrota: Blackwelder, 1946:599
Desmiphora aegrota: Breuning, 1963:512 [NAME NOT CHECKED]
Desmiphora aegrota: Breuning, 1974:153
Desmiphora aegrota: Turnbow & Wappes, 1981:78
Desmiphora aegrota: Chemsak & Linsley, 1982:81
Desmiphora aegrota: Linsley & Chemsak, 1985:139
Desmiphora aegrota: Rice, Turnbow, & Hovore, 1985:22
Desmiphora aegrota: Hovore, Penrose, & Neck, 1987:312, fig. 9
Desmiphora aegrota: Monné & Giesbert, 1993:216
Desmiphora aegrota: Giesbert, 1998:29
Desmiphora aegrota: Bender et al., 2005:773

Classification
Family: Cerambycidae
Subfamily: Lamiinae
Tribe: Desmiphorini
The classification of the genus *Desmiphora* is not controversial.

Diagnostic remarks
This species is well characterized and easy to recognize among the southern Texas fauna of lamiine longhorn beetles. The small size, pale ground color, and fasciculate tufts or pencils of erect or sub-erect hairs in addition to the vestiture of long erect hairs are distinctive. The body is ca. 4.5-6.75 mm in length, elongate and subparallel with the greatest width across the elytral humeri. The pronotum lacks dense, nearly tomentose, white or yellowish-white pubescence on the sides and across the apex which is characteristic of several closely related Neotropical species. The color of the integument is pale yellowish-brown throughout. There is a circular arrangement of white fasciculate hairs on the apical third of the elytra enclosing a slightly darker, comparatively denuded oval area. The elytral humeri are prominent, the antennal scape is cylindrical and lacks a cicatrix, and the tarsal claws are simple and divaricate. The head displays the broad vertical face typical of members of the Lamiinae, and the mouthparts are tucked ventrally nearly to the anterior margin of the prosternum.

The genus is well recognized and keyed in the standard works on North American Cerambycidae (Linsley and Chemsak 1985, Turnbow and Thomas 2002). The species taxonomy for North and Central America was revised by Giesbert (1998) who provides a key to the 12 species known to occur in the region. Color habitus images are available on the web [http://plant.cdfa.ca.gov/byciddb/details.asp?id=9512] (last accessed on 6/25/2009).

Historic Occurrence Records

1) From literature: See "literature records" on attached Excel spreadsheet.

2) From specimens examined: See "specimen records" on attached Excel spreadsheet.

3) From communicated records: See "communicated records" on attached Excel spreadsheet.

Known Range

Brownsville area of Texas (Cameron County), south through Mexico (Chiapas, Oaxaca, Tamaulipas, and Veracruz) to Costa Rica, El Salvador, Guatemala, Honduras, and Panama.

Biology, Host, Substrate, Habitat Data

1) From literature: "Collected from vine-like stems of turk's cap (*Malvaviscus arboreus* var. *drummondi*) both day and night" and "beaten from dead branches of hardwood trees" (Hovore et al. 1987). Rice et al. (1985) reported, … "Living stems of *M. drummondii* (1 cm dia.) cut in October 1981 and April 1982 (and left *in situ* for at least four months) produced adults of this species in May 1982 and September-October 1982 respectively." Turnbow and Wappes (1981) report: "Specimens were taken by beating the recumbent woody stems of living *Malvaviscus arboreus* Car. var. *drummondi* (T. & G.) Schery (Turk's cap), and larval mines were subsequently found in the stems of that plant. Adults have been taken from April to June and in September and October." Linsley and Chemsak (1985) report the host plant in Texas as *Malvaviscus arboreus* var. *drummondii*.

2) From specimens: Specimens were examined with the following label data "at lights," "on *Malvaviscus arboreus* var. *drummondi*," and "an trocknem Holz" [= on dry wood, German].

3) From communicated records: "Reared from *Malvaviscus arboreus* var. *drummondi* that was cut as living plants the previous October 17, 1981, left *in* situ during the winter, collected the next spring, and then held in a container for adult emergence. The Malvaviscus was growing in a dense clump as an understory plant in the shade under a large tree (species unknown)" (M. E. Rice, pers. comm., 2008).

Biology, Host, Substrate, Habitat Data by Inference (based on knowledge of related species)

Not much is known about the hosts and biology of *Desmiphora* other than what is mentioned above. It appears that *Desmiphora* may have a preference for attacking living plant material. Another common Neotropical species that ranges into southern Texas is associated with *Cordia* and living branches of *Ehretia anacua* (Berl.) I. M. Johnst., both woody members of the Boraginaceous (Rice et al. 1985). Vogt (1949) found *D. hirticollis* in southern Texas "feeding on terminal shoots of Mexican olive (*Cordia boisseri* D. C.)."

Adult Phenology in Texas

1) Number of compiled Texas collecting events by month: April (6), May (7), June (2), September (5), October (7), and November (3).

2) Year of most recent known collection in the Lower Rio Grande Valley: 1997.

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Vogt, G. B. 1949. Notes on Cerambycidae from the Lower Rio Grande Valley, Texas. Pan-Pacific Entomologist 25(3): 137-144; (4): 175-184.

Valid name

Dibolia championi Jacoby

Synonymy/catalog
Dibolia championi Jacoby, 1880-1888 (1885):358
Dibolia championi: Heikertinger & Csiki, 1940:495
Dibolia championi: Blackwelder, 1946:717
Dibolia championi: Parry, 1974:1330, figs. 39-41
Dibolia championi: Wilcox, 1975:134
Dibolia championi: Riley, Clark, & Seeno, 2003:131
Dibolia championi: Bender et al., 2005:773

Classification
Family: Chrysomelidae
Subfamily: Galerucinae
Tribe: Alticini
The classification of *Dibolia* as a member of the Galerucinae is somewhat controversial in that not all workers in chrysomelid systematics accept the collapsed subfamily classification proposed by Reid (1995). Reid proposed the first broadly-based morphological analysis of leaf beetle subfamily relationships using modern techniques and combined various formerly-recognized subfamilies into more cohesive, defendable subfamily groups. In that work, a single subfamily was recognized for the former "trichostome" chrysomelid subfamilies of Galerucinae and Alticinae, with the name Galerucinae taking priority for the joint family group. In all older classifications that recognized two "trichostome" subfamilies, *Dibolia* was classified in the Alticinae. In this report, we follow the leaf beetle subfamily concepts as proposed by Reid (1995).

Although some relationships among flea beetle genera based on morphology appear to be fairly clear and are generally recognized by chrysomelid systematists, a satisfactory delineation of alticine tribes/subtribes does not exist. This report follows Seeno and Wilcox (1982) and Riley et al. (2002, 2003) in not recognizing formal family-groups below the tribe level within the Alticini.

Diagnostic remarks
As a member of the tribe Alticini, this small compact leaf beetle is a "flea beetle" with exceptionally enlarged hind femora. Based on knowledge of other *Dibolia* species, this species is likely to be a powerful jumper. The body length is 2.5 to 2.8 mm and the greatest width is 1.5 to 1.7 mm. The lateral margins are continuous between the pronotum and elytra giving the beetle a sleek elongate-elliptical shape. The dorsum is moderately convex. The pronotum is smooth with scattered fine punctures, and it lacks a transverse groove or depression. The elytra are smooth and serially punctate with fine to moderate-size punctures. Dorsal coloration is markedly bicolored with the head and pronotum orange and the elytra metallic bluish-green. The ventral surfaces are orange to brownish. One of the most important diagnostic characters for the genus is found in the shape of the hind tibial spur. This spur is broad, grooved above, and terminates in a distinct bifurcation. This character is diagnostic for the genus within the North American alticine

fauna. *Dibolia championi* is the only member of the genus recorded from the Lower Rio Grande Valley, and it is unlikely to be confused with other flea beetle species occurring in the area.

The genus is keyed in Konstantinov and Vandenberg (1996) relative to Palearctic flea beetle genera, and in Riley et al. (2002) relative to the North American flea beetle genera. The species is keyed relative to other species found in America north of Mexico by Parry (1974). Parry also includes line drawings of the male genitalia for this species. It appears that no habitus images of this species are available.

Historic Occurrence Records

1) From literature: See "literature records" on attached Excel spreadsheet.

2) From specimens examined: See "specimen records" on attached Excel spreadsheet.

3) From communicated records: none.

Known Range

Brownsville area of Texas (Cameron County) south to Mexico (Tamaulipas and Veracruz) and Guatemala.

Biology, Host, Substrate, Habitat Data

1) From literature: none.

2) From specimens: none.

3) From communicated records: The single specimen I collected in Tamaulipas, Mexico came from an area of lowland, seasonally dry forest (E. G. Riley, pers. obser.).

Biology, Host, Substrate, Habitat Data by Inference (based on knowledge of related species)

Data on the biology of *Dibolia championi* are non-existent as this species is known from very few specimens. Parry (1974) reviewed the biology and summarized host plant data for the other *Dibolia* species occurring in America north of Mexico. As a leaf beetle, this species will be phytophagous, and it is likely monophagous or stenophagous, feeding on one species or on a few closely related plant species since this is the case with other *Dibolia* species. Larvae of the genus are leaf miners, consuming the leaf mesophyll leaving the outer layers intact to produce characteristic damage patterns in the leaves of their hosts. Adults and larvae feed on the same plant species and can be found together on their hosts. Known host plants for North American species are members of the Plantaginaceae (one beetle species on multiple species of *Plantago*) and Scrophulariaceae (multiple beetle species on one or more genera - *Chelone*, *Disistoma*, *Keckiella*, *Melampyrum, Penstemon, Scrophularia*) (Clark et al. 2004). Reed (1927), working in New York state, documented the field biology and described the immature stages of *D. borealis* Chevrolat, the most common species found in eastern North America. Its larvae produced distinctive trail mines in the leaves of its hosts (*Plantago major* L.) and exited the leaves for pupation in the soil. A single host leaf could support multiple larvae, but each larva maintained a separate mine. One generation per year was recorded. *Dibolia championi* is the only *Dibolia* species in the United States with lowland tropical affinities

(entire known range in subtropical to tropical areas), thus its biology may differ fundamentally from species inhabiting temperate areas.

Adult Phenology in Texas

1) Number of compiled Texas collecting events by month: May (2).

2) Year of most recent known collection in the Lower Rio Grande Valley: 1935.

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Riley, E. G., S. M. Clark, and T. N. Seeno. 2003. Catalog of the leaf beetles of America north of Mexico (Coleoptera: Megalopodidae, Orsodacnidae and Chrysomelidae, excluding Bruchinae). Coleopterists Society Special Publication no. 1: 1-290.

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of this work. This has led some authors to cite 1974 as the year of publication. The cover bears the date “January 1975”.]

Valid name

Dihammaphora dispar Chevrolat

Synonymy/catalog
Dihammaphora dispar Chevrolat, 1859:52
Dihammophora (sic) *dispar*: Bates, 1879-1886 (1880):61
Dihammophora (sic) *dispar*: Bates, 1879-1886 (1885):308
Dihammophora (sic) dispar: Schaeffer, 1908:338
Dihammaphora dispar: Leng, 1920:278
Dihammaphora dispar: Blackwelder, 1946:583
Dihammaphora dispar: Linsley, 1964:187
Dihammaphora dispar: Chemsak & Linsley, 1982:47
Dihammophora (sic) *dispar*: Hovore, Penrose, & Neck, 1987:307
Dihammaphora dispar: Monné & Giesbert, 1993:122
Dihammaphora dispar: Turnbow & Thomas 2002:595
Dihammaphora dispar: Bender et al., 2005:773
Note: The generic name is frequently mis-spelled as *Dihamm**o**phora*.

Classification
Family: Cerambycidae
Subfamily: Cerambycinae
Tribe: Cleomenini
The classification of *Dihammaphora* is not controversial.

Diagnostic remarks
This is a small, delicate, narrow-bodied species of Cerambycidae. As a member of the subfamily Cerambycinae, the face of the head is not vertical but rather somewhat horizontal in repose. Body length is ca. 4.6-6.2 mm, and the width across the elytral humeri is ca. 1.0-1.4 mm. The body form is depressed (flat on top), parallel sided, with a single lateral carina on each elytron. The coloration is essentially "bicolored" with the pronotum red, with or without a dark variably developed median spot that when present is best developed before pronotal base. The head and elytra are blackish to dark lead-colored with a sparse covering of inconspicuous grayish hairs. The elytral surface is uniformly closely punctate. Antennae are black and relatively short, not reaching beyond elytral mid-length. The outer antennal segments are weakly serrate. The legs are near black to bicolored red and black and relatively long, with the femora markedly pedunculate (swollen distally).

The genus is keyed in the standard works (Linsley 1962, Turnbow and Thomas 2002) as the sole genus of the tribe Cleomenini in the United States. *Dihammaphora dispar* is the only species of the genus recorded from the United States. It is similar in general appearance to members of the genus *Rhopalophora* Audinet-Serville, a few species of which occur in the Lower Rio Grande Valley of Texas. *Rhopalophora* species are easily distinguished from *Dihammaphora* by their long filiform antennae as apposed to the short subserrate antennae of *Dihammaphora*. A color image is available of the web [http://plant.cdfa.ca.gov/byciddb/details.asp?id=5280] (last accessed 6/25/2009).

Historic Occurrence Records

1) From literature: See "literature records" on attached Excel spreadsheet.

2) From specimens examined: See "specimen records" on attached Excel spreadsheet.

3) From communicated records: See "communicated records" on attached Excel spreadsheet.

Known Range

Brownsville area of Texas (Cameron County) south through much of Mexico (Chiapas, Nuevo Leon, Oaxaca, Puebla, Tamaulipas, and Veracruz).

Biology, Host, Substrate, Habitat Data

1) From literature: "occasionally collected from blossoms and on dead wood in Mexico" (Hovore et al. 1987).

2) From specimens: none.

3) From communicated records: none.

Biology, Host, Substrate, Habitat Data by Inference (based on knowledge of related species)

"In my experience most, if not all, Rhopalophorini can be taken from plants with umbelliferous flowers. Everything from wild carrot or queen ann's lace to woody shrubs or small trees with similar flowers. Preference, as with most flower-visiting Cerambycidae, is for white to pale cream colored flowers. Most of the species I've encountered do not seem to be host specific as to flowers but visit what's in bloom at the time of adult emergence. Some of the species can be encountered and taken in large numbers flying to freshly cut hardwoods in tropical America. I've seen and selectively taken many dozens of *Ischionodonta* flying to log decks in Panama and many times encountered *Listroptera* coming to freshly cut wood in Panama and Bolivia. Also collected a number of *Cosmisoma* species on blooming shrubs in Mexico and Central America. When you find them they are often quite abundant. For the *Dihammaphora* almost all my specimens have been taken visiting flowers" (J. E. Wappes, pers. comm., 2009).

Adult Phenology in Texas

1) Number of compiled Texas collecting events by month: No collecting events with dates are known from Texas.

2) Year of most recent known collection in the Lower Rio Grande Valley: Pre-1908, the year Schaeffer published the only known record from Brownsville, Texas. The basis of Schaeffer's report is a specimen that he attributed to the collector Ottomar Dietz (Schaeffer 1908). Ottomar Dietz is known to have collected in the Brownsville area during 1901. (Horace Burke, pers. comm., 2009).

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Valid name

Disonycha barberi Blake

Synonymy/catalog
Disonycha barberi Blake, 1951:327, fig. 10
Disonycha barberi: Blake, 1955:48
Disonycha barberi: Wilcox, 1975:105
Disonycha barberi: Maes & Staines, 1991:28
Disonycha barberi: Riley, Clark, & Seeno, 2003:120
Disonycha barberi: Clark et al., 2004:83
Disonycha barberi: Bender et al., 2005:773

Classification
Family: Chrysomelidae
Subfamily: Galerucinae
Tribe: Alticini
The classification of the genus *Disonycha* as a member of the Galerucinae is somewhat controversial in that not all workers in chrysomelid systematics accept the collapsed subfamily classification proposed by Reid (1995). Reid proposed the first broadly based morphological analysis of leaf beetle subfamily relationships using modern techniques and combined various formerly-recognized subfamilies into more cohesive, defendable subfamily groups. In that work, a single subfamily was recognized for the former "trichostome" chrysomelid subfamilies of Galerucinae and Alticinae, with the name Galerucinae taking priority for the joint family group. In all older classifications that recognized two "trichostome" subfamilies, *Disonycha* is classified in the Alticinae. This report follows the leaf beetle subfamily concepts as proposed by Reid (1995).

Although some relationships among flea-beetle genera based on morphology appear to be fairly clear and are generally recognized by chrysomelid systematists, satisfactory delineation of alticine tribes/subtribes does not exist. This report follows Seeno and Wilcox (1982) and Riley et al. (2002, 2003) in not recognizing formal family groups below the tribe level within the Alticini.

Diagnostic remarks
This species is a "flea beetle," i. e., a member of the chrysomelid tribe Alticini, and is a powerful jumper with conspicuously enlarged hind femora. It is otherwise a quite typical example of the genus *Disonycha*. The body is 5.3-6.6 mm in length and 2.8-3.3 mm in greatest width, usually at about the mid-length of the elytra. The body shape is broadly ovoid and more-or-less parallel-sided for most of its length. The upper surface is quite highly polished and shining, the elytra covered with fine uniform punctation. The pronotum is always entirely pale, and the elytra are distinctly black-and-white vittate (striped). Each elytron has narrow black sutural and marginal vittae that are united apically and a broader median discal black vitta. The marginal elytral vitta of *D. barberi* embraces and includes the elytral epipleuron, and this is an important diagnostic condition that is found in only one other *Disonycha* species occurring in the Lower Rio Grande Valley, *D. glabrata* (Fabricius). In the latter species, the pronotum sometimes

possesses an elongate blackish median spot. Another notable difference between these two species is their coloration in life. In general, the coloration of the vittate species of *Disonycha* is much more vivid in living specimens. After death and desiccation, there are often notable changes in color due to the desiccation of the cuticular tissues. In life, the pale color of the pronotum and elytral vittate of *D. barberi* is without any reddish tints and the pronotum coloration a little more yellowish than the silvery-white elytral vittae. The pronotal color of living *D. glabra* is bright pink (often with the black median spot) contrasting markedly with the creamy-white coloration of the pale elytral vittae. Upon desiccation, the pink color tends to fade to a dull whitish similar to that of the pale elytral vittate. The coloration difference seen in living material is easy to observe in the field. As noted by Blake (1951) in her original description and discussion, the eyes of *D. barberi* are notably larger than those of *D. glabrata*.

Disonycha was most recently keyed in Riley et al. (2002). Blake (1933) treats the taxonomy of the United States species of *Disonycha*, but *D. barberi* was not recognized and named until later (Blake 1951). Blake (1955) keys *D. barberi* relative to other Neotropical *Disonycha*. Blake (1951, 1955) provides a black-and-white habitus illustration and an illustration of the male genitalia for *D. barberi.* The same is provided for *D. glabrata* in Blake (1933, 1955) Color images of living specimens of *D. barberi* are available on the web [http://bugguide.net/node/view/289624 and http://bugguide.net/node/view/270458] (last accessed 6/25/2009) and color images of live specimens of *D. glabrata* are also available on the web [http://bugguide.net/node/view/269961 and many others at Bugguide] (last accessed 6/25/2009).

Historic Occurrence Records

1) From literature: See "literature records" on attached Excel spreadsheet.

2) From specimens examined: See "specimen records" on attached Excel spreadsheet.

3) From communicated records: See "communicated records" on attached Excel spreadsheet.

Known Range

Southernmost Texas (Cameron and Hidalgo counties) and Mexico (Sinaloa). Blake (1955) suspected that this species was not native to southern Texas but rather Sinaloa Mexico. The earliest year of collection in Texas recorded in the present study is 1939.

Biology, Host, Substrate, Habitat Data

1) From literature: "on *Condalia obovata*," "on corn foliage," and "reared from *Phaulothamnus spinescens*" (Blake 1951).

2) From specimens: Specimens were seen with the following label data, …"on coyotillo," "with larvae on *Phaulothamnus spinescens* Gray," "reared on *Phaulothamnus spinescens*," "on corn foliage," "on *Condalia obovata* shrub," "reared larvae on *Phaulothamnus spinescens*," and "beating sheet." "Coyotillo is a common name for *Karwinskia humboltiana* (Willd. ex. Roem. & Schult.) Zucc. (Rhamnaceae).

3) From communicated records: I have taken this species in the Sabal Palm Grove Preserve on a few occasions, but only once was it abundant. On that date, I took both adults and larvae on from *Phaulothamnus* (E. G. Riley, pers. obser.).

Biology, Host, Substrate, Habitat Data by Inference (based on knowledge of related species)

Disonycha is a fairly large genus (ca. 145 species) of New World Alticini (Riley at. al 2002). The various species utilize a wide taxonomic spectrum of plants as hosts, and species are monophagous or oligophagous, feeding one plant species or on a group of closely related plant species (Clark et al. 2004). Some food plant information is known for most *Disonycha* species occurring in the United States; they use plants of the following families: Achatocarpaceae, Asteraceae, Amaranthaceae, Cactaceae, Caryophyllaceae, Chenopodiaceae, Clusiaceae, Fabaceae, Lamiaceae, Passifloraceae, Polemoniaceae, Polygonaceae, Salicaceae, and Saxifragaceae (Clark et al. 2004, Riley et al. 2002). Larvae of *Disonycha* are folivorous (leaf-eating) and are often found on foliage in close association with the adult stage. The adult stage overwinters. The eggs are deposited on the soil surface near the host plant or directly on the plant. The larvae feed on leaves but return to the soil for pupation. There are from one to three generations per year (Blake 1933, DeSwarte and Balsbaugh 1973, Hemenway and Whitcomb 1968).

Adult Phenology in Texas

1) Number of compiled Texas collecting events by month: March (2), April (1), May (1), June (3), July (1), September (4), October (8).

2) Year of most recent known collection in the Lower Rio Grande Valley: 2002.

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Valid name

Disonycha stenosticha Schaeffer

Synonymy/catalog
Disonycha stenosticha Schaeffer, 1931:285
Disonycha stenosticha: Blake, 1933:63
Disonycha stenosticha: Heikertinger & Csiki, 1939:210
Disonycha stenosticha: Blake, 1955:32-33 [mentioned in discussion under *D. quinquelineata*
Disonycha stenosticha: Wilcox, 1975:105
Disonycha stenosticha: Riley, Clark, & Seeno, 2003:122
Disonycha stenosticha: Clark et al., 2004:88
Disonycha stenosticha: Bender et al., 2005:773

Classification
Family: Chrysomelidae
Subfamily: Galerucinae
Tribe: Alticini
The classification of the genus *Disonycha* Chevrolat as a member of the Galerucinae is somewhat controversial in that not all workers in chrysomelid systematics accept the collapsed subfamily classification proposed by Reid (1995). Reid proposed the first broadly based morphological analysis of leaf beetle subfamily relationships using modern techniques and combined various formerly recognized subfamilies into more cohesive, defendable subfamily groups. In that work, a single subfamily was recognized for the former "trichostome" chrysomelid subfamilies of Galerucinae and Alticinae, with the name Galerucinae taking priority for the joint family group. In all older classifications that recognized two "trichostome" subfamilies, *Disonycha* is classified in the Alticinae. This report follows the leaf beetle subfamily concepts as proposed by Reid (1995).

Although some relationships among flea beetle genera based on morphology appear to be fairly clear and are generally recognized by chrysomelid systematists, satisfactory delineation of alticine tribes/subtribes does not exist. This report follows Seeno and Wilcox (1982) and Riley et al. (2002, 2003) in not recognizing formal family groups below the tribe level within the Alticini.

Diagnostic remarks
This species is a "flea beetle," i. e., a member of the chrysomelid tribe Alticini, and is a powerful jumper with conspicuously enlarged hind femora. It is a typical example of the genus *Disonycha*. The body is 7.6-8.1 mm in length and 4.0-4.2 mm wide, widest across the apical third of the elytra. The body shape is broadly ovoid and more-or-less parallel-sided for most of its length. The upper surface is highly polished and shining, and the elytra are very finely and uniformly punctate. The pronotum is entirely pale, and the elytra are yellowish with very narrow sutural and discal vittae. Often the elytral margin has a faint indication of a marginal vitta, which when present is brownish in color. The large size, highly polished upper surface, and the very narrow median elytral vitta are diagnostic for this species. It will not likely be confused with other *Disonycha* species

found in southern Texas. It is, however, quite closely related to a few of Mexican species as noted by Blake (1955). She (1933) expressed some hesitation in accepting *D. stenosticha* as a valid species but still maintained the species as valid in her later work on the Neotropical *Disonycha* (1955).

In general, the coloration of the pale vittae (stripes) and other pale body regions in species of *Disonycha* is much more vivid in living specimens. After death and desiccation, there are often notable changes in color due to the desiccation of the cuticular tissues. In life, the pale color of the pronotum of *D. stenosticha* is bright pink, and the pale color of the elytra is golden yellowish. In dry-preserved specimens, the pronotum is often without any trace of reddish tint, and the elytral color much less bright.

Disonycha was most recently keyed in Riley et al. (2002) relative to other Alticini genera found in America north of Mexico. Blake (1933) treated the taxonomy of the United States species of *Disonycha* and keyed this species relative to other species found in the region. Color images of a preserved specimen and of living specimens are available on the web [http://bugguide.net/node/view/268478, http://bugguide.net/node/view/255907, and http://www.texasento.net/stenosticha.htm] (last accessed on 6/22/2009).

Historic Occurrence Records

1) From literature: See "literature records" on attached Excel spreadsheet.

2) From specimens examined: See "specimen records" on attached Excel spreadsheet.

3) From communicated records: See "communicated records" on attached Excel spreadsheet.

Known Range

Southern Texas (Cameron and San Patricio counties) to Mexico (Tamaulipas).

Biology, Host, Substrate, Habitat Data

1) From literature: Clark et al. (2004) state, … "we collected adults of this species, and larvae presumably belonging to this species, from *Passiflora filipes* Benth. (Passifloraceae) in southern Texas. Adults were also found on *P. lutea* L. growing in the vicinity of *P. filipes*."

2) From specimens: A few specimens are labeled "on *Passiflora filipes*."

3) From communicated records: Adults perch on the upper leaf surfaces and are quite conspicuous. They were seen or collected on only a few visits to the Sabal Palm Grove Preserve and always along the trails through the interior part the grove. The larvae found on *P. filipes* were bright pinkish-orange in color and looked to be a typical *Disonycha* larvae, complete with numerous fleshy lobes radiating from the body. These larvae are almost certainly those of *D. stenosticha*. (E. G. Riley, pers. obser.).

Biology, Host, Substrate, Habitat Data by Inference (based on knowledge of related species)

Disonycha is a fairly large genus (ca. 145 species) of New World Alticini (Riley et al. 2002). The various species utilize a wide taxonomic spectrum of plants as hosts, and

species are monophagous or oligophagous, feeding on one plant species or on a group of closely related plant species (Clark et al. 2004). Because of the complex chemistry of *Passiflora*, the *Passiflora*-feeders, including *D. stenosticha*, are not likely to feed on other plants. This seems to be true of all Chrysomelidae that develop on *Passiflora* (E. G. Riley, pers. obser.). Some food plant information is known for most *Disonycha* species occurring in the United States; they use plants of the following families: Achatocarpaceae, Asteraceae, Amaranthaceae, Cactaceae, Caryophyllaceae, Chenopodiaceae, Clusiaceae, Fabaceae, Lamiaceae, Passifloraceae, Polemoniaceae, Polygonaceae, Salicaceae, and Saxifragaceae (Clark et al. 2004, Riley et al. 2002). Larvae of *Disonycha* are folivorous (leaf-eating) and are often found on foliage in close association with the adult stage. The adult stage overwinters. The eggs are deposited on the soil surface near the host plant or directly on the plant. The larvae feed on leaves but return to the soil for pupation. There are from one to three generations per year (Blake 1933, DeSwarte and Balsbaugh 1973, Hemenway and Whitcomb 1968).

Adult Phenology in Texas

1) Number of compiled Texas collecting events by month: January (1), April (1), May (3), June (3), October (9).

2) Year of most recent known collection in the Lower Rio Grande Valley: 1994

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Bender, S., S. Shelton, K. C. Bender, and A. Kalmbach (eds.). 2005. Texas Comprehensive Wildlife Strategy, 2005-2010. Texas Parks and Wildlife, Austin. xv + 1131 pp.

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Valid name

Ecyrus penicillatus Bates

Synonymy/catalog
Ecyrus penicillatus Bates, 1879-1886 (1880):137
Ecyrus fasciatus Hamilton, 1896:137
Ecyrus fasciatus: Wickham, 1898:41
Ecyrus fasciatus: Townsend, 1902:79
Ecyrus fasciatus: Schaeffer, 1908:328
Ecyrus fasciatus: Leng, 1920:284
Ecyrus fasciatus: Aurivillius, 1923:325
Ecyrus penicillatus: Aurivillius, 1923:325
Ecyrus dasycerus fasciatus: Linsley, 1930:90
Ecyrus pencillatus: Linsley, 1930:89 [subsequent incorrect spelling]
Ecyrus fasciatus: Linsley, 1931:106
Ecyrus fasciatus: Linsley & Martin, 1933:182
Ecyrus penicillatus: Linsley, 1935:91; pl. i, fig. 7
Ecyrus penicillatus: Blackwelder, 1946:601
Ecyrus penicillatus: Chemsak & Linsley, 1970:410
Ecyrus penicillatus: Breuning, 1975:42
Ecyrus penicillatus: Chemsak & Linsley, 1975:282
Ecyrus penicillatus: Chemsak & Linsley, 1982:85
Ecyrus penicillatus: Linsley & Chemsak, 1985:186; fig. 42, p. 187
Ecyrus penicillatus: Rice, Turnbow, & Hovore, 1985:22
Ecyrus penicillatus: Hovore, Penrose, & Neck, 1987:313, fig. 12
Ecyrus penicillatus: Monné & Giesbert, 1993:210
Ecyrus penicillatus: Bender et al., 2005:773

Classification
Family: Cerambycidae
Subfamily: Lamiinae
Tribe: Pogonocherini
The classification of the genus *Ecyrus* is not controversial.

Diagnostic remarks
This species is easy to distinguish among lamiine longhorn beetles of the Lower Rio Grande Valley. The body is elongate and subparallel with the pronotum markedly narrower than the elytral base. The body length is 7.0 -10.5 mm with the greatest width across the elytral humeri. The pronotum is subcylindrical and without a lateral projection. Each elytron has a single row of three fasciculate clusters of dark brown hairs and an anterior and broader posterior band of appressed white hairs separated by a broad band of darker grayish and brownish appressed hairs. The elytral surface is weakly tumid anteriorly, and combined with the coloration give this beetle the appearance of a bird dropping. The antennal scape lacks a cicatrix, pubescence of pronotum short and appressed (not fasciculate), the elytral humeri are prominent, the elytra lack long erect

hairs (i. e., flying hairs), the legs are not especially hairy, the middle tibia with a distinct external emargination, and the tarsal claws are simple and divaricate. Another species of the genus, *Ecyrus arcuatus* Gahan, is also found in the Lower Rio Grande Valley but can be easily distinguished by the a narrow arcuate band of dark appressed hair extending across the basal third of the elytra and by having three rows of small fasciculate clumps of blackish hairs on each elytron.

The genus is keyed in the standard works on North American Cerambycidae (Linsley and Chemsak 1985, Turnbow and Thomas 2002). The species is keyed relative to other species found in America north of Mexico by Linsley and Chemsak (1985). Black-and-white habitus illustrations are provided by Linsley (1935), Linsley and Chemsak (1985), and Hovore et al (1987). Color habitus images are available on the web [http://plant.cdfa.ca.gov/byciddb/details.asp?id=9251 (last accessed on 6/25/2009) and http://bugguide.net/node/view/289962 (last accessed 6/25/2009)].

Historic Occurrence Records

1) From literature: See “literature records” on attached Excel spreadsheet.

2) From specimens examined: See “specimen records” on attached Excel spreadsheet.

3) From communicated records: See “communicated records” on attached Excel spreadsheet.

Known Range

Brownsville area of Texas (Cameron County) south through much of Mexico (Querétaro, San Luis Potosí, Sinaloa, Tamaulipas, and Veracruz).

Biology, Host, Substrate, Habitat Data

1) From literature: “attracted to UV light or beaten from dead branches of *Celtis* or *Salix*” (Hovore et al. 1987), “beaten from *Celtis*, a pair in coitu,” (Townsend 1902), “reared from dead branches of *Pithecellobium flexicaule* (Benth.) Coult. [= *Ebenopsis ebano* (Berl.) Barneby & Grimes] (Rice et al. 1985), “beaten from *Celtis* sp. and *Zanthoxylum* sp. (Rice et al. 1985), and “In Texas this species has been collected in late May, June and early June from dead branches of willow (*Salix*). Most of the examples from Mazatlan [Sinaloa, Mexico] were attracted to "black light" at night” (Chemsak and Linsley 1975). Wickham (1898) writes "... *Ecyrus fasciatus* is another jungle haunter..." while describing beetles collected and seen in the Lower Rio Grande Valley. Linsley (1935) gives *Salix* as the host.

2) From specimens: “at UV lights,” “on dead limb,” and “reared from unknown dead wood.”

3) From communicated records: none.

Biology, Host, Substrate, Habitat Data by Inference (based on knowledge of related species)

Linsley (1935) provides the following excellent overview on the biology of the Pogonocherini. “In so far as known, the life histories of the various members of the Pogonocherini are rather similar. The species are nocturnal, resting during the day on their host plants, where they are very inconspicuous because of their protective

coloration. During the night, the adult beetles are attracted to recently dead or dying branches, preferably those broken by storm and still hanging upon the tree. On these branches mating takes place and later the eggs are deposited. The larvae burrow in the dry sapwood and heartwood (*Poliaenus*, *Lophopogonius*, *Ecyrus*, and *Callipogonius*), or beneath the bark (*Pogonocherus*). The larvae period is usually a single year, or rarely (*Lophopogonius*) two years. The pupal cell is constructed in the heartwood in *Poliaenus* and *Lophopogonius* and in the sapwood in *Pogonocherus*. In the latter case the cell is plugged at both ends with fibrous chips in a manner similar to that of *Monochamus*."

Adult Phenology in Texas

1) Number of compiled Texas collecting events by month: May (12), June (9), July (3), August (1), September (2), October (5).

2) Year of most recent known collection in the Lower Rio Grande Valley: 1994.

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Blackwelder, R. E. 1946. Checklist of the coleopterous insects of Mexico, Central America, the West Indies, and South America. Part 4. United States National Museum Bulletin 185: iii + 551-763 pp.

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Turnbow, R. H., Jr. and M. C. Thomas. 2002. Cerambycidae Leach, 1815, pp. 568-601, *in* Arnett, R. H., M. C. Thomas, P. E. Skelley, and J. H. Frank (eds.). American Beetles. Polyphaga: Scarabaeoidea through Curculionoidea. Volume 2. CRC Press. xiv + 1-861 pp.

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Valid name

Epitrix sp. 1
This is not one of the recognized North American species and probably not one of the named Mexican species (present study).

Synonymy/catalog
Epitrix sp. EGR 1: Bender et al., 2005:773

Classification
Family: Chrysomelidae
Subfamily: Galerucinae
Tribe: Alticini
The classification of the genus *Epitrix* as a member of the Galerucinae is somewhat controversial in that not all workers in chrysomelid systematics accept the collapsed subfamily classification proposed by Reid (1995). Reid proposed the first broadly based morphological analysis of leaf beetle subfamily relationships using modern techniques and combined various formerly recognized subfamilies into more cohesive, defendable subfamily groups. In that work, a single subfamily was recognized for the former "trichostome" chrysomelid subfamilies of Galerucinae and Alticinae, with the name Galerucinae taking priority for the joint family group. In all older classifications that recognized two "trichostome" subfamilies, *Epitrix* is classified in the Alticinae. This report follows the leaf beetle subfamily concepts as proposed by Reid (1995).

Although some relationships among flea beetle genera based on morphology appear to be fairly clear and are generally recognized by chrysomelid systematists, satisfactory delineation of alticine tribes/subtribes does not exist. This report follows Seeno and Wilcox (1982) and Riley et al. (2002, 2003) in not recognizing formal family groups below the tribe level within the Alticini.

Diagnostic remarks
This species is a "flea beetle," i. e., a member of the chrysomelid tribe Alticini, and is a powerful jumper with conspicuously enlarged hind femora. This species is typical in all respects of the genus *Epitrix*. This beetle is small and stout, the elytra are nearly parallel-sided for most of their length, and the body is somewhat depressed above. The body length is 1.3 to 1.7 mm, and the width is 0.75 to 0.9 mm and greatest at about elytral mid-length. The body color is shining black with the legs and antennae yellowish. The pronotum is deeply punctate with the punctures separated by spaces greater than the diameter of the punctures. The pronotal margins are denticulate and the disc has a distinct transverse prebasal impression that terminates on each side in the short longitudinal impression. The elytra are serially punctate with deeply impressed punctures. The intervals bear a single row of reclining yellowish hairs.

The genus *Epitrix* is large (> 100 species: Konstantinov and Vandenberg 1996) and has never received a thorough modern taxonomic treatment, not even for the species found in America north of Mexico. The present species superficially resembles *E. cucumeris* (Harris) which is widespread throughout the eastern United States, but rarely, if at all, found in Texas. The present species can be definitively separated from *E.*

cucumeris by the shape of the female spermatheca, a species-level character of noted importance in the genus (Seeno and Andrews 1972).

The genus is keyed in Konstantinov and Vandenberg (1996) relative to Palearctic flea beetle genera, and in Riley et al. (2002) relative to Nearctic flea beetle genera. No habitus images of this species are available; however, images of the similar species, *E. fuscula* Crotch, can be found on the web [http://bugguide.net/node/view/276445] (last accessed 6/25/2009).

This is one of five *Epitrix* species known from the Lower Rio Grande Valley of Texas and can be distinguished by the following key:

1. Dorsal coloration pale brownish with a more-or-less dark brownish irregular transverse band on elytra:
   Epitrix fasciata Blatchley
   E. hirtipennis (Melsheimer)
   Dorsal coloration black or brownish, if brownish, without darker transverse band on elytra ……..….. 2
2. Dorsal coloration brownish, sometimes vaguely infuscate along elytral suture or with entire elytra a darker shade of brown than pronotum …….. *E*. sp. EGR no. 2
   Dorsal coloration black ……..……..… 3
3. Small, (1.3 to 1.7 mm) form nearly subparallel, dorsum depressed, hairs of elytral with distinct yellowish tinge ……...…….... *E*. sp. 1
   Large (1.85 to 2.0 mm), form rounded, dorsum convex, hairs of elytra white ……...
   ……. *E*. sp. EGR no. 3

Historic Occurrence Records

1) From literature: none.

2) From specimens examined: See “specimen records” on attached Excel spreadsheet.

3) From communicated records: none.

Known Range

Southern Texas (Cameron and Hidalgo counties).

Biology, Host, Substrate, Habitat Data

1) From literature: none.

2) From specimens: Some specimens are labeled “on *Capsicum annuum* L.”

3) From communicated records: The long series I collected taken at various times in the Palm Grove specimens were collected from *Capsicum annuum* found growing along the trails in the core area of the Sabal Palm Grove Preserve. Adults were often common and there was clear evidence of adult feeding on the leaves of the plants (E. G. Riley, pers. obser.).

Biology, Host, Substrate, Habitat Data by Inference (based on knowledge of related species)

Epitrix is a genus found almost world-wide and always in association with plants of the family Solanaceae (Clark et al. 2004, Konstantinov and Vandenberg 1996). Larvae are subterranean feeding the under ground portions of their host plants (Chittenden 1898,

Jolivet and Hawkeswood 1995). A number of species of *Epitrix* are pests of various solanaceous plants (eggplant flea beetle, *E. fuscula* Crotch; potato flea beetle, *E. cucumeris* (Harris); tobacco flea beetle, *E. hirtipennis* (Melsheimer); tuber flea beetle, *E. tuberis* Gentner; and western potato flea beetle, *E. subcrinita* LeConte) and their biology can be summarized as follows. Adults overwinter and emerge in the spring to feed on the young leaves of their host plant. Adults "pepper" leaves with numerous small holes, some which develop into larger holes as young leaves continue to grow. Eggs are deposited on the soil surface near the host plant. The larvae feed on the roots and tubers of their host plants by boring partway into the plant tissue. Larvae pupate in earthen cells after fully exiting the damaged plant tissues. Adults emerge later in the year and continue feeding on the leaves of there food plants before hibernation. There are one or two generations per year based on various studies in the United States (Anderson and Walker 1936, Chittenden 1898, Hill and Tate 1942, Martin and Herzog 1987).

Adult Phenology in Texas

1) Number of compiled Texas collecting events by month: April (1), May (5), July (1), October (4).

2) Year of most recent known collection in the Lower Rio Grande Valley: 1992.

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Valid name

Hemierana marginata suturalis (Linell)

Synonymy/catalog
Amphionycha suturalis Linell, 1896:398
Amphionycha flammata, var. *ardens*: Wickham, 1898:41 [misidentification]
Amphionycha suturalis: Townsend, 1902:80
Amphionycha suturalis: Leng, 1920:286
Hemierana suturalis: Aurivillius, 1923:595
Amphionycha suturalis: Blatchley, 1930:34
Hemierana suturalis: Linsley & Martin, 1933:183
Hemierana suturalis: Chemsak & Linsley, 1982:114
Hemierana suturalis: Hovore, Penrose, & Neck, 1987:322
Hemierana suturalis: Monné & Giesbert, 1993:285
Hemierana marginata suturalis: Linsley & Chemsak, 1995:292
Hemierana marginata suturalis: Bender et al., 2005:773

Classification
Family: Cerambycidae
Subfamily: Lamiinae
Tribe: Hemilophini
The classification of *Hemierana* in the Hemilophini is not controversial.

Diagnostic remarks
This lamiine longhorn beetle is fairly easy to recognize and not likely to be confused with other Lamiinae occurring in the Lower Rio Grande Valley. The body is cylindrical, parallel-sided, ca. 7.0 to 8.0 mm in length, and widest across at the elytral humeri. Ground color of elytral integument is black, and that of the pronotum and head is mostly reddish-brown. The antennae and legs are black. All body surfaces are densely covered with a fine vestiture of colored hairs. The elytral vestiture is grayish and dense with narrow yellowish marginal and sutural vittae. The pronotal vestiture is yellow and dense laterally becoming sparse towards the mid-line of the disc where the color of the integument dominates, appearing as a longitudinal median reddish to blackish macula that extends forward to include the vertex of the head. The head displays the broad vertical face typical of members of the Lamiinae, the antennae reach the elytral apices, the upper and lower lobes of the eyes are connected, and the tarsal claws are bifid.

The taxonomic status of this south Texas form must still be considered in question. It was originally described as a separate species and most recently treated as a subspecies of the wide ranging *H. marginata* (Fabricius) by Linsley & Chemsak (1995). They report not seeing any material from Mexico that matched Brownsville specimens, and they did not specifically mention Blatchley's (1930) record from Florida. Hovore et al. (1987) reported seeing material of *H. suturalis* from central Florida which seems to more or less confirm the Florida record reported by Blatchley (1930); however, Peck and Thomas (1998) list only *H. marginata marginata* (F.) from Florida.

The color pattern displayed by this subspecies could possibly be mimetic. Fireflies (Coleoptera; Lampyridae) are toxic and serve as a models for numerous mimetic insects (Gorham 1880-1886). Lampyridae of the genus *Photinus* are common in the Brownsville area (E. G. Riley, pers. obser.) and roughly the same size and color of *H. m. suturalis*. They often rest exposed on vegetation during the daytime. *Hemierana* are conspicuous diurnal beetles often found resting exposed on vegetation or seen in flight (E. G. Riley, pers. obser.) and thus may be predisposed to evolve beneficial mimetic color patterns. Close association with populations of *Photinus* species could possibly explain why beetles from different areas (some from Florida, for example) match or approximate the south Texas "*suturalis*" color pattern. The common black and orange colored form of *Hemierana* found throughout much of the eastern United States (*H. marginata ardens* (LeConte)) is likely a mimic of net-winged beetles (Lycidae) which are closely related to Lampyridae and also toxic.

On the species vs. subspecies problem with the Brownsville *Hemierana*, one additional confounding factor seems worthy of mention: the rearing record from *Bernardia* (details below). Beetles that utilize *Bernardia myricaefolia* as a host plant (two Buprestidae, one weevil, and one flea beetle) are all strictly monophagous as far as known (various sources and E. G. Riley, pers. obser.). This should not be unexpected given the complex plant chemistry of the Euphorbiaceae (Evans and Taylor 1983). If the *Bernardia* association for the Brownsville *H. m. suturalis* is authentic, then the monophagous-*Bernardia* pattern is incongruent with *H. marginata* that probably utilizes living Asteraceae as hosts throughout its range (see below).

The genus *Hemierana* is keyed in the standard works on North American Cerambycidae (Linsley & Chemsak 1985, 1995; Turnbow & Thomas 2002). Presently there is one recognized species in North America with three subspecies. This species will likely be placed into some Neotropical genus when the entire group is better understood (Linsley and Chemsak 1995). Color images of *H. m. suturalis* (and other subspecies) are available on the web [http://plant.cdfa.ca.gov/byciddb/thumb.asp?g=Hemierana] (last accessed 6/25/2009). The black-and-white illustration of *H. m. ardens* given by Linsley and Chemsak (1995) is inconsistent with the materials seen for this subspecies and may have been mislabeled. This illustration is a close match for *H. m. suturalis*.

Historic Occurrence Records

1) From literature: See "literature records" on attached Excel spreadsheet.

2) From specimens examined: See "specimen records" on attached Excel spreadsheet.

3) From communicated records: See "communicated records" on attached Excel spreadsheet.

Known Range

Brownsville area of Texas (Cameron County) and possibly central and southern Florida (see comments on taxonomic status above).

Biology, Host, Substrate, Habitat Data

1) From literature: Hovore et al. (1987) report seeing specimens in the USNM labeled as having been reared from larvae collected in the roots and stems of

Bernardia myricaefolia (Cheele) S. Watson (Euphorbiaceae). Also from "beating in a wooded river bottom" Wickham (1898), and "beaten in palmetto jungle from tangles of *Clematis drummondii*, *Ehretia elliptica*, and other foliage" Townsend (1902).

2) From specimens: One specimen was seen labeled "on *Bernardia myricaefolia* roots, stems." This specimen is in the USNM and is apparently one of those mentioned by Hovore et al. (1987).

3) From communicated records: "The specimens I collected at the Palm Grove on various dates were all found in the daytime sitting on the stems of a white-flowered *Verbesina* at the back of the grove. These beetles were resting parallel to the stems with their heads pointed upwards." (E. G. Riley, pers. obser.).

Biology, Host, Substrate, Habitat Data by Inference (based on knowledge of related species)

A known larval host of *H. marginata* (F.) is *Vernonia baldwinii* Torr. ssp. *interior* Small (Faust) (Asteraceae) (Schwitzgebel and Wilbur 1942, as *Vernonia interior* Small). Adults have been associated with many herbaceous plants, and Hovore et al. (1987) report collecting adults of *H. marginata* in numbers from *Verbesina* (Asteraceae) in southern Texas. Several people report taking *H. marginata ardens* from herbaceous vegetation (D. J. Heffern, E. G. Riley, J. E. Wappes, R. H. Turnbow, pers. comm./obser., 2009). In Kansas the larvae bored downward in the pith of living stems of *Vernonia* to the root crown where they overwintered as fully grown larvae. Pupation occurred the following spring and lasted about fifteen days.

Adult Phenology in Texas

1) Number of compiled Texas collecting events by month: February (1), March (5), April (2), May (10), June (9), August (1).

2) Year of most recent known collection in the Lower Rio Grande Valley: 1995.

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Valid name

Heptispa sp. 1

This species is highly unique and represents an undescribed species. It also represents the first record of the genus in the United States (present study).

Synonymy/catalog
Heptispa sp. EGR 1: Bender et al., 2005:774

Classification
Family: Chrysomelidae
Subfamily: Cassidinae
Tribe: Chalepini
The classification of the genus *Heptispa* Weise as a member of the Cassidinae is somewhat controversial in that not all workers in chrysomelid systematics accept the collapsed subfamily classification proposed by Reid (1995). Reid proposed the first broadly based morphological analysis of leaf beetle subfamily relationships using modern techniques and combined various formerly recognized chrysomelid subfamilies to form more cohesive defendable subfamily groups. In that work, a single subfamily was recognized for the former "cryptostome" chrysomelid subfamilies of Hispinae and Cassidinae. Reid (1995) and Riley et al. (2002) used the name Hispinae for the combined subfamily; however, for strict nomenclatural reasons as noted by Staines (2002), the subfamily name Cassidinae takes precedence over Hispinae. In all older classifications that recognized two "cryptostome" subfamilies, *Heptispa* was classified in the Hispinae. This report follows the leaf beetle subfamily concepts as proposed by Reid (1995).

Heptispa would be recognized in the tribe Chalepini following Riley et al. (2001, 2002, 2003) who treat the formerly recognized tribe Uroplatini as a synonym of Chalepini. *Heptispa* was treated in the Chalepini by Staines (2002). In most works prior to those publications, *Heptispa* is included in the Uroplatini.

Diagnostic remarks
This is a highly distinctive hispine beetle recognized by having only seven freely articulated antennomeres and seven regular rows of punctation on each elytron. The entire body and all appendages are orange in color. The body form is narrowly elongate and depressed and deeply punctate above. The body length is 3.8-3.9 mm and the width at the elytral mid-length is 1.25-1.3 mm. The elytra are parallel until the apical curvature and not widened distally or across the humeri as they are in many other hispines. The antennae are notably short, less than the combined length of the head and prothorax, and weakly clavate. They are composed of only seven freely articulated antennomeres, a trait unknown among other hispine beetles known to occur in the United States. The terminal segment is largest and with a bluntly rounded apex. There are seven regularly aligned rows of punctures on each elytron, the first six of which are geminate (paired) and separated by three discal costae. Beyond the third costa is a single row of punctures, the seventh and last row. Post-scutellar punctures are absent. The elytral margins are evenly serrate with small uniformly placed teeth, and the elytral apex is conjointly rounded.

The genus *Heptispa* has yet to be formally recognized as part of the United States fauna, and was not keyed by Riley et al. (2002) or Staines (2006). The genus is keyed relative to other Western Hemisphere hispine genera by Staines (2002). The two known Central American species are keyed and redescribed by Staines (1996). Images of this species are not presently available.

Historic Occurrence Records

1) From literature: none.

2) From specimens examined: See "specimen records" on attached Excel spreadsheet.

3) From communicated records: none.

Known Range

Brownsville area of Texas (Cameron County).

Biology, Host, Substrate, Habitat Data

1) From literature: none.

2) From specimens: none.

3) From communicated records: The only known specimens (two cited in this report) were collected in one collecting event by Wayne Clark while he was a graduate student at Texas A&M University. Clark (pers. comm., 2009) communicated that this event occurred "…while collecting for tychiine weevils by beating mostly mimosoid shrubs east of Brownsville."

Biology, Host, Substrate, Habitat Data by Inference (based on knowledge of related species)

General biology of members of the tribe Chalepini is fairly uniform across many taxa for which some biology is known. As a member of the Chalepini, the larva of *Heptispa* sp. 1 will be a leaf-miner in the same plant on which adults will feed, although the adult stage may feed on additional plant species that are not used as larval hosts. In general, the hispines are monophagous or stenophagous, feeding on one plant species or on a group of closely related plant species (Jolivet and Hawkeswood 1995). Known larvae of the Chalepini are leaf miners consuming the mesophyll layer of the leaf to create a blotch or trail-type mine. If a single leaf or leaflet is too small to allow for complete larval development, the larva of some genera are known to exit their original host leaf and enter another to complete development. Larvae will pupate within the mines. Hispinae beetles in Maryland (USA) probably have only a single generation per year (Ford and Cavey 1985), but this may not be the case with hispine beetles with tropical and semitropical affinities such as *Heptispa* species.

Heptispa limbata (Baly) in Costa Rica uses *Cassia* L. *Inga* Mill., *Machaerium* Pers., *Mimosa* L. (Fabaceae) and *Serjania* Mill. (Sapindaceae) as hosts (Hespenheide and Dang 1999, Maulik 1937, Uhmann 1937).

Adult Phenology in Texas

1) Number of compiled Texas collecting events by month: January (1).

2) Year of most recent known collection in the Lower Rio Grande Valley: 1972.

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Riley, E. G., S. M. Clark, and T. N. Seeno. 2003. Catalog of the leaf beetles of America north of Mexico (Coleoptera: Megalopodidae, Orsodacnidae and Chrysomelidae, excluding Bruchinae). Coleopterists Society Special Publication no. 1: 1-290.

Staines, C. L. 1996. The Hispinae (Coleoptera: Chrysomelidae) of Nicaragua. Revista Nicaragüense de Entomología 37/38A: 1-32.

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Uhmann, E. 1937. Hispinen-Minen aus Costa-Rica. II. Teil. 62. Beitrag zur Kenntnis der Hispinen. (Coleoptera: Chrysomelidae.). Arbeiten über physiologische und angewandte Entomologie aus Berlin-Dahlem 4(1): 61-67.

Valid name

Malacorhinus acaciae (Schaeffer)

Synonymy/catalog
Cneorane? *acaciae* Schaeffer, 1906:246
Cneorane? *acaciae*: Leng, 1920:298
Cneorane acaciae: Weise, 1924:126
Malacorhinus acaciae: Wilcox, 1951:92, fig. 5
Malacorhinus acaciae: Wilcox, 1965:61
Malacorhinus acaciae: Wilcox, 1971:164
Malacorhinus acaciae: Wilcox, 1975:79
Malacorhinus acaciae: Maes & Staines, 1991:23
Malacorhinus acaciae: Riley, Clark, & Seeno, 2003:76
Malacorhinus acaciae: Clark et al., 2004:130
Malacorhinus acaciae: Bender et al., 2005:774

Classification
Family: Chrysomelidae
Subfamily: Galerucinae
Tribe: Metacyclini
This species has always been classified as a member of the Galerucinae (*s. str*.).
The classification of *Malacorhinus* in the tribe Metacyclini is not controversial in that it follows Wilcox (1965). The acceptance of the tribe Metacyclini as a close sister group to the tribe Galerucini seems sound (Gillespie et al. 2008). This report follows the tribal classification of the Galerucinae (*s. str*.) as proposed by Wilcox (1965) and followed by Seeno and Wilcox (1982) and Riley et al. (2002, 2003).

Diagnostic remarks
This is a small, dorsally glabrous, shining, black-on-red patterned galerucine leaf beetle. The body length is ca. 4 to 5 mm long and the greatest width is 1.7 to 2.1 mm at the elytral mid-length. The dorsum is reddish to brownish-orange with two large black maculae on each elytron. The basal elytral spot almost embraces the anterior elytral margin, and the distal spot is elongate and about twice as large as the basal spot. The male has the lateral margin of the elytron modified just before the middle. This area is impressed with the upper boarder of the impression thickened and protruding slightly. Females lack elytral modifications. The legs, antennae and metathorax are black. The tarsal claws are appendiculate, i. e., each with a broad basal tooth.

The genus *Malacorhinus* is keyed in Wilcox (1965) and Riley et al. (2002). *Malacorhinus acaciae* is one of three species of the genus found in America north of Mexico, but the genus is well represented in the Mexico and Central America and probably contains a fair number of unnamed species (Riley 2002). Another *Malacorhinus* species, *M. tilghmani* Mignot (as *M. tripuncatata* (Jacoby)), has been recorded from Texas, but it is a much larger beetle and of a different shape and color and thus is not likely be confused with the present species. *Malacorhinus acaciae* is keyed relative to

other species known from America north of Mexico by Wilcox (1951, 1965). A black-and-white habitus illustration of a male is given by Wilcox (1951).

Historic Occurrence Records

1) From literature: See "literature records" on attached Excel spreadsheet.

2) From specimens examined: See "specimen records" on attached Excel spreadsheet.

3) From communicated records: See "communicated records" on attached Excel spreadsheet.

Known Range

Brownsville area of Texas (Cameron County).

Biology, Host, Substrate, Habitat Data

1) From literature: With the original description of this species, Schaeffer states "a small number (all females) on *Acacia flexicaulis* in May, June and July." *Acacia flexicaulis* is one of the out-dated names for *Ebenopsis ebano* (Berl.) Barney & Grimes (Fabaceae). This record was repeated by Wilcox (1965) and Clark et al. (2004).

2) From specimens: Some specimens are labeled "beating sheet."

3) From communicated records: I took this species on two occasions on the same date at the Palm Grove, once in the open regrowth area and once in the dense understory of the Palm Grove. The specimens from the regrowth area were taken by beating *Ebenopsis ebano,* but I am not sure about those taken in the core of the Palm Grove (E. G. Riley, pers. obser.).

Biology, Host, Substrate, Habitat Data by Inference (based on knowledge of related species)

Leaf beetles (Chrysomelidae) feed on tissues of living plants in both the larval and adult stages. Most adults consume foliage. Many species are highly specialized and feed on only one plant species or a few closely related plant species. The larval feeding habits in the family are quite diverse attacking many different plant parts (Jolivet and Hawkeswood 1996, Jolivet and Petitpierre 1981, Clark et al. 2004). A species from Arizona has been found on *Salix* (Clark et al. 2004). Food habits of Neotropical *Malacorhinus* species are unknown. The adults of a few Neotropical *Malacorhinus* species and those of different metacycline genera have been collected from species of *Inga* L. (Fabaceae) (E. G. Riley, pers. obser.). The larvae of members of the tribe Metacyclini were reported to be unknown (Riley 2002), but the larva of *Malacorhinus irregularis* Jacoby has since been reported to be a root feeder on *Mimosa* seedlings (Heard et al. 2005), and the larva of *Metacycla insolita* (LeConte) is now known to feed openly with adults on the leaves of its host, *Ambrosia* (Asteraceae) (Andrews and Gilbert 2005). It is likely that the larvae *M. acaciae* are like those *M. irregularis* and the large galerucine tribe Luperini, living in the soil and feeding on underground plant parts.

Adult Phenology in Texas

1) Number of compiled Texas collecting events by month: May (5), June (4), July (2), August (1), October (5).

2) Year of most recent known collection in the Lower Rio Grande Valley: 2002.

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Wilcox, J. A. 1975. Checklist of the beetles of Canada, United States, Mexico, Central America and the West Indies. Vol. 1, pt. 7. The leaf beetles (red version). [inside title: Checklist of the Chrysomelidae of Canada, United States, Mexico, Central America and the West Indies, family no. 104]. Biological Research Institute of America. New York. 166 pp. [The date "VIII-1-74" appears on the header of each page of the body of this work. This has led some authors to cite 1974 as the year of publication. The cover bears the date "January 1975".]

Valid name

Octotoma championi Baly

Synonymy/catalog
Octotoma championi Baly, 1885-1886 (1886):88
Octotoma championi: Donckier, 1899:571
Octotoma championi: Weise, 1911a:31
Octotoma championi: Weise, 1911b:45
Octotoma championi: Weise, 1921:270 [NAME NOT CHECKED]
Octotoma championi: Uhmann, 1927:135
Octotoma championi: Uhmann, 1934:274
Octotoma championi: Maulik, 1937:139
Octotoma championi: Uhmann, 1937:64
Octotoma championi: Blackwelder, 1946:729
Octotoma championi: Uhmann, 1949:25
Octotoma championi: Uhmann, 1950:266
Octotoma championi: Papp, 1953:93
Octotoma championi: Uhmann, 1957:116
Octotoma championi: Harley, 1969:836
Octotoma championi: Wilcox, 1975:144
Octotoma championi: Diatloff, 1977:165-167
Octotoma championi: Cilliers, 1983:134
Octotoma championi: Riley & Balsbaugh, 1988:148
Octotoma championi: Staines, 1989:45
Octotoma championi: Taylor, 1989:63
Octotoma championi: Maes & Staines, 1991:38
Octotoma championi: Staines, 1996:41, fig. p. 40
Octotoma championi: Broughton, 1998:39-44, fig. 1b
Octotoma championi: Julien & Griffiths, 1998:100
Octotoma championi: Maes, 1998:1020
Octotoma championi: Broughton, 2000:279
Octotoma championi: Johns et al., 2003:169-178
Octotoma championi: Riley, Clark, & Seeno, 2003:28
Octotoma championi: Clark et al., 2004:145
Octotoma championi: Santiago-Blay, 2004:69 [NAME NOT CHECKED]
Octotoma championi: Bender et al., 2005:774
Octotoma championi: Staines, 2006:68; pl. iv, fig. 48

Classification
Family: Chrysomelidae
Subfamily: Cassidinae
Tribe: Chalepini
The classification of the genus *Octotoma* as a member of the Cassidinae is somewhat controversial in that not all workers in chrysomelid systematics accept the collapsed subfamily classification proposed by Reid (1995). Reid proposed the first broadly based

morphological analysis of leaf beetle subfamily relationships using modern techniques and combined various formerly recognized chrysomelid subfamilies to form more cohesive defendable subfamily groups. In that work, a single subfamily was recognized for the former "cryptostome" chrysomelid subfamilies of Hispinae and Cassidinae. Reid (1995) and Riley et al. (2002) used the name Hispinae for the combined subfamily; however, for strict nomenclatural reasons as noted by Staines (2002), the subfamily name Cassidinae takes precedence over Hispinae. In all older classifications that recognized two "cryptostome" subfamilies, *Octotoma* was classified in the Hispinae. This report follows the leaf beetle subfamily concepts as proposed by Reid (1995).

Octotoma is recognized in the tribe Chalepini following Riley et al. (2001, 2002, 2003) and Staines (2002, 2006) who treat the formerly separate tribe Uroplatini as a junior synonym of Chalepini. In most works prior to those publications, *Octotoma* is included in the Uroplatini.

Diagnostic remarks

Members of the genus *Octotoma* Dejean are quite distinctive in general appearance, and in the Lower Rio Grande Valley there are no other beetles likely to be confused with *O. championi*, the only species of the genus found in the region. These beetles are elongate and depressed above with a body length of ca. 3.8-4.8 mm and the greatest width across the distal expansions of the elytra. The general ground color is dark brownish with faint violet and bluish reflections. Most of the antennae, pronotum, and parts of the legs are yellow-brown. The antennae have only eight freely articulating antennomeres and the two distal most are enlarged to form a more-or-less abrupt club. The elytral disc is deeply punctate with the arrangement of the punctures somewhat irregular and obscured by an interconnected system of irregularly-placed carinae. Lateral margins of the elytra are broadly, shallowly concave when seen from dorsal view with the narrowest point at mid-length. They are armed with stout, evenly-placed spines. The apical angle of each elytron is flattened and extended horizontally to form a short foliaceous expansion, and the posterior edge is coarsely and irregularly serrate. The tibiae are flattened and expanded slightly along their exterior margins.

The genus is keyed relative to other "hispine" genera found in America north of Mexico by Riley et al. (2002) and Staines (2006). The genus is keyed relative to Western Hemisphere "hispine" genera by Staines (2002). Staines (1989) revised the taxonomy of the genus and provided a key to the known species, and later recognized and named an additional species from Guatemala (Staines 1994). A color image is given in Staines (2006). Color images of a live adult are available on the web [http://bugguide.net/node/view/270401] (last accessed 6/25/2009).

Historic Occurrence Records

1) From literature: See "literature records" on attached Excel spreadsheet.

2) From specimens examined: See "specimen records" on attached Excel spreadsheet.

3) From communicated records: See "communicated records" on attached Excel spreadsheet.

Known Range

Brownsville area of Texas (Cameron County) south through Mexico (Chiapas, Colima, Distrito Federal, Morelos, Nayarit, San Luis Potosí, Tabasco, Tamaulipas, and Veracruz) to Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama.

Biology, Host, Substrate, Habitat Data

1) From literature:

This species has been considered as a potential biocontrol agent and has been released at several locations around the world where its primary host, *Lantana camara* L., is considered an invasive weed. In most instances, there has been no establishment or the results are inconclusive (review by Julien and Griffiths 1998). It has established in Australia, but record of that establishment was not made until seven years after its release. It established in the Sydney area where it shows a marked preference for shaded habitats (Taylor 1989). Surprisingly, there seems to be no life history studies published on this species. The first report of *Lantana camara* as an adult host was Uhmann (1934) based on observations in Costa Rica. Diatloff (1977) reported *L. camara*, *L. hispida* H. P. K. and *L. trifolia* L. as larval hosts and tested many plants for acceptability as food. It was noted that adults will feed on a few plants of other families: *Mentha* and *Origanum* (Lamiaceae) and *Sesamum* (Pedaliaceae). Uhmann (1949) provided some descriptive comments on the larva stage and pupa exuvium based on specimens from Costa Rica. The larva, like that of *O. plicatula* (Fabricius) (Ford and Cavey 1985), seems to have reduced thoracic legs, which is unusual for hispine larvae in that typically these appendages are fully formed and functional.

Based on observations made in Cameron County, Texas, Riley and Balsbaugh (1988) reported that adults were taken… "from the leaves of an undetermined species of *Lantana* (Verbenaceae). The leaves showed scars very similar to those made by the adult feeding of *O. plicatula* on trumpet creeper" and that adults were … "collected from the upper leaf surfaces of *Lantana* plants." The undetermined *Lantana* mentioned was later determined to be *L. camara* L. Adult beetles were collected during March and noted to be on plants "growing among understory vegetation." The following October, the plants that had hosted the beetles during the spring were noted to have leaves with "mines of the trail type … with a darkened pupal cell on or near the mid-rib." Attempts to rear beetles from the mines failed, possibly due to parasitoids (Riley and Balsbaugh 1988).

2) From specimens: Specimens were examined with various citations of *Lantana* (Verbenaceae) on their labels: "feeding on *Lantana camara* leaf," "on *Lantana camara* leaf," "on *Lantana* leaves," "feeding on *Lantana achyranthifolia* leaf," "on *Lantana camara* L.," and "leafminer in *Lantana horrida*."

3) From communicated records: The typical "etching" type feeding damage made by the adult beetles is quite easy to recognize on the upper surface of *Lantana* leaves. Adults seem to prefer plants that were growing in areas that were fairly well shaded (E. G. Riley, pers. obser.).

Biology, Host, Substrate, Habitat Data by Inference (based on knowledge of related species)

What is known of the adult and larval habits of *O. championi* is typical for members of the tribe Chalepini. It is highly likely that larvae of this species will feed only on members of the genus *Lantana*, but adults may feed on other plant families. Other *Octotoma* species also use *Lantana* and others are known to use different genera (and plant families) as larval hosts. Adults of a given species may feed on more than one plant family, but only one plant family serves as a larval host: *O. plicatula* (Fabricius) in *Campsis* (Bignonicaeae), *O. gundlachi* Suffrian in *Lantana* (Verbenaceae), *O. marginicollis* Horn in *Perezia* (Asteraceae), and *O. scabripennis* Guérin-Méneville in *Lantana* (Staines 2006, Vaurie 1956). Adults of both *O. plicatula* and *O. marginicollis* are often found on ash, *Fraxinus* spp. (Oleaceae) (Riley et al. 2002, Staines 2006).

Octotoma scabripennis has been cultured as a biocontrol agent for the pan-tropical weed *Lantana camara* L., and is apparently well established at numerous locations (Julien and Griffiths 1998). Harley (1969) provides some basic biology for this species, most of which is probably similar for *O. championi*. Adult females insert eggs into the upper leaf surface of the host and cover them with a black material. The larvae consume the mesophyll of the leaves leaving behind a blotch mine (large irregular shaped dead patch) with a darkened central portion and several feeding galleries extended from it (see Broughton 1998, fig. 1B). Pupation occurs in the darkened central area. The developmental period from egg to adult lasts from 34 to 45 days (in Hawaii and Trinidad) with a pre-oviposition period of about 45 days. Adults often destroy almost the entire leaf by consuming the epidermis and mesophyll layers. The lower epidermis layer is left intact.

Adult Phenology in Texas

1) Number of compiled Texas collecting events by month: March (5), May (4), October (4).

2) Year of most recent known collection in the Lower Rio Grande Valley: 1987.

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Valid name

Pachybrachis duryi Fall

Synonymy/catalog
Pachybrachys duryi Fall, 1915:385
Pachybrachys duryi: Leng, 1920:289
Pachybrachis duryi: Wilcox, 1975:29
Pachybrachis duryi: Riley, Clark, & Seeno, 2003:157
Pachybrachis duryi: Clark et al., 2004:156
Pachybrachis duryi: Bender et al., 2005:774

Classification
Family: Chrysomelidae
Subfamily: Cryptocephalinae
Tribe: Cryptocephalini
Subtribe: Pachybrachina
The classification of the genus *Pachybrachis* as a member of the Cryptocephalinae is not controversial. In this report, the collapsed subfamily classification for Chrysomelidae proposed by Reid (1995) is followed. Reid proposed the first broadly-based morphological analysis of leaf beetle subfamily relationships using modern techniques and combined various formerly-recognized subfamilies into more cohesive, defendable subfamily groups. In that work, the former "camptosome" subfamilies (Clytrinae, Chlamisinae and Cryptocephalinae) were merged to form a single subfamily with each of the three former subfamilies recognized as tribes. The genus *Pachybrachis* has been classified in the tribe Pachybrachini in the narrower concept of the Cryptocephalinae. Under the broader concept of the Cryptocephalinae, the former tribes are reduced to subtribes. *Pachybrachis* is commonly spelled incorrectly as *Pachybrachys* in early literature.

Diagnostic remarks
Pachybrachis is an exceptionally large and complex genus, containing ca. 150 species in American north of Mexico. The last comprehensive taxonomic treatment for the region was Fall (1915). In this work, Fall divided the species into six artificial species-group divisions. *Pachybrachis duryi* belongs to Fall's "Group C" which includes the species remaining after the exclusion of those species belonging to other groups: those with dorsal pubescence (Group A), those species that are wholly or in great part yellow (Group B), those species with distinct elytral vittae (Group D), those species wholly or in great part black with minimal sharply-defined pattern (Group E), and those with thin front femora (not swollen) (Group F). Species of Group C are generally of a pale to brownish ground color, rarely approaching blackish, with a more-or-less reticulate suffuse pattern of various shades of brown to reddish-brown ranging to blackish. Group C contains more species than any other group, and, due to extremes of color variation, some of its species fall into more than one group. Fall (1915) did not study the wealth of taxonomic information found in the structure of the male genitalia of these beetles.

The general appearance of *Pachybrachis* species is typical of the Cryptocephalinae. Their bodies are robust and cylindrical. The head is deeply inserted into the prothorax, up to the hind margin of the eyes, with the face broad and flat. The pygidium is broad and exposed, more-or-less vertical. The hind pronotal margin is distinctly margined with a narrow impressed groove at the extreme base. The anterior femora are distinctly swollen in almost all species.

Pachybrachis duryi can be distinguished from the other species of Group C by the following series of characteristics: eyes of the male with the upper lobes separated by a distance equal to or greater than the length of the basal antennomere, but distinctly less than the length of the first two antennomeres; anterior tarsal claws of the male not or slightly enlarged (compared to middle tarsal claws); front of head without distinct ocular lines; marginal interval of elytra impunctate or nearly so; body relatively small (2.3-3.3 mm in length); upper lobes of eyes narrowly separated in both sexes (interocular distance 0.15-0.2 X width of head in males, 0.23 X width of head in females); elytra pale yellowish with a small but conspicuous blackish sutural spot on the convexity; and general shape of the median lobe of the male genitalia. The elytral striae are fairly distinct over almost all the elytral disc. There is a small postscutellar patch of confused punctation.

The genus is keyed relative to other genera found in America north of Mexico in Riley et al. (2002), and the species is keyed by Fall (1915) relative to the other *Pachybrachis* species occurring north of Mexico. A color habitus image is available on the web [http://bugguide.net/node/view/270345] (last accessed 6/26/2009).

Historic Occurrence Records

1) From literature: See “literature records” on attached Excel spreadsheet.

2) From specimens examined: See “specimen records” on attached Excel spreadsheet.

3) From communicated records: See “communicated records” on attached Excel spreadsheet.

Known Range

Brownsville area of Texas (Cameron County).

Biology, Host, Substrate, Habitat Data

1) From literature: none.

2) From specimens: Some specimens are labeled “beating sheet,” “on Tepaguaje, *Leucaena pulverulenta*,” and “at UV lights.”

3) From communicated records: The long series I took of this species was taken in early-stage re-growth areas just east of the Palm Grove headquarters building. The habitat was dominated by tepaguaje. They were fairly abundant on tepaguaje during the fall season (E. G. Riley, pers. obser.)

Biology, Host, Substrate, Habitat Data by Inference (based on knowledge of related species)

Adult *Pachybrachis* species have been associated with a wide range of plants, a trait that is essentially ubiquitous among Chrysomelidae (Clark et al. 2004). Larval habits of

Pachybrachis species are much less understood. As a member of the Cryptocephalinae their larvae will be case bearers, i. e., the larva constructing and living inside an open-ended case composed of bits or organic debris and its own feces. Larval habits and biology of the "Camptosomata" (=Cryptocephalinae) were reviewed by Erber (1988), and it is evident from this work that very little information is known on specific larval habits for the genus *Pachybrachis*. Most species of Cryptocephalini are suspected to feed on dead plant materials on the soil surface (Erber 1988, Jolivet and Petitpierre 1981), and this seems to be supported by the fact that there are few published associations of their larvae with their exposed, green-leaf feeding adults. In the few instances where known, the larvae of *Pachybrachis* feed on dead plants materials. Two Canadian *Pachybrachis* were reared under laboratory conditions on the decaying leaves of the adults' food plant (LeSage 1985), and a third species (and a species of the related genus *Cryptocephalus*) were reared on the dead phloem of a decomposing log in which they were found in the field (Stiefel 1993).

Adult Phenology in Texas

1) Number of compiled Texas collecting events by month: March (1), April (5), May (4), June (1), July (2), October (10).

2) Year of most recent known collection in the Lower Rio Grande Valley: 2002.

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Valid name

Pachybrachis sp. 1

Synonymy/catalog

Pachybrachis sp. EGR 2: Bender et al., 2005:774
This species is apparently undescribed. It was not treated by Fall (1915) and likely is not among the 35 or so species of Mexican *Pachybrachis* treated by Jacoby (1880, 1889).

Classification
Family: Chrysomelidae
Subfamily: Cryptocephalinae
Tribe: Cryptocephalini
Subtribe: Pachybrachina
The classification of the genus *Pachybrachis* as a member of the Cryptocephalinae is not controversial. In this report, the collapsed subfamily classification for Chrysomelidae proposed by Reid (1995) is followed. Reid proposed the first broadly-based morphological analysis of leaf beetle subfamily relationships using modern techniques and combined various formerly recognized subfamilies into more cohesive, defendable subfamily groups. In that work, the former "camptosome" subfamilies (Clytrinae, Chlamisinae and Cryptocephalinae) were merged to form a single subfamily with each of the three former subfamilies recognized as tribes. The genus *Pachybrachis* has been classified in the tribe Pachybrachini in the narrower concept of the Cryptocephalinae. Under the broader concept of the Cryptocephalinae, the former tribes are reduced to subtribes. *Pachybrachis* is commonly misspelled as *Pachybrachys* in the early literature.

Diagnostic remarks
Pachybrachis is an exceptionally large and complex genus, containing ca. 150 species in American north of Mexico. The last comprehensive taxonomic treatment for the region was Fall (1915). In this work, Fall divided the species into six artificial species-group divisions. *Pachybrachis* sp. 1 belongs to Fall's "Group C" which includes the species remaining after the exclusion of those species belonging to other groups: those with dorsal pubescence (Group A), those species that are wholly or in great part yellow (Group B), those species with distinct elytral vittae (Group D), those species wholly or in great part black with minimal sharply defined pattern (Group E), and those with thin front femora (not swollen) (Group F). Species of Group C are generally of a pale to brownish ground color, rarely approaching blackish, with a more-or-less reticulate suffuse pattern of various shades of brown to reddish-brown ranging to blackish. Group C contains more species than any other group, and, due to extremes of color variation, some of its species fall into more than one group. Fall (1915) did not study the wealth of taxonomic information found in the structure of the male genitalia of these beetles.

The general appearance of *Pachybrachis* species is typical of the Cryptocephalinae. Their bodies are robust and cylindrical. The head is deeply inserted into the prothorax, up to the hind margin of the eyes, with a broad flat vertical face. The pygidium is broad and exposed, more-or-less vertical. The hind pronotal margin is

distinctly margined with a narrow impressed groove at the extreme base. The anterior femora are distinctly swollen in almost all species.

Pachybrachis sp. 1 can be distinguished from the other species of Group C by the following series of characteristics: eyes of the male with the upper lobes separated by a distance greater the length of the basal antennomere; anterior tarsal claws of the male slightly enlarged (compared to middle tarsal claws); front of head without distinct ocular lines; marginal interval of elytra usually with several irregularly-placed punctures; body small to moderate in length (2.3-3.4-2.4 mm in length); upper lobes of eyes moderately separated in both sexes (inter-ocular distance 0.23-0.26 X width of head in males, 0.3-0.31 X width of head in females); elytra pale yellowish-brown with conspicuous brownish to blackish suffuse pattern; and the general shape of the median lobe of the male genitalia. The elytral striae are comparatively poorly formed in this species and discal punctation is mostly confused. The punctation on the pronotal disc is not dense on the extreme lateral margin and not contiguous with marginal bead, which is a useful external character for separating this species from *P. spumarius* Suffrian, a species that is very similar in general appearance and also occurs in the Lower Rio Grande Valley.

The genus is keyed relative to other genera found in America north of Mexico in Riley et al. (2002). This species was not recognized by Fall (1915) in his treatment of the *Pachybrachis* species occurring north of Mexico, but it will trace to couplet 43 in his key. Images of this species are not presently available.

Historic Occurrence Records

1) From literature: none.

2) From specimens examined: See "specimen records" on attached Excel spreadsheet.

3) From communicated records: none.

Known Range

Brownsville area of Texas (Cameron County).

Biology, Host, Substrate, Habitat Data

1) From literature: none.

2) From specimens: Some specimens examined are labeled as having been taken on *Zanthoxylum fagara* (Rutaceae).

3) From communicated records: Although many of my specimens do not carry labels indicating an association with *Zanthoxylum fagara*, most all were probably taken by beating the foliage of this tree. At the Sabal Palm Grove, this beetle seems to always be present during the fall but never very abundant. It was taken from *Zanthoxylum* in the old growth core of the grove, not from trees growing in open re-growth zones. (E. G. Riley, per. obser.).

Biology, Host, Substrate, Habitat Data by Inference (based on knowledge of related species)

Adult *Pachybrachis* species have been associated with a wide range of plants, a trait that is essentially ubiquitous among Chrysomelidae (Clark et al. 2004). Larval habits of *Pachybrachis* species are much less understood. As a member of the Cryptocephalinae,

their larvae will be case bearers, i. e., the larva constructing and living inside an open-ended case composed of bits of organic debris and its own feces. Larval habits and biology of the "Camptosomata" (=Cryptocephalinae) were reviewed by Erber (1988), and it is evident from this work that very little information is known on specific larval habits for the genus *Pachybrachis*. Most species of Cryptocephalini are suspected to feed on dead plant materials on the soil surface (Erber 1988, Jolivet and Petitpierre 1981), and this seems to be supported by the fact that there are few published associations of their larvae with their exposed, green-leaf feeding adults. In the few instances where known, the larvae of *Pachybrachis* feed on dead plant materials. Two Canadian *Pachybrachis* were reared under laboratory conditions on the decaying leaves of the adult's food plant (LeSage 1985), and a third species (and a species of the related genus *Cryptocephalus*) were reared on the dead phloem of a decomposing log from which they were found in the field (Stiefel 1993).

Adult Phenology in Texas

1) Number of compiled Texas collecting events by month: July (1), September (1), October (6).

2) Year of most recent known collection in the Lower Rio Grande Valley: 2002.

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Bender, S., S. Shelton, K. C. Bender, and A. Kalmbach (eds.). 2005. Texas Comprehensive Wildlife Strategy, 2005-2010. Texas Parks and Wildlife, Austin. xv + 1131 pp.

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Riley, E. G., S. M. Clark, R. W. Flowers, and A. J. Gilbert. 2002. Chrysomelidae Latreille, 1802, pp. 617-691, *in* Arnett, R. H., M. C. Thomas, P. E. Skelley, and J. H. Frank (eds.). American Beetles. Polyphaga: Scarabaeoidea through Curculionoidea. Volume 2. CRC Press. xiv + 1-861 pp.

Stiefel, V. L. 1993. The larval habitat of *Pachybrachis pector*alis (Melsheimer) and *Cryptocephalus fulgaratus* LeConte (Coleoptera: Chrysomelidae). Journal of the Kansas Entomological Society 66(4): 450-453.

Valid name

Pachybrachis sp. 2

Synonymy/catalog
Pachybrachis sp. EGR 6: Bender et al., 2005:774
This species is apparently undescribed. It was not treated by Fall (1915) and likely is not among the 35 or so Mexican species of *Pachybrachis* treated by Jacoby (1880, 1889).

Classification
Family: Chrysomelidae
Subfamily: Cryptocephalinae
Tribe: Cryptocephalini
Subtribe: Pachybrachina
The classification of the genus *Pachybrachis* as a member of the Cryptocephalinae is not controversial. In this report, the collapsed subfamily classification for the Chrysomelidae proposed by Reid (1995) is followed. Reid proposed the first broadly-based morphological analysis of leaf beetle subfamily relationships using modern techniques and combined various formerly recognized subfamilies into more cohesive, defendable subfamily groups. In that work, the former "camptosome" subfamilies (Clytrinae, Chlamisinae and Cryptocephalinae) were merged to form a single subfamily with each of the three former subfamilies recognized as tribes. The genus *Pachybrachis* has been classified in the tribe Pachybrachini in the narrower concept of the Cryptocephalinae. Under the broader concept of the Cryptocephalinae, the former tribes are reduced to subtribes. *Pachybrachis* is commonly spelled incorrectly "*Pachybrachys*" in early literature.

Diagnostic remarks
Pachybrachis is an exceptionally large and complex genus, containing ca. 150 species in American north of Mexico. The last comprehensive taxonomic treatment for the region was Fall (1915). In this work, Fall divided the species into six artificial species-group divisions. *Pachybrachis* sp. 2 belongs to Fall's "Group C" which includes the species remaining after the exclusion of those species belonging to other groups: those with dorsal pubescence (Group A), those species that are wholly or in great part yellow (Group B), those species with distinct elytral vittae (Group D), those species wholly or in great part black with minimal sharply-defined pattern (Group E), and those with thin front femora (not swollen) (Group F). Species of Group C are generally of a pale to brownish ground color, rarely approaching blackish, with a more-or-less reticulate suffuse pattern of various shades of brown to reddish brown ranging to blackish. Group C contains more species than any other group, and, due to extremes of color variation, some of its species fall into more than one group. Fall (1915) did not study the wealth of taxonomic information found in the structure of the male genitalia of these beetles.

The general appearance of *Pachybrachis* species is typical of the Cryptocephalinae. Their bodies are robust and cylindrical. The head is deeply inserted into the prothorax, up to the hind margin of the eyes, with the face broad and flat. The pygidium is broad and exposed, more-or-less vertical. The hind pronotal margin is

distinctly margined with a narrow impressed groove at the extreme base. The anterior femora are distinctly swollen in almost all species.

Pachybrachis sp. 2 can be distinguished from the other species of Group C by the following series of characteristics: eyes of the male with the upper lobes separated by a distance equal to or greater than the length of the basal antennomere, but distinctly less than the length of the first two antennomeres; anterior tarsal claws of the male slightly enlarged (compared to middle tarsal claws); front of head without distinct ocular lines; marginal interval of elytra impunctate or nearly so; body exceptionally small (2.0-2.4 mm in length); upper lobes of eyes narrowly separated in both sexes (interocular distance 0.21 X width of head in males, 0.24-0.26 X width of head in females); elytra pale yellowish with irregular suffuse reddish-brown bands including a sutural spot on the convexity; and general shape of the median lobe of the male genitalia. The elytral striae are fairly distinct over almost all the elytral disc. There is a small postscutellar patch of confused punctation.

The genus is keyed relative to other genera found in America north of Mexico in Riley et al. (2002). This species was not recognized by Fall (1915) in his treatment of the *Pachybrachis* species occurring north of Mexico, but it will trace to couplet 15 in his key. Image of this species are not presently available.

Historic Occurrence Records

1) From literature: none.

2) From specimens examined: See "specimen records" on attached Excel spreadsheet.

3) From communicated records: none.

Known Range

Brownsville area of Texas (Cameron County).

Biology, Host, Substrate, Habitat Data

1) From literature: none.

2) From specimens: Some specimens examined are labeled "beating *Pithecellobium flexicaule*" [= *Ebenopsis ebano* (Berl.) Barneby & Grimes (Fabaceae)].

3) From communicated records: I collected this species by beating ebony on the clay loma that is covered by ebony trees east of Brownsville on highway; it was not abundant (E. G. Riley, pers. obser.).

Biology, Host, Substrate, Habitat Data by Inference (based on knowledge of related species)

Adult *Pachybrachis* species have been associated with a wide range of plants, a trait that is essentially ubiquitous among Chrysomelidae (Clark et al. 2004). Larval habits of *Pachybrachis* species are much less understood. As a member of the Cryptocephalinae their larvae will be case bearers, i. e., the larva constructing and living inside an open-ended case composed of bits or organic debris and its own feces. Larval habits and biology of the "Camptosomata" (=Cryptocephalinae) were reviewed by Erber (1988), and it is evident from this work that very little information is known on specific larval habits for the genus *Pachybrachis*. Most species of Cryptocephalini are suspected to feed on

dead plant materials on the soil surface (Erber 1988, Jolivet and Petitpierre 1981), and this seems to be supported by the fact that there are few published associations of their larvae with their exposed, green-leaf feeding adults. In the few instances where known, the larvae of *Pachybrachis* feed on dead plants materials. Two Canadian *Pachybrachis* were reared under laboratory conditions on the decaying leaves of the adult's food plant (LeSage 1985), and a third species (and a species of the related genus *Cryptocephalus*) were reared on the dead phloem of a decomposing log from which they were found in the field (Stiefel 1993).

Adult Phenology in Texas

1) Number of compiled Texas collecting events by month: January (1), March (1), October (3).

2) Year of most recent known collection in the Lower Rio Grande Valley: 1989.

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Bender, S., S. Shelton, K. C. Bender, and A. Kalmbach (eds.). 2005. Texas Comprehensive Wildlife Strategy, 2005-2010. Texas Parks and Wildlife, Austin. xv + 1131 pp.

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Jacoby, M. 1888-1892 (1889). Biologia Centrali-Americana, Insecta, Coleoptera, Vol. VI. part 1, Supplement. Phytophaga (part). London. pp. 81-168.

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Riley, E. G., S. M. Clark, R. W. Flowers, and A. J. Gilbert. 2002. Chrysomelidae Latreille, 1802, pp. 617-691, *in* Arnett, R. H., M. C. Thomas, P. E. Skelley, and J. H. Frank (eds.). American Beetles. Polyphaga: Scarabaeoidea through Curculionoidea. Volume 2. CRC Press. xiv + 1-861 pp.

Stiefel, V. L. 1993. The larval habitat of *Pachybrachis pector*alis (Melsheimer) and *Cryptocephalus fulgaratus* LeConte (Coleoptera: Chrysomelidae). Journal of the Kansas Entomological Society 66(4): 450-453.

Valid name

Parchicola sp. 1

It is likely that *Parchicola* sp. 1 represents an undescribed species. The species of the vast Neotropical fauna of *Parchicola* and related genera (the original *Monomacra* Chevrolat, of authors) needs a broad taxonomic review, and the limits of the genus probably need refinement relative to closely related Neotropical genera. *Parchicola* specimens examined from Arizona are clearly conspecific with the Brownsville, Texas material. Somewhat surprisingly, no conspecific specimens have been located among Mexican material examined (present study).

Synonymy/catalog
Parchicola sp. EGR 1: Bender et al., 2005:774

Classification
Family: Chrysomelidae
Subfamily: Galerucinae
Tribe: Alticini
The classification of the genus *Parchicola* as a member of the Galerucinae is somewhat controversial in that not all workers in chrysomelid systematics accept the collapsed subfamily classification proposed by Reid (1995). Reid proposed the first broadly based morphological analysis of leaf beetle subfamily relationships using modern techniques and combined various formerly recognized subfamilies into more cohesive, defendable subfamily groups. In that work, a single subfamily was recognized for the former "trichostome" chrysomelid subfamilies of Galerucinae and Alticinae, with the name Galerucinae taking priority for the joint family group. In all older classifications that recognized two "trichostome" subfamilies, *Parchicola* was classified in the Alticinae (often under the broadly defined genus *Monomacra*: the name *Parchicola* did not enter the North American leaf beetle literature until recently (Riley et al. 2001). This report follows the leaf beetle subfamily concepts as proposed by Reid (1995).

Although some relationships among flea beetle genera based on morphology appear to be fairly clear and are generally recognized by chrysomelid systematists, a satisfactory delineation of alticine tribes/subtribes does not exist for this large and complex group of beetles (Riley et al. 2002). Duckett (1999) included *Parchicola* within what she considered a subtribe, the "Disonychina." This report follows Seeno and Wilcox (1982) and Riley et al. (2002, 2003) in not recognizing formal family groups below the tribe level within the Alticini.

Diagnostic remarks
This is a highly distinctive flea beetle, not likely to be confused with other species. As one of the flea beetles (Alticini), the hind femora are greatly enlarged and the species is capable of jumping. It is elongate-ovoid with the sides of the elytra gently rounded, depressed above, and highly polished and reflective. It is bicolored, i. e., the head and pronotum are bright yellow-orange contrasting bright metallic violet elytra. The body length is 3.1-4.25 mm and the width is 1.7-2.2 mm with the greatest at just posterior to

middle of the elytra. The under surface of the prothorax and the meso thorax are orange; the pro- and mesothoracic legs are mostly orange. The antennae, hind legs, metathorax, and abdomen are black. The pronotum has a well defined prebasal transverse groove that ends on each side in a short longitudinal fold. The upper surfaces are sparingly punctate; the punctation is indistinct, with the punctures small and well separated.

This species is likely undescribed. It is closest to other bicolored species of the genus, especially *P. iris* (Olivier), which is a wide-ranging species occurring in the southeastern United Sates and likely also in the easternmost parts of Texas. It is superficially very similar to that species, but is distinguished by slight external differences and the differently shaped male genitalia (E. G. Riley, present study). There are several "bicolored" flea beetle species found in the Lower Rio Grande Valley, but only *Syphrea* sp. 1 could be confused with the present species. This beetle is of the same general size and color scheme, but it is shaped differently, the elytra are metallic blue (not violet), the pronotum is red (not orange) with a transverse groove that is not bounded laterally by longitudinal folds, and the punctation of the elytra is coarse. *Syphrea* sp. 1 is consistently associated with *Bernardia* (Euphorbiaceae) and not *Passiflora* (Passifloraceae).

The genus is keyed in Riley et al. (2002) relative to other Nearctic flea beetle genera. Habitus images of this species are not available for this species or for the closely related *P. iris*.

Historic Occurrence Records

1) From literature: none.

2) From specimens examined: See "specimen records" on attached Excel spreadsheet.

3) From communicated records: none.

Known Range

Brownsville area of Texas (Cameron County) and southeastern Arizona.

Biology, Host, Substrate, Habitat Data

1) From literature: none.

2) From specimens: Some specimens examined are labeled "on *Passiflora subersosa*."

3) From communicated records: Almost all the specimens I have collected of this species were taken on the small delicate *Passiflora* that is found growing in the understory of the Palm Grove. I pressed a plant specimen and later had it identified as *P. suberosa* (E. G. Riley, pers. obser.).

Biology, Host, Substrate, Habitat Data by Inference (based on knowledge of related species)

Adults of this genus are associated with Passifloraceae (several references in Clark et al. 2004) including those for several Neotropical species (E. G. Riley, pers. obser.), otherwise almost nothing is known about the biology. Adults feed on the leaves of the plants producing conspicuous hole in the leaves, but larvae and their feeding habits are apparently completely unknown, this being a good indication that larvae are probably

cryptic in some way, perhaps living in the soil and eating the host plant roots, or in leaf littler, or hidden by day and active on foliage only at night.

Adult Phenology in Texas

1) Number of compiled Texas collecting events by month: July (2), September (30, October (8).

2) Year of most recent known collection in the Lower Rio Grande Valley: 1992

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Seeno, T. N. and J. A. Wilcox. 1982. Leaf beetle genera (Coleoptera: Chrysomelidae). Entomography 1: 1-221.

Valid name

Pentispa distincta (Baly)

Synonymy/catalog
Uroplata distincta Baly, 1885-1886 (1886):96
Uroplata distincta: Donckier, 1899:576
Pentispa distincta: Weise, 1911a:36
Uroplata distincta: Weise, 1911b:52
Pentispa distincta: Blackwelder, 1946:732
Pentispa distincta: Uhmann, 1947:129
Pentispa distincta: Papp, 1953:117
Pentispa distincta: Uhmann, 1957:146
Pentispa distincta: Wilcox, 1975:147
Pentispa distincta: Riley, Clark, & Seeno, 2003:30
Pentispa distincta: Clark et al., 2004:167
Pentispa distincta: Bender et al., 2005:774
Pentispa distincta: Staines, 2006:99; pl. v, fig. 58

Classification
Family: Chrysomelidae
Subfamily: Cassidinae
Tribe: Chalepini
The classification of the genus *Pentispa* as a member of the Cassidinae is somewhat controversial in that not all workers in chrysomelid systematics accept the collapsed subfamily classification proposed by Reid (1995). Reid proposed the first broadly based morphological analysis of leaf beetle subfamily relationships using modern techniques and lumped various formerly recognized chrysomelid subfamilies to form more cohesive defendable subfamily groups. In that work, a single subfamily was recognized for the former "cryptostome" chrysomelid subfamilies of Hispinae and Cassidinae. Reid (1995) and Riley et al. (2002) used the name Hispinae for the combined subfamily; however, for strict nomenclatural reasons as noted by Staines (2002), the subfamily name Cassidinae takes precedence over Hispinae for the joint family group. In all older classifications that recognized two "cryptostome" subfamilies, *Pentispa* was classified in the Hispinae. This report follows the leaf beetle subfamily concepts as proposed by Reid (1995).

Pentispa is recognized in the tribe Chalepini following Riley et al. (2001, 2002, 2003) and Staines (2006) who treat the formerly separate tribe Uroplatini as a junior synonym of Chalepini. In most works prior to those publications, *Pentispa* is included in the Uroplatini.

Diagnostic remarks
The body of *Pentispa distincta* is elongate, depressed and subparallel in form. The pronotum is subconical, narrowest across at the anterior margin and the base is a little narrower than the elytral base. The dorsum is deeply punctate throughout. The body length is ca. 4.5 to 5.2 mm and the greatest width is across the elytral at a point just before the apex. The coloration is everywhere black or nearly black with the sides of the

pronotum and humeral area of the elytra orange. The orange humeral spot extends posteriorly and is angled laterally to reach a point just beyond the middle of the extreme lateral margin of the elytra. The antennae are weakly clavate and composed of eight freely articulated antennomeres with the terminal segment elongate and apically pointed. Punctation on each elytron is aligned in eight geminate (paired) rows separated by three discal costae, the first of which is very strongly elevated. Each elytron has a short post-scutellar stria of from one to three punctures. The lateral margins of the elytra are serrate with the coarseness of the serration gradually becoming stronger posteriorly until the apical margins where it is highly developed and somewhat irregular. The sutural apex of the elytra is conjointly emarginated.

The genus is keyed relative to other "hispine" genera found in America north of Mexico by Riley et al. (2002) and Staines (2006). The genus is keyed relative to Western Hemisphere "hispine" genera by Staines (2002). Staines (2006) provided a key to the *Pentispa* species recorded from America north of Mexico. A second black and orange species of *Pentispa*, *P. melanura* (Horn), occurs in the Lower Rio Grande Valley of Texas and could be confused with *P. distincta*. *Pentispa melanura* (Horn) is similar but has evenly, conjointly rounded elytral apices that are more finely and regularly serrate, and the orange humeral markings are expanded to occupy from half to two-thirds of the elytra. Color images of the United States species of *Pentispa* are given in Staines (2006). Color image of a live adult of *P. distincta* is available on the web [http://bugguide.net/node/view/270439] (last accessed 6/26/2009).

Historic Occurrence Records

1) From literature: See "literature records" on attached Excel spreadsheet.

2) From specimens examined: See "specimen records" on attached Excel spreadsheet.

3) From communicated records: See "communicated records" on attached Excel spreadsheet.

Known Range

Brownsville area of Texas (Cameron County) south to Mexico (Chiapas, Hidalgo, Tamaulipas, and Veracruz) to Guatemala and Honduras.

Biology, Host, Substrate, Habitat Data

1) From literature: Clark et al. (2004) report "… we have collected adults of this species from *Eupatorium azureum* DC. (Asteraceae) in southern Texas. Leaf mining hispine larvae, presumably belonging to this species were found associated with adults." Staines (2006) repeats "Adults have been collected on *Eupatorium azureum* (Mill.) DC (Asteraceae)" and "...collected sweeping succulents on floor of the palm grove."

2) From specimens: Specimens have been examined with the following notations: "on *Eupatorium azureum*," "at night," and "sweeping succulents on palm grove floor."

3) From communicated records: I have taken this species a few occasions always in the interior area of the Sabal Palm Grove Preserve. The adults are flighty and often take flight if one attempts to collect them by hand. They sit on the upper leaf surfaces

of what must be their food plant, the big common *Eupatorium*. I have seen what must be the adult feeding scars on the upper leaf surfaces of this plant. On one visit during October I found a single hispine larva in a leaf mine on the same *Eupatorum* which is almost certainly that of *Pentispa distincta* (E. G. Riley, pers. obser.) [The larval specimen mentioned here is conserved in the TAMU Insect Collection].

Biology, Host, Substrate, Habitat Data by Inference (based on knowledge of related species)

General biology of members of the tribe Chalepini is fairly uniform across many taxa for which some aspects are known. The larva of *Pentispa distincta* will be a leaf-miner in the same plant on which adults are found, although the adult stage may feed on plant species that are not used as larval hosts. In general, the hispines are monophagous or oligophagous, feeding on one plant species or on a group of closely related plant species (Jolivet and Hawkeswood 1995). Known larvae of the Chalepini are leaf miners consuming the mesophyll layer of the leaf to create a blotch or trail-type mine. If a single leaf or leaflet is too small to allow for complete larval development, the larva of some genera are known to exit their original host leaf and enter another to complete development. Larvae will pupate within the mines. Hispinae beetles in Maryland (USA) probably have only a single generation per year (Ford and Cavey 1985), but this may not be the case with hispine beetles with tropical and semi-tropical affinities such as *P. distincta*. A second species of *Pentispa* found in southern Texas is associated with the Asteraceae (*Verbesina* spp.) as well as *P. suturalis* (Baly) (on *Baccharis bigelovi* A. Gray) in Arizona (Bolt and Staines 1993; Clark et al. 2004). Additional species of *Pentispa* are also known to use Asteraceae as hosts, but also Malpighiaceae and Sapindaceae (Maulik 1937, Uhamnn 1937).

Various details on the life history of *P. suturalis* have been documented based on field studies in southern Arizona (Boldt and Staines 1993). Beetle densities were greatest on shaded plants, and beetles appeared to feed only on their host despite their high densities and the presence of various non-hosts. Because of the small leaf size of the host, larvae required more than one leaf to complete development. Larvae were present in the field from July to September, and pupae were present from mid-August to September. Teneral adults emerged in September and fed for two to six weeks before overwintering in leaf debris. There was one generation per year. Boldt and Staines (1993) also provided a description of the third instar larva of *P. suturalis*.

Adult Phenology in Texas

1) Number of compiled Texas collecting events by month: March (3), April (1), May (4), October (9).

2) Year of most recent known collection in the Lower Rio Grande Valley: 1994.

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Valid name

Plagiodera thymaloides Stål

Synonymy/catalog
Plagiodera thymaloides Stål, 1860:468
Plagiodera thymaloides: Jacoby, 1880-1888 (1882):191
Plagiodera thymaloides: Leng, 1920:295
Plagiodera thymaloides: Blackwelder, 1946:678
Plagiodera thymaloides: Wilcox, 1972:18
Plagiodera thymaloides: Wilcox, 1975:71
Plagiodera thymaloides: Daccordi 1986:446
Plagiodera thymaloides: Riley et al., 2002:653
Plagiodera thymaloides: Riley, Clark, & Seeno, 2003:66
Plagiodera thymaloides: Clark et al., 2004:178
Plagiodera thymaloides: Bender et al., 2005:774

Classification
Family: Chrysomelidae
Subfamily: Chrysomelinae
Tribe: Chrysomelini
Subtribe: Chrysomelina
The classification of the genus *Plagiodera* is not controversial.

Diagnostic remarks
Plagiodera thymaloides is a distinctive chrysomelid not likely to be confused with other species found in the Lower Rio Grande Valley of Texas. The beetle is ovate, flat on the ventral side, evenly convex above, and shining brown in color with a more-or-less well-defined narrow orange marginal band on the elytra. The head and pronotum are mostly orange and the pronotum usually has an elongate darker median patch. The body length is 4.25-4.8 mm and the maximum width at the elytral mid-length is 3.4-3.6 mm. The antennae are brownish with the distal half black. The antennae are clavate with the distal antennomeres flattened and broader than the preceding. The elytra are smooth between distinct punctures. The elytral punctation is mostly irregular in placement but at times they tend to form vague rows. The apical tarsal segment is not developed ventrally to form a large tooth.

The genus is keyed in Wilcox (1972) and Riley et al. (2002) relative to other chrysomeline genera found in America north of Mexico. Wilcox (1972) provides a key to the species of *Plagiodera* found in America north of Mexico. Daccordi (1986) treated the New World subgenera of *Plagiodera*, placing *P. thymaloides* in the subgenus *Plagioschema* Daccordi. Color images of this species are available on the web [http://bugguide.net/node/view/290199 and http://bugguide.net/node/view/258617] (last accessed on 6/26/2009).

Historic Occurrence Records

1) From literature: See “literature records” on attached Excel spreadsheet.

2) From specimens examined: See "specimen records" on attached Excel spreadsheet.
3) From communicated records: See "communicated records" on attached Excel spreadsheet.

Known Range
Brownsville area of Texas (Cameron County), south through Mexico (Campeche, Chiapas, Guerrero, Puebla, San Luis Potosí, Tamaulipas, and Veracruz) to Belize, Guatemala, and Honduras.

Biology, Host, Substrate, Habitat Data
1) From literature: "larvae and adults feed on *Xylosma flexuosa* (H. E. K.) Hemsl. (Flacourtiaceae)" (Clark et al. 2004).
2) From specimens: There are numerous biological notations on specimen labels. Those notations from Texas specimens are as follows: "on *Xylosma flexuosa*," "sweeping succulent undergrowth in palm grove," "palm grove," "beating sheet," "on *Myroxylon flexuosum*," "*Myroxylon celastinum* (H. B. K.) Kuntz.," and "*Myroxylon celastinum* (H. B. K.) Kuntz., breeding on foliage." *Myroxylon celastinum* and *M. flexuosum* are older names for *Xylosma flexuosa*. There are numerous specimens in the USNM Collection representing border interceptions from Mexico: "Bromeliads," "with bromeliads," "on orchids," "with orchids," "on orchid leaf," "on orchid stem," "with cactus," "with *Tillandsia* plants," "on *Tillandsia*," and "*Laelia anceps*." *Laelia* is an orchid genus; *Tillandsia* is a Bomealiaceae.
3) From communicated records: I have taken this beetle on several occasion from a few *Xylosma* plants growing in the Sabal Palm Grove Preserve. On more than one occasion the *Xylosma* plants were almost stripped entirely of their foliage, so it appears that this beetle can do severe defoliation under the right conditions. On two occasions at the Sabal Palm Grove Preserve (May and October), I found chrysomeline larvae on the plants that must be the larva of this species (larval specimens preserved in the TAMU Insect Collection). On one occasion, I found adults of this species in southern Tamaulipas, Mexico, together with adults of *P. semivittata* (Stål) feeding on a woody plant that was probably *Xylosma* (E. G. Riley, pers. obser.)

Biology, Host, Substrate, Habitat Data by Inference (based on knowledge of related species)
Plagiodera Chevrolat is almost worldwide in distribution (Riley et al. 2002). The three other species of *Plagiodera* occurring in the United States belong to different subgenera: *Plagiodera s. str*. (one adventive species from Europe) and *Plagiomorpha* Motschulsky (two native species with affinities to the northern Neotropical region). Other than *P. thymaloides* on *Xylosma*, the other United States species all feed on *Salix* or on *Salix* and *Populus* (Salicaceae) (Clark et al. 2004). Food plants for most Neotropical species remain unknown. In southern Tamaulipas, Mexico, *P.* (*Plagioschema*) *semivittata* (Stål) has been found together *P. thymaloides* defoliating the same individual woody plant and this plant was probably *Xylosma* (E. G. Riley, pers., obser.). Jolivet and Hawkeswood (1995) mention the existence of species from India and the Philippines on *Flacourtia* and

Xylosma (Flacortiaceae), so utilizing plants of this family may be a trend in tropical *Plagiodera*. It is likely that *P. thymaloides* is a specialist feeder on this plant family.

Like other closely related genera in the Chrysomelina, all life stages of *Plagiodera* occur on the foliage of the host plant. The adventive northeastern United States species, *Plagiodera versicolor* (Laicharting), overwinters as an adult and has three to four overlapping generations per year (Hood 1940).

Adult Phenology in Texas

1) Number of compiled Texas collecting events by month: March (4), April (7), May (14), June (6), July (8), August (4), September (2), October (22).

2) Year of most recent known collection in the Lower Rio Grande Valley: 2002.

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Valid name

Sphaenothecus trilineatus Dupont

Synonymy/catalog

Sphaenothecus tomentosus Dupont, 1838:56, pl. 219, Fig. 1
Sphaenothecus trilineatus Dupont, 1838:57, pl. 219, Fig. 2
Sphenothecus tomentosus: White, 1853:85
Sphenothecus trilineatus: White, 1853:85
Sphoenothecus tomentosus: Thomson, 1864:205
Sphaenothecus tomentosus: Lacordaire, 1869:184
Sphaenothecus trilineatus: Lacordaire, 1869:184
Sphenothecus tomentosus: Bates, 1879-1886 (1880):84
Sphenothecus trilineatus: Bates, 1879-1886 (1880):84
Sphenothecus lateralis Bates, 1879-1886 (1885):329
Sphenothecus tomentosus: Bates, 1879-1886 (1885):328
Sphenothecus trilineatus: Bates, 1879-1886 (1885):329
Sphaenothecus tomentosus: Aurivillius, 1912:472
Sphaenothecus tomentosus: Casey, 1912:333
Sphaenothecus trilineatus: Aurivillius, 1912:472
Sphaenothecus trilineatus: Casey, 1912:333
Sphaenothecus trilineatus: Linsley, 1935:100
Sphaenothecus trilineatus: Blackwelder, 1946:589
Sphaenothecus trilineatus, var. *lateralis*: Blackwelder, 1946:589
Sphaenothecus trilineatus, var. *tomentosus*: Blackwelder, 1946:589
Sphaenothecus trilineatus: Chemsak, Linsley, & Mankins, 1980:33
Sphaenothecus trilineatus: Chemsak & Linsley, 1982:54
Sphaenothecus trilineatus: Chemsak & Noguera, 1993:64
Sphaenothecus trilineatus: Monné & Giesbert, 1993:151
Sphaenothecus trilineatus: Chemsak & Noguera, 1998:23, pl. vii
Sphaenothecus trilineatus: Noguera et al., 2002:624
Sphaenothecus trilineatus: Toledo et al., 2002:518, 529
Sphaenothecus trilineatus: Bender et al., 2005:773
Sphaenothecus trilineatus: Noguera et al., 2007:302, 312
Sphaenothecus trilineatus: Toledo, Corona, & Morrone, 2007:132

Classification

Family: Cerambycidae
Subfamily: Cerambycinae
Tribe: Trachyderini
The classification of the genus *Sphaenothecus* Dupont as a member of the tribe Trachyderini is not controversial, except that, as now interpreted (Monné and Giesbert 1993, Turnbow and Thomas 2002), this tribe includes the tribe Purpuricenini to which *Taranomis* Casey (now a junior synonym of *Sphaenothecus*) was assigned in the Linsley (1962) monograph of Cerambycidae of America north of Mexico.

Diagnostic remarks

This is a large and conspicuous cerambycine with alternating light and dark elytral stripes. The body is elongate, tapering from the elytral humeri. The integument is everywhere black. The pale vittae are composed of dense, short, appressed, cream-colored to yellowish hairs that form a median and lateral vittae on the pronotum and elytra. The pale pronotal vittae are continuous with those on the elytral as a conjoint sutural vitta and as a lateral vitta on each elytron. There is a black glabrous streak running posteriorly from below the humeral umbone. The width of the pubescent elytral vittae varies considerably with specimens from eastern Mexico having thin cream-colored vittae and those from western Mexico with broader yellowish vittae (Chemsak and Noguera 1998). The ventral areas of the body are moderately to densely covered with cream colored hairs. The antennae and legs are black. The body length ranges from 16 to 25 mm. As a member of the subfamily Cerambycinae, the face of the head is somewhat horizontal in repose, not vertical as in the Lamiinae. The elytra are smooth without costae. Male antennae are slender filiform and at least two times the length of the body. The female antennae are a little longer than the body with the more segments subserrate.

A second species, *S. bivittata* Dupont, is found in the Lower Rio Grande Valley of Texas. This species is a little smaller, although still fairly large, and it is colored similarly, thus it could be confused with *S. trilineatus*. However, it is easily distinguished by having costate instead of smooth elytra.

The genus is keyed in the standard works on North American Cerambycidae (Linsley 1962, Turnbow and Thomas 2002). The genus was revised by Chemsak and Noguera (1998) who provided a key to the known species. Color images of preserved specimens are available on the web [http://plant.cdfa.ca.gov/byciddb/details.asp?id=6585] (last accessed on 6/23/2009).

Historic Occurrence Records

1) From literature: See “literature records” on attached Excel spreadsheet.

2) From specimens examined: See “specimen records” on attached Excel spreadsheet.

3) From communicated records: See “communicated records” on attached Excel spreadsheet.

Known Range

Brownsville area of Texas (Cameron County), south throughout most of Mexico (Chiapas, Guerrero, Jalisco, Mexico, Michoacan, Morelos, Oaxaca, Puebla, Sinaloa, and Veracruz) to Guatemala and Honduras.

This species was not recognized as part of the United States longhorn beetle fauna until reported from Brownsville by Chemsak and Noguera (1998). They mention the single Texas record in a paragraph discussion but not in the “Material Examined” section of their paper. The specimen that is the basis for the record is present in the Essig Museum of Entomology (University of California–Berkeley) (C. B. Barr, pers. comm., 2009).

Biology, Host, Substrate, Habitat Data

1) From literature: No biological data accompany the published Texas record. Based on specimens from Mexico, the following data are reported by Chemsak & Noguera 1998): "host *Caesalpinia* sp., emerged VII-27-1985," "host *Ceiba pentandra*, emerged VII-5-1985, … VII-1-27-1985, VIII-2-24-1985, IX-2-15-1985" "host *Lonchocarpus magallanesii*, emerged VI-13-26-1985," "host *Caesalpinia platyloba*, emerged VII-5-1985," "on flowers of *Caesalpinia eriostachys*," "on flowers of Acacia sp.," "host *Spondias purpurea*," "host *Delonix regia*," "host *Acacia angustissima*," "host *Amphipterigium adstringens*," "on flowers of *Apoplanesia paniculata*," "on flowers of *Leucaena* sp.," and "on flowers of *Lonchocarpus*." Their host records represent rearing records, i. e., larval hosts. Adults of this species are fall and winter-active and visit flowers. Chemsak and Noguera (1993) report, … "October to January on flowers of *Acacia*, *Caesalpina*, *Croton*, *Leucaena* and *Lonchocarpus* …". Noguera et al. (2007) report direct collecting of adults from January and from September to December, and Noguera et al. (2002) report, … "October to January. On flowers of *Ipomoea* sp., *Gliricidia sepium*, and on the trunk of a dead tree of *Pseudobombax* sp. One individual was collected at light." The plant genera mentioned above are members of the Fabaceae, except *Ceiba* and *Pseudobombax* (Malvaceae), *Croton* (Euphorbiaceae), *Amphipterigium* and *Spondias* (Anacradiaceae), and *Ipomoea* (Convolvulaceae).

2) From specimens: none.

3) From communicated records: In western Mexico, adults are common on flowers during the fall (J. E. Wappes, pers. comm., 2009).

Biology, Host, Substrate, Habitat Data by Inference (based on knowledge of related species)

Adults of the Trachyderini are common flower visitors and develop as larvae in a wide range of plant species. Depending on the genus, their larvae develop in either dead or living plants (Linsley 1962).

Adult Phenology in Texas

1) Number of compiled Texas collecting events by month: June (1).

2) Year of most recent known collection in the Lower Rio Grande Valley: 1925. A second specimen labeled as being from Texas was seen during the preparation of this report (USNM collection). It is labeled "Port la Vaca, at Brownsville, II-7-1968, J. B. Kee." Since there is no such location as "Port la Vaca at Brownsville," but there is a Port Lavaca, Texas (Calhoun County), one can speculate that this specimen was perhaps intercepted in commerce and not collected in the field. This view is supported by the fact that the USNM Collection includes a great amount of insect material that was submitted by inspectors to the United States Department of Agriculture taxonomic service unit for identification. It seems highly unlikely that this specimen originated in Port Lavaca, Texas and was later intercepted at Brownsville, Texas.

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