

NEW SPECIES AND NEW RECORDS OF *SIBINIA*
GERMAR (COLEOPTERA: CURCULIONIDAE)
FROM PANAMA

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ABSTRACT

Two new species of the curculionid genus *Sibinia* from Panama, *S. stockwelli* and *S. guaymi*, are described. The former may have *Inga edulis* Mart. as host; the host of the latter is unknown. *Sibinia altensis* Clark and *S. peruana* Pierce are reported for the first time from Panama. Distinguishing characters of *S. altensis*, previously known only from the male holotype from Guatemala, are also given. Relationships of the new species and their position in a previously proposed phylogeny of the genus *Sibinia* are discussed.

INTRODUCTION

Members of the curculionid genus *Sibinia* Germar occur throughout much of the Nearctic, Neotropical, Palearctic, and Ethiopian faunal regions. In my recent monograph of the genus (Clark 1978), I recognized 133 species of New World *Sibinia*. Six species, *S. fastigiata* Clark, *S. aurifera* Clark, *S. calvata* Clark, *S. robusta* Clark, *S. rotundata* Champion, and *S. tropidorhyncha* Clark, were reported to occur in Panama. All but *S. fastigiata* were and still are known only from Panama. Recently, specimens of six species of *Sibinia* collected in Panama during July of 1976 became available for study. These include specimens of *S. altensis* Clark and *S. peruana* Pierce, not previously known to occur in Panama, and specimens of two new species, described for the first time herein. This brings to ten the number of species of *Sibinia* known to occur in Panama.

Most Neotropical *Sibinia*, including the known Panamanian species, belong to the subgenus *Microtychius*. Apparently, all members of this strictly New World group have hosts in the legume subfamily Mimosoideae (Clark 1978). Larvae of some *Microtychius* develop in seeds, others in flower buds of their mimosoid hosts. I examined thirteen of the 95 species of Mimosoideae known to occur in Panama (Scherry 1950) during July, 1976. *Sibinia* specimens (*S. peruana*) were found in association with only one of these, *Mimosa pigra* L. One of the new species is suspected to have been associated with *Inga edulis* Mart., but specimens were not actually found on the plant. Weevils were not found on at least three other species of *Inga*, nor were they found on *Acacia angustissima* (Mill.) Ktze., *Mimosa somnians* Humb. & Bonpl. ex Willd., *M. pudica* L., *M. albida* Humb. & Bonpl. ex Willd., *Pithecellobium longifolia* (H. & B.) Standl., *P. rufescens* (Benth.) Pittier, *P. oblongum* Benth. in Hook., and *Prosopis juliflora* (Sw.) DC.

I thank Dr. Thomas Croat of the Missouri Botanical Garden who identified mimosoids and other plants I collected in Panama, and Dr. Henry P. Stockwell of Ancon, Canal Zone, who took or directed me to productive

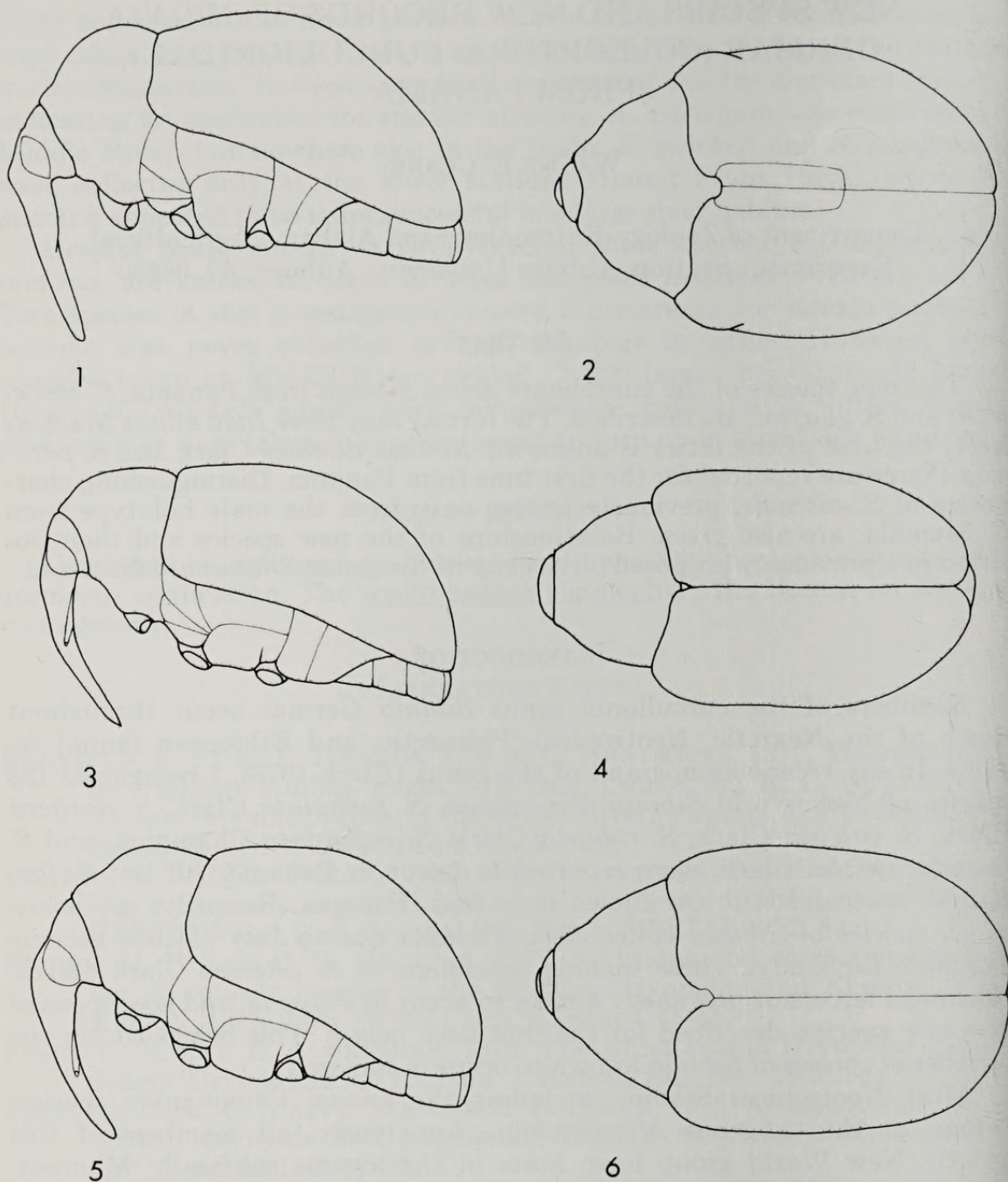


Fig. 1-2, *Sibinia stockwelli*, n.sp., female allotype, (1) lateral view; (2) dorsal view. Figs. 3-4, *S. guaymi*, n.sp., female holotype, (3) lateral view; (4) dorsal view. Figs. 5-6, *S. altensis* Clark, female, Cerro Campana, Panama; (5) lateral view; (6) dorsal view.

collecting sites. I also thank the staff of the Smithsonian Tropical Research Institute for courtesies extended to me during my visit to the Canal Zone. Partial funding for the trip came from the Smithsonian Institution's Office of Academic Studies, the balance from the American Philosophical Society, Penrose Fund.

NEW SPECIES

Sibinia (Microtychius) guaymi Clark, **new species**
(figs. 3, 4, 9, 12)

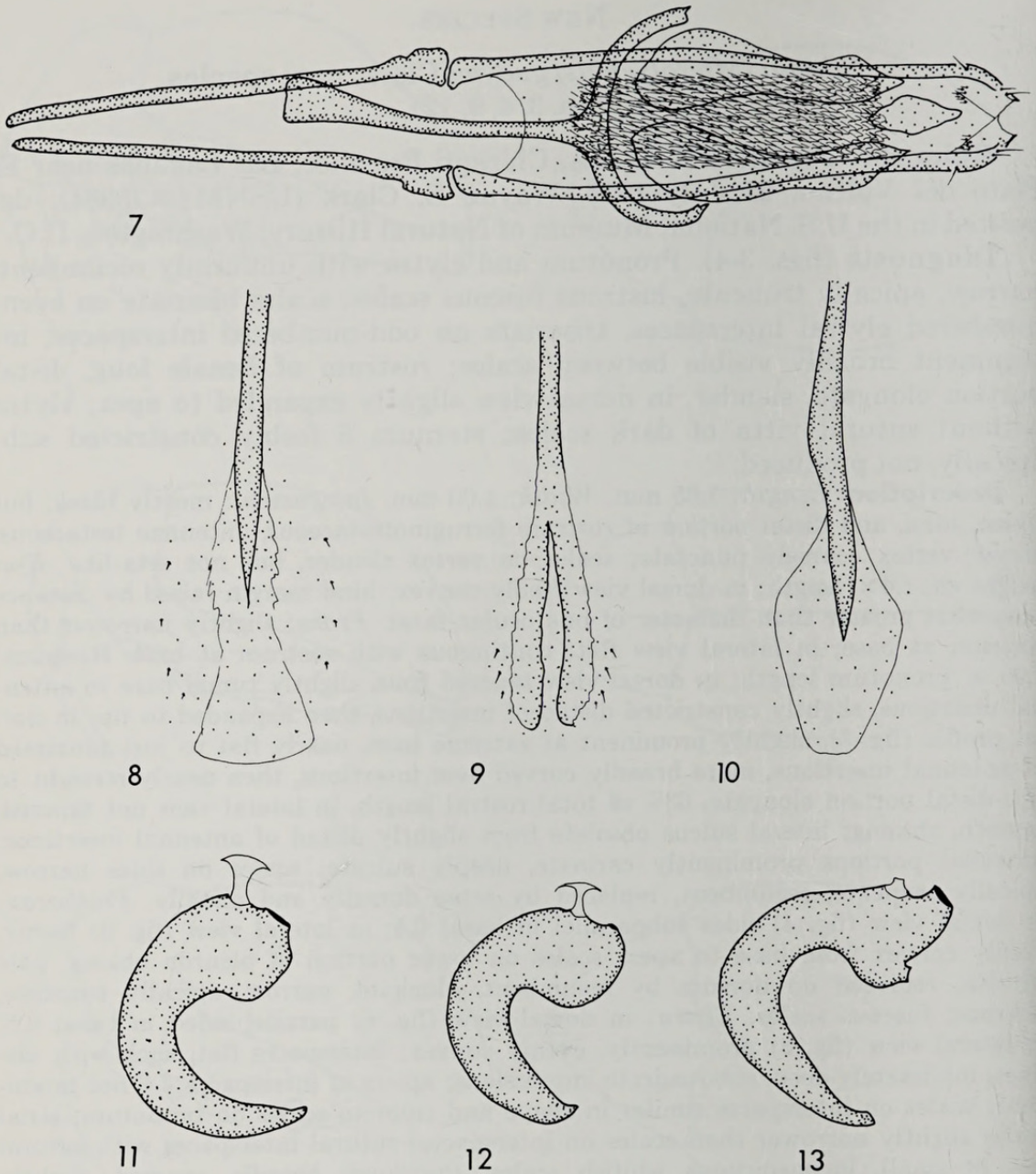
Holotype. Female: PANAMA, Chiriqui Province, Las Lagunas near El Hato del Volcan, 22 July 1976, Wayne E. Clark (USNM #75964); deposited in the U.S. National Museum of Natural History, Washington, D.C.

Diagnosis (figs. 3-4). Pronotum and elytra with uniformly recumbent, narrow, apically truncate, lustrous fuscous scales; scales biseriate on even-numbered elytral interspaces, triseriate on odd-numbered interspaces; integument broadly visible between scales; rostrum of female long, distal portion elongate, slender, in dorsal view slightly expanded to apex; elytra without sutural vitta of dark scales; sternum 5 feebly constricted subapically, not produced.

Description. *Length:* 1.85 mm. *Width:* 1.00 mm. *Integument:* mostly black, but tibiae, tarsi, and distal portion of rostrum ferruginotestaceous, antennae testaceous. *Head:* vertex coarsely punctate; scales on vertex slender, but not seta-like. *Eye:* height ca. $1.4 \times$ length; in dorsal view feebly convex; hind margin raised by distance somewhat greater than diameter of one ocular facet. *Frons:* slightly narrower than rostrum at base; in lateral view flat; continuous with rostrum at base. *Rostrum:* $1.00 \times$ pronotum length; in dorsal view tapered from slightly tumid base to antennal insertions, slightly constricted distad of insertions, then expanded to tip; in dorsal profile (fig. 3), slightly prominent at extreme base, nearly flat to just proximad of antennal insertions, more broadly curved over insertions, then nearly straight to tip; distal portion elongate, 63% of total rostral length, in lateral view not tapered, smooth, shining; lateral sulcus obsolete from slightly distad of antennal insertions; proximal portions prominently carinate, deeply sulcate; scales on sides narrow, apically truncate, recumbent, replaced by setae dorsally and distally. *Prothorax:* in dorsal view (fig. 4) sides subparallel in basal 0.5; in lateral view (fig. 3) feebly, evenly convex from base to apex; scales on lower portion of pleuron oblong, pale whitish, replaced on dorsum by recumbent, elongate, narrow, apically truncate, lustrous, fuscous scales. *Elytra:* in dorsal view (fig. 6) parallel sided in basal 0.5; in lateral view (fig. 3) prominently, evenly convex; interspaces flat, each with distinct, moderately-deep, subquadrate impressions; apices of interspaces 4-6 not prominent; scales on interspaces similar in shape and color to scales on pronotum; striae slightly narrower than scales on interspaces; sutural interspaces with sutural row of small, inconspicuous whitish scales. *Pygidium:* broadly exposed, slightly convex, rounded apically, perpendicular to long axis of body. *Abdomen:* sterna 3-5 feebly convex medially; sternum 5 feebly constricted subapically, postero-medial portion of segment slightly prominent, not produced, posterior margin straight. *Femora:* narrow at base; profemur stout, moderately inflated, meso- and metafemora less strongly inflated. *Tibiae:* each with moderately large acute horizontal apical mucro; metabital mucro slightly shorter. *Spiculum Ventrals:* (fig. 9). *Spermatheca:* (fig. 12).

Remarks: A relatively small *Microtychius*, *S. guaymi* is probably a bud predator. It is known only from the female holotype. Its host is unknown.

In the key to North and Central American *Sibinia* (Clark 1978), *S. guaymi* traces to *S. aurifera*, if the statement in couplet 62 about the distal portion of the female rostrum is ignored. It is distinguished from *S. aurifera* by its darker scales and integument, less strongly raised eyes, more robust form and convex elytra, and much longer distal portion of the female rostrum. It closely resembles and appears to be closely allied to the Pana-



Figs. 7-8, *Sibinia stockwelli*, n.sp., (7) male genitalia, ventral view; (8) spiculum ventrali. Figs. 9-13, (9) *S. guaymi*, n.sp., spiculum ventrale; (10) *S. altensis* Clark, spiculum ventrali; (11) *S. stockwelli*, spermatheca; (12) *S. guaymi*, spermatheca; (13) *S. altensis*, spermatheca.

manian *S. calvata* and *S. barberi* of Guatemala. Unlike *S. guaymi*, these have a sutural vitta of dark scales on the elytra. *S. guaymi* also has somewhat more convex, less distinctly raised eyes than these probable bud predators.

The name Guaymi is that of one of Panama's native Indian tribes.

Sibinia (Microtychius) stockwelli Clark, **new species**
(Figs. 1, 2, 7, 8, 11)

Holotype. Male: PANAMA, Panama Province, Cerro Campana, 18

July 1976, Wayne E. Clark (USNM #75963); deposited in the U. S. National Museum of Natural History, Washington, D. C.

Allotype. Female, same label data as holotype; also deposited in the U. S. National Museum.

Paratypes. Six males, four females, same label data as holotype; deposited in the U. S. National Museum, W. E. Clark, and H. Stockwell collections.

Diagnosis (Figs. 1-2). Frons narrow, ca. $0.5\times$ width of base of rostrum; pronotum and elytra with white scales, fulvous scales, and fuscous to black scales; light fuscous scales sparsely intermixed among fulvous scales; darker fuscous to black scales forming prominent mediobasal sutural patch on elytra; odd numbered elytral interspaces with sparse, elongate oval white scales; eye convex, hind margin slightly raised; anterodorsal margin of pronotum broadly concave; rostrum tumescent at extreme base in male and in female, in lateral view abruptly separated from frons.

Description. *Length:* male 2.95-3.00 (2.98) mm; female 2.90-3.10 (3.00) mm. *Width:* male 1.85-2.00 (1.93) mm; female 1.85-1.95 (1.90) mm. *Integument:* mostly piceous to black, but tibiae and distal portion of rostrum rufopiceous, tarsi and antennae rufous. *Head:* scales on vertex small, narrow, fulvous. *Eye:* height ca. $1.6\times$ length; in dorsal view convex; hind margin raised by distance ca. equal to diameter of 1 ocular facet. *Frons:* in lateral view feebly curved; somewhat narrower than rostrum at base. *Rostrum:* male $0.91\text{--}1.03$ (0.97) \times , female $1.00\text{--}1.10$ (1.06) \times pronotum length; in dorsal view tapered from base to antennal insertions; sides of distal portion sub-parallel in male and female; in profile tumescent at extreme base, dorsal margin broadly, evenly curved distad of tumescence to tip in male, nearly straight to tip in female; distal portion in male moderately long, 39-42 (41%) of total rostral length, stout, not tapered in lateral view, lateral sulcus distinct in proximal 0.66; in female (Fig. 1), distal portion longer, 45-48 (46%) of total rostral length, slender, not tapered, lateral sulcus limited to proximal 0.25; scales on sides elongate, moderately broad, parallel sided, apically truncate, fulvous, limited to basal 0.25 in male, even more basally limited in female; broad scales replaced distally and on dorsum by narrower scales or setae. *Prothorax:* in dorsal view (Fig. 2) sides broadly, evenly curved from base to distinct subapical constriction; in lateral view (Fig. 1) prominently convex posteriorly, subapical constriction feebly developed on dorsum; scales on pronotum elongate, uniformly recumbent; elongate oval, apically-rounded white scales interspersed among narrower, more elongate, blunt apically-rounded fulvous scales, and narrower, feebly striate, apically truncate fuscous scales (the latter very sparse); pleuron with oblong, flat, pale fulvous scales which are interspersed among elongate scales on upper portion. *Elytra:* in dorsal view (Fig. 2) humeri not prominent, sides broadly, feebly curved in basal 0.66; in lateral view (Fig. 1) strongly convex, especially in basal 0.66; interspaces broad, flat, deeply, discretely impressed; odd-numbered interspaces feebly raised, distinctly narrower than even-numbered ones, striae distinct but shallowly impressed; apices of interspaces 4-6 feebly prominent; scales in 5 to 6 irregular rows on each even-numbered interspace, in 3 to 4 rows on odd-numbered interspaces, more dense on sutural interspaces; prominent oval white scales sparse on odd-numbered interspaces among narrow, recumbent, fulvous scales and sparser, slightly narrower, pale fulvous scales; sutural interspaces with prominent mediodorsal vitta of dense, fuscous to black scales; striae slightly but distinctly narrower than scales on interspaces. *Pygidium:* small, narrowly exposed, in male distinctly convex, with narrow, evenly-rounded apex, perpendicular to long axis of body; in female, pygidium narrower, more acutely rounded apically, basal portion of exposed portion distinctly concave. *Abdomen:* in male, sterna 3-4 shallowly, sternum 5 slightly more deeply concave medially; scales on concave portions of sterna unmodified; sternum

5 not constricted subapically, posterior margin of segment shallowly, subquadrate emarginate; in female, sterna 3-4 shallowly concave, sternum 5 more deeply concave; posteromedian portion of sternum 5 prominent, distinctly produced posteriorly, posterior margin nearly straight. *Femora*: stout, broad at base; feebly channeled ventrally in distal 0.66. *Tibiae*: each with short, acute, horizontal apical mucro; metatibial mucro minute. *Male Genitalia*: (Fig. 7). *Spiculum Ventrale*: (Fig. 8). *Spermatheca*: (Fig. 11).

Remarks. A relatively large *Microtychius*, *S. stockwelli* is probably a seed predator. It traces to *S. rotundata* Champion, in the key to North and Central American *Sibinia* (Clark 1978), but is distinguished from that species by its larger size; convex, feebly-raised eyes; tumescent basal portion of the somewhat longer, more slender rostrum; sparse fuscous scales on the pronotum and elytra; prominent mediobasal sutural patch of fuscous scales on the sutural interspaces; and produced apical portion of sternum 5 of the female abdomen. The male and female genitalia of the 2 species are similar, but in *S. stockwelli* (Fig. 7) the distal portion of the median lobe is more slender, and the apical setae are much shorter (cf. Clark 1978, Fig. 119).

The type-series of *S. stockwelli* was taken by beating bamboo plants growing at the foot of a large *Inga edulis*, possibly the host. The *Inga* was not in bloom, however, and the foliage could not be reached from the ground. Numerous fruits which had fallen from the tree were found on the ground beneath the tree and around the bamboo, but no *Sibinia* larvae were found in them.

This species is named in honor of Dr. Henry P. Stockwell.

NEW LOCALITY RECORDS

Sibinia (Microtychius) altensis Clark

This species (probably a seed predator), previously known only from the male holotype from Trece Aguas, Alta Verapaz, Guatemala (Clark 1978:186), is now represented by two additional specimens, a male and a female, collected July 16, 1976 at Cerro Campana, Panama Province, Panama (specimens in the U.S. National Museum of Natural History). The host plant remains unknown. The specimens were collected a few meters from the spot where a specimen of the closely related *S. tropidorhyncha* was collected on the same day.

The Panamanian *S. altensis* specimens differ slightly from the holotype. They are larger (male 2.60 mm, female 2.65 mm in length; male 1.60 mm, female 1.55 mm in width); the eye is less prominently raised and more convex; the dorsomedian rostral carina is well developed; the pronotum is evenly convex in anterior view; the fulvous, ferruginous, and fuscous scales on the pronotum and elytra are more distinctly differentiated; and ova with white scales are lacking. Features which characterize the previously unknown female (Figs. 5-6) are: rostrum (Fig. 5), distinctly tapered from base to tip in dorsal view, prominently rounded at extreme base and feebly curved just distad of base to tip in dorsal profile; length of rostrum 0.93 × pronotum length; distal portion of rostrum relatively long, 41% of total rostral length; sternum 5 flat medially, posterior margin of segment straight; spiculum ventrale (Fig. 10); spermatheca (Fig. 13).

Sibinia (Microtychius) tropidorhyncha Clark

This seed predator was previously known only from the male holotype and female allotype from Cerro Campana, Panama Province, Panama (Clark 1978:184). A single male (in U.S. National Museum) was taken at the same locality on July 16, 1976. The host plant remains unknown.

Sibinia (Microtychius) peruana Pierce

Two specimens (in U.S. National Museum) were taken on *Mimosa pigra*, the known host, 87 km E David, Chiriqui Province, and five additional specimens (also in the U.S. National Museum) were taken on the same plant at 1 km E Bejuco, Panama Province. The probable bud predator was previously known from Mexico, Guatemala, Honduras, Costa Rica, Peru, Paraguay, Brazil, and Argentina (Clark 1978).

Sibinia (Microtychius) aurifera Clark

Previously known from El Cermeno, Canal Zone (Clark 1978:193), this bud predator is now known from a male (in the U.S. National Museum) from 5 mi. NW Gamboa, Canal Zone. It was taken by fogging the canopy with malathion on October 24, 1975, by H. P. Stockwell. Its host remains undetermined.

EVOLUTIONARY CONSIDERATIONS

The new Panamanian species, *S. stockwelli* and *S. guaymi*, may be assigned, the first with greater confidence, to the *rotundata-suturalis* stock. This paraphyletic group of bud predators and seed predators is discussed by Clark (1978:332-333, Fig. 444). The group contains *S. rotundata*, *S. calvata*, *S. tropidorhyncha*, and *S. aurifera*, all previously known from Panama, *S. altensis*, newly recorded from Panama and known previously only from Guatemala, and 10 additional species from North, Central, and South America. Known hosts of the weevils, species of the mimosoid genera *Caliandra* and *Lysiloma*, belong to the mimosoid tribe Ingaeae. If the suspected association of *S. stockwelli* with *Inga edulis* (also Ingaeae) is correct, the hypothesis of an ancestral association of the stock with the Ingaeae is strengthened. Relationships of the species within the stock are poorly known because very few good apotypic character states are known. In fact, most of the hypothesized relationships assume loss of the so-called "Itychus characters", plesiotypic features which characterize a paraphyletic group called the "Itychus stock" (see Clark 1978:325).

Like *S. rotundata*, *S. stockwelli* retains several "Itychus characters", including the strongly convex pronotum and elytra, prominently raised, flattened eyes, and the dorsal emargination and lateral expansion of the anterior margin of the pronotum. A sister-group relationship between *S. rotundata* and *S. stockwelli* is inferred on the basis of overall similarity and shared possession of a prominent patch of dark scales on the sutural interspaces.

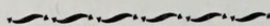
As indicated in the discussion of the species, *S. guaymi* closely resembles *S. calvata* and *S. barberi*. However, since the male of *S. guaymi* is unknown and all three of these species are probable bud predators, it is difficult to propose a more precise hypothesis of relationships between the species. In

Sibinia, but predators have reduced or simplified structural features (Clark 1978:327).

The spermatheca of *S. altensis* (Fig. 13) has what appears to be a double spermathecal duct like that of *S. hispaniolae* Clark (see Clark 1978: Fig. 307). There is no other indication of relationship between these two species, however, and no change in the hypothesized relationship of *S. altensis* to the other members of the *rotundata-suturalis* stock is proposed.

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BOOK REVIEW

Classification of the Coleoptera of North America, by J. L. LeConte and G. H. Horn. 1883 (A 1978 reprint of Smithsonian Miscellaneous Collections, 507, which appeared in 1883). Arno Press Inc., A New York Times Company, Three Park Avenue, New York, NY 10016. Hardbound, 567p., \$35.00.

Coleopterists owe a debt of gratitude to Arno Press Inc. for reprinting this venerable classic which was originally published by the Smithsonian Institution almost a century ago. Long out of print, it is now available to those who may simply want it to be a part of their library and also to those workers who still find it useful in their research. According to Arnold Mallis . . . "LeConte is indeed our greatest coleopterist, not because he named almost five thousand species of beetles, but because he showed their systematic relationships and pointed the way to the scientific classification of American insects." One need only refer to the literature citations in *The Coleopterists Bulletin* issued during 1977 and 1978 to find that the 19th Century publications of LeConte and of Horn are of importance to current coleopterists. The pages are of good quality, the binding is sturdy, and the cover is attractive. Students of coleopterology would do a service to their field of science by advising their libraries to obtain copies of this excellent reprint while it is available.

—P.P.S.



Clark, Wayne E. 1979. "New Species and New Records of Sibiria Germar (Coleoptera: Curculionidae) from Panama." *The Coleopterists' Bulletin* 33(2), 209–216.

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