

NEW SYNONYMY AND NEW SPECIES OF AMERICAN BARK BEETLES (COLEOPTERA: SCOLYTIDAE), PART VIII¹

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ABSTRACT.— New synonymy of American Scolytidae is proposed as follows: *Acacis*, Lea (= *Neodiamerus* Schedl), *Gnatholeptus panamensis* Blackman (= *Pityophthorus epistomalis* Schedl), *Gnatholeptus shannoni* (Blackman) (= *Gnatholeptus mandibularis* Blackman, *Pityophthorus gentilis* Schedl), *Gymnochilus reitteri* Eichhoff (= *Problechilus striatus* Eggers, *Problechilus bicolor* Eggers), *Hylastes scabripennis* (Zimmermann) (= *Hylastes salebrosus* Eichhoff), *Hylurgopinus opaculus* (LeConte) (= *Hylastes rufipes* Eichhoff), *Ips perturbatus* (Eichhoff) (= *Tomicus interpunctus* Eichhoff), *Monarthrum dimidiatum* (Ferrari) (= *Pterocyclon moritzi* Eichhoff), *Pityophthorus subcibratus* Schedl (= *Pityophthorus zeteki* Blackman), *Scolytodes trispinosus* Eggers (= *Scolytodes elongatus* Schedl), *Xyleborus costaricensis* Blandford (= *Xyleborus nevermanni* Schedl), *Xyleborus improvidus* Schedl (= *Xyleborus acinus* Wood), *Xyleborus spinulosus* Blandford (= *Xyleborus fusciseriatus* Eggers, *Xyleborus artespinulosus* Schedl). The genus *Carphodicticus* Wood is removed from synonymy with *Dendrodicticus* Schedl. *Scolytodes striatulus*, new name, is proposed as a replacement for *Hylocurosoma striatum* Eggers. Notes on the status of *Xyleborus perforans* (Walker) are presented. The following species are named as new to science: *Cnemonyx furvescens* (Colombia), *C. squamifer* (Guatemala), *C. protivorus* and *C. vismiacolens* (Venezuela), *Corthylus nanus* (Costa Rica), *Dendrocranulus auctus*, *D. limbellus*, *D. limitaris*, *D. modus*, and *D. pinguis* (Venezuela), *Hylocurus clarki* (Guatemala), and *H. longipennis* (Mexico).

On the following pages several newly discovered cases of synonymy, some additional notes, and 12 species new to science are presented for American Scolytidae. The species new to science represent the genera *Cnemonyx* (4), *Corthylus* (1), *Dendrocranulus* (5), and *Hylocurus* (2) and were taken in Mexico (1), Guatemala (2), Costa Rica (1), Colombia (1), and Venezuela (7).

NEW SYNONYMY AND NOTES

Acacis Lea

Acacis Lea, 1910, Proc. Roy. Soc. Victoria 22:149
(Type-species: *Acacis abundans* Lea, monobasic)

Neodiamerus Schedl, 1971, Ent. Scand. (Suppl.) 1:282
(Type-species: *Neodiamerus granulicollis* Schedl, original designation). *New synonymy*

The unique male holotype of *Neodiamerus granulicollis* Schedl and 102 other specimens of this species were compared to eight species of *Acacis*, including two paratypes and more than 100 other species of *A. abundans*

Lea. In the absence of anatomical or biological characters that might distinguish them, it is necessary to place *Neodiamerus* in synonymy and to transfer *granulicollis* to *Acacis*.

Dendrodicticus Schedl

Dendrodicticus Schedl, 1958, Acta Zool. Lilloana 16:37
(Type-species: *Dendrodicticus argentiniae* Schedl, original designation)

Schedl (1975, Ent. Blätt. 71:42) placed *Carphodicticus* Wood (1971, Brigham Young Univ. Sci. Bull., Biol. Ser. 15(3):19) in synonymy under his *Dendrodicticus*. My examination of the type of *D. argentiniae* Schedl suggests that a reevaluation of this action is necessary. Schedl's type appears to be a female that superficially resembles *C. cristatus* Wood. However, the antennal club is more slender, symmetrical, and the sutures are entirely transverse (broader, distinctly asymmetrical, with sutures slightly oblique in *C. cristatus*), the procoxae are more widely separated, the tibiae are longer, more slender,

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and apparently have a different arrangement of socketed denticles, the pronotum is less elongate and feebly constricted, the basal margins of the elytra are strongly elevated into an irregular (subcrenulate) costa, the declivital impression is deeper and the lateral convexities are higher and extend the full length of the declivity, and the elytral vestiture is represented by closely set rows of fine stria and coarse interstriae from the base to the apex except on declivital interstriae 2. While the two species are of somewhat similar size and appearance, the antennal, tibial, pronotal, and elevated basal margins of the elytra in *Dendrodicticus* suggests that Schedl's action was premature. Until other species are found that reduce the character gap between these two taxa, they should be considered as distinct genera. The type of *D. argentiniae* is in rather poor condition and several important characters are hidden; however, until more material is available for study I tentatively place it in the tribe Carphodicticini.

Gnatholeptus panamensis Blackman

Gnatholeptus panamensis Blackman, 1943, J. Washington Acad. Sci. 33:35 (Holotype, female; Barro Colorado Island, Canal Zone, Panama; U.S. Nat. Mus.)

Pityophthorus epistomalis Schedl, 1961, Pan Pacific Ent. 37:224 (Holotype, female; Barro Colorado Island, Canal Zone, Panama; Cornell Univ.) *New synonymy*

The female holotypes of *Gnatholeptus panamensis* Blackman and *Pityophthorus epistomalis* Schedl were compared to my series of 29 specimens from Costa Rica and Panama. Because only one distinctive species is represented by this material, Schedl's name must be placed in synonymy as indicated above.

Gnatholeptus shannoni (Blackman)

Pityophthorus shannoni Blackman, 1942, Proc. U.S. Nat. Mus. 92:224 (Holotype, female; Cano Saddle at Gatun Lake, Canal Zone, Panama; U.S. Nat. Mus.)

Gnatholeptus mandibularis Blackman, 1943, J. Washington Acad. Sci. 33:34 (Holotype, female; Barro Colorado Island, Canal Zone, Panama; U.S. Nat. Mus.) *New synonymy*

Pityophthorus gentilis Schedl, 1961, Pan Pacific Ent. 37:225 (Holotype, male; Barro Colorado Island,

Gatun Lake, Canal Zone, Panama; Cornell Univ.) *New synonymy*

The holotypes of *Pityophthorus shannoni* Blackman, *P. gentilis* Schedl, and *Gnatholeptus mandibularis* Blackman were compared directly to more than 60 of my specimens from the Canal Zone, Panama. Only one distinctive species is represented in this material.

Hylastes scabripennis (Zimmermann), n. status

Hylurgus scabripennis Zimmermann, 1868, Trans. Amer. Ent. Soc. 2:149 (Syntypes; Atlantic States; Mus. Comp. Zool.)

Hylastes salebrosus Eichhoff, 1869, Berliner Ent. Zeitschr. 12:146 (Syntypes; Carolina; one in U.S. Nat. Mus.); Blandford, 1898, Ent. News 9:5. *Synonymy*

Although the synonymy of *Hylurgus scabripennis* Zimmermann and *Hylastes salebrosus* Eichhoff was known to Eichhoff (1896, Proc. U.S. Nat. Mus. 18:606) and subsequent workers, it was assumed that Eichhoff's name had priority. Consequently, the name *salebrosus* has been used consistently in American literature during this century. All American workers overlooked Blandford's (1898, Ent. News 9:5) article in which the priority of *scabripennis* (December 1868) is clearly established over *salebrosus* (March 1869). In view of this priority and the time-consuming, difficult process of overriding it, the name *scabripennis* is being used to designate this species.

Hylurgopinus opaculus (LeConte), n. status

Hylesinus opaculus LeConte, 1868, Trans. Amer. Ent. Soc. 2:170 (Two syntypes; Pennsylvania; Mus. Comp. Zool.)

Hylastes rufipes Eichhoff, 1869, Berliner Ent. Zeitschr. 12:147 (Syntypes; Carolina; one syntypes in U.S. Nat. Mus.); Eichhoff, 1896, Proc. U.S. Nat. Mus. 18:605. *Synonymy*

The synonymy of this species was discussed by Eichhoff (1896, cited above) and has been confirmed by me through the examination of all known syntypes. The assumption was made by Eichhoff and subsequent authors that his name had priority; however, Blandford (1898, Ent. New 9:5) pointed out that *opaculus* was validated in December 1868 and *rufipes* in March 1869. In view of the

priority of *opaculus* and the extreme difficulty of overriding priority when the need for correction has been published, as in this case, the name *opaculus* is being restored and used for this species, which has been known as *Hylurgopinus rufipes* during most of this century.

Gymnochilus reitteri Eichhoff

Gymnochilus reitteri Eichhoff, 1878, preprint of Mem. Soc. Roy. Sci. Liège (2)8:169 (Lectotype, male; Mexico; U.S. Nat. Mus., present designation)

Problechilus striatus Eggers, 1932, Wiener Ent. Zeit. 49:227 (Holotype, male; Canelas, probably Durango, Mexico; U.S. Nat. Mus.). *New synonymy*

Problechilus bicolor Eggers, 1932, Wiener Ent. Zeit. 49:228 (Holotype, male; Nicaragua; U.S. Nat. Mus.). *New synonymy*

Four syntypes of *Gymnochilus reitteri* Eichhoff are in the U.S. National Museum, all mounted on one pin. One of the two males was marked by the word "type" on the mounting card and is here designated as the lectotype as indicated above. It bears Eichhoff's labels "61," "Mex.," and *Problechilus reitteri* Eichh., Type." These syntypes were compared directly to the holotypes of *Problechilus striatus* Eggers and *Problechilus bicolor* Eggers and to 44 other specimens. All represent the same common species.

Ips perturbatus (Eichhoff)

Tomicus perturbatus Eichhoff, 1869, Berliner Ent. Zeitschr. 12:274 (Syntypes?, *Amerique boreali*; presumably lost with Hamburg Mus.)

Tomicus interpunctus Eichhoff, 1878, preprint of Mem. Soc. Roy. Sci. Liège (2)8:241 (Syntypes?, Sitka, Alaska; presumably lost with Hamburg Mus.). *New synonymy*

Although the type was lost in the destruction of the Hamburg Museum, *Tomicus perturbatus* Eichhoff is recognizable by its size and redescription of the type and from the comparison of the type to specimens of *Tomicus hudsonicus* LeConte by Eichhoff (1878:248-250). The type of *interpunctus* Eichhoff was also lost with the Hamburg Museum, and this name has never been associated with a natural population. The type of *interpunctus* was taken at Sitka, Alaska, where only two species of *Ips* occur, (1) *perturbatus*, and (2) *tridens* (Mannerheim). The original description indicates that the type

was 4.0 mm long, it had a transversely arranged pair of tubercles on the frons, and it had the basal area of the discal interstriae impunctate. The size could fit either species, but the other two characters apply only to *perturbatus*. Therefore, *interpunctus* is placed in synonymy under the senior name *perturbatus*. It is conceivable that *pini* (Say) might eventually be found on Sitka Island; however, specimens of *pini* from the northwestern part of its range lack the frontal tubercles.

Monarthrum dimidiatum (Ferrari)

Corthylus dimidatus Ferrari, 1867, Die Forst- und Baumzuchtschädlichen Borkenkäfer, p. 57 (Syntypes; Venezuela; Vienna Mus.)

Pterocyclon moritzi Schedl, 1939, Rev. de Ent. 10:727 (Holotype, male; locality not given; Schedl Coll.). *New synonymy*

Two male syntypes of *Corthylus dimidiatus* Ferrari, the male holotype of *Pterocyclon moritzi* Schedl, and 33 other specimens from Costa Rica, Colombia, and Venezuela (15 of these were from Colonia Tovar and nearby Rancho Grande in Pittier National Park) were examined. Since both *dimidiatus* and *moritzi* appear to have been named from Moritz material taken at Colonia Tovar, Aragua, Venezuela, it is not surprising that the type specimens are identical to one another and to my series taken in that vicinity. Because only one species is represented, Schedl's name must be placed in synonymy as indicated above.

Pityophthorus subcibratus Schedl

Pityophthorus subcibratus Schedl, 1937, Arch. Inst. Biol. Veget. Río de Janeiro 3:168 (Holotype, female; Hamburgfarm on Río Reventazon, Limon, Costa Rica; Schedl Coll.)

Pityophthorus zeteki Blackman, 1942, Proc. U.S. Nat. Mus. 92:226 (Holotype, female; Trinidad River, Panama; U.S. Nat. Mus.). *New synonymy*

The female holotypes of *Pityophthorus subcibratus* Schedl and *P. zeteki* Blackman were examined and compared directly to my series of 62 specimens from Costa Rica and Panama. Because only one species is represented by this material, Blackman's name must be placed in synonymy as indicated above.

Scolytodes striatulus, new name

Hylocurosoma striatum Eggers, 1940, Arb. Morph. Taxon. Ent. Berlin 7:139 (Holotype, male?; Trois Rivières, Guadeloupe; Paris Mus.)

When *Hylocurosoma striatum* Eggers, 1940, and *Hexacolus striatus* Eggers, 1934, were both transferred to *Scolytodes*, the species validated in 1940 became a junior homonym. The name *Scolytodes striatulus* is proposed as a replacement name for *Scolytodes striatus* (Eggers, 1940).

Scolytodes trispinosus Eggers

Scolytodes trispinosus Eggers, 1934, Ent. Blätt. 30:80 (Holotype, female; Amatán, presumably in Chiapas, Mexico; U.S. Nat. Mus.)

Scolytodes elongatus Schedl, 1835, Stylops 4:273 (Holotype, male?; Brazil; Schedl Coll.). *New synonymy*

Scolytodes trispinosus Eggers was named from one female labeled Amatán. Subsequently, a hand-written label, "Mexico," was added. This holotype and a female from Brazil compared by me to the type of *Scolytodes elongatus* Schedl were examined. They represent the same species. In all probability this species ultimately will prove to be *laevigatus* Ferrari.

This and allied species are known only from South America. Since the designation "Mexico" was subsequently added to the data borne by the type of *trispinosus*, this species is removed from the Mexican fauna until more substantial evidence of its occurrence in Mexico is found. It apparently breeds in recently fallen *Cecropia* petioles from Colombia to Brazil.

Xyleborus costaricensis Blandford

Xyleborus costaricensis Blandford, 1898, Biol. Centr. Amer., Colept. 4(6):210 (Holotype, female; Volcan Irazu, Costa Rica; British Mus. Nat. Hist.)

Xyleborus nevermanni Schedl, 1935, Archiv. Inst. Biol. Veg., Río de Janeiro 2:93 (Syntypes, female; Vara Blanca, Heredia, Costa Rica; Schedl and Nevermann colls.). *New synonymy*

The female holotype of *Xyleborus costaricensis* Blandford and Schedl's female syntypes of *X. nevermanni* Schedl were both compared directly to my series of 39 specimens from Costa Rica and Panama. Because all of these specimens represent only one species, the name *nevermanni* must be placed in synonymy.

Xyleborus improvidus Schedl

Xyleborus improvidus Schedl, 1935, Arch. Inst. Biol. Veg. Río de Janeiro 2:92 (Holotype, female; Moritz, 1858, Venezuela; Schedl Coll.)

Xyleborus aclinis Wood, 1974, Brigham Young Univ. Sci. Bull., Biol. Ser. 19(1):38 (Holotype, female; Cerro Punta, Chiriqui, Panama; Wood Coll.). *New synonymy*

The female holotype of *Xyleborus improvidus* Schedl was compared directly to the type series of *aclinis* Wood. All characters agree rather well except for the major tubercles on the declivity. In *aclinis* there are from two to four major tubercles; variation between the four specimens is obvious. The type of *improvidus* bears four tubercles, with a fifth subequal in size at the base of declivital interstriae 2. In view of the variability in *aclinis* and the complete agreement in other characters, it appears that *aclinis* should be placed in synonymy.

Xyleborus perforans (Wollaston)

Tomicus perforans Wollaston, 1857, Cat. Coll. Madeira, p. 96 (Syntypes?; Madeira; British Mus. Nat. Hist.)

This species is virtually indistinguishable from *Xyleborus volvulus volvulus* (Fabricius). It tends to average slightly smaller, the declivity is not as steep and less strongly arched, the declivital tubercles average slightly smaller, and the tubercles or crenulations on the ventrolateral margin of the declivity are smaller or obsolete. It occurs abundantly from Australia to India and in parts of Africa, Micronesia, and other areas. Pliocene fossils in amber from northern Kenya clearly are of this species.

In Africa this species now occurs only in limited areas and apparently is being replaced by *v. volvulus* and *v. torquatus* Eichhoff. In Micronesia, most specimens in this complex are of *perforans*, but definite examples of both forms of *volvulus* are present on some islands.

In America, pure series of unquestioned *perforans* have been seen from the USA (Miami, Florida), Costa Rica, and the Antilles Islands. However, several series of both forms of *volvulus* from Peru to Florida contain occasional individuals that appear to be of *perforans* or of a form intermediate between *perforans* and *volvulus*.

Because both "species" appear to have repeatedly moved through commerce and apparently will continue to do so in the future, and because one appears capable of swamping the other through hybridization, I hesitate either to add *perforans* to the American list or to place *perforans* in synonymy until more information is available on what is happening within this complex.

Xyleborus spinulosus Blandford

Xyleborus spinulosus Blandford, 1898, Biol. Centr. Amer., Coleopt. 4(6):201 (Syntypes, females; San Geronimo, Zapote, and Mirandilla, Guatemala, Grenada and Guadeloupe; British Mus. Nat. Hist.)

Xyleborus fusciseriatus Eggers, 1934, Ent. Blätt. 30:82 (Holotype, female; La Caja, 8 km W San Jose, San Jose, Costa Rica; Berlin Mus.) *New synonymy*

Xyleborus artespinulosus Schedl, 1935, Arch. Inst. Biol. Veg. Río Reventazon, Santa Clara, Limon, Costa Rica; Schedl and Nevermann colls.). *New synonymy*

The female syntypes of *Xyleborus spinulosus* Blandford and *X. artespinulosus* Schedl and the holotype of *X. fusciseriatus* Eggers were examined and compared to my series of more than 150 specimens. This common Central American species is quite variable in the size and arrangement of the spines and tubercles on the female elytral declivity. The type specimens of Eggers and Schedl represent only minor variations of *spinulosus* and, for this reason, the names *fusciseriatus* and *artespinosus* must be placed in synonymy.

NEW TAXA

Cnemonyx furvescens, n. sp.

This species is distinguished from *atratus* (Blandford) by the larger size, by the differences in the frons described below, and by the differences in the elytral declivity.

FEMALE.—Length 2.4 mm (paratypes 2.2–2.5 mm), 2.2 times as long as wide; color very dark brown.

Frons as in *atratus* except slightly more elongate, more distinctly, shallowly concave to upper level of eyes, vestiture slightly longer, more abundant.

Pronotum as in *atratus*.

Elytra as in *atratus*, striae more distinctly impressed, punctures on interstriae 2 confused, declivity with striae much less strongly impressed and interstitial granules much smaller, all surfaces more brightly shining.

MALE.—Similar to female except frontal vestiture shorter, more uniformly distributed.

TYPE LOCALITY.—Twenty-seven km NE Montoya, Santander, Colombia.

TYPE MATERIAL.—The female holotype, male allotype, and 21 paratypes (most in poor condition) were taken at the type locality on 2-VII-1970, 150 m, No. 632, *Cespedesia macrophylla*, S. L. Wood.

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

Cnemonyx protivorus, n. sp.

This species is distinguished from *panamensis* (Blandford) by the more coarsely punctured pronotum, by the male frons as described below, and, apparently, by the host.

MALE.—Length 2.2 mm (paratypes 2.1–2.5 mm), 2.3 times as long as wide; color almost black.

Frons weakly convex from transverse carina at level of antennal insertion to above eyes; surface subreticulate, punctures moderately coarse, rather poorly defined; transverse carina acute, occupying median third, smooth and glabrous below carina to epistoma; epistomal margin with a tuft of setae; vestiture above carina about as in *panamensis*, of reddish yellow color.

Pronotum as in *panamensis* except punctures conspicuously larger, particularly in lateral areas.

Elytra as in *panamensis*.

FEMALE.—Similar to male except frons with carina less well developed, smaller, with vestiture shorter, less abundant.

TYPE LOCALITY.—Forty km SE Socopo, Barinas, Venezuela.

TYPE MATERIAL.—The male holotype and 51 paratypes were taken at the type locality on 25-I-1970, 150 m, No. 256, from *Protium*. The female allotype and 48 paratypes were taken at 17 km SE Miri, Barinas, Venezuela, on 17-XII-1969, 150 m, No. 195, from *Protium*. Other paratypes include 42 from 8 km SE Bumbum, Barinas, Venezuela, 11-II-1970,

150 m, No. 312, from *Protium*. All were taken by me.

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

Cnemonyx squamifer, n. sp.

This species is distinguished from *splendens* (Wood) by the smaller size, by the smaller, less strongly impressed strial punctures, by the larger, broader interstitial scales, and by the more strongly impressed male frons.

MALE.—Length 1.6 mm (paratypes 1.7 mm), 2.2 times as long as wide; color yellowish brown.

Frons similar to *splendens* except more strongly, more broadly concave, vestiture extending slightly above upper level of eyes and closer to margins of eyes.

Pronotum as in *splendens* except punctures conspicuously smaller.

Elytra resembling *splendens* except more weakly impressed, punctures much smaller, very close, interstriae twice as wide as striae, less strongly convex, punctures only slightly smaller than those of striae; interstitial setae in rows, slightly longer and much wider than in *splendens*, each about three to four times as long as wide, about half as long as distance between rows, spaced within a row by length of a seta.

TYPE LOCALITY.—Tikal, Petén, Guatemala.

TYPE MATERIAL.—The male holotype and two male paratypes were taken at the type locality 13-IV-1956, 100 m, at light.

The holotype and paratypes are in my collection.

Cnemonyx visimiacolens, n. sp.

This species is distinguished from *minusculus* Blandford by the absence of a transverse, subcarinate callus above level of antennal insertion, by the smaller pronotal punctures, and by other characters cited below.

FEMALE.—Length 1.7 mm (paratypes 1.5–1.9 mm), 2.1 times as long as wide; color almost black.

Frons similar to *minusculus* except wider, less strongly impressed, punctures coarser,

transverse callus absent or nearly so, vestiture finer, less abundant, mostly shorter.

Pronotum about as in *minusculus* except punctures finer, longitudinal striations finer, more numerous, slightly more extensive.

Elytra similar to *minusculus* except strial punctures less deeply, less distinctly impressed, interstitial punctures smaller, not as deep, not subvulcanate, obscurely granulate on declivity, vestiture usually confined to declivity, mostly abraded.

MALE.—Similar to female except frons more distinctly impressed, with vestiture slightly longer, more conspicuous.

TYPE LOCALITY.—Merida, Merida, Venezuela.

TYPE MATERIAL.—The female holotype, male allotype, and 33 paratypes were taken at the type locality on 22-IX-1969, 1700 m, No. 13, *Vismia* sp. Other paratypes taken in Venezuela include: 17, same data as type except lot 17; 147 from Rancho Grande, Pittier N.P., Aragua 9-IV-1970, 1100 m, No. 432, Guttiferae. All were taken by me.

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

Corthylus nanus, n. sp.

The unique male is entirely unrelated to known species but is distinguished from *pumilus* Wood by the smaller, more slender form, by the shining, weakly reticulate frons, and by the very different elytra.

MALE.—Length 1.2 mm, 2.5 times as long as wide; color reddish brown.

Frons broadly convex, a feeble median granule at epistoma; surface shining, reticulate, very weakly so above upper level of eyes; vestiture fine, inconspicuous.

Pronotum 1.1 times as long as wide; basally as in *minutissimus* Schedl except anterior margin armed only by two slender, contiguous, median serrations; surface reticulate.

Elytra 1.4 times as long as wide, 1.3 times as long as pronotum; sides almost straight and parallel on basal two thirds, rather broadly rounded behind; surface smooth, brightly shining, punctures minute, almost obsolete, perhaps in obscure strial rows. Declivity steep, convex; striae obscurely evident, punctures more distinct than on disc; interstriae 1 weakly, distinctly elevated, 2 strongly, rather

narrowly elevated from just below base to just below middle, its narrowly convex crest uniformly elevated, with a row of small punctures, 3 neither elevated nor impressed, with a row of punctures on 1-3 possibly very feebly granulate. Vestiture restricted to declivity, of interstrial rows of subspatulate bristles on all interstriae; about 5-6 on each interstriae, each bristle about one and one-half times as long as distance between rows.

TYPE LOCALITY.—One km southwest of Rincon de Osa, Puntarenas, Costa Rica.

TYPE MATERIAL.—The male holotype was taken on 12-VIII-1968, from a *Cecropia* leaf petiole, by H. Hespenehede.

The holotype is in my collection.

Dendrocranulus auctus, n. sp.

This species is distinguished from *limitaris* Wood by numerous characters cited below.

FEMALE.—Length 1.8 mm (paratypes 2.3-2.7 mm), 2.7 times as long as wide; color very dark reddish brown.

Frons about as in *limitaris* except tuft of hair less dense.

Pronotum as in *limitaris* except posterior areas reticulate, punctures and their accompanying granules much smaller, extending to median area.

Elytra as in *limitaris* except stria and interstrial punctures rather minute, distinctly impressed and declivity rather strongly impressed. Declivity almost smooth, shining, striae obsolete; interstriae 1 slightly elevated, with a row of very fine granules, 2 somewhat strongly impressed, particularly on lower half, with a row of small to feeble granules, 3 higher than 1 and ascending to broadly rounded 4, 3 and 4 each with a row of feeble, minute granules as on 2. Vestiture as in *limitaris* except only two-thirds as long on declivity.

MALE.—Similar to female except frons lesser convex, almost flat on lower half, with rounded tubercles in lateral and dorsal areas, vestiture sparse, declivity much more broadly, strongly impressed (shallowly subconcave), its lateral and apical margins more abruptly rounded, punctures on declivital striae small, distinct, granules slightly larger.

TYPE LOCALITY.—Rancho Grande, Pittier National Park, Aragua, Venezuela.

TYPE MATERIAL.—The female holotype, male allotype, and 48 paratypes were taken at the type locality on 9-IV-1970, 1100 m, No. 407, by me, from the same cucurbitaceous vines that contained *limitaris*.

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

Dendrocranulus limbellus, n. sp.

The four species in this genus named here (excluding *modus*) are somewhat related to *limbatus* Blandford and *fulgidus* Wood, but all are distinguished by the longer, more slender declivital setae and by the very different arrangement of long frontal setae on the female. The four are allied to one another, but not to other South American members of the genus presently known to me.

FEMALE.—Length 2.4 mm (paratypes 2.0-2.5 mm), 2.9 times as long as wide; color very dark brown.

Frons broadly, evenly convex from epistoma to vertex; surface smooth, shining except obscure reticulation in some lower areas, punctures rather coarse, deep, close on upper half, finer and subgranulate on lower half of area below upper level of eyes; vestiture on lower half of area below eyes of fine, long abundant hair, longest equal to one-third distance between eyes.

Pronotum 1.2 times as long as wide; essentially as in *limbatus* except posterior areas smooth, shining, with no reticulation, punctures distinctly larger, rounded tubercles on lateral margins of most punctures slightly larger.

Elytra 1.7 times as long as wide, 1.6 times as long as pronotum; outline as in *limbatus* except more narrowly rounded behind; disc as in *limbatus* except striae 1 slightly impressed, stria punctures spaced by 1-2 diameters of a puncture, interstrial punctures more widely spaced, declivity narrower, more distinctly impressed on interstriae 2; declivital stria punctures smaller than on disc, interstriae 1 wide, a row of fine, feebly granulate punctures on side next to suture, 2 almost impunctate, 3 with about three fine, rounded granules. Vestiture of interstrial hair, each seta as long as distance between rows, slightly longer toward base of declivity, usually absent on declivital interstriae 2.

MALE.— Similar to female except frons almost flat on lower half, with punctures finer, vestiture sparse, declivity much more strongly, more broadly impressed (to middle of interstriae 3), its lateral and apical margins more abruptly rounded.

TYPE LOCALITY.—Merida, Merida, Venezuela.

TYPE MATERIAL.— The female holotype, male allotype, and 25 paratypes were taken at the type locality on 22-IX-1969, 5300 m, No. 1, from *Cucurbita*, by me.

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

Dendrocranulus limitaris, n. sp.

This species is distinguished from the very closely allied *limbellus* Wood by the more extensive female frontal vestiture, by the finer punctures on the head, and by differences on the pronotum and elytral declivity cited below.

FEMALE.— Length 2.1 mm (2.0–2.3 mm), 2.7 times as long as wide; color very dark brown.

Frons as in *limbellus* except area above pubescence mostly reticulate, punctures much finer, dense brush of pubescence extending from epistoma to upper level of eyes, longest setae equal to almost half distance between eyes.

Pronotum as in *limbellus* except punctures on disc smaller, their accompanying tubercles larger, tuberculate area extending to median area.

Elytra as in *limbellus* except declivital interstriae 2 ascending laterally, with a row of regularly spaced punctures, granules on interstriae 3 absent, vestiture on declivital interstriae 2 usually present.

MALE.— Similar to female except frons less strongly convex (more strongly than male *limbellus*), with vestiture sparse, declivity more distinctly impressed (about as in female *limbellus*), with interstriae 2 largely impunctate, lateral and apical margins broadly rounded.

TYPE LOCALITY.— Rancho Grande, Pittier National Park, Aragua, Venezuela.

TYPE MATERIAL.— The female holotype, male allotype, and 137 paratypes were taken at the type locality on 9-IV-1970, 1100 m,

Nos. 407 (type), 421, 422, 423, from cucurbit vines, by me.

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

Dendrocranulus modus, n. sp.

This species is distinguished from *carbonarius* (Ferrari) and *guatemalensis* (Hopkins) by characters indicated below.

FEMALE.— Length 1.8 mm (paratypes 1.6–2.0 mm), 2.5 times as long as wide; color very dark brown.

Frons as in *guatemalensis* except weakly, transversely impressed just above epistoma.

Pronotum as in *guatemalensis* except disc less irregular with punctures smaller than in *guatemalensis* but larger than in *carbonarius*.

Elytra as in *guatemalensis* except declivity less strongly impressed (but more so than in *carbonarius*), declivital interstitial setae much longer than in *carbonarius*, slightly longer than *guatemalensis*, each distinctly longer than distance between rows; interstitial punctures on declivity very feebly granulate.

MALE.— Similar to female except frons intermediate between males of *guatemalensis* and *carbonarius*, median third on lower half slightly impressed (not impressed in *carbonarius*; in *guatemalensis* impression extends to lateral margins and higher on frons); declivital impression slightly stronger and more extensive than in female.

TYPE LOCALITY.— Merida, Merida, Venezuela.

TYPE MATERIAL.— The female holotype, male allotype, and 12 paratypes were taken at the type locality on 11-IX-1969, 170 m, No. 1, from *Cucurbita*, by me. Four paratypes are from the same locality, and host, taken 22-IX-1969, No. 18.

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

Dendrocranulus pinguis, n. sp.

The relationship of this species to *acutus*, *limbellus*, and *limitaris* is more remote. The female frons lacks a dense tuft of hair and the declivity is less distinctly impressed.

FEMALE.— Length 2.4 mm (paratypes 2.2–2.4 mm), 2.5 times as long as wide; color very dark brown.

Frons broadly convex, a weak, transverse impression between eyes; surface reticulate, rather finely, uniformly punctured, lower margins of most punctures shining, perhaps feebly granulate; vestiture sparse, inconspicuous; fine, rather short.

Pronotum 1.2 times as long as wide; resembling *auctus* Wood; disc finely reticulate, punctures very small, distinct, their accompanying tubercles transverse, with longitudinal axis equal to diameter of puncture, transverse axis two or three times as great.

Elytra 1.5 times as long as wide, 1.4 times as long as pronotum; sides straight and parallel on basal two-thirds, slightly tapered then very broadly rounded behind; striae not impressed, punctures moderately coarse, deep, close; interstriae twice as wide as striae, almost smooth, shining, punctures two-thirds as large as those of striae, rather close. Declivity very steep, broadly convex, feebly sulcate on median half; striae punctures slightly smaller than on disc; interstriae 1 slightly elevated, 2 feebly impressed, 3 as high as 1, interstitial punctures almost as large as those of striae, their dorsolateral margins armed by a granule almost equal in height and diameter to puncture. Vestiture abraded on type; on paratypes consisting of erect interstitial bristles, each slightly shorter than distance between rows.

MALE.—Similar to female except frontal impression slightly more extensive, lateral granules larger, declivity more broadly, more strongly impressed (but still rather shallow).

TYPE LOCALITY.—Bumbum Forest Station, Barinas, Venezuela.

TYPE MATERIAL.—The female holotype, male allotype, and six paratypes were taken at the type locality on 29-I-1970, 150 m, No. 276, from a cucurbit vine, by me.

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

Hylocurus clarki, n. sp.

This species is distinguished from *aberrans* Wood by the more coarsely tuberculate pronotal disc, by the smaller discal striae punctures, and by the very different male elytral declivity.

MALE.—Length 2.3 mm (male paratype 2.5 mm), 2.4 times as long as wide; color dark reddish brown.

Head about as in *aberrans*.

Pronotum as in *aberrans* except disc much more strongly reticulate, rounded tubercles conspicuously larger.

Elytra similar to *aberrans* except striae punctures smaller, interstriae slightly wider than striae and marked by more numerous transverse lines, declivity with spines in circumdeclivital ring blunt, conspicuously more strongly projecting, particularly on upper half, degree of projection about equal to width of spine, punctures of declivital face confused, vestiture on circumdeclivital ring conspicuously longer, more slender, setae on declivital face short, of stout hair.

TYPE LOCALITY.—Between Sicabé and San Miguel Ixtahuacán, San Marcos, Guatemala.

TYPE MATERIAL.—The male holotype and one male paratype were taken at the type locality on 24-II-1972, from *Pinus tenuifolia*, by E. W. Clark.

The holotype and paratype are in my collection.

Hylocurus longipennis, n. sp.

This species is distinguished by the slender body form and by other characters cited below. Though it is more closely allied to *hirtellus* (LeConte) than to other known species, the relationship is not close.

MALE.—Length 2.5 mm (females 2.8–3.0 mm), 3.1 times as long as wide; color very dark brown.

Frons with a strong, transverse carina on more than median half midway between level of antennal insertion and upper margin of eyes; surface concealed by pronotum above carina, smooth, shining, with small punctures at sides and below. Antenna about as in *hirtellus* except club slightly larger, wider, with sutures slightly more strongly procurved.

Pronotum 1.2 times as long as wide; about as in *hirtellus* except disc longer, more strongly reticulate, with subcrenulate tubercles almost twice as large.

Elytra 2.0 times as long as wide, 1.7 times as long as pronotum; sides straight and parallel on basal four-fifths, rather abruptly, serately tapered to strong, apical mucro; striae not impressed, punctures rather coarse, deep, spaced by diameter of a puncture; interstriae slightly narrower than striae, smooth, shining,

punctures small, close, their anterior margins slightly elevated, more strongly so near declivity. Declivity very steep, convex; about as in *hirtellus* except smoother, more brightly shining, tubercles at base slightly larger, broader, interstriae 3 without tubercles below junction with 7, 9 higher and without tubercles on its posterior half; costal margin near apex finely serrate. Vestiture much as in *hirtellus* except interstitial setae at base of declivity longer, coarser, striae setae much shorter.

FEMALE.— Similar to male except frons

without a carina, an indefinite callus in its place, upper surface with indefinite punctures and fine, sparse granules, vestiture rather sparse; tubercles at base of declivity finer.

TYPE LOCALITY.— Five km west of El Salto, Durango, Mexico.

TYPE MATERIAL.— The male holotype, female allotype, and two female paratypes were taken on 7-VI-1965, 2500 m, No. 41, from a *Quercus* branch by me.

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



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