

NEW SYNONYMY, NEW SPECIES, AND
NOTES ON SCOLYTIDAE (COLEOPTERA) FROM
SOUTHEASTERN UNITED STATES¹

THOMAS H. ATKINSON

Entomology and Nematology Department, 1600 SW 23rd Dr., IFAS 0540,
University of Florida, Gainesville, FL 32611-0562, U.S.A.

ABSTRACT

New synonymies, new species, and notes on Scolytidae from the eastern United States are presented. New synonymies proposed are: *Hylastes tenuis* Eichhoff 1868 (= *H. exilis* Chapuis 1869), *Chramesus chapuisii* LeConte 1876 (= *C. wisteriae* Wood 1974), and *Hylocurus rudis* (LeConte 1876) (= *H. torosus* Wood 1971). *Phloeotribus pseudoscabri-collis* from southern Texas, *Hylocurus carinifrons* from Florida, and *Hylocurus floridensis* from Florida are described as new and included in modifications to existing keys. Morphological notes on *Hylocurus binodatus* Wood including a description of the male are included. Significant range extensions for *Carphoborus bicornus* Wood and *Pseudothy-sanoes phoradendri* Blackman are reported.

While reviewing the Scolytidae of the southeastern United States for a regional monograph on the systematics and biology of bark and ambrosia beetles of Florida and adjacent areas, I have encountered several cases of synonymy, new taxa, and significant range extensions. These are presented here since publication of the intended monograph is not imminent and so that they can be included in an upcoming world catalog of the Scolytidae (S. L. Wood, pers. comm.).

Hylastes tenuis Eichhoff
(Figs. 1, 2)

Hylastes tenuis Eichhoff 1868, Berliner Entomol. Zeit. 12:147.

Hylastes criticus Eichhoff 1868, Berliner Entomol. Zeit. 12:147. Blackman 1941, U.S. Dept. Agric. Misc. Publ. 417:23; synonymy.

Hylastes exilis Chapuis 1869; Synopsis des Scolytides, p. 20. **New synonymy.**

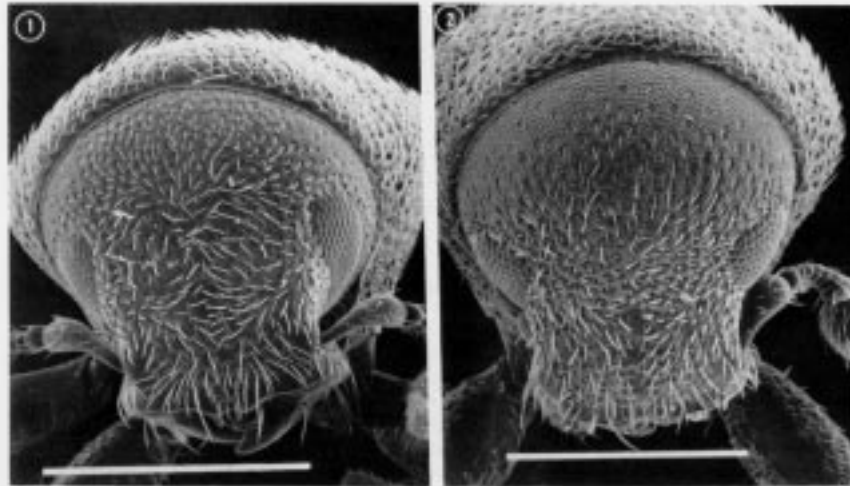
Hylastes pusillus Blackman 1941; U.S. Dept. Agric. Misc. Publ. 417:23. Wood 1971, Great Basin Nat. 31:146; synonymy.

Hylastes parvus Blackman 1941, U.S. Dept. Agric. Misc. Publ. 417:24. Wood 1971, Great Basin Nat. 31:146; synonymy.

Hylastes minutus Blackman 1941, U.S. Dept. Agric. Misc. Publ. 417:25. Wood 1971, Great Basin Nat. 31:146; synonymy.

Specimens of a small species of *Hylastes* from the southeastern United States with a granulate, impunctate frons have previously been referred to *H. exilis* Chapuis; those with a punctate, shining frons from the same area as well as from parts of the southwestern United States to central Mexico have been referred to *H. tenuis* Eichhoff (Wood 1982). The only consistent difference

¹ Florida Agricultural Experiment Station Journal Series No. 9480.



Figs. 1, 2. *Hylaster tenuis*, frons. 1, smooth form. 2, granulate form. Lines = 0.5 mm.

between these species as described is in the frontal sculpturing. At higher magnification it is clear that the frons of both forms are punctate, and differ only in the degree of smoothness of the interstices (Figs. 1, 2). The frontal punctures are difficult to see in rugose forms using optical microscopy, probably due to the scattering of light from the interstitial sculpturing. The degree of smoothness may be due to abrasion or to intraspecific variation. Specimens from the southeastern states tend to have more asperities between the frontal punctures, but this character is not constant within series and intergrades are common. The types of *tenuis* and *criticus* were presumably lost in the Hamburg Museum during the Second World War (Wood 1982). I examined specimens labelled as *tenuis* and *exilis* which had been compared to the respective holotypes by J. M. Swaine, as well as the holotypes of *pusillus*, *parvus*, and *minutus* in the U.S. National Museum (USNM). I have also examined several hundred specimens of this species from the eastern and southwestern United States and Mexico and have concluded that only a single species is represented.

I recently examined a single specimen from the Dominican Republic in the Museum of Comparative Zoology labelled: "fthills Cord. Cent. S of Santiago, June '38, Dom. Rep., Darlington." This is the first record of this species from the Greater Antilles, although it is found in southern Florida. Specimens were examined from the following localities: **United States:** AL: Alexander City; Montgomery. AR: Texarkana. AZ: Prescott; Williams. CA: San Mateo Co.; Shasta Co. DC: Washington. DE: Long Neck. FL: Alachua Co.; Archbold Biological Station; Lake Placid; Sebring; Monticello; Key West; Winter Park; Milton; Lake Worth; Flagler Co.; Vero Beach; Tall Timbers Res. Sta. GA: Athens; Jackson Co.; Spalding Co.; Union Co.; Valdosta. KY: Noble. LA: Bogalusa; Kisatchie Natl. Forest; E. Baton Rouge Par.; Sabine Par. MA: Framingham; Tyngsboro. MD: Cabin John; Plummer's Island. MO: Kansas City. MS: Starkville. NC: Asheville; Biltmore; Lillington; Southern Pines; Roan Mt.; Tryon. NM: Las Vegas Mts.; Santa Fe; Snow. NV: Reno. NY: Ithaca; New

York, SC: Charleston; Myrtle Beach; Manning; Florence; Clemson; Meredith.
 TN: "East Tennessee." TX: Call; Kirbyville. VA: Amelia Co.; Ft. Monroe;
 Maywood; Nelson Co.; Virginia Beach. WV: Kanawha Station; Morgantown;
 White Sulphur Springs. **Mexico:** Mexico (near Amecameca); Morelos. **Dominican Republic:** Santiago.

Chramesus chapuisii LeConte

Chramesus chapuisii LeConte 1876, Proc. Amer. Philos. Soc. 15:375.

Chramesus wisteriae Wood 1974, Brigham Young University Sci. Bull., Biol. Ser. 19:11. **New synonymy.**

I have examined the holotype and paratypes of *Chramesus wisteriae*, the type of *C. chapuisii*, and several hundred specimens of *C. chapuisii* from the southeastern United States and Mexico and have concluded that only a single species is represented. The specimens treated as *C. wisteriae* fall within the range of variability of *C. chapuisii*. Specimens in the type series of *C. wisteriae* apparently have more pronounced interstitial granules in the declivity, but this may be due to the fact that the elytral scales have been abraded on these specimens, making the granules more visible. The elytral vestiture of newly emerged specimens of *C. chapuisii* normally consists of abundant, dense, confused interstitial scales which would tend to hide any granulation. *Chramesus chapuisii* normally breeds in species of *Celtis* (Ulmaceae), but it has also been collected in *Rhamnus capraeifolia* (Rhamnaceae) (Noguera and Atkinson 1989) and *Robinia* sp. (Leguminosae) (Wood 1982). The collection from wisteria (Leguminosae) apparently represents a case of an unusual host since I have been unable to find any species of *Chramesus* in this host despite extensive searching in the southeastern states.

Hylocurus rudis LeConte

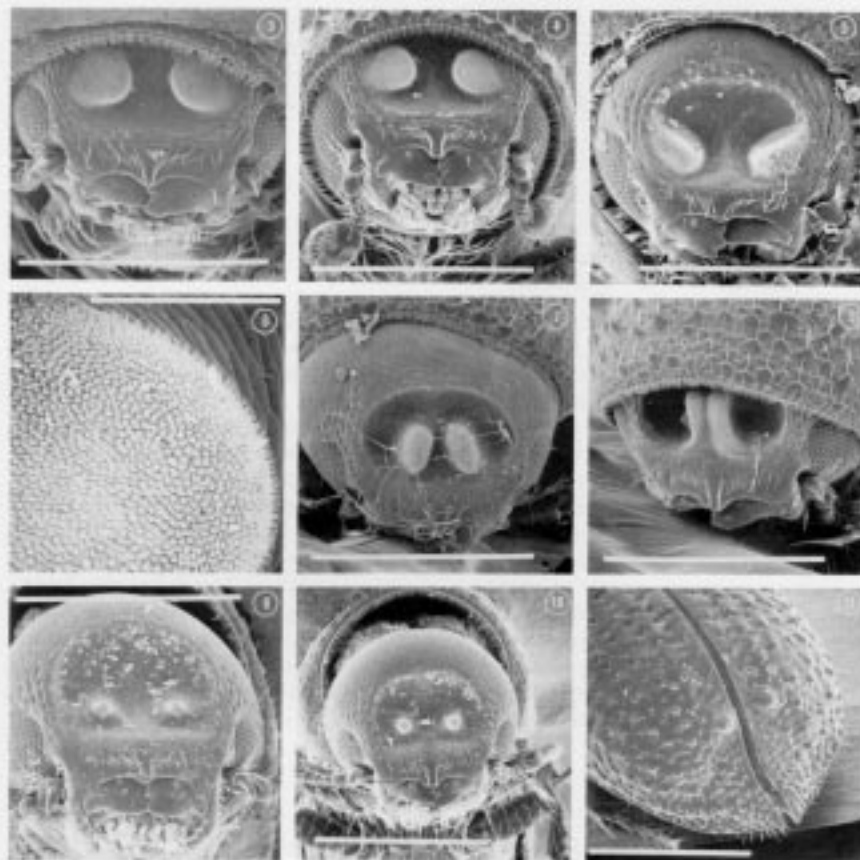
(Figs. 3–6)

Micracis rudis LeConte 1876, Proc. Amer. Philos. Soc. 15:369.

Micracis biorbis Blackman 1920, Miss. Agric. Exp. Sta. Tech. Bull. 9:22. Wood 1972, Great Basin Nat. 32:196; synonymy.

Hylocurus torosus Wood 1971, Brigham Young Univ. Sci. Bull. Biol. Ser. 15:28. **New synonymy.**

Hylocurus rudis belongs to a group of species found in eastern North America and which differ from all other members of the genus in having a concave frons with paired, "spongy-looking" structures (Figs. 3–5). Under higher magnification the spongy texture is seen to consist of short setae interspersed with rounded lamellae (Fig. 6), which may also be setal in origin. The size and arrangement of the spongy areas are sexually dimorphic in this and related species [*binodatus* Wood (Figs. 9, 10), *bicornus* (Blackman) (Figs. 7, 8), *biconcavus* Blackman, and a new species described below (Figs. 17, 18)]. Several are apparently widespread in the eastern United States, but specimens are uncommon in collections and usually from short series. Wood distinguished *torosus* from *rudis* by the shape and placement of the paired frontal structures in the females (protuberant in the former, flattened in the latter). Examination of a large number of specimens, particularly long series from Louisiana and Georgia, indicated that the characters used to separate these 2 species intergrade within series. In all specimens the frons is concave over a large area, although the size



Figs. 3-11. *Hylocyrtus* spp. 3, 4, *rudis*, female frons with "inflated" protuberance. 5, *rudis*, female frons with "deflated" protuberance. 6, *rudis*, closeup of protuberance on female frons. 7, *bicornus*, female frons. 8, *bicornus*, male frons. 9, *binodatus*, male frons. 10, *binodatus*, female frons. 11, *binodatus*, female declivity. Lines = 0.5 mm in Figures 3-5, 7-11; 0.05 mm in Figure 6.

of the concavity varies considerably. The spongy frontal projections are protuberant and rounded in some specimens (Figs. 3, 4) and appear "deflated" in others (Fig. 5). These structures may be inflated in living insects and collapse on death in some specimens or the degree of inflation or deflation may simply vary between individuals. The size of the protuberances (inflated or not) is quite variable, though fairly consistent within series. These are most commonly located on the lateral portions of the central concavity, but may also be on the lower margin or even on the upper margin. In Wood's (1982) key to species, *rudis* and *torosus* are separated from other species in the group by the lack of a median carina in the frontal concavity. This is true for most specimens that I have seen, but others have a slight carina in the lower part of the concave area.

I have examined the holotypes of *rudis* and *biorbis*, a female paratype of *torosus*, as well as 6 specimens referred to *torosus* by Wood in the USNM. Some of these were apparently treated as *rudis* by Blackman (1920, 1928). I have also examined 50 other specimens in several collections. Only one variable species is represented. Specimens have been examined from the following localities: **United States:** DC: "DC." GA: Clarke Co.; Barrow Co. IA: Johnson Co.; Saylorville; Polk Co.; Jester City. IL: Rosedale. IN: Indianapolis; Poland. LA: Baton Rouge. MD: Plummer's Island; Jackson Island. MS: Electric Mills. NC: Tryon. NJ: Pequest. PA: Blair; Harrisburg; Shermanstown. SC: Clemson.

Phloeotribus pseudoscabricollis Atkinson, n. sp.
(Figs. 12-15)

DESCRIPTION. Length 2.4 mm, 1.75 times longer than wide. Male. Frons concave from epistomal margin to vertex, lateral margins subacutely elevated on lower portion, with large, rounded protuberance at level of antennal insertion; surface smooth, with short, sparse, hairlike vestiture. Antennal scape with long hairs, none longer than $\frac{1}{2}$ length of scape. Segments of antennal club approximately 5 times longer than wide.

Pronotum 1.4 times wider than long; widest at base, broadly rounded in front; base nearly straight with only a slight backwards projection in scutellar area. Surface closely punctured, becoming granulate to rugose laterally and anteriorly, several prominent, coarse asperities in anterolateral areas. Vestiture abundant, short, hairlike.

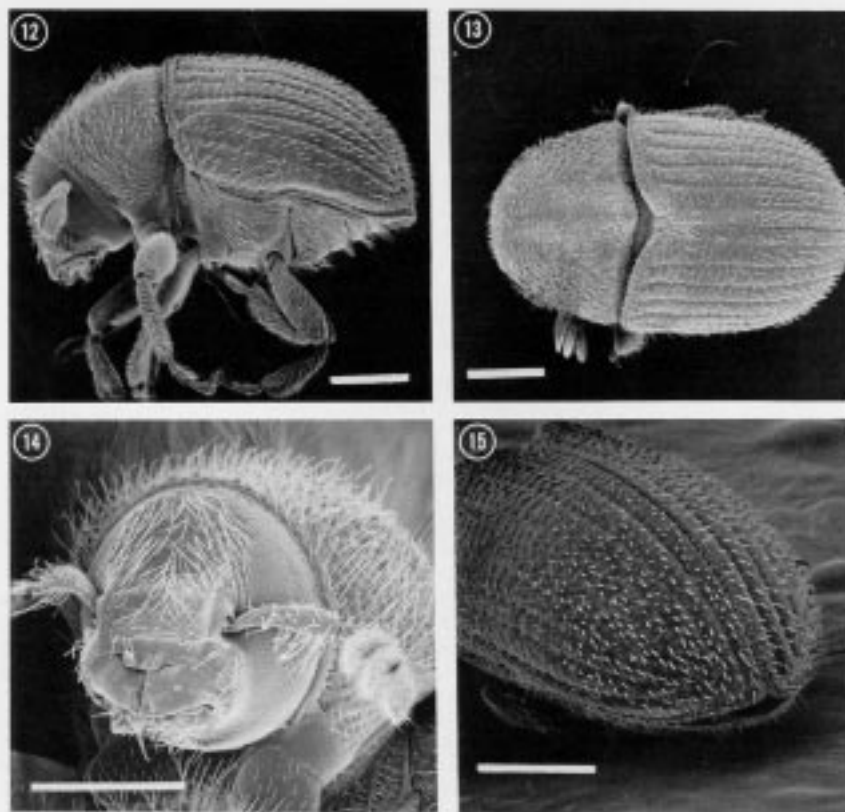
Elytra nearly as wide as long, 1.6 times longer than pronotum; sides nearly straight on basal $\frac{2}{3}$, broadly rounded behind; scutellar invagination gradual, obtuse, basal margins armed by coarse marginal and submarginal crenulations; interstriae armed at base with coarse submarginal crenulations, those on interstriae 1 and 2 as high as the marginal crenulations. Striae narrowly impressed, punctures confluent, individual punctures difficult to distinguish, especially in declivity. First interstriae not impressed at midline near scutellum; interstriae broad, convex, smooth, more than 4 times wider than striae on disk, 3 times wider than striae on declivity, with confused punctures and short hairlike setae from base to apex. Declivity convex, interstriae equally convex; some punctures finely granulate, similar in size on all interstriae; interstriae 9 elevated laterally, becoming indistinct apically, intersecting interstriae 2, not joining costal margin; denticles small, rounded, inconspicuous. Vestiture of confused, short, dark, hairlike setae on all interstriae, setae less than $\frac{1}{3}$ width of interstriae in length.

Female. Similar to male except frons flattened, lateral margins not elevated; antennal scape without tuft of hairs; asperities of pronotum slightly larger and more widely distributed.

TYPE MATERIAL. The male holotype is labelled: "Lake Corpus Christi State Park, San Patricio Co., Texas, March 29, 1970, W. E. Clark"/"HOLOTYPE *Phloeotribus pseudoscabricollis* T. H. Atkinson 1989." Three female paratypes are labelled "Corpus Christi, Nueces Co., Texas, May 1, 1971, C. W. Griffin" with paratype labels. The holotype and 1 paratype have been deposited in the USNM. The other 2 paratypes are in the author's collection.

COMMENTS. A single female not included in the type series is labelled "Mexico, Chiapas, 25 mi SW Cintalapa, 11-VII-71, Clark, Murray, Hart, Schaffner." This specimen is indistinguishable in all respects from the females from Texas, but since males are required for definitive species determination in this genus, the identification of the Chiapas female is considered provisional.

Phloeotribus pseudoscabricollis most closely resembles *scabricollis* Hopkins of all the species of *Phloeotribus* in North and Central America and would key to that species in Wood's (1982) key. It differs from *scabricollis* in its larger size; wider, smoother interstriae with less deeply punctured striae; less prom-



Figs. 12-15. *Phloeotribus pseudoscabricollis*. 12, male, lateral view. 13, female, dorsal view. 14, male frons. 15, female declivity. Lines = 0.5 mm.

inent interstitial granules on the declivity; and larger submarginal crenulations at the base of the elytra. In addition, the first interstriae of *scabricollis* are deeply impressed near the scutellum, forming a basal median groove. All interstriae of *pseudoscabricollis* are equally elevated near the scutellum. The following modification of Wood's (1982) key to the species of *Phloeotribus* will aid in the identification of this species.

- 20(19). Elytral vestiture hairlike at base, slender bristles on declivity, declivital vestiture confused _____ 20'
 - Elytral vestiture of slender scales, uniseriate on all declivital interstriae except 1; Panama; 2.5 mm _____ *scabratus* Blandford
- 20'(20). First interstriae depressed near scutellum, forming median groove on basal 1/3 of elytra, striae punctures relatively larger, interstriae 2 times width of striae; submarginal crenulations sparse, all lower than marginal crenulations; sharply pointed, conspicuous uniseriate denticles on interstriae 9 and costal margin in declivital area, visible in dorsal view _____ *scabricollis* Hopkins

- First interstriae not depressed near scutellum, basal $\frac{1}{3}$ of elytra flat in center; striae punctures comparatively smaller, confluent, interstriae 4 times width of striae; submarginal crenulations abundant on all interstriae, especially those of interstriae 1 and 2 which are as high as marginal crenulations; denticles on interstriae 9 and costal margin small, rounded, inconspicuous
 *pseudoscabricollis*, n. sp.

Hylocurus carinifrons Atkinson, n. sp.
 (Figs. 16–18)

DESCRIPTION. Length 2.0 mm, 2.9 times longer than wide.

Female. Frons deeply concave from epistoma nearly to vertex; surface smooth, shining, impunctate; concave area sharply constricted laterally just above upper level of the eyes, occupying $\frac{2}{3}$ of frontal area between eyes, narrower and shallower above constriction, upper limits indistinct, lower portion divided into 2 roughly circular areas by longitudinal carina extending from epistomal margin to upper level of eyes; 2 small, distinctly separated, pilose-setose areas on slightly projecting lower margin of concavity, appearing inflated and subglobular in some specimens, separated by distance greater than or equal to their width, not reaching carina. Antennal club with 2 bisulcate sutures, marked by golden, fimbriate setae.

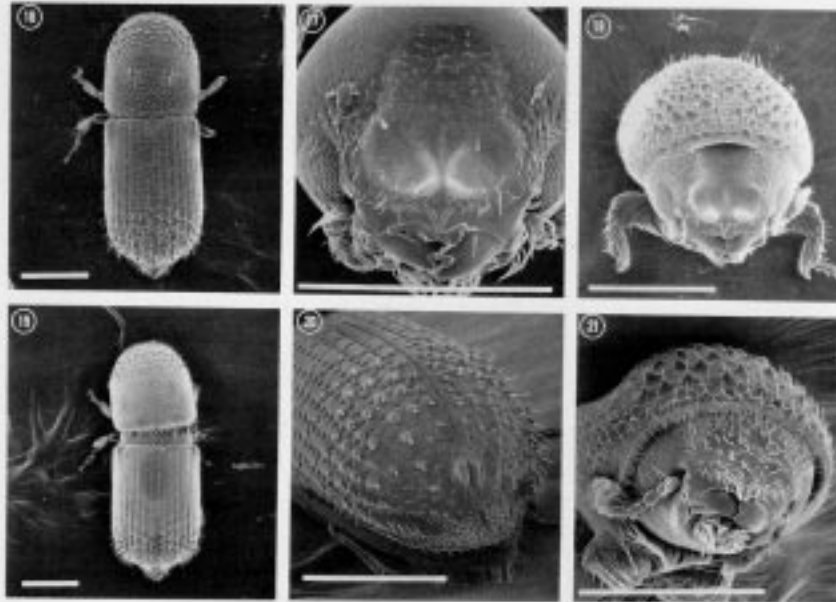
Pronotum 1.1 times as long as wide; sides straight on basal $\frac{2}{3}$, broadly rounded in front; asperities large on anterior portion, not pronounced on anterior margin, abruptly smaller from well-marked pronotal summit to base, subparallel at summit, much less pronounced on posterolateral area, each associated with a single, backwards-projecting seta, arising from behind. Several (less than 10) larger setae in 2 loose groups on either side of and slightly posteriad of summit, largest at least twice as long and thick as largest setae associated with asperities. Surface of posterior portion finely reticulate between asperities.

Elytra 1.7 times longer than pronotum, 1.7 times longer than wide; discal striae impressed, interstriae as wide as striae, surface shining, interstitial punctures on disc smaller than striae punctures, in uniseriate rows, spaced widely; discal interstitial setae very small, about size of striae setae. All striae continue to apex of declivity, punctures appreciably smaller than on disc; subacuminate granules on all declivital interstriae, somewhat larger on interstriae 3, 5, 7; golden interstitial setae arising from punctures between granules, spaced within rows by distance slightly greater than their length; length approximately equal to interstitial width; declivital apex acuminate, interstriae 9 slightly raised, gradually joining costal margin before apex without any notch or groove.

Male. Frons similar to that of female in most respects except spongy pubescent areas less well defined, concentrated at lower portion of central carina, not inflated or protuberant, with sponginess diffusely extending into centers of paired subcircular areas on either side of carina. Interstitial granules on declivity smaller than those of females. Similar in all other respects.

TYPE MATERIAL. The holotype female is labelled "FL, Suwannee Co., Bradford, 5-IX-87, *Planera aquatica*, T. H. Atkinson, THA-423"/"HOLOTYPE *Hylocurus carinifrons* T. H. Atkinson, 1989." Six female paratypes and 8 male paratypes bear the same data plus paratypes labels. The holotype and 3 paratypes are deposited in the USNM; 4 paratypes are placed in the Florida State Collection of Arthropods; remaining paratypes are in the author's collection.

COMMENTS. Most species in this genus are capable of breeding in a wide variety of hardwoods. The host association with *Planera aquatica* (Ulmaceae) is probably not significant. This species closely resembles *H. rudis* and related species, but differs in the shape of the frontal concavity and size and orientation of the spongy areas of the frons. Due to the synonymy of 2 species and de-



Figs. 16-18. *Hylocurus carinifrons*. 16, female, dorsal view. 17, male frons. 18, female frons.

Figs. 19-21. *H. floridensis*. 19, male, dorsal view. 20, *floridensis* male declivity. 21, *floridensis* male frons. Lines = 0.5 mm.

scription of a new species in the *rudis* group the following modifications of Wood's (1982) key to North American species of *Hylocurus* are presented.

- 2(1). Both sexes with frons deeply excavated and/or ornamented by minutely pilose or spongy areas, E. United States. Figs. 3-5, 7, 8, 17, 18 _____ 3
 - Both sexes with frons flattened or convex, devoid of spongy areas _____ 6
- 3(2). Frontal concavity completely divided by a longitudinal median partition; spongy areas absent _____ *biconcavus* Blackman
 - Frontal concavity without median partition, or not completely divided by it; paired spongy areas present _____ 4
- 4(3). Spongy areas of female frontal concavity arising from lateral or basal margins (more rarely from dorsal margin) (Figs. 3-5, 18) _____ 5a
 - Spongy areas of female frontal concavity on protuberant processes arising from internal portion, may be contiguous (Figs. 7, 10) _____ 5b
- 5a(4). Frontal concavity as wide or wide than long; frontal protuberances large, often inflated, usually borne on lateral margins of concavity (less commonly on dorsal or basal margin), central carina poorly developed if present (Figs. 3-5) _____ *rudis* LeConte
 - Frontal concavity with lower, oval portion abruptly narrowed at upper level of eyes and extending upwards to vertex; protuberances small, widely separated and projecting from basal margin _____

- of concavity in female, contiguous in male; central carina conspicuous (Figs. 17, 18) *carinifrons*, n. sp.
- 5b(4). Frons (both sexes) with small, distinctly separated, protuberant horns, covered with spongy pilosity (may be reduced in some specimens) (Figs. 9, 10) *binodatus* Wood
- Frons with contiguous, spongy protuberance on median elevation in female, with narrowly separated protuberances in basal area of concavity in male (Figs. 7, 8) *bicornus* (Blackman)

Hylocurus floridensis Atkinson, n. sp.
(Figs. 19–21)

DESCRIPTION. Length 2.2 mm, 2.8 times longer than wide.

Female. Frons transversely impressed above epistoma, impression not reaching upper level of eyes, surface of impressed area transversely strigose; convex above impression, surface smooth with scattered, rounded granules, those near top of impression more or less in line giving impression of irregular transverse carina. Frontal vestiture short, sparse in all areas, longest and densest on epistomal margin. Antennal club rounded, about as long as wide, with 2 clearly marked procurved sutures, these slightly displaced apically on posterior face; scape short, length subequal to combined length of first 3 segments of funicle.

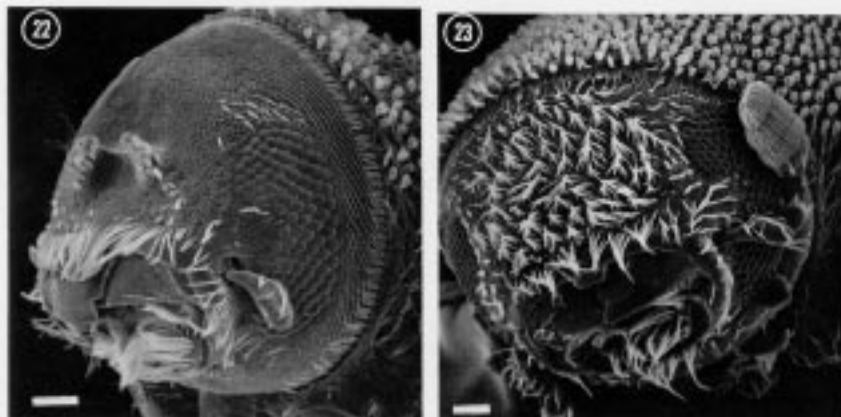
Pronotum 1.1 times longer than wide, sides straight on posterior portion, broadly rounded anteriorly; asperities strongly developed anteriorly, abruptly smaller behind well-defined summit, those on anterior margin weak; surface of posterior portion finely rugose, punctate.

Elytra 1.7 times longer than pronotum, 1.6 times longer than wide, discal striae about as wide as interstriae; interstriae flattened on disc, becoming convex posteriorly; with sparse, uniseriate punctures on disc, separated by distance equal to twice interstitial width. Declivity steep, apex sharply acuminate; striae punctures continuous to apex on all striae except obsolete on lower 1/5 of striae 1 and 2, punctures smaller than those on disc. Well-marked granules on all interstriae at base of declivity, each associated with a short flattened seta with length less than interstitial width; granules on face of declivity only on interstriae 1, 3, 5, 7, 9, most prominent on interstriae 3. First interstriae prominently raised along union of elytra on declivital face, this elevation continuing to apex; apparently swollen areas on each near apex, not clearly defined as tubercles. Interstriae 9 strongly elevated, granulate to middle of declivity, abruptly lower near intersection with stria 3, not continuing to costal margin, appearing as tooth-like projections on each side of declivity in dorsal view.

Male. Frons, antenna, and pronotum similar to those of female. Interstitial granules at base of declivity larger, more prominent; interstriae 3 and granules elevated on declivital face. First interstriae not appreciably elevated near union of elytra; a single large, blunt, tubercle on first interstriae about 1/2 to 2/3 distance from base to apex of declivity, longer than wide, height slightly greater than width of discal interstriae.

TYPE MATERIAL. The holotype female is labelled "FL, Suwannee Co., Branford, 5-IX-87, *Planera aquatica*, T. H. Atkinson, THA-423"/"HOLOTYPE *Hylocurus floridensis* T. H. Atkinson, 1989." One female paratype and 2 male paratypes bear the same data plus paratype labels. The holotype and 1 male paratype are in the USNM. The remaining paratypes are in the author's collection.

COMMENTS. Most species in this genus are capable of breeding in a wide variety of hardwoods. The host association with *Planera aquatica* (Ulmaceae) is probably not significant. This species is very similar to *H. harnedi* Blackman and *H. spadix* Blackman, differing in the position and shape of the declivital tubercles in both sexes. It is also similar to *H. flaglerensis* Blackman, differing in the sculpture of the frons and declivity. It can be identified by the following



Figs. 22, 23. *Carphoborus* spp., female frons. 22, *bicornus*. 23, *bifurcus*. Lines = 0.5 mm.

modification of Wood's (1982) key to the North and Central American species of *Hylocurus*.

- 6(6). Female declivity with first interstriae elevated for entire length of declivity, swollen near apex, but without definite tubercles; male with large rounded tubercle on first interstriae in middle of declivity, slightly higher than wide _____ *floridensis*, n. sp.
 - Large processes on declivity in both sexes; either displaced from suture or else much longer than wide (fingerlike) _____ 7

Carphoborus bicornus Wood and *bifurcus* Eichhoff
(Figs. 22-24)

Carphoborus bicornus was described from Fayette, Alabama, and from the Archbold Biological Station in central Florida (Wood 1986). It differs from the closely related *bifurcus* Eichhoff in that females have paired horns on the frons (Figs. 22, 23). I have recently examined specimens of *bicornus* from South Carolina, the District of Columbia, and Pennsylvania which represent significant extensions of its previously known range. The only known hosts for *bicornus* are *Pinus virginiana* Mill., widely distributed in the eastern U.S., and the closely related sand pine, *clausa* (Chapm.) Vasey, restricted to Florida but planted off-range in adjacent areas of nearby states (Fig. 24) (both species are in subsection *contortae*, Critchfield and Little 1966). Localities from which hosts are not known, including the type series from Alabama, are within or near the natural ranges of *virginiana* or *clausa*. Additional new locality records for *bicornus* include: **United States:** AL: Dale Co., 5-IV-86, R. H. Turnbow; Geneva Co., 22-V-86, R. H. Turnbow. DC, *Pinus virginiana*. FL: Juniper Springs, 19-III-85, *Pinus clausa*, M. A. Deyrup. PA: Angora, VI-11. SC: Pickens, 24-VI-88, *P. virginiana*, T. H. Atkinson.

Carphoborus bifurcus and *bicornus* are apparently locally sympatric in at least part of their respective ranges (Fig. 24) based on several common localities. *Carphoborus bifurcus* is known from a much wider host range including *P. taeda* L., *P. elliottii elliottii* Engelm., *P. virginiana*, and *P. echinata* Mill. (Wood

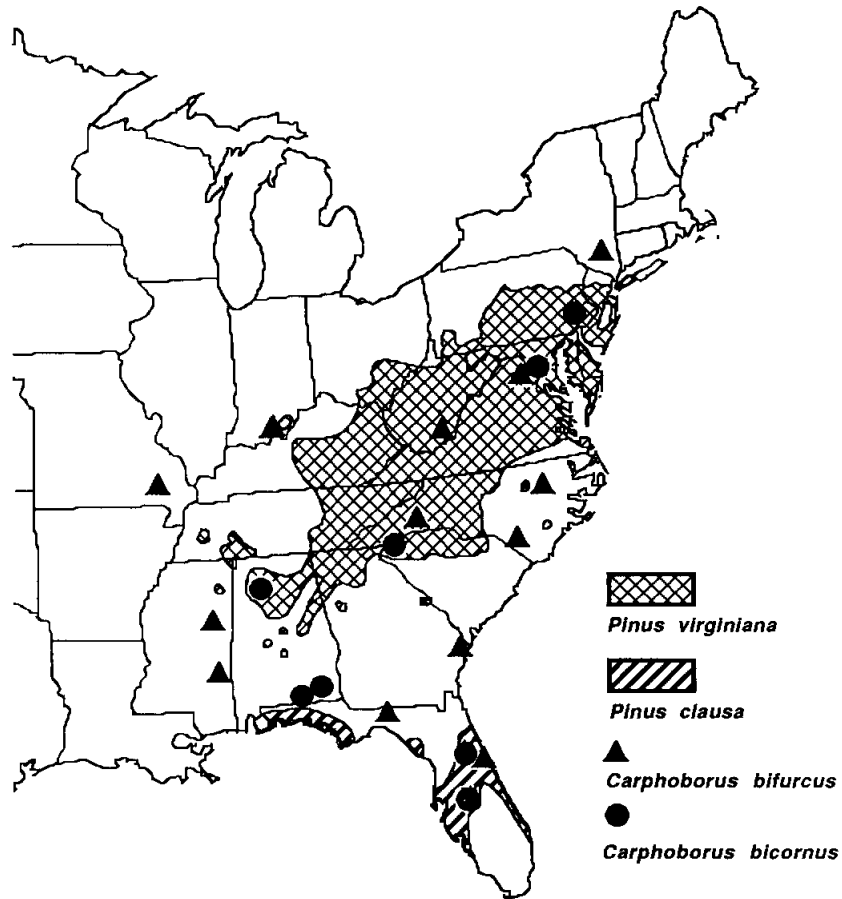


Fig. 24. Collection localities for *Carphoborus bifurcus* and *bicornus* in the eastern United States showing natural distributions of *Pinus virginiana* and *clausa* (taken from Critchfield and Little 1966).

1982). The reference to *P. clausa* in Wood (1982) probably refers to *bicornus*. Specimens of *bifurcus* have been examined from the following localities: **United States:** FL: Tallahassee; Flagler Co. GA: Tybee Island. MS: A&M; Meridian. NC: Chadburn; Lake Toxaway. Tryon; Raleigh. NY: West Point. PA: Angora. VA: Arlington Farms. WV: Ronceverte.

Hylocurus binodatus Wood
(Figs. 9–11)

Hylocurus binodatus Wood was described from 3 specimens from Louisiana and Mississippi. Recently I had opportunity to study several long series of this species from Indiana [Indiana localities reported as *bicornus* (Blackman) by Deyrup (1981), as *binodatus* Wood by Deyrup and Atkinson (1987)] and Mich-

igan (Livingston Co., Pinckney, 12-VII-81, *Carya ovata*, M. A. Deyrup), a considerable range extension. These specimens differ somewhat from the type series in the USNM in that the protuberant, spongy areas in the middle of the frontal concavity are more horn-like and less spongy, especially in the males (Figs. 9, 10).

The male of this species has not been previously described. Males are similar to females in general appearance and size. The horn-like frontal protuberances in the male are more acute and less pilose than those of the female. The protuberance on interstriae 1 on the female declivity (Fig. 11) is absent in the male. Sex was determined by dissection.

Pseudothysanoes phoradendri Blackman

This species was described from mistletoe in southern Texas and has subsequently been reported from related hosts from southern California, Arizona, and northern Mexico. I recently collected it in northern Florida, in mistletoe, where it was very abundant [Alachua Co., Gainesville, 12-IX-87, *Phoradendron serotinum* (Raf.) Johnston; Suwannee Co., Branford, 19-IX-87, *P. serotinum*]. Presumably it (or related species) is found in mistletoes throughout the eastern U.S. Wood (1982) included *P. phoradendri* in a taxonomically compact group of 15 species of *Pseudothysanoes*, all of which breed in mistletoes, mostly in the genus *Phoradendron*. Most species in that group are found from the southwestern U.S. to Costa Rica with the greatest diversity in Mexico. These species are poorly known, in many cases from the type series only. Their relative obscurity is probably more related to lack of collecting effort than to any rarity.

ACKNOWLEDGMENTS

I am grateful to Scott Shaw of the Museum of Comparative Zoology and Donald Anderson at the U.S. National Museum for assistance at their respective institutions. Mark Deyrup, Robert H. Turnbow, Jr., E. G. Riley, and J. E. Wappes loaned specimens from their personal collections. Emily Lott, Mark A. Deyrup and M. C. Thomas kindly reviewed this manuscript. I thank John L. Foltz for his support and encouragement in this project. Travel to the Museum of Comparative Zoology was supported by an Ernst Mayr Grant from that institution. Scanning electron microscopy was done with the facilities of the Electron Microscope Core Facility, IFAS ICBR, University of Florida, and the assistance of the associated staff.

LITERATURE CITED

- BLACKMAN, M. W. 1920. North American Ipidae of the subfamily Micracinae, with descriptions of new species and genera. Miss. Agric. Expt. Sta. Tech. Bull. 9:1-62.
- . 1928. Notes on Micracinae with description of twelve new species. New York St. Coll. For., Syracuse, Tech. Pub. 25:185-208.
- CRITCHFIELD, W. B., AND E. L. LITTLE, JR. 1966. Geographic distribution of the pines of the world. U.S. Dept. Agric. Misc. Publ. 991. 97 pp.
- DEYRUP, M. A. 1981. Annotated list of Indiana Scolytidae (Coleoptera). Great Lakes Ent. 14:1-9.
- , AND T. H. ATKINSON. 1987. New records of Scolytidae (Coleoptera) from Indiana and Florida. Great Lakes Ent. 20:67-68.
- NOGUERA M., F. A., AND T. H. ATKINSON. In press. Biogeography and biology of bark and ambrosia beetles (Coleoptera: Scolytidae and Platypodidae) in a mesic montane forest in Mexico with an annotated checklist of species. Ann. Entomol. Soc. Amer. (submitted March 1989).

- WOOD, S. L. 1982. The bark and ambrosia beetles of North and Central America (Coleoptera: Scolytidae), a taxonomic monograph. Great Basin Nat. Mem. 6:1-1356.
- . 1986. New synonymy and new species of American bark beetles (Coleoptera: Scolytidae), Part XI. Great Basin Nat. 46:265-273.

(Received 8 December 1988; accepted 28 June 1989)

THANKS TO THE REVIEWERS

The following list of reviewers represent those that I have called upon during a recent 12-month period; obviously this is not a list of reviewers used for the current year. If anyone wishes to remain anonymous, please let me know the next time I ask you to review a manuscript.

I am very grateful to all of the reviewers for taking the time to review manuscripts. In general, the manuscripts have been returned within the requested two-week period and I am sure that by using the stamp requesting return within the two-week period has helped. Some of you were too busy or out of town at the time and I appreciated the fact that the manuscript was promptly returned so that I could send it to someone else.

Again, many thanks to all reviewers. I owe a special thanks to the coleopterists in Ottawa because not only have they done more than their share of reviewing, but they were always handy for advice on various aspects of editing a journal (ask the ones with whom I have coffee!!). Without their help, and the help from everyone else, I could not have done the job.

My thanks to: Yves Alarie, Bob Anderson, Fred Andrews, Bob Angus, Steve Ashe, Tom Atkinson, Dick Beal, Chuck Bellamy, Gary Bernon, Yves Bousquet, Don Bright, Ev Britton, Harley Brown, Gary Buckingham, Larry Burgess, Horace Burke, Milt Campbell, Chris Carlton, Joan Chapin, Wayne Clark, Mark Deyrup, Norv Downie, John Doyen, George Eickwort, Sebastion Endrödy-Younga, Terry Erwin, Ed Ford, Howard Frank, Malcolm Furniss, Dave Furth, George Gerber, Gene Gerberg, Bruce Gill, Mike Goodrich, Ralph Gunderson, Ken Hagen, Al Hardy, Charles Henry, Lee Herman, Henry Hespeneide, Rick Hoebeke, Henry Howden, Mike Ivie, Dan Johnson, Paul Johnson, John Kingsolver, Barry Knisley, Jim LaBonte, Gerry Lanier, Dave Larson, John Lawrence, Laurent LeSage, Jim Liebherr, Bill MacLachlin, Dave Maddison, Steve McCleve, Julio Micheli, Miguel Morón, Gayle Nelson, Al Newton, Gary Noonan, Charlie O'Brien, Dave Pearson, Stuart Peck, Phil Perkins, Rob Roughley, Mike Sanborne, Terry Seeno, Paul Skelley, Elbert Sleeper, Ales Smetana, Eric Smith, John Spence, Margaret Thayer, Don Thomas, Mike Thomas, Chuck Triplehorn, Bob Turnbow, Bill Tyson, John Wagner, Bill Warner, Rick Westcott, Stan Wellso, Quentin Wheeler, Richard White, Don Whitehead, Guillermo Wibmer, Steve Wood, Norm Woodley, Bob Woodruff, Dan Young, and Orrey Young.

The above list contains 92 names for the 102 manuscripts received during the period, compared with 71 names for 92 manuscripts received the previous period.

Again, many thanks.