

**CARINIOCORIS, A NEW PHYLINE PLANT BUG GENUS
FROM THE EASTERN UNITED STATES, WITH A
DISCUSSION OF GENERIC RELATIONSHIPS
(HETEROPTERA: MIRIDAE)**

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Abstract.—The new genus *Cariniocoris* is described to accommodate *Plagiognathus geminatus* Knight, *P. ilicis* Knight, and the new species *C. nyssae* from Florida and Maryland. Photographs of adults, illustrations of male genitalia, and micrographs of certain other structures are given and distributions and host plants are outlined. A neotype is designated for *P. ilicis*. Evidence supporting the group's monophyly and its relationship to several other phylinae genera are discussed. Keys are provided to facilitate recognition of the genus and species.

Recent collecting and discovery of a plant bug feeding on ornamental black gum, *Nyssa sylvatica* Marsh., and subsequent efforts to place it in an existing genus, have revealed the need for a new genus. Further research shows that two other species, described in the genus *Plagiognathus*, require transfer to this new genus.

Herein, *Cariniocoris* is described to accommodate *Plagiognathus geminatus* Knight, *P. ilicis* Knight, and the new species *C. nyssae*. Evidence for its monophyly and relationship to several other phylinae genera are discussed. A neotype is designated for *C. ilicis*. Photographs of adults, illustrations of male genitalia, and micrographs of certain other structures are given. Keys to males and females of the genus and modifications for Knight's (1941) key to the genera of Phylinae are provided to facilitate recognition of the genus and species.

The following abbreviations are for institutions cited in this paper: AMNH (American Museum of Natural History, New York); CU (Cornell University, Ithaca, New York); JTP (John T. Polhemus and University of Colorado Museum, Englewood, Colorado); PDA (Bureau of Plant Industry, Pennsylvania Department of Agriculture, Harrisburg); and USNM (U. S. National Museum of Natural History, Washington, D.C.).

Cariniocoris, new genus

Type species. *Cariniocoris nyssae*, new species.

Diagnosis. Sexes dimorphic (males slender, color variable; females broader, color mostly green), head shorter in lateral aspect than distance from eye to apex of tylus, male genital capsule with a distinct mesal carina on the ventral surface, bases of tibial spines immaculate or nearly so, and male vesica C-shaped with a spiculate base on the primary spiculum and a middorsal flange.

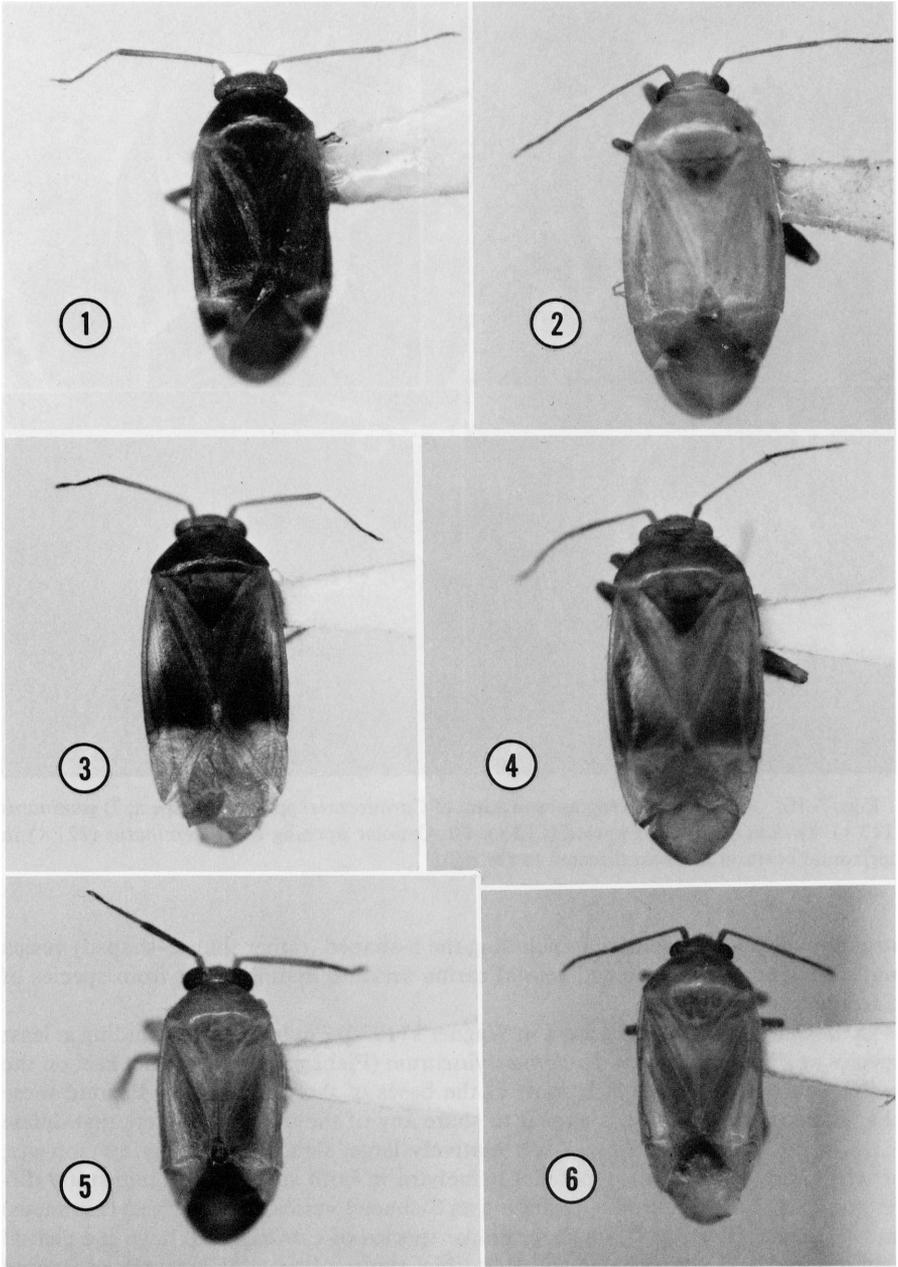
Description. Small to medium sized species, length 3.0–4.0 mm, with recumbent simple setae. Head impunctate, much broader than long, width nearly 2× length;

compound eye prominent; in lateral aspect, width of eye distinctly broader than distance from anterior margin of eye to tylus (Figs. 7–9); antennal fossa contiguous with and set into distinct emargination on inner lower $\frac{1}{3}$ of eye. Rostrum relatively stout, segment I not extending beyond posterior margin of head, segment IV not extending beyond apices of mesocoxae or bases of metacoxae. Antenna slender; segment I shortest and thickest, but apex of segment II in some species approaching equal thickness; segment II longest, length greater than combined lengths of segments III and IV. Pronotum trapeziform, impunctate; calli weakly raised, slightly depressed behind; mesoscutum prominent; scutellum equilateral. Hemelytron macropterous and dimorphic; slender and subparallel in males, weakly arcuate or broadly oval in females. Ostiolar evaporative area (Fig. 10). Ventral surface smooth, semishiny, abdomen shiniest. Legs slender; tibial spines without or with only vague spots at bases; claws with short arolia attached for entire length on basal halves, parempodia simple, setiform, apices somewhat widened (Figs. 11–12). Ventral surface of male genital capsule with a distinct median carina or keel, arising on anterior $\frac{1}{3}$ and extending to or near posterior margin (Figs. 13–16). Left paramere (Figs. 17, 21, 25) somewhat mitt-shaped with two parallel arms: right arm slender, elongate; left arm short, pointed, dorsal edge finely serrate, basal edge raised from connecting edge of two arms to form a blunt tubercle. Right paramere (Figs. 18, 22, 26) simple, elongate oval. Vesica of aedeagus (Figs. 19, 23, 27) twisted, C-shaped, having two apical spiculi and a distinct subapical secondary gonopore. Phallosome (Figs. 20, 24, 28).

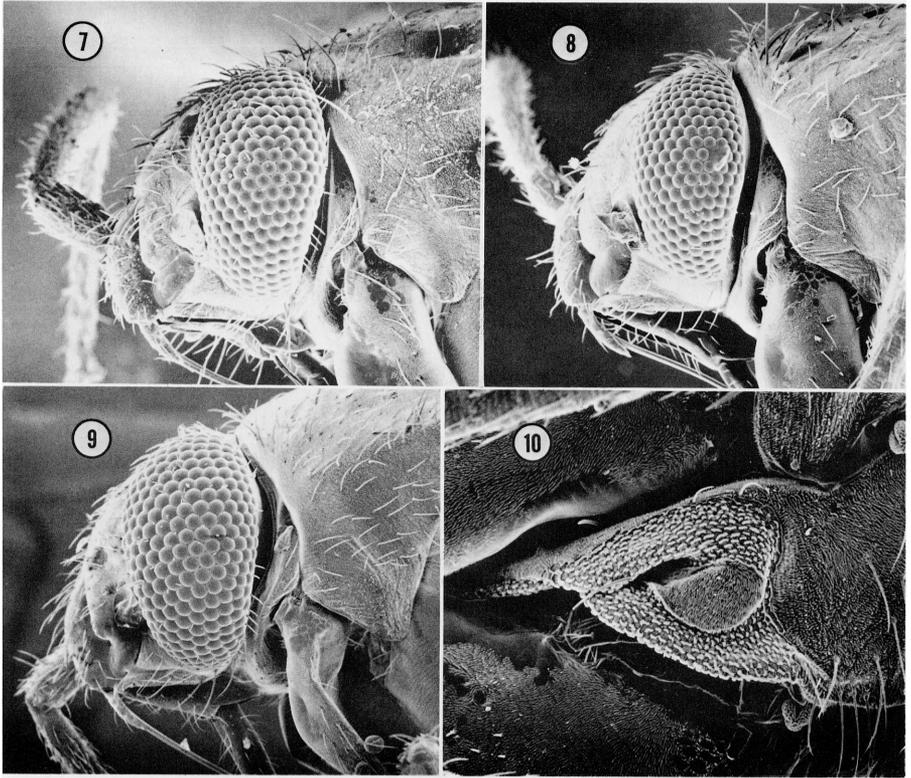
Etymology. The generic name of this taxon is taken from the Latin word *carina* meaning carina, ridge, or keel (and *coris* meaning bug) and refers to the unusual carina found on the ventral surface of the male genital capsule. The gender is masculine.

Discussion of generic relationships. The presence or absence of spots at the bases of the tibial spines is considered useful in distinguishing many genera of Phylini. I have examined the majority of New World and many Old World phylines in search of genera which contain species lacking these basal spots, as well as those having similar sexual dimorphism, a carina or keel on the male genital capsule, and other features possessed by species of *Cariniocoris*. Based on this comparison, evidence supporting the monophyly of the species being placed in *Cariniocoris* includes the following synapomorphies: 1) strong sexual dimorphism (males slender, subparallel, color variable; females broadly oval, color mostly pale); 2) head short in lateral aspect, area from anterior margin of eye to apex of tylus shorter than lateral width of eye; 3) rostrum relatively stout and short, not extending beyond apices of mesocoxae or bases of metacoxae; 4) ventral aspect of male genital segment with a long, narrow median carina or keel (homologous in general form with several other taxa but differing in exact structure); 5) ventral half of genital opening with a thickened rim, the right side with a broad, blunt protuberance; 6) vesica C-shaped with 2 apical spiculi, the primary one with variable patterns of spicules at base, a middorsal flange, and a subapical secondary gonopore; and 7) left paramere with right arm elongate and left arm serrate on dorsal edge.

In the Nearctic, *Icodema nigrolineatum* (Knight), the only North America species of *Icodema* Reuter, has a large keel on the male genital capsule and lacks spots at the bases of the tibial spines, suggesting a relationship somewhere near *Cariniocoris*. However, the pale and more elongate body in both sexes, diagnostic linear black markings on the antennae and legs, the elongate structure of the head, and the different



Figs. 1-6. Adults of *Cariniocoris* spp.: 1) *geminatus*, male. 2) *geminatus*, female. 3) *ilicis*, male. 4) *ilicis*, female. 5) *nyssae*, male. 6) *nyssae*, female.



Figs. 7–10. 7–9. Head micrographs of adult of *Cariniocoris* spp., lateral aspect: 7) *geminatus* (113 \times). 8) *ilicis* (114 \times). 9) *nyssae* (113 \times). 10. Ostiolar opening of *C. geminatus* (221 \times) in horizontal position, dorsum directed to the right.

structure of the male genitalia, including the S-shaped (rather than C-shaped) vesica and a broader, more flattened genital carina serve to distinguish it from species of *Cariniocoris*.

In the Palearctic, several genera in Wagner's (1975) *Phylus* group, including at least species of *Phylus* Hahn and *Icodema infuscatum* (Fieber), have a distinct keel on the male genital capsule and lack spots at the bases of the tibial spines. Beyond these characters these taxa do not appear to share any of the other characters that define *Cariniocoris*. Species of *Phylus* are relatively large, slender bugs, having elongate, acutely produced heads, subparallel hemelytra in both sexes, and significantly different types of male genitalia, including an S-shaped vesica. *Phylus coryli* (Linnaeus) and *P. melanocephalus* (Linnaeus), unlike species of *Cariniocoris*, have the genital keel reduced and very slender and lack tibial spots. Although I have not examined specimens of *I. infuscatum*, Wagner (1975) noted it possesses a genital keel and lacks tibial spots. This species, however, has an S-shaped vesica (figured by Wagner, 1975: 292, fig. 830h) and lacks other features shared by species of *Cariniocoris*.

From this preliminary review of phylinae genera, the lack of distinct spots at the bases of the tibial spines and the presence of a median carina on the male genital capsule indicate that *Cariniocoris*, *Icodema*, and *Phylus* may form a natural group and be part of a larger clade yet to be documented. Further phylogenetic analysis of the phylinae taxa sharing these and some other corroborating characters is needed, but is beyond the limits of the present study.

Remarks on identification. Species of *Cariniocoris* will key to the genera *Microphylellus* Reuter and *Plagiognathus* Fieber in Knight (1941) or to *Icodema* Reuter in Slater and Baranowski (1978) primarily because of the dorsal coloration (dark vs. pale) and the pale yellowish tibial spines without or with only vague pale-brown spots at the bases.

Knight (1925) said in describing the species *Plagiognathus ilicis*: "In some respects . . . intermediate between *Plagiognathus* and *Microphylellus*, while the left genital clasper is of a form quite different from either genus. The general form, color and pubescence is that of *Plagiognathus* while the tibial characters approach *Microphylellus*; the yellowish brown spines with brownish at base of each which scarcely forms distinct spots, may cause some difficulty in tracing *ilicis* through the generic key."

To facilitate generic placement of *Cariniocoris*, Knight's (1941:22-25) key to the genera of Phylinae, beginning with couplet 17, should be modified as follows [couplets 18-19 not repeated]:

- 17. Hind tibia with black spines lacking dark spots at bases 18
- Hind tibia with pale yellowish-brown to almost colorless spines, sometimes with pale brown spots at bases, or dark spines with dark spots at bases 20
- 20. Mesopleuron with flattened scalelike pubescence *Psallus*
- Mesopleuron always without flattened, scalelike pubescence 21
- 21. Tibial spines dark with distinct dark spots at bases; ventral surface of male genital capsule smooth, without a median carina *Plagiognathus*
- Tibial spines pale yellowish brown, sometimes with brownish spots at bases of meso- and metatibiae; ventral surface of male genital capsule with a distinct median carina *Cariniocoris*

The following keys to males and females will allow recognition of the species of *Cariniocoris*; females are best identified by their association with males, especially when determining generic placement.

KEY TO MALES OF *CARINIOCORIS*

- 1. Dorsal coloration uniformly pale green to greenish yellow (Fig. 5); host *Nyssa sylvatica* *nyssae*
- Dorsal coloration predominantly brown to fuscous; hosts *Ilex* spp. 2
- 2. Hemelytron uniformly brown to fuscous (Fig. 1); length of second antennal segment nearly equal to basal width of pronotum; hosts *Ilex* spp. *geminatus*
- Hemelytron not uniformly brown, clavus and basal half of corium distinctly paler (Fig. 3); length of second antennal segment much shorter than basal width of pronotum; host *Ilex verticillata* *ilicis*

KEY TO FEMALES OF *CARINIOCORIS*

- 1. Inside of areoles or membranal cells fumate or black (Fig. 6), dark color sometimes fading to brown but always darker than remainder of membrane; body width 1.52-1.60 mm *nyssae*

- Hemelytral membrane uniformly pallid or, at most, uniformly translucent or smoky brown; body width greater than 1.60 mm 2
- 2. Length of antennal segment II subequal to length of rostrum; hemelytra uniformly pale green (Fig. 2); body width 1.84–1.92 mm *geminatus*
- Length of antennal segment II distinctly shorter than length of rostrum; apical half of corium infuscated (Fig. 4); body width 1.68–1.72 mm *ilicis*

Cariniocoris geminatus (Knight), **New Combination**

Figs. 1–2, 7, 10, 13–14, 17–20

Plagiognathus geminatus Knight, 1929:265; Carvalho, 1958:102; Henry and Wheeler, 1988:486.

Plagiognathus ilicis [sic]: Khalaf, 1971:340.

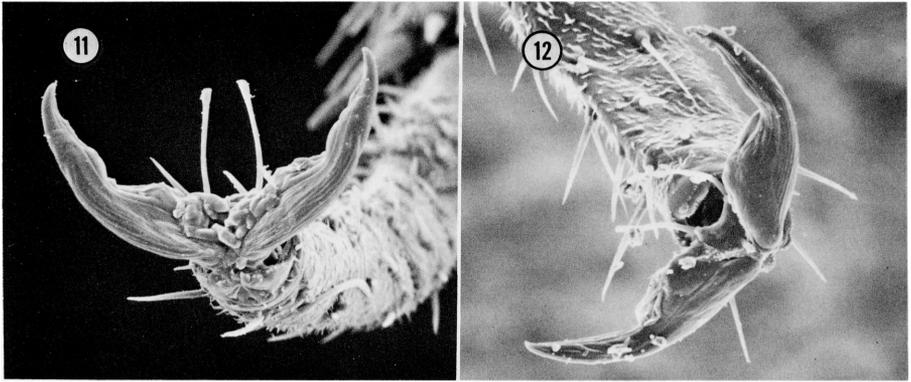
Diagnosis. Color dimorphic; males with hemelytra uniformly dark brown, base of corium sometimes paler, females uniformly pale greenish; primary spiculum with spicules along ventral surface of basal $\frac{1}{3}$ and middorsal flange elongate with anterior edge pointed.

Males can be distinguished from those of *C. ilicis* and *C. nyssae* by the uniformly dark-brown hemelytra and the longer 2nd antennal segment. Females differ from those of *C. ilicis* by the uniformly pale-yellow to yellowish-green body and the proportionately longer 2nd antennal segment. From females of *C. nyssae*, this species is separated by the uniformly pale smoky-brown hemelytral membrane and larger body size; females of *C. nyssae* are more slender and have the insides of the areoles fuscous.

Description. Male (N = 10): Length 3.20–3.52 mm, width 1.44–1.52 mm. Head: Width 0.74–0.80 mm, vertex 0.30–0.34 mm. Rostrum: Length 0.94–0.96 mm, extending to mesocoxae. Antenna: Segment I, length 0.22–0.24 mm; II, 1.14–1.20 mm; III, 0.52–0.54 mm; IV, 0.28–0.34 mm. Pronotum: Length 0.62–0.64 mm, basal width 1.14–1.24 mm.

Female (N = 10): Length 3.66–3.88 mm, width 1.84–1.92 mm. Head: Width 0.78–0.80 mm, vertex 0.38–0.40 mm. Rostrum: Length 1.02–1.04 mm, extending to mesocoxae. Antenna: Segment I, length 0.22–0.24 mm; II, 1.02–1.12 mm; III, 0.54–0.58 mm; IV, 0.30–0.32 mm. Pronotum: Length 0.70–0.72 mm, basal width 1.38–1.42 mm.

General coloration brown to dark brown, clothed with recumbent brown simple setae. Head brown. Antenna pale yellowish brown, segment III and IV becoming infuscated. Pronotum brown, areas anterior to calli sometimes paler brown; scutellum dark brown. Hemelytron uniformly brown to dark brown, sometimes having the base of corium paler; cuneus pale at base; membrane dark smoky brown. Under-surface yellowish brown, genital segment frequently darker. Legs yellowish brown; metafemur dark brown to fuscous, paler at base and apex, anterior surface with a few small fuscous spots; mesofemur yellowish brown but sometimes infuscated, anterior surfaces with a few small brown spots; tibial spines pale brown without basal spots or with only very indistinct pale-brown spots. Genital segment with narrow mesal keel ending before touching transverse swollen ridge around basal margin of genital opening (Figs. 13–14). Left paramere (Fig. 17); right paramere (Fig. 18); vesica with dorsal surface of apical $\frac{1}{2}$ having a small, but distinct, backward-curving flange



Figs. 11–12. Claws of *Cariniocoris* spp.: 11) *ilicis* (694 \times). 12) *nyssae* (694 \times).

and the primary spiculus with numerous spicules along bottom of basal $\frac{1}{3}$ (Fig. 19); phallosheca (Fig. 20).

Females differ from males in the uniformly pale-yellowish to yellowish-green body and legs, paler smoky-brown hemelytral membrane, and the distinctly more broadly oval body form.

Remarks. Knight (1929) called this species the “southern twin” of *C. ilicis* and, indeed, it is quite similar in size and sexual dimorphism. However, he commented when describing *C. geminatus* that “It seems rather remarkable that not a single male can be found in the large series studied.” The pronounced sexual dimorphism found in this species apparently accounted for his not associating the dark males with the uniformly yellowish-green, paratype females taken on the same hosts at the type locality [he later associated these males with females in his collection].

Although I have not seen Khalaf’s (1971) specimens reported as *Plagiognathus ilicis* from Mississippi, distribution and extensive fieldwork indicate that he actually had *C. geminatus*.

Specimens examined. DELAWARE: 1♀, New Castle Co., Newark, University of Delaware, 28 May 1984, A. G. Wheeler, Jr. coll., taken on *Ilex opaca* (PDA). FLORIDA: 9♂♂, 9♀♀, Alachua Co., Austin Cary Mem. Forest, 10 mi NE Gainesville, 4 May 1982, T. J. Henry coll., taken on *Ilex glabra* (USNM); 1♂, Gulf Co., Rt. 30, 8 mi S Port St. Joe on St. Joe Peninsula, 1 May 1984, T. J. Henry and A. G. Wheeler, Jr., taken on *Ilex glabra* (USNM); 16♂♂, 10♀♀, Walton Co., 3 mi W Freeport, Rt. 20, 9 May 1981, T. J. Henry coll., taken on flowers of *Ilex glabra* (USNM). MARYLAND: 25♂♂, 22♀♀, Prince Georges Co., Beltsville, 17–22 May 1982, T. J. Henry coll., taken on *Ilex opaca* (USNM). MISSISSIPPI: 1♂, Wiggins, 5 May 1931, H. G. Johnston coll. (USNM); 2♂♂, 3♀♀, Washington Co., 3 mi SE Leland, 9 May 1983, T. J. Henry and G. L. Snodgrass colls., taken on *Ilex decidua* (USNM). PENNSYLVANIA: 10♂♂, 5♀♀, Dauphin Co., Harrisburg, 25 May 1983, A. G. Wheeler, Jr. coll., taken on male inflorescences of *Ilex opaca* (PDA). SOUTH CAROLINA: 9♂♂, 4♀♀, Richland Co., Columbia, Univ. South Carolina campus, 9 Apr. 1988, A. G. Wheeler, Jr. coll., taken on *Ilex vomitoria* (PDA). TEXAS: Holotype ♀ and 31 paratype ♀♀ (and 17♂♂ not mentioned in original description), College Station, 7–12 Apr. 1928, H. G. Johnston

coll., taken on *Ilex decidua* and *Ilex vomitoria*. VIRGINIA: 2♂♂, 2♀♀, Lancaster Co., White Stone, 26 May 1984, A. G. Wheeler, Jr. coll., taken on *Ilex opaca* (PDA); 7♂♂, 3♀♀, Westmoreland Co., Montross, 25 May 1984, A. G. Wheeler, Jr. coll., taken on *Ilex opaca* (PDA).

Distribution. Known in the literature only from Mississippi (as *ilicis* by Khalaf, 1971) and Texas (Knight, 1929). New state records are Delaware, Florida, Maryland, South Carolina, and Virginia.

Hosts. Recorded from *Ilex decidua* Walt. and *I. vomitoria* Ait. (Knight, 1929). New host records are *Ilex glabra* (L.) A. Gray and *I. opaca* Ait. This species prefers the male flowers of its host. At Beltsville, Maryland, many thousands of adults and nymphs could be collected on male flowers of a large American holly, *I. opaca*, but only a few adults could be found on a profusely flowering female tree no more than 25 feet away.

Cariniocoris ilicis (Knight), New Combination

Figs. 3-4, 8, 11, 15, 21-24

Plagiognathus ilicis Knight, 1925:305; Blatchley, 1926:928; Henry and Wheeler, 1988:486.

Plagiognathus ilicis [sic]: Carvalho, 1958:103.

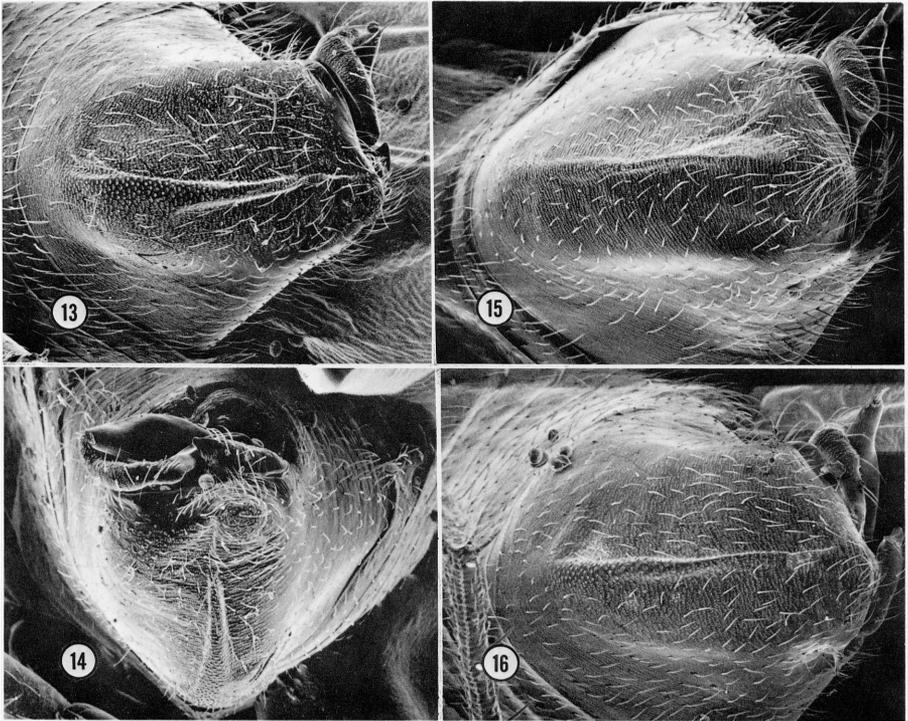
Diagnosis. Recognized by the brown coloration becoming dark brown on the apical half of the hemelytron in both sexes, but smaller and paler in females, and the structure of the vesica with numerous spicules around the basal ½ of the primary spiculum and a large, triangular, middorsal flange.

Cariniocoris ilicis is similar to *C. geminatus* in general form and coloration. Males are separated from those of *C. geminatus* by the paler brown clavus, basal ½ of the corium, and cuneus, and by the much shorter second antennal segment; from *C. nyssae* they differ by the extensive brown coloration of the dorsum. Females can be separated from *C. geminatus* females by the paler dorsum, having the apical ½ of the corium infuscated, and the shorter second antennal segment; from females of *C. nyssae* they differ by the apically infuscated corium and uniformly pale smoky-brown membrane.

Description. Male (N = 10): Length 3.32-3.60 mm, width 1.48-1.52 mm. Head: Width 0.74-0.76 mm, vertex 0.34-0.36 mm. Rostrum: 1.06-1.10 mm, extending to apices of mesocoxae or bases of metacoxae. Antenna: Segment I, length 0.22-0.24 mm; II, 0.96-0.98 mm; III, 0.50-0.54 mm; IV, 0.28-0.34 mm. Pronotum: Length 0.60-0.64 mm, basal width 1.22-1.24 mm.

Female (N = 10): Length 3.24-3.76 mm, width 1.68-1.72 mm. Head: Width 0.74-0.76 mm, vertex 0.38-0.40 mm. Rostrum: 1.12-1.18 mm, extending to bases of metacoxae. Antenna: Segment I, length 0.22-0.24 mm; II, 0.88-0.92 mm; III, 0.50-0.52 mm; IV, 0.30-0.32 mm. Pronotum: Length 0.66-0.68 mm, basal width 1.36-1.40 mm.

General coloration brown to dark brown, clothed with recumbent pale-brown setae. Head brown. Antenna pale yellowish brown, segment III and IV becoming infuscated. Pronotum brown, paler brown on posterior ½; scutellum brown. Hemelytron brown to dark brown with the clavus, basal ½ of corium, and inner angle of cuneus pale yellowish brown; membrane pale smoky brown, veins yellowish. Ventral surface



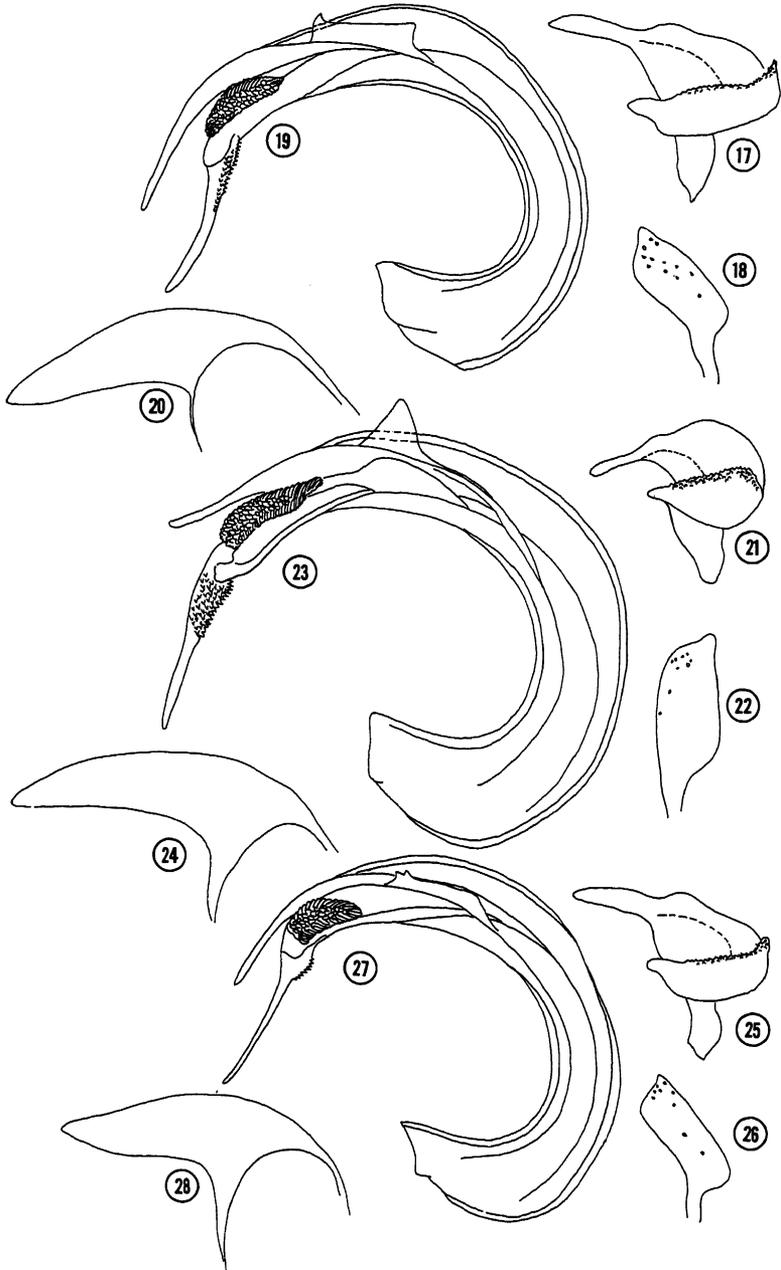
Figs. 13–16. Male genital capsules of *Cariniocoris* spp.: 13) *geminatus*, ventral aspect (105×). 14) *geminatus*, caudal aspect (110×). 15) *ilicis*, ventral aspect (115×). 16) *nyssae*, ventral aspect (120×).

yellowish brown. Legs yellowish brown; meso- and metafemora sometimes with a few tiny brown spots on anterior surfaces; tibial spines pale brown without basal spots or, at most, with some basal spines on the pro- and mesotibiae having small indistinct pale brown spots; claws pale brown. Genital capsule with a relatively thickened mesal keel extending to a wide transverse ridge around basal $\frac{1}{2}$ of genital opening (Fig. 15). Left paramere (Fig. 21); right paramere (Fig. 22); vesica (Fig. 23) with dorsal surface of apical $\frac{1}{3}$ having a large triangular flange, and the primary spiculum with numerous spicules around swollen basal $\frac{1}{3}$ to $\frac{1}{2}$; phallosheca (Fig. 24).

Females differ from males by the overall paler coloration and the smaller, less distinct dark apex of the hemelytra, the often contrastly dark scutellum, and the much more broadly oval form. Coloration of the membrane, undersurface, and legs similar to that of males.

Remarks. Based on distribution, as noted under *C. geminatus*, I am referring Khalaf's (1971) records of *Plagiognathus ilicis* to *geminatus*.

Type designation. Although the pin and labels for the holotype of this species are present in the USNM type collection, a note placed by R. C. Froeschner states: "Holotype missing from point—1976." For nomenclatural stability I designate one



Figs. 17-28. Male genitalia of *Cariniocoris* spp.: *C. geminatus*: 17) left paramere. 18) right paramere. 19) vesica. 20) phallosome. *C. ilicis*: 21) left paramere. 22) right paramere. 23) vesica. 24) phallosome. *C. nyssae*: 25) left paramere. 26) right paramere. 27) vesica. 28) phallosome.

of Knight's male paratypes as a neotype to be placed in the USNM type collection. Label data as follows: label 1, "Ringwood, Ithaca, N. Y., 13-VII 1920"; 2, "H. H. Knight Collector"; 3 (red label), PARATYPE *Plagiognathus ilicis* by H. H. Knight"; 4, "H. H. Knight Collection 1976"; 5 (here added; white label with red border), "Neotype: *Plagiognathus ilicis* Knight by T. J. Henry."

Other specimens examined. NEW YORK: 27 paratype ♂♂, 21 paratype ♀♀, same locality data as for neotype, 26 June–13 Jul. 1920, H. H. Knight coll., taken on *Ilex verticillata* (USNM); 3♂♂, 18♀♀, Tompkins Co., Ithaca [Cornell Univ. Campus], 26 June 1983 & 7 Jul. 1984, E. R. Hoebeke coll., taken on *Ilex verticillata* (CU); 13♂♂, 8♀♀, Tompkins Co., Ithaca, Cornell Univ. Campus, 26 June 1987, A. G. Wheeler, Jr., taken on male flowers of *Ilex verticillata* (PDA, USNM).

Distribution. This species is known only from New York and Wisconsin (Henry and Wheeler, 1988).

Hosts. Recorded only from *Ilex verticillata* A. Gray.

***Cariniocoris nyssae*, new species**

Figs. 5–6, 9, 12, 16, 25–28

Diagnosis. Recognized by the uniformly green coloration in both sexes, and fuscous membrane in males and fuscous areoles in females, small size, and the vesica having the spicules of the primary spiculum limited to the ventral surface of the base and the shallow, middorsal flange having a V-shape notch anteriorly.

Cariniocoris nyssae is noticeably the smallest and most slender species of the genus; size differences are most readily apparent when series of each are compared side by side. Males can be separated from males of *C. geminatus* and *C. ilicis* by the uniformly yellow to greenish-yellow body having only the membrane smoky black or fumate. Females of all three species have the same general pale coloration, but those of *C. nyssae* have only the insides of the areoles or membranal cells smoky black or fumate, rather than the entire membrane uniformly pale or smoky brown. Additionally, females of *C. ilicis* have the apical ½ of each corium infuscated.

Description. Male (N = 10): Length 3.04–3.52 mm, width 1.36–1.48 mm. Head: Width 0.74–0.76 mm, vertex 0.28–0.30 mm. Rostrum: Length 0.86–0.90 mm, extending to mesocoxae. Antenna: Segment I, length 0.22–0.24 mm; II, 0.96–1.02 mm; III, 0.44–0.46 mm; IV, 0.30–0.32 mm. Pronotum: Length 0.54–0.58 mm, basal width 1.10–1.14 mm.

Female (N = 10): Length 3.40–3.64 mm, width 1.52–1.60 mm. Head: Width 0.72–0.76 mm, vertex 0.32–0.34 mm. Rostrum: Length 0.98–1.00 mm, extending to mesocoxae. Antenna: Segment I, length 0.20–0.22 mm; II, 0.96–1.02 mm; III, 0.42–0.50 mm; IV, 0.28–0.30 mm. Pronotum: Length 0.62–0.66 mm, basal width 1.28–1.34.

Males uniformly pale yellow to pale greenish yellow, clothed with recumbent yellowish or pale-brown setae. Head yellowish green. Antenna pale yellow, segment III and IV infuscated; segment II gradually thickened toward apex, diameter of apical half equal to diameter of segment I. Pronotum and scutellum yellowish, tinged with green laterally and on and posterior to calli. Hemelytron pale, somewhat translucent, yellow; membrane smoky or fumate, veins yellowish. Ventral surface pale yellow, tinged with green, especially on abdomen. Legs uniformly pale yellow; tibial spines

pale brown, without spots at bases or rarely with vague pale brown spots on basal spines; claws pale brown. Genital keel or carina extending to near rim of genital opening (Fig. 16). Left paramere (Fig. 25); right paramere (Fig. 26); vesica (Fig. 27) with a shallow, subdorsal flange, which is notched anteriorly, and the primary spiculum with a few, distinct spicules restricted to ventral edge of swollen base; phalotheca (Fig. 28).

Female coloration much as in males, but with hemelytral membrane pale translucent, having only the inside of the areoles smoky black or fumate (dark area appearing to the naked eye as a black bar at base of the membrane). Also the general body form is more broadly oval and the apical half of antennal segment II is distinctly more slender than segment I.

Type specimens. Holotype ♂: USA, Maryland, Prince Georges Co., College Park, University of Maryland Campus, 23 May 1987, T. J. Henry and A. G. Wheeler, Jr. colls., taken on blackgum, *Nyssa sylvatica* (USNM). Paratypes: 23♂♂, 33♀♀, same data as for holotype (AMNH, PDA, and USNM); 2♂♂, 15♀♀, Florida, Orange Co., N of Sand Lake Rd., Orlando, 30 Apr. 1984, J. T. Polhemus coll. (JTP, USNM).

Etymology. The specific epithet of this species is taken from the generic name of its host, blackgum or tupelo, *Nyssa sylvatica* Marsh.

Distribution. Florida and Maryland.

Hosts. This species was collected in Maryland on the male flowers of a large, open-growing, ornamental blackgum, along with many adults of *Lepidopsallus nyssae* Johnston, previously known only from Illinois and Texas.

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