

REVIEW OF THE GENUS *SPHAENOTHECUS* DUPONT (COLEOPTERA: CERAMBYCIDAE)

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Abstract.—The trachyderine genus *Sphaenothecus* Dupont is reviewed. *Sphaenothecus funebris* Bates is transferred to the genus *Zalophia* Casey and *Z. spissicornis* Casey is synonymized with *Z. funebris*, NEW COMBINATION, *Sphaenothecus cribellatus* Bates and *S. luteicollis* Bates are placed into the genus *Ischnocnemis* Thomson, NEW COMBINATION. *Taranomis* Casey is synonymized with *Sphaenothecus* and *Taranomis pallida* Schaeffer is placed into *Perarthrus* LeConte, NEW COMBINATION. *Taranomis cylindricollis* Casey is synonymized under *Sphaenothecus bivittatus* Dupont.

As here defined, *Sphaenothecus* consists of the following seven species: *S. argenteus* Bates, Mexico to Guatemala; *S. bivittatus* Dupont, United States to Honduras; *S. picticornis* Bates, Mexico; *S. maccartyi* NEW SPECIES, Mexico; *S. toledo* NEW SPECIES, Mexico-Honduras; *S. facetus* NEW SPECIES Guatemala to Costa Rica; *S. trilineatus* Dupont, Texas and Mexico.

Key Words.—Cerambycidae, *Sphaenothecus*, taxonomic revision, new species, key, distribution, activity period, hosts.

The trachyderine genus *Sphaenothecus* Dupont is currently comprised of seven Mexican and Central American species. Examination of this group indicates that the presently included species are not congeneric. *Zalophia spissicornis* Casey is synonymous with *S. funebris* Bates (NEW SYNONYMY) and *funebris* enters into the genus *Zalophia* Casey (NEW COMBINATION). *S. cribellatus* Bates and *S. luteicollis* Bates are placed into the genus *Ischnocnemis* Thomson (NEW COMBINATION) for the time being. A study of the genus will be necessary to determine the validity of the reassignments.

Generically we can find no differences between *Sphaenothecus* and *Taranomis* Casey. The species *pallida* Schaeffer from Baja California is placed into *Perarthrus* LeConte (NEW COMBINATION) and appears to be distinct from the other two species in that genus.

The genus *Sphaenothecus* as presently defined consists of seven species, three of which are previously undescribed.

GENUS *SPHAENOTHECUS* DUPONT

Sphaenothecus Dupont, 1838: 55; Thomson, 1860: 209; Lacordaire, 1869: 184; LeConte, 1873: 316; LeConte and Horn, 1883: 301; Leng, 1886: 60; Casey, 1912: 333; Bradley, 1930: 241.

Sphaenothecus; Guerin, 1839: 250; Thomson, 1864: 205.

Sphaenothecus; White, 1853: 85; Gemminger and Harold, 1873: 2972; Bates, 1880: 84.

Taranomis Casey, 1912: 333; Linsley, 1962: 95., Type species: *Sphaenothecus bivittatus* Dupont, by original designation. NEW SYNONYMY.

Ischnocnemis; LeConte, 1873: 316; LeConte and Horn, 1883: 301; Leng, 1886: 61.

Form moderate sized to large, tapering posteriorly. Head small; palpi short, apical segments short; mandibles arcuate, acute at apices; eyes finely faceted, deeply emarginate, upper lobes widely separated; antennal tubercles divergent, often prominently elevated; antennae slender, often robust in females, often 12-segmented, much longer than body in males, slightly longer than body and often subserrate in females, scape usually robust, shorter than segment 3, 4 subequal to 3, segment 3 often stout, densely clothed with coarse setae. Pronotum convex, sides rounded or with small lateral tubercles; apex narrower than base, disk lacking distinct calluses; prosternum with intercoxal process not protuberant, abruptly declivous behind, coxal cavities wide open behind; mesosternum with intercoxal process broad, prominently protruding above coxae, abruptly declivous; metasternum with episternum broad, subparallel. Elytra tapering posteriorly; disk with longitudinal eburneous costae or longitudinal pubescent vittae; apices sinuate truncate to bi-emarginate. Legs slender; hind femora often linear, arcuate; middle femora carinate apically; posterior tarsi slender, rather short, apical segment cleft almost to base. Abdomen normally segmented.

Type species.—*Sphaenothecus tomentosus* Dupont, Thomson designation, 1864 (= *Sphaenothecus trilineatus* Dupont).

This genus may be recognized by the tapering form of the pronotum and elytra, longitudinally costate or vittate elytra, non protuberant, abruptly declivous prosternal process and by the elevated, declivous mesosternal process.

Seven species are presently known.

KEY TO THE SPECIES OF *SPHAENOTHECUS*

1. Elytra with elevated, longitudinal, eburneous or dark costae, at least behind middle 2
- 1'. Elytra non-costate, longitudinal pale bands consisting of rows of appressed pubescence 6
- 2(1). Pronotum with sides rounded, non-tuberculate 3
- 2'. Pronotum with small lateral tubercles; antennae of males 11-segmented; elytra with vitta densely, minutely punctate, subopaque; pronotum with two broad longitudinal bands of golden appressed pubescence. Length, 14.5–22 mm. Western Mexico from Sinaloa to Guatemala *argenteus* Bates
- 3(2). Antennae stout, segment 3 almost as thick as scape, densely clothed with long, coarse, subdepressed, blue-black setae; scutellum longer than broad 4
- 3'. Antennae slender, segment 3 distinctly narrower than scape, segments not appreciably apically expanded in either sex; scutellum as broad as long; longitudinal yellowish vittae of elytra broad; appendages often partially or entirely reddish. Length, 9–15.5 mm. Southern California to Texas, Honduras and Baja California *bivittatus* Dupont
- 4(3). Elytra feebly bilobed basally, lobes not extending onto sides of basal margin of pronotum, yellowish longitudinal vittae broad, apices feebly sinuate truncate or strongly dentate at outer angles 5
- 4'. Elytra strongly lobed on each side of scutellum, longitudinal, yellowish vittae, if present, narrow, apices strongly bi-emarginate. Antennae of males 12-segmented, segment 11 of females almost divided. Form rather slender. Length, 12–22 mm. Central Mexico .. *picticornis* Bates
- 5(4). Elytra with median dark vittae with punctures behind middle separated, not opaque appearing, apices strongly dentate at outer angles. Hind

- tibiae moderately sinuate, dark suberect setae rather sparse. Mesosternal process broadly rounded at apex. Antennae of males 12-segmented. Length, 10–15 mm. Sinaloa, Jalisco and Chiapas
 *maccartyi* NEW SPECIES
- 5'. Elytra with median dark vittae very finely, contiguously punctate behind middle, appearing subopaque, apices with angles unarmed. Hind tibiae strongly sinuate, dark, suberect setae dense. Mesosternal process narrowly rounded at apex. Antennae of males 11-segmented. Length, 16–22 mm. Oaxaca to Honduras *toledo* NEW SPECIES
- 6(1'). Antennae with scape 2 × as long as broad, dorsally flattened and impressed at base. Integument reddish-brown. Length 15–22 mm. Guatemala to Costa Rica *facetus* NEW SPECIES
- 6'. Antennae with scape at least 2.5 × as long as broad, slightly flattened dorsally at base but not impressed. Integument black. Length, 15–25 mm. Southern Texas to Veracruz, Sinaloa to Oaxaca
 *trilineatus* Dupont

SPHAENOTHECUS ARGENTEUS BATES

(Pl. 2)

Sphenothecus argenteus Bates, 1880: 84.

Sphaenothecus argenteus; Aurivillius, 1912: 472; Chemsak and Noguera, 1995: 64.

Male.—Form moderate sized, tapering; integument black to reddish, elytra with two longitudinal, yellowish, eburneous vittae on each side; pubescence dense, golden, appressed, fine, pale, suberect and fine, appressed and dark. Head small; antennal tubercles prominently elevated, blunt at apices; vertex with a linear, glabrous callus; pubescence dense, appressed, golden, long, erect, golden hairs numerous; antennae slender, 11-segmented, extending at least 4 segments beyond elytra, scape cylindrical, slender, moderately flattened only slightly beneath at base, basal segments densely clothed with subdepressed black setae, outer segments densely clothed with very fine, very short pubescence, third segment only slightly narrower than scape, segment 11 appendiculate at apical one-third. Pronotum broader than long, sides with a small tubercle behind middle; disk with median area convex, slightly elevated, broadly impressed at middle at base; basal margin lobed at middle; punctures at middle fine, arranged in irregular contiguous rows; pubescence dense, appressed, golden, forming 2 broad longitudinal vittae at sides of middle; sides sparsely to densely clothed with long or short erect hairs; lateral longitudinal dark vittae subopaque, finely, irregularly punctate; prosternum shallowly impressed, usually densely golden pubescent; meso- and metasternum medially glabrous, very finely, sparsely punctate, sides densely golden pubescent. Elytra a little more than 2 × as long as broad, tapering apically; basal margin broadly lobed; each elytron with a broad, longitudinal eburneous fascia near suture and a narrow one near lateral margin, the 2 coalescing near apex; punctures on median black vittae subcontiguous near base, punctures on outer black vittae very fine, dense, subopaque; pubescence along suture dense behind scutellum, golden, appressed, arranged transversely, black areas with fine, dark, appressed pubescence; apices sinuate, sutural angles dentate. Scutellum narrow, elongate, glabrous. Legs slender, hind femora not extending to apices of elytra; femora rather sparsely punctate and pubescent; front tibiae arcuate, densely pubescent beneath, hind tibiae densely clothed with dark, subdepressed setae; hind tarsi moderately broad, segment 1 shorter than two following together. Abdomen medially glabrous, sides densely clothed with golden appressed pubescence, long erect hairs dense to sparse; last sternite shallowly emarginate at middle. Length, 15–22 mm.

Female.—Form similar, slightly more robust. Antennae slightly longer than body. Abdomen with last sternite broadly rounded, narrowly, shallowly emarginate at apical margin. Length, 14.5–21.5 mm.

Diagnosis.—This species is very distinctive by the broad, longitudinal bands

of golden, appressed pubescence of the pronotum and by the eburneous longitudinal vittae of the elytra.

Type Locality.—San Geronimo, Guatemala.

Range.—Western Mexico from Sinaloa to Guatemala.

Flight Period.—June to December.

Remarks.—The northernmost Mexican specimens have short, sparse, erect pubescence on the pronotum while in Guatemala, this is long and dense. The underside of the Guatemala material also has the long erect hairs much more numerous and the pubescence of the middle of the prosternum much denser.

Adults have been collected on flowers of *Croton*.

Material Examined.—MEXICO. CHIAPAS: 21 males, 6 females, 16 km W of Ocozocuatla, "El Aguacero", 4–5 Aug 1994, 4–30 Sep 1994, 1–3 Oct 1994, 4–16 Nov 1994, V. H. Toledo. JALISCO: 11 males, 6 females, Estacion de Biologia, Chamela, 14–23 Oct 1986, Chemsak; 7 Dec 1983, S. H. Bullock; 1 Sep 1985, R. Ayala; 13 Sep 1985, 22 Nov 1985, 25 Sep 1986, 27 Oct 1986, 25 Nov 1986, F. A. Noguera. MICHOACAN: 1 female, La Huacana, 10 Oct 1988, G. Rodriguez. OAXACA: 1 female, El Camaron, 32 km (20 mi) E of Oaxaca, 21 Jul 1956, J. W. MacSwain; 3 males, 1 female, 89.6 km (56 mi) NW of Tehuantepec, 27 Jul 1963, J. Doyen, W. Foster. SINALOA: 2 females, 4 km (2.5 mi) N of Mazatlan, 10–11 Aug 1970, J. A. Chemsak. GUATEMALA. BAJA VERAPAZ: 5 males, 6 females, Las Limas, Mpio. Salama, Baja Verapaz, 1150 m, 16 Jun 1986, 8–28 Sep 1986, 16 Oct 1986, 7 Nov 1986, 18 Dec 1986. EL PROGRESO: 1 female, 12.8 km (8 mi) NE of El Progreso, 8 Jul 1965, A. Raske, C. Slobodchikov; 1 male, Magdalena, Mpio. San Agustin, Acasaguastlan, 16 Jun 1989. GUATEMALA: 1 male, San Geronimo, Champion. ZACAPA: 1 female, Zacapa, 1 Oct 1929, D. M. Bates.

SPHAENOTHECUS BIVITTATUS DUPONT

Sphaenothecus bivittatus Dupont, 1838: 58, pl. 220, Fig. 1; Guerin, 1844: 250; Linsley, 1934: 61; Saalas, 1936: 111; Linsley, 1940: 562.

Sphenothecus bivittatus; White, 1853: 86; Bates, 1880: 84.

Ischnocnemis bivittatus; LeConte, 1873: 316; Leng, 1887: 193; Townsend, 1903: 77.

Taranomis bivittata; Casey, 1912: 333; Linsley, 1942: 63; Linsley, 1962: 95; Rogers, 1977: 227; Chemsak, Linsley and Mankins, 1980: 33.

Taranomis bivittatus; Duffy, 1960: 109.

Taranomis bivittata bivittata; Linsley, 1960: 95; Turnbow and Wappes, 1978: 368; Hovore and Penrose, 1982: 25; MacKay, Zak and Hovore, 1987: 364; Hovore, Penrose and Neck, 1987: 296.

Leptocera bilineata Gory, 1831: pl. 45, Fig. 9; Castelnau, 1840: 490, pl. 34, Fig. 4.

Taranomis cylindricollis Casey, 1924: 267. NEW SYNONYMY.

Taranomis bivittata cylindricollis, Linsley, 1962: 96.

Taranomis nematocera Casey, 1924: 268.

Male.—Form small, tapering; integument black, legs and often pronotal disk reddish, elytra with 2 longitudinal eburneous vittae on each side; pubescence short, pale or golden, appressed and subdepressed. Head small; antennal tubercles not elevated; vertex coarsely, confluent punctate; pubescence erect, sparse, antennae slender, 12-segmented, 2.5 to 3 × longer than body, scape conical, slender, dorsally carinate, at least near base, basal segments clothed with short, dark, suberect setae, third segment longer than scape, fourth subequal to third. Pronotum broader than long, sides broadly rounded; disk convex, broadly impressed at middle at base; basal margin shallowly lobed at middle; punctures moderately coarse, sparse to dense, usually transverse on apical one-half, center behind middle usually with an irregular glabrous area; each side with a broad, longitudinal, densely appressed, pubescent vitta, sides with numerous long, erect hairs; prosternum shallowly impressed, densely pubes-

cent; meso- and metasternum densely clothed with silvery appressed pubescence and longer, erect hairs, middle glabrous. Elytra about $2.5 \times$ as long as broad; basal margin moderately bilobed; each elytron with 2 longitudinal eburneous fasciae, one beginning inside of humeri and extending almost to apex, one lateral usually not reaching lateral margin and extending almost to apex; punctures between fasciae fine, dense, becoming finer and denser toward apex; pubescence dense, fine, appressed, long, erect hairs usually numerous basally; apices sinuate truncate, angles usually moderately dentate. Scutellum about as long as broad, apex narrow, acute, sparsely pubescent. Legs slender; hind femora extending beyond body, moderately densely punctate and pubescent; hind tibiae moderately densely clothed with suberect, dark setae; hind tarsi slender, first segment as long as following two together. Abdomen densely clothed with silvery appressed pubescence, middle glabrous; last sternite lightly emarginate at middle. Length 9–15.5 mm.

Female.—Form similar. Antennae a little longer than body, 11-segmented. Legs with femora not extending beyond body. Abdomen with last sternite broadly truncate. Length, 9–14 mm.

Diagnosis.—This species averages smaller in size than other *Sphaenothecus*. The slender, 12-segmented antennae and elongated hind femora of males and the usual dark lateral margins of the elytra also characterize this species. The color of the pronotum varies from black to reddish and does not appear to be a constant geographical character.

Discussion.—We have been informed that (Monné 1994) in his recent catalog has reinstated the name *bilineatus* Gory for *bivittatus*. We have not seen this reference and in view of the confusion regarding publication dates are maintaining the long accepted synonymy of *bilineatus*. Unless the name is a homonym, Monné's usage may be correct.

Type Locality.—Of *bivittatus*, Mexico; *bilineata*, Mexico; *cylindricollis*, near Tucson, Arizona; *nematocera*, near Tucson, Arizona.

Range.—Southern California to Texas, Honduras and Baja California (Pl. 1).

Flight Period.—April to November.

Host Plants.—*Acacia*, *Prosopis*.

Remarks.—There appears to be no justification for segregating this species into another genus and it is being treated as originally proposed by Dupont, 1838.

SPHAENOTHECUS PICTICORNIS BATES

(Pl. 3)

Sphenothecus picticornis Bates, 1880: 84.

Sphaenothecus picticornis; Aurivillius, 1912: 472.

Male.—Form moderate sized, tapering; integument reddish to black, pronotum and underside often reddish, antennal segments dark at apices, elytra usually with 2 narrow, eburneous, longitudinal vittae on each side, legs with tibiae and femora dark at apices, tarsi black; pubescence moderately dense, short, appressed silvery to golden, pronotum laterally with a longitudinal band of dense, appressed pubescence. Head small; antennal tubercles prominent, rounded; vertex with an often vague, medially impressed callus; pubescence around eyes dense; antennae 12-segmented, often $2.5 \times$ longer than body, scape cylindrical, about $2 \times$ as long as broad, dorsally carinate, basal segments densely clothed with short, dark, vaguely bluish, suberect setae, outer segments clothed with minute appressed pubescence, segments dark annulate at apices, segment 3 about as broad as scape, segments 4–9 slightly expanded at apices, segment 3 longer than scape, 4 slightly longer than 3, 5 longer than 4. Pronotum slightly broader than long, sides broadly rounded; disk convex, transversely impressed near base, basal margin strongly lobed at middle; punctures fine, denser over apical one-half, middle toward base usually impunctate; each side with a moderately broad, longitudinal, silver or golden pubescent vitta, vittae widely separated on disk, sides with numerous long, erect, pale hairs; prosternum barely impressed, densely pubescent; meso- and metasternum densely clothed with silvery or golden, appressed pubescence, middle glabrous, long, pale, erect hairs numerous, mesosternal process prominently elevated. Elytra about $2.5 \times$ as long as broad, basal margin strongly bilobed; each elytron with 2 ebur-

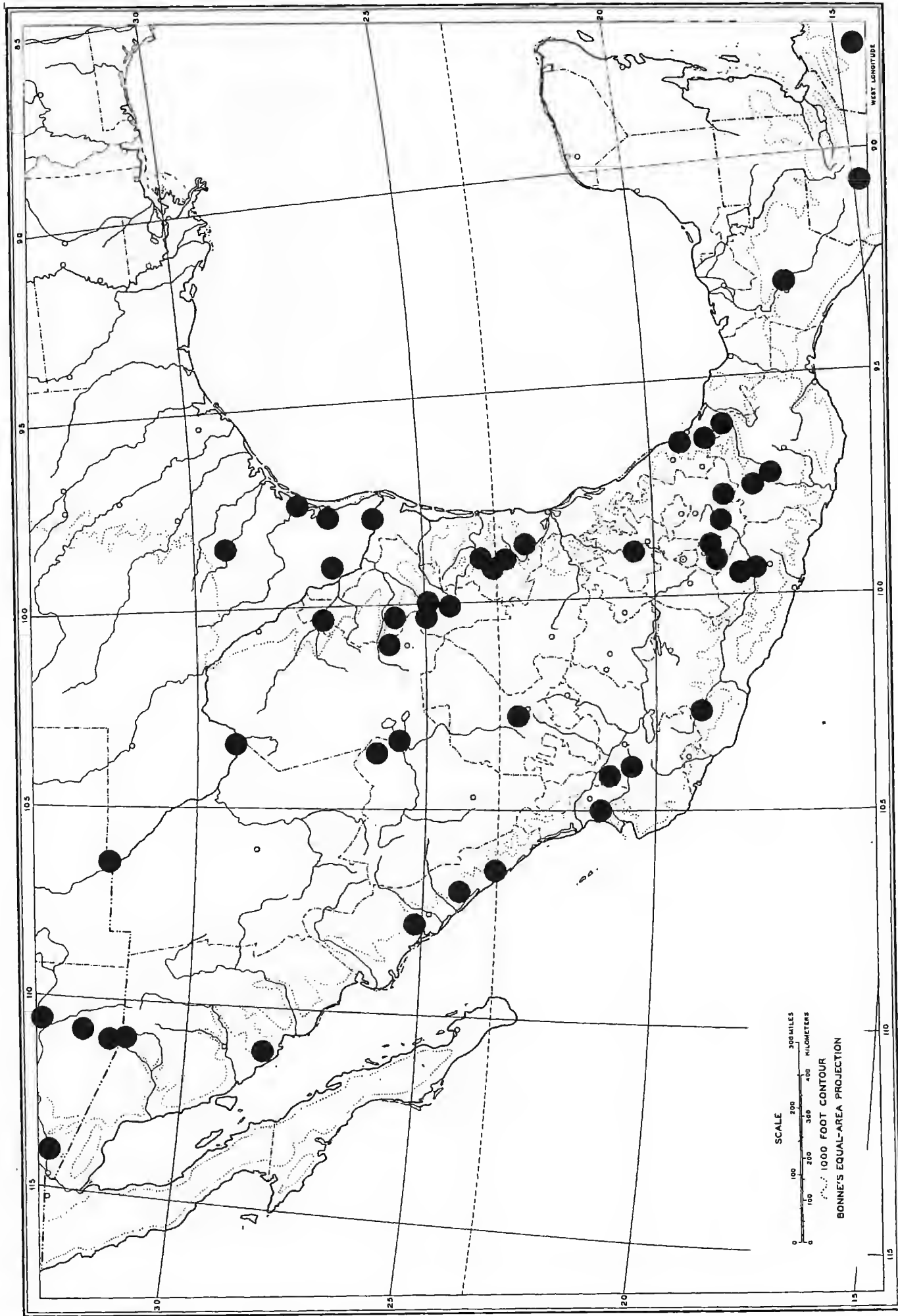


Plate 1. Known distributional range of *Sphaenothecus bivittatus* Dupont.



neous, longitudinal fasciae extending almost to apex; each side narrowly costate down middle; basal punctures fine, sparse, becoming very dense toward apex; pubescence fine, short, silvery, densely, transversely appressed along sutural area; apices sinuate, angles acutely dentate. Scutellum strongly tapering, about 2 × as long as broad, glabrous. Legs slender; hind femora not extending beyond body, sparsely punctate and pubescent; hind tibiae moderately densely clothed with fine, suberect setae; hind tarsi slender, segment 1 slightly shorter than two following together. Abdomen densely pubescent, narrowly glabrous medially; last sternite shallowly emarginate at middle. Length, 12–22 mm.

Female.—Form similar. Antennae subserrate, slightly longer than body; 11-segmented, segment 11 strongly appendiculate. Abdomen with last sternite broadly truncate at apex. Length, 14–19 mm.

Diagnosis.—This species varies greatly in size and coloration. The eburneous fasciae of the elytra vary in length and width and occasionally are black. The pronotum is often totally black and the legs and underside vary in the amount of infuscation. The thickened, slightly arcuate, densely pubescent third segment of the antennae, strongly lobed basal pronotal margin and strongly bilobed elytral base make this species distinctive.

Type Locality.—Mexico.

Range.—Central Mexico from Michoacan to Veracruz and Oaxaca.

Flight Period.—October to January.

Material Examined.—All from MEXICO. *GUERRERO*: 1 male, 2 km SE of Grutas on Hwy 55, 6 Jan 1989, R. L. Minckley and B. N. Danforth. *MEXICO*: 1 male, km 20 of Tejupilco-Bejucos, 6 Jun 1964, Barrera, Brailovsky. *MICHOACAN*: 1 male, 3 km N of Arteaga, 850 m, 1 Nov 1987, R. Ayala. *MORELOS*: 16 males, 6 females, 2.5 km W of Huautla, Estacion CEAMISH, 940 m, 20 Nov 1995 to 16 Mar 1996, F. A. Noguera, A. Rodriguez, A. Morales, E. Ramirez, E. Gonzalez; 3 males, 1 female, 2.5 km W of Ajuchitlan, 950 m, 11 Nov 1995 to 17 Jan 1996, R. Ayala, F. A. Noguera, E. Gonzalez. *OAXACA*: 1 male, 63 km N of Huajuapán, 14 Oct 1978, E. Giesbert; 4 males, 1 female, Petlalcingo, 25 Nov 1963, A. E. Michelbacher. *PUEBLA*: 1 male, 1 female, 15 km WNW of Izucar de Matamoros, 1300 m, 6 Nov 1976, P. H. Sullivan. *VERACRUZ*: 3 males, 1 female, Cordoba, 28 Oct 1963, A. B. Lau. *STATE UNKNOWN*: 1 male, 1 female.

SPHAENOTHECUS TOLEDOI CHEMSAK AND NOGUERA, NEW SPECIES
(Pl. 5)

Types.—Holotype male, allotype: MEXICO. *CHIAPAS*: 16 km W of Ocozacoatlán, “El Aguacero”, 26 Jan 1995, V. H. Toledo; deposited: Instituto de Biología, UNAM, Mexico. Paratypes, all with same data as follow: 1 male, 1 female, 2 Jan 1995; 3 males, 1 female, 28 Jan 1995; 1 male, 2 females, 30 Jan 1995; 2 males, 1 female, 1 Feb 1995; 1 male, 28 Feb 1995; 1 male, 1 Mar 1996; 1 male, 2 Mar 1996; 5 males, 3 Mar 1995; 1 male, 2 females, 4 Mar 1995; 1 male, 22 Dec 1994; deposited in EMEC; EBCC and V. H. Toledo collection. Additional paratypes include: *OAXACA*: 1 male, 15 km E Tehuantepec, emerged Dec 1980 from dead thorned vine, E. Giesbert (GIES). *HONDURAS*. *LA PAZ*: 1 male, Taladro, 5 Jan 1976, J. V. Mankins (EMEC).

Male.—Form moderate sized, tapering; integument reddish, head pronotum, legs and underside usually partially infuscated, antennae narrowly black at apices of segments, elytra testaceous with longitudinal black vittae; pubescence sparse to dense, erect and appressed. Head small; antennal tubercles prominent, obtuse at apices; vertex with a usually raised median line; pubescence fine, pale,

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Plates 2–5. Plate 2, *Sphaenothecus argenteus* Bates; Plate 3, *S. picticornis* Bates; Plate 4, *S. maccartyi* NEW SPECIES, and Plate 5, *S. toledo* NEW SPECIES.

suberect; antennae slender, 11-segmented, often more than $2 \times$ as long as body, scape rather slender, cylindrical, about $3 \times$ longer than broad, carinate basally, basal segments moderately densely clothed with short, subdepressed blue-black setae, outer segments minutely pubescent, segments 3–8 slightly expanded at apices, segment 3 narrower than scape except at apex, segment 3 longer than 1, segments 3–5 equal, 11 long, appendiculate. Pronotum broader than long, sides broadly rounded; disk convex, impressed at middle near base, basal margin broadly lobed at middle; punctures moderately coarse, irregular, transversely placed, area before impression usually non-punctate; sides with widely separated, longitudinal bands of pale, appressed pubescence, long, erect hairs numerous at sides; prosternum barely impressed, densely pubescent; mesosternal process prominently projecting, meso- and metasternum densely golden pubescent, medially glabrous. Elytra a little more than $2 \times$ longer than broad; basal margin moderately strongly bilobed; each elytron with two broad, longitudinal, yellowish vittae, suture, middle of disk and often, lateral margins, dark vittate; pubescence toward apex dense, appressed; apices sinuate truncate, inner angles very lightly dentate. Scutellum glabrous, black, longer than broad, acute at apex. Legs slender, stout; hind femora not attaining elytral apices, sparsely punctate and pubescent; hind tibiae moderately densely clothed along edges with short, suberect setae; hind tarsi short, moderately broad, segment 1 shorter than two following together. Abdomen densely pubescent, medially glabrous; last sternite subtruncate, shallowly emarginate at middle. Length, 16–21 mm.

Female.—Form similar. Antennae subserrate, a little longer than body, segment 11 pointed at apex. Abdomen with last sternite broadly truncate. Length, 16–19 mm.

Diagnosis.—*S. toledo* may be separated from *S. bivittatus* by the larger size, 11-segmented antennae of males and basally thicker antennal segments. It differs from *S. picticornis* by the feebly bilobed base of the elytra, usually broad yellowish elytral vittae, and 11-segmented antennae of males. *S. maccartyi* may be separated by the strongly dentate outer angles of the elytral apices and 12-segmented antennae of males.

Etymology.—We dedicate this species to V. H. Toledo to acknowledge his collecting efforts.

SPHAENOTHECUS MACCARTYI CHEMSAK AND NOGUERA, NEW SPECIES
(Pl. 4)

Sphaenothecus sp.; Chemsak and Noguera, 1993: 64.

Taranomis bivittata bivittata; (not Dupont) Chemsak and Noguera, 1993: 64.

Types.—Holotype male: MEXICO. *JALISCO*: Chamela, 18 Feb 1986, R. Ayala; allotype, Estacion de Biologia Chamela, emerged ex *Stemadenia* sp., 7 Oct 1985, F. A. Noguera; deposited in Instituto de Biologia, UNAM, Mexico. Paratypes, all from Estacion de Biologia Chamela as follows: 25 males, 10 females, 1–8 Dec 1988, J. A. Chemsak, J. D. MacCarty (EMEC and J. D. MacCarty collection); 1 male, 7 Dec 1977, H. Brailovsky (UNAM); 3 males, 3 females, Dec 1986, host *Caesalpinia eriostachys* Benth, FANM 499, S. H. Bullock; 1 female, Dec 1986, host *Caesalpinia sclerocarpa* Standl., FANM 501, S. H. Bullock; 1 male, 3 Feb 1987, FANM 449, host *Amphipterigium adstringens* (Schlecht.) Schiede, F. A. Noguera; 1 female, 3 Feb 1987, FANM 454, host *Comocladia engleriana* Loes, F. A. Noguera; 1 male, 2 females, 5 Feb 1987, FANM 462, host *Caesalpinia eriostachys*, F. A. Noguera; 1 female, 9 Feb 1987, FANM 485, host *Spondias purpurea* L., F. A. Noguera; 1 female, 13 Feb 1987, FANM 521, host *Caesalpinia sclerocarpa*, F. A. Noguera; 2 males, 13 Feb 1987, FANM 525, host *Bursera instabilis* McVaugh & Rzed., F. A. Noguera; 1 female, 18 Feb 1987, FANM 539, host *Delonix regia* (Boj.), F. A. Noguera; 2 females, 20 Feb 1987, FANM 604, host *Caesalpinia caladenia* Standl., F. A. Noguera; 1 female,

2 Apr 1987, FANM 610, host *Pithecellobium mangense* (Jacq.) MacBride, F. A. Noguera; 1 male, ex: *Stemadenia*, 2 Oct 1985, Noguera; 4 males, 3 females, 7–9 Dec 1986, on flowers of *Caesalpinia eriostachys*, F. A. Noguera; 3 males, 2 females, 9 Dec 1987, 14 Jan 1987, on *Caesalpinia* flowers, F. A. Noguera; 1 male, 27 Sep 1987, Noguera; 1 female, 9 Dec 1984, ovipositing on dead branch of *Ipomoea wolcottiana* Rose, Noguera; 1 male, 22 Nov 1985, Noguera; 1 male, 18 Feb 1986, R. Ayala (EBCC). One additional male paratype from 8 km (5 mi) N of Mazatlan, Sinaloa, Mexico, 12 Dec 1988, Chemsak (EMEC), and 2 males, 1 female, Rio San Nicolas, Chamela, 18 Nov 1985, R. Ayala (EBCC).

Male.—Form moderate sized, tapering; integument reddish, head pronotum, apices of antennal segments, apices of femora, elytra often partially infuscated; pubescence sparse to dense, short, appressed and long and erect. Head small; antennal tubercles not prominent, apically obtuse; vertex linearly impressed, vaguely callused; pubescence fine, short, golden, appressed with long, erect hairs numerous around eyes; antennae slender, 12-segmented, about 2 × as long as body, scape slender, slightly cylindrical, a little more than 2 × as long as broad, carinate basally, basal segments moderately densely clothed with short, dark, subdepressed setae, outer segments very finely pubescent, segments 3–8 slightly enlarged at apices, segment 3 as broad as and longer than scape, 4 equal to 3, 5 subequal to 4. Pronotum broader than long, sides broadly rounded; disk convex, impressed at middle near base, basal margin narrowly lobed at middle; punctures fine, sparse, irregular, transverse; each side with a slightly curved, broad, golden pubescent, longitudinal vitta, sides with numerous long, erect hairs; prosternum lightly impressed near apex, densely golden pubescent, medially glabrous. Elytra a little more than 2 × as long as broad; basal margin moderately strongly bilobed; punctures fine, sparse at base, dense along suture and between vittae; each elytron with 2 narrow, longitudinal eburneous vittae, vittae usually broadly yellowish and extending to apex, suture and disk dark vittate; pubescence rather sparse, short depressed; apices sinuate, outer angles usually strongly dentate, inner angles with small teeth. Scutellum about 1.5 × longer than broad, glabrous. Legs slender; hind femora not attaining elytral apices, sparsely punctate and pubescent; hind tibiae moderately densely clothed with fine, dark, suberect setae; tarsi black, hind pair slender, segment 1 slightly shorter than two following together. Abdomen densely pubescent, glabrous medially; last sternite narrowly subtruncate. Length, 10–18 mm.

Female.—Form similar. Antennae 11 segmented, slightly longer than body, segments subequal in diameter, eleventh appendiculate. Abdomen with last sternite broadly subtruncate. Length, 12–15 mm.

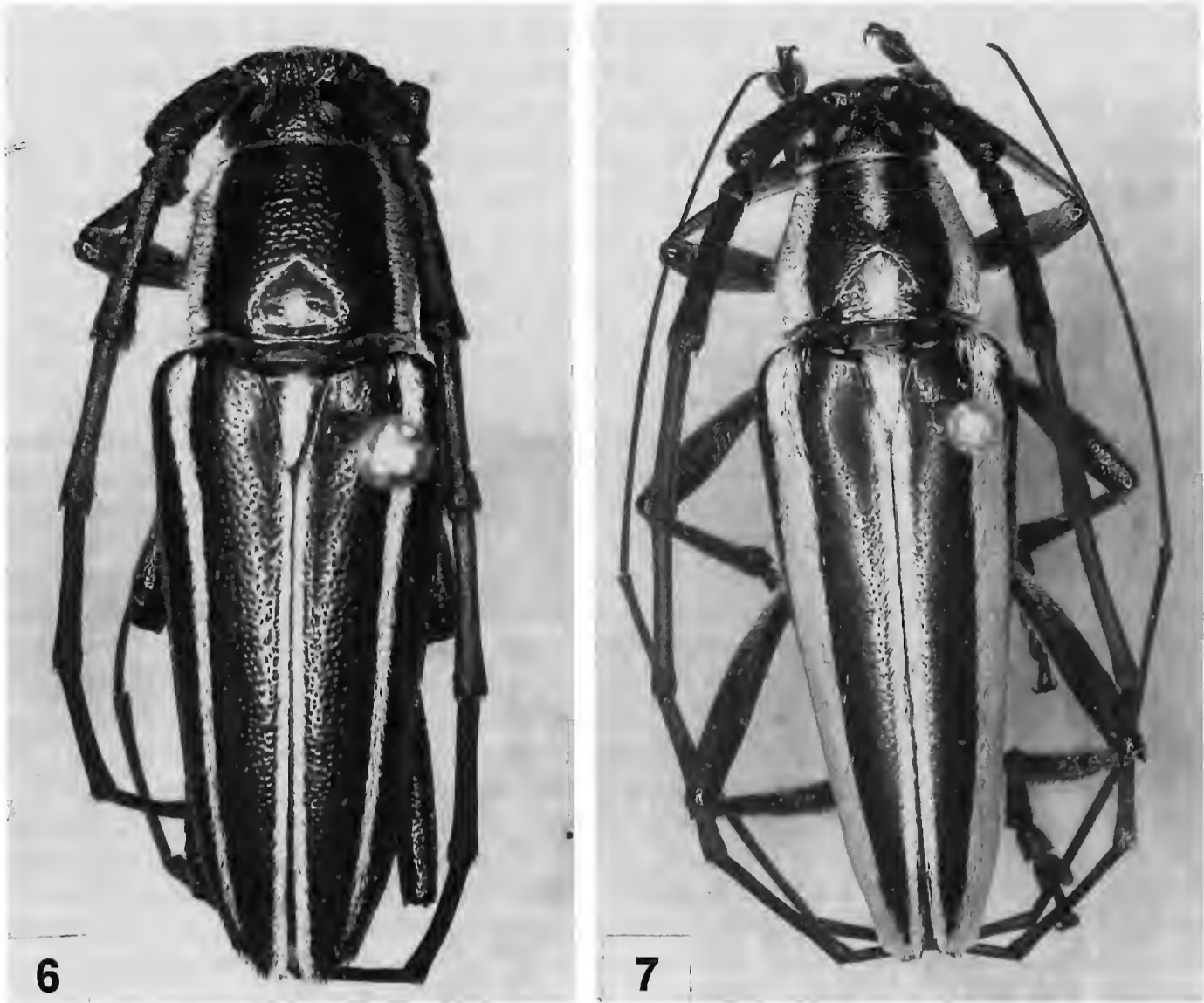
Diagnosis.—This species is distinctive by the usually strongly dentate outer angles of the elytral apices. It averages smaller in size than *S. toledo* and also differs from that species by the 12-segmented antennae of males. *S. maccartyi* also differs from *S. bivittatus* by the broader yellowish vittae of the elytra and by the shorter hind femora which do not attain the apices of the elytra.

Etymology.—We are pleased to dedicate this species to J. D. McCarty for his interest, assistance, and collecting efforts.

Remarks.—A series of 12 males, 7 females from 16 km W of Ocozocoautla, “El Aguacero”, Chiapas, Mexico, 2 Nov 1994 to 4 Mar 1995, V. H. Toledo, appear assignable to this species. These are identical in all respects to the Jalisco and Sinaloa populations except for the outer angles of the elytral apices which are only lightly dentate.

SPHAENOTHECUS FACETUS CHEMSAK AND NOGUERA, NEW SPECIES
(Pl. 6)

Types.—Holotype male: COSTA RICA. *GUANACASTE*: Santa Cruz, 28 Nov 1985; allotype: Comelco, 8 km NW of Bagaces, 10 Apr 1971, P. Opler; deposited: Essig Museum of Entomology, University of California, Berkeley. Paratypes, all



Plates 6-7. Plate 6, *Sphaenothecus facetus* NEW SPECIES; Plate 7, *S. trilineatus* Dupont.

from same Province as follow: 3 males, 5 females, Comelco, 8 km NW of Bagaces, 10 Apr 1971, 24-25 Jan 1972, 3 Feb 1972, P. Opler; 1 male, 1 female, Comelco, 4 km NW of Bagaces, Area A, on flowers of Bullthorn (*Acacia* sp.), P. Opler; 2 males, 1 female, Cañas, 5 Jan 1972, F. Cordero; 2 males, 1 female, Hacienda La Pacifica, 5 km NW of Cañas, 1-10 Jan 1974, 1 Feb 1972, G. Frankie, 17 Feb 1972; 1 male, 1 female, Santa Rosa National Park, 7-9 Dec 1979, D. H. Janzen, 2-11 Mar 1980, Janzen and Hallwachs. Two additional male paratypes from: GUATEMALA. ZACAPA: 1 male, Gualan, 22 Jan 1905, J. A. Hine; 1 female, 2 km E of Santa Cruz, 14 Jun 1991, E. Giesbert. All the paratypes deposited in EMEC except 2 specimens in EBCC and 1 in Giesbert Collection.

Male.—Form moderate sized, tapering; integument reddish-brown, antennae darker; pubescence white to creamy, appressed, forming 3 longitudinal vittae on elytra and 2 on pronotum. Head small; antennal tubercles prominent, apices acutely elevated; front short, deeply impressed; vertex linearly impressed; pubescence sparse, denser on front; antennae slender, 12-segmented, extending 5-6 segments beyond apices of elytra, scape short, about 2 × as long as broad, flattened basally dorsally and ventrally, dorsally carinate near base, segments 3-8 slightly enlarged at apices, segments 5-10 dorsally vaguely carinate, basal segments clothed with short, subdepressed, blue-black setae, segment 3 longer than 1, 4 subequal to 3, 5 longer than 4. Pronotum slightly broader than long, sides occasionally with a small lateral tubercle; base broadly impressed laterally; disk convex, impressed medially near base; punctures moderately sparse, transversely placed; pubescence sparse, each side with a broad densely pubescent longitudinal vitta, basal impression with a rounded pubescent spot, long, fine, erect hairs numerous at sides below vittae; prosternum narrowly impressed at apex, densely clothed with subdepressed pubescence; meso- and metasternum medially glabrous, sides clothed with dense, appressed

pubescence. Elytra a little more than $2 \times$ as long as broad, tapering apically; basal margin moderately sinuate; each elytron with a narrow pubescent fascia along suture and a slightly broader one on disk ending just before apex; punctures fine, well separated; apices sinuate. Scutellum narrow, elongate, densely pubescent. Legs slender; femora gradually enlarged toward apex, not extending to elytral apices, finely, moderately densely punctate, pubescence short, depressed, moderately dense; hind tibiae clothed with short, dark, subdepressed setae; hind tarsi moderately broad, segment 1 shorter than two following together. Abdomen medially glabrous, sides densely clothed with appressed pubescence; last sternite very shallowly, narrowly emarginate truncate at apex. Length, 15–22 mm.

Female.—Form similar, more robust. Antennae about as long as body. Abdomen with last sternite broadly rounded. Length, 15–22 mm.

Diagnosis.—The broad, basally flattened antennal scape immediately identifies this species. Additionally the dark reddish-brown integument and usually creamy colored pubescent vittae make it distinctive.

Etymology.—The name, *facetus*, alludes to the elegant appearance of this species.

SPHAENOTHECUS TRILINEATUS DUPONT

(Pl. 7)

Sphaenothecus trilineatus Dupont, 1838: 57, pl. 219, Fig. 3; Casey, 1912: 333; Linsley, 1935: 100; Chemsak, Linsley and Mankins, 1980: 33; Chemsak and Noguera, 1993: 64.

Sphenothecus trilineatus; White, 1853: 85; Bates, 1880: 84; 1885: 329.

Sphaenothecus tomentosus Dupont, 1838: 56, pl. 219, Fig. 1; Casey, 1912: 333.

Sphenothecus tomentosus; White, 1853: 85; Bates, 1880: 84; 1885: 328.

Sphoenotheucus tomentosus; Thomson, 1864: 205.

Sphaenothecus trilineatus V. *tomentosus*; Blackwelder, 1946: 589.

Sphaenothecus lateralis Bates, 1880: 329.

Sphaenothecus trilineatus v. *lateralis*; Blackwelder, 1946: 589.

Male.—Form moderately large, tapering; integument black; pubescence short, dense, appressed, creamy to yellowish, forming 2 longitudinal fasciae on pronotum and 3 prominent fasciae on elytra. Head small; antennal tubercles prominently elevated, apices obtuse; vertex linearly impressed, irregularly punctate; pubescence on front, above and below eyes dense, appressed; antennae slender, 12-segmented, at least $2 \times$ as long as body, scape cylindrical, slightly broader at apex, vaguely carinate basally, basal segments clothed with short subdepressed, violet-black setae, outer segments densely clothed with very short, fine, dark, appressed pubescence, segments 4–8 slightly enlarged at apices, segments 11 and 12 almost fused, segment 3 slightly narrower than scape, segment 3 longer than scape, 4 subequal to 3, 5 longer than 4. Pronotum slightly broader than long, sides broadly rounded; disk convex, impressed at middle near base; basal margin broadly arcuate, not lobed; punctures fine, rather sparse, center often with an impunctate area; each side with a broad, longitudinal, densely appressed pubescent vitta, middle often with an incomplete vitta or at least a pubescent spot on basal impression, long, erect, pale hairs numerous at sides; prosternum barely impressed, densely pubescent; meso- and metasternum densely golden pubescent, middle glabrous. Elytra a little more than $2 \times$ as long as broad; basal margin slightly arcuate, not bilobed; punctures fine, sparse; each elytron with a narrow to broad longitudinal, densely appressed pubescent fascia, sutural pair usually narrower, epipleura with a narrow pubescent fascia on basal one-half; apices sinuate truncate, angles unarmed. Scutellum longer than broad, densely pubescent. Legs slender, robust; hind femora not extending to elytral apices, rather sparsely punctate, usually with a dorsal patch of appressed pubescence at basal one-half; hind tibiae densely clothed with short, dark, subdepressed setae; hind tarsi moderately broad, first segment shorter than following two together. Abdomen densely pubescent, glabrous medially; last sternite narrow, shallowly emarginate at apex. Length, 16–25 mm.

Female.—Form similar, more robust. Antennae a little longer than body, 11-segmented, segments subserrate, 11 strongly appendiculate. Abdomen with last sternite broadly rounded at apex. Length, 15–25 mm.

Diagnosis.—The large size, black integument and pubescent fascia of the elytra distinguish this species. It differs from *S. facetus* by the dark integument and longer, non-flattened antennal scape.

Type Locality.—Of *trilineatus*, Mexico; *tomentosus*, Mexico; *lateralis*, Mexico.

Range.—Southern Texas to Veracruz, Sinaloa to Oaxaca.

Flight Period.—September to February.

Host Plants.—*Amphipterigium adstringens*, *Spondias purpurea*, *Lonchocarpus magallanesii*, *Delonix regia*, *Acacia angustissima* (Mill.) KTze., *Caesalpinia eriostachys*, *Caesalpinia platyloba* S. Wats, *Caesalpinia* sp., *Ceiba pentandra* (L.) Gaertn.

Remarks.—The width of the pubescent elytral fasciae varies considerably. Specimens from eastern Mexico tend to have the fasciae thin and cream colored. Those from western Mexico tend to have the fasciae broader and yellow.

There is at hand a single male from Brownsville, Texas, June 1925, G. Linsley, which represents the first record to the United States fauna.

Adults can be encountered on the flowers of *Acacia*, *Apoplanesia paniculata* Presl., *Caesalpinia*, *Croton*, *Leucaena*, *Lonchocarpus* and *Ipomoea*.

Material Examined.—MEXICO. CHIAPAS: 23 males, 8 females, 16 km W of Ocozocuatla, El Aguacero, 4–16 Nov 1994, 3–10 Dec 1994, 31 Jan 1995, V. H. Toledo. GUERRERO: 3 males, 2 females, 13 km NW of Iguala, 12 Sep 1982, Powell & Chemsak; 1 male, 1 female, 23 km W of Iguala, 11–16 Sep 1982, Powell & Chemsak; 9 males, 11 females, Zopilote Canyon, 8 km S of Mezcala, 17 Sep 1982, Chemsak. JALISCO: 65 males, 59 females from Estacion de Biologia Chamela as follow, 3 Jan 1983, S. H. Bullock; 12 Nov 1983, Bullock; 11 Dec 1983, Bullock; 17 Jan 1985, THA 104, host *Caesalpinia* sp., emerged 27 Jul 1985, Atkinson & Noguera; 6 Feb 1985, THA 143, host *Ceiba pentandra*, emerged 5 Jul 1985, Atkinson; 23 Feb 1985, FANM 205, host *Lonchocarpus magallanesii*, emerged 13–26 Jun 1985, 1–27 Jul 1985, 2–24 Aug 1985, 2–15 Sep 1985, Noguera; 14 Mar 1985, FANM 220, host *Caesalpinia platyloba*, emerged 5 Jul 1985, Noguera; 1 Apr 1985, Noguera; 18 Jun 1985, Noguera; 30 Sep 1985, A. Rodriguez; 25 Oct 1985, M. Sanchez; 13 Dec 85, on flowers of *Caesalpinia eriostachys*, A. Rodriguez; 2 Jul 1986, Noguera; 22 Jul 1986, AR30a, on flowers of *Acacia* sp., A. Rodriguez; 28 Aug 1986, M. Sanchez; 22 Sep 1986, FANM 410a, Noguera; 3 Oct 1986, R. A. Usela; 14/23 Oct 1986, Chemsak; 14 Nov 1986, Noguera; 7 Dec 1986, FANM 433d, on flowers of *Caesalpinia eriostachys*, Noguera; 9 Dec 1986, FANM 436, Noguera; 5 Feb 1987, FANM 464, host *Spondias purpurea*, Noguera; 9 February 1987, FANM 505, host *Spondias purpurea*, Noguera; 12 Feb 1987, FANM 510–512, host *Delonix regia*, Noguera; 18 Feb 1987, FANM 543, host *Delonix regia*, Noguera; 13 Mar 1987, FANM 570, host *Acacia angustissima*, Noguera; 13 Mar 1987, FANM 574, host *Amphipterigium adstringens*, Noguera; 25 Sep 1987, FANM 683b, on flowers of *Leucaena* sp., Noguera; 25 Sep 1987, FANM 683c, on flowers of *Apoplanesia paniculata*, Noguera; 7 Oct 1987, FANM 685b, on flowers of *Leucaena* sp., Noguera; 17 Oct 1987, Chemsak; 20–22 Oct 1987, J. Powell; 7–15 Jul 1987, Chemsak, E. & J. Linsley; 1–8 Dec 1988, Chemsak; 21 Nov 1991, E Ramirez; 2 males, Jose Maria Morelos, 13 Aug 1985, 5 Sep 1985, M. Sanchez; 5 females, Quemaro, 25 Oct 1985, Atkinson; 6 males, 3 females, 7 km NE of Melaque, 16–23 Oct 1986, Chemsak; 4 males, 2 females, 4 km N of Melaque, 27 Oct 1986, FANM 427a, Noguera; 3 males, 1 female from Careyes as follow, 17 Oct 1986, on flowers of *Lonchocarpus* sp., Noguera; 21 Dec 1992, Chemsak & Katsura; 5 females, 1 male, 8 km N of Autlan, 8 Oct 1993, Carrillo, Rodriguez & Noguera; 3 males, 1 female, El Corcovado, 12 Sep 1994, alt. 940 m, G. Nogueira; 1 female, Sayula, Isla Chica, B. espinoso, 1366 m, 13 Nov 1994, S. Gallegos. MORELOS: 3 males, 1 female, 9.6 km (6 mi) S of Amacuzac, 9 Oct 1963, Michelbacher; 1 male, 1 female, Tequesquitengo, 1 Oct 1959, E. Gonzalez; 1 female, Yautepec, 13 Jul 1963, Parker, Stange; 1 male, Cañon de Lobos, 22 Dec 1948, A. C. Smith; 1 female, Progreso, 3 Feb 1949, J. Hernandez; 2 females, Cuernavaca, 5 Nov 1989, 1700 m, A. Burgos; 24 males, 8 females, 2.5 km N, 4 km W Huatla, Estacion CEAMISH, 940 m, 18°40'.671 N 99°02'.475 W, 16 Nov 1995 to 14 Jan 1996, R. Ayala, F. A. Noguera, E. Gonzalez, E. Ramirez, A. Rodriguez; 6 males, 12 females, 2.5 km W Ajuchitlan, 950 m, 18°28'.065 N 98°59'.548 W, 17 Nov 1995 to 17 Jan 1996, R. Ayala, A. Rodriguez, A. Perez, Noguera. MICHOACAN: 1 female, Laguna

Zicuiran, 4 Nov 1992, Rodriguez & Noguera; 1 female, 6 km W of La Placita, 214 km W Playa Azul, 7 Nov 1987, R. Ayala. OAXACA: 2 males, 1 female, 36.8 km (23 mi) S of Matias Romero, 14 Aug 1963, Paker, Stange; 2 females, 6.4 km (4 mi) E of El Camaron, 13 Oct 63, A. E. Michelbacher; 1 male, 7.2 km (4.5 mi) E of Tehuantepec, 13 Sep 1959, Cantrall, Cohn; 2 females, 12.8 km (8 mi) NW of Tutla, 6 Oct 1975, Chemsak; 1 female, 15 km S of Rio Grande, 24 Oct 1989, Noguera & Rodriguez; 5 females, 2.5 km NE of Puerto Angel, 27 Oct 1989, Noguera & Rodriguez. PUEBLA: 2 males, 9.6 km (6 mi) SE of Acatlan, 8 Oct 1975, Chemsak; 1 female, 9.6 km (6 mi) S of Zapotitlan, 6 Oct 1975, Chemsak. SINALOA: 2 males, Elota, 29 Aug 1960, Westcott; 2 males, 3 females, Guamuchil, 27 Oct 1965, G. E. & A. S. Bohart; 2 females, 1.6 km (1 mi) SE of Mazatlan, 25 Dec 1968, D. L. Briggs. VERACRUZ: 1 female, 43.2 km (27 mi) E of Jalapa, 31 Oct 1973, Williams, Mullinex.

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