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NEW SPECIES AND NEW RECORDS OF NORTH AMERICAN *PITYOPHTHORUS* (COLEOPTERA: SCOLYTIDAE) PART VII.

Donald E. Bright¹

ABSTRACT.—Three species of *Pityophthorus* from Mexico are described: *bravoi* (Mexico), *conscriptus* (Morelos), and *ostriacoleus* (Morelos). Additional host or locality data are given for: *atomus*, *corruptus*, *deletus*, *diglyphus*, *elimatus*, *exquisitus*, *furnissi*, *hylocuroides*, *molestus*, *montezumae*, *nebulosus*, *nocturnus*, and *vespertinus*. Existing keys are modified to contain all newly described species.

This is the final contribution to a series of papers describing the unnamed species and giving new data for the species of *Pityophthorus* collected by T. H. Atkinson and his colleagues (Centro de Entomología y Acarología, Colegio de Postgraduados, Chapingo, Mexico). Unlike the previous papers of this series (Great Basin Nat. 45: 467–482) in which all the new species in a species group were described together and a new key written for the species of the group, each of the species described here is the only new one in a species group. Therefore, only the key couplets from my 1981 monograph (Ent. Soc. Canada Mem. 118) are modified to accommodate the new forms.

Once again I wish to thank Dr. T. H. Atkinson for sending the specimens to me and also thank him and his colleagues for their persistence in searching for Scolytidae in numerous different host plants. I also thank my colleagues Dr. E. C. Becker and Dr. J. M. Campbell for reviewing the manuscript of this paper.

Pityophthorus bravoi, n. sp.

Length 1.9–2.2 mm, 2.7 times longer than wide.

FEMALE.—Frons flattened on a semicircular area extending laterally from eye to eye and from epistoma to well above upper level of eyes; surface shining, with numerous fine punctures and with sparse, erect setae, these more abundant, longer, incurved on periphery. Antennal club broadly oval, 1.4 times longer than wide, widest through segments 2 and 3; suture 1 weakly arcuate, suture 2 more

strongly arcuate; segment 1 slightly narrower than 2; first two segments occupy half of total club length. Pronotum less than 1.1 times longer than wide, widest behind summit; sides weakly arcuate; asperities on anterior slope small, scattered, isolated; summit strongly elevated; posterior area of disc distinctly punctured, punctures small, deep, close, surface between punctures moderately shining, finely, minutely reticulate; median line not elevated, impunctate. Elytra 2.0 times longer than wide; apex broadly rounded; discal striae punctured in regular rows, punctures larger, deeper than those on posterior portion of pronotum; discal interstriae only slightly wider than striae or as wide as striae, moderately shining, surface finely, minutely reticulate, interstriae 1, 3, 5, 7 each with a median row of sparse punctures and setae, punctures smaller than those in striae, setae longer than those in striae. Declivity convex, weakly bisulcate; interstriae 2 weakly impressed below 1 and 3, equal in width to discal width, surface as on disc; interstriae 1 very weakly impressed below level of 3, with median row of very small granules and setae; interstriae 3 bearing median row of granules, these slightly larger than those in interstriae 1 and with several long, stout setae (sometimes abraded); punctures in striae 1 and 2 much smaller than those on disc, barely visible.

MALE.—Frons convex, median longitudinal carina weakly elevated from epistoma to upper level of eyes, surface on each side of carina shining, densely, finely punctured, setae absent except along epistomal margin. Pronotum and elytra essentially as described

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for female except pronotal asperities somewhat stronger and pronotal and elytral punctures larger, deeper. Declivity as in female.

TYPE MATERIAL.—The holotype (♀) is labeled: "Carr. Mex. Popo, Km. 85, VIII-26-1961, Col. H. Bravo M." / ♀ / "HOLOTYPE *Pityophthorus bravo* D. E. Bright, 1986, CNC No. 18719." The allotype and 6 paratypes bear the same data.

The holotype, allotype, and two paratypes are in the CNC; four paratypes have been returned to T. H. Atkinson.

COMMENTS.—Adults of this species closely resemble those of *P. clivus* Bright. They differ from those of *P. clivus* by the longer, more obscure carina on the male frons, by the more evenly pubescent female frons, by the slightly more deeply sulcate elytral declivity on which interstriae 2 is not wider than the discal width, and by the slightly larger size.

The key to the species in the *Blaudus* group (pp. 238–241) in my 1981 monograph should be modified as follows:

(Males)

5. Occurs in Mexico; carina on frons moderately or weakly elevated 6
- Occurs in western United States and western Canada; carina on frons variable in height 6a
6. Carina on frons distinctly, moderately elevated, short, extending to well below upper margin of eyes; 1.7–2.0 mm; Nuevo León *clivus* Bright
- Carina on frons weakly elevated, extending to well above upper margin of eyes; 1.9–2.2 mm; Mexico *bravo* Bright
- 6a. continue from couplet 6 in monograph.

(Females)

27. Occurs in Mexico; setae on frons sparse; median pair of serrations on anterior pronotal margin longer than others; interstriae 2 equal to or only slightly wider on declivity than on disc 28
- Occurs in western United States and western Canada; setae on frons abundant over entire surface; median pair of serrations on anterior pronotal margin not especially longer than others; interstriae 2 distinctly wider on declivity than on disc *sierraeensis* Bright
28. Setae on frons absent or very sparse on small area in center; interstriae 2 slightly wider on declivity than on disc; 1.7–2.0 mm; Nuevo León *clivus* Bright
- Setae on frons sparse, evenly distributed over surface; interstriae 2 equal in width on declivity and disc; 1.9–2.2 mm; Mexico *bravo* Bright
29. continue as in couplet 28 in monograph.

Pityophthorus conscriptus, n. sp.

Length 1.7–1.9 mm, 2.8 times longer than wide; color black with light reddish legs and antennae.

FEMALE.—Frons flattened on a large, semicircular area extending from epistoma to well above upper level of eyes, about half of flattened area above upper level of eyes, rising slightly toward epistoma and with low, median granule on epistoma; surface shining, with fine, dense, scattered punctures and long, erect, yellowish setae, these slightly longer and incurved on periphery, denser along epistoma. Antennal club oval, 1.2–1.3 times longer than wide, widest through segment 2; sutures 1 and 2 transverse, 1 more strongly chitinized; segments 1 and 2 occupy half of total club length. Pronotum 1.1 times longer than wide, widest on posterior half; asperities on anterior slope arranged in a series of irregular concentric rows, the three or four rows behind anterior margin composed of individual, closely placed asperities generally arranged in broken rows, some rows not extending completely from side to side, with occasional isolated asperities between rows, upper rows around summit in form of elongate, elevated costae, these sometimes weakly serrate but not divided to base to form individual asperities, each row extending up to half of distance across pronotum, some rows joining adjacent rows; summit not elevated; posterior area of disc distinctly punctured, punctures moderate in size and depth, separated by distance equal to or less than their diameters; surface between punctures smooth, moderately shining, with numerous impressed points; median line broad, impunctate, not elevated. Elytra 1.8 times longer than wide; apex broadly rounded; discal striae punctured in regular rows, punctures larger, deeper than those on posterior portion of pronotum; interstriae slightly narrower than striae, smooth, more brightly shining than posterior portion of pronotum with scattered fine points or lines. Declivity evenly convex, moderately steep; interstriae 1 moderately elevated, devoid of granules; interstriae 2 flat, slightly broader than discal width; interstriae 3 not elevated, unmodified; surface of all interstriae dull, densely micro-punctate; striae 1 narrowly impressed, slightly more strongly so on upper half. Inter-

striae 1 with a median row of erect setae extending from base to apex; interstriae 3, 5, 7 with median row of similar setae extending from or posterior to midpoint of disc to apex.

MALE.—Frons weakly flattened from epistoma to above upper level of eyes, more distinctly, transversely impressed just above epistoma, slightly convex on upper portions; surface densely, strongly punctured, dull on lower half, shining above, setae short, scattered, longer and more abundant in transverse impressions above epistoma. Pronotum and elytra essentially as on female except punctures on pronotum and in striae slightly larger. Declivity steep, deeply bisulcate; interstriae 1 strongly elevated, broad, with median row of 4 or 5 large, acute granules; interstriae 2 much broader than discal width, smooth, distinctly impressed; interstriae 3 strongly elevated, arcuate, with median row of 4 or 5 acute granules, these smaller than those on interstriae 1; surface and vestiture of interstriae as in female.

TYPE MATERIAL.—The holotype (♀) is labeled: "LA HERRADURA, Mpio, Tepoztlan, Mor.[elos], 10 Jie 1982, 1,750 m, (??)3-127, A. Burgos-E. Saucedo"/"HOLOTYPE *Pityophthorus conscriptus* D. E. Bright, 1986, CNC No. 18720."

The allotype and six paratypes bear the same labels. Some of the letters or numbers on the labels are illegible.

The holotype, allotype, and two paratypes are in the CNC; four paratypes have been returned to T. H. Atkinson.

COMMENTS.—Adults of this species are unique by the presence of broken concentric rows of asperities on the lower slope of the pronotum, by the short concentric, anastomatic rows of elevated costae on the upper slope and around the summit of the pronotum, by the deeply bisulcate elytral declivity that bears distinct granules on interstriae 1 and 3 of the male, and by the evenly sloping, not sulcate, not granulate elytral declivity of the female.

This species does not readily fit into any of the species groups I used in my 1981 monograph. Its declivital characters indicate relationship to *P. guatemalensis*, but its pronotal characters seem distinctly unrelated. Adults of this species differ from those of *P. guatemalensis* by the more deeply impressed male declivity, by the less deeply impressed

female declivity that is devoid of granules on the first and third interstriae, by the characters on the pronotum as described above, by the more extensively pubescent female frons, and by the less strongly convex male frons.

The key to species group (p. 22) in my monograph should be modified as follows:

- 6. (as in monograph)
 - Segment 1 of antennal club nearly equal in width to others, club widest through segment 2 7a
 - 7a. Asperities on lower slope of pronotum arranged in broken, concentric rows, those on upper slope and around summit developed into short, concentric, anastomatic costae; male elytral declivity deeply bisulcate, with acute granules on interstriae 1 and 3; female elytral declivity convex, not sulcate, devoid of granules on interstriae 1 and 3 Conscriptus group
 - Asperities on anterior slope and around summit arranged in even concentric rows, elevated costae not present; elytral declivity variable, not as above 7
- 7. Continue as in monograph.

Pityophthorus ostryacolens, n. sp.

Length 2.4–2.5 mm, 2.9 times longer than wide; color reddish brown, legs and antenna light reddish or yellowish brown.

FEMALE.—Frons weakly convex, with a smooth, broad, weakly elevated, longitudinal, median elevation extending from epistoma to level of upper margin of eyes; surface lateral to and above elevation densely punctured, punctures small, shallow, becoming larger, deeper toward vertex and laterally toward eyes, surface between punctures shining, generally smooth but with a few, scattered minute granules; vestiture moderately abundant, scattered, consisting of downward pointing, moderately long, yellowish setae, these longer, denser along epistomal margin. Antennal club broadly oval, 1.2 times longer than wide, widest through segment 2; sutures 1 and 2 arcuate; segments 1 and 2 occupy about half of total club length. Pronotum 1.1 times longer than wide, widest at middle; sides very weakly arcuate on basal half, broadly rounded to the weakly serrate anterior margin; anterior slope with numerous, scattered, low asperities, these extending laterally to base and onto posterior discal portion; summit not elevated; posterior area of disc deeply punctured, punctures large, separated by a distance less than their diameters, lateral edges of punctures elevated, forming

low asperities except in very limited median area, surface between punctures smooth, shining, with minute impressed points; median line not evident. Elytra 1.8 times longer than wide; apex broadly rounded; discal striae punctured in regular rows, punctures large, deeply impressed, each with a very short seta; interstriae about 1.5 times wider than striae, surface moderately shining, with numerous, scattered, impressed points. Declivity evenly convex, sloping; striae and interstriae essentially as on disc except interstriae 1, 3, 5, 7, etc., with a median row of very fine granules and a median row of erect setae and striae punctures slightly less distinct.

MALE.—Identical to female except setae on frons less abundant and less distinct.

TYPE MATERIAL.—The holotype (♀) is labeled: "Cuernavaca, Mor.[elos], 18.III.82, S-396, 2,190 msnm, T. H. Atkinson"/"*Ostrya virginiana* (Ulmaceae)"/"HOLOTYPE *Pityophthorus ostryacols* D. E. Bright 1986, CNC No. 18721." The allotype bears the same locality and host label plus an allotype label.

The holotype and allotype are in the CNC.

COMMENTS.—This species belongs in the *Alni* group and will key out near *P. alnicolens* Wood. Adults differ by their larger size, by the more distinct longitudinal carina on the frons, by the more weakly serrate anterior pronotal margin, and by the different host and distribution.

The key to the species in the *Alni* group (pp. 92–93) in my 1981 monograph should be modified as follows:

3. Declivital interstriae 2 bearing a median row of stout setae; elytral striae impressed on disc, interstriae convex; lateral areas of pronotum asperate almost to base; pronotum and elytra shining; Veracruz *alni* Blackman
- Declivital interstriae 2 not bearing a median row of setae; elytral striae not or only weakly impressed; lateral areas of pronotum punctate to subasperate; pronotum and elytra dull to moderately shining 3a
- 3a. Length 1.8–2.0 mm; longitudinal carina on frons indistinct, faintly elevated; elytral striae not impressed; in *Alnus*, Veracruz *alnicolens* Wood
- Length 2.4–2.5 mm; longitudinal carina on frons distinct, weakly elevated; elytral striae weakly impressed; in *Ostrya*, Morelos *ostryacols* Bright
4. Continue as in monograph.

NEW HOST OR LOCALITY RECORDS

Only locality records that significantly extend the range or represent the first records since the species was described are listed below. All new host records seen are also listed below. Numerous new state records were seen in the material examined; these will be reported later.

Pityophthorus atomus Wood

Pityophthorus atomus Wood, 1964, Great Basin Nat. 24: 61; Bright, 1981, Ent. Soc. Canada Mem. 118: 44; Wood, 1982, Great Basin Nat. Mem. 6: 1137.

This species was previously recorded only from Oaxaca and Veracruz from an unknown shrub. Two series totaling 17 specimens have been seen with the data: "Pachuca, Edo. de Hidalgo, S-463, 21.V.82, 2,400 m, Col. A. Equihua M." (8) and "Jalapa, VERACRUZ, 25.II.84, FANM 143, Col. Felipe A. Noguera"/"Hosp. *Vernonia* sp. (Compositae)."

Pityophthorus corruptus Wood

Pityophthorus corruptus Wood, 1976, Great Basin Nat. 36: 363; Bright, 1981, Ent. Soc. Canada Mem. 118: 68; Wood, 1982, Great Basin Nat. Mem. 6: 1133.

Known only from the type locality in Puebla from *Toxicodendron* (or *Rhus* sp.). Twenty-nine specimens have been seen with the data: "San Rafael, Mex.[ico], 4.IX.81, S-242, 2,400 m, Atkinson-Equihua"/"Hosp.: *Rhus* sp."

Pityophthorus deletus LeConte

Pityophthorus deletus LeConte, 1879, Bull. U.S. Geol. Geog. Survey 5(3): 519; Bright, 1981, Ent. Soc. Canada Mem. 118: 110; Wood, 1982, Great Basin Nat. Mem. 6: 1040.

This name includes a presently unresolved complex of one or more very closely related and variable species. Seven names (*sensu* Bright) or six names (*sensu* Wood) are included as synonyms under the above name.

This species is known from California to South Dakota, south to Durango and Coahuila, Mexico. Five specimens which I have assigned to this species complex have been seen with the labels: (3) "Cerro Tlaloc, Tequesquahuac, Edo. Mex.[ico], 22.I.80; 3,400 msnm, Col. T. H. Atkinson"/"Hosp.: *Pinus hartwegii* (Pinaceae)" and (2) "Zoquiapan, Edo. Mex.[ico], Altitud. 3,600 msnm, Fecha: 25-III-81, Col. A. Equihua M."/ "Hosp. *Pinus hartwegii* (Pinaceae)."

Pityophthorus diglyphus Blandford

Pityophthorus diglyphus Blandford 1904, Biol. Cent.-Amer. 4(6): 240; Bright, 1981, Ent. Soc. Canada Mem. 118: 121; Wood, 1982, Great Basin Nat. Mem. 6: 1058.

Previously known only from Guatemala. Three specimens, all females, were seen with the labels: "Volcan Chichinatzin, Morelos, 30. Jie (?), 1982, 2,790 m, 73-133, J. Burgos"/ "(Pinaceae) *Pinus* sp."

These three specimens could possibly be considered examples of *P. leiophyllae* Blackman based on morphological similarity and locality. The presence of long setae on the third declivital interstriae place it in *P. diglyphus* as presently understood. The two names may be synonyms, but more specimens are needed before a definite conclusion can be made.

Pityophthorus elimatus Bright

Pityophthorus elimatus Bright, 1976, Great Basin Nat. 36: 432; Bright, 1981, Ent. Soc. Canada Mem. 118: 196; Wood, 1982, Great Basin Nat. Mem. 6: 1086.

This species was previously known only from the type locality in Oaxaca. Eight specimens have been seen with the data: "Parque Nal. Zoquiapan, Edo. de Mexico, 3,200 msnm, 24.V.80, S-099, Col. D. Cibrian Tovar."

Pityophthorus exquisitus (Blackman)

Neodryocoetes exquisitus Blackman, 1942, Proc. U.S. Nat. Mus. 92(3147): 196.

Pityophthorus exquisitus: Bright, 1981, Ent. Soc. Canada Mem. 118: 102; Wood, 1982, Great Basin Nat. Mem. 6: 1026.

Pityophthorus inceptis Wood, 1975, Great Basin Nat. 35: 396; Bright, 1981, Ent. Soc. Canada Mem. 118: 102.

This species was previously known from Jalisco and Michoacán. The host is listed as an unknown shrub or in wood crates or wood stems. Four specimens were examined that bore the following labels: "Rancho Tetela, Cuernavaca, Mor[elos], Compositae, 10-En-ero-1982, 1,350 m, Col. BUSA-SACE-MAFE."

Pityophthorus furnissi Bright

Pityophthorus furnissi Bright, 1976, Great Basin Nat. 36: 433; Bright, 1981, Ent. Soc. Canada Mem. 118: 144; Wood, 1982, Great Basin Nat. 6: 1094.

Previously known only from the type locality of Amecameca, Mexico. Eight specimens were seen with the following data: "Cerro Tlaloc, Tequesquinahuac, Edo. Mex[ico], 22.I.80, 3,400 msnm, Col. T. H. Atkinson"/ "Hosp.: *Pinus hartwegii* (Pinaceae)."

Pityophthorus hylocuroides Wood

Pityophthorus hylocuroides Wood, 1964, Great Basin Nat. 24: 69; Bright, 1981, Ent. Soc. Canada Mem. 118: 31; Wood, 1982, Great Basin Nat. Mem. 6: 1120.

Previously known only from Hidalgo taken on *Rhus* sp. One specimen has been seen with the data: "Jalapa, VERACRUZ, 21.II.84, FANM 140, Col. Felipe A. Noguera"/ "Hosp.: *Tithonia* sp. (Compositae)."

Pityophthorus molestus Wood

Pityophthorus molestus Wood, 1976, Great Basin Nat. 36: 362; Bright, 1981, Ent. Soc. Canada Mem. 118: 61; Wood, 1982, Great Basin Nat. Mem. 6: 1131.

Previously known only from the type locality in San Luis Potosi. Three specimens were seen with the data: "Apulco Centre Zaca-poaxtla y Cuetzalan, Pue[bla], 4.V.81, 1,480 m, Col. T. H. Atkinson y A. Equihua, S216"/ "Hosp.: *Liquidambar styraciflua*."

Pityophthorus montezumae Bright

Pityophthorus montezumae Bright, 1978, Great Basin Nat. 38: 81; Bright, 1981, Ent. Soc. Canada Mem. 118: 272; Wood, 1982, Great Basin Nat. Mem. 6: 1079.

Known previously only from the type locality in Chiapas. Two specimens have been seen with the data: "Parque Nal. Zoquiapan, Edo. de Mexico, 3,200 msnm, 24.V.80, S-099, Col. D. Cibrian Tovar" (1) and "Parque Nal. Zoquiapan, Edo. Mexico. Agosto 79, Hos. *Pinus hartwegii*. T. H. Atkinson" (1).

Pityophthorus nebulosus Wood

Pityophthorus nebulosus Wood, 1976, Great Basin Nat. 36: 363; Bright, 1981, Ent. Soc. Canada Mem. 118: 100; Wood, 1982, Great Basin Nat. Mem. 6: 1126.

This species was previously known only from the type series collected at Lake Catemaco, Veracruz from *Bursera* sp. A series of 10 specimens was seen bearing the labels: "Campo Exptal. I.N.I.F., Escarcega, CAMP[ECHE], 14.IX.83, AEV. 51, Col. A. Estrada V."/ "*Bursera semaruba* (Burseraceae)."

Pityophthorus nocturnus Schedl

Pityophthorus nocturnus Schedl, 1938, Archiv Naturgesch. 7: 185; Bright, 1981, Ent. Soc. Canada Mem. 118: 192; Wood, 1982, Great Basin Nat. Mem. 6: 1087.

Pityophthorus hidalgoensis Blackman, 1942, Proc. U.S. Nat. Mus. 92: 215.

This species was previously known from the states of Chiapas, Hidalgo, and Veracruz in Mexico and from Guatemala and Honduras. Three series have been seen with the labels: "Taxco, Guerrero, 22-II-82, S-325, 1,900 m, Col. Atkinson y Equihua"/"Hosp. *Pinus* sp."; "La Herradura, Cuernavaca, Mor.[elos], 10 Diciembre 1982, 1,810 m, SM-104, E.

Saucedo-A. Burgos"/"(Pinaceae, *Pinus* sp." and "Acajete, Ver.[acruz]), 22-XI-83, FAMN 91, Col. Felipe A. Noguera"/"Hosp. *Pinus patula* (Pinaceae)."

Pityophthorus vespertinus Bright

Pityophthorus vespertinus Bright, 1978, Great Basin Nat. 38: 83; Bright, 1981, Ent. Soc. Canada Mem. 118: 119; Wood, 1982, Great Basin Nat. Mem. 6: 1058.

This species was previously known from only four specimens collected from *Pinus* sp. in Durango. Six specimens that are referred to this species have been seen bearing the labels: "Acajete, Ver[acruz], 22-XI-83, FAMN 91, Col. Felipe A. Noguera"/"Hosp. *Pinus patula* (Pinaceae)."