

NEW SYNONYMY AND NEW SPECIES OF AMERICAN BARK BEETLES (COLEOPTERA: SCOLYTIDAE), PART IV¹

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ABSTRACT.— New synonymy is proposed as follows: *Pityophthorus* Eichhoff (= *Pityophthoroides* Blackman), *Scolytodes* Ferrari (= *Ctenophorus* Chapuis), *Araptus pallidus* (Blackman), n. comb. (? = *Neodryocoetes portoricensis* Schedl, *Neodryocoetes devius* Schedl), *Corthylus letzneri* (Ferrari) (= *Corthylus strigilatus* Eggers, *Corthylus columbianus* Schedl, *Corthylus ater* Schedl), *Corthylus spinifer* Schwarz (= *Corthylus guayanensis* Eggers), *Hypothenemus brunneus* (Hopkins) (= *Hypothenemus cryphalomorphus* Schedl, *Stephanoderes bituberculatus* Eggers), *Monarthrum parvum* (Eggers) (= *Monarthrum praeclarum* Wood), *Phloeoborus punctatorugosus* Chapuis (= *Phloeoborus brevisculus* Chapuis), *Phloeotribus pilula* Erichson (= *Phloeotribus australis* Schedl), *Phloeotribus setulosus* Eichhoff (*Phloeotribus dubius* Eichhoff, *Phloeotribus spinipennis* Eggers), *Pityophthorus pulicarius* (Zimmermann) (= *Pityophthorus cubensis* Schedl), *Pityophthorus subsimilis* Schedl (= *Pityophthorus subimpresus* Bright), *Premnobius cavipennis* Eichhoff (= *Premnobius latior* Eggers), *Scolytus propiguus* Blandford (= *Scolytus penicillus* Schedl), *Xyleborus dryographus* (Ratzeburg) (= *Xyleborus linearis* Schedl), *Xyleborus horridus* Eichhoff (= *Xyleborus flohri* Schedl). *Xyleborus tonsus* (Hagedorn), n. comb., was transferred to *Xyleborus* from *Dryocoetes*. *Pityophthorus aquilus* Blackman and *Pityophthorus cascoensis* Blackman, n. status, were removed from synonymy. *Scolytodes chapuisi*, n. n., is proposed for *Scolytodes* (= *Ctenophorus*) *laevigatus* Chapuis, 1869 (nec Ferrari 1867). The following species are named as new to science: *Araptus crassus* (Panama), *A. obesus* (Brazil), *Cnesinus prominulus* (Mexico), *Conophthorus conicolens* (Mexico), *Microcorthylus vicinus* (Mexico), *Pityophthorus alnicolens* (Mexico), *P. assitus* (Mexico), *P. concinnus* (Mexico), *P. indigens* (Colorado), *P. leechi* (California), *P. solatus* (Mexico), *P. speciosus* (Mexico), *Pseudopityophthorus denticulus* (Texas), *Pseudothysanoes securus* (Mexico), *P. turnbowi* (Texas), *Pycnarthrum fulgidum* (Colombia), *Scolytodes fulmineus* (Venezuela), *S. radiatus* (Costa Rica), *Xyleborinus tribuloides* (Mexico), *Xyleborus devexus* (Florida, Puerto Rico), and *X. lateceps* (Venezuela).

On the following pages several newly discovered cases of synonymy and of species new to science are presented for American Scolytidae. The 21 species new to science represent the genera *Cnesinus* (1), *Pycnarthrum* (1), *Scolytodes* (2), *Pseudothysanoes* (2), *Xyleborus* (2), *Xyleborinus* (1), *Pseudopityophthorus* (1), *Araptus* (2), *Microcorthylus* (1), *Conophthorus* (1), and *Pityophthorus* (7), and they are from the following countries: United States (5, including one which also occurs in Puerto Rico), Mexico (10), Costa Rica (1), Panama (1), Columbia (1), Venezuela (2), and Brazil (1).

NEW SYNONYMY

Pityophthorus Eichhoff

Pityophthorus Eichhoff, 1864, Berliner Ent. Zeitschr. 8:39 (Type-species: *Bostrichus lichtensteini* Ratzeburg, subsequent designation by Hopkins, 1914, Proc. U. S. Nat. Mus. 48:127).
Pityophthoroides Blackman, 1942, Proc. U. S. Nat. Mus.

92:199 (Type-species: *Pityophthoroides pudens* Blackman, original designation). *New synonymy*

In a review of the North and Central American *Pityophthorus* and allied genera, Blackman's *Pityophthoroides pudens* was placed in the genus *Pityophthorus* following a study of the type series. The characters on which *Pityophthoroides* was based intergrade completely with those of *Pityophthorus*. Blackman's name, therefore, must be placed in synonymy.

Scolytodes Ferrari

Scolytodes Ferrari, 1867, Die Forst- und Baumzuchtsschädlichen Borkenkäfer, p. 77 (Type-species: *Scolytodes laevigatus* Ferrari, Monobasic)
Ctenophorus Chapuis, 1869, Synopsis des Scolytides, p. 49 (Type-species: *Ctenophorus laevigatus* Chapuis, monobasic). *New synonymy*

Each type series of *Scolytodes laevigatus* Ferrari and *Ctenophorus laevigatus* Chapuis consists of two males, all four of which were

¹Part of this research was sponsored by the National Science Foundation.

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examined. It is clear that they are congeneric, but that they represent different species. Since this generic synonymy creates homonymy, Chapuis's species is renamed below.

Araptus pallidus (Blackman), n. comb.

Neodryocoetes pallidus Blackman, 1942, Proc. U.S. Nat. Mus. 92(3147):103 (Holotype, male; Cayamas, Cuba; U.S. Nat. Mus.)

Neodryocoetes portoricensis Schedl, 1951, Dusenía 2:109 (Holotype, male; Portorico; Schedl Coll.). *Probable synonymy*

Neodryocoetes devius Schedl, 1972, Koleopt. Rundschau 50:61 (Holotype, male; Valle Ancón, Pinar del Río, Cuba; Schedl Coll.). *Probable synonymy*

The male holotypes of *Neodryocoetes pallidus* Blackman, *portoricensis* Schedl, and *devius* Schedl were all examined at different times and compared to my series of closely allied *Araptus tenellus* (Schedl). All are 1.7 mm in length, of pale color, and fit the same descriptive notes. Although they have not been compared directly to authentic material, there is a strong possibility of synonymy.

Corthylus letzneri (Ferrari)

Pseudocorthylus letzneri Ferrari, 1867, Die Forst- und Baumzuchtschädlichen Borkenkäfer, p. 59 (Syn-type, male; Venezuela, apparently from Colonia Tovar; Vienna Museum).

Corthylus strigilatus Eggers, 1933, Trav. Lab. d'Ent. Mus. Nat. d'Hist. Nat., Paris, Mem. 1:20 (Holotype, male; Colonia Tovar, Venezuela; Paris Mus.). *New synonymy*

Corthylus columbianus Schedl, 1950 (nec. Hopkins, 1894), Dusenía 1:158 (Holotype, female; Comatán, Colombia; Schedl Coll.). *New synonymy*

Corthylus ater Schedl, 1952, Dusenía 3:345 (Replacement name for *columbianus* Schedl). *New synonymy*

A male syntype of *Pseudocorthylus letzneri* Ferrari, the male holotype of *Corthylus strigilatus* Eggers, and the female holotype of *Corthylus columbianus* Schedl were all compared directly to my series from Merida and Rancho Grande (Aragua), Venezuela. All clearly represent the same species.

Corthylus spinifer Schwarz

Corthylus spinifer Schwarz, 1891, Proc. Ent. Soc.

Washington 2:114 (Syntypes, females; Key West, Florida; U.S. Nat. Mus.)

Corthylus guayanensis Eggers, 1933, Trav. Lab. d'Ent. Mus. Nat. d'Hist. Nat. Paris, Mem. 1:22 (Syntype, male; Camopi, Franz. Guayana; Paris Mus.). *New synonymy*

The male type and female cotype of *Corthylus guayanensis* Eggers from Camopi were compared to my series from Florida, Central America, and Venezuela, some of which were compared to the syntypes of *spinifer* Schwarz. All represent the same common species.

Hypothenemus brunneus (Hopkins)

Stephanoderes brunneus Hopkins, 1915, U.S. Dept. Agric. Rept. 99:31 (Holotype, female; Brownsville, Texas; U.S. Nat. Mus.)

Hypothenemus cryphalomorphus Schedl, 1939, Proc. Roy. Ent. Soc. London 8(1):14 (Holotype, female; Trinidad, British West Indies; British Mus. Nat. Hist.). *New synonymy*

Stephanoderes bituberculatus Eggers, 1940, Arb. Morph. Taxon. Ent. Berlin 7:126 (Holotype, female; Env. de Trois-Rivières, Guadeloupe; Paris Mus.). *New synonymy*

The female holotypes of *Stephanoderes brunneus* Hopkins, *Hypothenemus cryphalomorphus* Schedl, and *Stephanoderes bituberculatus* Eggers were compared directly to my long series from Florida, Texas, and Mexico. Since only one species is represented, the names *cryphalomorphus* and *bituberculatus* must be placed in synonymy.

Monarthrum parvum (Eggers)

Anchonocerus parvus Eggers, 1933, Trav. Lab. d'Ent. Mus. Nat. d'Hist. Nat., Paris Mem. 1:22 (Holotype, male; Nouveau Chantier, Guyane Française; Paris Mus.)

Monarthrum praeclarum Wood, 1968, Great Basin Nat. 28:6 (Holotype, male; Manaka, British Guiana; British Mus. Nat. Hist.). *New synonymy*

Because my concept of *Anchonocerus* was quite different from that of Eggers, I overlooked the possibility that any of his species in that genus might be allied to my *Monarthrum praeclarum*. The male holotype of *parvus* was directly compared to my male paratype of *praeclarum*. They are identical.

Phloeoborus punctatorugosus Chapuis

Phloeoborus punctatorugosus Chapuis, 1869, Synopsis

des Scolytides, p. 14 (Holotype, male Nouvelle Grenade; Mus. Roy. Nat. Belge)

Phloeoborus brevisculus Chapuis, 1869, Synopsis des Scolytides, p. 14 (Holotype, male; Cayenne; Brussels Mus.). *New synonymy*

The male holotypes of *Phloeoborus punctatorugosus* Chapuis and *brevisculus* Chapuis were directly compared to my series. Except for size they are identical. The name *punctatorugosus* is more widely known in the literature and is retained for this species.

Phloeotribus pilula Erichson

Phloeotribus pilula Erichson, 1847, Archiv Naturgesch. 13(1):138 (Lectotype, male; Peru; Zool. Mus. Berlin, designated by Wood, 1973, Great Basin Nat. 33:181)

Phloeotribus australis Schedl, 1953, Mem. Queensland Mus. 13:80 (Holotype, male; Queensland, Australia; Schedl Coll.). *New synonymy*

Phloeotribus australis Schedl is based on a unique male that is labeled "Queensland." Since this is the only reported member of this genus from Australia, and because the original description and accompanying illustration suggest a South American and not an oriental affinity, the type of this species was of unusual interest from zoogeographical and phylogenetic points of view. The holotype is identical in every respect to specimens compared by me to the lectotype of *pilula* Erichson. This species is widely distributed in Central and South America in *Brosimum*. The Schedl specimen was apparently intercepted in Australia or was mislabeled.

Phloeotribus setulosus Eichhoff

Phloeotribus setulosus Eichhoff, 1868, Berliner Ent. Zeitschr. 12:149 (Lectotype, male; Colombia; Brussels Mus., designated by Wood, 1973, Great Basin Nat. 33:182)

Phloeotribus dubuis Eichhoff, 1868, Berliner Ent. Zeitschr. 12:150 (Holotype?, male; Columbia; Berlin Mus.). *New synonymy*

Phloeotribus spinipennis Eggers, 1930, Ent. Blätt. 26:168 (Holotype, male; Columbia, Moritz; Berlin Mus.). *New synonymy*

The male holotypes of *Phloeotribus dubuis* Eichhoff and *spinipennis* Eggers were compared directly to one another and to my material that had previously been

compared to the lectotype of *setulosus* Eichhoff. Except for the pale, callow color of the type of *dubuis*, they are identical. For this reason the names *dubuis* and *spinipennis* must be placed in synonymy.

Pityophthorus aquilus Blackman, n. status

Pityophthorus aquilus Blackman, 1928, New York St. Coll. For., Syracuse, Tech. Pub. 25:33 (Holotype, female; Kaibab National Forest, Arizona; U.S. Nat. Mus.)

Bright (1977, Canadian Ent. 109:514) placed in synonymy under *Pityophthorus carinulatus* Swaine, 1925, the names *aquilus* Blackman, 1928, *caelator* Blackman, 1928, *opimus* Blackman, 1928, and *aristatae* Bright, 1964. A review of the holotypes of all of these names plus an additional 442 specimens of these taxa, indicates that two species are represented. *Pityophthorus carinulatus* (= *opimus*) is larger (2.0–2.5 mm) and it has the pronotum and male head reticulate. The sulcus on the elytral declivity is wider, not as deep, with the tubercles on interstriae 1 and 3 finer, and the host is *Picea*. The other species, designated by the senior name *aquilus* Blackman (= *caelator*, *aristatae*), is smaller (1.8–2.1 mm), the pronotum and male head lack reticulation, the declivital sulcus is slightly deeper, with the tubercles on interstriae 1 and 3 larger, and the host is *Pinus*. Both are rather widely distributed in western North America.

Pityophthorus cascoensis Blackman, n. status

Pityophthorus cascoensis Blackman, 1928, New York St. Coll. For., Syracuse, Tech. Pub. 25:99 (Holotype, female; Peak Island, Maine; U.S. Nat. Mus.)

Bright (1977, Canadian Ent. 109:515) placed in synonymy under *Pityophthorus in-textus* Swaine, 1917, the names *cascoensis* Blackman, 1928, *tonsus* Blackman, 1928, *kenti* Blackman, 1928, and *pilifer* Schedl, 1931. A review of the holotypes and other type material of the above names and 1,121 additional specimens in these taxa indicates the presence of at least two and probably three species. One, represented by the type of *cascoensis* (= *pilifer*), is of larger average size (1.6–2.2 mm), the male frons is less strongly impressed and may have a weak

median carina, the female frontal setae never appear scalelike, the discal interstriae are sparsely punctured, and declivital interstriae I bears a row of regularly spaced setae. The second species, represented by the type of *intextus* (= *shepardi*, *tonsus*), is smaller (1.4–2.0 mm), the male frons is rather strongly, transversely impressed and never has a median carina, the female frontal vestiture appears to include short scales when viewed with the light source coming from the direction of the beetle's vertex (an illusion caused by an abrupt curve near the base of each long frontal seta), the discal interstriae are impunctate, and the setae on declivital interstriae I are irregularly, widely spaced or absent. The type series of *kenti* is in poor condition, but is considered to be synonymous with *ornatus* Blackman, a species very closely related to *intextus*.

Pityophthorus pulicarius (Zimmermann)

Crypturgus pulicarius Zimmermann, 1868, Trans. Amer. Ent. Soc. 2:144 (Syntypes?; Lake Superior, Southern States, Tampa, and Illinois: Mus. Comp. Zool.)

Pityophthorus cubensis Schedl, 1972, Koleopt. Rundsch. 50:65 (Holotype, male; Vinales, Pinar del Río Prov., Cuba; Schedl Coll.). *New synonymy*

The male holotype of *Pityophthorus cubensis* Schedl and the 10 syntypes of *pulicarius* (Zimmermann) were compared to my series of this species. Since only one species is represented by this material the name *cubensis* must be placed in synonymy.

Pityophthorus subsimilis Schedl

Pityophthorus subsimilis Schedl, 1955, Zeit. angew. Ent. 38:25 (Lectotype, female; Ciudad Guatemala, Guatemala; Schedl Coll.)

Pityophthorus subimpressus Bright, 1977, Great Basin Nat. 36:441 (Holotype, female; 32 miles or 53 km S Valle Nacional, Oaxaca, Mexico; Canadian Nat. Coll.). *New synonymy*

The female lectotype of *Pityophthorus subsimilis* Schedl was compared directly to the type series of *subimpressus* Bright. Although the lectotype of *subsimilis* is in rather poor condition and frass obscures part of the pronotal asperities, it is clear that the asperities are essentially in obscure

concentric rows. Because I see no differences in other characters, they are considered to be synonymous.

A long series of this species taken by me from a nonconiferous shrub is identical to the lectotype of *subimilis*. Several series of *attenuatus* Blackman from a variety of hosts in Mexico exhibit minor differences in the female frons and have the declivital punctures variable, but they are almost always smaller than in the lectotype of *subsimilis*. Because of this variability, I have regarded *subsimilis* as a minor geographical variant of *attenuatus*. However, it appears desirable to await the collection of additional material before proposing synonymy with *attenuatus*.

Premnobius cavipennis Eichhoff

Premnobius cavipennis Eichhoff, 1878, Mém. Soc. Roy. Sci. Liège (2)8:404 (Syntypes; Cap bonae spei in Africa meridionalis, and Colombia; lost with Hamburg Mus.)

Premnobius latior Eggers, 1933, Trav. Lab. d'Ent. Mus. Nat. d'Hist. Nat. Mem. 1:9 (Holotype, female; St. Jean du Maroni, French Guiana; Paris Mus.)

The female holotype of *Premnobius latior* Eggers was compared directly to my series of this species from Venezuela, some of which were compared to Eggers' homotypes of *cavipennis* Eichhoff. They are obviously of the same species.

Scolytodes chapuisi, n. n.

Ctenophorus laevigatus Chapuis, 1869, Synopsis des Scolytides, p. 49 (Syntypes, two males; Colombie; Brussels Mus.)

As indicated above, the synonymy of *Scolytodes* and *Ctenophorus* has created homonyms of their type species. It is, therefore, necessary to rename the junior homonym. I propose the new name, *Scolytodes chapuisi*, as a replacement for *S. laevigatus* (Chapuis).

Scolytus propinguus Blandford

Scolytus propinguus Blandford, 1896, Biol. Centr. Amer., Coleopt. 4(6):121 (Syntypes; Mexico, Guatemala, Cuba; British Mus. Nat. Hist.)

Scolytus penicillus Schedl, 1973, Papeis Avulsos Zool. 26:165 (Holotype, male; Veracruz, Mexico; Schedl Coll.). *New synonymy*

This species is rather common in a variety of host trees from the states of Nayarit and Veracruz in Mexico to Costa Rica. Several long series in which males and females are definitely associated are in my collection. Several females were directly compared to the holotype of *Scolytus propinguis* Blandford and are identical; the males from that series are identical to the male holotype of *penicillus* Schedl. Since these names represent the opposite sexes of the same species, *penicillus* must be placed in synonymy.

Xyleborus dryographus (Ratzeburg)

Bostrichus dryographus Ratzeburg, 1837, Die Forstinsekten, p. 167 (Syntypes, female; apparently Germany; presumably Berlin Mus., not examined)
Xyleborus linearis Schedl, 1949, Rev. Brasil. Biol. 9:273 (Lectotype, female; Am. Bor.; U.S. Nat. Mus., present designation). *New synonymy*

Xyleborus linearis Schedl was named from a syntypic series in the Eggers collection, which Eggers had described but did not publish. The syntype in the U.S. National Museum is labeled "Am. Bor.; *Xyleborus linearis* n. sp. Type, Eggers det. 1927." Since it was apparently intended to be the type by Eggers and since the Schedl syntypes are on loan from the Eggers collection, I here designate the above "type" specimen in the U.S. National Museum as the lectotype of *Xyleborus linearis* Schedl. It is a specimen of the European *X. dryographus* (Ratzeburg) that was either mislabeled or intercepted in America and is not known to be established anywhere in America. The lectotype was compared directly to my series of five specimens from Europe, which were determined by Dr. A. Pfeffer.

Xyleborus horridus Eichhoff

Xyleborus horridus Eichhoff, 1869, Berliner Ent. Zeitschr. 12:282 (Syntypes, female; Teapa, Mexico; Brussels Mus.)
Xyleborus flohri Schedl, 1972, Koleopt. Rund. 50:69 (Holotype, female; Mexico; Schedl Coll.). *New synonymy*

The female holotype of *Xyleborus flohri* Schedl and the syntypes of *X. horridus* Eichhoff in the Chapuis collection were

both compared directly to my series of this species. Since all represent the same species, Schedl's name must be placed in synonymy.

Xyleborus tonsus (Hagedorn), n. comb.

Dryocoetes tonsus Hagedorn, 1905, Bull. Mus. d'Hist. Nat., Paris 6:412 (Holotype, female; environs de Saint-Georges, Oyapock, Guyane française; Paris Mus.)

Dryocoetes tonsus Hagedorn must be transferred to *Xyleborus*. It represents a species group within the genus previously unknown to me.

NEW SPECIES

Araptus crassus, n. sp.

This species represents a unique group in the genus that is characterized by the very stout body form which has the general habitus of *Coccotrypes*, by the similar frons in both sexes, by the shallow, equally large striae and interstitial punctures, by the unique antennal club, and by the broad tibiae.

FEMALE(?).—Length 2.2 mm (paratypes 2.0–2.2 mm), 1.9 times as long as wide; color dark brown.

Frons evenly convex, epistomal margin with a weak, narrow, median suggestion of a premandibular process; surface smooth, shining, a very few minute, isolated granules. Antennal club obovate, about as long as scape, about 1.15 times as long as wide, and about equally divided by rather strongly procurved sutures 1 and 2, these weakly grooved and marked by rows of setae, suture 1 septate on lateral half.

Pronotum 0.94 times as long as wide; widest near base, sides strongly arcuate on basal half, rather strongly constricted, then narrowly rounded in front; anterior margin armed by about four small, indefinite granules; summit indefinite, on basal third; anterior slope rather gradual armed by low, isolated, abundant asperities extending almost to base in lateral areas, surface between asperities shining, almost smooth; posterior areas shining, not smooth, punctures very fine, indefinite, sparse. Vestiture of short, fine, recumbent hair.

Elytra 1.01 times as long as wide, 1.2

times as long as pronotum; sides straight and parallel on basal half, very broadly rounded behind; striae not impressed, punctures moderately large, distinctly impressed, spaced by diameter of a puncture; interstriae smooth, shining, almost three times as wide as striae, punctures as large as those of striae, a bit more widely spaced. Declivity broadly convex, very steep; sculpture about as on disc. Vestiture of minute strial hair, length of each less than diameter of its puncture, and erect, flattened, narrowly spatulate, closely set interstitial setae, each equal in length to about two-thirds distance between rows.

Prothibia much broader than normal for this genus, armed by three major and about six minor denticles; posterior face with several granules.

Sexual differences not apparent, although both sexes apparently represented.

TYPE LOCALITY.—Eight km NE Cerro Jefe, Panama Prov., Panama.

TYPE MATERIAL.—The holotype (female?) and four paratypes were taken at the type locality on 27-III-1976, 700 m, by H. P. Stockwell.

The holotype and two paratypes are in the Canadian National Collection; the other two paratypes are in my collection.

Araptus obesus, n. sp.

This species is distinguished from the very similar *crassus* Wood by the smaller size, by the absence of a median epistomal lobe, by the more strongly impressed declivital striae, and by the yellowish brown color.

FEMALE.—Length 1.8 mm (paratypes 1.5–1.8 mm), 2.1 times as long as wide; color yellowish brown.

Frons as in *crassus* except surface more nearly subreticulate, median epistomal area with no indication of a lobe.

Pronotum as in *crassus* except asperities largely absent from posterolateral areas, punctures on posterior areas distinctly larger, setae much stouter.

Elytra as in *crassus* except declivital striae weakly impressed and interstitial

punctures on 1 and 3 replaced by minute granules, interstitial setae slightly wider.

TYPE LOCALITY.—Eighteen km NE Oriximina, Brazil.

TYPE MATERIAL. The holotype (female?) and seven paratypes were taken at the type locality on 13-14-XI-1969, by J. M. and B. A. Campbell.

The holotype and four paratypes are in the Canadian National Collection; three paratypes are in my collection.

Cnesinus prominulus, n. sp.

This species is distinguished from the closely allied *minax* Schedl by the larger size, by the more slender body, by the more abundant, shorter vestiture, and by other minor details.

FEMALE.—Length 3.0 mm (paratypes: female 2.7–3.3 mm, males 2.4–3.1), 2.7 times as long as wide.

As in *minax* except as indicated above.

TYPE LOCALITY.—Volcan Colima, Jalisco, Mexico.

TYPE MATERIAL.—The holotype, allotype, and 29 paratypes were taken at the type locality on 23-VI-1965, 2500 m, No. 107, from twigs of a shrub, by me.

The holotype, allotype, and most of the paratypes are in my collection. Two paratypes are in the British Museum (Natural History).

Conophthorus conicolens, n. sp.

This species is distinguished from *apachecae* Hopkins and *ponderosae* Hopkins by the slightly stouter body form, by the more strongly, more broadly impressed declivity, with the tubercles on interstriae 3 larger, by the larger punctures on declivital striae 3, and by the smoother elytral disc, with the punctures averaging larger and somewhat confused.

FEMALE.—Length 3.7 mm (paratypes 3.3–3.8 mm), 2.2 times as long as wide; color very dark brown.

Frons and pronotum as in *mexicanus*

Wood except crenulations on pronotal disc distinctly smaller.

Elytra about as in *ponderosae* except discal punctures larger, slightly confused, declivital sulcus distinctly deeper, lateral convexities distinctly higher than suture, tubercles on interstriae 3 larger.

MALE.—Similar to female except punctures on frons apparently larger.

TYPE LOCALITY.—Eight miles or 13 km W Texmelucan, Puebla, Mexico.

TYPE MATERIAL.—The female holotype, male allotype, and 10 paratypes were taken at the type locality on 13-VI-1967, 2500 m, No. 25, from *Pinus* cones, by me. Other paratypes from Mexico include: 4 from Tlalmanalco, Mexico, 24-XI-1949, #13A, *Pinus leiophylla*, J. P. Perry, Jr.; 2 from Tulancingo, Hidalgo, 24-VI-1953, *Pinus*, by me.

The holotype, allotype, and paratypes are in my collection.

Microcorthylus vicinus, n. sp.

This species is distinguished from *minus* Schedl by the larger size, by the larger epistomal tubercle, by the more strongly reticulate elytra, and by the slightly narrower declivital impression.

FEMALE.—Length 2.0 mm (paratypes 1.5–2.0 mm), 2.9 times as long as wide; color brown.

Frons as in *minus* except epistomal tubercle distinctly larger and more nearly carinate.

Pronotum and elytra about as in *minus* except elytra strongly reticulate, striae punctures more distinctly indicated, declivity less strongly, more narrowly impressed, lateral elevations ending more remote from costal margin.

MALE.—Similar to female except antennal club without long setae on posterior face.

TYPE LOCALITY.—Thirty-two miles or 51 km S Valle Nacional, Oaxaca, Mexico.

TYPE MATERIAL.—The female holotype, male allotype, and 34 paratypes were taken

at the type locality on 21-V-1971, by D. E. Bright. Additional paratypes from Mexico include: 9 from 3 miles or 5 km N Suchixtepec, Oaxaca, on Highway 175, 4-VI-1971, 7000 ft., *Salix*, D. E. Bright; 20 from 8 miles or 13 km E San Cristobal, Chiapas, 6-VI-1969, D. E. Bright; 1 from Mt. Tzontehuiz, Chiapas, 12-VI-1969, *Quercus*, D. E. Bright.

The holotype, allotype, and most of the paratypes are in the Canadian National Collection; the remaining paratypes are in my collection.

Pityophthorus alnicolens, n. sp.

This species is distinguished from *alni* Blackman by the smaller size, by the reticulate, dull pronotum, by the smaller, less deeply impressed striae punctures, and by the proportionately wider discal interstriae which have numerous, irregular, impressed lines.

MALE (?).—Length 1.5 mm (paratypes 1.5–1.7 mm), 2.6 times as long as wide; color dark brown.

Frons broadly convex, flattened on lower half, a very feeble median carina from epistoma to upper level of eyes; epistomal margin slightly elevated; vestiture sparse, short, inconspicuous. Antennal club as in *alni* except slightly smaller, slightly more slender.

Pronotum much as in *alni* except discal area strongly reticulate, punctures coarser, margins not asperate; asperities absent from posterior third.

Elytra much as in *alni* except striae not impressed, punctures much smaller, not as deep, interstriae three times as wide as striae, with fine, irregular, impressed lines and points, with fine, rather sparse, uniseriate punctures. Declivity about as in *alni* except punctures much finer. Vestiture about as in *alni* except much longer.

TYPE LOCALITY.—Highway 131, 115 miles or 184 km S Oaxaca, Oaxaca, Mexico.

TYPE MATERIAL.—The holotype (male?) and four damaged paratypes in poor condition were taken at the type locality on 27-30-V-1971, 6000 ft., in *Alnus*, by D. E. Bright.

The holotypes and two paratypes are in the Canadian National Collection; two paratypes are in my collection.

Pityophthorus assitus, n. sp.

This species is distinguished from *morosus* Wood by the larger size, by the stouter body, by the strongly reticulate head and pronotum, and by the more strongly impressed declivital interstriae 2.

FEMALE.—Length 2.1 mm (paratypes 1.9–2.2 mm), 2.6 times as long as wide; color dark brown.

Frons and pronotum as in *morosus* except reticulate.

Elytra as in *morosus* except striae punctures smaller, not as deep, in slightly irregular rows, a few interstitial punctures present on posterior half of disc, declivital interstriae 2 more strongly impressed on its lateral half, striae setae slightly longer.

MALE.—Similar to female in all respects.

TYPE LOCALITY.—Lagos des Colores, Chiapas, Mexico.

TYPE MATERIAL.—The female holotype, male allotype, and 59 paratypes were taken at the type locality on 17-V-1969, by D. E. Bright. Six specimens from 15 miles or 24 km S Valle Nacional, Oaxaca, Mexico 20-V-1971, 4000 ft., D. E. Bright, are not included in the type series.

The holotype, allotype, and most of the paratypes are in the Canadian National Collection; the remaining paratypes are in my collection.

Pityophthorus concinnus, n. sp.

This species is distinguished from *coronarius* Blackman by the larger size, by the more strongly impressed male frons, and by the longer, darker, more abundant setae on the female frons.

FEMALE.—Length 1.9 mm (paratypes 1.7–2.3 mm), 2.7 times as long as wide; color dark yellowish brown.

Frons similar to *coronarius* except a bit more strongly impressed; vestiture reddish brown, longer, much more abundant; long-

est setae equal in length to half distance between eyes.

Pronotum and elytra as in *coronarius* except lateral convexities on declivity conspicuously higher than suture.

MALE.—Similar to female except frons rather strongly impressed from epistoma to upper level of eyes, upper margin of impressed area marked by a conspicuous, transverse carina.

TYPE LOCALITY.—“Plaquesaque, Mexico.”

TYPE MATERIAL.—The female holotype, male allotype, and 14 paratypes were intercepted at Nogales, Arizona (No. 49236) in unidentified wood from the type locality on 21-X-1941, Lot No. 41-18984. Four paratypes are labeled: Mexico, 22-III-1962, Crump Coll., unidentified wood, Boston 27132, No. 62-11725.

The holotype, allotype, and 11 paratypes are in the U.S. National Museum; two paratypes are in the Canadian National collection; and five paratypes are in my collection.

Pityophthorus indigenus, n. sp.

This species is distinguished from *fuscus* Blackman by the shorter vestiture on the frons, by the more smooth, shining elytra, with smaller punctures, and by the deeper declivital sulcus.

FEMALE.—Length 2.2 mm (paratypes 2.0–2.3 mm), 2.8 times as long as wide; color very dark brown.

Frons broadly convex, a weak, median, subcarinate tubercle on epistomal margin; surface smooth, shining, punctures coarse, deep, uniformly distributed; vestiture minute, much shorter than in *fuscus*.

Pronotum about as in *fuscus* except disc smooth, shining, punctures replaced by isolated, rounded granules.

Elytra about as in *fuscus* except smooth, shining, discal punctures minute, almost obsolete, declivital sulcus distinctly deeper.

MALE.—Similar to female except median carina on frons very weakly indicated from epistoma half distance to upper level of eyes.

TYPE LOCALITY.—Two miles or 3 km E Gould, Jackson Co., Colorado.

TYPE MATERIAL.—The female holotype, male allotype, and three paratypes were taken at the type locality on 12-VI-1968, No. 8, from a *Pinus contorta* branch, by me.

Pityophthorus leechi, n. sp.

This species is distinguished from *scalptor* Blackman by conspicuous characters of the female frons as indicated below.

FEMALE.—Length 1.4 mm (paratypes 2.0–2.5 mm), 2.8 times as long as wide; color reddish brown.

Frons transversely impressed on area below upper level of eyes, very feebly concave on median half of impressed area; surface smooth, shining, punctures moderately coarse, almost uniformly distributed, interspaces about equal to diameter of a puncture; a weak epistomal process clearly indicated; vestiture much less abundant than in *scalptor*, almost uniformly distributed, rather short, only slightly longer in marginal areas, longest setae about equal to one-third distance between eyes.

Pronotum and elytra as in *scalptor*, perhaps less brightly shining and elytral vestiture very slightly longer.

MALE.—Similar to male *scalptor* except transverse frontal impression not as strong, median carina less strongly elevated.

TYPE LOCALITY.—Two miles or 3 km NNE Angwin on N side of Howell Mt., Napa Co., California.

TYPE MATERIAL.—The female holotype, male allotype, and 27 paratypes were taken at the type locality on 5-VI-1977, reared from a shaded-out branch of *Pinus ponderosa*, by H. B. Leech.

The holotype, allotype, and some paratypes are in the California Academy of Sciences Collection; the remaining paratypes are in the Canadian National Collection and in my collection.

Pityophthorus solatus, n. sp.

This species is distinguished from *solers*

Blackman by the different frons and elytra as described below.

FEMALE.—Length 2.1 mm (paratypes 1.9–2.2 mm), 2.7 times as long as wide; color very dark brown.

Frons similar to *solers* except planoconvex, punctured pubescent area extending to well above eyes, vestiture slightly more abundant and longer.

Pronotum and elytra as in *solers* except surface of elytral disc smoother, declivital sulcus slightly wider and deeper, its surface more nearly microreticulate, declivital vestiture distinctly longer.

MALE.—Similar to female except frons as in male *solers*, declivity similar to male *solers* except sulcus narrower, lateral elevation distinctly higher.

TYPE LOCALITY.—Fifty-one miles or 81 km NW Oaxaca, Oaxaca, Mexico.

TYPE MATERIAL.—The female holotype, male allotype, and 12 paratypes were taken at the type locality on 10-V-1971, 7500 ft., *Quercus*, by D. E. Bright.

Since all allied species are from coniferous hosts, the type was probably either mislabeled or its occurrence in *Quercus* was accidental. Since Bright also collected in potential hosts at Cerro Potosí (Nuevo León) and in the Popocatépetl-Iztaccihuatl area (Mexico), it is possible that the type series was taken at a locality north of that designated; the relationship to *solers* suggests such a possibility.

The holotype, allotype, and most of the paratypes are in the Canadian National Collection; the remaining paratypes are in my collection.

Pityophthorus speciosus, n. sp.

This species is distinguished from *assitus* Wood by the smooth, shining frons which is transversely impressed on its lower half and by differences on the pronotum and elytra as described below.

FEMALE.—Length 1.8 mm (paratypes 1.7–

2.0 mm), 2.5 times as long as wide; color reddish brown.

Frons smooth, shining, punctures coarse, close, deep; transversely impressed from epistoma to slightly below upper level of eyes, upper area convex; vestiture short, inconspicuous.

Pronotum about as in *assitus* except transversely much more broadly arched, smooth, shining, with numerous, rather large, impressed points, punctures very small.

Elytra about as in *assitus* except surface smooth, brightly shining, declivital interstriae 2 strongly impressed and narrower.

MALE.— Similar to female in all respects.

TYPE LOCALITY.— Fifteen miles or 24 km S Valle Nacional, Oaxaca, Mexico.

TYPE MATERIAL.— The female holotype, male allotype, and 7 paratypes were taken at the type locality on 20-V-1971, 4000 ft., by D. E. Bright. One paratype is from 92 miles or 147 km N Oaxaca, Oaxaca, Mexico, 18-V-71, at blacklight, D. E. Bright.

The holotype, allotype, and most of the paratypes are in the Canadian National Collection; the remaining paratypes are in my collection.

Pseudopityophthorus denticulus, n. sp.

This species is distinguished from *granulifer* Wood by the different frons, by the less definite discal striae, by the more widely spaced, more slender interstitial bristles, and by the near absence of granules and bristles on declivital interstriae 2.

FEMALE.— Length 1.9 mm (paratypes 1.6–2.0 mm), 2.9 times as long as wide; color dark brown.

Frons as in *granulifer* except more shallowly, more broadly concave, punctures smaller, more widely spaced.

Pronotum and elytra as in *granulifer* except stria punctures on disc in less definite rows, erect interstitial setae more slender, more widely spaced, spaced by distance equal to length of a seta, setae and granules absent from declivital interstriae 2, one or

two granules sometimes present near base or apex on 2.

MALE.— Similar to female in all respects except antennal club sometimes more slender.

TYPE LOCALITY.— Boot Springs, Big Bend National Park, Brewster Co., Texas.

TYPE MATERIAL.— The female holotype, male allotype, and 17 paratypes were taken at the type locality on 20-VII-1974, from *Quercus*, by D. E. Bright.

The holotype, allotype, and most of the paratypes are in the Canadian National Collection; the remaining paratypes are in my collection.

Pseudothysanoes securus, n. sp.

This species is distinguished from *quercicolens* Wood by the much longer, more slender, flattened process on the female scape, by the more slender, more acutely pointed antennal club, by the more slender, more isolated pronotal asperities, and by many other characters.

FEMALE.— Length 1.5 mm (paratype 1.5 mm), 2.9 times as long as wide; color black, vestiture white.

Frons about as in *quercicolens* except surface rugose-reticulate. Scape acutely triangular, twice as wide as long, ornamented by a conspicuous tuft of rather long hair; club small, twice as long as wide, acutely pointed at apex, sutures obscure.

Pronotum about as in *quercicolens* except anterior margin unarmed, asperate area smaller, asperities smaller, more slender.

Elytra about as in *quercicolens* except stria punctures not as deep, interstriae more irregular, punctate granules larger, closer; declivital striae 1 and 2 with punctures reduced, interstriae 2 narrower, flat, 3 with weak elevation not reaching junction with 9. Vestiture white, closer, interstitial scales on disc one and one-half to two times as long as wide, on declivity about as long as wide.

TYPE LOCALITY.— Five miles or 8 km W Tulancingo, Hidalgo, Mexico.

TYPE MATERIAL.—The female holotype and one female paratype were taken at the type locality on 11-VI-1967, 2400 m, No. 12, from a *Quercus* branch, by me.

The holotype and paratype are in my collection.

Pseudothysanocs turnbowi, n. sp.

This species is distinguished from *recavus* Wood by the smoother, more brightly shining pronotum and elytra, by the less deeply, more extensively excavated female frons which has punctures and small, stout setae in the excavated area, and by the more slender scales on the male declivity.

FEMALE.—Length 1.3 mm (paratypes 1.2–1.4 mm), 2.3 times as long as wide; color very dark brown.

Frons similar to *recavus* except less strongly, more extensively impressed, surface of impressed area smooth, shining, with sparse punctures and stout setae.

Pronotum as in *recavus* except surface on posterior areas smooth, not reticulate.

Elytra as in *recavus* except smoother, interstitial setae slightly longer, more slender.

MALE.—Similar to male of *recavus* except differing by smoother frons, pronotum, and elytra and by the much more slender declivital setae, each about three times as long as wide.

TYPE LOCALITY.—Bentsen-Rio Grande State Park, Hidalgo Co., Texas.

TYPE MATERIAL.—The female holotype, male allotype, and 67 paratypes were reared from *Prosopis glandulosa* branches by Robert H. Turnbow, Jr., with emergence dates ranging from 29-31-XII-1975, 9-13, 21-23 (type), 27-29-I, 1-5, 11-18-VII, 2-8-VIII-1976. One paratype is labeled; Hidalgo Co., Texas, 26-III-57, D. J. and J. N. Knull.

The holotype, allotype, and most of the paratypes are in my collection, other paratypes are in the University of Georgia collection and the Canadian National Collection.

Pycnarthrum fulgidum, n. sp.

This species is distinguished from *lucidum*

Wood by the larger size, by the less regularly punctured pronotum, by the smaller, less strongly impressed punctures on the elytral striae, and by the much finer vestiture.

MALE.—Length 1.8 mm, 2.0 times as long as wide; color brown.

Frons shallowly, broadly, transversely impressed, not concave; surface shining, slightly irregular, punctures fine, rather sparse, not clearly defined; vestiture short, rather sparse, almost hairlike. Eyes more finely faceted and more widely separated than in *lucidum*.

Pronotum much as in *lucidum* except slightly more declivous on anterior third, surface not as smooth, punctures slightly larger, not as regular in size. Elytra somewhat as in *lucidum* except striae not impressed, punctures much smaller, less strongly impressed, interstriae three to four times as wide as striae, ground vestiture very sparse, hairlike, as fine as striae, except interstitial setae slightly longer and much more slender than in *lucidum*, not stouter on declivity.

FEMALE.—Similar to male except frons convex.

TYPE LOCALITY.—Eight km S Colonia, Valle de Cauca, Colombia.

TYPE MATERIAL.—The male holotype, female allotype, and seven paratypes were taken at the type locality on 9-VII-1970, 30 m, No. 650, from *Guarea trichiloides*, by me.

The holotype, allotype, and paratypes are in my collection.

Scolytodes fulmineus, n. sp.

This species is distinguished from *ambilis* Wood by the larger size, by the more strongly reticulate pronotum, with finer punctures, and by the very different female frons.

FEMALE.—Length 1.8 mm (paratypes 1.6–1.8 mm), 2.4 times as long as wide; color black.

Frons weakly convex from epistoma to above upper level of eyes, median third

smooth, shining, impunctate, lateral thirds rather finely, closely punctured; vestiture confined to punctured areas, fine, short, longest setae about equal in length to diameter of three facets of eye.

Pronotum about as in *amabilis* except surface strongly reticulate, punctures much smaller but slightly larger than in *clusiae* Wood.

Elytra as in *ambilis* except vestiture confined to odd-numbered interstriae, not more than three or four setae on each of these.

MALE.—Similar to female except frons more strongly convex, punctures rather sparse, uniformly distributed, vestiture sparse, inconspicuous.

TYPE LOCALITY.—La Carbonera Experimental Forest, about 50 km (airline) NW Merida, Merida, Venezuela.

TYPE MATERIAL.—The female holotype, male allotype, and 11 paratypes were taken at the type locality on 14-X-69, 2500 m, No. 50, from *Clusia* branches, by me.

Scolytodes radiatus, n. sp.

This species is distinguished from *clusiae* Wood and *volcanus* Wood by the slightly larger size, by the much coarser pronotal punctures, and by the very different female frons.

FEMALE.—Length 1.7 mm (paratypes 1.6–1.9 mm), 2.4 times as long as wide; color almost black.

Frons convex and virtually glabrous as in males of allied species.

Pronotum much as in *volcanus* except punctures much larger, each equal to from half to full diameter of a strial puncture (variable).

Elytra about as in *amabilis* Wood except punctures larger and vestiture less abundant; striae not impressed, punctures rather coarse, deep; interstriae slightly wider than striae, smooth, shining, punctures uniseriate, less than half diameter of those of striae. Subglabrous, a few fine setae on odd-numbered interstriae on posterior half.

MALE.—Similar to female in all respects.

TYPE LOCALITY.—La Georgiana, 79 km SE San José, Costa Rica.

TYPE MATERIAL.—The female holotype, male allotype, and 13 paratypes were taken at the type locality on 31-VII-1965, from *Quercus*, by L. S. Otvos.

The holotype, allotype, and paratypes are in my collection.

Xyleborinus tribuloides, n. sp.

This species is distinguished from *bicornatulus* Wood by the uniformly reticulate pronotum and by the much shorter, less strongly impressed, very different declivity.

FEMALE.—Length 2.1 mm (paratype 2.3 mm), 2.9 times as long as wide; color dark brown.

Frons and pronotum about as in *bicornatulus* except pronotal disc uniformly, strongly reticulate.

Elytra 1.7 times as long as wide, 1.5 times as long as pronotum; declivity confined to posterior third; striae not impressed, punctures fine, shallow; interstriae smooth, shining, three to four times as wide as striae, punctures finely granulate. Declivity gradual, shallowly subconcave; punctures on striae 1 and 2 slightly larger than on disc; interstriae 1 and 2 unarmed except for small granules at base, 3 armed one-third declivital length from base by a moderately coarse, pointed tubercle, as high as wide, a larger, blunt spine two-thirds of declivital length from base, longer than wide, its length about equal to width of an interstriae, a small tubercle at base above spine 1 and another at apex below spine 2; lateral summit at striae 4, lateral areas armed by about a dozen moderately coarse tubercles (smaller and less numerous than in *bicornatulus*). Vestiture of minute strial hair and distinctly longer interstitial hair, regularly, closely spaced to base, each interstitial seta about equal in length to width of an interstriae.

TYPE LOCALITY.—Fifteen miles or 24 km S Valle Nacional, Oaxaca, Mexico.

TYPE MATERIAL.—The female holotype and one female paratype were taken at the

type locality on 20-V-1971, from a *Cecropia* petiole, by D. E. Bright.

The holotype is in the Canadian National Collection; the paratype is in my collection.

Xyleborus devexus, n. sp.

This species is distinguished from *obliquus* (LeConte) by the smaller size, by the coarser, deeper elytral punctures, and by the absence of tubercles on declivital interstriae 1 and 3.

FEMALE.—Length 1.9 mm (paratypes 1.8–2.1 mm), 2.5 times as long as wide; color very dark brown.

Frons and pronotum as in *obliquus*.

Elytra as in *obliquus* except declivity slightly steeper, less strongly convex; punctures on disc larger, deeper, interstriae twice as wide as striae; interstitial punctures near declivity not granulate. Declivity more distinctly impressed between interstriae 3; interstriae 1-3 without granules. Vestiture as in *obliquus*.

TYPE LOCALITY.—Homestead, Florida.

TYPE MATERIAL.—The female holotype and three female paratypes were taken at the type locality on 27-X-1957 on Burdiken palm. Additional female paratypes were taken as follows: 3 from Orange Heights, Florida, 3-V-1914, Hopk. US 9925i, pecan, E. W. Berger; 1 from Lake Co., Florida, 21-I-1930, B. L. Smith; 1 from Manatee Co., 2-IV-1930, R. F. Tinker; 1 from Orange Co., Florida, 24-I-1930, W. M. Loe; 1 from Orange Co., Florida, 22-III-1930, J. E. Sadler; 2 from Pinellas Co., Florida, 22-III-1930 and 12-IV, B. P. Moore; 15 from Río Grande, Puerto Rico, 26-IV-1940, *Cedrella mexicana*, Hopk. US 33100-V-1, D. DeLeon; 4 from Vega Alta, G. N. W. (presumably Puerto Rico), 16-XI-1915, acc. no. 170-15.

The holotype and several paratypes are in my collection; the remaining paratypes are in the U.S. National Museum of Natural History.

Xyleborus laticeps, n. sp.

This species is distinguished from *retusus*

Eichhoff by the slightly smaller size, by the nonreticulate, much more coarsely punctured pronotal disc, and by the different declivity as described below.

FEMALE.—Length 3.5 mm (paratypes, females 3.1–3.6 mm, males 1.7–2.0 mm), 1.7 times as long as wide; color black.

Frons as in *retusus* except more coarsely punctured.

Pronotum as in *retusus* except posterior areas usually smooth, shining, coarsely, closely punctured, interspaces in discal area equal to about half diameter of a puncture (reticulate and equal to two to four diameters in *retusus*).

Elytra as in *retusus* except discal punctures slightly larger, margin of declivity with a subacutely elevated circumdeclivital ring forming a complete circle (forming about two-thirds of a circle in *retusus*), punctures on declivital face at least twice as large, surface with few to many irregular, serpentine impressed lines (these lines absent in *retusus*).

MALE.—Similar to female except dwarfed, deformed; pronotum and elytra more gradually declivous; all features less sharply defined.

TYPE LOCALITY.—Twenty km SW El Vigía, Merida, Venezuela.

TYPE MATERIAL.—The female holotype, male allotype, and 33 paratypes were taken at the type locality on 21-XI-69, 50 m, No. 145, from *Jacaranda* poles, by me. (The allotype and 17 of these paratypes were reared at and incorrectly labeled Merida, 22-IX-69, 1700 m.) Additional paratypes from Venezuela include: 12 from 9 km S Barancas, Barinas, 1-X-69, 150 m, No. 24, *Protium tenuifolium*, 9 more with the same data except 5-XI-69, *Inga* sp., *Spondias mombin*, or *Dendropanax arboreum*, 1 more with the same data except 2-XII-69, *Melicococcus bijugata*; 1 from 17 km SE Mirí, Barinas, 17-XII-69, 150 m, No. 195, *Protium*; 1 from 10 km SE Mirí, 8-II-70, 150 m, No. 295, *Inga*; 3 from 8 km SW Bumbum, Barinas, 11-II-70, Moraceae, *Protium tenuifolia*, or "Tartaguito"; 6 are from 40 km E Canton, Barinas, 8-III-70, from various

hosts or in flight; all were taken by me. J. L. Saunders.

Three paratypes are from Valle de Choroní, Venezuela, 3-IV-1964, *Theobroma cacao*, The holotype, allotype, and paratypes are in my collection.