

General color dark fuscous to black with genae, apices of juga, median line on frons, median line and slender area along basal margin of pronotum, lateral margins and apical two-thirds of median line of scutellum, thoracic sternum, and lower half of abdominal venter except on genital segment, coxae, basal halves of femora, and tibiae except base and apex, pale to yellowish; cuneus pale translucent, inner half reddish, apex dark red to almost black.

FEMALE.—Length 6.00, width 2.40; very similar to male, but with dark areas smaller. General color yellowish to brownish, darkened with fuscous; head yellowish with bases of juga, and broad mark on frons either side of median line, black; pronotum brownish, a broad black line at either lateral margin and a black ray behind callus on either side of pale median line; hemelytra rather uniformly fusco-brownish; hind femora with very dark brown bands before apices, anterior face more or less black on apical half.

FOOD PLANT.—Black willow (*Salix nigra*).

KNOWN DISTRIBUTION.—Illinois, Michigan, New York, Nova Scotia, Ontario, Pennsylvania.

Illinois Records.—Eleven males and 11 females, taken June 3 to July 5, are from Champaign, Chicago, Grand Detour, Homer, Kampsville, Keithsburg, Mount Carmel, Rockford, Urbana, Warsaw, White Heath.

Lygidea salicis Knight

Lygidea salicis Knight (1939a, p. 22).

MALE.—Length 5.60, width 2.20. Rostrum pale, apex black. Antennae with first segment black, slender apex pale; second fusco-brownish, basal one-fourth black, pubescence rather short and recumbent; third fuscous; fourth almost black. Pronotum with disk punctate, transversely rugulose; black, collar except behind eyes, median line of disk, two blotches behind outer halves of calli, disks of calli, narrow area along basal margin, and dorsal margin, pale; ventral one-third of propleura pale. Scutellum pale with a wedge-shaped, very dark brown mark on either side of median line, mesoscutum black. Hemelytra very dark brown, embolium except apically, cuneus except reddish spot on apex, pale translucent. Membrane uniformly dark fuscous, less dark on

area bordering apex of cuneus; veins pale. Clavus and corium clothed with pale to silvery, somewhat silky pubescence. Ventral surface white to yellowish; a broad, lateral, longitudinal stripe on thoracic pleura and sides of venter, reddish brown to black. Legs pale; hind femora with two subapical reddish brown annuli; tibial spines yellowish; apical segment of each tarsus fuscous.

FEMALE.—Length 5.90, width 2.30. Very similar to male in color and pubescence, but pale area on disk of pronotum broader.

FOOD PLANT.—Peach-leaved willow (*Salix amygdaloides*).

KNOWN DISTRIBUTION.—Illinois, Michigan, Minnesota, Ontario.

Illinois Record.—GALENA: June 30, 1932, Dozier & Mohr, 1 ♂, 1 ♀.

Lygidea mendax Reuter

Apple Redbug, fig. 158.

Lygidea mendax Reuter (1909, p. 47).

While not as yet collected in Illinois, this bright, orange red species undoubtedly will be found along the Rock River and vicinity.

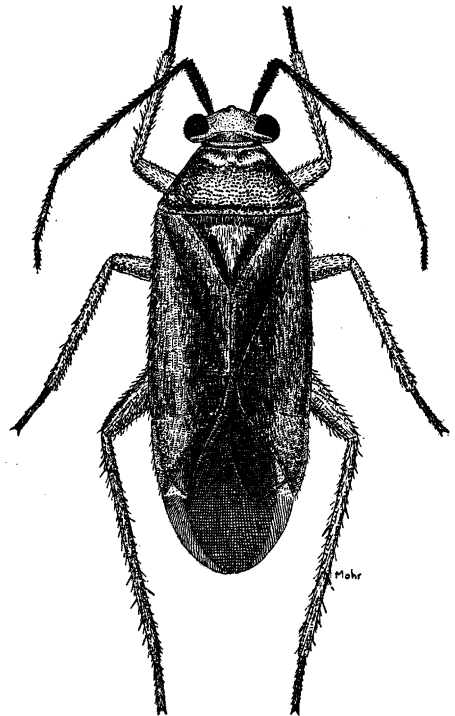


Fig. 158.—*Lygidea mendax*, ♀.

This assumption is based on the fact that *mendax* has been collected near Davenport and Bentonsport, Iowa. Occurs on hawthorn (*Crataegus* sp.), American crabapple (*Pyrus coronaria*), cultivated apple (*Pyrus malus*) and to some extent on cultivated quince (*Cydonia oblonga*). This insect is now regarded as a serious pest on apples in New York, Pennsylvania and Michigan. Known from Connecticut, Indiana, Iowa, Maine, Michigan, New York, Nova Scotia, Ohio, Ontario, Pennsylvania.

Neocapsus Distant

Neocapsus cuneatus Distant

Neocapsus cuneatus Distant (1893, p. 438).

MALE.—Length 4.80, width 2.60. Head width 1.17, vertex 0.52. Rostrum, length 1.73, reaching to apices of middle coxae.

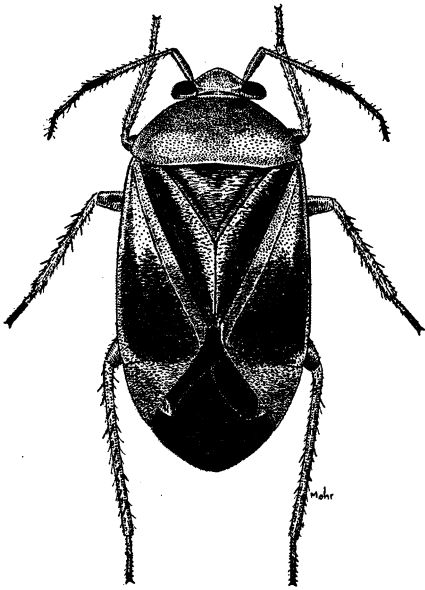


Fig. 159.—*Neocapsus cuneatus*, ♀.

Antennae very short, black, with fine pubescence; first segment, length 0.47; second 1.38, cylindrical, slightly more slender near base; third, 0.56; fourth, 0.35. Pronotum, length 1.25, width at base 2.25; finely, shallowly punctate. Scutellum transversely rugulose, orange red, rarely partly black. Dorsum practically glabrous; hemelytra with minute pubescence in some of the shallow punctures. General color black; pronotum,

except calli and basal angles, femora, and sometimes cuneus, red; head yellowish to red; tylus usually darker.

FEMALE.—Fig. 159. Length 5.60, width 2.80. More robust than male and usually with red areas broader; pronotum, scutellum, cuneus, femora and ventral surface of body orange to red; basal area of corium usually pale; tibiae and second antennal segment largely pale.

FOOD PLANT.—Post oak (*Quercus stellata*), according to Dr. H. G. Johnston.

KNOWN DISTRIBUTION.—Arizona, Illinois, Mississippi, Missouri, North Carolina, Oklahoma, Texas; Mexico.

Illinois Records.—DUBOIS: May 15, 1917, 1 ♂; May 22, 1917, 1 ♂; May 23, 1917, 2 ♂, 7 ♀; May 24, 1917, 4 ♂, 3 ♀.

Platylygus Van Duzee

Platylygus luridus (Reuter)

Lygidea rubecula var. *lurida* Reuter (1909, p. 46).

MALE.—Fig. 160. Length 6.50, width 2.40. Minutely pubescent; dorsum practi-

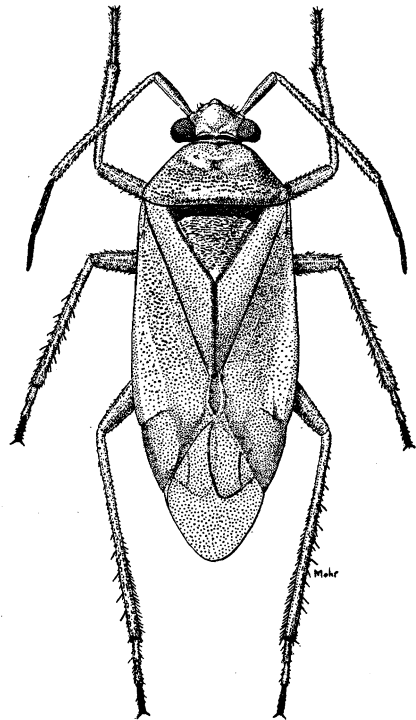


Fig. 160.—*Platylygus luridus*, ♂.

cally glabrous. General color pale yellowish brown; hemelytra translucent; collar and tip of scutellum pale to white; apex and inner half of cuneus, brachium, disk of scutellum, apices of femora, and area on venter, somewhat reddish; third and fourth antennal segments infuscated; apex of rostrum piceous; membrane fumate or pale brownish.

FEMALE.—Length 7.00, width 2.70; more robust than male, but otherwise very similar in structure and coloration.

FOOD PLANT.—White pine (*Pinus strobus*). The nymphs are yellowish with a tinge of brownish, and thus very closely match the color of the bud scales of their host plant.

KNOWN DISTRIBUTION.—Illinois, New Hampshire, New York.

Illinois Record.—NORTHERN ILLINOIS: 1 ♀.

Lygus Hahn

KEY TO SPECIES

- 1. Length of second antennal segment less than width of head; body ovate, robust, yellowish brown to dark reddish brown, darkened with fuscous.....**rubicundus**, p. 153
Length of second antennal segment greater than width of head..... 2
- 2. Basal carina of vertex lacking in middle, visible only at corners of eyes; green or greenish yellow, preserved specimens fading to dull yellowish; Y-shaped fuscous mark formed by anal areas of membranes; usually with a longitudinal cloud distad of areoles.....**pabulinus**, p. 153
Basal carina of vertex entire; variously colored..... 3
- 3. Rostrum just attaining posterior margins of middle coxae; scutellum bright yellow or green.....**campestris**, p. 154
Rostrum reaching to or slightly beyond hind coxae..... 4
- 4. Hind tibiae deep black.....**atritibialis**, p. 152
Hind tibiae more or less pale..... 5
- 5. Color chiefly pale or green, sometimes with darker markings..... 6
Color yellowish brown to black, or reddish..... 8

- 6. Tibiae uniformly pale greenish, without bands at base; eyes large; color of body chiefly green.....**apicalis**, p. 154
Tibiae spotted, often with red and black bands at base..... 7
- 7. Rostrum almost, but not quite, reaching tips of hind coxae; abdomen uniformly green; area along claval vein and spot on apical area of corium fuscous.....**elusus**, p. 152
Rostrum attaining or slightly exceeding apices of hind coxae; abdomen marked with black; hemelytra of female uniformly pale, of male darkened with red and black.....**hesperus**, p. 151
- 8. Hemelytra black and irregularly mottled with greenish yellow; head and anterior part of pronotum yellowish green, usually with two black rays behind each callus.....**plagiatus**, p. 153
Hemelytra sometimes dark but not mottled with pale spots; head and pronotum not colored as above.... 9
- 9. Length 6.50–7.30; nearly glabrous, strongly shining..**vanduzeei**, p. 150
Length 4.80–6.30; distinctly pubescent.....10
- 10. Second antennal segment three times as long as first segment; frons uniformly yellowish, without black lines; length 6.00–6.30..**frisoni**, p. 151
Second antennal segment less than three times as long as first segment; frons with median line dark; length 5.00–5.50.....**oblineatus**, p. 148

Lygus oblineatus (Say)

Tarnished Plant Bug

Capsus oblineatus Say (1832, p. 21).

This species has passed in American literature under the name *Lygus pratensis* (Linnaeus) for many years. It differs, however, from the European *pratensis* in the structure of the right genital clasper, fig. 161; *oblineatus* is darker in color and has definite stripes.

ADULTS.—Fig. 162. Length 4.90–5.50, width 2.50; ovate. General color shining, yellowish brown with more or less blackish marking, or reddish brown and fuscous areas; pronotum with yellowish and blackish rays; scutellum margined with blackish leaving a Y- or heart-shaped yellowish

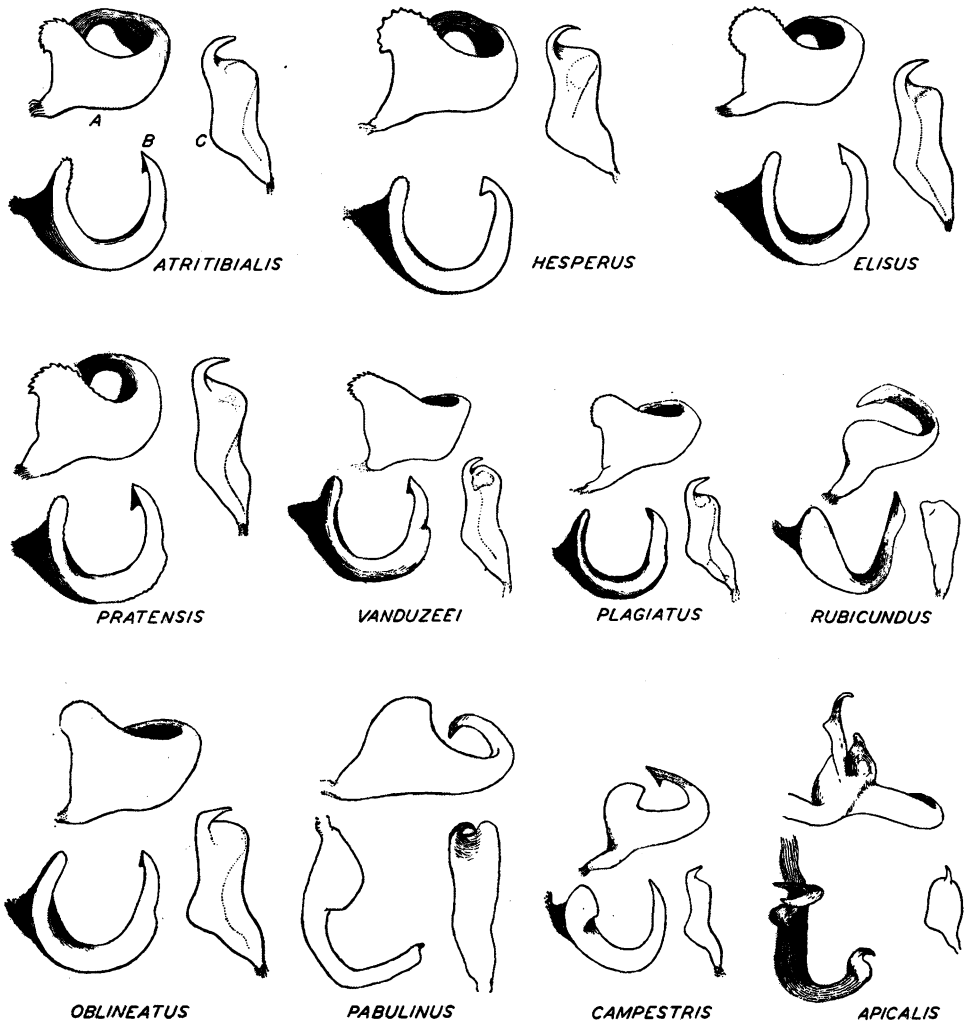


Fig. 161.—Male genital claspers of *Lygus*. A, left clasper, lateral aspect; B, left clasper, dorsal aspect; C, right clasper, mesal aspect.

central area; hemelytra reddish brown or blackish, streaked with yellowish or gray. The amount of black on the dorsum varies greatly.

The very dark extremes in which the black predominates belong to the variety *strigulatus* (Walker) (1873, p. 94). Both extremes and their intergrades have been collected together throughout Illinois.

KNOWN DISTRIBUTION.—This is the commonest species of the family Miridae in the eastern United States and is found everywhere frequenting many kinds of plants. It is a pest on nursery stock, ornamental plants and cultivated crops. The adults hibernate

chiefly under leaves on the ground; many also hibernate in mullein rosettes.

Illinois Records.—Five hundred eighty-five males and 453 females, taken Jan. 24 to Nov. 13, are from Albion, Algonquin, Al- lerton, Alton, Alto Pass, Amboy, Antioch, Apple River Canyon State Park, Auburn Park, Beach, Beardstown, Beverly Hills, B l o o m i n g t o n, Bluff Springs, Borton, Browns, Bureau, Cache, Calvin, Carbon- dale, Carthage, Cary, Champaign, Charle- ston, Chester, Chicago, Custer Park, Cy- press, Danville, Darwin, Decatur, Delavan, De Soto, Dixon, Dolson, Dubois, East Cape Girardeau, East Dubuque, Effingham, Ei-

chorn, Elizabeth, Elizabethtown, Erie, Ernst, Evanston, Fairmount, Farmer City, Fountain Bluff, Fox Lake, Frankfort, Fulton, Galena, Galesburg, Georgetown, Giant City State Park, Glencoe, Glen Ellyn, Glenview, Golconda, Grand Detour, Grand

Forest State Park, Willow Springs, Woodstock, York, Zion.

Lygus vanduzeei Knight

Lygus vanduzeei Knight (1917*b*, p. 565).

MALE.—Length 7.10, width 3.30. Head width 1.25, vertex 0.50. Rostrum, length 2.93, just attaining posterior margins of hind coxae, yellowish brown, apex blackish. Antennae, first segment, length 0.85, reddish brown to black; second, 2.22, reddish brown, apex blackish; third, 1.31, blackish, narrow pale area at base; fourth, 1.00, fuscous; all segments with fine pubescence. Pronotum, length 1.70, width at base 2.82; nearly glabrous, strongly shining, punctures deep and irregularly placed; a small black spot present behind each callus, usually two in darkest specimens; basal angles with a black spot just inside the narrow, pale margins; in darkest specimens, dark lines extending along lateral margins of disk; a small black spot present just above coxal cleft; dark specimens have dark brown rays behind black spots on disk. Scutellum transversely rugose and sparsely punctate; yellowish brown, with apex and dash on either side at base paler. Hemelytra strongly shining, with minute pubescence, nearly glabrous; punctures coarse and deep, somewhat crowded; color rich dark brown, darker on clavus and at apex of corium; claval vein and cubitus pale; embolium translucent yellowish except at apex; cuneus translucent yellowish, dark brownish to blackish at base and on extreme apex. Membrane fuliginous, a pale spot present in center and on either side just behind apex of cuneus; veins at apices of cells and in area bordering apex of cuneus also pale. Legs yellowish brown, apical halves of posterior femora brownish to blackish, with two pale rings near each apex; tibiae greenish yellow, each apex and spines dark brownish, a dark spot on base and, in some cases, a dark stripe; tarsi dark brownish, tips blackish. Venter yellowish brown, a dark brownish, longitudinal stripe on either side; some specimens brownish beneath, thus forming a pale stripe beneath dark lateral one. Genital claspers, fig. 161, typical for this group, but shape of claw on right clasper and internal arm on left distinguishes this species.

FEMALE.—Length 6.70; width 3.40; more robust than male, but very similar in color and general structural characters.

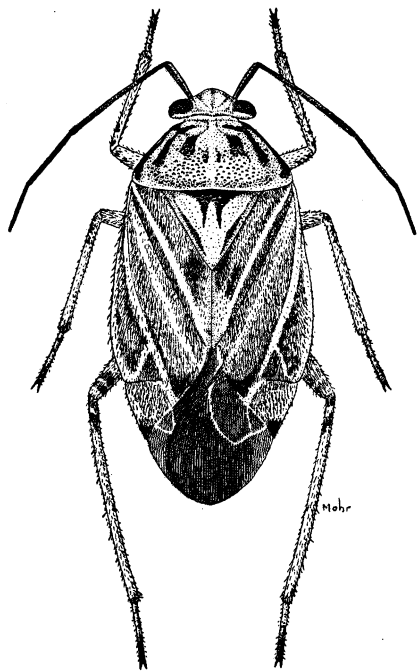


Fig. 162.—*Lygus oblineatus*.

Tower, Grand View, Grayville, Hamilton, Hardin, Harrisburg, Harvard, Hatton, Havana, Henry, Herod, Hillsboro, Hillsdale, Homer, Horseshoe Lake, Iroquois, Joliet, Kampsville, Kankakee, Kansas, Kappa, Karnak, Keithsburg, Lawrenceville, Lima, Litchfield, Mahomet, Makanda, Marshall, Mason City, Maywood, McClure, Metropolis, Milford, Monmouth, Monticello, Mounds, Mount Carmel, Mount Carroll, Muncie, New Columbia, New Milford, Normal, Oak Lawn, Oakwood, Olive Branch, Ozark, Palmer, Palos Park, Paris, Parker, Patoka, Pekin, Philadelphia, Pulaski, Quincy, Riverdale, River Forest, Rockford, Rock Island, Rockton, St. Anne, Savanna, Savoy, Seymour, Shawneetown, Sheldon, Sherman, Sparland, Springfield, Starved Rock State Park, Temple Hill, Union County State Forest, Urbana, Vienna, Ware, Warsaw, Watseka, Waukegan, West Union, White Heath, White Pines

FOOD PLANT.—Goldenrod (*Solidago canadensis* and perhaps other species of the genus). The adults hibernate and come forth in early spring to feed on the tender goldenrod plants. The eggs are doubtless inserted in the goldenrod stems where the nymphs appear and feed during July. In New York, most of the adults mature by the middle of August, and continue to feed until the cool September nights make them seek hibernation quarters.

KNOWN DISTRIBUTION.—Illinois, Iowa, Minnesota, Ontario, Wyoming and eastward, perhaps everywhere its host plant grows freely.

Illinois Records.—NORTHERN ILLINOIS: 1 ♂. APPLE RIVER CANYON STATE PARK: July 11, 1934, DeLong & Ross, 1 ♂, 2 ♀. GALESBURG: Sept. 13, 1888, 1 ♀. ROCK ISLAND: May 19, 1934, Ross & Mohr, 1 ♂. SAVANNA: June 13, 1917, 1 ♀. WHITE PINES FOREST STATE PARK: July 12, 1934, DeLong & Ross, 1 ♂.

Lygus frisoni new species

This is to be distinguished from *oblineatus* (Say) by its larger size and longer second antennal segment; it is smaller than *vanduzeei* Knight, but the second antennal segment is relatively longer than in that species.

MALE.—Length 6.10, width 3.00. Head width, 1.18, vertex 0.48; yellowish without dark marks, collum black. Rostrum, length 2.60, extending to tips of hind coxae, yellowish, apex black. Antennae, first segment, length 0.73, yellowish brown, becoming blackish beneath; second, 2.20, brownish, apical one-fourth black; third, 1.04, black; fourth, 0.91, black. Pronotum, length 1.38, width at base 2.38; disk rather coarsely punctate; yellowish brown; two small spots present behind each callus, large spot at either basal angle, and ray behind top of coxal cleft, black. Scutellum pale to yellowish, darker on median line at base; coarsely punctate; transversely rugulose. Hemelytra punctate, with rather fine pubescence, this pubescence more distinct than in *vanduzeei*; pale translucent yellow; apical area of corium and area on middle of clavus fuscous to black. Cuneus pale, translucent; extreme tip black. Membrane dark fuscous, veins yellowish; marginal spot beyond tip of cuneus and basal half of cells clear. Venter very dark brown with a broad lateral, longitudinal, yellowish stripe. Legs yellowish brown; apical half of each hind femur very

dark brown, with three rather irregular, pale fasciae on anterior aspect; tibiae pale; spot at base and elongate mark just beneath black. Genital claspers rather similar to those of *vanduzeei*.

Holotype, male.—Urbana, Ill.: Sept. 1932, T. H. Frison.

Paratype.—Same data as for holotype, 1 ♂.

Lygus hesperus Knight

Legume Bug

Lygus elisus hesperus Knight (1917b, p. 575).

MALE.—Length 6.50. Head width 1.22, vertex 0.45. Rostrum, length 2.68, slightly exceeding posterior margin of hind coxae. Antennae, first segment, length 0.65, pale reddish brown, fuscous on ventral side; second, 2.11, reddish, apex and ventral side at base very dark brown; third, 1.00, dark reddish brown to fuscous; fourth, 0.63, fuscous. Pronotum, length 1.34, width at base 2.30; yellowish; outer half of calli and a small round spot behind each inner margin, a spot within basal and anterior angles of disk, and a small spot behind coxal cleft, black. Hemelytra more pallid than yellowish; apex of clavus and suture, apical half of corium, and tip of embolium, reddish or marked with red; cuneus with inner margin and apex reddish. Membrane pale, faintly shaded with brownish in areas bordering veins, a darker mark at inner apical angles of larger areoles. Legs yellowish, more or less shaded with reddish; two annuli present near apex of each femur; tibiae yellowish, apices reddish, spines black. Venter fuscous beneath, sides yellowish. Genital claspers as in fig. 161.

FEMALE.—Length 6.40. More uniformly yellowish than male, pronotum entirely yellow except for a small black dot behind inner margin of each callus; hemelytra uniformly pallid, without reddish; markings on femora more reduced than in male; venter yellow. Rostrum attaining or slightly exceeding posterior margins of hind coxae.

FOOD PLANTS.—This species is an important pest of beans and alfalfa in Idaho and Utah and on cotton in Arizona. Shull (1933) has published a work on the biology and economic status of this species and has given it the common name "legume bug."

KNOWN DISTRIBUTION.—This is a west-

ern species that finds its eastern limits of distribution in Illinois, Iowa, Michigan and Minnesota.

Illinois Record.—NORTHERN ILLINOIS: 1 ♀.

***Lygus atritibialis* new species**

This species is allied to *hesperus* Knight and related western species, but is easily to be distinguished by its uniformly black antennae and posterior tibiae, fig. 163.

MALE.—Length 5.40, width 2.50. Head width 1.17, vertex 0.45; yellow, collum black. Rostrum, length 2.30, extending slightly beyond hind coxae, yellow, apex very dark brown. Antennae uniformly black; first segment, length 0.52; second, 1.56; third, 0.87; fourth, 0.65. Pronotum, length 1.25, width at base 2.16; yellow; a lateral, submarginal line joining outer half of callus, two rays behind each callus (in dark specimens these rays joining to form a submarginal line), and ray behind top of coxal cleft, black. Scutellum yellow; a geminate mark on middle of base, lateral edges and mesoscutum, black. Hemelytra pale, translucent yellowish; middle of clavus and outer apical angle of corium fuscous. Cuneus pale, trans-

lucent; outer margin yellowish, but not darker on apex. Membrane pale fuscous, veins pale. Dorsum clothed with fine, short, pale pubescence. Ventral surface uniformly yellow. Legs mostly yellowish, but hind femora with two subapical black annuli; hind tibiae black; middle and front pairs pale, fuscous at apices and each one with a black ring at base, spines black; tarsi fuscous, apices and claws very dark brown. Genital claspers as in fig. 161.

FEMALE.—Length 5.20, width 2.50. Head width 1.17, vertex 0.52. Antennae, first segment, length 0.49; second, 1.51. Slightly more robust than male, but very similar in coloration; black marks on pronotum usually more reduced.

FOOD PLANT.—Apparently breeds on wormwood (*Artemisia canadensis*).

Holotype, male.—Oregon, Ill.: July 4, 1932, on *Artemisia canadensis*, Mohr & Dozier.

Allotype, female.—Same data as for holotype.

Paratypes.—ILLINOIS.—OREGON: Same data as for holotype, 32 ♂, 48 ♀. ROCKFORD: June 11, 1933, Mohr & Townsend, 2 ♂. ZION: July 6, 1932, T. H. Frison *et al.*, 1 ♂.

MICHIGAN.—PENTWATER: July 17, 1916, E. Liljebblad, 1 ♂.

MINNESOTA.—ST. PAUL: St. Anthony Park, June 18, 1921, at light, H. H. Knight, 1 ♀, KC.

***Lygus elisus* Van Duzee**

Pale Legume Bug

Lygus pratensis elisus Van Duzee (1914, p. 20).

MALE.—Length 4.80–5.80. Head width 1.20, vertex 0.45. Rostrum, length 2.11, scarcely attaining posterior margins of hind coxae. Antennae, first segment, length 0.52, pale yellowish to brown, very dark brown on ventral surface; second, 1.98, dusky brown, lower side at base and extreme apex darker; third, 0.85, brownish, apex fuscous; fourth, 0.60, dusky brown. Pronotum, length 1.40, width at base 2.20; coarsely, deeply and closely punctate, with minute, pale pubescence. General color pale greenish with pronotum and scutellum bright green, a small black spot present behind each callus. Scutellum bright green, two black dashes in middle at base; roughly, transversely rugose. Mesoscutum black,

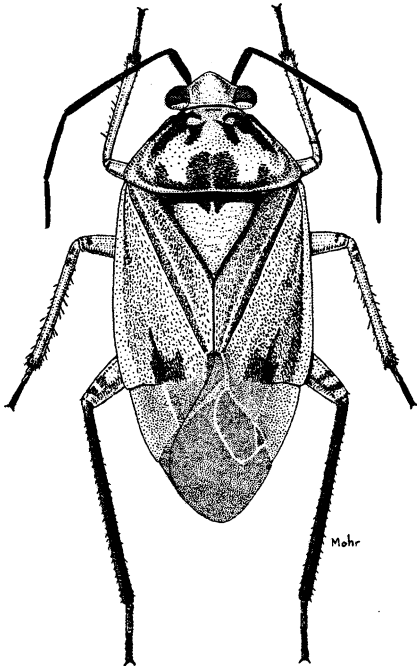


Fig. 163.—*Lygus atritibialis*, ♀.

scarcely exposed. Hemelytra pale, translucent; clavus with a dusky cloud in middle, divided by pale claval vein; apex of corium with two small, fuscous patches; cuneus pale, extreme tip fuscous; membrane clear, veins pale. Legs pale yellowish; femora with a wide, fuscous band in middle on ventral side, also with two annuli near each apex; tibiae with a spot on knee and a ring just below, fuscous; spines very dark brown. Venter yellowish green; genital claspers distinctive, fig. 161.

FOOD PLANTS.—This species is an important pest on beans and alfalfa in Idaho, Utah and Arizona and perhaps other western states. Shull (1933) has discussed the biological and economic status of this species and has given it the common name "pale legume bug."

KNOWN DISTRIBUTION.—This is a western species which migrated eastward during the drought years of 1930 to 1936. It is now known from Illinois, Iowa, Minnesota and all the states westward.

Illinois Record.—ILLINOIS: 1 ♀.

Lygus plagiatus Uhler

Lygus plagiatus Uhler (1895, p. 35).

MALE.—Length 5.30, width 2.80. More robust than *oblineatus* (Say). General color black with greenish yellow mottling; head and anterior part of pronotum yellowish or olive green, hemelytra irregularly mottled with black and less dark spots. Right genital clasper distinctive, fig. 161.

FEMALE.—Slightly more robust than male and usually not so dark in color; second antennal segment shorter; pronotum yellowish, black rays behind calli frequently not reaching black basal margin; venter greenish yellow, blackish on the vagina exterior, dark specimens with black more extended.

FOOD PLANTS.—Giant ragweed (*Ambrosia trifida*); a few Illinois specimens were collected on fleabane (*Erigeron* sp.), smartweed (*Polygonum* sp.), willow (*Salix* sp.) and hickory (*Carya glabra*). The last is undoubtedly a "sitting" record.

Illinois Records.—One hundred thirty-one males and 107 females, taken Feb. 12 to Dec. 1, are from Algonquin, Allerton, Alton, Anna, Antioch, Apple River Canyon State Park, Ashley, Beardstown, Bloomington, Borton, Browns, Calvin, Carbondale, Champaign, Charleston, Danville, Darwin, Decatur, De Soto, Dubois, East

Dubuque, East St. Louis, Elizabeth, Elizabethtown, Forest City, Fountain Bluff, Freeport, Galena, Galesburg, Grand Tower, Harvard, Havana, Hillsboro, Hillsdale, Homer Park, Kansas, Kappa, Keithsburg, Lawrenceville, Mahomet, Monticello, Mounds, Muncie, Murphysboro, Niota, Oakwood, Oquawka, Oregon, Palos Park, Parker, Pekin, Philadelphia, Prophetstown, Quincy, Rock Island, Rockford, Rockton, St. Francisville, St. Joseph, Sherman, Starved Rock State Park, Springfield, Urbana, Warsaw, Waukegan, West Pullman, White Heath, White Pines Forest State Park, Willow Springs, York.

Lygus rubicundus (Fallen)

Phytocoris rubicundus Fallen (1829, p. 92).

MALE.—Length 4.50, width 2.14. Ovate, robust. General color dark reddish brown to fuscous; second antennal segment shorter than width of head; genital claspers distinctive for species, fig. 161.

FEMALE.—Very similar to male in structure, but usually not so darkly colored.

HOST PLANTS.—Peach-leaved willow (*Salix amygdaloides*); occurs also to some extent on other willows.

KNOWN DISTRIBUTION.—A common, Holarctic species.

Illinois Records.—Seventy-four males and 70 females, taken April 15 to Nov. 15, are from Alton, Antioch, Beardstown, Bloomington, Browns, Cairo, Carbondale, Chicago, Dongola, Elizabeth, Elizabethtown, Freeport, Galena, Galesburg, Geff, Golconda, Grafton, Grand Detour, Grand Tower, Harrisburg, Hatton, Havana, Herod, Hopedale, Kankakee, Lilly, Marshall, Meredosia, Monticello, Mount Carmel, Oquawka, Oregon, Putnam, Quincy, Rockford, Savanna, Springfield, Starved Rock State Park, Thebes, Urbana, Volo, West Union, White Pines Forest State Park, York.

Lygus pabulinus (Linnaeus)

Cimex pabulinus Linnaeus (1761, p. 253).

MALE.—Length 5.50, width 2.00; body elongate. General color pale green or greenish yellow, frequently fading to dull yellowish; carina of vertex indistinct in middle; a fuscous Y-shaped mark formed at extreme anal area of membrane; usually a spot present within apices of areoles, and

a longitudinal cloud extending beyond areoles to tip of membrane. Genital claspers as in fig. 161.

FEMALE. — Length 6.10, width 2.22; slightly larger and more robust than male, but not differing in coloration.

HOST PLANT.—Touch-me-not (*Impatiens biflora*).

KNOWN DISTRIBUTION. — Europe and Boreal America; apparently Holarctic in distribution.

Illinois Records.—Eight males and 11 females, taken May 7 to Oct. 6, are from Antioch, Bloomington, Bowmanville, Du-bois, Elizabethtown, Evanston, Fountain Bluff, Herod, Karnak.

Lygus campestris (Linnaeus)

Cimex campestris Linnaeus (1758, p. 448).

MALE.—Length 4.10, width 1.77. Ovate, rather small. General color greenish brown or brownish yellow with fuscous areas; scutellum bright yellow or green; genital claspers, fig. 161, distinctive for species.

FEMALE.—Slightly more robust than male; second antennal segment more slender; very similar to male in coloration.

FOOD PLANTS.—Poison hemlock (*Conium maculatum*) and other plants of the family Umbelliferae; Illinois specimens have been collected on wild parsnip (*Pastinaca sativa*) and cow parsnip (*Heracleum lanatum*). Reported in Massachusetts and New Brunswick as a pest on celery plants.

KNOWN DISTRIBUTION.—Common in the northern states and Canada; Holarctic in distribution.

Illinois Records. — Seventy-one males and 83 females, taken April 12 to Oct. 9, are from Algonquin, Allerton, Antioch, Browns, Champaign, Elizabeth, Lawrenceville, Oregon, Palos Park, St. Joseph, Seymour, Spring Grove, Urbana, Waukegan, Willow Springs, Worth.

Lygus apicalis Fieber

Lygus apicalis Fieber (1861, p. 275).

Lygus Carolinae Reuter (1876, p. 71).

Lygus carolinae Reuter has remained an enigma to American Hemipterists up to the present time. Mr. W. L. McAtee visited the Stockholm museum in 1927 and at the writer's request examined the type of *carolinae* and drew the genital claspers. These distinctive structures leave no doubt about

the identity of the species and its synonymy with *apicalis* Fieber.

MALE.—Length 4.50–5.00, width 2.00; body oblong; head broad, width 1.12, vertex 0.29, eyes unusually large. General color greenish, dark green, or yellowish green; membrane, and, in some cases, corium, marked with fuscous; genital claspers distinctive for species, fig. 161.

FEMALE.—Length 4.60, width 2.05; width of head 1.05, vertex 0.37; uniformly green or greenish yellow; eyes dark brown; tip of tarsi and apex of rostrum very dark brown.

HOST PLANT.—Fleabane (*Erigeron canadensis*).

KNOWN DISTRIBUTION.—Throughout the eastern United States, and known also from Europe, Mexico, Central America and islands of the Pacific.

Illinois Records. — Twenty-seven males and 32 females, taken June 24 to Nov. 11, are from Cypress, Grand Tower, Hardin, Lawrenceville, McClure, Monticello, Mounds, Quincy, Shawneetown, Ullin, Urbana, Villa Ridge, Ware.

Neolygus Knight

KEY TO SPECIES

1. Pronotal disk greenish, or yellowish to brownish, but without distinct dark rays..... 2
 Pronotal disk black or marked with dark rays..... 23
2. Color chiefly greenish, old specimens frequently fading to yellowish; sometimes darkened on clavus and at tip of corium, but ground color green..... 3
 Color distinctly yellowish or brownish, more brownish than green..... 9
3. Tibial spines with fuscous spots, at base; corium never infuscated, but inner half faintly bronzed; clavus and basal half of pronotum usually bronzed..... **alni**, p. 157
 Tibial spines without fuscous spots at base..... 4
4. Dorsum uniformly greenish, with a small, fuscous mark beginning at inner apical angles of corium and extending transversely across anal area of membrane; length 5.20–5.70..... **neglectus**, p. 162

- Dorsum partly brownish; apical area of corium and usually clavus distinctly brownish, sometimes dark brown or even fuscous 5
5. Membrane with apical half infuscated along median line, this darkened area forming a distinct, longitudinal ray which may be widened apically; corium with a triangular dark brownish spot just before apex, clavus usually brownish; length 5.60-6.00 **befragii**, p. 162
Membrane never forming a median, longitudinal fuscous ray; smaller forms 6
6. Apical one-fifth of second antennal segment infuscated
canadensis var. **canadensis**, p. 164
Second antennal segment uniformly colored 7
7. Scutellum partly fuscous; clavus also more or less darkened; corium with a triangular dark patch before apex **tiliae**, p. 161
Scutellum pale; clavus and apex of corium usually darkened 8
8. Area of clavus bordering scutellum dark brown; apical half of membrane clear, a fuscous spot at margin either side of middle, a spot also bordering tip of cuneus
. **inconspicuus**, p. 161
Area of clavus bordering commissure as well as along scutellum dark brown; apical half of membrane rather uniformly infuscated
. **clavigenitalis**, p. 163
9. Rostrum scarcely attaining apices of intermediate coxae; color rich yellowish brown, darker on clavus and apex of corium 10
Rostrum extending beyond apices of intermediate coxae 11
10. Second antennal segment darkened at apex, its length greater than width of pronotum at basal margin **viburni**, p. 159
Second antennal segment not infuscated, its length less than width of pronotum at base . . . **nyssae**, p. 164
11. Apical half of tylus black; two reddish bands present near apices of hind femora; sides of body red
. **atritylus**, p. 157
Tylus not black, or, if so, then body and bands on femora not reddish . . 12
12. Hind femora without two distinct bands near apices; when dark, paler only at tip; second antennal segment rarely darkened, if so, bands on femora indistinct 13
Hind femora with distinct dark or light bands near apices; second antennal segment darkened apically . . 21
13. Scutellum dark, with a pale, median stripe on apical half; dorsum dark greenish brown to almost black, a lateral, dark fuscous stripe extending full length of body; femora dark with pale tips **invitus**, p. 157
Scutellum sometimes dark, but without any indication of a pale median line 14
14. Color distinctly reddish; head, pronotum, femora and veins of membrane red **tinctus**, p. 157
Color not reddish 15
15. Hemelytra uniformly rich brownish, or brownish pink; clavus and apical half of hemelytra not appreciably darker 16
Hemelytra not uniformly colored; clavus and apical half of corium darker than scutellum and basal half of corium 18
16. Hemelytra and femora brownish pink; membrane distinctly darkened
. **fagi**, p. 161
Hemelytra reddish yellow brown to black, or uniformly rich brownish; membrane darkened, or uniformly yellowish 17
17. Dorsal prongs of left genital clasper parallel or converging at tips, fig. 164 **hirticulus**, p. 163
Dorsal prongs of left genital clasper divergent at tips, fig. 164
. **geminus**, p. 163
18. Second antennal segment darkened apically 19
Second antennal segment uniformly colored, never distinctly darkened apically 20
19. Length 4.70-5.00; female vertex distinctly wider than dorsal width of an eye; male left genital clasper with basal spine shorter and more slender than posterior spine, fig. 164 **carpini**, p. 164
Length 5.50-6.00; female vertex narrower than dorsal width of an eye; male left genital clasper with basal

- spine longer and stouter than posterior spine, fig. 164. *ostryae*, p. 164
20. Length of second antennal segment scarcely exceeding width of posterior margin of pronotum; rostrum scarcely attaining apices of hind coxae; hemelytra greenish yellow with apical spot on corium and inner margins of clavus dark brownish to almost black. *clavigenitalis*, p. 163
Length of second antennal segment much exceeding width of posterior margin of pronotum; rostrum extending slightly beyond apices of hind coxae; clavus and corium dark brownish. *genesensis*, p. 159
21. Pale greenish yellow; clavus and large spot on apical half of corium very dark brown; femora greenish yellow, with faint, fuscous bands near apices. *canadensis* var. *canadensis*, p. 164
Color yellowish to brownish; apical half of corium brownish, but this colored area not forming a definite spot; femora brownish or reddish. 22
22. Femora and, usually, sides of body distinctly reddish; hind femora with dark reddish bands before apices. *quercalbae*, p. 160
Femora and sides of body dark brown to fuscous; hind femora with dark brown bands before apices. *omnivagus*, p. 163
23. Pronotal disk dark, but without distinct rays. 24
Pronotal disk with distinct, dark rays or spots behind calli. 27
24. Sides of body and hind femora distinctly reddish; femora with pale and dark red bands near apices. *quercalbae*, p. 160
Sides of body and femora not reddish. 25
25. Hind femora black, with paler bands near apices; hemelytra black, costal margin scarcely paler, cuneus clear, apex dark. *caryae* var. *caryae*, p. 161
Hind femora greenish to brownish, without subapical bands. 26
26. Embolium greenish, clavus and inner half of corium dark fuscous to almost black. *tiliae*, p. 161
Embolium scarcely paler than corium, hemelytra and whole dorsum nearly uniformly dark brown. *hirticulus*, p. 163
27. Hind femora with two dark brown or pale bands near apices. 28
Apical halves of hind femora dark brown to black, but without two distinct bands, pale only at apices. 32
28. First and second antennal segments black; embolium, outer half of corium and cuneus, pale and translucent. *johnsoni*, p. 162
First antennal segment pale or only slightly brownish; apex of embolium and outer half of corium darkened; if not, then first antennal segment distinctly pale. 29
29. Sides of body and usually hind femora distinctly reddish. *communis*, p. 159
Sides of body and femora not reddish. 30
30. Embolium and basal half of corium pale, a large black spot on apical half of corium; clavus and a nearly quadrate spot behind each callus black; calli and areas just anterior to them not black. *canadensis* var. *binotatus*, p. 164
Embolium usually darkened apically; if not, then calli and areas just anterior to them black. 31
31. Apex of median line of scutellum and all but cuneus of hemelytra dark brown to black. *caryae* var. *caryae*, p. 161
Scutellum and basal half of corium and embolium distinctly pale. *caryae* var. *subfuscus*, p. 161
32. Scutellum with a darkened median line; apex and inner margin of cuneus, femora and variable areas on sides of body, reddish. *univittatus*, p. 160
Scutellum never with a dark brown median line. 33
33. Pronotal disk with small fuscous mark behind each callus; venter dark brown, with a pale, lateral stripe. *semivittatus*, p. 163
Pronotal disk with distinct black ray or spot behind each callus; venter without pale, lateral stripe. 34
34. Pronotal disk with two conspicuous, nearly square black spots, one behind each callus; ground color yellowish brown; hind femora black except at tips. *atrinotatus*, p. 162

A black stripe traversing outer half of each callus and extending to posterior margin of pronotal disk; ground color pale yellowish, with clavus and apices of corium and embolium black. . . *vitticollis*, p. 162

Neolygus invitus (Say)

Capsus invitus Say (1832, p. 24).

MALE.—Length 5.00, width 2.00. General color dark greenish with fuscous or black areas; a lateral, fuscous stripe extending full length of body, including genital segment; apical half of scutellum with a pale, median vitta; disk of pronotum dark brown or black, but never with two distinct rays, as in *communis* Knight; genital claspers distinctive for species, fig. 164.

FEMALE.—Length 5.10, width 2.20; slightly more robust than male, very similar in coloration, but in general lighter colored, with pale vitta on scutellum longer.

FOOD PLANT.—American elm (*Ulmus americana*); a single specimen was collected in Illinois on hickory (*Carya* sp.).

KNOWN DISTRIBUTION.—Connecticut, Illinois, Indiana, Iowa, Massachusetts, Michigan, Minnesota, Missouri, New York, Ohio, Vermont.

Illinois Records.—ILLINOIS: June 21, 1892, 2 ♀. DUBOIS: May 21, 1917, 1 ♂. ELIZABETHTOWN: May 27-31, 1932, on elm, H. L. Dozier, 10 ♂, 6 ♀. FRANKFORT: June 8, 1933, Mohr & Townsend, 2 ♂, 9 ♀. MOUNT CARMEL: May 27, 1884, on leaves of *Carya* sp., 1 ♀. MUNCIE: June 8, 1917, 1 ♀. SAVANNA: June 1, 1917, 1 ♀; June 12, 1917, 3 ♂, 1 ♀.

Neolygus tinctus new species

This species is distinguished from allied ones by its smaller size and reddish coloration; it apparently is most closely related to *invitus* (Say).

MALE.—Length 4.76, width 2.00. Head width 0.99, vertex 0.30. Rostrum yellowish, apex reddish brown, length 1.56, extending slightly beyond middle of hind coxae. Antennae, first segment, length 0.44, yellowish brown; second, 1.56, yellowish, becoming dusky at apex. Pronotum reddish; basal half of disk fuscous; calli dusky brown; median line of side of pronotum paler just behind calli. Propleuron pale about coxal cleft. Scutellum yellowish, with many red flecks in

hypodermis. Hemelytra reddish to fuscous, with clavus and apical half of corium distinctly fuscous; cuneus pale, flecked with red about margins; membrane pale, with red veins and with areas within areoles and along margin behind cuneus fuscous. Dorsum clothed with fine, yellowish, recumbent pubescence; pronotum and scutellum minutely regulose, as in allied species. Venter of body pale yellowish, tinged with reddish and shaded with fuscous; sides of thorax dusky. Legs yellowish green, hypodermis of femora rather uniformly colored with bright red; tarsi darkened. Genital claspers distinctive, fig. 164; form nearest to *invitus*, but left clasper thicker at base and right clasper with a much more prominent, protuberant shoulder at middle.

FEMALE.—Length 4.63, width 2.20. Head with frons, tylus and juga bright red. Antennae yellowish, first segment becoming reddish at apex, third and fourth segments dusky; first segment, length 0.47; second, 1.47; third, 0.82; fourth, 0.34. More robust than male, and very similar in coloration, although with less fuscous shading on pronotum and hemelytra.

Holotype, male. — Morgan County, Ind.: June 10, 1933, on *Gleditsia triacanthos*, P. O. Musgrave, KC.

Allotype, female. — ILLINOIS. — EICHORN, HICK'S BRANCH: June 13, 1934, DeLong & Ross.

Neolygus atritylus Knight

Lygus (*Neolygus*) *atritylus* Knight (1917b, p. 606).

No Illinois specimens; known from Colorado, Minnesota, New Hampshire, New York, Vermont. Feeds on willow (*Salix* sp.).

Neolygus alni Knight

Lygus (*Neolygus*) *alni* Knight (1917b, p. 607).

MALE.—Length 5.50–6.00, width 2.00. Head width 1.00, vertex 0.33. Rostrum, length 1.88, just attaining posterior margins of hind coxae. Antennae, first segment, length 0.64; second, 2.02, yellowish to brownish, its apex not strongly infuscated; third, 1.04; fourth, 0.74. Pronotum, length 0.86, width at base 1.57. Color medium green to light green, fading to yellowish in old specimens; clavus, scutellum and basal

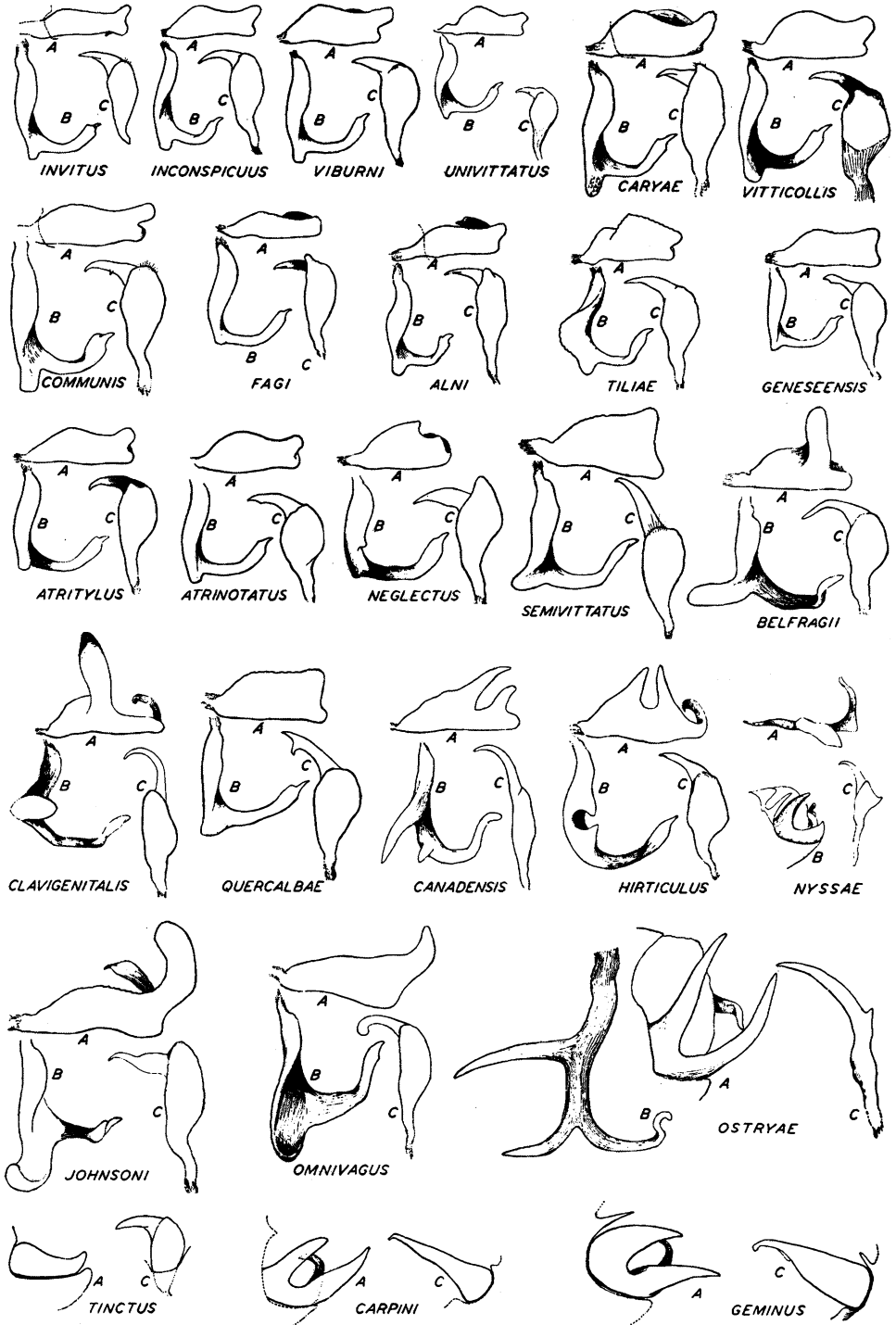


Fig. 164.—Male genital claspers of *Neolygus*. A, left clasper, lateral aspect; B, left clasper, dorsal aspect; C, right clasper, ventral aspect.

half of pronotal disk usually distinctly bronzed. Membrane slightly smoky, with apical part of cells and a narrow transverse spot at apex of cuneus darker, veins pale to dusky. Legs greenish, each tibial spine with fuscous spot at base. Venter bright green to yellowish green. Genital claspers, fig. 164, distinctive for species.

FEMALE.—Length 5.50, width 1.95. Form, color and pubescence very similar to those of male.

HOST PLANT.—Alder (*Alnus incana*).

KNOWN DISTRIBUTION.—Illinois, Minnesota, New Hampshire, New York, Nova Scotia, Quebec.

Illinois Record.—HEROD: June 20, 1935, DeLong & Ross, 1 ♂.

Neolygus geneseensis Knight

Lygus (Neolygus) geneseensis Knight (1917b, p. 609).

MALE.—Length 5.00, width 2.05. General color yellowish brown to dark brown and fuscous. Allied to *viburni* Knight, having much the same color, but differs in being slightly smaller, having a longer rostrum and differently shaped genital claspers, fig. 164.

FEMALE.—Length 4.90, width 2.10; very similar to male, but more uniformly yellowish brown; distinguished from *viburni* by having uniformly yellowish antennae, and by the rostrum, which extends to posterior margins of hind coxae.

FOOD PLANTS.—White oak (*Quercus alba*) and post oak (*Q. stellata*).

KNOWN DISTRIBUTION.—Georgia, Illinois, Iowa, Maryland, Massachusetts, Michigan, Mississippi, Missouri, New York, Pennsylvania, Virginia.

Illinois Records.—Fifteen males and 13 females, taken May 25 to July 4, are from Beach, Charleston, Elizabethtown, Frankfort, Galena, Geff, Grand Detour, Harvard, Marshall, Oakwood, Palos Park, St. Joseph, White Heath, White Pines Forest State Park.

Neolygus viburni Knight

Lygus (Neolygus) viburni Knight (1917b, p. 609).

MALE.—Length 5.20, width 2.08; width of head 1.03, vertex 0.38. Rostrum short, its apex scarcely attaining posterior margins of mesocoxae. Similar to *omnivagus*

Knight, but is smaller and more yellowish brown than that species. It also is closely related to *geneseensis* Knight, but is more robust and has a shorter rostrum; the apical half of the second antennal segment is darkened, and the general coloration is a richer yellowish brown. Claspers, fig. 164, distinctive for species.

FEMALE.—Length 5.30, width 2.28; very similar to male in coloration, but usually not so dark.

FOOD PLANT.—Sheepberry (*Viburnum lentago*). In New York state this bug often occurs in such numbers that foliage of its host is badly injured.

KNOWN DISTRIBUTION.—Connecticut, Illinois, Michigan, Minnesota, New York, Ohio, Pennsylvania.

Illinois Records.—GALENA: June 30, 1932, Dozier & Mohr, 1 ♂, 1 ♀. GALESBURG: July 16, 1892, 2 ♀.

Neolygus communis Knight

Pear Plant Bug

Lygus (Neolygus) communis Knight (1916a, p. 346).

This species, fig. 165, is suggestive of *invitus* (Say), but may easily be distinguished from it by the two black rays on the disk of the pronotum, the reddish lateral stripe on the body and the larger size.

MALE.—Length 5.50, width 2.30. Antennae with second segment dark brownish to fuscous, sometimes with basal half paler; third dark brown; fourth fuscous. Pronotum greenish, darkened with brown on basal half; two black rays on disk, one behind each callus and, in the darkest specimens, extending across calli, widened behind and nearly reaching hind margin. Scutellum greenish, darkened with brown; rarely with a longitudinal, median, fuscous line. Hemelytra dark brown to fuscous, darker on apical half of corium and across tip of embolium; cuneus clear, tinged with yellow, extreme tip sometimes slightly darkened; membrane darkened. Legs greenish to yellowish, posterior femora and often intermediate femora with two reddish annulations near each apex; frequently entire apical halves reddish. Venter pale greenish with a broad, lateral band and the genital segment dark brownish red; genital claspers distinctive for species, fig. 164.

FEMALE.—Length 5.40, width 2.40. More

robust than male, but very similar in color and pubescence.

FOOD PLANTS AND HABITS.—Breeds on dogwoods (*Cornus stolonifera*, *C. paniculata* and *C. alternifolia*) and cultivated pear (*Pyrus communis*); also reared from winterberry (*Ilex verticillata*). The nymphs hatch when the leaves unfold and they feed

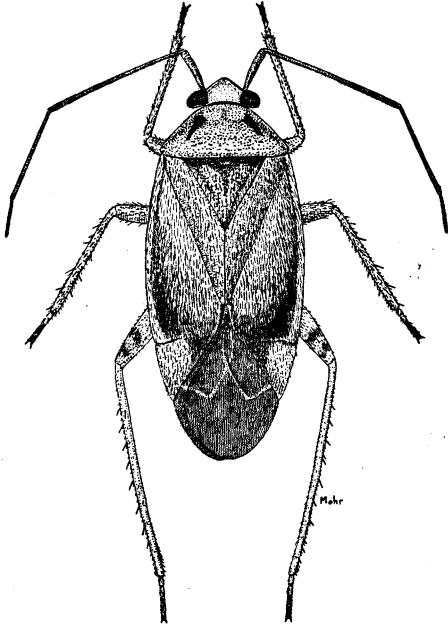


Fig. 165.—*Neolygus communis*, ♀.

on this tender foliage. On pears, the nymphs attack the young fruit as soon as it forms and continue to feed on it in preference to the leaves. All pears thus punctured become knotty and scarred to such an extent that the fruit is unsalable. The nymphs are green, closely matching the color of the young fruit; this makes it difficult to see them. The nymphs mature in about 24 days, or, usually, by the middle of June in central Illinois. The adults, likewise, prefer to feed on the pears and contribute further to the destruction of the fruit. In New York, the author observed that the adult bugs were active agents in distributing pear blight among the trees, the blight developing about feeding punctures made by the bugs. Oviposition occurs during the last week of June and up to the middle of July in New York, a few individuals probably laying after that date. The eggs are inserted under the bark of the new cambium layer (Knight 1915);

in one place six eggs were found deposited in a mass. Most of the males die by the middle of July, but many females live until the end of that month. There is only one brood annually; the winter is passed in the egg stage and the nymphs appear again in the spring at the time the leaves unfold. In Nova Scotia a smaller, more slender form, variety *novascotiensis* Knight (1916a, p. 349), is an important pest on apple fruit.

KNOWN DISTRIBUTION.—Colorado and Idaho northward to Alberta and Minnesota, eastward to Ontario and Maine and southward to North Carolina.

Illinois Records.—ANTIOCH: Aug. 1, 1924, T. H. Frison, 1 ♀; July 5-7, 1932, T. H. Frison, on *Ilex verticillata*, 4 ♂, 20 ♀. FRANKFORT: June 8, 1933, Mohr & Townsend, 3 ♀. QUINCY: June 11-30, 1883, lowlands, 1 ♀. ST. JOSEPH: June 17, 1932, T. H. Frison, 1 ♀.

Neolygus univittatus Knight

Lygus (Neolygus) univittatus Knight (1917b, p. 623).

Known only from New York, but intensive collecting on its host plant, hawthorn (*Crataegus* sp.), should extend its recorded range.

Neolygus quercalbae Knight

Lygus (Neolygus) quercalbae Knight (1917b, p. 624).

MALE.—Length 5.70, width 2.40. Resembles *omnivagus* Knight, but is deeper reddish brown, more robust, and has a pale stripe on either side of venter; similar to *semivittatus* Knight in coloration of venter, but does not have distinct, fuscous spots behind calli and is more red in color; genital claspers, fig. 164, distinctive.

FEMALE.—Length 5.60, width 2.60; more robust than male, but very similar in coloration; larger and more reddish than *omnivagus* and *semivittatus*; distinguished from them by the distinctly reddish hind femora and sides of body.

FOOD PLANT.—White oak (*Quercus alba*) on which it is often very abundant. This species has been collected on peach trees and hickory (*Carya ovata*) along with *N. caryae* Knight, but breeds only on white oak so far as the writer has been able to determine. The nymphs hatch with the bursting of the buds and feed thereafter on the

tender foliage. In times of rain or cold weather the nymphs retreat under the bud scales which remain on the trees. Up to the fourth instar the nymphs are greenish yellow, but later they become tinged with pink; in the last instar the wing pads become brownish while the body is pink. In western New York the nymphs are developing during May and usually begin maturing during the first week of June; the adults may remain on the trees up to the middle of July. Eggs are laid mostly in late June and early July in the oak twigs; there they pass the winter, and the nymphs come forth with the bursting of the buds the following spring.

KNOWN DISTRIBUTION.—Connecticut, Illinois, Iowa, Maryland, Massachusetts, Michigan, Minnesota, Missouri, New York, Ontario, Virginia, Wisconsin.

Illinois Records.—Twenty males and 18 females, taken May 9 to July 6, are from Algonquin, Antioch, Beach, Cedar Lake, Dongola, Dubois, Elizabeth, Frankfort, Galena, Glen Ellyn, Goreville, Grand Detour, Harvard, Meredosia, Oregon, St. Anne, Savanna, Urbana, Willow Springs, Zion.

***Neolygus fagi* Knight**

Lygus (Neolygus) fagi Knight (1917*b*, p. 603).

Not as yet collected in Illinois; known from Massachusetts, New Hampshire, New York, Ohio, Vermont. Feeds on beech (*Fagus grandifolia*) and birch (*Betula lutea*).

***Neolygus inconspicuus* Knight**

Lygus (Neolygus) inconspicuus Knight (1917*b*, p. 612).

MALE.—Length 4.50, width 2.08. General color pale greenish; a transverse brownish spot at apex of corium and on area of clavus bordering scutellum; in general appearance, resembling *tiliae* Knight and *clavigenitalis* Knight, but differing greatly from those species in form of genital claspers, fig. 164.

FEMALE.—Length 4.80, width 2.25; very similar to male in size and coloration; similar in size and general appearance to *clavigenitalis* and *tiliae*; distinguished from the latter by the pale scutellum, and from the former by being more greenish with a paler scutellum.

FOOD PLANT.—Muscadine grape (*Vitis rotundifolia*).

KNOWN DISTRIBUTION.—Connecticut, Georgia, Illinois, Indiana, Iowa, Maryland, Michigan, Minnesota, New York, North Carolina, Oklahoma, Virginia.

Illinois Records.—NORTHERN ILLINOIS: June, 1 ♀. ALDRIDGE: May 8, 1932, H. L. Dozier, 1 ♀. ELIZABETH: July 6, 1917, 1 ♂. FREEPORT: July 4, 1917, 1 ♂. OREGON: June 11, 1933, Mohr & Townsend, 1 ♀. WILLOW SPRINGS: July 3, 1904, W. J. Gerhard, 1 ♀, FM.

***Neolygus tiliae* Knight**

Lygus (Neolygus) tiliae Knight (1917*b*, p. 613).

MALE.—Length 4.60, width 1.74; rather small, scarcely as large as *invitus* (Say). General color greenish yellow, with base of pronotum darker, and scutellum, clavus and corium dark fuscous to black. Genital claspers distinctive, fig. 164.

FEMALE.—Length 5.00, width 2.00. Lighter colored than male and usually slightly larger; pronotum yellowish, scutellum and clavus only slightly darkened, apex of corium with a triangular dark patch, much resembling *belfragii* (Reuter) in this respect; similar in size and general appearance to *inconspicuus* Knight and *clavigenitalis* Knight; distinguished from *inconspicuus* by having front of head more conic and scutellum darker; *clavigenitalis* differs from this species in being generally more brownish with a paler scutellum.

FOOD PLANT.—Linden (*Tilia americana*).

KNOWN DISTRIBUTION.—Connecticut, Illinois, Iowa, Massachusetts, Minnesota, New York, Ohio, Ontario, Pennsylvania, Vermont.

Illinois Records.—Sixty-seven males and 53 females, taken June 8 to July 19, are from Algonquin, Antioch, Elizabeth, Frankfort, Freeport, Galena, Galesburg, Kampsville, Monticello, Oregon, Urbana, Waukegan.

***Neolygus caryae* Knight**

Lygus (Neolygus) caryae Knight (1917*b*, p. 615).

MALE.—Length 4.80–5.70, width 2.10. General color varying from dark brown or black to yellowish brown with more prominent dark areas on pronotum and apex of

hemelytra. Paler brown forms suggest *omnivagus* Knight. Genital claspers distinctive, fig. 164.

FEMALE.—Length 5.00–6.30, width 2.30; more robust than male, frequently with brownish yellow areas between the calli and over posterior part of disk.

Specimens which are towards the pale end of the series with a more or less prominently banded effect represent the variety *subfuscus* Knight (1917*b*, p. 616); they resemble *omnivagus* in coloration. Specimens that show all ranges of color have been taken in Illinois, frequently both extremes and the intergrades together on the same tree.

FOOD PLANTS.—Hickory (*Carya ovata*) and pecan (*C. illinoensis*). Also, single Illinois specimens were taken on locust (*Robinia pseudoacacia*), oak (*Quercus* sp.) and red cedar (*Juniperus virginiana*). There is no evidence that they fed on these hosts.

Of recent years this species has been reported several times as causing "cat-facing" on peaches in New York and Ohio. The species may breed on nearby hickory trees and, when mature, fly to the peach trees where they puncture and feed upon the young fruits.

KNOWN DISTRIBUTION.—Connecticut, Illinois, Iowa, Massachusetts, Michigan, Minnesota, Mississippi, New Hampshire, New York, North Carolina, Ohio, Ontario, Texas.

Illinois Records.—Sixty-two males and 58 females, taken May 15 to July 6, are from Antioch, Bluff Springs, Dubois, Elizabethtown, Fox Lake, Frankfort, Freeport, Galena, Galesburg, Glen Ellyn, Goreville, Grand Detour, Grayslake, Hardin, Harvard, Havana, Kampsville, Manito, Meredosia, Oquawka, Rockford, Savanna, Seymour, Urbana, Waukegan, White Pines Forest State Park, Zion.

Neolygus atrinotatus Knight

Lygus (Neolygus) atrinotatus Knight (1917*b*, p. 617).

Known from District of Columbia, North Carolina, Ohio, Pennsylvania; not yet collected in Illinois.

Neolygus vitticollis (Reuter)

Lygus vitticollis Reuter (1876, p. 71).

MALE.—Length 5.80, width 2.48; elongate, easily separated from other species by

its large size and distinct black markings. General color pale yellowish, with two rays on pronotum; clavus, apical halves of posterior femora, and apices of corium and of embolium, black; rostrum reaching only intermediate coxae; genital claspers, fig. 164, distinctive.

FEMALE.—More robust than male, but not differing in coloration.

FOOD PLANTS.—Sugar maple (*Acer saccharum*), red maple (*A. rubrum*) and silver maple (*A. saccharinum*).

KNOWN DISTRIBUTION.—Connecticut, Illinois, Indiana, Iowa, Michigan, Minnesota, New Jersey, New York, Ohio, Ontario. In the original description Reuter gave Texas as the type locality for *vitticollis*, but Mr. W. L. McAtee examined the type in the Stockholm Museum in 1927 and reported that it was labeled "N. Y."

Illinois Records.—Twenty-four males and 37 females, taken May 11 to July 1, are from Algonquin, Antioch, Carlinville, Meredosia, Mount Carmel, Normal, Oakwood, Oquawka, Savanna, Urbana, White Heath.

Neolygus neglectus Knight

Lygus (Neolygus) neglectus Knight (1917*b*, p. 619).

Known from Alabama northward to Maine and westerly from Louisiana, Mississippi, Ohio. This species has not as yet been taken in Illinois, but it should be found here eventually. Feeds on American hornbeam (*Carpinus caroliniana*).

Neolygus johnsoni Knight

Lygus (Neolygus) johnsoni Knight (1917*b*, p. 629).

No Illinois specimens; known from New York, Ohio, Virginia. Feeds on hornbeam (*Carpinus caroliniana*).

Neolygus belfragii (Reuter)

Lygus belfragii Reuter (1876, p. 71).

MALE.—Length 5.80, width 2.30; elongate. General color green or greenish yellow; clavus brownish, tinged with fuscous and bronze; apex of corium with a triangular fuscous or blackish patch, membrane with a median, longitudinal, fuscous area; genital claspers distinctive, fig. 164.

FEMALE.—Length 5.50–5.80; similar to male in coloration, but more robust.

HOST PLANTS.—Breeds on *Acer spicatum* and *Viburnum acerifolium*.

KNOWN DISTRIBUTION.—Illinois, Maine, Minnesota, New York, Ontario, Pennsylvania, Wisconsin.

Illinois Record.—DOLSON: July 18, 1934, Rocky Branch, DeLong & Ross, 1 ♀.

Neolygus clavigenitalis Knight

Lygus (Neolygus) clavigenitalis Knight (1917b, p. 632).

Known from Connecticut, Maine, Maryland, Massachusetts, Ohio, but not yet collected in Illinois. Has been collected on smooth alder (*Alnus rugosa*).

Neolygus semivittatus Knight

Lygus (Neolygus) semivittatus Knight (1917b, p. 626).

Not yet taken in Illinois, but it should be found here eventually. Known from Alabama, Florida, Minnesota, Mississippi, New York, Pennsylvania, Texas, Virginia; feeds on white oak (*Quercus alba*).

Neolygus omnivagus Knight

Lygus (Neolygus) omnivagus Knight (1917b, p. 627).

MALE.—Length 5.40, width 2.20. Yellowish brown with apex of corium dark brown to fuscous; clavus dark brown or black; very much resembling forms of *semivittatus* Knight and *quercalbae* Knight; also similar in color to *caryae subfuscus* Knight, but genital claspers distinctive, fig. 164.

FEMALE.—Length 5.40, width 2.50. Usually paler than male, more yellowish brown; never reddish, as in *quercalbae*, nor with fuscous marks on pronotum as in *semivittatus* or *caryae subfuscus*; very similar to *canadensis* Knight, but that species has apical one-third of second antennal segment distinctly black, fuscous spot on apex of the corium smaller and embolium entirely without fuscous.

FOOD PLANTS.—White oak (*Quercus alba*), red oak (*Q. rubra*), scarlet oak (*Q. coccinea*) and probably other oaks; breeds occasionally on dogwood (*Cornus* sp.), chestnut (*Castanea* sp.) and arrow-wood (*Viburnum* sp.).

KNOWN DISTRIBUTION.—Connecticut, Illinois, Iowa, Massachusetts, Michigan, Minnesota, New Hampshire, New York,

North Carolina, Ontario, Pennsylvania, Quebec, Rhode Island, Vermont, Virginia, Wisconsin.

Illinois Records.—Eleven males and 25 females, taken June 4 to July 31, are from Dolson, Galena, Glen Ellyn, Grand Detour, Keithsburg, Lilly, Marshall, McHenry, Monticello, Mount Carroll, Oregon, Rockford, St. Anne, Savanna, White Pines Forest State Park, Willow Springs.

Neolygus hirticulus (Van Duzee)

Lygus tenellus Van Duzee (1912, p. 484), *not* Hahn.

Lygus hirticulus Van Duzee (1916a, p. 41).

MALE.—Length 4.80, width 2.28. General color dark ferrugino-testaceous, sometimes entirely dark fuscous or black, except for the legs and antennae; genital claspers distinctive, fig. 164.

FEMALE.—Length 5.30, width 2.30. Slightly larger and more robust than male. Uniformly colored with yellowish brown or, in some cases, dark brown; hemelytra rarely much darker than pronotum; easily confused with *fagi* Knight, but membrane is uniformly and faintly tinged with fuliginous color, never dark as in *fagi*.

FOOD PLANTS.—Chestnut (*Castanea* sp.), sugar maple (*Acer saccharum*), beech (*Fagus* sp.), ash (*Fraxinus* sp.), cottonwood (*Populus deltoides*) and woodbine (*Psedera* sp.).

KNOWN DISTRIBUTION.—Connecticut, Illinois, Iowa, Maryland, Massachusetts, Minnesota, New Hampshire, New Jersey, New York, North Carolina, Ohio, Ontario, Pennsylvania, Rhode Island, Vermont. Always rare.

Illinois Records.—ILLINOIS: 1 ♂; July 9, 1892, 1 ♀; July 16, 1892, 1 ♀. DUBOIS: June 3, 1919, 1 ♂. FRANKFORT: June 8, 1933, on *Fraxinus* sp., Mohr & Townsend, 3 ♂. URBANA: June 30, 1889, woods above lake, 1 ♂; July 20, 1917, cottonwoods, 1 ♂; July 27, 1917, cottonwood grove, 1 ♀. WILLOW SPRINGS: July 8, 1906, W. J. Gerhard, 1 ♀, FM.

Neolygus geminus new species

This is closely allied to *hirticulus* (Van Duzee), as individuals of the two species are similar in size and coloration, but the males are readily distinguished by the structure of the genital claspers, fig. 164.

MALE.—Length 4.80, width 2.20. Head width 0.91, vertex 0.34. Rostrum, length 1.81, almost attaining posterior margins of hind coxae. Antennae, first segment, length 0.58, pale; second, 1.98, pale to yellowish brown; third, 1.17, dusky yellow; fourth, 1.21, dusky. Pronotum, length 0.95, width at base 1.70. Color dusky brown, hemelytra slightly darker; cuneus pale, translucent; membrane pale to smoky, veins yellowish. Legs pale to yellowish; femora tending to yellowish brown. Venter yellowish to brown, darker on sides; genital claspers distinctive.

FEMALE.—Length 5.00, width 2.30. Head width 0.95, vertex 0.39; antennae, first segment, length 0.60; second, 1.94; third, 1.17. Pronotum, length 1.08, width at base 1.77. Slightly more robust than male and more yellowish brown in color. Cannot at present be separated from female of *hirticulus*.

Holotype, male.—Elizabethtown, Ill.: May 27-31, 1932, H. L. Dozier.

Allotype, female.—Same data as for holotype.

Paratypes.—ILLINOIS.—Same data as for holotype, 4 ♂, 1 ♀. GOLCONDA: June 22, 1932, on *Trifolium pratense*, Ross, Dozier & Park, 1 ♂.

Neolygus nyssae Knight

Lygus (Neolygus) nyssae Knight (1918c, p. 43).

MALE.—Length 5.50, width 2.50; slightly more robust, but in general structure similar to *quercalbae* Knight; pronotum and scutellum evenly shaded with rich brown; clavus and corium darker brown; genital claspers distinctive for species, fig. 164.

FEMALE.—Length 5.60, width 2.57; very similar to male in size and coloration.

FOOD PLANT.—Sour gum (*Nyssa* sp.).

KNOWN DISTRIBUTION.—Alabama, Connecticut, Illinois, Mississippi, Ohio, Pennsylvania.

Illinois Record.—DIXON SPRINGS: June 24, 1936, DeLong & Ross, 1 ♀.

Neolygus canadensis Knight

Lygus (Neolygus) canadensis Knight (1917b, p. 634).

This species is allied to *omnivagus* Knight, but is more greenish yellow in color and has a distinct, dark spot on the corium. The only specimen seen from Illinois has a black

ray behind each callus extending nearly to the hind margin of the pronotum and would, thus, be referable to the variety *bino-tatus* Knight (1917b, p. 635).

MALE.—Length 5.50, width 2.08. Second antennal segment, length 2.05, pale yellowish, apical one-third fuscous to black. Margins of scutellum usually brownish; cuneus pale; legs greenish yellow; hind femora with two pale, fuscous annuli near apices; genital claspers distinctive, fig. 164.

KNOWN DISTRIBUTION.—Illinois, Minnesota, New Jersey, New York, Ohio, Ontario, Wisconsin.

Illinois Record.—NORTHERN ILLINOIS: July, 1 ♂.

Neolygus ostryae Knight

Lygus (Neolygus) ostryae Knight (1917b, p. 635).

MALE.—Length 5.80, width 2.36. Head width 1.05, vertex 0.37. Rostrum, length 2.08, reaching posterior margins of hind coxae. Antennae, first segment, length 0.74; second, 2.25, yellowish, apex fuscous; third, 1.25, yellowish with apical half slightly infuscated; fourth, 0.71, infuscated. Pronotum, length 1.00, width at base 1.85. Deep yellowish brown in color; embolium and basal half of corium pale yellowish; clavus and apical half of corium light brown to dark brown; cuneus almost colorless, tinged with yellowish. Genital claspers as in fig. 164.

FEMALE.—Length 6.00, width 2.40; similar to male in coloration, but slightly larger and more robust.

HOST PLANT.—Hop hornbeam (*Ostrya virginiana*).

KNOWN DISTRIBUTION.—Illinois, Massachusetts, New York, Ontario, Vermont.

Illinois Record.—NORTH EVANSTON: Aug. 20, 1905, Gerhard & Wolcott, 1 ♀, FM.

Neolygus carpini Knight

Neolygus carpini Knight (1939a, p. 21).

MALE.—Length 4.70, width 2.00. Head width 0.99, vertex 0.35. Rostrum yellowish, apex brownish, length 1.90, extending slightly beyond hind margins of posterior coxae. Antennae with first segment pale, second pale with apical one-third black, third yellowish, fuscous apically, fourth fuscous. Pronotum yellowish green, tinged with brown, without definite streaks or vittae.

Scutellum yellowish brown, scarcely darker at sides. Hemelytra translucent, yellowish, with clavus evenly shaded with brownish; apical area of corium dark brown; cuneus uniformly translucent, scarcely tinged with yellow; membrane and veins rather uniformly fuscous brown. Venter of body pale to yellowish, a fuscous band along lateral margins. Fuscous band also extending across pleura of thorax. Legs yellowish to brown; femora uniformly brownish, without bands, apices paler; tibiae pale yellowish, spines brown; tarsi brownish, apices fuscous.

FEMALE.—Length 5.00, width 2.16. More robust than male but very similar in color and pubescence.

HOST PLANT.—Hornbeam (*Carpinus caroliniana*).

KNOWN DISTRIBUTION.—Illinois, Iowa, Minnesota.

Illinois Record.—DOLSON: June 14, 1933, Frison & Ross, 1 ♂.

Dichroscytus Fieber

KEY TO SPECIES

1. Length less than 4.00..... 2
 Length 4.80 or greater..... 3
2. Width of vertex greater than length of first antennal segment; hemelytra reddish; length 3.50–3.70.....
 **tinctipennis**, p. 165
 Vertex narrower, its width less than length of first antennal segment; dorsum uniformly green; length 3.20–3.40..... **viridicans**, p. 165
3. Paracuneus pale to white; length of first antennal segment less than width of vertex; length 4.80–5.30...
 **suspectus**, p. 166
 Paracuneus reddish; length of first antennal segment equal to or greater than width of vertex; length 5.50–5.80..... **rufipennis**, p. 166

Dichroscytus tinctipennis Knight

Dichroscytus elegans Knight (1923*d*, p. 597), not Uhler.

Dichroscytus tinctipennis Knight (1927*b*, p. 15).

MALE.—Length 3.70, width 1.50. Head width 0.83, vertex 0.36. Rostrum, length 1.18, scarcely attaining posterior margins of hind coxae. Antennae, first segment, length 0.33, less than width of vertex; second

1.36; third, 0.50; fourth, 0.42. Pronotum, length 0.64, width at base, 1.18. Body clothed with soft, brownish, simple pubescence; on embolium and legs pubescence pale brown or yellowish. General coloration yellowish green, more distinctly green on pronotum and tibiae; corium, clavus, and inner apical half of cuneus, reddish; base and outer margin of cuneus paler. Membrane uniformly light fuscous, veins reddish; an opaque, white, callous mark bordering apical angle of larger areole.

FEMALE.—Length 3.60, width 1.60. Slightly more robust than male, but very similar in pubescence and coloration.

HOST PLANTS.—Red cedar (*Juniperus virginiana*) and arbor vitae (*Thuja occidentalis*).

KNOWN DISTRIBUTION.—District of Columbia, Georgia, Illinois, Iowa, Kansas, Maryland, Minnesota, Mississippi, New Jersey, New York, Ohio, Virginia.

Illinois Records.—CAVE-IN-ROCK: Oct. 2, 1934, Frison & Ross, 1 ♂, 3 ♀. MUNCIE: Sept. 20, 1935, Frison & Mohr, 1 ♀.

Dichroscytus viridicans Knight

Dichroscytus viridicans Knight (1918*d*, p. 114).

MALE.—Length 3.20, width 1.25. Head width 0.75, vertex 0.26. Rostrum, length 0.95, just attaining posterior margins of hind

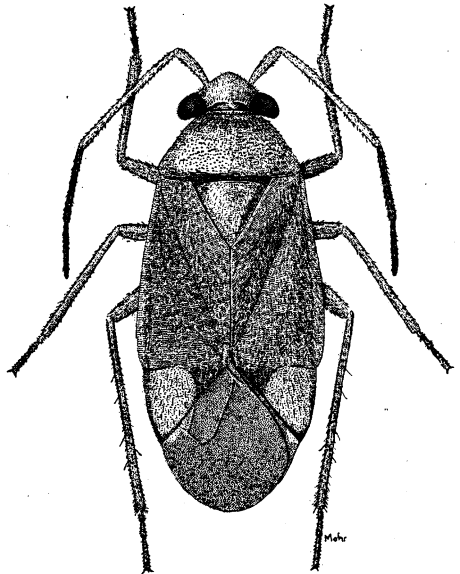


Fig. 166.—*Dichroscytus viridicans*, ♀.

coxae. Antennae, first segment, length 0.32; second, 1.22; third, 0.56; fourth, 0.38. Pronotum, length 0.56, width at base 1.03, with black, conspicuous pubescence. General color bright green; head, coxae and femora often becoming pale to brownish; cuneus green, apical halves of margins reddish; membrane fuscous, cell veins sometimes reddish.

FEMALE.—Fig. 166. Length 3.30, width 1.40; slightly more robust than male, but not differing in coloration.

HOST PLANTS.—Red cedar (*Juniperus virginiana*) and arbor vitae (*Thuja occidentalis*).

KNOWN DISTRIBUTION.—District of Columbia, Illinois, Indiana, Iowa, Minnesota, Mississippi, New York, Ohio.

Illinois Records. — Seventy-one males and 101 females, taken May 27 to Aug. 28, are from Antioch, Apple River Canyon State Park, Elizabethtown, Ernst, Freeport, Galena, Golconda, Grandview, Grayville, Hillsboro, Kampsville, Keithsburg, Lake Villa, Monticello, Oquawka, Starved Rock State Park, Urbana, White Pines Forest State Park.

Dichrooscytus suspectus Reuter

Dichrooscytus suspectus Reuter (1909, p. 37).

Not yet collected in Illinois, but should occur here. Known from Connecticut, Colorado, District of Columbia, Indiana, Maine, Maryland, Massachusetts, New Jersey, New York. Its host plants are pines (*Pinus resinosa* and *P. virginiana*).

Dichrooscytus rufipennis (Fallen)

Lygaeus rufipennis Fallen (1807, p. 84).

A European species known from New York; may have been imported with the Scotch pine (*Pinus sylvestris*), on which it feeds. Not yet taken in Illinois.

Polymerus Hahn

KEY TO SPECIES

1. Rostrum reaching hind coxae, or slightly beyond..... 2
 Rostrum not reaching hind coxae.... 4
2. Rostrum scarcely attaining hind margins of posterior coxae; dorsum black and pale brown; femora with apical halves fulvous, tibiae pale...
 **nigropallidus**, p. 167
3. Rostrum reaching slightly beyond posterior coxae; body yellowish brown, with darkened areas; cuneus usually red, rarely paler..... 3
3. Hemelytra mostly yellowish.....
 **basalis** var. **basalis**, p. 167
 Hemelytra mostly very dark brown, almost black.....
 **basalis** var. **fuscatus**, p. 167
4. Rostrum reaching beyond anterior margins of middle coxae..... 5
 Rostrum not reaching posterior margin of mesosternum..... 6
5. Rostrum attaining hind margins of middle coxae; dorsum black, narrow area at apex of cuneus and slender line on either side of fracture pale; tibiae uniformly black.....
 **proximus**, p. 168
 Rostrum just attaining middle of intermediate coxae; dorsum black and pale brown; tip of scutellum and basal angle of corium pale; cuneus yellowish, red and black.....
 **unifasciatus** var. **lateralis**, p. 167
6. Rostrum nearly attaining posterior margin of mesosternum..... 7
 Rostrum not reaching beyond middle of mesosternum..... 8
7. Legs rather uniformly reddish yellow, but hind femora with a small group of fuscous points on anterior face at middle of apical half; cuneus with outer edge pale brown.....
 **punctipes**, p. 169
 Tibiae black, femora black on apical half of dorsal aspect; cuneus uniformly red orange.... **illini**, p. 168
8. Tibiae reddish yellow or with broad, pale areas..... 9
 Tibiae black, rarely with some yellowish..... 12
9. Legs mostly red, with apical one-third of femora black; tibiae yellowish, with apices and variable basal area black; second antennal segment yellowish with apex very dark brown..... **venustus**, p. 170
 Legs orange yellow or fulvous..... 10
10. Hemelytra uniformly black; length of second antennal segment equal to width of pronotum at posterior margin..... **nubilipes**, p. 170
 Cuneus and embolium of hemelytra pale or fulvous..... 11

11. Pubescence on dorsum deep golden; tibiae without black spot at base. **fulvipes**, p. 170
 Pubescence on dorsum silvery white; tibiae with black spot at base. **severini**, p. 170
12. Rostrum scarcely attaining hind margins of front coxae. 13
 Rostrum reaching behind posterior margins of front coxae, or nearly to middle of mesosternum. 14
13. Hemelytra uniformly black; dorsum clothed with silvery, silky pubescence. **gerhardi**, p. 171
 Hemelytra with embolium and edge of cuneus pale; dorsum clothed with golden, silky pubescence. **brevirostris**, p. 170
14. Cuneus black; second antennal segment of male as thick as first segment; coxae yellow in both sexes; dorsum black with scutellum and hemelytra clothed chiefly with black pubescence. **opacus**, p. 170
 Cuneus yellowish or red. 15
15. Embolium black; cuneus orange; coxae of male black, of female yellow; dorsum clothed with silvery, silky pubescence. **venaticus**, p. 169
 Embolium pale brown to red. 16
16. Femora deep red, only narrow band at apices black; tarsi black; embolium and cuneus deep red. **chrysopsis**, p. 171
 Femora deep yellow, apical one-third black, a pale fascia showing on anterior aspect; tarsi mostly yellow, with apical segment and claws black; embolium pale brown to yellow; cuneus orange. **flavocostatus**, p. 168

Polymerus basalis (Reuter)

Poeciloscytus basalis Reuter (1876, p. 73).

ADULTS.—Length 3.70–4.80, width 1.70–2.30. General color pale brown to yellowish, darkened with fuscous and black; hemelytra mostly yellowish, with clavus and apical half of corium chiefly fuscous; scutellum black, variable area at apex not so dark; cuneus red; sometimes embolium and legs tinged with reddish; posterior femora with two subapical fuscous bands; dorsum clothed with silvery, silky pubescence that appears golden yellow in certain lights. A very dark

form of this species, variety *fuscatus* Knight (1926f, p. 167), has not been taken in Illinois.

FOOD PLANTS.—Dog fennel (*Anthemis cotula*); Illinois specimens were collected also on plantain (*Plantago aristata*), daisy (*Chrysanthemum* sp.), sunflower (*Helianthus* sp.), oak (*Quercus* sp.), tickweed (*Coreopsis* sp.); the oak record was certainly a "sitting" record.

KNOWN DISTRIBUTION.—Common in the eastern United States.

Illinois Records.—Two hundred ten males and 176 females, taken May 18 to Oct. 12, are from Albion, Algonquin, Alton, Antioch, Bloomington, Champaign, Chicago, Darwin, Delavan, Dubois, Elizabethtown, Elmira, Farmer City, Freeport, Galesburg, Grand Tower, Grayville, Herod, Karnak, Lawrenceville, M c H e n r y, Metropolis, Monticello, Mount Carmel, Muncie, Paxton, Rockton, Savanna, Seymour, Shawneetown, Springfield, Starved Rock State Park, Urbana, West Union.

Polymerus nigropallidus Knight

Polymerus nigropallidus Knight (1923d, p. 599).

Known only from New Jersey.

Polymerus unifasciatus (Fabricius)

Lygaeus unifasciatus Fabricius (1794, p. 178).

MALE.—Length 5.60, width 2.60. Head width 1.04, vertex 0.47. Rostrum, length 1.56, reaching to middle of intermediate coxae. Antennae, first segment, length 0.56; second, 2.08, black, with basal half dusky brown; third, 0.82; fourth, 0.78. Pronotum, length 1.04, width at base 1.86. Clothed with golden, sericeous, tomentose pubescence, intermixed with blackish hairs. Ground color black; apex of scutellum, basal angle of corium, anal ridge and area at inner angle of corium, apex of embolium and area of corium bordering cuneus, base and apex of cuneus, tibiae, apical one-third of front and middle femora, pale to testaceous; cuneus with inner half red, outer margin black except at base and apex; membrane fuscous, veins and central area less dark; a small clear spot bordering apex of cuneus.

FEMALE.—Length 5.20, width 2.65; very similar to male in color and pubescence.

All North American specimens of this species are referable to the variety *lateralis* Hahn (1834, p. 85). The typical *unifasciatus* has the pale areas broader than does *unifasciatus lateralis*; the embolium and corium of this variety are pale brown except for a small fuscous patch on the apical area of the corium.

FOOD PLANT.—Northern bedstraw (*Gallium boreale*).

KNOWN DISTRIBUTION.—This is a European species, now known from Alberta, British Columbia, Colorado, Illinois, Iowa, Maine, Minnesota, New York, North Dakota, Nova Scotia, Quebec. Blatchley (1926b, p. 737) records this from Champaign, Ill., June 14, at light, under the name *Polymerus unifasciatus* (Fabricius). Specimens of the typical form from North America have not been seen by the writer.

Polymerus flavocostatus Knight

Polymerus flavocostatus Knight (1926f, p. 165).

FEMALE.—Length 5.00, width 2.30. Head width 1.06, vertex 0.54. Rostrum, length 1.11, extending slightly beyond anterior coxae, or to middle of mesosternum; first and second segments chiefly yellow. Antennae black, with third segment yellowish; first segment, length 0.51; second, 1.80; third, 0.86. Pronotum, length 1.02, width at base 1.70.

MALE.—Length 5.70, width 2.30. Head width 1.06, vertex 0.46. Antennae, first segment, length 0.53; second, 1.86. Hemelytra colored as in female; coxae orange yellow, or dusky only at base, similar to female.

FOOD PLANT.—Goldenrod (*Solidago* sp.).

KNOWN DISTRIBUTION.—Illinois, Iowa, Missouri, Nebraska, North Dakota.

ILLINOIS RECORDS. — CHAMPAIGN: June 15, 1888, C. A. Hart, 1 ♂. GALESBURG: June 18, 1893, 1 ♂. OAKWOOD: June 14, 1930, T. H. Frison, on *Solidago* sp., 1 ♂, 1 ♀. URBANA: June 17, 1889, Marten, 1 ♀; June 19, 1889, C. A. Hart, 1 ♂. WEST PULLMAN: July 30, 1905, W. J. Gerhard, 1 ♀, FM.

Polymerus illini new species

This differs from *flavocostatus* Knight by the longer rostrum, and from *punctipes* Knight by the black tibiae, the partly black femora and the red orange cuneus.

MALE.—Length 4.85, width 2.50. Head width 1.18, vertex 0.44; black, a glabrous, pale spot either side of vertex. Rostrum, length 1.43, just attaining posterior margin of mesosternum. Antennae black with last two segments yellow; first segment, length 0.44, thickness 0.15; second, length 2.29, thickness 0.15, cylindrical; third, length 0.65; fourth, 0.62. Pronotum, length 1.17, width at base 2.03; black, narrow basal and ventral edge pale. Clothed with silvery, sericeous pubescence intermixed on hemelytra with simple, black pubescence. General color black, embolium pale, cuneus and tip of embolium orange colored; membrane black, narrow pale area bordering cuneus; veins yellowish. Tibiae black, slightly pale near base; femora orange colored, apical half black on dorsal aspect, dark color broken by an incomplete annulus of orange which does not cross dorsal surface; coxae pale to orange, infuscated at base; tarsi yellow, apical segment and claws black.

FEMALE.—Length 5.50, width 2.77. Head width 1.22, vertex 0.56. Antennae, first segment, length 0.45, width 0.16; second, 2.08, thickness 0.10; third, 0.77; fourth, 0.78. Pronotum, length 1.21, width at base 2.25. More robust than male, but very similar in coloration and pubescence.

Holotype, male.—Oak Lawn, Ill.: July 1, 1935, DeLong & Ross.

Allotype, female.—Onarga, Ill.: June 8, 1933, Mohr & Townsend.

Paratypes.—ILLINOIS.—Same data as for holotype, 1 ♀; NORTHERN ILLINOIS: 2 ♂, 1 ♀.

Polymerus proximus Knight

Polymerus proximus Knight (1923d, p. 601).

This is closely related to *nigritus* (Fallen), but may be distinguished from it by the uniformly dark tibiae; the length of the first antennal segment is equal to the width of the vertex, while in *nigritus* the length of the first segment is less than the width of the vertex.

MALE.—Length 5.30, width 2.70. Head mostly black with a yellow spot on either side of vertex near eye. Rostrum barely attaining hind margins of middle coxae. Antennae, first segment black; second very dark brown, black at base; third dark brown; fourth black. Pronotum with posterior half of disk strongly convex, transversely wrinkled, uniformly black, slightly

shining; clothed with yellowish, sericeous pubescence. Scutellum deep black, slender area at apex yellowish. Sternum and pleura black; ostiolar peritreme pale brown to yellowish. Hemelytra black; slender area at tip of embolium, and narrow areas at base and apex of cuneus, pale; slightly shining, clothed with intermixed yellowish and black pubescence; membrane and veins uniformly dark fuscous. Legs usually uniformly black; in paler forms, tibiae uniformly very dark brown, but never with indication of annulations. Venter uniformly black, clothed with pale brown to yellowish pubescence.

FEMALE.—Length 5.30, width 2.80; emboliar margins more strongly arcuate than in male, but general coloration similar.

HOST PLANT.—Bedstraw (*Galium aparine*).

KNOWN DISTRIBUTION.—Illinois, Iowa, Kansas, Minnesota, Missouri, Nebraska, Ohio, Ontario, Pennsylvania.

Illinois Record.—ROCK CITY: May 30, 1938, Mohr & Burks, 2 ♂.

Polymerus venaticus (Uhler)

Poecilosecytus venaticus Uhler (1872, p. 414).

MALE.—Length 5.90, width 2.30. Head width 1.04, vertex 0.46. Rostrum, length 1.09, just attaining middle of sternum; piceous, only slightly paler at joints. Antennae, second segment, length 2.31, cylindrical, not equal in thickness to first segment. Hemelytra elongate, tip of abdomen attaining middle of cuneus, emboliar margins very slightly arcuate; black, moderately shining; thickly clothed with sericeous, pale pubescence, a few black hairs on embolium and cuneus; cuneus fulvous or reddish. Legs black, with basal halves of hind and middle femora, anterior face of front femora except at apex, and two basal segments of tarsi, yellow.

FEMALE.—Length 5.00, width 2.57; emboliar margins strongly arcuate; shorter, more ovate and robust than male; coloration very similar to that of male, but coxae always yellowish except for spot at base.

HOST PLANT.—Goldenrod (*Solidago altissima*).

KNOWN DISTRIBUTION.—Alberta, British Columbia, Colorado, Connecticut, District of Columbia, Idaho, Illinois, Iowa, Maine, Maryland, Massachusetts, Michigan, Minnesota, Nebraska, New Hampshire, New York, North Dakota, Ohio, Ontario, Pennsylvania, Quebec, Vermont.

Illinois Records.—Eleven males and 24 females, taken May 17 to July 4, are from Antioch, Champaign, Cypress, Elizabethtown, Freeport, Galena, Oakwood, Odin, Palos Park, St. Anne, Urbana.

Polymerus punctipes Knight

Polymerus punctipes Knight (1923d, p. 602).

MALE.—Length 4.60, width 2.00. Head width 0.97, vertex 0.47; head black, with a yellow spot on either side of vertex at border of eye; pubescence yellowish. Rostrum, length 1.23, almost attaining hind margin of mesosternum, yellowish, apex black. Antennae, first segment, length 0.51, black, narrow yellowish area at base; second, 1.85, nearly cylindrical, slightly thicker at middle, nearly equal in thickness to first segment, black, clothed with mixed black and pale pubescence; third, 0.66, yellowish, with dusky tinge; fourth, 0.80, dusky. Pronotum, length 1.00, width at base 1.70; black, slightly shining, disk transversely rugulose; clothed with pale and yellowish, sericeous pubescence. Scutellum black, transversely rugulose; clothed with yellowish pubescence, more sericeous on basal angles. Sternum and pleura black; ostiolar peritreme yellow, becoming dusky on anterior lobe. Hemelytra, with emboliar margins slightly arcuate on apical half; black; embolium and outer margin of cuneus yellowish or fulvous; surface scabridulous, slightly shining, clothed with golden, sericeous pubescence intermixed with darker hairs. Membrane rather uniformly fusco-brownish, a small, nearly clear spot bordering apex of cuneus, veins yellowish. Legs fulvous, with spot at apices of femora and apical segment of each tarsus black; hind femora with a group of from two to five fuscous points on anterior face at middle of apical half, a prominent hair rising from each of the two lower points; pubescence pale brown to yellowish, black on apical halves of femora. Venter black, clothed with pale brown to yellowish pubescence.

FEMALE.—Length 5.20, width 2.40; emboliar margins strongly arcuate on apical half; pubescence and color similar to those of male. Rostrum, length 1.31, nearly attaining hind margin of sternum.

FOOD PLANT.—Loosestrife (*Lysimachia quadrifolia*).

KNOWN DISTRIBUTION.—District of Columbia, Florida, Georgia, Illinois, Iowa,

Maine, Maryland, Minnesota, New York, Ohio, Ontario, Quebec.

Illinois Records.—Twelve males and 19 females, taken May 21 to June 24, are from Dolson, Dubois, Elizabethtown, Golconda, Herod, Mound City, Mount Carmel, Oakwood, Pulaski.

Polymerus fulvipes Knight

Polymerus fulvipes Knight (1923*d*, p. 603).

Known from Connecticut, Massachusetts, New York, North Carolina, Pennsylvania. Not yet collected in Illinois.

Polymerus severini Knight

Polymerus severini Knight (1925, p. 247).

No Illinois specimens; known from Alberta, Minnesota, South Dakota.

Polymerus nubilipes Knight

Polymerus nubilipes Knight (1925, p. 248).

Known only from Minnesota and Wisconsin; not yet taken in Illinois.

Polymerus opacus Knight

Polymerus opacus Knight (1923*d*, p. 604).

Not taken in Illinois; known from Maine, Ontario, New York, Vermont. Feeds on aster (*Aster umbellatus*).

Polymerus venustus Knight

Polymerus venustus Knight (1923*d*, p. 605).

MALE.—Length 5.20, width 2.30. Head width 1.01, vertex 0.38; head black; a yellow spot on either side of vertex bordering eye; lower margin of jugum and upper margin of lorum red; clothed with sericeous, pale pubescence. Rostrum, length 1.14, scarcely exceeding posterior margins of front coxae, piceous, paler at joints. Antennae, first segment, length 0.81, black, unusually long and thick (0.15 thick); second, 2.06, cylindrical, thickness 0.07, yellowish, apical one-third black, pubescence same color as surface beneath; third, 1.02, slender, yellowish to fuscous, darker apically; fourth, 1.03, blackish. Pronotum, length 1.03, width 1.74; surface minutely granulate and transversely wrinkled; clothed with yellowish to golden, silky pubescence; black, lower pleural margin with a slender reddish area. Scutellum black, surface and pubescence as

on pronotal disk. Sternum and pleura black; ostiolar peritreme yellowish to reddish. Hemelytra with emboliar margins moderately arcuate; black, opaque, surface rather irregularly roughened, somewhat scabriculous; clothed with golden and dusky sericeous pubescence. Membrane uniformly dark fuscous; area bordering apex of cuneus slightly paler, veins yellowish. Legs with coxae and basal half of femora deep, translucent red; lateral areas of coxae, with apex of front pair also, becoming fuscous; apical one-half to one-third of femora black, blackish cloud formed on anterior face of front pair near base; tibiae yellowish to fulvous, basal one-third and apices black; tarsi yellowish, apical half of third segment fuscous. Venter black, clothed with sericeous, silvery pubescence; genital segment with simple, dusky yellowish hairs.

FEMALE.—Length 5.70, width 2.60. Emboliar margins more strongly arcuate apically. More robust than male, but very similar in coloration. First antennal segment as thick as that of male, but second segment slightly more slender.

HABITS.—Collected on willow (*Salix* sp.).

KNOWN DISTRIBUTION.—Florida, Illinois, Michigan, North Carolina, Ohio, South Carolina, Virginia.

Illinois Records.—**GOLCONDA:** June 22, 1932, on *Salix* sp., Ross, Dozier & Park, 1 ♂, 1 ♀. **PULASKI:** May 28, 1909, cypress swamp, 1 ♂.

Polymerus brevirostris Knight

Polymerus brevirostris Knight (1925, p. 246).

MALE.—Length 4.50, width 2.20. Head width 0.97, vertex 0.43. Rostrum, length 0.88, not reaching hind margins of front coxae, reddish to fuscous. Antennae, first segment, length 0.46, thickness 0.14, black; second, 1.74, thickness 0.11, cylindrical, slightly constricted near base, black; third, 0.71, orange yellow, fuscous apically; fourth, 0.93, fuscous, yellowish at base. Pronotum, length 0.96, width at base 1.80; basal margin with a slender yellowish area; xyphus reddish. Body clothed with golden yellow, sericeous pubescence, silvery beneath, this pubescence intermixed with pale and fuscous, simple hairs; femora with pale pubescence. General color black; embolium and usually slender outer margin of cuneus yellowish; membrane black, veins yellowish. Legs orange to red; tibiae, tarsi and apices

of femora black; hind femora with indication of a subapical, fuscous band on anterior aspect.

FEMALE.—Length 5.00, width 2.60. Very similar to male in pubescence and coloration.

KNOWN DISTRIBUTION.—Illinois, Manitoba, Michigan, Minnesota, North Dakota, South Dakota, Wisconsin.

Illinois Record.—GALESBURG: June 28, 1893, 1 ♂, 2 ♀.

Polymerus chrysopsis Knight

Polymerus chrysopsis Knight (1925, p. 245).

MALE.—Length 5.70, width 3.60. Head width 1.17, vertex 0.48; head black, with a rounded, yellowish spot on either side of vertex near eye. Rostrum, length 1.24, reaching slightly beyond middle of mesosternum; blackish; first and second segments more or less reddish. Antennae black, clothed with short, mixed pale and fuscous pubescence; first segment, length 0.45, thickness 0.14; second, length 2.06, cylindrical, thickness 0.12; third, length 0.66; fourth, length 0.63. Pronotum, length 1.17, width at base 2.06. Body clothed with silvery white pubescence intermixed with suberect, pale yellowish pubescence. General color black, moderately shining, with embolium and variable area at apex of corium and cuneus, blood red; coxae and femora red; apices of femora and tibiae black; trochanters and extreme bases of coxae sometimes fuscous; posterior femora often with a black patch on dorsal surface before black apex, also two small dots of black on ventral aspect.

FEMALE.—Length 5.50, width 2.80. Very similar to male in pubescence and coloration. Antennae black, last two segments dark brownish.

HOST PLANT.—Golden aster (*Chrysopsis villosa*).

This is the most beautiful species of *Polymerus*, the bright red of the embolium, cuneus and femora, standing in brilliant contrast with the black body. Strange to say, the contrasting red and black colors make the insect difficult to see when it is on its host plant. When disturbed, the adult bug usually rushes to the base of a leaf petiole, where it clasps its legs about the reddish stem of the plant in such a way that the black body with its covering of silvery pubescence suggests, at first glance, a bud

in the leaf axil of the golden aster. Many other mirids are so colored as to be similarly inconspicuous when they are on their normal host plants.

KNOWN DISTRIBUTION.—Illinois, Iowa, Manitoba, Minnesota, North Dakota, South Dakota.

Illinois Record.—ALDRIDGE: May 8, 1932, H. L. Dozier, 1 ♂.

Polymerus gerhardi Knight

Polymerus gerhardi Knight (1923d, p. 606).

FEMALE.—Length 6.40, width 2.80. Head width 1.16, vertex 0.51; head black, vertex pale on either side; clothed with sericeous, white pubescence. Rostrum, length 1.08, not attaining hind margins of front coxae, piceous, basal segment and joints reddish. Antennae, first segment, length 0.64, thickness 0.14, black; second, 2.03, thickness 0.09, cylindrical, black, with rather closely set, black pubescence; third, 0.96, fusco-brownish; fourth, 0.88, fuscous. Pronotum, length 1.24, width at base 2.14; black, scarcely shining, rather irregularly rugulose; thickly clothed with sericeous, white pubescence; margins of xyphus, and narrow area along lower margins of pleura, yellowish. Scutellum black, pubescent as on pronotal disk. Sternum and pleura black; ostiolar peritreme yellowish. Emboliar margins moderately arcuate. Hemelytra black, thickly clothed with sericeous, white pubescence intermixed with more erect, simple, black hairs. Membrane and veins uniformly very dark brown, slightly paler bordering apex of cuneus. Legs with femora deep red; coxae tending toward yellowish or orange; tips of femora, tibiae, and tarsi, black; tibiae unusually thick, 0.17; spines and pubescence also black. Venter black, thickly clothed with sericeous, white pubescence intermixed with more nearly erect, dark hairs.

MALE.—Length 4.70, width 2.00. Antennae, first segment, length 0.52; second, 2.03, thickness 0.13; third, length 0.82; fourth, length 0.86. Smaller than female, but very similar in pubescence and coloration.

KNOWN DISTRIBUTION.—Described originally from specimens from Lake County, Indiana, and Texas. Since being described, this species has also been collected in Illinois, Mississippi, Oklahoma.

Illinois Records.—ASHLEY: Aug. 7, 1917, 1 ♂, 1 ♀. SAVANNA: June 29, 1935, DeLong & Ross, 1 ♂.

Poecilocapsus Reuter

Poecilocapsus lineatus (Fabricius)

Four-Lined Plant Bug

Lygaeus lineatus Fabricius (1798, p. 541).

ADULT.— Fig. 167. Length 7.00–7.50, width 3.50. General color yellow or green yellow, with four black lines on the dor-

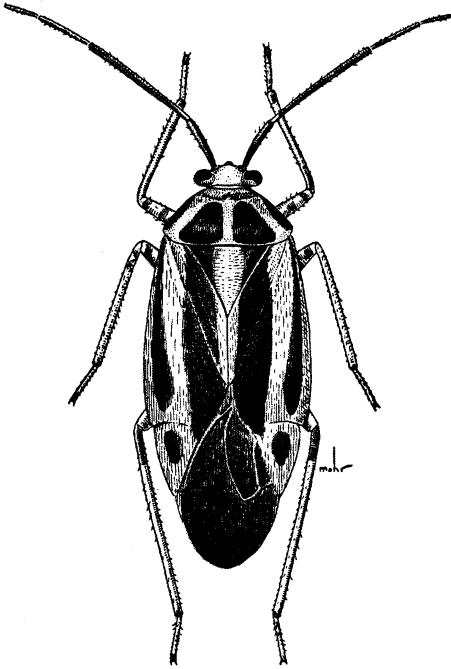


Fig. 167.—*Poecilocapsus lineatus*.

sum; certain specimens have the yellow of the hemeleytra replaced by bright green.

HOST PLANTS.—A large number of herbaceous plants, especially dock (*Rumex* sp.); occasionally becomes a pest on currant bushes (*Ribes* sp.). Large numbers of specimens were collected in Illinois on potato foliage (*Solanum tuberosum*).

KNOWN DISTRIBUTION. — Throughout most of the eastern states and Canada.

Illinois Records.—Sixty-eight males, 129 females and 16 nymphs, taken May 7 to September, are from Algonquin, Anna, Antioch, Beach, Bishop, Bluff Springs, Carbondale, Carlinsville, Champaign, Chicago, Clarksville, Cypress, Danville, Edgebrook, Elizabethtown, Fountain Bluff, Frankfort, Freeport, Galena, Galesburg, Giant City State Park, Makanda, Glendon Park, Glen Ellyn,

Golconda, Grand Detour, Hardin, Havana, Joliet, Kankakee, Karnak, Manito, Morton Grove, Mount Carmel, Oakwood, Odin, Palos Park, Quincy, Rockford, Rockton, Urbana, Vienna, Villa Ridge, Volo, Warsaw, Waukegan, Willow Springs.

Horcias Distant

KEY TO SPECIES

1. Second antennal segment clavate, its maximum diameter exceeding diameter of first segment; embolium white, cuneus rose colored; see frontispiece **illini**, p. 172
- Second antennal segment slightly clavate, but its maximum diameter less than diameter of first segment..... 2
2. Rostrum not surpassing posterior margins of middle coxae; color black with scutellum frequently red..... **fallax**, p. 173
- Rostrum extending nearly to posterior margins of hind coxae; color variable **dislocatus**, p. 173

Horcias illini new species

This species is allied to *dislocatus* (Say), but differs from it in being smaller, and in having a narrower vertex and more strongly clavate second antennal segment; in color, it is very similar to *dislocatus flavidus* Knight, but the cuneus, calli and head are distinctly reddish; the color pattern apparently is not variable.

MALE.—Frontispiece. Length 5.20, width 2.70. Head width 1.12, vertex 0.43. Rostrum, length 1.95, nearly attaining hind margins of middle coxae. Antennae, first segment, length 0.74, thickness 0.14, black; second, 1.86, thickness 0.15, slender at base (0.07 thick), gradually enlarging to clavate on apical half (0.15 thick), black, densely clothed with short, velvety, yellowish pubescence; third, length 0.82, basal one-fourth widened and pale brown, distal part slender and black; fourth, length 1.04, slender, black, with narrow, tan area at base. Pronotum, length 1.21, width at base 2.04. Surface of body smooth and shining; dorsum with sparse and very fine pubescence. General coloration black and white with lighter areas tinged with reddish. Head yellowish to reddish brown, frons with transverse reddish lines on either side. Pronotum white, a large

quadrate, black area on either side behind calli, leaving median line, lateral margins of disk, and narrow area at basal edge, white; calli and area extending along lateral margins of disk irregularly marked with reddish; propleura with two reddish rays extending parallel to margins of disk. Mesoscutum and scutellum black, median line white. Hemelytra black, broad white area along claval vein; claval suture black only on basal half; embolium, narrow area along radial vein, and wedge-shaped area on inner apical area of corium, white; cuneus reddish, apex blackish, outer basal angle pale. Membrane uniformly dark brown. Ventral surface reddish brown to black, a white line formed on either side of venter; also white mark extending across dorsal half of ostiolar peritreme and side of sternum. Legs pale to dark brown; coxae reddish brown; femora paler on apical half, annulated with yellowish and brown near apices; tibiae pale, tips and knees dark, spines black; tarsi mostly pale, black apically.

FEMALE.—Length 5.80, width 3.10. Head width 1.25, vertex 0.49. Antennae, first segment, length 0.82; second, 2.12, greatest thickness 0.15, clavate as in male; third, length 0.86. Pronotum, length 1.38, width at base 2.42. More robust than male, but very similar in color and pubescence.

Holotype, male.—Dongola, Ill.: May 12, 1916.

Allotype, female.—Same data as for holotype.

Paratypes.—ILLINOIS.—DONGOLA: May 9, 1916, 1 ♂; May 12, 1916, 1 ♂; May 13, 1916, 1 ♂, 1 ♀.

The apparently restricted distribution of this beautiful new species seems worthy of remark. Future collections of specimens will be received with great interest.

Horcias dislocatus (Say)

Capsus dislocatus Say (1832, p. 21).

ADULTS.—Length 6.20, width 3.00. General color of typical form pale rufo-sanguineous. First and second antennal segments, tylus, juga, base of vertex, two wedge-shaped approximate spots on basal half of pronotal disk, scutellum except median line, inner half of clavus, inner apical angles of corium, membrane, pleura, middle and hind coxae, and the venter, black.

This species varies in color from yellow and brown, through red and black, to en-

tirely black. A large number of color combinations of this species have been given varietal names. The Illinois material contains representatives of the following in addition to the typical form: *rubellus* Knight (1923d, p. 608), *goniphorus* (Say) (1832, p. 21), *gradus* Knight (1923d, p. 609), *residuus* Van Duzee (1912, p. 484), *coccineus* (Emmons) (1854, pl. 30, fig. 2), *limbatellus* (Walker) (1873, p. 93), *affinis* (Reuter) (1876, p. 74), *flavidus* Knight (1923d, p. 609), *scutatus* Knight (1923d, p. 609), *palipes* Van Duzee (1912, p. 484), and *nigritus* Reuter (1909, p. 41). Two other varieties, *nigriclavus* Knight (1923d, p. 609) and *marginalis* (Reuter) (1876, p. 75) have not been recognized in the material collected here.

FOOD PLANTS.—False Solomon's seal (*Smilacina racemosa*), wild geranium (*Geranium maculatum*), figwort (*Scrophularia leporella*) and occasionally papoose root (*Caulophyllum thalictroides*). A few Illinois specimens were collected also on clover (*Melilotus* sp. and *Trifolium* sp.), oak (*Quercus* sp.) and fleur-de-lis (*Iris* sp.). The different color varieties of this species may occur on any of these food plants.

KNOWN DISTRIBUTION.—Known in its various color forms from Maine westward to Minnesota and southward to Pennsylvania and Texas.

Illinois Records.—One hundred forty males, 155 females and 4 nymphs, collected May 21 to June 30, are from Algonquin, Antioch, Beach, Bloomington, Castle Rock, Champaign, Danville, Dubois, Elizabeth, Frankfort, Freeport, Galesburg, Glendon Park, Glen Ellyn, Grand Detour, Herod, Homer, Joliet, Keithsburg, Le Roy, Manito, Monticello, Mount Carmel, Muncie, Oakwood, Oregon, Palos Park, Pecatonica, Riverdale, St. Joseph, Springfield, Stratford, Urbana, Waukegan, White Heath, White Pines Forest State Park, Willow Springs, Zion.

Horcias fallax Reuter

Horcias fallax Reuter (1909, p. 42).

MALE.—Length 5.10, width 2.10. Head width 1.08, vertex 0.41. Rostrum, length 1.86, just attaining posterior margins of middle coxae. Antennae, first segment, length 0.60, thickness 0.12; second, 1.99, thickness 0.11; third, length 0.80; fourth, length 0.95. Pronotum, length 1.08, width at base 1.86. General color black, shining,

nearly glabrous; scutellum either red or black. Propleura yellowish; rarely anterior half of pronotum yellowish. Legs mostly yellowish with basal halves of middle and hind coxae, tips of tibiae, and apical segment of each tarsus, black; hind femora often with two fuscous annulations just before apex; membrane and veins uniformly dark fuscous or black.

FEMALE.—Length 5.40, width 2.43. Somewhat more robust than male, but very similar in coloration.

HOST PLANTS.—A good series of nymphs and adults were taken on wild gooseberry (*Ribes oxycanthoides*) in Iowa, May 18 to 25; a few Illinois specimens were collected on willow (*Salix* sp.) and oak (*Quercus* sp.).

KNOWN DISTRIBUTION.—Illinois, Indiana, Iowa, Ohio, Pennsylvania, Wisconsin.

Illinois Records.—Five males and 12 females, taken May 9 to June 30, are from Algonquin, Dongola, Galesburg, Glen Ellyn, Urbana, White Heath, Willow Springs.

Adelphocoris Reuter

KEY TO SPECIES

- Hemelytra dark brown, broad pale area at costal margin, fig. 168; scutellum uniformly dark brown, length 6.80–7.40 ***rapidus***, p. 174
- Hemelytra pale, costal edge black; scutellum light with two dark longitudinal lines; usually apical area of corium darkened, fig. 169; length 8.00 ***lineolatus***, p. 175

Adelphocoris rapidus (Say)

Capsus rapidus Say (1832, p. 20).

ADULTS.—Fig. 168. Length 6.80–7.40. General color dark brown. Embolium and outer margin of cuneus light brown; pronotum yellowish brown, basal half of disk usually with two black spots; these spots sometimes fuse to form a transverse black mark.

HOST PLANTS.—Ordinarily breeds on dock (*Rumex* sp.) in the northern states, but may breed on several other plants; Illinois specimens have been collected on clover (*Trifolium* sp. and *Melilotus* sp.) and yarrow (*Achillea* sp.).

KNOWN DISTRIBUTION.—A common species in the eastern states and those westward to the 100th meridian; farther west it

is replaced by *superbus* Uhler, a quite variable species.

Illinois Records.—Two hundred forty-two males, 253 females and 1 nymph, collected May 15 to Nov. 4, are from Albion, Algonquin, Allerton, Alton, Anna, Antioch,

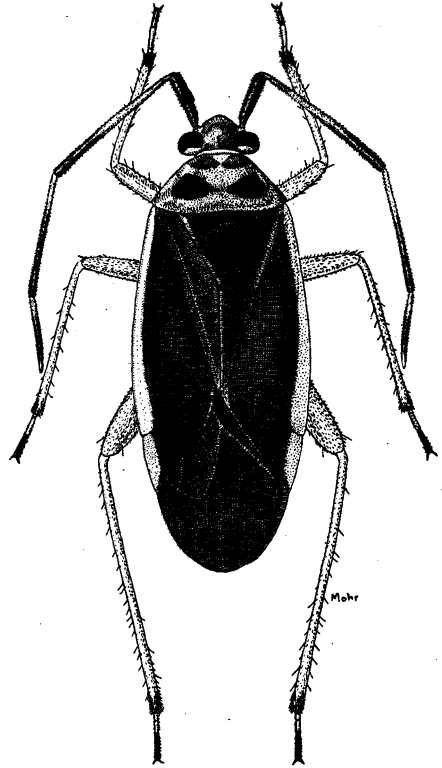


Fig. 168.—*Adelphocoris rapidus*.

Arcola, Aurora, Beardstown, Beach, Bloomington, Blue Island, Bluff Springs, Borton, Browns, Bushnell, Carbondale, Champaign, Chicago, Darwin, Delavan, Dixon, Dolson, Dubois, East St. Louis, Elgin, Elizabethtown, Erie, Fairmount, Farmer City, Fountain Bluff, Freeport, Galena, Galesburg, Giant City State Park, Makanda, Glencoe, Glen Ellyn, Golconda, Grand Detour, Grand Tower, Grand View, Hamilton, Hardin, Hartsburg, Havana, Herod, Hilliary, Hinsdale, Homer Park, Iroquois, Jonesboro, Kankakee, Karnak, Keithsburg, Lawrenceville, Mahomet, Marshall, Mason City, Metropolis, Milford, Monticello, Mound City, Mount Carroll, Muncie, Normal, Oak Lawn, Oakwood, Ogden, Oquawka, Oregon, Palos Park, Pecatonica, Princeton, Pulaski, Rockford, Rockton, St.

Anne, St. Joseph, Savanna, Seaton, Seymour, Shawneetown, Sparta, Springfield, Starved Rock State Park, Sun Lake, Topeka, Ullin, Urbana, Vandalia, Vienna, Virginia, Volo, Ware, Waterman, Watseka, Waukegan, West Union, Willow Springs, York, Zion.

Adelphocoris lineolatus (Goeze)

Alfalfa Plant Bug

Cimex lineolatus Goeze (1778, p. 267).

MALE.—Length 8.00, width 2.80. Head width 1.36, vertex 0.42. Antennae, first segment, length 0.98; second, 2.87; third, 2.20; fourth, 1.30. Pronotum, length 1.30, width at base 2.25. General coloration pale yellowish with a tinge of brown and dusky. Scutellum with two fine, longitudinal fuscous marks on middle; corium usually with a triangular fuscous area on apical half; a fine line along costal edge black; cuneus

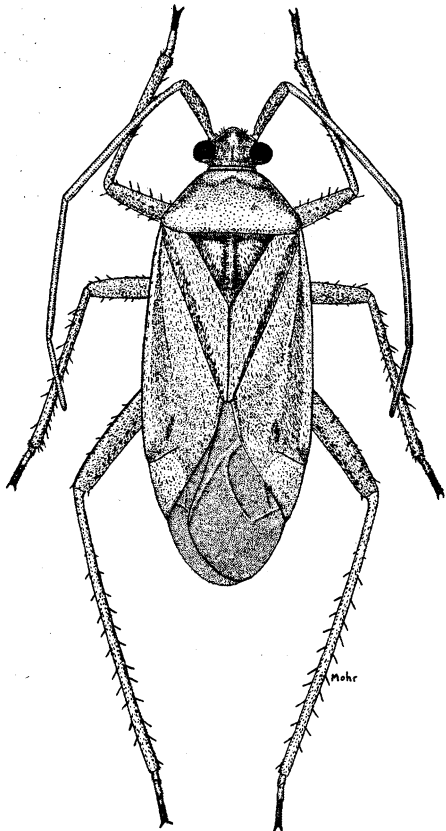


Fig. 169.—*Adelphocoris lineolatus*.

yellowish; membrane fuscous. Antennae yellowish to brown, apical half darker and usually reddish brown. Legs yellowish; femora with many black dots, anterior aspect with two rows of somewhat larger spots; tibial spines black, without distinct spots at bases. Body clothed with simple, pale yellowish pubescence, legs provided with black pubescence.

FEMALE.—Fig. 169. Length 7.50, width 2.90. More robust than male and usually somewhat paler in color, but otherwise very similar in form and coloration.

HOST PLANTS.—Alfalfa (*Medicago sativa*) and sweet clover (*Melilotus* sp.); occurs in limited numbers on other leguminous plants; also on many other succulent, herbaceous plants. The bugs prefer to feed on flower buds and newly formed seeds, and may prove a pest where alfalfa and sweet clover are grown for seed.

KNOWN DISTRIBUTION. — A European species first recorded from North America at Cape Breton, Nova Scotia (Knight 1922a), and later from Ames, Iowa, where adults were first collected June 18, 1929. They were probably imported as eggs in seeds, as about 700 samples were imported and grown at the agronomy farm at Ames in 1926 and 1927. The spread of this foreign species to surrounding states is indicated to a certain extent by the collection dates placed in parentheses following the names of these states: Iowa (1929), Minnesota (1934), Illinois (1935), Missouri (1935), South Dakota (1935), Nebraska (1936), Wisconsin (1936), Kansas (1939), Manitoba (1939).

Illinois Records.—FREEPORT: June 28, 1935, DeLong & Ross, 2 ♂. RICHMOND: June 25, 1938, at light, Ross & Burks, 1 ♂. SAVANNA: June 29, 1935, DeLong & Ross, 1 ♂.

Stenotus Jakovlev

Stenotus binotatus (Fabricius)

Lygaeus binotatus Fabricius (1794, p. 172).

MALE.—Length 6.00, width 2.00. Chiefly yellowish green below; pronotum with two broad black rays; hemelytra yellowish orange, with two broad, irregular, longitudinal black stripes.

FEMALE.—Length 7.00, width 2.40; yellowish green, pronotum with two prominent black spots on disk, one behind each callus; corium with a longitudinal fuscous stripe.

HOST PLANTS.—Orchard grass (*Dactylis glomerata*) and, to some extent, other grasses; Illinois specimens have been collected on orchard grass and timothy (*Phleum pratense*).

KNOWN DISTRIBUTION. — A European species now known from British Columbia, Illinois, Indiana, Iowa, Massachusetts, Michigan, Minnesota, Missouri, New Hampshire, New Jersey, New York, North Carolina, Ohio, Ontario, Oregon, Pennsylvania, Quebec, Tennessee, Wisconsin.

Illinois Records. — One hundred twenty-six males and 158 females, taken June 1 to July 14, are from Antioch, Apple River Canyon State Park, Bureau, Elizabeth, Galena, Hamilton, Hardin, Karnak, Marshall, Mason City, Monticello, Palos Park, Plainview, Putnam, Urbana, Warsaw, Waukegan, Zion.

Paracalocoris Distant

KEY TO SPECIES

- 1. Hind tibiae thickly clothed with long, erect hairs which obscure tibial spines and are easily confused with them..... **scrupeus**, p. 177
- Hind tibiae with shorter and more appressed hairs, especially on inner side; hairs not easily confused with true spines..... 2
- 2. Length of first antennal segment as great as or greater than maximum dorsal length of pronotum..... 3
- First antennal segment shorter than pronotum..... 6
- 3. Length of first antennal segment less than width of head plus dorsal width of an eye; length 6.00–6.50..... **hawleyi**, p. 178
- Length of first antennal segment equal to width of head plus dorsal width of an eye, or greater..... 4
- 4. Second antennal segment uniformly black..... **limbus**, p. 178
- Second antennal segment pale yellowish to brown, sometimes dark brown, but never black; general coloration brownish, with minute pale spots..... 5
- 5. First antennal segment reddish brown, with pallid spots; gula and genae dark brown..... **pallidulus** var. **pallidulus**, p. 178

- First antennal segment more pallid than brown; gula and genae pallid..... **pallidulus** var. **albigulus**, p. 178
- 6. Length of first antennal segment equal to or greater than width of head... 7
- Length of first antennal segment less than width of head..... 9
- 7. Pronotum and scutellum with three distinct yellowish stripes; first antennal segment black, with few, if any, pale spots..... **trivittis**, p. 178
- Pronotum and scutellum without distinct stripes; first antennal segment pallid, marked with brown, or brown with pallid marks..... 8
- 8. Apical half of second antennal segment black or very dark brown; scutellum with narrow, median, yellowish line, this line sometimes obscured by brownish coloration..... **evonymi**, p. 178
- Second antennal segment rather uniformly yellowish brown, in darkest specimens with black but only at apex; scutellum with light color irregularly distributed; brown largely broken by minute, light-colored spots..... **salicis**, p. 177
- 9. Dorsum dark brown, with several large yellow patches: on apical half of scutellum, apex of clavus, middle of corium, apex of embolium and outer half of corium, and three areas on pronotum..... **multisignatus**, p. 180
- Ground color dark brown, light-colored areas taking the form of fine lines and small dots..... 10
- 10. Basal half of second antennal segment yellowish brown, but without narrow white annulus at middle or base..... **castus**, p. 178
- Second antennal segment with a narrow white annulus near the middle which separates black area on apical half from brownish basal half..... 11
- 11. Rostrum extending beyond hind coxae..... **celtidis**, p. 179
- Rostrum not extending beyond hind coxae..... 12
- 12. Second antennal segment dark, with pale annulus at middle only; femora dark at base, apical half with one large and several smaller white spots..... **gleditsiae**, p. 180
- Second antennal segment with pale

annulus both near base and at middle; femora with broad, light-colored areas at base and middle.
 **colon**, p. 180

Paracalocoris scrupeus (Say)

Capsus scrupeus Say (1832, p. 23).

MALE.—Length 6.00, width 2.50. Head, width 1.10, vertex 0.52. Rostrum, length 2.38, reaching to middle of hind coxae. Antennae, first segment, length 1.25; second, 1.95; third, 0.82; fourth, 0.91. Pronotum, length 1.34, width at base 2.08. Varying in color from orange and black, through yellow and brown, to almost uniformly brown or tan.

A large number of color combinations of this species have been given varietal names. Of these, besides the typical form, the following varieties, all described by McAtee (1916), have been taken in Illinois: *delta*, *ardens*, *cunealis*, *par*, *sordidus*, *bidens*, *nubilus*, *varius*, *compars*, *lucidus*, *percursor*, *rubidus* and *triops*.

HOST PLANTS.—Most frequently wild grape (*Vitis* sp.), but may occur on cultivated varieties of grape and, occasionally, on other woody plants. Illinois specimens were collected on grape, box elder (*Acer negundo*), willow (*Salix* sp.), hop tree (*Ptelea trifoliata*), hickory (*Carya* sp.), hawthorn (*Crataegus* sp.), dogbane (*Apocynum* sp.) and dogwood (*Cornus* sp.).

Illinois Records.—One hundred males and 150 females, taken May 30 to July 12, are from Algonquin, Antioch, Bureau, Dixon, Dolson, Elizabeth, Elizabethtown, Frankfort, Freeport, Galena, Galesburg, Grand Detour, Harvard, Havana, Joliet, Kampsville, Kankakee, Keithsburg, Kingston, Monticello, Oakwood, Oquawka, Oregon, Palos Park, Putnam, Riverside, Savanna, Urbana, West Union, White Heath, Willow Springs, Zion.

Paracalocoris salicis Knight

Paracalocoris salicis Knight (1926j, p. 367).

MALE.—Length 6.00, width 2.50. Head width 1.15, vertex 0.50. Rostrum, length 2.36, nearly attaining hind margins of posterior coxae. Antennae, first segment, length 1.18, slightly greater than width of head; second, 2.22, rather uniformly yellowish brown, somewhat darker at apex; third, 0.89, black, narrow pale area at base. Pro-

notum, length 1.35, width at base 2.06. Dorsum clothed with short, yellowish pubescence, more golden on clavus, and with a few sericeous hairs on scutellum and clavus. Ground color pale yellowish, more or less clouded with dark brown; pronotal disk brown with several small, pale spots, some

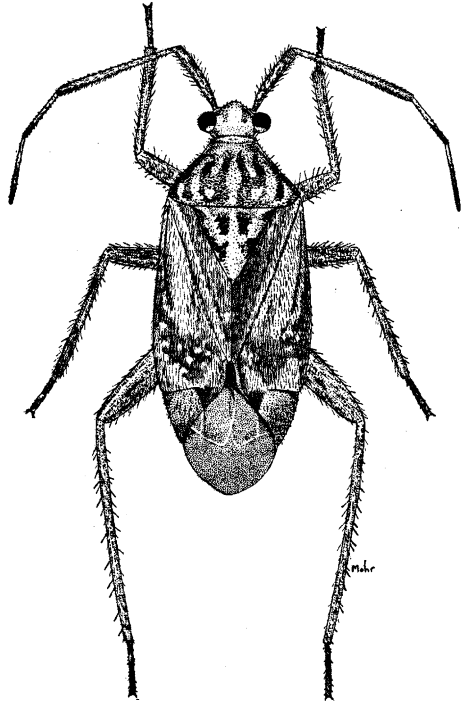


Fig. 170.—*Paracalocoris salicis*, ♀.

of which coalesce behind outer margin of each callus to suggest a ray; pale yellowish median line of pronotum continued on scutellum, where irregular dark color on either side of it is composed of aggregated small dots. Hemelytra medium brown to dark brown, marked with pale dots in longitudinal series, one row along middle of corium, another along radial vein; apex of embolium and inner apical angle of corium with broad, pale areas; clavus with a more or less broad, pale mark along claval vein. Cuneus very light yellow, with inner basal angle, apex, and area extending back along margin of membrane, brownish. Membrane yellowish to brownish, darker at apex and areoles; veins white, brown around smaller areole. Legs tan to yellowish, darkened with brown, this dark color broken by numerous pale dots; basal third of tibiae, band at mid-

dle, and narrow band at apex, dark brown. Venter yellowish, sides with three indistinct, longitudinal, dark lines separated by three indistinct yellow ones.

FEMALE.—Fig. 170. Length 6.40, width 2.60. Head width 1.14, vertex 0.50. Antennae, first segment, length 1.24; second, 2.22; third, 1.00; fourth, 0.98. Very similar to male in pubescence and coloration.

HOST PLANT. — Sandbar willow (*Salix longifolia*).

KNOWN DISTRIBUTION.—Colorado, Illinois, Indiana, Iowa, Michigan, Minnesota, Nebraska, Pennsylvania, South Dakota.

Illinois Records. — Twenty-two males and 31 females, taken May 27 to July 26, are from Alton, Bureau, Elizabethtown, Freeport, Golconda, Herod, Kampsville, Lilly, Monticello, Oquawka, Oregon, Palos Park, Pulaski, Rockford, St. Joseph, Savanna, Seymour, West Union, Willow Springs, York.

Paracalocoris hawleyi Knight

Paracalocoris hawleyi Knight (1916*b*, p. 377).

Not taken in Illinois; known from Massachusetts, New York, Ohio. Occurs on cultivated hop (*Humulus japonicus*).

Paracalocoris limbus McAtee

Paracalocoris limbus McAtee (1916, p. 380).

Not taken in Illinois; known from Georgia, Maryland, Massachusetts, New York, Ohio, Pennsylvania, Virginia.

Paracalocoris pallidulus McAtee

Paracalocoris hawleyi var. *pallidulus* McAtee (1916, p. 380).

Not taken in Illinois; known from Minnesota, New York, North Dakota, Ohio, Ontario; feeds on apple (*Pyrus malus*) and hawthorn (*Crataegus* sp.). The variety *albigulus* Knight (1930*d*, p. 823) is generally lighter in color than the typical form.

Paracalocoris castus McAtee

Paracalocoris colon var. *castus* McAtee (1916, p. 382).

MALE.—Length 5.40, width 2.30. Head width 1.04, vertex 0.45. Rostrum, length 1.95, just reaching to middle of hind coxae. Antennae, first segment, length 0.88, dark brown with a few yellowish spots; second,

2.08, yellowish brown, apical two-fifths and narrow area at base dark brown, without any indication of white annuli; third, 0.75, yellowish, apical half black; fourth, 1.03, fuscous. Pronotum, length 1.21, width at base 1.90. General color dark brown, with a few yellow spots on pronotum, apical area of corium and on cuneus; scutellum with a slender, median yellowish line. Membrane fuscous, with a yellowish spot near tip of cuneus; veins fuscous, pale at apex of larger areole. Dorsum clothed with yellowish to golden, sericeous pubescence intermixed with a lesser amount of simple pubescence. Legs dark brown; femora with rows of small yellowish spots, hind femora each with a large yellowish spot dorsally near middle of apical half; each tibia with a broad, yellowish band at middle and just before apex; tarsi brown to fuscous.

FEMALE.—Length 5.40, width 2.60. Head width 1.11, vertex 0.51. Antennae, first segment, length 1.03; second, 1.99; third, 0.91; fourth, 1.12. Pronotum, length 1.38, width at base 2.12. More robust than male, but very similar in pubescence and coloration.

HOST PLANT.—Virginia creeper (*Pseodera quinquefolia*).

KNOWN DISTRIBUTION.—District of Columbia, Florida, Illinois, Iowa, Maryland, Massachusetts, Michigan, Minnesota, New Jersey, New York, Ohio, Vermont.

Illinois Records.—ALGONQUIN: June 24, 1894, 1 ♀. ANTIOCH: July 5-7, 1932, T. H. Frison, 1 ♂, 1 ♀. HAVANA: July 12, 1932, Dozier & Park, 1 ♀. WHITE PINES FOREST STATE PARK: July 4, 1932, Dozier & Mohr, 1 ♂.

Paracalocoris trivittis Knight

Paracalocoris trivittatus Knight (1926*j*, p. 371). *Preoccupied*.

Paracalocoris trivittis Knight (1930*d*, p. 812).

Known only from Mississippi.

Paracalocoris evonymi Knight

Paracalocoris evonymi Knight (1930*d*, p. 812).

MALE.—Length 6.10, width 2.70. Head width 1.13, vertex 0.54. Rostrum, length 2.25, reaching to middle of hind coxae, yellow with apex black. Antennae, first segment, length 1.25, pale, with reticulated brown marks and spots; second, 2.25, nar-

row area at base black, bordered by a pale annulus, then yellowish brown to middle, where a slightly paler annulus separates this from the black on apical half; third, 0.97, pale, distal half black; fourth, 1.12, blackish, paler at base. Pronotum, length 1.38, width at base 2.12; dark brown; disk with a few pale spots; median line pale although it may be indistinct near basal margin, basal edge yellowish; discal spots black, inner and outer margins bordered by yellow. Scutellum dark brown, median line with a slender pale mark; small spot near each basal angle, and a few even smaller dots near middle and apex, yellow. Hemelytra dark brown to black; area at inner half of clavus bordering scutellum black; corium with a few vague, yellowish spots; radial vein yellow on basal half. Cuneus mostly dark brown, with outer edge and area extending across middle yellowish; light-colored area on disk appearing more as spots than as uniform color. Membrane dark fuscous to black; a rather large, yellowish spot on margin near apex of cuneus and a smaller one on middle of larger areole; vein at apex of larger areole yellowish. Legs tan, with bases of coxae more or less fuscous and apical halves of femora spotted with brown, this coloration on apical third of hind femora interrupted by a few minute, yellow spots; tibiae each with two brown bands, apices only slightly darkened; tarsi pale, apices black. Venter of thorax dark brown, darker at sides; ventral surface of abdomen yellowish on basal half, sides rather uniformly very dark brown, except on second, or first visible, segment, where two more or less indistinct pale marks occur. Dorsum clothed with yellowish to golden, recumbent, sericeous pubescence intermixed with a few obscure, simple hairs.

FEMALE.—Length 5.80, width 2.80. Head width 1.16, vertex 0.56. Antennae, first segment, length 1.21; second, 2.20; third, 1.00; fourth, 1.12. Pronotum, length 1.35, width at base 2.16. Slightly more robust than male, but very similar in pubescence and coloration.

HOST PLANT.—Waahoo or burning bush (*Evonymus atropurpureus*); a single specimen was taken in this state on box elder (*Acer negundo*); others were taken on redbud (*Cercis canadensis*).

KNOWN DISTRIBUTION.—Illinois, Iowa, Ohio, western New York.

Illinois Records. — ELIZABETHTOWN: May 27-31, 1932, on redbud, H. L. Dozier, 3 ♂. OQUAWKA: June 13, 1932, on *Acer negundo*, H. L. Dozier, 1 ♀.

Paracalocoris celtidis Knight

Paracalocoris celtidis Knight (1930*d*, p. 810).

MALE.—Length 5.70, width 2.60. Head width 1.14, vertex 0.56. Rostrum, length 2.70, extending to fifth abdominal segment, tan to yellowish with last two segments black. Antennae, first segment, length 1.00, dark brown to black, with several small, white, glabrous spots and set with several erect, black setae; second, 2.25, black, with pale annulus at middle; third, 0.91, fuscous to black, yellowish at base; fourth, 0.95, black, with a narrow yellowish area at base. Pronotum, length 1.30, width at base 2.00; disk dark brown to black, with pale spots; calli and areas surrounding discal spots yellow to yellowish brown; area between calli white, this color extending back along median line to base as a white line, basal half of line apparently produced by the joining of several spots. Scutellum brown, with yellowish, more or less confluent spots; median line yellowish, except at apex, but this line joined by so many spots that its outline is largely obscured. Hemelytra black and brown, with minute yellowish spots, these more prominent along radial vein and near apex of embolium. Cuneus largely white due to the numerous and confluent white spots; apex and paracuneus black. Membrane dark fuscous or black, with disk of larger areole, apical half of membrane except large spot bordering apex of larger areole, and spot at middle of outer margin, yellowish. Legs yellow, marked with brown; distal half of femora with black ground color, which is cut into small areas by numerous white spots; hind femora with one much larger white spot on middle of dorsal aspect; tibiae with apex, band at middle, and a broader band at base, brown, the last somewhat broken by white spots; tarsi pale, apices black. Venter dark brown, varied with white and yellowish marks; sides tending toward black, with three rows of obliquely placed, yellow dashes. Dorsum clothed with recumbent, pale to golden yellow, sericeous pubescence, intermixed with less prominent, simple, fus-

cous hairs; femora with several prominent, bristlelike white hairs, much as in *gleditsiae* Knight; tibiae with several yellowish, setose hairs which may be longer than true spines, but these spines much thicker and brown in color.

FEMALE.—Length 6.00, width 2.60. Head width 1.14, vertex 0.56. Antennae, first segment, length 1.04; second, 2.03; third, 0.95; fourth, 1.29. Pronotum, length 1.34, width at base 2.12. Slightly more robust than male, but very similar in pubescence and coloration.

HOST PLANT.—Hackberry trees (*Celtis occidentalis*).

KNOWN DISTRIBUTION. — Illinois and Iowa.

Illinois Records.—ILLINOIS: 1 ♀. URBANA: July 16, 1932, C. O. Mohr, 1 ♀.

Paracalocoris gleditsiae Knight

Paracalocoris gleditsiae Knight (1926j, p. 370).

This is allied to *colon* (Say) by key characters and it is distinguished from *colon* by having several prominent, erect, bristlelike hairs on the hind femora; the length of each of these hairs is greater than the thickness of a tibia.

MALE.—Length 5.40, width 2.20. Head width 1.05, vertex 0.47. Rostrum, length 2.04, reaching to middle of hind coxae. Antennae, first segment, length 0.89, dark reddish brown with a few small white dots; second, 1.90, dark brown, with a pale annulus at the middle and a somewhat lighter brown area before annulus; third, 0.81, dark brown to fuscous, paler at base; fourth, 0.83, fuscous, a narrow yellowish area at base. Pronotum, length 1.20, width at base 1.86; dark brown, basal half of disk black, slender area at base yellowish, and with seven or eight pale spots on sub-basal margin, area bordering outer margin of black discal spots, and four short, longitudinal marks between, yellow to white. Scutellum dark brown, with slender line and irregular marks on either side near apex pale. Hemelytra dark brown, somewhat paler at base of corium and apex of clavus; embolium, corium and cuneus with several small, yellowish or white dots. Membrane infuscated, veins about apex of larger areole white. Venter with sides dark brown, each segment with three yellow marks which, taken together, suggest broken, longitudinal

lines. Legs reddish brown, irregularly marked with white dots; femora much darker at bases; hind pair with a large white spot on dorsal aspect beginning at middle; tibiae with white band at middle.

FEMALE.—Length 5.80, width 2.70. Head width 1.12, vertex 0.54. Antennae, first segment, length 0.99; second, 1.92; third, 0.75; fourth, 0.78. Pronotum, length 1.30, width at base 2.04. Very similar to male in pubescence and coloration.

HOST PLANT.—Honey locust (*Gleditsia triaanthos*); also collected on black locust (*Robinia pseudoacacia*).

KNOWN DISTRIBUTION. — Illinois, Indiana, Iowa, Ohio.

Illinois Records.—DANVILLE: June 8, 1902, Titus & Kahl, 1 ♂. ELIZABETHTOWN: May 27-31, 1932, on *Robinia pseudoacacia*, H. L. Dozier, 1 ♂, 4 ♀. NEW HOLLAND: May 28, 1936, Mohr & Burks, 3 ♂, 4 ♀. ST. JOSEPH: June 17, 1932, T. H. Frison, 1 ♂.

Paracalocoris multisignatus Reuter

Paracalocoris multisignatus Reuter (1909, p. 40).

Known from District of Columbia, Georgia, Indiana, Maryland, Mississippi, New York, North Carolina, Ohio, Oklahoma, Texas, Virginia. It should eventually be found in southern Illinois. Breeds on wild grape (*Vitis rotundifolia*).

Paracalocoris colon (Say)

Capsus colon Say (1832, p. 25).

ADULTS.—Length 5.80, width 2.50; length of pronotum 1.33. Antennae, first segment, length 1.10, brownish, spotted with yellow, spots more or less confluent, clothed with black semierect hairs which are hardly as long as segment is thick; second, 2.22, narrow area at base and apical one-third black, area between brownish, but with pale annulus bordering black, pubescence fine; third, 0.97, pale to fuscous, becoming darker at apex; fourth, 1.08, pale fuscous, darker at apex. Dorsum pale yellowish to grayish or dark brown, spotted with yellow, in paler specimens brown forming large spots; clothed with pale yellowish to golden pubescence; membrane fuscous, with a spot at middle and on either side near tip of cuneus yellowish. Ventral surface brownish, each segment with two or three longitudinal, yellow marks on sides. Legs yellowish; apical third of femora and two bands on tibiae

brownish, this color spotted with yellow; in dark specimens, hind femora developing a brownish patch on basal half.

FOOD PLANT.—Collected on gooseberry (*Ribes* sp.) in Illinois.

KNOWN DISTRIBUTION.—District of Columbia, Illinois, Indiana, Michigan, New Jersey, New York.

Illinois Records.—Eleven males and 8 females, taken May 29 to July 14, are from Anna, Forest City, Hardin, Havana, Keithsburg, Manito, Palos Park, Quincy, White Heath, White Pines Forest State Park.

Garganus Stål

Garganus fusiformis (Say)

Capsus fusiformis Say (1832, p. 24).

MALE.—Fig. 171. Length 5.10, width 1.60. Head width 0.86, vertex 0.30. Rostrum, length 1.86, slightly exceeding posterior margins of hind coxae. Antennae, first segment, length 0.95, orange colored and with short, fuscous pubescence; second, 1.86, fusiform, thickness 0.13, black, thickly clothed with

slightly flattened, black hairs; third, 0.99, slender, black, yellowish at base; fourth, 1.00, black. Pronotum, length 0.78, width at base 1.22. General color black; collar, broad area on median line of scutellum, inner margin of clavus, embolium, and outer margin of cuneus, yellowish to white; legs and venter, except genital segment, orange colored.

FEMALE.—Length 5.40, width 1.81. Head width 0.91, vertex 0.36. Antennae, first segment, length 0.86, yellow to orange; second, 1.77, fusiform, greatest thickness 0.17; third, 1.00; fourth, 1.08. Pronotum, length 0.86, width at base 1.35. More robust than male, but very similar in pubescence and coloration.

HOST PLANTS. — Coltsfoot (*Tussilago farfara*); Illinois specimens were taken also on smartweed (*Polygonum* sp.).

KNOWN DISTRIBUTION.—Alabama, Connecticut, District of Columbia, Florida, Georgia, Illinois, Indiana, Kansas, Maryland, Massachusetts, Missouri, North Carolina, New Jersey, New York, Ohio, Ontario, Pennsylvania, South Carolina, Tennessee, Virginia.

Illinois Records.—Sixty-six males, 46 females and 1 nymph, taken June 14 to Oct. 6, are from Algonquin, Alto Pass, Browns, Cairo, Carbondale, Carmi, De Soto, Dixon Springs, Dolson, East St. Louis, Elizabeth, Elizabethtown, Galesburg, Grand Tower, Grandview, Herod, Karnak, Metropolis, Milo, Mount Carmel, Normal, Pulaski, Temple Hill, Urbana, West Pullman.

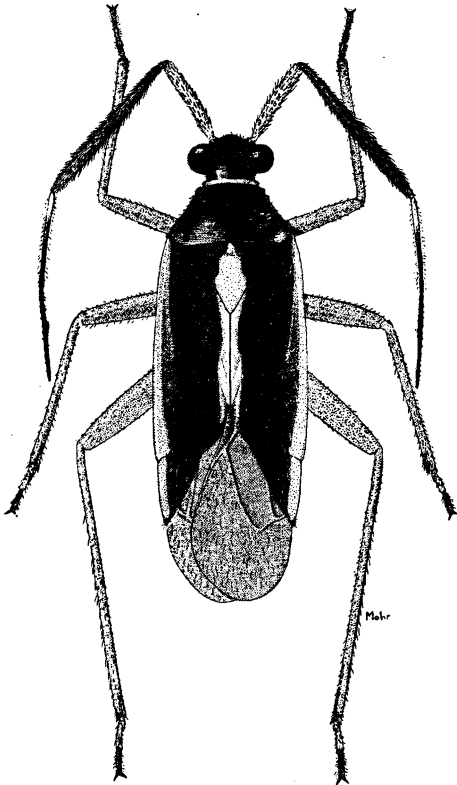


Fig. 171.—*Garganus fusiformis*, ♂.

Neurocolpus Reuter

KEY TO SPECIES

1. Length of first antennal segment three-fifths or more length of second segment..... 2
- Length of first antennal segment not, or only slightly, exceeding one-half length of second segment..... 3
2. Length of first antennal segment nearly three-fourths length of second segment; tip of rostrum surpassing posterior margins of hind coxae.....
..... *tilliae*, p. 182
- Length of first antennal segment not more than two-thirds length of second segment; tip of rostrum reaching posterior margins of hind coxae..... *nubilus*, p. 182

3. Hind femora pale with apical one-fourth black. **jessiae**, p. 183
 Hind femora fuscous or reddish on basal half. **rubidus**, p. 183

Neurocolpus nubilus (Say)

Capsus nubilus Say (1832, p. 22).

MALE.—Length 6.50, width 2.50. Head width 1.12, vertex 0.52. Rostrum, length 2.70, just attaining posterior margins of hind coxae. Antennae, first segment, length 1.34, moderately compressed, width 0.28, pale, with irregular brown marks, clothed with prominent, flattened black hairs intermixed with erect, white bristles; second, 2.42, yellowish brown, reddish brown to black on slightly thickened apical one-third; third, 0.88, black, pale at base; fourth, 0.86, blackish. Pronotum, length 1.43, width at base 2.12; pale greenish yellow; disk with irregular brownish marks; basal half clothed with erect, slightly flattened black hairs, intermixed with pale, simple and a few more recumbent, sericeous hairs. Scutellum yellowish, irregularly marked with brown. Hemelytra brownish to fuscous, the darker color broken by minute yellowish dots and irregular spots; cuneus darker at base and apex; membrane fuscous with a pale marginal spot behind cuneus; veins brown, yellowish apically. Legs tan; femora showing brownish markings; hind pair with brownish band at middle of apical half; space before band and at apex, yellowish or white; irregular brownish markings usually breaking paler color; tibiae with band at middle and at apex dark brown or fuscous and with another irregular one of same color near base.

FEMALE.—Length 7.00, width 2.60. More robust than male, but very similar in pubescence and coloration.

HOST PLANT.—Buttonbush (*Cephalanthus occidentalis*); Illinois specimens also were collected on cottonwood (*Populus deltoides*), Kentucky coffee tree (*Gymnocladus dioica*) and willow (*Salix* sp.).

KNOWN DISTRIBUTION.—Common in all the eastern states and southeastern Canada.

Illinois Records.—One hundred twenty-six males and 119 females, taken May 24 to Sept. 2, are from Algonquin, Alton, Antioch, Ashley, Browns, Champaign, Chicago, Decatur, Dolson, Dubois, Duncan Mills, East St. Louis, Elizabethtown, Frankfort, Galena, Grand Tower, Havana, Herod, Horseshoe Lake, Karnak, Keithsburg, Lilly,

Monticello, Mound City, Mount Carmel, Muncie, Oakwood, Oregon, Palos Park, Parker, Quincy, Savanna, Seymour, Shawneetown, Urbana, Volo, Wauconda, West Union, Winchester, York.

Neurocolpus tiliae Knight

Neurocolpus tiliae Knight (1934, p. 162).

MALE.—Fig. 172. Length 5.70, width 2.30. Head width 1.00, vertex 0.48. Rostrum, length 2.55, exceeding posterior margins of hind coxae, extending to fourth ventral segment. Antennae, first segment, length 1.43, slightly compressed, greatest width 0.24 near middle, clothed with erect, flattened, black hairs, intermixed with erect, slightly longer, simple, yellowish hairs, orange yellow, irregularly marked with reddish or fuscous dots; second, 2.03, slender, becoming clavate on apical third (width 0.15), pale, thickened part dark red to blackish; third, 0.78, yellowish, apical third black with a reddish cast; fourth, 0.74, fuscous. Pronotum, length 1.25, width at base 1.82, basal margin distinctly sinuate at middle. Dorsal aspect yellowish to orange red, hemelytra with a considerable number of yellowish spots which are larger and, in part,

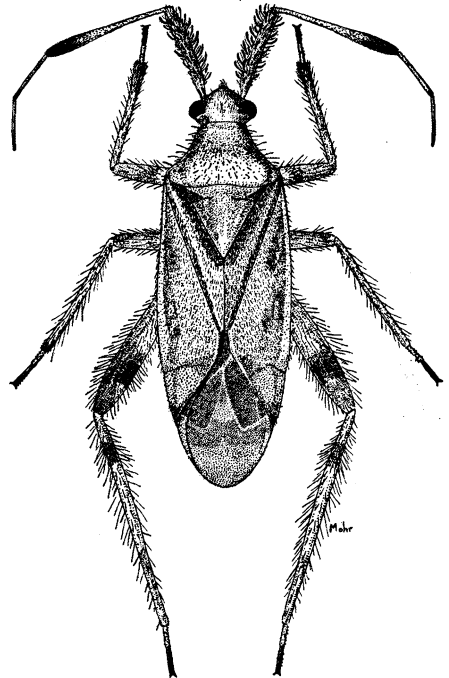


Fig. 172.—*Neurocolpus tiliae*, ♂.

confluent on cuneus; scutellum paler, irregularly marked with dark granulate reticulations; pronotum yellowish, usually darkened by hypodermal reddish granulations; propleura pale; coxal cleft crossed by two irregular dark rays. Membrane fuscous, a rounded spot on either side touching margin; discal spot, and areas bordering cuneus within areoles, less dark. Hemelytra clothed with golden, slightly sericeous, recumbent pubescence, intermixed with some simple, pale to fuscous hairs; pronotum with much longer hairs. Body beneath tan to yellowish; sides of thorax and abdomen darkened with reddish and fuscous; two paler longitudinal lines running through dark color. Legs tan to yellowish; hind femora darkened on apical half with reddish and fuscous and provided with a few flattened, black hairs; tibiae pale to reddish, not distinctly banded.

FEMALE.—Length 5.60, width 2.30. Very similar to male in form and coloration.

HOST PLANT.—Basswood (*Tilia americana*).

KNOWN DISTRIBUTION.—Illinois, Iowa, Minnesota, New York, Ontario.

Illinois Records.—NORTHERN ILLINOIS: 3 ♀. ALGONQUIN: July 17, 1896, 1 ♀. FRANKFORT: June 8, 1933, Mohr & Townsend, 1 ♀. GALESBURG: July 24, 1892, 4 ♀. URBANA: July 4, 1915, on tree trunk, 1 ♀.

Neurocolpus jessiae Knight

Neurocolpus jessiae Knight (1934, p. 163).

MALE.—Length 6.30, width 2.34. Head width 1.08, vertex 0.43. Rostrum, length 2.50, extending nearly to hind margins of posterior coxae. Antennae, first segment, length 1.25, slightly compressed, greatest width (0.22) near middle, the black scale-like hairs only moderately conspicuous, these hairs intermixed with a few more nearly erect, black bristles, this segment very dark brown, closely and irregularly spotted with yellowish; second, 2.64, slender, distal half gradually tapering to become thicker apically, part black, basal half yellowish; third, 1.08, black, yellowish at base; fourth, 1.11, black. Pronotum, length 1.34, width at base 1.95. Dorsum chiefly black, with basal half of cuneus, spots on embolium and scutellum, and more or less broad area on anterior half of pronotum, tan to yellowish; body beneath pallid to yellowish, sides of thorax and venter more or less infuscated. Legs pallid; apical one-fourth of hind femora

black; front and middle femora with irregular fuscous areas at apices; tibiae pallid; front and middle pairs with bases, apices, and two narrow rings between, fuscous; hind tibiae with basal one-fourth and broad band just below middle, black; apices fuscous; tarsi yellowish, apical segment largely black.

FEMALE.—Length 6.50, width 2.30. Very similar to male in form and coloration.

HABITS.—Nymphs and adults were collected "from panicles of elder fruit" at Urbana, by C. A. Hart.

KNOWN DISTRIBUTION.—Illinois, Iowa, Massachusetts, Missouri, Mississippi, New York, Ontario, Texas.

Illinois Records.—NORTHERN ILLINOIS: 1 ♂. GALESBURG: 1 ♂; July 27, 1892, 1 ♂, 1 ♀; July 24, 1892, 1 ♀. URBANA: July 20, 1889, from panicles of elder fruit, C. A. Hart, 11 ♂, 16 ♀; July 21, 1889, in forest, C. A. Hart, 1 ♀; July 24, 1889, on elder (*Sambucus* sp.), C. A. Hart, 2 ♂, 9 ♀.

Neurocolpus rubidus Knight

Neurocolpus rubidus Knight (1934, p. 164).

MALE.—Length 6.00, width 2.10. Head width 1.00, vertex 0.41. Rostrum, length 2.30, just attaining posterior margins of hind coxae. Antennae, first segment, length 1.04, compressed, greatest width 0.22 near middle, reddish, irregularly and closely marked with yellowish, usually flattened, black hairs abundant, intermixed with somewhat longer, pale to fuscous, bristlelike hairs; second, 2.16, slender, gradually thickened (width 0.12) on apical half, yellowish, apical half reddish; third, 0.82, fuscous, pale at base; fourth, 0.83, black. Pronotum, length 1.12, width at base 1.73. General coloration reddish, in dark specimens fuscous appearing on hemelytra. Embolium and scutellum with several yellowish spots; membrane dark fuscous, a pale spot on either side at margin; veins dark; apical curve of cubitus reddish. Dorsum clothed with golden, sericeous pubescence intermixed with simple yellowish to fuscous hairs; distinct black hairs on pronotum. Femora reddish; hind pair with a distinct yellowish spot above, slightly beyond middle; tibiae yellowish, two narrow reddish rings on front and middle pair; reddish areas on middle and basal one-fourth of hind pair.

FEMALE.—Length 6.20, width 2.34. Very similar to male in form and coloration.

KNOWN DISTRIBUTION.—Connecticut, Illinois, Kansas, New York, Ohio.

Illinois Record.—NORTHERN ILLINOIS: 2 ♂, 2 ♀.

Phytocoris Fallen

KEY TO GROUPS

- 1. Wing membrane confusedly sprinkled with discolored or dark spots, or with numerous, minute, pale spots; median lobe of male genital structure provided with a flagellum that lacks distinct teeth, fig. 175. **Group I**, p. 184

- 4. Antennae more black or fuscous than pallid; if second segment has a broad, pale area at middle, then dorsum chiefly dark brown to black; general coloration dark brown or black on a less dark background. **Group II**, p. 191
- Antennae more nearly pale, yellowish or reddish rather than dark brown or black; second segment sometimes partly brown, but with larger pallid than brown areas; general coloration usually yellowish to reddish on a paler background. . . **Group IV**, p. 201

Group I

KEY TO SPECIES

- 1. First antennal segment greatly thickened; thickness nearly equal to dorsal width of an eye, fig. 173. 2
- First antennal segment more slender; thickness distinctly less than dorsal width of an eye, fig. 174. 3
- 2. Basal three-fourths of second antennal segment yellowish, apical one-fourth black or very dark brown. **lasiomerus**, p. 185
- Second antennal segment uniformly yellowish, or very slightly dusky only at apex. . . **pallidicornis**, p. 185
- 3. Second antennal segment dusky yellow to pale brown, white at base; clavus pallid; corium with an oblique, dark brown band on basal half that joins a brown area extending along claval suture; length 3.80-4.00. . . . **breviusculus**, p. 190
- Second antennal segment chiefly black, usually with white bands. . . 4
- 4. Second antennal segment black at base, with a light-colored band more distad; length of first antennal segment greater than width of pronotum at base; four small, black, conical projections, two on either side of median line, present near posterior margin of pronotum. **antennalis**, p. 185
- Second antennal segment with a light-colored band at base, black beyond 5
- 5. Third antennal segment with pale band at base and at middle. 6
- Third antennal segment with pale band at base only, or annuli entirely wanting. 7

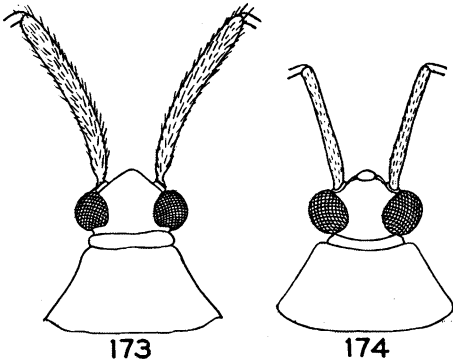


Fig. 173.—Head and first antennal segment of *Phytocoris lasiomerus*.

Fig. 174.—Head and first antennal segment of *Phytocoris conspurcatus*.

Wing membrane marbled, uniformly dark brown or uniformly light colored, never with many minute spots (except perhaps in some forms of *quercicola*); margins of dark areas of membrane sometimes separating into small specks, but general effect more mottled than spotted; median lobe of male genital structure with a flagellum bearing distinct teeth, figs. 176, 178. 2

- 2. Length of first antennal segment less than width of head. 3
- Length of first antennal segment greater than width of head. 4
- 3. First segment of antennae red with yellow spots. . . . **Group IV**, p. 201
- First segment of antennae not red with yellow spots, but yellow, yellow with dark spots or brown to almost black. **Group III**, p. 199

6. Dorsum bearing both black and white scalelike hairs, which are turned on edge; ventral half of propleura pallid, but no distinct white line present above middle of coxal cleft.
 **conspurcatus**, p. 188
 Dorsum without distinct scalelike hairs; propleura white with dorsal margin black and a clear-cut, black line extending across ventral half of coxal cleft to basal margin.
 **davisi**, p. 187
7. Second antennal segment with a broad, pale yellowish to dusky area at middle, dark fuscous only at apex and next to pale band at base; small, slender species, length 5.10.
 **minutulus**, p. 188
 Second antennal segment black with a pale band at base, but, at most, only a narrow, pallid band at middle. 8
8. Corium with a longitudinal black vitta on middle of apical half, set on a grayish background, radius indicated by an interrupted series of black dots; length of first antennal segment equal to distance between tylus and basal margin of pronotum; second antennal segment with a light-colored area at base which is interrupted on ventral side by a black line. **vittatus**, p. 190
 Corium without a distinct longitudinal black vitta on a grayish background. 9
9. Hind femora very dark brown, apical half with small, pale dots only.
 **fumatus**, p. 188
 Hind femora black, with a large light-colored band or numerous large, pale spots. 10
10. Lower half of head black, or pallid and marked with black. 11
 Lower half of head white; tylus blackish only at base. 12
11. Second antennal segment with light-colored band at middle; mesopleura uniformly black.
 **corticevivens**, p. 186
 Second antennal segment without light-colored band at middle; mesopleura with pallid ray appearing as an extension of that on propleura. **purvus**, p. 187
12. Length of first antennal segment equal to or greater than width of pronotum at base. **albifacies** p. 186
 Length of first antennal segment not equal to width of pronotum at base 13
13. Femora black; hind pair with an oblique, subapical white band, usually a few small pallid dots nearby; length 6.50. **tuberculatus**, p. 187
 Femora more pallid than black, apical half darkened with fuscous and broken by numerous large and small pallid spots; length 6.00.
 **sulcatus** p. 190

Phytocoris lasiomerus Reuter

Phytocoris lasiomerus Reuter (1909, p. 34).
 Known from Colorado, Iowa, Maine, Massachusetts, Minnesota, Montana, New York, Ontario, Quebec, Washington, Wisconsin, Wyoming. Not as yet recorded from Illinois, but should be found in the northern part.

Phytocoris pallidicornis Reuter

Phytocoris pallidicornis Reuter (1876, p. 69).
 Known from British Columbia, Colorado, Maine, Massachusetts, Michigan, Minnesota, Montana, New Hampshire, New York, North Dakota, Wisconsin. Not yet taken in Illinois, but should be found in the northern part.

Phytocoris antennalis Reuter

Phytocoris antennalis Reuter (1909, p. 32).
 MALE.—Length 5.10, width 1.60. Head width 0.90, vertex 0.42; testaceous to very dark brown; tylus white with middle third black. Antennae, first segment, length 1.28, very dark brown, inner surface marked with four or five pale spots; second, 2.56, black, with a narrow, light-colored annulus slightly distad of base and a second, broader light band slightly beyond middle; third, 1.66, fusco-brownish, pale at base; fourth, 1.44, fuscous. Pronotum, length 0.79, width at base 1.43, testaceous to brownish and becoming black on area bordering sinuate pale area at posterior margin; two small, conical projections on either side of middle near posterior margin; propleura black, a pale ray extending across top of coxal cleft. Scutellum testaceous to fuscous, with a slender, nearly obsolete, pale median line. Hemelytra testaceous to fuscous and clothed with

yellowish, black and white pubescence; embolium with an elevated black spot at apex, also with a black area at middle which is broken by pale marks; corium with a darker area bordering clavus and a dark spot at middle on outer margin; cuneus reddish to black along outer margin and at apex, with a black tuft of hairs at middle of inner margin and a second one near inner basal angle. Membrane rather densely marbled with fuscous; more uniformly fuscous apically and at base and with a somewhat light-colored area near apex of cuneus, this spot invaded by fuscous marks; veins fuscous. Coxae white, with small lateral areas at base dusky red. Femora black, less dark at base; hind pair with light spots on ventral aspect and a rather distinct, subapical, light band on dorsal aspect; front pair mostly pale, with a longitudinal black bar on apical half of anterior face. Front tibiae reddish to black, with a pale annulus at middle of apical half, a narrower one near middle of basal half and a third, nearly obsolete one, near base; intermediate tibiae chiefly light, but marked with dark reddish; hind pair light colored, with variable dark brown marks; tarsi fuscous. Venter black, sides irregularly tinged with reddish; genital segment bearing, above base of left clasper, a broad, erect tubercle with a vague apical notch and another smaller tubercle above base of right clasper; claspers distinctive for species.

FEMALE.—Length 6.20, width 1.90; more robust than male, but very similar in coloration.

HABITS.—Usually collected at lights; probably predacious.

KNOWN DISTRIBUTION.—District of Columbia, Illinois, Indiana, Massachusetts, Mississippi, New York, Oklahoma, Virginia.

Illinois Record. — CHAMPAIGN: June 13, 1888, C. A. Hart, 1 ♂.

***Phytocoris albifacies* Knight**

Phytocoris albifacies Knight (1926g, p. 159).

FEMALE.—Length 5.90, width 2.30. Head width 1.11, vertex 0.46. Lower half of face, or ventrad to a line running through base of tylus and lower margin of eyes, white; vertex more or less colorless, a curved, white mark touching inner margin of each eye. Rostrum, length 3.43, attaining base of ovipositor, white, with third and fourth

segments black. Antennae, first segment, length 1.80, black, dorsal aspect with two smooth, white spots on apical half and four or five smaller spots on basal half, spines both fuscous and light colored, short, length scarcely equal to thickness of segment; second, 3.30, mostly black, almost colorless at base for a space of 0.23, and a pale annulus of equal length beginning at middle; third, 1.77, black, paler at base; fourth, 1.31, black. Pronotum, length 1.06, width at base 1.69; black, with lower margin of propleura, xyphus, and collar to a point behind lower margin of eye, white; disk more or less fuscous, basal margin somewhat pale, with two black, elevated spots on either side of median line. Scutellum fuscous to black; basal angles and apex pale. Hemelytra black; with several small spots on embolium, base of cuneus, a triangular spot at apex of corium and spot near middle, tending toward pale. Membrane mostly very dark brown with paler areas sprinkled with fuscous dots; cubitus almost entirely colorless. Sternum and pleura black, margins bordering coxae pale. Venter principally black, with most of ventral area light except on last segment. Legs black with almost colorless marks much as in *corticevivens* Knight; femora black, with numerous minute, pale spots, a somewhat larger, light-colored spot indicating an oblique, subapical annulus. Dorsum clothed with rather short, black, simple pubescence intermixed with silvery and golden, silky pubescence.

MALE.—Length 6.00, width 2.00. Very similar to female in coloration, although generally darker. Genital claspers distinctive and indicating a close relationship to *corticevivens*.

HABITS.—Occurs on the bark of pecan trees where it is probably predacious.

KNOWN DISTRIBUTION. — Illinois and Mississippi.

Illinois Record. — HARRISBURG: June 15, 1934, at lights, DeLong & Ross, 1 ♀.

***Phytocoris corticevivens* Knight**

Phytocoris corticevivens Knight (1920, p. 63, pl. I, fig. 6).

MALE.—Length 6.60, width 2.30. Head width 1.04, vertex 0.39. Rostrum, length 3.03, reaching fifth abdominal sternite. Antennae, first segment, length 1.60, black, basal half with five or six small, smooth, white spots, each bearing a few erect, short

bristles; second, 3.00, very dark brown, with a pallid band at base and another, narrow one at middle; third, 1.69, black, pallid only at base; fourth, 1.30, black. Pronotum, length 1.16, width at base 1.90. Dorsum clothed with rather short, recumbent, black pubescence intermixed with yellowish to golden, silky hairs. General coloration black, with small, light-colored spots on embolium, between calli, on apical area of corium, and a narrow, pale area at base of cuneus. Membrane almost colorless, thickly and rather uniformly marbled with fuscobrownish. Legs black; hind femora with a few small, light spots; entire coxae light colored, except at bases; tibiae with two pallid bands, those of hind pair becoming obsolete, spots and spines of tibiae almost white. Genital claspers distinctive, fig. 175, a small tubercle present above base of each clasper.

FEMALE.—Length 6.80, width 2.50. More robust than male, but very similar in color and pubescence.

HABITS.—Predacious. In Minnesota, I collected a series of nymphs and adults on the bark of sugar maple (*Acer saccharum*); both nymphs and adults were well concealed as they crouched in crevices of the bark, apparently awaiting their prey.

KNOWN DISTRIBUTION.—Connecticut, Illinois, Iowa, Maryland, Minnesota, Missouri, New Jersey, New York, Ohio, Ontario, Texas, Wisconsin.

Illinois Records.—NORTHERN ILLINOIS: 7 ♀; July, 1 ♀. ALGONQUIN: 1 ♂; June 5, 1895, 1 ♂. FOX LAKE: June 10, 1936, Ross & Burks, 2 ♀. GALESBURG: June 21, 1892, 1 ♂. URBANA: May 31, 1889, C. A. Hart, 1 ♀.

Phytocoris tuberculatus Knight

Phytocoris tuberculatus Knight (1920, p. 64.)

MALE.—Length 6.50, width 2.10. Head width 1.10, vertex 0.39; lower half of head white; very dark brown across base of tylus; frons with oblique dark lines. Rostrum, length 3.42, extending to sixth abdominal sternite. Antennae, first segment, length 1.51, black, dorsal aspect with several smooth, white spots; second, 3.12, black, pallid at base, a yellowish annulus at middle, this band sometimes nearly obsolete; third, 1.86, black, pallid at base. Pronotum, length 1.16, width at base 1.95. Dorsum clothed with short, black pubescence intermixed with

pale yellowish, silky hairs. General color fuscous to black; pronotum and scutellum with paler areas; embolium with small pallid spots. Membrane fuscous, paler areas stippled with small fuscous dots. Legs black, coxae light colored, hind femora with an oblique white band near apex and a few small, pallid spots an apical half. Genital claspers, flagellum, long tubercle above base of left clasper, and shorter one above right clasper, distinctive for species, fig. 175.

FEMALE.—Length 6.90, width 2.55. More robust than male; very similar in coloration, but dorsum often lighter in color.

HABITS.—Collected chiefly at lights.

KNOWN DISTRIBUTION.—Illinois, Indiana, Michigan, Missouri, New York, North Carolina, Oklahoma, Texas, Wisconsin.

Illinois Records.—GALESBURG: 1 ♂. URBANA: June 20, 1909, 1 ♂.

Phytocoris davisii Knight

Phytocoris davisii Knight (1923*d*, p. 624).

Not taken in Illinois; known only from New Jersey and New York.

Phytocoris purvus Knight

Phytocoris purvus Knight (1927*b*, p. 17).

This species is allied to *minutulus* Reuter, but differs from it in the shorter first antennal segment, the black second antennal segment with a narrow, pale annulus at base only, in the larger eyes and narrow vertex, the distinctive subapical marks on the scutellum, and the structure of the male genital claspers.

MALE.—Length 5.50, width 1.90. Head width 1.05, vertex 0.22; eyes large and prominent, vertex chiefly almost colorless, frons with six transverse dark lines, ventral area of frons and tylus black, a V-shaped white mark on basal half of tylus, juga white with a transverse black mark on dorsal half, lora black with a light-colored area on lower margin which joins the similarly colored areas on the much reduced genae and gula. Rostrum, length 2.60, extending to fifth abdominal sternite, pale yellowish with apex very dark brown. Antennae, first segment, length 1.11, only slightly greater than width of head, black, with ventral side light, black area broken by several white spots, a white seta arising from each spot; second, 2.80, black, narrow pale area at base; third, 1.45,

black, narrow pale area at base; fourth, 1.09, black. Pronotum, length 0.83, width at base 1.51; fuscous to black, paler on calli and central area of disk, lower margin of propleura almost white. Scutellum pale, with a pair of well defined dark brown, subapical, marginal spots. Sternum pale, sides and pleura black. Dorsum rather uniformly dark fuscous, with light-colored spots on embolium and a somewhat paler area at middle of corium. Clothed with fuscous, simple pubescence, intermixed with white, silky hairs in numerous spots. Membrane almost colorless, speckled with numerous small brownish to fuscous spots, the preapical area and margins of areoles more evenly fuscous; veins fuscous, white areas present around apices of areoles. Legs black, marked with more or less confluent, white spots, these spots forming a well-defined preapical white annulus. Genital claspers distinctive; left clasper with inner arm much flattened, right clasper shaped much as in *quercicola* Knight.

FEMALE.—Length 5.30, width 2.00. Very similar to male in pubescence and coloration.

HABITS.—Collected chiefly about lights; a single Illinois specimen was taken on cypress (*Taxodium distichum*).

KNOWN DISTRIBUTION.—District of Columbia, Illinois, Iowa, Maryland, South Carolina.

Illinois Record. — KARNAK: July 28, 1930, on *Taxodium distichum*, Knight & Ross, 1 ♀.

Phytocoris minutulus Reuter

Phytocoris minutulus Reuter (1909, p. 24).

Not taken in Illinois; known from Maryland, Massachusetts, New Hampshire, New York, North Carolina, Pennsylvania, Virginia.

Phytocoris fumatus Reuter

Phytocoris fumatus Reuter (1909, p. 25).

MALE.—Length 7.00, width 2.30. Head width 1.17, vertex 0.40; front with five oblique black lines on either side of median line and a transverse black area between bases of antennae; lower half of face white; base of tylus, base of jugum, and spot on dorsal margin at base of lorum, black; a rather irregular reddish band extends across middle of tylus. Rostrum, length 4.20, attaining base of genital segment, pale with apical

segment brownish. Antennae, first segment, length 1.57, equal to distance between posterior margin of pronotum and a line drawn through eyes at a point slightly before middle, black, with pale spots on dorsal side, two largest spots on apical half; second, 3.10, dark brown with pallid areas on dorsal side at base and middle, areas at middle vague; third, 1.79, black with almost white area 0.17 wide at base; fourth, 1.30, black. Hemelytra fuscous to black; a large yellowish and translucent spot at apex of corium near base of cuneus; embolium irregularly translucent and darkened with fuscous; cuneus very slightly lighter at base, a tuft of black hair on inner margin near base and a similar tuft at apex of corium; pubescence black, intermixed with pale, silky pubescence. Membrane pale, thickly and rather uniformly marbled with fusco-brownish; veins dark, pale at apex of larger areole. Legs very dark brown, entire coxae light colored except spot near base; trochanters pallid; femora with numerous, small, pallid spots, a slightly larger, nearly colorless spot on anterior aspect near apex, this mark not quite forming a subapical band; front and middle tibiae pale at middle and with another, rather distinct pale band at middle of apical half; tarsi fuscous. Venter black, with yellowish pubescence; genital segment and claspers distinctive, fig. 175.

FEMALE.—Length 7.60, width 2.60; larger and more robust than male; very similar to male in coloration, but dorsum lighter colored; first antennal segment longer than in male, equal to distance between posterior margin of pronotum and a line drawn through front margins of eyes.

KNOWN DISTRIBUTION.—District of Columbia, Georgia, Illinois, Massachusetts, New Jersey, New York, North Carolina.

Illinois Record.—CHAMPAIGN: July 7, 1887, C. A. Hart, 1 ♂.

Phytocoris conspurcatus Knight

Phytocoris conspurcatus Knight (1920, p. 61).

This species is distinguished by its dark, marbled membrane and by the pale band at the middle of the first and second antennal segments; the dorsum is thickly clothed with black, deciduous, scalelike hairs intermixed with small patches of dense, white, woolly hairs.

MALE.—Length 5.90, width 2.10. Head width 1.06, vertex 0.34; infuscation similar

to that of *canadensis* Van Duzee. Rostrum, length 2.60, attaining base of genital segment. Antennae, first segment, length 1.20, black, with irregular minute, white spots beset with from 14 to 16 almost colorless setae; second, 2.50, black, with a light-colored annulus at base and a second, similar band beginning at middle and extending

dark fuscous to black, more or less pallid on under side at base; genital claspers and long tubercle above base of left clasper, fig. 175, distinctive for species.

FEMALE.—Very similar to male in size and coloration.

HABITS.—This is a predacious, bark-inhabiting species, which the author has taken

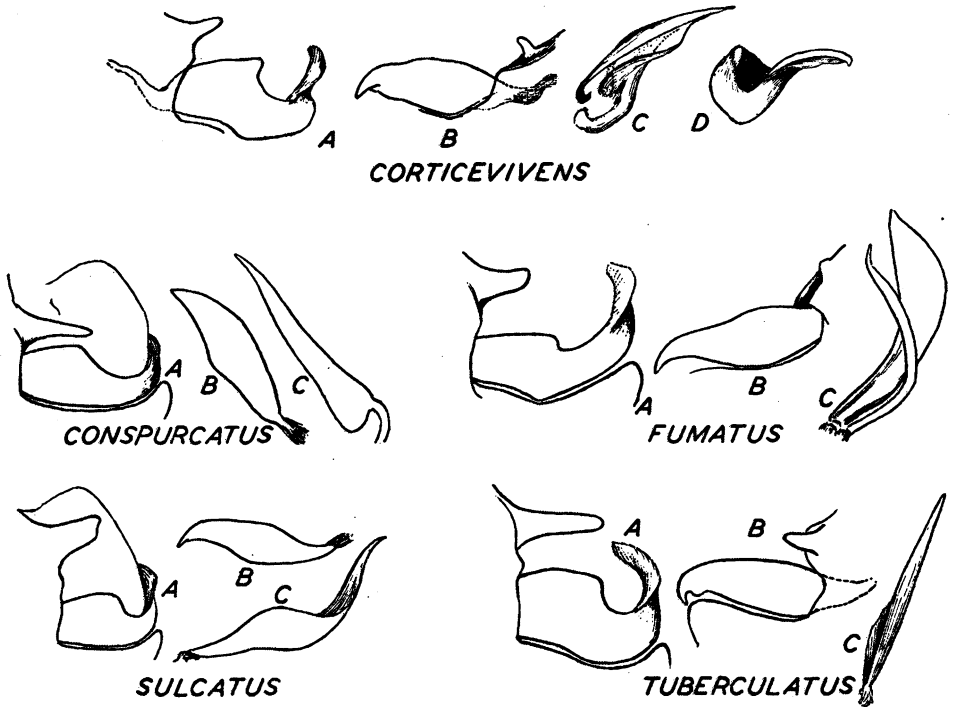


Fig. 175.—Male genital claspers of *Phytocoris*, Group I. A, left clasper, lateral aspect; B, right clasper, lateral aspect; C, flagellum; D, left clasper, caudal aspect.

for a space of 0.30; third, 1.48, pallid at base and at middle; fourth, 1.11, black. Pronotum, length 1.54, width at base 1.70; form and coloration very similar to those in *eximius* Reuter, but differing by having black, scalelike hairs; scutellum thickly covered with white, woolly pubescence. Hemelytra rather uniformly darkened, a triangular pallid spot at tip of corium bordering cuneus; thickly clothed with black, scalelike hairs intermixed with small patches of dense, white, woolly hairs. Membrane thickly marbled with dark fuscous; cubital vein pallid at apex of larger areole; dark spots scattered near apices of cells. Legs marked very much like those of *canadensis*, but pale band near apex of hind femora more or less interrupted on ventral side. Venter

on the boles of linden (*Tilia americana*), elm (*Ulmus* sp.), walnut (*Juglans nigra*), pear (*Pyrus communis*), apple (*Pyrus malus*), willow (*Salix* sp.) and maple (*Acer* sp.); frequently attracted to light.

KNOWN DISTRIBUTION.—Connecticut, District of Columbia, Illinois, Iowa, Kansas, Maryland, Michigan, Minnesota, Mississippi, Missouri, New Hampshire, New Jersey, New York, Ontario, Pennsylvania, South Dakota, Wisconsin.

Illinois Records.—Twenty-three males and 23 females, taken May 17 to September, are from Alton, Antioch, Carbondale, Champaign, Darwin, Galesburg, Grafton, Havana, Mahomet, Odin, Palos Park, Quincy, Shawneetown, Starved Rock State Park, Urbana.

Phytocoris vittatus Reuter

Phytocoris vittatus Reuter (1909, p. 28).

Not taken in Illinois; known only from New York; has been collected on prickly gooseberry (*Ribes cynosbati*).

Phytocoris sulcatus Knight

Phytocoris sulcatus Knight (1920, p. 64).

In form, this species is very similar to *fumatus* Reuter, but the latter is larger; the pronotum of *sulcatus* is more distinctly sulcate at the sides and immediately behind the calli; the pallid bands at the base and the middle of the second antennal segment are more distinct; the dorsum is distinctly paler; and the outer half of the clavus and the inner apical angles of the corium are very dark brown, almost black.

MALE.—Length 6.00, width 1.80. Head width 1.08, vertex 0.30. Rostrum, length 2.80, extending to fifth abdominal sternite. Antennae, first segment, length 1.25, black, with one large and several small white, smooth spots; second, 2.64, mostly black, pallid at base and a yellowish band at middle; third, 1.47, fuscous, pallid at base; fourth, 1.21, dark fuscous. Pronotum, length 0.99, width at base 1.60; lateral margins of disk and immediately behind calli distinctly sulcate. Dorsum clothed with silvery to yellowish, silky pubescence, intermixed with more nearly erect, short, black hairs. General color fuscous to black, with paler spots and areas; membrane pallid, rather thickly and evenly marbled with fuscous. Femora with a broad pallid area at base, apical half black with several pallid spots; hind pair with an irregular, oblique, subapical pallid band. Front and middle tibiae with black and white bands; hind pair without distinct white bands. Genital claspers, flagellum and a large, thick tubercle above base of left clasper, fig. 175, distinctive for species.

FEMALE.—Length 6.00, width 2.03. More robust than the male but very similar in color and pubescence.

HABITS.—Occurs on the bark of linden (*Tilia americana*), on bur oak (*Quercus macrocarpa*) and elm (*Ulmus* sp.); probably predacious.

KNOWN DISTRIBUTION.—Connecticut, District of Columbia, Illinois, Iowa, Kansas, Michigan, Minnesota, Pennsylvania, South Dakota, Virginia.

Illinois Records.—Five males and 7 females, taken May 22 to Aug. 21, are from Argo, Beverly Hills, Champaign, Dubois, Galesburg, Quincy, St. Anne, Urbana.

Phytocoris brevisculus Reuter

Phytocoris brevisculus Reuter (1876, p. 68).

MALE.—Length 3.90, width 1.60. Head width 0.84, vertex 0.30; lower face white, marked with reddish brown. Rostrum, length 1.94, extending to sixth abdominal sternite. Antennae, first segment, length 0.63, reddish brown, marked with four or five white, smooth spots, spines pallid; second, 1.51, dusky yellow, white annulus at base; third, 1.04, fuscous, pallid at base; fourth, 0.78, fuscous. Pronotum, length 0.78, width at base 1.38, disk dusky yellow, central area more nearly pure yellow, basal edge white, this white area bordered by an undulating, fuscous line. Dorsum clothed with simple fuscous hairs thickly intermixed with white and yellowish, silky pubescence. Hemelytra pale yellowish; broad fuscous area along claval suture; inner apical angles and a broad, transverse band on basal half of corium fuscous. Cuneus yellowish to white; disk with several small brown dots; apex fuscous. Membrane thickly marbled with fuscous; two small, white spots on outer margin of apical half. Legs pale yellowish; hind femora very dark brown, this dark color broken by numerous pale dots; front and middle femora marked with reddish brown on apical half. Tibiae with three fuscous bands; hind pair dark fuscous with numerous white dots. Genital claspers distinctive, a prominent tubercle above base of left clasper.

FEMALE.—Length 4.10, width 1.64. More robust than male, but very similar in color and pubescence.

HABITS.—A predacious species which may be collected about lights. Reared in Ohio on apple branches which were heavily infested with San José scale.

KNOWN DISTRIBUTION.—Alabama, District of Columbia, Illinois, Indiana, Mississippi, Ohio, Texas. Common in Texas, but rare east of the Mississippi River.

Illinois Records. — **ALBION:** July 16, 1937, on blackberry, Mohr & Burks, 3 ♂. **ALTON:** July 19-21, 1932, on *Crataegus*, Ross & Dozier, 3 ♂, 4 ♀. **FAIRFIELD:** June 12, 1934, DeLong & Ross, 1 ♀. **JONESBORO:** Aug. 2, 1932, H. L. Dozier, 1 ♀. **URBANA:**

July 31, 1932, H. L. Dozier, 1 ♂; Sept., 1932, T. H. Frison, 1 ♂, 2 ♀.

Group II

KEY TO SPECIES

1. Apex of abdomen with claspers (males); couplets 2-17 illustrated in fig. 176. 2
Apex of abdomen without claspers (females); fully mature, well preserved specimens necessary for this section of key. 18
2. Basal shoulder of left clasper with thumblike projection, *e.g.*, *erectus*. . . 3
Basal shoulder of left clasper without thumblike projection, *e.g.*, *husseyi*. . . 5
3. Basal projection of left clasper extending vertically as a tall, thick process bluntly rounded at apex. *erectus*, p. 199
Basal projection of left clasper rather slender and acute, *e.g.*, *canadensis*. . . 4
4. Right clasper with dorsal process extending half the length of ventral process. *canadensis*, p. 193
Right clasper with dorsal process not over one-third the length of ventral process. *brevifurcatus*, p. 194
5. Basal shoulder of right clasper without angulate projection, *e.g.*, *schotti* 6
Basal shoulder of right clasper with a thumblike or angulate projection, *e.g.*, *penipecten*. 9
6. Basal shoulder of right clasper with a rounded hump. *schotti*, p. 197
Basal shoulder of right clasper without rounded hump, *e.g.*, *husseyi*. . . 7
7. Genital segment with a distinct tubercle above base of left clasper. *husseyi*, p. 199
Genital segment without tubercle above base of left clasper, *e.g.*, *obtectus*. 8
8. Base of left clasper with angulate shoulder. *obtectus*, p. 199
Base of left clasper without angulate shoulder. *salicis*, p. 196
9. Tip of right clasper hooked downward. *penipecten*, p. 199
Tip of right clasper projecting straight or curved upward, *e.g.*, *buenoi*, *spicatus*. 10
10. Tip of right clasper straight, *e.g.*, *buenoi*. 11
- Tip of right clasper curved upward, *e.g.*, *spicatus*. 12
11. Base of left clasper convexly rounded. *buenoi*, p. 197
Base of left clasper sinuate. *nigricollis*, p. 197
12. Basal shoulder of right clasper with a slender fingerlike process projecting vertically, *e.g.*, *spicatus*. 13
Basal shoulder of right clasper with a more angulate process, *e.g.*, *lacunosus*. 14
13. Basal fingerlike process of right clasper tapering very little on apical half. *spicatus*, p. 196
Basal fingerlike process tapering gradually from base to apex. *cortitectus*, p. 196
14. Thumblike process at middle of right clasper sloping away from tip of clasper. *lacunosus*, p. 197
Thumblike process at middle of right clasper vertical in position, *e.g.*, *onustus*. 15
15. Wall of genital segment with a prominent, blunt tubercle at a point well above base of left clasper. *arundinicola*, p. 198
Wall of genital segment without tubercle above base of left clasper. . . 16
16. Apical half of right clasper with sides parallel to point near apex. *angustulus*, p. 197
Apical half of right clasper tapering gradually from base, *e.g.*, *onustus*. . 17
17. Length of right clasper beyond base of dorsal process equal to four times the width of base at this point. *onustus*, p. 194
Length of right clasper beyond base of dorsal process not over two and one-half times the width of base at this point. *neglectus*, p. 194
18. Corium with distinct black or dark fuscous mark across apical area, this mark extending obliquely from radius to inner apical angle of corium; dark area never broken with numerous, minute, light-colored spots. 19
Corium without distinct black mark across apical area; sometimes with a fuscous area, but this dark color broken by numerous, paler spots, or, if not, then dark-colored area on radius distinctly darker than oblique infuscation on corium. 28

19. Pronotal disk uniformly deep black, with a narrow, pale area at basal margin; scutellum yellowish, with an oblique, black mark on either side of median line beginning at middle of disk and extending to margin at a point slightly beyond middle. **nigricollis**, p. 197
Pronotal disk pale grayish to very deep gray, always paler on middle and never deep black. 20
20. Scutellum with distinct black mark on either side of apical half extending from lateral margin obliquely cephalad to near middle of disk. 21
Scutellum with black spot at margin on either side of apical half, this mark scarcely longer than broad, at most not extending more than half way to middle of disk. 24
21. Pale areas at lower margins of propleura extending upon sides of sternum; hind femora mostly black except at base; pale spots small, largest spot not wider than narrow pale band located slightly beyond middle of apical half. **husseyi**, p. 199
Pale areas at lower margins of propleura not extending upon sides of sternum. 22
22. Hind femora of female with large irregular pale spots on anterior face, these spots connected by a longitudinal, almost colorless bar which does not attain subapical pale band; length 7.30-7.60. . . **onustus**, p. 194
Hind femora of female with small spots; without distinct, longitudinal pale bar on anterior face. 23
23. Membrane with infuscation on central area tending to separate into small specks; front of head with black, transverse striations on either side of median line. **neglectus**, p. 194
Membrane more uniformly infuscated, color not separating into small specks; front of head without distinct, black striations even when hemelytra are very dark; reddish lines usually evident on frons. **spicatus**, p. 196
24. Hind femora with distinct white band placed slightly beyond middle of apical half, and usually with large, light-colored spots near middle. . . . 25
Hind femora without distinct white band on apical half; light-colored spots usually rather small. 27
25. Second antennal segment black except at base, dorsal aspect not distinctly paler; scutellum and clavus clothed with erect black hairs intermixed with prominent white, silky pubescence. **buenoi**, p. 197
Second antennal segment distinctly almost white or yellowish on dorsal aspect, darker at apex and on area bordering light-colored basal annulus. 26
26. Propleura mostly black, only lower margin white; tibiae with distinct light-colored and black bands. **canadensis**, p. 193
Propleura mostly pale, with a longitudinal, black ray crossing coxal cleft; tibiae light to dusky, not banded. **arundinicola**, p. 198
27. Corium with very heavy, triangular black mark set obliquely across apex; hind femora with two or three large white spots on dorsal surface; cuneus usually reddish. . **erectus**, p. 199
Corium with light, almost interrupted fuscous mark set obliquely across apex; hind femora with small white spots only; cuneus rarely if ever reddish. **brevifurcatus**, p. 194
28. Apical half of corium distinctly greenish; second antennal segment black with pale annulus at base. **penipecten**, p. 199
No part of corium distinctly green. . . . 29
29. Hemelytra more brownish than black; dark color on apical area of corium and on middle of clavus broken into small spots. 30
Hemelytra sometimes brownish, but usually black; dark area not distinctly broken into small spots. . . . 31
30. Second antennal segment uniformly black except for pallid annulus at base; vertex narrow, its width less than dorsal width of an eye. **schotti**, p. 197
Second antennal segment chiefly yellowish brown, black at apex and on area bordering pallid basal annulus; vertex wider, equal to dorsal width of an eye. **salicis**, p. 196

31. Front and vertex almost colorless to yellowish, not distinctly marked with black, rarely with short, vague, red lines near each eye; scutellum almost colorless to yellowish; a small rounded, brown to fuscous spot located near either margin at middle of apical half. **angustulus**, p. 197
Front and vertex marked with transverse black lines. 32
32. Scutellum chiefly very dark brown, with irregular paler spots; a median, slender, pale line present, this line irregularly invaded by the darker color. **obtectus**, p. 199
Scutellum chiefly pale to grayish, but with black mark at either side on apical half. 33
33. Corium with a longitudinal pale area that extends upon base of cuneus without interruption; a black line paralleling radius but, at apex, curving outward to fracture.
. **lacunosus**, p. 197
Apical half of corium rather distinctly darkened with fuscous, scarcely paler than dark marks along radius
. **cortitectus**, p. 196

Phytocoris canadensis Van Duzee

Phytocoris eximius Knight (1920, p. 51) not Reuter.

Phytocoris canadensis Van Duzee (1920, p. 346).

MALE.—Length 5.70, width 2.00. Head width 0.94, vertex 0.35; yellowish, frequently tinged with reddish and marked with black. Rostrum, length 2.40, attaining basal margin of genital segment. Antennae, first segment, length 1.28, yellowish, with irregular fuscous mottling, bearing five or six long, almost colorless setae; second, 2.77, chiefly fuscous, paler at base for a space of 0.17, infuscation distinctly paler on dorsal aspect of middle third, but becoming darker toward either end; third, 1.60, chiefly dark fuscous, pale at base for a space of 0.14, with another very narrow, light-colored space at apex; fourth, 1.25, black. Pronotum, length 0.91, width at base 1.60, disk light yellow brown to fuscous, central area frequently grayish green, paler anteriorly, narrow light-colored area at basal margin, and six black points which frequently fuse located near basal margin; disk distinctly hairy, longest hairs at anter-

ior angles, hairs taking color of surface from which they arise; propleura black, with lower margins and a mark extending across base of coxal cleft almost white. Scutellum dull yellow brown, with a black mark present on either side near apex. Hemelytra clothed with prominent yellowish pubescence intermixed with groups of white, deciduous woolly hairs, but dark hairs arising from dark areas; greenish gray to fuscous; base, middle and a triangular spot just before cuneus of corium, and several spots on embolium, paler and more or less translucent. Tip of embolium, an oblique, nearly triangular patch lying just inside of radius at apex of corium, and area bordering apical two-thirds of claval suture, fuscous to black. Cuneus translucent gray, with apex, a small point along inner margin, and a second near basal angle, black; paler parts usually showing some brownish or reddish coloration. Membrane fuscous, with a large, almost colorless area just beyond small areole and tip of cuneus, this area divided by a small fuscous spot which touches the margin; central area more or less invaded by a paler streak; cubitus distinctly pallid at apex of areoles. Legs, coxae and bases of femora pallid; front and intermediate femora with a series of irregular reddish brown to fuscous marks; posterior femora chiefly black with many large and small, light-colored spots; pale patches most numerous and tending to coalesce on inner side; an irregular, light-colored annulation located a short space before apex and a second one situated nearer middle, but latter annulus interrupted on outside. Tibiae with fuscous and pale annuli; hind pair infuscated and with irregular pallid spots; a broad, pale area on basal one-third; spines almost colorless to brownish. Genital claspers and flagellum, fig. 176, distinctive for species.

FEMALE.—Length 5.70, width 2.05. Usually very similar to male in coloration; imperfect or poorly colored specimens can never with certainty be distinguished from females of closely related species.

HABITS.—This species occurs on a number of plants in various situations; it is largely if not wholly, predacious. Collected in Illinois on hornbeam (*Carpinus caroliniana*), gooseberry (*Ribes* sp.) and buttonbush (*Cephalanthus occidentalis*).

KNOWN DISTRIBUTION.—Connecticut, Georgia, Illinois, Indiana, Iowa, Kansas,

Maine, Massachusetts, Michigan, Minnesota, Missouri, New Jersey, New York, North Carolina, Ohio, Ontario, Pennsylvania, South Dakota.

Illinois Records.—Eight males and 15 females, collected June 14 to Sept. 27, are from Antioch, Argo, Channel Lake, Danville, De Soto, Dolson, Galena, Harrisburg, Herod, Karnak, Lawrenceville, Marshall, Rock Island, Seymour, Shawneetown, Vienna. Blatchley (1926*b*, p. 720) records the species from Maywood under the name *eximius* Reuter.

Phytocoris brevifurcatus Knight

Phytocoris brevifurcatus Knight (1920, p. 53).

This species is very similar to *canadensis* Van Duzee, but lacks the heavy, oblique, fuscous mark at the apex of the corium; the second antennal segment is darker fuscous on the middle third; the head and pronotum are distinctly grayish green on the paler parts; the posterior femora have smaller pale spots and are not distinctly banded with pale yellow brown.

MALE.—Length 5.80, width 2.14. Head width 0.95, vertex 0.34. Rostrum, length 2.51, reaching to seventh abdominal sternite. Antennae, first segment, length 1.21; second, 2.55; third, 1.47; fourth, 1.34. Pronotum, length 0.91, width at base 1.69. Genital claspers distinctive for species, fig. 176.

FEMALE.—Length 5.80, width 2.20. Head width 0.96, vertex 0.41. Antennae, first segment, length 1.36; second, 2.77; third, 1.47; fourth, 1.21. Pronotum, length 0.91, width at base 1.70.

KNOWN DISTRIBUTION. — Illinois, New York, Ontario.

Illinois Record. — HORSESHOE LAKE: July 11, 1935, DeLong & Ross, 1 ♂.

Phytocoris neglectus Knight

Phytocoris neglectus Knight (1920, p. 54).

This resembles *canadensis* Van Duzee, but the second antennal segment is uniformly black with a white annulation at the base, the middle tibiae have an apical white band and the infuscation at the middle of the membrane tends to form small specks.

MALE.—Length 6.20, width 2.20. Head width 0.99, vertex 0.32. Rostrum, length 2.60, extending to fifth abdominal sternite. Antennae, first segment, length 1.17, black,

with several white, smooth spots; second, 2.68, black, a narrow white annulus at base; third, 1.38, black, white at base; fourth, 1.05, black. Pronotum, length 0.91, width at base 1.75. Genital claspers and flagellum distinctive for species, fig. 176.

FEMALE.—Length 6.00, width 2.30. More robust than male, but very similar in color and pubescence.

HABITS.—I have collected this species most frequently on the bark of apple trees where both nymphs and adults fed on psocids. It has, also, been collected on the bark of other trees and is probably predacious on soft-bodied insects living in such situations. In New York the species was collected from June to October, which indicates two generations for the season.

KNOWN DISTRIBUTION. — Illinois, Iowa, Maine, Massachusetts, Michigan, Minnesota, Mississippi, New Hampshire, New York, Ontario, South Carolina, South Dakota, Washington.

Illinois Records. — ELIZABETHTOWN: May 27-31, 1932, H. L. Dozier, 1 ♂. FAIRFIELD: June 12, 1934, DeLong & Ross, 1 ♂. GALENA: June 28, 1935, DeLong & Ross, 1 ♂. KEITHSBURG: June 15, 1932, H. L. Dozier, 1 ♂. SHAWNEETOWN: June 23, 1936, DeLong & Ross, 1 ♀. URBANA: June 13, 1885, 1 ♂.

Phytocoris onustus Van Duzee

Phytocoris onustus Van Duzee (1920, p. 344).

MALE.—Length 6.80, width 2.50. Head width 1.08, vertex 0.35; head pale yellowish; oblique lines on frons, base and middle of tylus, lora, and base of jugum, fuscous to black. Rostrum, length 3.16, reaching fifth abdominal sternite. Antennae, first segment, length 1.41, black, with four or five white, smooth spots and a few yellowish bristles; second, 3.33, black, a narrow white annulus at base; third, 1.60, black, narrow white area at base; fourth, 1.29, black. Pronotum, length 1.12, width at base 2.00. Clothed with erect, short, black hairs intermixed with a moderate amount of recumbent, pale yellowish, silky pubescence. General color fuscous to black over a pale yellowish, ground color; propleura, except lower margin, black; lateral margins and basal band of pronotal disk, black; basal edge white; scutellum yellowish, a black marginal spot on either side on apical half; hemelytra

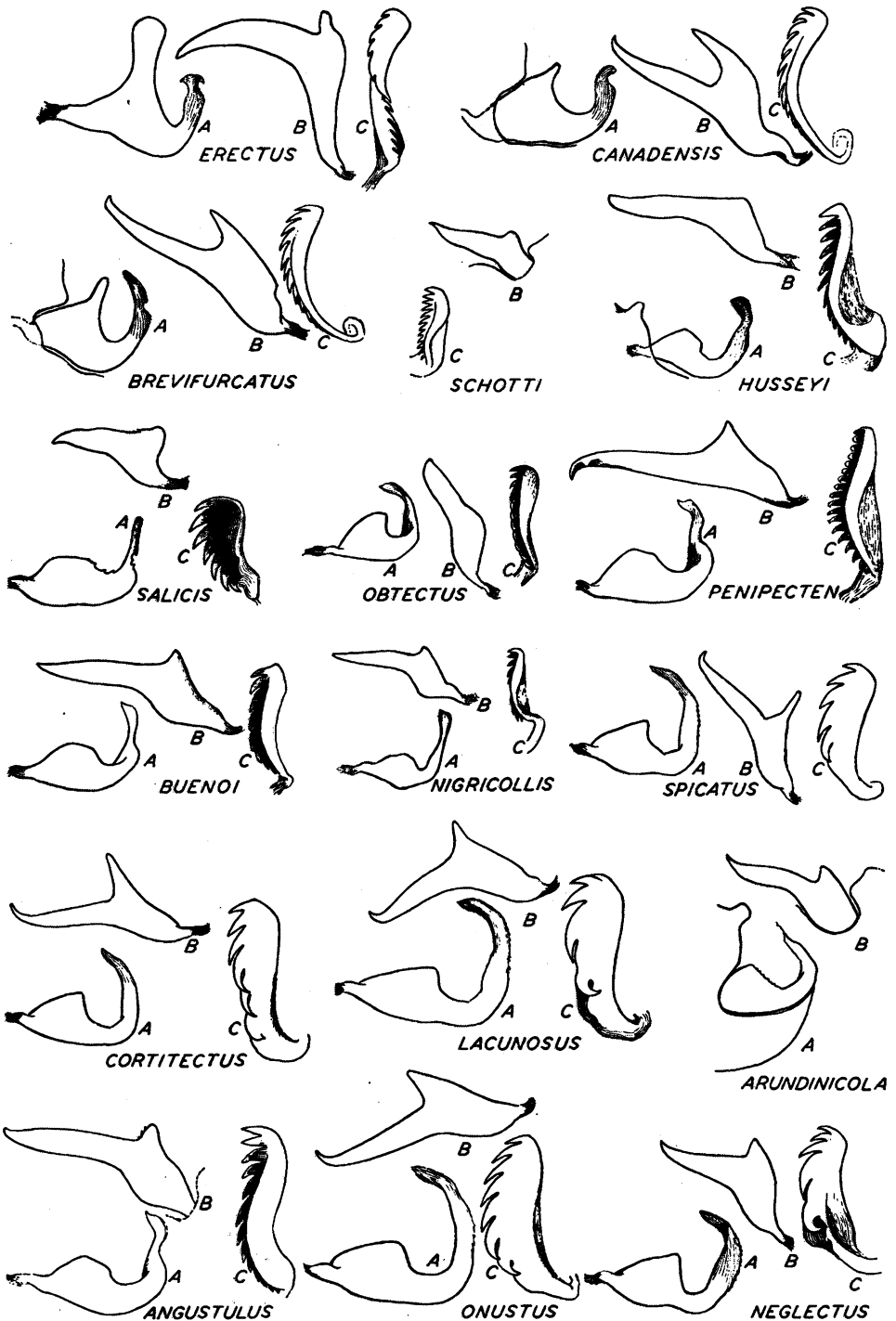


Fig. 176.—Male genital claspers of *Phytocoris*, Group II. A, left clasper, lateral aspect; B, right clasper, lateral aspect; C, flagellum.

shaded with very dark brown spots on embolium; an area at middle, and a triangular patch at outer apical angle of corium, pale yellowish and translucent; cuneus largely black with yellowish spots and a variable yellowish area at base. Membrane fuscous with a pale marginal spot on either side extending irregularly toward middle. Legs colored almost as in *canadensis* Van Duzee, but hind femora with large irregular pallid spots on anterior face, these spots connected by a longitudinal pale bar which does not attain subapical pale band. Genital claspers and flagellum distinctive for species, fig. 176.

FEMALE.—Length 7.10, width 2.64. Larger and more robust than male, but very similar in coloration.

HABITS.—I have collected this species most frequently on the bark of hickory trees (*Carya* sp.) in shaded, humid surroundings. The color of this mirid matches the bark so closely that it is difficult to see when it is crouching in crevices on the trunk of the tree. Predacious habits are indicated.

KNOWN DISTRIBUTION.—Georgia, Illinois, Maine, Massachusetts, New Hampshire, New York, Ontario, Pennsylvania.

Illinois Record.—NORTHERN ILLINOIS: July, 2 ♀.

Phytocoris cortitectus Knight

Phytocoris cortitectus Knight (1920, p. 55).

MALE.—Length 6.00, width 2.00. Head width 1.04, vertex 0.32. Rostrum, length 2.72, reaching to sixth abdominal sternite. Antennae, first segment, length 1.28, black, with eight or nine smooth, white spots; second, 2.94, fuscous to black, with a yellowish dorsal spot and a narrow white annulus at base; third, 1.64, black, yellowish at base; fourth, 1.21, black. Pronotum, length 0.86, width at base 1.60; calli whitish; disk dusky to fuscous; four black points located near posterior margin. Clothed with simple, black pubescence intermixed with tufts of silvery, silky hairs. Hemelytra translucent and slightly darkened, irregularly shaded with fuscous; without a strong, oblique, fuscous mark across apical area of corium; cuneus pale, translucent, with apical half infuscated; membrane fuscous, central area varied with lighter color. Legs pallid and darkened with fuscous; femora with numerous, small, almost colorless spots, hind pair with a well-defined, oblique, pallid band at middle

of apical half; middle tibiae with an almost colorless band at apex.

FEMALE.—Length 6.20, width 2.16. Head width 1.01, vertex 0.39. Antennae, first segment, length 1.43; second, 3.11; third, 1.71; fourth, 1.43. Pronotum, length 0.95, width at base 1.65. More robust than male, but very similar in color and pubescence.

HABITS.—I collected specimens of this species only on the trunks of elm trees (*Ulmus* sp.) where the adults were well concealed as they crouched in crevices of the bark.

KNOWN DISTRIBUTION.—Illinois, New Hampshire, New York, Ontario.

Illinois Record.—ANTIOCH: July 5-7, 1932, T. H. Frison, 1 ♂.

Phytocoris spicatus Knight

Phytocoris spicatus Knight (1920, p. 55).

The coloration of this species is very similar to that of *neglectus* Knight, but the membrane is more uniformly infuscated.

MALE.—Length 6.00, width 2.00. Head width 1.04, vertex 0.29; frons with reddish lines. Rostrum, length 2.81, reaching sixth abdominal sternite. Antennae, first segment, length 1.38, black, with five or six white, smooth spots; second, 2.85, black, a narrow white annulus at base; third, 1.56, black, narrow white area at base; fourth, 1.12, black. Pronotum, length 0.91, width at base 1.73. Clothed with fuscous to black, simple pubescence intermixed with patches and tufts of silvery and some golden, silky pubescence. Genital claspers and flagellum distinctive for species, fig. 176.

FEMALE.—Length 6.30, width 2.20. More robust than male, but very similar in color and pubescence.

KNOWN DISTRIBUTION.—Illinois, Iowa, Maine, Maryland, Massachusetts, Minnesota, North Carolina, New York.

Illinois Record.—GALESBURG: 1 ♂.

Phytocoris salicis Knight

Phytocoris salicis Knight (1920, p. 56).

MALE.—Fig. 177. Length 6.00, width 2.12. Head width 0.97, vertex 0.35; head yellowish; oblique lines on frons and mark on middle of tylus reddish. Rostrum, length 2.73, reaching seventh abdominal sternite. Antennae, first segment, length 1.27, black, with three or four large, white, smooth spots; second, 2.85, dusky yellow to black,

basal annulus white; third, 1.55, black, pallid at base; fourth, 1.16. Pronotum, length 0.99, width at base 1.73. General coloration dusky to brownish; spots on base of pronotal disk, tip of clavus, apex of embolium and of cuneus, black; fuscous color-

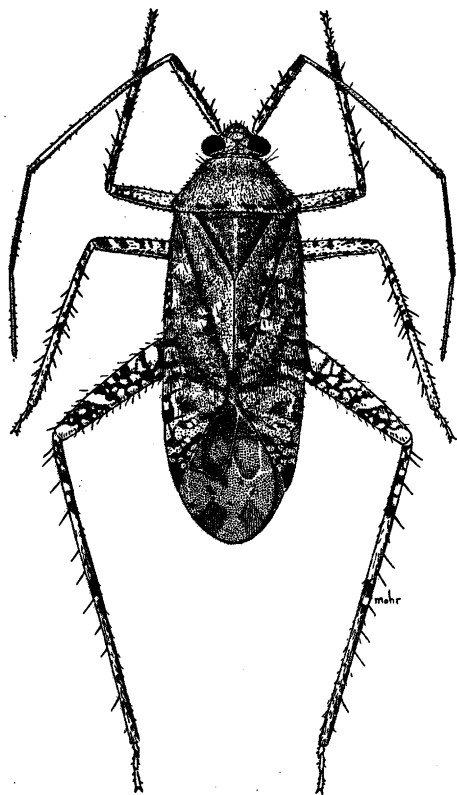


Fig. 177.—*Phytocoris salicis*, ♂.

ation of hemelytra interspersed with pallid and brownish marks and dots; membrane clear, marked with patches of fuscous; cubitus white around apex of larger areole. Legs pallid; apical half of femora marked with reddish brown; hind pair chiefly dark brown, with numerous white spots, a larger white spot forming an incomplete subapical band; tibiae banded with fuscous; apices of middle pair pallid; hind pair chiefly dark fuscous. Dorsum clothed with pale to brownish, simple pubescence thickly intermixed with silvery to golden yellow, silky hairs. Genital claspers and flagellum distinctive for species, fig. 176.

FEMALE.—Length 6.30, width 2.30. Antennae, first segment, length 1.34, chiefly white, irregularly marked with reddish

brown; second, 2.98, yellowish brown, more fuscous at apex and next to pallid base; third, 1.47, black, pallid at base; fourth, 1.12, black. More robust than male and usually lighter in color.

HABITS.—Breeds on willow (chiefly *Salix nigra*) where the species appears to be predacious on soft-bodied insects.

KNOWN DISTRIBUTION.—Connecticut, District of Columbia, Illinois, Iowa, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, New Hampshire, New Jersey, New York, North Dakota, Ohio, Ontario, Pennsylvania, South Dakota.

Illinois Records.—Seventeen males and 15 females, taken June 11 to July 9, are from Alton, Antioch, Elizabeth, Galena, Galesburg, Golconda, Monticello, Savanna, Seymour, Waukegan.

Phytocoris lacunosus Knight

Phytocoris lacunosus Knight (1920, p. 56).

Not taken in Illinois; known from Minnesota and New York. Collected on the bark of hornbeam (*Carpinus caroliniana*).

Phytocoris angustulus Reuter

Phytocoris angustulus Reuter (1909, p. 29).

Known from New York, North Carolina, Nova Scotia, Vermont; not yet collected in Illinois.

Phytocoris buenoi Knight

Phytocoris buenoi Knight (1920, p. 57).

Not taken in Illinois; known from Massachusetts, New York, Ontario. Adults and nymphs have been collected on Norway spruce (*Picea excelsa*).

Phytocoris nigricollis Knight

Phytocoris nigricollis Knight (1923*d*, p. 636).

Known only from New Hampshire and North Carolina.

Phytocoris schotti Knight

Phytocoris schotti Knight (1926*g*, p. 162).

The coloration of this species is suggestive of that of *salicis* Knight, but the dark areas are black rather than brown; the apical half of the corium is largely pallid, except near the inner margin, and is without an oblique infuscation; the cuneus is almost

entirely colorless, but the apex and two spots on the inner margin are black, while the outer margin is marked with red. The membrane is marbled with fuscous, and the areoles are chiefly dark fuscous, with white veins at apices. The legs are marked much as in *salicis*, but the black color on the femora is irregularly broken by two or three large, and many small, white spots.

MALE.—Length 5.20, width 1.90. Head width 1.00, vertex 0.26; frons with five or six oblique, reddish lines on either side of median line; base of tylus and spot on either side of basal half, dorsal margins of juga and lora, and slender median line on apical half of tylus, reddish. Rostrum, length 2.34, extending to fifth abdominal sternite. Antennae, first segment, length 0.97, very dark brown, with several small, smooth white spots on dorsal aspect, spines pale; second, 2.30, black, narrow pallid area at base; third, 1.23, black, pale at base and at extreme tip; fourth, 0.91, black. Pronotum, length 0.84, width at base 1.50; propleura black; lower margin, and spot at top of coxal cleft, white; the white of lower margin continued as a ray upon black sternum. Clothed with fuscous to black, simple pubescence intermixed with white, silky pubescence; more yellowish hairs on head and embolium than black ones. Genital claspers distinctive for species, fig. 176.

KNOWN DISTRIBUTION. — Illinois and New Jersey.

Illinois Record.—**WHITE HEATH:** Sept. 10, 1929, C. C. Goff, 1 ♂, KC.

Phytocoris arundinicola new species

This species is distinguished from allied ones by its general pale gray color, with a conspicuous black spot on the inner apical angle of the corium; it also is distinguished by the pale and black, unspotted, first antennal segment. The structure of the male genital claspers is distinctive, fig. 176; the genitalia are apparently nearest in form to those of *buanoi* Knight and *schotti* Knight.

MALE.—Length 5.60, width 2.16. Head width 0.95, vertex 0.35; head white to yellowish, with incomplete lines on frons; marks on middle and on median line at apex, basal half of lora, and dorsal half of bucculae, reddish brown to fuscous; a pair of marks, beginning on collum and extending across collar and between calli, distinctly red orange. Rostrum, length 2.64, extend-

ing to sixth abdominal sternite. Antennae, first segment, length 1.16, tapering to become more slender on apical half, chiefly white, black on anterior aspect, with only one or two small, pallid spots cutting into edge of dark color, setae short, brownish; second, 2.51, chiefly yellowish brown, black at apex and next to pallid basal annulus; third, 1.34, yellowish, fuscous apically; fourth, 0.73. Pronotum, length 0.88, width at base 1.60; pale yellowish to dusky; calli pallid; lower margin of propleura and area on coxal cleft whitish, a black ray crossing lower margin of coxal cleft and flaring out at basal margin; basal edge of disk white, bordered by four black points which are often connected by dark color. Dorsum clothed with pale to brownish, simple pubescence sparsely intermixed with more recumbent, silvery, silky pubescence. Scutellum usually pale yellowish, sometimes dusky; a small fuscous spot indicated on either margin at middle of apical half. Hemelytra dusky gray, with an irregular black area on middle of claval vein and a subtriangular one on inner apical angle of corium; embolium uniformly yellowish gray, except for darkened extreme tip; cuneus with apex and spot on inner margin, and spot on inner margin of paracuneus, fuscous to black. Membrane uniformly pale fuscous, scarcely paler near apex of cuneus; cubitus white around apex of areoles, fuscous where it separates areoles. Legs pale yellowish, tibiae without dark bands; spines yellowish to dark brown; hind pair with black microsetae; femora dark brown to black, with numerous, minute, pallid spots; hind pair with two rather distinct pallid bands on apical half; tarsi fuscous to black. Venter almost white to yellowish; lateral line fuscous; sides of genital segment fuscous. Genital claspers distinctive for species, fig. 176.

FEMALE.—Length 5.60, width 2.16. Head width 0.99, vertex 0.41. Antennae, first segment, length 1.21; second, 2.73; third, 1.55; fourth, 1.38. Pronotum, length 0.95, width at base 1.64. Very similar to male in color and pubescence, but light areas perhaps more extensive.

HABITS.—Breeds on switch cane (*Arundinaria tecta*); doubtless predacious.

Holotype, male.—Vienna, Ill.: July 10, 1935, DeLong & Ross.

Allotype, female.—Same data as for holotype.

Paratypes.—ILLINOIS.—VIENNA: Same

data as for holotype, 1 ♂, 3 ♀; June 14, 1934, DeLong & Ross, 3 ♂.

Phytocoris husseyi Knight

Phytocoris husseyi Knight (1923*d*, p. 639).

Not taken in Illinois; known only from Minnesota and Ohio.

Phytocoris erectus Van Duzee

Phytocoris erectus Van Duzee (1920, p. 345).

MALE.—Length 5.40, width 2.00. Head width 0.94, vertex 0.36. Rostrum, length 2.51, extending to fifth abdominal sternite. Antennae, first segment, length 1.16, black, basal two-thirds with white, smooth spots so large that black ground color is reduced to a network; second, 2.50, black, dorsal aspect partly yellowish brown, white annulus at base; third, 1.28, black, pallid at base and extreme tip; fourth, 1.20, black. Pronotum, length 0.87, width at base 1.56. Dorsum clothed with simple, fuscous pubescence intermixed with a moderate amount of silvery, silky pubescence. General color nearly white to yellowish, shaded with fuscous. Basal submargin of pronotal disk with the usual four black points; scutellum with oblique black marks on apical half; apical area of corium with heavy, very dark brown subtriangular mark, and a contrasting pallid spot just behind which joins with pallid basal half of cuneus; paracuneus reddish; membrane fuscous, with a paler spot near tip of cuneus and a smaller one just beyond on margin; cubitus white about tip of larger areole. Hind femora very dark brown, with numerous small and some large white spots and a rather distinct pallid annulus slightly beyond middle of apical half; tibiae banded with pallid and black, middle pair with pale band on apex. Genital claspers and flagellum distinctive for species, fig. 176.

FEMALE.—Length 5.30, width 2.10. More robust than male, but very similar in color and pubescence.

HABITS.—Predacious; Illinois specimens collected on willow (*Salix* sp.), cypress (*Taxodium distichum*) and hornbeam (*Carpinus caroliniana*).

KNOWN DISTRIBUTION.—Alabama, District of Columbia, Illinois, Iowa, Louisiana, Maine, Maryland, Michigan, Minnesota, Mississippi, Missouri, New Hampshire, New York, Ohio, Ontario, Utah.

Illinois Records.—Twenty-seven males

and 7 females, taken June 13 to Sept. 6, are from Algonquin, Antioch, Browns, Chicago, Duquoin, Eichorn, Galesburg, Harrisburg, Havana, Homer Park, Kankakee, Karnak, Mahomet, Maywood, Metropolis, Monticello, Pekin, Pulaski, Urbana, Vienna, White Heath.

Phytocoris penipecten Knight

Phytocoris penipecten Knight (1920, p. 58).

Not taken in Illinois; known only from Alabama, Connecticut, Louisiana, Massachusetts.

Phytocoris obtectus Knight

Phytocoris obtectus Knight (1920, p. 58).

Not taken in Illinois; known only from New York and Ohio.

Group III

The species of this group are apparently all phytophagous.

KEY TO SPECIES

1. Clavus and corium rather uniformly colored..... 2
 Clavus and corium not uniformly colored; marked with fuscous, or reddish brown to fuscous, with paler spots..... 4
2. Hemelytra reddish; embolium and cuneus translucent and yellowish.....
 **mundus**, p. 201
 Hemelytra yellowish to fulvous, or translucent and brownish..... 3
3. Hemelytra yellowish to fulvous; femora dusky yellow with numerous small, pale dots..... **fulvus**, p. 201
 Hemelytra dusky brown, translucent; femora reddish brown, with conspicuous white spots.....
 **uniformis**, p. 201
4. Hemelytra pale to yellowish; corium with an oblique, fuscous mark on basal half and a second one on inner apical angle; cuneus pale, apex and two spots on inner margin black....
 **junipericola**, p. 201
 Hemelytra marked otherwise..... 5
5. Pronotal disk with black spots on basal margin; apical area of corium with strong fuscous marks.....
 **exemplus**, p. 201

- Pronotal disk without black spots. 6
- 6. Light-colored dots and spots on hind femora uniting to form a subapical band or transverse pale mark. 7
 - Dots on hind femora not forming a distinct light-colored band or large mark. 8
- 7. Cuneus with a narrow white area along outer margin and two black dots on this white edge. **angustifrons**, p. 201
 - Cuneus with outer margin reddish brown and marked with three or four white dots. **pinicola**, p. 201
- 8. Length of second antennal segment twice as great as width of head. **diversus**, p. 200
 - Length of second antennal segment less than twice width of head. **conspersipes**, p. 201

Phytocoris diversus Knight

Phytocoris diversus Knight (1920, p. 60).

The general aspect of this species is suggestive of *fulvus* Knight, but the light, yellow brown coloration on the inner apical half of the corium and the cuneus is more distinct.

MALE.—Length 5.00, width 1.70. Head width 0.97, vertex 0.37. Rostrum, length 2.03, reaching fifth abdominal sternite. Antennae, first segment, length 0.71, greenish yellow, darkened with deep brownish, with five or six smooth, white spots on dorsal side, and beset with 9 or 10 dark setae; second, 2.05, dark fuscous, paler on basal half; third, 1.05, black; fourth, 0.85, black. Pronotum, length 0.78, width at base 1.36. Clothed with brownish, simple hairs intermixed with silvery, silky pubescence. Head, pronotum and ventral parts greenish to yellowish; base of pronotum, sides of tylus, dorsal margins of juga and lora, base of head, indistinct striae on front, sternum, and sides of venter, tinged with reddish brown; femora, except at bases, and tibiae, deep brownish, with many light to white spots; hind femora with rather large spots on dorsal aspect. Genital claspers and flagellum distinctive for species, fig. 178.

FEMALE.—Length 4.80, width 1.73. Very similar to male in color and pubescence.

HOST PLANT. — White pine (*Pinus strobus*).

KNOWN DISTRIBUTION.—Illinois, Maine, Minnesota, New Hampshire, New York.

Illinois Records.—STARVED ROCK STATE

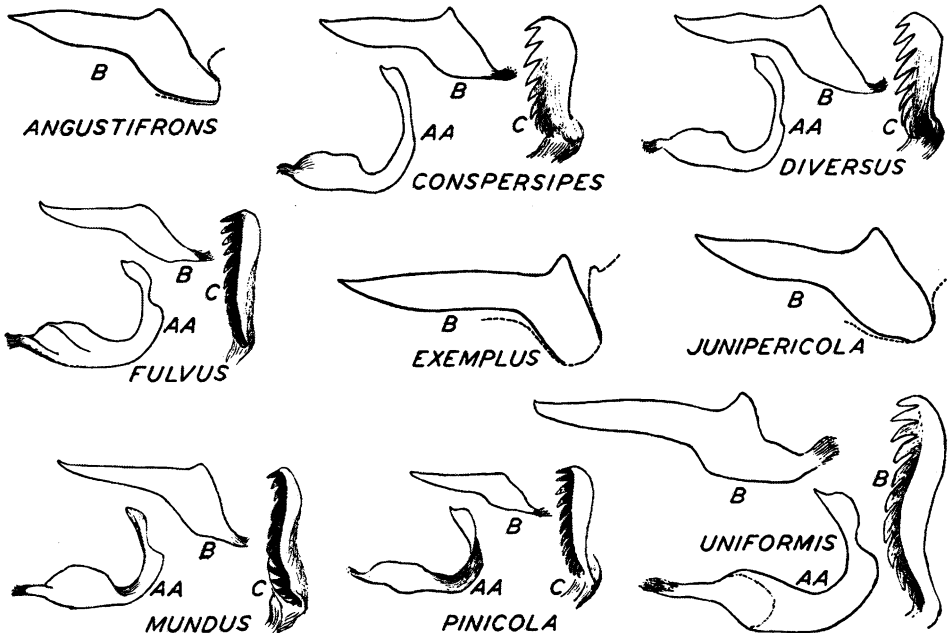


Fig. 178.—Male genital claspers of *Phytocoris*, Group III. AA, left clasper, dorsal aspect; B, right clasper, lateral aspect; C, flagellum.

PARK: July 14, 1932, on *Pinus strobus*, Dozier & Park, 1 ♂, 19 ♀; Sept. 17, 1935, DeLong & Ross, 1 ♂. WHITE PINES FOREST STATE PARK: July 12, 1934, DeLong & Ross, 2 ♂, 3 ♀.

Phytocoris mundus Reuter

Phytocoris mundus Reuter (1909, p. 18).

Not taken in Illinois; known from District of Columbia, Maryland, New Jersey, Pennsylvania, Virginia. Feeds on Virginia pine (*Pinus virginiana*).

Phytocoris fulvus Knight

Phytocoris fulvus Knight (1920, p. 59).

Not yet taken in Illinois; known from Maine, New York, Ontario, Pennsylvania. Occurs on white pine (*Pinus strobus*).

Phytocoris uniformis Knight

Phytocoris uniformis Knight (1923d, p. 643).

Originally described from Long Island, New York, and the coastal area of Massachusetts. This species has subsequently been recorded from Maryland, Mississippi, North Carolina, Virginia, but has not yet been taken in Illinois. It has been collected on pitch pine (*Pinus rigida*), which possibly is the normal host.

Phytocoris pinicola Knight

Phytocoris pinicola Knight (1920, p. 59).

Not taken in Illinois; specimens known from Connecticut, Massachusetts, Minnesota, Mississippi, New Jersey, New York. Feeds on pines (*Pinus resinosa* and *P. sylvestris*).

Phytocoris angustifrons Knight

Phytocoris angustifrons Knight (1926g, p. 164).

Not taken in Illinois; known only from Florida, Louisiana, Mississippi. Collected on pine (*Pinus* sp.).

Phytocoris exemplus Knight

Phytocoris exemplus Knight (1926g, p. 163).

Known at present only from Louisiana, but should be found wherever the cypress (*Taxodium distichum*) grows; that is the tree on which it occurs.

Phytocoris conspersipes Reuter

Phytocoris conspersipes Reuter (1909, p. 22).

Not taken in Illinois; known from District of Columbia, Maryland, New Jersey, North Carolina, Pennsylvania, South Carolina, Virginia. Feeds on Virginia pine (*Pinus virginiana*).

Phytocoris junipericola Knight

Phytocoris junipericola Knight (1927b, p. 16).

Known from District of Columbia, Indiana, Maryland; not yet taken in Illinois. Breeds on red cedar (*Juniperus virginiana*).

Group IV

The species of this group are phytophagous.

KEY TO SPECIES

1. Pronotal disk frequently red but without four distinct, reddish vittae on a paler background..... 2
 Pronotal disk with four orange or red vittae on a paler background..... 8
2. Pronotal disk with four black spots on basal submargin; scutellum usually uniformly pale, sometimes with indistinct fuscous dots forming a spot at either side of apical half.....
 **quercicola**, p. 202
 Pronotal disk without four distinct black spots on basal submargin; scutellum usually with orange or red at either side on apical half.... 3
3. Scutellum unmarked, uniformly yellowish..... 4
 Scutellum marked with reddish or fuscous..... 5
4. Hemelytra rather uniformly fusco-reddish to roseate; embolium and outer margin of scutellum paler....
 **taxodii**, p. 203
 Hemelytra yellow; clavus and basal one-third of corium dark reddish; cuneus red with many minute, clear spots..... **luteolus**, p. 209
5. Pronotum chiefly red, more area red than pale or fuscous..... 6
 Pronotum with more area pale or fuscous than red..... 7
6. Hemelytra with many small, distinct, white spots; calli darkened with fuscous....
 **confluens**, p. 205

Hemelytra with only indistinct, white spots, nearly uniformly deep orange red; calli pale. **puella**, p. 207

- 7. Pronotal disk with base and lateral margins dark fuscò-reddish; scutellum yellow, a red mark at either side on apical half but without vittae at middle of base. **infuscatus**, p. 204

Pronotal disk chiefly pale, not distinctly darkened laterally or at base; base of scutellum with an orange-colored vitta on either side of median line, these frequently extending to join with orange mark at either side on apical half. **olseni**, p. 205

- 8. Second antennal segment almost colorless, with a slender, black line on anterior aspect; embolium and outer half of corium green; clavus greenish to fuscous, with a rather large, irregular, reddish blotch on middle and a smaller one on basal half. **tibialis**, p. 205

Second antennal segment without a slender, black line on anterior aspect; embolium and outer half of corium marked with reddish. 9

- 9. Hemelytra with a yellow, triangular area just before cuneus; clavus, basal area of corium and embolium, and cuneus, bright red but with many small, paler markings. **venustus**, p. 206

Hemelytra and apical area of corium marked with reddish; or, if not, then basal half of corium not bright red. 10

- 10. First antennal segment reddish, with three or four large, smooth white spots and three or four small spots. **rubellus**, p. 202

First antennal segment not distinctly marked with red and white spots. . 11

- 11. Apical area of corium, or area behind tip of clavus, without netlike marks; dorsum pale greenish yellow; markings of hemelytra dusky. **caryae**, p. 207

Apical area of corium with netlike markings of orange or red. 12

- 12. Length of first antennal segment greater than width of head and vertex combined. **puella**, p. 207

Length of first antennal segment less than width of head and vertex combined. **depictus**, p. 208

Phytocoris rubellus Knight

Phytocoris rubellus Knight (1926g, p. 166).

MALE.—Length 4.80, width 1.54. Head width 0.86, vertex 0.25. Rostrum, length 1.94, extending to base of fourth abdominal sternite. Antennae, first segment, length 0.81, reddish, with three or four large, smooth white spots and about the same number of small ones, set with six or eight pallid bristles, some of which in length exceed thickness of segment; second, 2.10, yellowish, sometimes tinged with red, apex dusky; third, 1.06, yellowish, apex dusky; fourth, 1.00, fuscous. Pronotum, length 0.71, width at base 1.28; reddish to fuscous; median line and line extending upon vertex, and frequently a line on either side of pronotal disk, pallid. Scutellum reddish, basal angles and apex yellowish. Hemelytra reddish to fuscous; embolium with several obsolete pallid marks. Cuneus reddish, and scarcely darker at apex. Membrane pale fuscous, marbled with paler color; veins fuscous although pale to reddish at apices of areoles. Legs pale yellowish to reddish and marked with paler spots, exhibiting more red than in *puella* Reuter. Clothed with pallid to fuscous, simple pubescence intermixed with white, silky pubescence, the latter tending to form spots on hemelytra.

FEMALE.—Length 4.80, width 1.63. Head width 0.86, vertex 0.37. Antennae, first segment, length 0.86; second, 2.06; third, 1.08; fourth, 0.95. Pronotum, length 0.77, width at base 1.37. Coloration usually a deeper red than in male; hemelytra pallid to red.

HOST PLANT.—Sandbar willow (*Salix longifolia*).

KNOWN DISTRIBUTION. — Illinois, Indiana, Iowa, Kansas, Missouri, South Dakota.

Illinois Records.—Twenty-six males and 30 females, taken June 1 to Aug. 24, are from Alton, Grafton, Grand Tower, Havana, Kankakee, Meredosia, Putnam, Quincy, Savanna, Starved Rock State Park, Waukegan.

Phytocoris quercicola Knight

Phytocoris quercicola Knight (1920, p. 60).

MALE.—Length 4.70, width 1.70. Head width 0.91, vertex 0.30. Basal half of lora, spot on either side of tylus, transverse mark across front, and four marks on vertex,

red; front with prominent, nearly colorless hairs. Rostrum, length 2.20, extending to base of genital segment. Antennae, first segment, length 0.97, pallid, three irregular marks on dorsal surface, broad, fusco-brownish or reddish band at apex, beset with six or eight prominent, pale spines; second, 2.25, pale brownish, pallid annulus at base, area next to this and at apex dark fuscous; third, 1.25, fusco-brownish, annulus at base and middle, and a narrow one at apex, pallid; fourth, 1.04, fuscous. Pronotum, length 0.75, width at base 1.43; yellowish, outer halves of calli, and broad area extending rearward, fusco-brownish to dark fuscous; a basal, submarginal, fuscous line with two black points on either side of median line; narrow area at basal margin pallid; pubescence yellowish to dusky, longest hairs situated anteriorly and on collar. Scutellum pallid, median line frequently reddish, either side of this an indistinct vitta composed of small brownish dots. Hemelytra pale yellowish, more or less translucent; an irregular patch at middle of clavus, and a larger one just opposite on corium, fusco-brownish, dark color broken by small, irregular, light spots; frequently apex of corium with a smaller, dark patch and a series of fusco-brownish spots bordering claval suture; embolium and cuneus with small spots of reddish in hypodermis. Membrane pallid; infuscation usually composed of fine irregular spots; a large spot at apex and a smaller one at either side joining margin, central area and that within areoles more sparsely marked with fuscous dots; cubitus pallid, radius infuscated. Front and middle tibiae pallid, with three fuscous annuli; hind pair with two reddish brown bands on basal half; femora pallid, reticulated with reddish brown; hind pair with two irregular pallid bands on apical half, dark color broken by numerous light-colored spots. Venter pallid, sides flecked with reddish. Genital claspers and flagellum distinctive for species, fig. 179.

FEMALE.—Length 4.80, width 1.80. Head width 0.95, vertex 0.36. Antennae, first segment, length 1.08; second, 2.25; third, 1.12; fourth, 1.04. Pronotum, length 0.82, width at base 1.56. Very similar to male in color and pubescence.

HOST PLANT.—Bur oak (*Quercus macrocarpa*).

KNOWN DISTRIBUTION.—Florida, Illinois, Iowa, Maryland, Massachusetts, Min-

nesota, New York, North Carolina, Ontario, Virginia.

Illinois Records.—CHAMPAIGN: June 27, 1932, on oak, Harper, 1 ♀. DUBOIS: Aug. 8, 1917, 1 ♂. GALESBURG: 1 ♂; June 24, 1892, 1 ♀; July 27, 1892, 2 ♂. GLENDON PARK: Aug. 19, 1903, A. B. Wolcott, 1 ♂, FM. URBANA: June 27, 1932, Frison & Ross, 2 ♂, 1 ♀; Aug. 11, 1932, on *Quercus macrocarpa*, H. H. Ross, 1 ♀; Sept. 12, 1891, C. A. Hart, 1 ♂.

Phytocoris taxodii Knight

Phytocoris taxodii Knight (1926g, p. 165).

This species is allied to *rufus* Van Duzee, a species known to occur only in Florida, but differs from it in the longer rostrum and longer first antennal segment; the basal half of the right genital clasper of the male is more slender in *taxodii* than in *rufus*.

MALE.—Length 5.10, width 1.70. Head width 0.94, vertex 0.26; color of head yellowish, sometimes tinged with red. Rostrum, length 2.50, attaining base of genital segment. Antennae, first segment, length 1.03, slightly thicker at base and apex, a few weak, yellowish setae on basal half, yellow to reddish; second, 2.34, yellowish; third, 1.30, yellowish to dusky; fourth, 1.05, dusky. Pronotum, length 0.80, width at base 1.40; reddish, becoming fusco-reddish near base of disk; narrow area at basal margin, median line on collar, and area between calli, paler. Scutellum yellowish or tinged with reddish. Clothed with golden yellow to brown, simple pubescence sparsely intermixed with more recumbent, silvery, silky pubescence. Hemelytra yellowish to reddish; inner apical angles of corium dark red to fuscous, but this dark color not extending forward along radial vein; cuneus rose red, narrow area along outer margin yellow; membrane fusco-brownish, veins red. Ventral surface and legs yellowish; hind femora reddish, except basal one-third, and with many small, yellowish spots; base of hind tibiae reddish. Genital claspers distinctive, fig. 179.

FEMALE.—Length 5.30, width 1.80. Head width 0.91, vertex 0.34. Antennae, first segment, length 1.10; second, 2.40; third, 1.31; fourth, 1.04. Pronotum, length 0.85, width at base 1.49. Very similar to male in color and pubescence.

HOST PLANT.—Bald cypress (*Taxodium distichum*).

KNOWN DISTRIBUTION. — Georgia, Illinois, Louisiana, Mississippi.

Illinois Records.—ELIZABETHTOWN: July 25, 1930, on *Taxodium distichum*,

segment. Antennae, first segment, length 1.08, pale yellowish, fusco-brownish near apex, dusky at base, pubescence yellowish to dusky, basal half with five or six yellowish

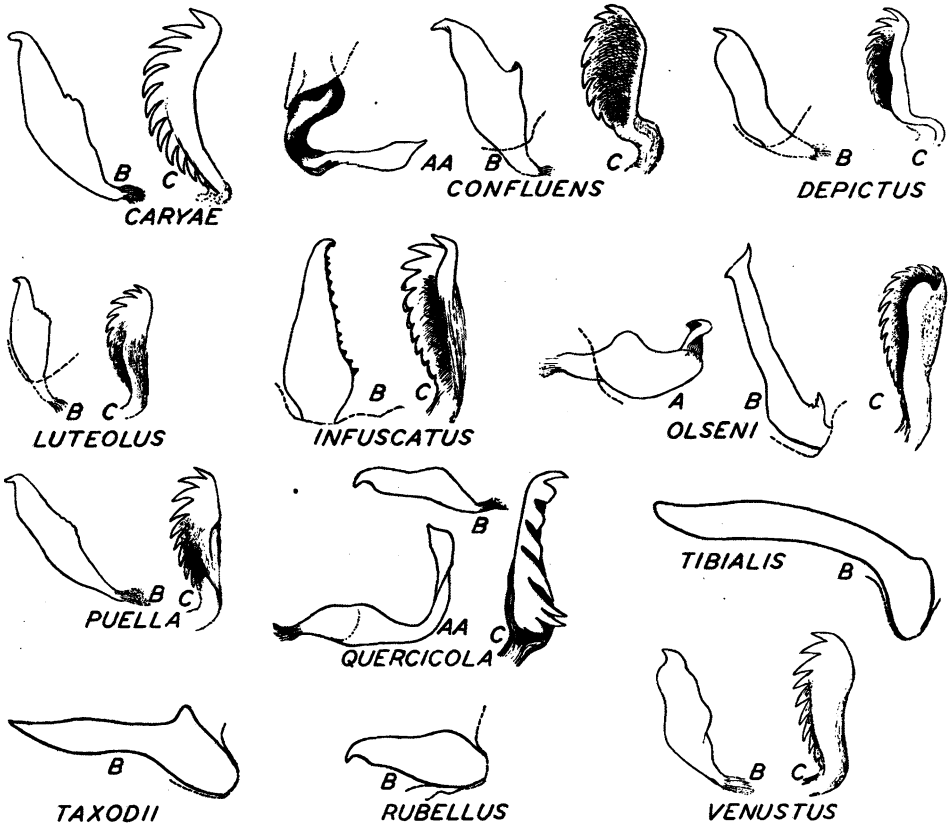


Fig. 179.—Male genital claspers of *Phytocoris*, Group IV. A, left clasper, lateral aspect; AA, left clasper, dorsal aspect; B, right clasper, lateral aspect; C, flagellum.

Knight & Ross, 3 ♀. HORSESHOE LAKE: July 11, 1935, DeLong & Ross, 1 ♀. PULASKI: June 28, 1909, 2 ♂.

***Phytocoris infuscatus* Reuter**

Phytocoris infuscatus Reuter (1909, p. 20).

MALE.—Length 5.30, width 1.94. Head width 0.88, vertex 0.28; color of head yellowish, dorsal half of juga, basal half of lora, bucculae in part, and mark between bases of antennae, dark red; tylus dark red, two irregular, yellowish marks on basal half separated by small red wedge at base; front and vertex clothed with prominent yellowish hairs; either side of front with indications of transverse reddish lines. Rostrum, length 2.70, nearly attaining base of genital

setae; second, 2.74, uniformly yellowish; third, 1.49, yellowish; fourth, 1.20, yellowish to fuscous. Pronotum, length 0.84, width at base 1.50; disk yellowish to fusco-reddish, basal submargin darker; calli and area between them pallid, collar yellowish, a reddish patch on either side of median line, also an orange spot just behind inner angle of each callus; clothed with rather prominent pallid to yellowish pubescence; propleura pallid, a fusco-brownish line crossing lower extremity of coxal cleft and extending to near posterior margin. Scutellum pale yellowish, a reddish spot on margin on either side of apical half, but broad, yellowish line at meson. Hemelytra with emboliar margins very slightly arcuate; reddish to fusco-reddish, with many more or less confluent,

minute white spots, basal half more fuscous than reddish; cuneus red, broken by small, translucent spots at middle. Membrane smoky to fusco-brownish, infuscation of areoles somewhat broken into small spots, apical half with slightly darker fuscous area touching margin beyond cuneus. Legs pale yellowish; hind femora, except basal one-third, black with a red cast, with many, small yellowish spots and larger spots on dorsal aspect at middle, a yellowish band slightly beyond middle of apical half; front tibiae with indistinct brownish band on middle and near base; hind pair with broad, reddish band at base. Venter yellowish to fuscous, darker laterally and on genital segment. Genital claspers and flagellum distinctive for species, fig. 179.

FEMALE.—Length 5.50, width 2.00. Head width 0.91, vertex 0.39. Antennae, first segment, length 1.23; second, 2.94; third, 1.55; fourth, 1.17. Pronotum, length 0.86, width at base 1.51. More robust than male, very similar in coloration, but pale area on apical half of corium broader, and with pallid and orange rays behind calli.

HOST PLANT.—Hickory (*Carya* sp.)

KNOWN DISTRIBUTION.—District of Columbia, Georgia, Illinois, Iowa, Massachusetts, Mississippi, New York, North Carolina, Ohio, Pennsylvania.

Illinois Records. — ILLINOIS: June 26, 1892, 1 ♂. BLUFF SPRINGS: June 10, 1932, Ross & Mohr, 1 ♀. DUBOIS: July 3, 1909, 1 ♀. GEFF: June 12, 1934, DeLong & Ross, 1 ♀. QUINCY: June 15, 1883, 1 ♂.

Phytocoris olsenii Knight

Phytocoris olsenii Knight (1923*d*, p. 647).

Not taken in Illinois; known from Florida, Mississippi, New Jersey, New York, Virginia.

Phytocoris tibialis Reuter

Phytocoris tibialis Reuter (1876, p. 68).

MALE.—Length 5.10, width 1.90. Head width 0.88, vertex 0.35. Rostrum, length 2.60, extending to sixth abdominal sternite. Antennae, first segment, length 1.08, yellowish, with four or five reddish brown marks; second, 2.38, yellowish, a distinct fuscous to black line on anterior aspect, with white annulus at base; third, 1.47, fuscous, pale yellowish at base; fourth, 1.30, fuscous. Pronotum, length 0.86, width at

base 1.47; greenish; disk with four longitudinal orange stripes. Hemelytra yellowish green to green; clavus with a rather large reddish blotch on middle and a smaller one on basal half; inner half of corium with reddish spots and blotches. Apex of cuneus and two spots on paracuneus reddish. Membrane fuscous, with irregular pale and translucent areas behind cuneus and extending across middle. Legs greenish yellow; front and middle tibiae with very dark red-brown line on dorsal aspect; hind femora with apical half dark red brown, this color area broken by numerous small and large, yellowish spots and a distinct sub-apical, pale yellowish annulus. Genital claspers distinctive, fig. 179; right clasper very long.

FEMALE.—Length 5.50, width 2.00. Head width 0.88, vertex 0.36. Antennae, first segment, length 1.12; second, 2.34; third, 1.51; fourth, 1.35. Pronotum, length 0.86, width at base 1.47. Clothed with yellowish to fuscous, simple pubescence sparsely intermixed with yellowish, silky pubescence. Coloration very similar to that of male.

HABITS.—Breeds among weedy, herbaceous plants in damp situations; Illinois specimens collected on mountain mint (*Pycnanthemum* sp.).

KNOWN DISTRIBUTION.—Alabama, Connecticut, District of Columbia, Florida, Illinois, Iowa, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, New Jersey, New York, North Carolina, Ohio, Ontario, Texas, Virginia, Wisconsin.

Illinois Records.—Forty-four males and 23 females, taken June 22 to Oct. 2, are from Albion, Alto Pass, Anna, Browns, Carbondale, Cave-in-Rock, Dongola, Dubois, East St. Louis, Elizabethtown, Gibsonia, Golconda, Grand Tower, Havana, Herod, Lawrenceville, McClure, Metropolis, Monticello, Newton, Norris City, Olive Branch, Pulaski, Rosiclare, Shawneetown, Temple Hill, York.

Phytocoris confluens Reuter

Phytocoris puella var. *confluens* Reuter (1909, p. 20).

MALE.—Length 4.60, width 1.43. Head width 0.83, vertex 0.26; head chiefly bright red; geminate mark at base of tylus, apices of juga and lora, and ventral margin of bucculae, pallid. Rostrum, length 2.20, reaching sixth abdominal sternite, pale yellowish.

lowish, black at apex. Antennae, first segment, length 1.00, reddish yellow, pubescence and spines pale yellowish; second, 2.42, uniformly yellowish; third, 0.91, yellowish; fourth, 1.57, yellowish. Pronotum, length 0.70, width at base 1.00; deep red, becoming almost black at anterior angles of disk; calli fuscous and red with almost colorless ray or spots behind each callus, basal margin with a slender, light colored area except at basal angles; propleura deep red, lower margins and xyphus pallid; clothed with yellowish to dusky pubescence; disk also with yellowish, silky pubescence. Scutellum red, basal angles and apex pallid; vague, light colored, median line present. Sternum and pleura dark red, ostiolar peritreme, and ventral margin of epimera, white. Hemelytra red, with many irregular, small to medium-sized spots; cuneus with pale spots on inner margin and across middle; hemelytra clothed with yellowish to dusky pubescence, intermixed with yellowish, silky pubescence which may be white over light spots. Membrane uniformly pale smoky, veins red. Legs pallid to yellowish; anterior femora reddish yellow at apices; tibiae with annulations; hind femora red, pallid at bases, with rather numerous, small, pallid spots although at times these spots nearly obsolete; hind tibiae with small red marks near bases; tips of tarsi fuscous. Venter white beneath, latero-dorsal margin deep red; each sternite with small spot of red laterally; eighth segment and base of genital segment dark fusco-reddish. Genital claspers and flagellum distinctive, fig. 179.

FEMALE.—Length 5.50, width 2.03. Head width 0.90, vertex 0.34. Antennae, first segment, length 1.25; second, 3.16; third, 1.51; fourth, 1.30. Pronotum, length 0.86, width at base 1.60. More robust than male, but very similar in color and pubescence.

HABITS.—Collected on oak (*Quercus* sp.) and red birch (*Betula nigra*).

KNOWN DISTRIBUTION.—Connecticut, District of Columbia, Illinois, Kansas, Maryland, Massachusetts, Mississippi, New Jersey, New York, North Carolina, Ohio, Pennsylvania.

Illinois Records. — **ASHLEY:** Aug. 7, 1917, 2 ♀. **DOLSON:** June 25, 1932, Rocky Branch, Frison & Mohr, 1 ♂. **DUBOIS:** Aug. 8, 1917, 1 ♀. **FAIRFIELD:** June 12, 1934, DeLong & Ross, 1 ♂. **GALENA:** June 30, 1932, on *Quercus* sp., Dozier & Mohr, 1 ♂. **GALESBURG:** June 27, 1893, 1 ♂. **HARRIS-**

BURG: June 25, 1932, on *Betula nigra*, Ross, Dozier & Park, 2 ♂. **OAKWOOD:** June 14, 1930, T. H. Frison, 1 ♀.

Phytocoris venustus Knight

Phytocoris venustus Knight (1923*d*, p. 651).

MALE.—Length 4.50, width 1.60. Head width 0.86, vertex 0.28; head orange colored above; spot on either side of vertex and one at base, two spots on median line of front, and base of tylus, light colored; lower half of head pallid; base of juga, dorsal margin of lora, and irregular band across middle of tylus, bright red. Rostrum, length 2.00, reaching sixth abdominal sternite, yellowish, black at apex. Antennae, first segment, length 0.97, pale yellowish, darker at apex, setae pale; second, 0.80, uniformly yellowish; third, 1.34, yellowish; fourth, 1.16, yellowish. Pronotum, length 0.68, width at base, 1.37; pale, with two orange stripes behind either callus, outer stripe continued around callus and extending to anterior angle and collar; small orange spot before callus; collar orange red; propleura with red ray crossing lower half of coxal cleft, but not extending to posterior margin; clothed with moderately prominent, yellowish pubescence, this more prominent laterally and on scutellum and clavus. Scutellum orange red to deep red; basal angles and median line more or less pale. Sternum and pleura pallid, red areas on mesosternum and metepisternum; ostiolar peritreme white. Hemelytra yellow, with clavus and basal half of corium and embolium red, but with many, pale yellowish spots, these spots forming a large triangular area before cuneus; embolium sometimes with small red flecks on apical half; cuneus, and part of corium extending beyond cuneal fracture, red; outer margin of cuneus with four yellow spots, these sometimes almost confluent. Membrane smoky to pale fuscous, slightly paler on apical half, veins red, usually pale at apices of areoles. Legs pale to yellowish, fore femora with red flecks at apices; hind femora with netlike, bright red markings, these somewhat broken at middle of apical half by a yellowish area; hind tibiae with reddish spots near base. Venter yellowish, with red flecks along dorsal margin; genital claspers and flagellum distinctive for species, fig. 179.

FEMALE.—Length 4.70, width 1.90; more robust than male, but very similar in color-

ation. Head width 0.86, vertex 0.36. Antennae, first segment, length 1.04; second, 2.47; third, 1.38; fourth, 1.17. Pronotum, length 0.74, width at base 1.38. More robust than male, but very similar in color and pubescence.

KNOWN DISTRIBUTION.—Alabama, Connecticut, District of Columbia, Illinois, Maryland, New York.

Illinois Record.—GALESBURG: July 24, 1892, 1 ♂, 6 ♀.

Phytocoris caryae Knight

Phytocoris caryae Knight (1923*d*, p. 652).

MALE.—Length 5.30, width 1.74. Head yellow, width 0.93, vertex 0.28; small spot at dorsal margin of each eye, irregular. large spot on either side of front, and spot on dorsal margin of lora, orange colored; front and vertex bearing prominent, pale hairs. Rostrum, length 2.20, reaching fifth abdominal segment; pale yellowish, very dark brown at apex. Antennae, first segment, length 1.14, yellow, anterior aspect with small orange spots, largest one located near apex, setae pale to dusky; second, 2.46, uniformly pale yellow; third, 1.50, yellow; fourth, 1.16, yellow, dusky at apex. Pronotum, length 0.81, width at base 1.44; greenish yellow, with four orange stripes on disk, these sometimes joining at base; calli pallid, collar with broad orange spot located on either side of median line, these spots extending posteriorly to calli; propleura with small orange ray behind lower half of coxal cleft; clothed with pale yellowish pubescence, a few dusky hairs at basal margin. Scutellum greenish yellow, an oblique orange mark on either side of median line. Sternum and pleura pale yellowish. Hemelytra pale to greenish yellow, mottled with brown orange; darker on clavus, with many large, irregular greenish yellow spots; apical one-fifth of corium nearly uniformly greenish yellow; embolium with a few scattering red orange spots; tip of clavus with a dusky spot and beset with prominent black hairs; cuneus yellowish and translucent, apex and margins flecked with reddish; a prominent, dull reddish spot at margin between corium and membrane; clothed with yellow pubescence, this darker near apex of corium; emboliar margins very slightly arcuate. Membrane nearly colorless, with pale fuscous marbling, coloring darkest within areoles and at middle; veins dusky yellow at

apices of areoles. Legs almost white to yellowish; apical halves of femora flecked with bright red, larger spots on posterior pair; tibial spines fuscous, hind pair with a small, reddish spot at base of each spine, although these spots obscure apically; tips of tarsi dusky. Venter pale greenish yellow; genital claspers and flagellum distinctive for species, fig. 179.

FEMALE.—Length 5.20, width 1.90. Head width 0.91, vertex 0.36. Antennae, first segment, length 1.21; second, 2.68; third, 1.51; fourth, 1.12. Pronotum, length 0.82, width at base 1.47. More robust than male, but very similar in color and pubescence.

HOST PLANT.—Hickory (*Carya* sp.).

KNOWN DISTRIBUTION. — Illinois and New York.

Illinois Records.—DUBOIS: Aug. 8, 1917, 1 ♂. GALESBURG: June 24, 1892, 1 ♀; July 29, 1892, 1 ♂, 4 ♀. MONTICELLO: June 28, 1914, Sangamon River, 1 ♂, 1 ♀. SAVANNA: July 23, 1892, McElfresh, 1 ♀.

Phytocoris puella Reuter

Phytocoris puella Reuter (1876, p. 69).

FEMALE.—Length 4.90, width 1.90. Head width 0.86, vertex 0.36; head pale, with mark on either side of collum extending upon collar; irregular arc either side of front, base of lora and dorsal half of bucculae, orange colored. Rostrum, length 2.26, extending to fifth ventral segment, pale, black at apex. Antennae, first segment, length 1.26, pallid, indistinctly dotted with orange on anterior aspect; second, 2.80, pale yellowish; third, 1.49, yellowish; fourth, 1.28, yellowish to dusky. Pronotum, length 0.78, width at base 1.40; pale, disk with four orange stripes, paler forms with stripes broken at middle; anterior angles with orange stripe which extends upon collar; propleura with orange ray crossing lower half of coxal cleft and extending nearly to posterior margin. Scutellum pale, with an oblique orange vitta on either side of apical half. Hemelytra pale, with rather uniform orange, netlike markings; cuneus partly red; hemelytra clothed with pale yellowish pubescence intermixed with prominent, white, silky pubescence. Membrane pale, areoles infuscated and marbled within apical half, veins yellowish, pale at apex of areoles. Legs pallid, front tibiae with two nearly obsolete, orange yellow bands; hind femora with red, netlike marks on apical half, di-

vided at middle of apical half by pallid annulus, fuscous hairs arising from red marks. Venter pallid, tinged with red near each spiracle.

MALE.—Length 4.80, width 1.51. Head width 0.85, vertex 0.21. Antennae, first segment, length 1.21; second, 2.81; third, 1.56; fourth, 1.21. Pronotum, length 0.73, width at base 1.25. Dorsum uniformly bright red, sometimes dotted with yellowish spots; calli pale; basal angles of pronotum and apex of scutellum yellowish to pale orange. Membrane pale smoky or nearly clear; areoles with rather fine, obscure, pale fuscous marks. Legs yellowish; apical half of hind femora with red, netlike markings and bearing fuscous to black hairs; a yellowish subapical band present; in this last respect very similar to female. Genital claspers, fig. 179. The sexes of *puella* exhibit a greater difference in color than do other, closely related species of this group.

HABITS.—Collected on oak (*Quercus* sp.) and red birch (*Betula nigra*).

KNOWN DISTRIBUTION.—Connecticut, District of Columbia, Illinois, Maryland, Massachusetts, Michigan, Mississippi, New Jersey, New York, North Carolina, Ohio, Pennsylvania.

Illinois Records.—Eleven males and 20 females, taken June 12 to October, are from Anna, Ashley, De Soto, Dubois, Galena, Galesburg, Geff, Grand Detour, Harrisburg, Makanda, Marshall, Oregon, Palos Park, Starved Rock State Park, Urbana, White Pines Forest State Park. Blatchley (1926*b*, p. 729) records this species from Beverly Hills.

Phytocoris depictus Knight

Phytocoris depictus Knight (1923*d*, p. 654).

MALE.—Length 4.10, width 1.50. Head width 0.78, vertex 0.27; head marked with orange and red as in *puella* Reuter. Rostrum, length 1.93, reaching fifth abdominal sternite, yellowish, black at apex. Antennae, first segment, length 0.83, thickest near base and tapering to become more slender just before apex, yellowish, with a few red dots on anterior aspect and with seven or eight fuscous setae on basal half of dorsal aspect; second, 1.97, uniformly pale yellowish; third, 0.96, yellowish; fourth, 0.97, yellowish. Pronotum, length 0.71; width at base 1.23; pale testaceous and dusky; calli lighter; disk with four orange stripes; collar either side of

median line and behind eye orange colored; clothed with pale yellowish pubescence, this fuscous near basal margin and sparsely intermixed with pale, silky pubescence; propleura with red mark crossing lower half of coxal cleft, this mark diffused behind cleft. Scutellum pallid, with orange mark either side of median line extending obliquely to lateral margin. Sternum pallid, episternum with red mark, epimeron chiefly red, ostiolar peritreme white, area just above reddish. Hemelytra with irregular, red, netlike markings, these produced by thickly placed and more or less confluent pale spots; basal half of corium nearly fusco-reddish; tip of clavus, and spot near inner basal angle of cuneus, black with prominent black hairs; clothed with golden yellow pubescence; central area with a few small spots of dense, silvery wool; cuneus bright red and with many rather small, pallid spots. Membrane pale fuscous; areoles and central area with clear spots; veins pale to fuscous. Legs pale to yellowish; apical two-thirds of hind femora dark red, with many large and small pallid spots, and an irregular, incomplete, pallid band at middle of apical half; a few black hairs arising from red area; spines on hind tibiae pallid, with reddish spot at base of each, except those spines at apex. Venter pale yellowish, with reddish dots on sides; base of genital segment fuscous; genital claspers and flagellum distinctive for species, fig. 179.

FEMALE.—Length 5.10, width 1.77. Head width 0.86, vertex 0.39. Antennae, first segment, length 1.04; second, 2.55; third, 1.21; fourth, 1.04. Pronotum, length 0.85, width at base 1.55. Larger and more robust than male, but very similar in coloration, although dorsum and membrane frequently with broader, light-colored areas.

HOST PLANT.—Bur oak (*Quercus macrocarpa*) and red oak (*Q. rubra*).

KNOWN DISTRIBUTION.—District of Columbia, Illinois, Minnesota, New York, Ohio.

Illinois Records.—BEVERLY HILLS: Aug. 31, 1907, W. J. Gerhard, 2 ♀, FM. CARY: Aug. 27, 1905, W. J. Gerhard, 2 ♀, FM. FAIRFIELD: June 12, 1934, DeLong & Ross, 1 ♂. GIBSONIA: Oct. 2, 1934, Frison & Ross, 1 ♂. GOLCONDA: June 22, 1932, on oak, Ross, Dozier & Park, 1 ♂. KEITHSBURG: June 15, 1932, on red oak, H. L. Dozier, 1 ♂. SHAWNEETOWN: June 23, 1936, DeLong & Ross, 1 ♂.

Phytocoris luteolus Knight

Phytocoris luteolus Knight (1923*d*, p. 649).

Known only from Alabama and Connecticut; not taken in Illinois.

MYRMECORINI**KEY TO GENERA**

- Length of first antennal segment greater than width of head; scutellum not conically produced, fig. 180; dorsum with fine, short pubescence. **Paraxenetus**, p. 209
- Length of first antennal segment much less than width of head, only slightly greater than width of vertex; scutellum conically produced, fig. 181; dorsum, especially pronotum and scutellum, with long, erect hairs. **Barberrella**, p. 209

Paraxenetus Reuter**Paraxenetus guttulatus** (Uhler)

Eucerochoris guttulatus Uhler (1887*d*, p. 150).

MALE.—Fig. 180. Length 6.40, width at base of cuneus, 1.33. Head width 1.00, vertex 0.27; sulcus on median line of vertex. Rostrum, length 2.42, extending slightly beyond posterior coxae or to second abdominal sternite. Antennae, first segment, length 1.46; second, 3.45; third, 2.85; fourth, 0.86; all segments slender, of nearly equal thickness, three basal ones yellowish to dusky brown, last segment reddish brown. Pronotum, length 0.95, width at base 1.34. Emboliar margins strongly sulcate, or medially coarctate. General color fusco-grayish, tinged with fulvous, sometimes fulvous areas broad; cuneus, veins of membrane, and calli, fulvous to reddish; femora frequently fusco-reddish. Body clothed with recumbent, fine yellowish pubescence, femora rather sparsely set with long pilose hairs, these hairs longest on posterior pair.

FEMALE.—Length 6.80, width 1.51. Head width 1.08, vertex 0.39. Antennae, first segment, length 1.51; second, 3.30; third, 2.94; fourth, 0.86. Pronotum, length 1.08, width at base 1.56. Very similar to male in form and coloration.

HOST PLANT.—Grape vines (*Vitis* sp.); one specimen collected in Illinois on walnut (*Juglans nigra*).

KNOWN DISTRIBUTION.—District of Columbia, Illinois, Indiana, Iowa, Maryland, Mississippi, Missouri, New Jersey, New York, Pennsylvania, Texas, Virginia.

Illinois Records.—COLLINSVILLE: Aug. 14, 1899, McElfresh, 1 ♀. DANVILLE: June 16, 1930, Frison & Hottes, 1 ♀. DUBOIS:

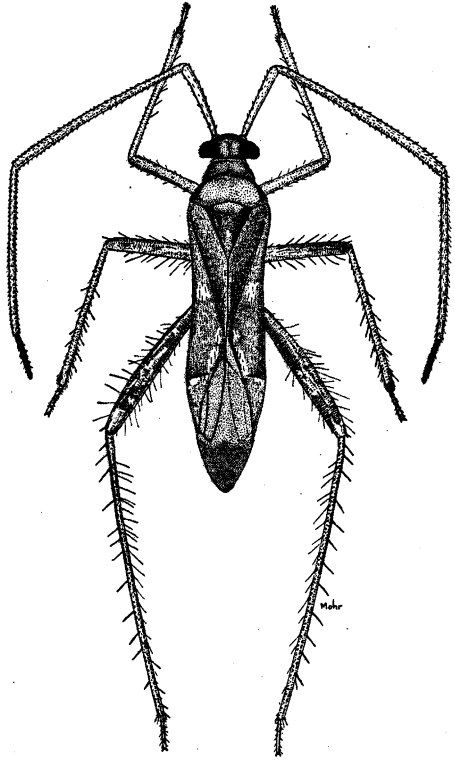


Fig. 180.—*Paraxenetus guttulatus*, ♂.

July 3, 1909, 1 ♂. GRAFTON: July 20, 1932, on *Juglans nigra*, Ross & Dozier, 1 ♂. HAVANA: Aug. 15, 1907, Devil's Hole, 2 ♀. HEROD: July 24, 1930, Knight & Ross, 1 ♂. QUINCY: Aug. 8, 1889, 3 ♀; Aug. 11, 1889, 1 ♀.

Barberrella Poppius**Barberrella apicalis** Knight

Barberrella apicalis Knight (1923*d*, p. 657).

This species, fig. 181, is more closely related to *Fiebrigiella silvestri* Poppius, described from Brazil, than to *Barberrella formicoides* Poppius, but differs from the former, at least, in the longer first antennal segment and in the shining, brownish and

translucent apical area of the corium and embolium. The members of this genus are good ant mimics, and in their general aspect are very suggestive of the large species of *Pilophorus*.

MALE.—Length 5.00, width 1.60. Head width 1.14, vertex 0.43; head almost vertical; vertex and base of front distinctly impressed along median line but not grooved; head very dark brown, clothed with pale pubescence, this more prominent on front. Rostrum, length 1.99, reaching bases of hind coxae, dark brown. Antennae, first segment,

above ostiole. Hemelytra with emboliar margins strongly constricted at middle, disk nearly flat; cuneus strongly declivitous; clothed with moderately sparse, golden yellow pubescence interspersed with more nearly erect fine hairs, these more prominent on clavus; clavus dull fusco-brownish, a triangular pruinose field extending upon middle from corium; corium fuscous on basal half; a transverse pallid spot at middle; behind this a dark fusco-brownish area extending as far as a line drawn transversely through tip of clavus; apical area chiefly

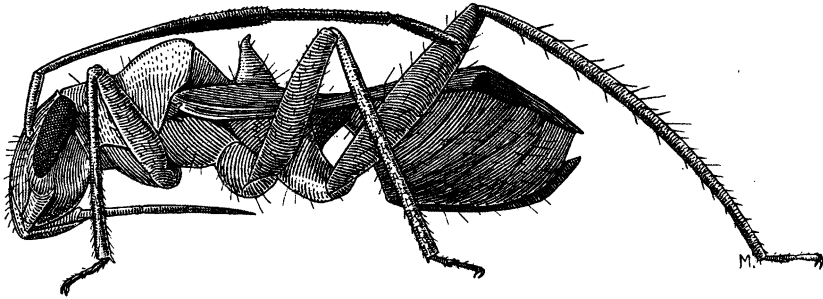


Fig. 181.—*Barberiella apicalis*, ♀.

length 0.52, dark brown, with fine and dense pubescence and with two or three larger, erect hairs near apex, length of these less than thickness of segment; second, 2.03, cylindrical, slightly thicker than first segment, more slender near base, dark brown, with fine, dense pubescence; third, 1.11, slender, dark brown; fourth, 0.68, dark brown. Pronotum, length 1.24, width at base 1.59; anterior angles 0.84, anterior one-third nearly cylindrical to a point just behind calli, from thence flaring to posterior margin, but margin nearly a straight line; disk strongly convex; calli much reduced and with two impressed points between; very dark brown, darker anteriorly; surface leathery with pale pubescence and sparsely interspersed with erect, pilose hairs. Scutellum conically produced; point bent over and directed to the rear, fig. 181; sparsely set with long, pilose hairs; much of mesoscutum exposed, sloping downward to base of scutellum from which it is not distinctly separated; dark brown, moderately shining. Sternum and pleura dark brown; posterior half of epimeron white; ostiolar peritreme dark brown, with a protuberant point just

pale brownish, somewhat translucent and shining, pruinose bordering the transverse dark band; cuneus uniformly brownish and translucent; membrane uniformly fusco-brownish, veins slightly darker. Legs uniformly dark brown, hind coxae with a pale or yellowish, opaque spot at antero-lateral angle; femora with coarse, leathery surface, sparsely clothed with erect, pale hairs; hind tibiae compressed, strongly curved, beset with yellow, spinelike hairs; tarsi fuscous, brownish at base. Venter black with a tinge of brown, moderately shining; strongly constricted at base, a pale mark on side just beneath that of corium; venter sparsely set with erect, pale hairs.

FEMALE.—Length 5.50, width before base of cuneus 1.59. Very similar to male in form and coloration; abdomen broader at apex. Head width 1.32, vertex 0.58. Antennae, first segment, length 0.54; second, 2.10, slender on basal half, clavate at apex (0.11 thick), exceeding thickness of first segment.

KNOWN DISTRIBUTION.—Illinois, Mississippi, New York, North Carolina.

Illinois Record.—SHAWNSETOWN: June 27, 1936, DeLong & Mohr, 1 ♀.

HOST LIST

Most species of Miridae are restricted to a single host plant or to a few closely related plants. Notable exceptions include the tarnished plant bug, *Lygus oblineatus* (Say), which may be found on almost any plant, and *Plagiognathus politus* Uhler, which occurs on a great many herbaceous plants. Both are so common and so diverse in their feeding habits that, to prevent repetition, neither is included under the various hosts in the following list. A number of mirids are predacious, but are associated with definite species of plants; in this list such mirids are indicated by an asterisk (*). Other species are possibly or probably pre-

dacious, at least in part, but are associated with definite plants; these are indicated by a dagger (†). Still other species have been collected on particular species of plants in sufficient numbers to make it probable that those plants are the food plants of the mirids, but the exact relationship existing between the mirids and the plants under which they are listed has not been demonstrated. Such species are indicated by a double dagger (‡). In species of Miridae not indicated by asterisk or dagger, the host relationship of the mirid and the plant species under which it is listed has been definitely established.

- Acer negundo*
 †*Paracalocoris scrupeus* (Say), 177
 †*Plagiognathus negundinis* Knight, 33
- Acer rubrum*
Coccobaphes sanguinarius Uhler, 138
Neolygus vitticollis (Reuter), 162
- Acer saccharinum*
Neolygus vitticollis (Reuter), 162
- Acer saccharum*
Coccobaphes sanguinarius Uhler, 139
Microphyllellus elongatus Knight, 42
Neolygus hirticulus (Van Duzee), 163
Neolygus vitticollis (Reuter), 162
 †*Phytocoris corticevirens* (Knight), 186
- Acer spicatum*
Neolygus belfragii (Reuter), 162
- Acer* sp.
 **Deraeocoris nebulosus* (Uhler), 67
 †*Diaphnoidia pellucida* Uhler, 92
 †*Phytocoris conspurcatus* Knight, 188
- Achillea millefolium*
Lopidea heidemanni Knight, 88
- Achillea* sp.
 †*Adelphocoris rapidus* (Say), 174
- Agropyron repens*
Capsus ater (Linnaeus), 138
- Alder; see *Alnus*
- Alder, smooth; see *Alnus rugosa*
- Alder, speckled; see *Alnus incana*
- Alfalfa; see *Medicago sativa*
- Allium canadense*
Labopidea allii Knight, 105
- Allium cepa*
Labopidea ainsliei Knight, 105
Labopidea allii Knight, 105
- Allium cernuum*
Labopidea ainsliei Knight, 105
Labopidea allii Knight, 105
- Alnus incana*
 †*Deraeocoris alnicola* Knight, 70
Neolygus alni Knight, 157
- Alnus rugosa*
 **Ceratocapsus decurvatus* Knight, 116
Ceratocapsus incisus Knight, 113
Ceratocapsus modestus (Uhler), 111
 **Deraeocoris poecilus* (McAtee), 67
Neolygus clavigenitalis Knight, 163
- Psallus alnicola* Douglas and Scott, 44
Psallus fuscatus Knight, 44
- Alnus* sp.
 †*Deraeocoris borealis* (Van Duzee), 71
 †*Diaphnoidia pellucida* Uhler, 92
 †*Plagiognathus similis* Knight, 37
- Althaea rosea*
Melanotrichus althaeae (Hussey), 96
- Ambrosia trifida*
Lygus plagiatus Uhler, 153
- Ambrosia* sp.
Chlamydatus associatus (Uhler), 25
Chlamydatus suavis (Reuter), 26
Ilnacora malina (Uhler), 83
 †*Plagiognathus blatchleyi* Reuter, 35
Plagiognathus nigronitens Knight, 30
Plagiognathus politus Uhler, 29
Reuteroscopus ornatus (Reuter), 48
Reuteroscopus sulphureus (Reuter), 49
- Amorpha canescens*
Lopidea instabilis (Reuter), 91
Psallus amorphae Knight, 44
- Amorpha fruticosa*
Lopidea amorphae Knight, 90
Psallus amorphae Knight, 44
- Anthemis cotula*
Polymerus basalis (Reuter), 167
- Apium graveolens*
Lygus campestris (Linnaeus), 154
- Apple; see *Pyrus malus*
- Arbor vitae; see *Thuja occidentalis*
- Arrow-wood; see *Viburnum*
- Artemisia canadensis*
Lygus atritibialis Knight, 152
Psallus bakeri (Bergroth), 45
- Artemisia* sp.
Psallus bakeri (Bergroth), 45
- Artichoke; see *Helianthus tuberosus*
- Arundinaria tecta*
 **Phytocoris arundinicola* Knight, 198
- Asclepias* sp.
 †*Ilnacora divisa* Reuter, 83
Macrolophus brevicornis Knight, 55
- Ash; see *Fraxinus*
- Ash, black; see *Fraxinus nigra*
- Ash, red; see *Fraxinus pennsylvanica*
- Ash, white; see *Fraxinus americana*
- Aspen, American; see *Populus tremuloidea*
- Aspidium spinulosum*
Monalocoris filicis (Linnaeus), 58
- Aster, golden; see *Chrysopsis*
- Aster macrophyllus*
Microphyllellus nigricornis Knight, 41

*Mirid predacious, but associated with the plant under which it is listed.

†Mirid possibly or probably predacious, but associated with the plant under which it is listed.

‡Mirid probably associated with the plant under which it is listed, but exact relationship of plant and mirid not demonstrated.

- Aster, New England; see *Aster novae-angliae*
Aster novae-angliae
Macrotylus amoenus Reuter, 51
Aster, prairie; see *Aster sericeus*
Aster sericeus
Psallus astericola Knight, 45
Aster umbellatus
Polymerus opacus Knight, 170
Aster undulatus
Macrotylus sexguttatus (Provancher), 51
Aster sp.
Dicyphus discrepans Knight, 54
Plagiognathus cuneatus Knight, 34
Avena sativa
Trigonotylus ruficornis (Geoffroy), 130
Balm of Gilead; see *Populus candicans*
Basswood; see *Tilia americana*
Bean; see *Phaseolus*
Bedstraw; see *Galium aparine*
Bedstraw, northern; see *Galium boreale*
Beech; see *Fagus*
Beech, blue; see *Carpinus caroliniana*
Beech, water; see *Carpinus caroliniana*
Beet, cultivated; see *Beta vulgaris*
Beet, sugar; see *Beta vulgaris*
Beta vulgaris
†*Chlamydatus associatus* (Uhler), 25
Betula lutea
†*Deraeocoris betulae* Knight, 70
Neolygus fagi Knight, 161
Orthotylus necopinus Van Duzee, 103
Betula nigra
†*Ceratocapsus pumilus* (Uhler), 112
**Deraeocoris poecilus* (McAtee), 67
†*Lopidea media* (Say), 89
†*Phytocoris confluens* Reuter, 205
†*Phytocoris puella* Reuter, 207
†*Plagiognathus atricornis* Knight, 35
Plagiognathus similis Knight, 37
Betula pumila
Psallus parshleyi Knight, 44
Betula sp.
†*Plagiognathus politus* Uhler, 29
Birch; see *Betula*
Birch, red; see *Betula nigra*
Birch, yellow; see *Betula lutea*
Blackberry; see *Rubus*
Bladder nut, American; see *Staphylea trifolia*
Bluegrass; see *Poa pratensis*
Bluegrass, Canada; see *Poa compressa*
Box elder; see *Acer negundo*
Brassica nigra
Campylomma verbasci (Meyer), 25
Bromus inermis
Capsus simulans (Stål), 138
Burning bush; see *Evonymus atropurpureus*
Butternut; see *Juglans cinerea*
Buttonbush; see *Cephalanthus occidentalis*
Calamagrostis canadensis
Collaria milleurii Provancher, 126
Cane, switch; see *Arundinaria tecta*
Carex vesicaria
Teratocoris paludum J. Sahlberg, 128
Carex sp.
Teratocoris discolor Uhler, 128
Carpinus caroliniana
Ceratocapsus incisus Knight, 113
Neolygus carpini, Knight, 164
Neolygus johnsoni Knight, 162
**Phytocoris canadensis* Van Duzee, 193
**Phytocoris erectus* Van Duzee, 199
†*Phytocoris lacunosus* Knight, 197
Reuteria fuscicornis Knight, 94
Carya illinoensis
Neolygus caryae Knight, 161
Orthotylus ramus Knight, 100
†*Phytocoris albifacies* Knight, 186
Plagiognathus caryae Knight, 38
Carya ovata
Neolygus caryae Knight, 161
†*Neolygus quercalbae* Knight, 160
Plagiognathus caryae Knight, 38
Carya sp.
Ceratocapsus fasciatus (Uhler), 109
†*Ceratocapsus nigellus* Knight, 111
†*Deraeocoris grandis* (Uhler), 71
†*Eusictus venatorius* Van Duzee, 66
†*Microphylellus modestus* Reuter, 41
Orthotylus ramus Knight, 100
†*Paracalocoris scrupus* (Say), 177
Phytocoris caryae Knight, 207
Phytocoris infuscatus Reuter, 204
Phytocoris onustus Van Duzee, 194
Plagiognathus dispar Knight, 39
†*Plagiognathus politus* Uhler, 29
Castanea sp.
Neolygus hirticulus (Van Duzee), 63
Neolygus omnivagus Knight, 163
Caulophyllum thalictroides
Horcias dislocatus (Say), 173
Cedar, red; see *Juniperus virginiana*
Celery; see *Apium graveolens*
Celtis occidentalis
Paracalocoris celtidis Knight, 179
Cephalanthus occidentalis
Neurocolpus nubilus (Say), 182
**Phytocoris canadensis* Van Duzee, 193
Chenopodium album
Melanorichus flavosparsus (Sahlberg), 96
†*Reuterocopus ornatus* (Reuter), 48
†*Reuterocopus sulphureus* (Reuter), 49
Chestnut; see *Castanea*
Chrysanthemum leucanthemum
Plagiognathus chrysanthemii (Wolff), 31
Chrysanthemum sp.
†*Lopidea confluenta* (Say), 87
†*Polymerus basalis* (Reuter), 167
†*Psallus seriatus* (Reuter), 45
Chrysopsis villosa
Polymerus chrysopsis Knight, 171
Clematis virginiana
Halticus intermedius Uhler, 77
Clover; see *Trifolium*, *Melilotus*
Clover, prairie; see *Petalostemum purpureum*
Clover, red; see *Trifolium pratense*
Clover, sweet; see *Melilotus*
Clover, white; see *Trifolium repens*
Cocklebur; see *Xanthium*
Coltsfoot; see *Tussilago farfara*
Conium maculatum
Lygus campestris (Linnaeus), 154
Coralberry; see *Symphoricarpos orbiculatus*
Coreopsis sp.
†*Polymerus basalis* (Reuter), 167
Cornus alternifolia
Neolygus communis Knight, 159
Cornus anomum
Plagiognathus cornicola Knight, 38
Cornus paniculata
Neolygus communis Knight, 159
Cornus stolonifera
Neolygus communis Knight, 159
Cornus stricta
Plagiognathus cornicola Knight, 38

- Cornus* sp.
Neolygus omnivagus Knight, 163
 †*Paracalocoris scrupeus* (Say), 177
- Corylus americana*
Microphyllellus longirostris Knight, 42
 †*Microphyllellus modestus* Reuter, 41
- Corylus* sp.
 †*Ceratocapsus pilosulus* Knight, 109
 †*Lopidea media* (Say), 89
 †*Plagiognathus politus* Uhler, 29
- Cotton; see *Gossypium herbaceum*
- Cottonwood; see *Populus*
- Crabapple; see *Pyrus coronaria*
- Cranberry; see *Vaccinium*
- Crataegus mollis*
 †*Microphyllellus modestus* Reuter, 41
- Crataegus punctata*
Orthotylus serus Van Duzee, 102
- Crataegus tomentosa*
Orthotylus serus Van Duzee, 102
- Crataegus* sp.
 **Deraeocoris fasciolus* Knight, 70
 †*Deraeocoris quercicola* Knight, 71
Diaphnidia pellucida Uhler, 92
Heterocordylus malinus Reuter, 107
Lygidea mendax Reuter, 146
Neolygus univittatus Knight, 160
Paracalocoris pallidulus McAtee, 178
Paracalocoris scrupeus (Say), 177
Plagiognathus dispar Knight, 39
- Croton capitatus*
Psallus seriatus (Reuter), 45
- Croton texensis*
Psallus seriatus (Reuter), 45
- Croton* sp.
Psallus seriatus (Reuter), 45
- Cudweed; see *Gnaphalium uliginosum*
- Cup plant; see *Silphium perfoliatum*
- Currant; see *Ribes*
- Cydonia oblonga*
Lygidea mendax Reuter, 146
- Cynodon dactylon*
Trigonotylus brevipes Jakovlev, 129
- Cypress, bald; see *Taxodium distichum*
- Dactylis glomerata*
Stenotus binotatus (Fabricius), 175
- Daisy; see *Chrysanthemum*
- Daisy, oxeye; see *Chrysanthemum leucanthemum*
- Dock; see *Rumex*
- Dog fennel; see *Anthemis cotula*
- Dogwood; see *Cornus*
- Elder; see *Sambucus*
- Elm; see *Ulmus*
- Elm, American; see *Ulmus americana*
- Erigeron canadensis*
Lygus apicalis Fieber, 154
- Erigeron* sp.
 †*Lygus plagiatus* Uhler, 153
- Euphorbia adenoptera*
Semium hirtum Reuter, 75
- Euphorbia humistrata*
Semium hirtum Reuter, 75
- Evonymus atropurpureus*
Paracalocoris evonymi Knight, 178
- Fagus grandifolia*
Neolygus fagi Knight, 161
- Fagus* sp.
Neolygus hirticulus (Van Duzee), 163
- Fern, cinnamon; see *Osmunda cinnamomea*
- Fern, shield; see *Aspidium spinulosum*
- Ferns (undifferentiated)
Ceratocapsus setosus Reuter, 115
- Figwort; see *Scrophularia leporella*
- Fleabane; see *Erigeron*
- Foxglove, false; see *Gerardia pedicularia*
- Fraxinus americana*
Neoborus amoenus (Reuter), 140
Neoborus canadensis (Van Duzee), 141
Neoborus geminus (Say), 140
Neoborus glaber Knight, 140
Neoborus palmeri Reuter, 141
Neoborus pubescens Knight, 141
Neoborus rufusculus Knight, 143
Neoborus vittiscutis Knight, 143
Tropidosteptes cardinalis Uhler, 139
Xenoborus pettiti (Reuter), 145
- Fraxinus nigra*
Xenoborus commissuralis Reuter, 144
Xenoborus neglectus Knight, 144
Xenoborus plagifer (Reuter), 144
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BIBLIOGRAPHY

- Ashmead, William H.**
1887. Hemipterological contributions. No. 1. Ent. Am. 3(8):155-6.
- Barber, Harry G.**
1914. New Hemiptera-Heteroptera, with comments upon the distribution of certain known forms. N. Y. Ent. Soc. Jour. 22(2):164-71.
- Bergroth, Ewald**
1898. Ueber einige amerikanische Capsiden. Wiener Entomologische Zeitung 17 (1):33-5.
1920. List of the Cylapinae, with descriptions of Philippine forms. Annales de la Société Entomologique de Belgique 60:67-83.
- Beyer, A. H.**
1921. Garden flea-hopper in alfalfa and its control. U. S. Dept. Ag. Bul. 964. 27 pp., 14 figs.
- Blatchley, W. S.**
1926a. Some new Miridae from the eastern United States. Ent. News 37(6): 163-9.
1926b. Heteroptera or true bugs of eastern North America with especial reference to the faunas of Indiana and Florida. Nature Publishing Co., Indianapolis. 1116 pp.
- Brittain, W. H.**
1917. The green apple bug in Nova Scotia. Nova Scotia Dept. Ag. Bul. 9. 70 pp., 6 pls.
- Burque, F. X.**
1887. Descriptions of certain species in Provancher 1886-90.
- Cook, A. J.**
1891. Kerosene emulsions. Mich. Ag. Exp. Sta. Bul. 76, p. 10.
- Distant, W. L.**
1880-93. Insecta. Rhynchota. Hemiptera-Heteroptera 1. Biologia Centrali-Americana. London. xx+462 pp., 39 pls.
- Douglas, John W., and John Scott**
1865. The British Hemiptera 1. Hemiptera-Heteroptera. London. xii+627 pp., 21 pls.
1871. British Hemiptera: additions and corrections. Entomologist's Monthly Magazine 8(1):23-9; (3):60-3.
1875. British Hemiptera: additions and corrections. Entomologist's Monthly Magazine 12(5):100-2.
- Emmons, Ebenezer**
1854. Natural history of New York. Agriculture 5, Insects. Albany. viii+272 pp., 3+47 pls.
- Fabricius, Johann Christian**
1794. Entomologia systematica 4. Hafniae. vi+472 pp.
1798. Supplementum entomologicae systematicae. Hafniae. 2+572 pp.
- Fallen, Carl Friedrich**
1807. Monographia Cimicum Sueciae. Hafniae. 123 pp.
1828-29. Hemiptera Sueciae. Cimicides earumque familiae affines. London. iv+1-16 pp., 1828; 17-186 pp., 1829.
- Fieber, Franz Xavier**
1859. Critirien zur generischen Theilung der Phytocoriden (Capsini aut.). Wiener Entomologische Monatschrift 2(10):289-327; (11):329-47. 6 pls.
1860-61. Fauna Austriaca, die europäischen Hemiptera. Halbflugler (Rhynchota-Heteroptera). Nach der analytischen Methode bearbeitet. Wien. 16+108 pp., 2 pls., 1860; 109-444, 1861.
- Fourcroy, Antoine Francois**
1785. Entomologia Parisiensis. Paris. 2 vols. 544 pp.
- Fulton, B. B.**
1918. Observations on the life-history and habits of *Pilophorus walshii* Uhler. Ent. Soc. Am. Ann. 11:93-6.
- Geoffroy, Etienne Louis**
1785. New species described in Fourcroy 1785.
- Gmelin, Johann Friedrich**
1790. Caroli a Linné systema naturae, thirteenth edition. Lipsiae. Tome 1, 4:2041-224.
- Goeze, Johann A. E.**
1778. Entomologische Beiträge zu des Ritter Linné Zwölften Ausgabe des Natursystems 2. Leipzig. 72+352 pp.
- Hahn, C. W., and G. A. W. Herrich-Schaeffer**
1831-53. Die Wanzenartigen Insecten. Nürnberg. Vols. 1-3(p.32), 1831-35 by Hahn. Vols. 3(p. 33)-9, 1836-53 by Herrich-Schaeffer.
- Heidemann, Otto**
1892. Note on the food-plants of some Capsidae from the vicinity of Washington, D. C. Ent. Soc. Wash. Proc. 2:224-6.
1905. A list of Capsids from the state of New York, with the description of a new species. N. Y. Ent. Soc. Jour. 13(1):48-50.
- Hottes, Frederick C., and Theodore H. Frison**
1931. The plant lice, or Aphididae, of Illinois. Ill. Nat. Hist. Surv. Bul. 19(3):121-447. 10 pls.

Hussey, R. F.

1924. A change of name (Hemiptera, Miridae). Brooklyn Ent. Soc. Bul. 19(5):165.

Jakovlev, B.

1880. Hemiptera-Heteroptera from Russia and adjacent countries (translated from Russian title). Russkoe entomologicheskoe obshchestvo Trudy 11:200-20.

Johnston, Horace G.

1930. Four new species of Miridae from Texas. Brooklyn Ent. Soc. Bul. 25(5):295-300.
1935. Five new species of Miridae. Brooklyn Ent. Soc. Bul. 30(1):15-8.

Kirschbaum, C. L.

1855. Rhynchographische Beiträge. Die Rhynchoten der Gegend von Wiesbaden. Erstes Heft, die Capsinen. Jahrbücher des Vereins für Naturkunde in Herzogthum Nassau 10: 161-348. Also separate, Wiesbaden, 189 pp.

Knight, Harry H.

1915. Observations on the oviposition of certain Capsids. Jour. Econ. Ent. 8(2):293-8.
- 1916a. Remarks on *Lygus invitus* Say, with descriptions of a new species and variety of *Lygus*. (Hemiptera, Miridae.) Can. Ent. 48(10):345-9.
- 1916b. *Paracalocoris hawleyi* n. sp., and var. *ancora* n. sp. Ent. Soc. Am. Ann. 9(4): 377-8.
- 1917a. New and noteworthy forms of North American Miridae (Hemiptera). Ent. News 28(1):3-8.
- 1917b. A revision of the genus *Lygus* as it occurs in America north of Mexico, with biological data on the species from New York. N. Y. (Cornell) Ag. Exp. Sta. Bul. 391:555-645. 1 pl.
- 1917c. Notes on species of Miridae inhabiting ash trees (*Fraxinus*) with the descriptions of new species (Hemiptera). Brooklyn Ent. Soc. Bul. 12(4):80-2.
- 1917d. New species of *Lopidea* (Miridae, Hemiptera). Ent. News 28(10): 455-61.
- 1918a. Synoptic key to the subfamilies of Miridae (Hemiptera, Heteroptera). N. Y. Ent. Soc. Jour. 26(1):40-4. 1 pl.
- 1918b. Old and new species of *Lopidea* from the United States (Hemiptera, Miridae). Ent. News 29(6):210-6. 1 pl.
- 1918c. Additional data on the distribution and food plants of *Lygus* with descriptions of a new species and variety (Hemiptera, Miridae). Brooklyn Ent. Soc. Bul. 13(2):42-5.
- 1918d. Interesting new species of Miridae from the United States, with a note on *Orthocephalus mutabilis* (Fallen)

(Hemiptera, Miridae). Brooklyn Ent. Soc. Bul. 13(5):111-6.

1920. New and little-known species of *Phytocoris* from the eastern United States (Heteroptera, Miridae). Brooklyn Ent. Soc. Bul. 15(2-3):49-66. 1 pl.
1921. Monograph of the North American species of *Deraeocoris* (Heteroptera, Miridae). Minn. State Ent. 18th Rep. 1920:76-210, pls. 8-9, figs. 2-44.
- 1922a. Nearctic records for species of Miridae known heretofore only from the Palaearctic region (Heteroptera). Can. Ent. 53(12):280-8.
- 1922b. The North American species of *Labops* (Heteroptera, Miridae). Can. Ent. 54(11):258-61.
- 1923a. A new *Peritropis* from the eastern United States (Heteroptera, Miridae). Ent. News 34(2):50-2.
- 1923b. A new species of *Labopidea* on garlic (Heteroptera, Miridae). Brooklyn Ent. Soc. Bul. 18(1):31.
- 1923c. A fourth paper on the species of *Lopidea* (Heteroptera, Miridae). Ent. News 34(3):65-72. 2 pls.
- 1923d. The Miridae (or Capsidae) of Connecticut. In Bul. 34, Conn. Geol. and Nat. Hist. Surv., pp. 422-658, figs. 47-149.
1925. Descriptions of twelve new species of *Polymerus* (Hemiptera, Miridae). Can. Ent. 57(10):244-53.
- 1926a. Descriptions of four new species of *Plagiognathus* from the eastern United States (Hemiptera, Miridae). Ent. News 37(1):9-12.
- 1926b. A new *Rhinacloa* and three new species of *Lepidopsallus* (Hemiptera, Miridae). Brooklyn Ent. Soc. Bul. 20(5):225-8. (Dated 1925.)
- 1926c. *Capsus simulans* (Stål) and *Labops burmeisteri* Stål recognized from the Nearctic region. Can. Ent. 58(3): 59-60.
- 1926d. Descriptions of seven new species of *Pilophorus* (Hemiptera, Miridae). Brooklyn Ent. Soc. Bul. 21(1):18-26.
- 1926e. Descriptions of nine new species of Bryocorinae (Hemiptera, Miridae). Brooklyn Ent. Soc. Bul. 21(3):101-8.
- 1926f. Notes on species of *Polymerus* with descriptions of four new species and two new varieties (Hemiptera, Miridae). Can. Ent. 58(7):164-8.
- 1926g. Descriptions of eleven new species of *Phytocoris* from eastern North America (Hemiptera, Miridae). Brooklyn Ent. Soc. Bul. 21(4):158-68.
- 1926h. Descriptions of six new species of Miridae from eastern North America (Hemiptera, Miridae). Can. Ent. 58(10):252-6.
- 1926i. A key to the North American species of *Macrolophus* with descriptions of two new species (Hemiptera, Miridae). Ent. News 37(10): 313-6.

- 1926j. Descriptions of seven new *Paracalocoris* with keys to the Nearctic species and varieties (Hemiptera, Miridae). Ent. Soc. Am. Ann. 19(4):367-77.
- 1927a. Notes on the distribution and host plants of some North American Miridae (Hemiptera). Can. Ent. 59(2):34-44.
- 1927b. Descriptions of twelve new species of Miridae from the District of Columbia and vicinity (Hemiptera). Biol. Soc. Wash. Proc. 40(2):9-18.
- 1927c. Descriptions of fifteen new species of *Ceratocapsus* (Hemiptera, Miridae). Ohio Jour. Sci. 27(3):143-54.
- 1927d. New species and a new genus of Deraeocorinae from North America (Hemiptera, Miridae). Brooklyn Ent. Soc. Bul. 22(3):136-43.
- 1927e. Descriptions of seven new species of the genus *Orthotylus* Fieber (Hemiptera, Miridae). Can. Ent. 59(8):176-81.
- 1928a. New species of *Labopidea* and *Macrotylodes* (Hemiptera, Miridae). Can. Ent. 60(10):233-6.
- 1928b. List of Miridae and Isometopidae in Leonard 1928.
- 1929a. New species of *Halticotoma* and *Sixeonotus* (Hemiptera, Miridae). Brooklyn Ent. Soc. Bul. 23(5):241-9. (Dated 1928).
- 1929b. Descriptions of five new species of *Plagiognathus* from North America (Hemiptera, Miridae). Ent. News 40(3):69-74.
- 1929c. New species of *Neoborus* and *Xenoborus* (Hemiptera, Miridae). Brooklyn Ent. Soc. Bul. 24(1):1-11.
- 1929d. The fourth paper on new species of *Plagiognathus* (Hemiptera, Miridae). Ent. News 40(8):263-8.
- 1930a. An European plant-bug (*Adelphocoris lineolatus* Goeze) found in Iowa (Hemiptera, Miridae). Ent. News 41(1):4-6.
- 1930b. New species of *Psallus* Fieber (Hemiptera, Miridae). Can. Ent. 62(6):125-31.
- 1930c. New species of *Ceratocapsus* (Hemiptera, Miridae). Brooklyn Ent. Soc. Bul. 25(4):187-98.
- 1930d. A new key to *Paracalocoris* with descriptions of eight new species (Hemiptera, Miridae). Ent. Soc. Am. Ann. 23(4):810-27.
1931. *Dacota hesperia* Uhler referred to *Atractotomus*, also descriptions of three new species (Hemiptera, Miridae). Brooklyn Ent. Soc. Bul. 26(1):36-8.
1934. *Neurocolpus* Reuter: key with five new species (Hemiptera, Miridae). Brooklyn Ent. Soc. Bul. 29(4):162-7.
1938. *Strongylocoris* Blanchard: six new species from North America (Hemiptera, Miridae). Iowa State Col. Jour. Sci. 13(1):1-7. 1 pl.
- 1939a. Three new species of Miridae from North America (Hemiptera). Bul. Brooklyn Ent. Soc. 34(1):21-3.
- 1939b. *Reuteria* Puton: four new species from the United States (Hemiptera, Miridae). Iowa State Col. Jour. Sci. 13(2):129-33. 1 pl.
- Knight, H. H., and W. L. McAtee**
1929. Bugs of the family Miridae of the District of Columbia and vicinity. U. S. Natl. Mus. Proc. 75:(13). 27 pp.
- Leonard, Mortimer D.**
1928. A list of the insects of New York. N. Y. (Cornell) Ag. Exp. Sta. Mem. 101. 1121 pp.
- Linnaeus, Carl**
1758. Systema naturae, tenth edition. Holmiae. 1. 2+824 pp.
1761. Fauna Suecica, second edition. Stockholmiae. 46+578 pp., 2 pls.
1767. Systema naturae, twelfth edition. Holmiae. 1(2):533-1327.
- McAtee, Waldo Lee**
1916. Key to the Nearctic species of *Paracalocoris* (Heteroptera, Miridae). Ent. Soc. Am. Ann. 9(4):366-90.
1919. Notes on two Miridae, *Camptobrochis* and *Paracalocoris* (Heteroptera). Ent. News 30(9):246-7.
- Meyer-Dür, L. R.**
1843. Verzeichniss der in der Schweiz einheimischen Rhynchoten (Hemiptera Linn.). Heft 1, familie Capsini. Solothurn. x+115+iv pp., 7 pls.
- Osborne, Herbert**
1898. Additions to the list of Hemiptera of Iowa. Iowa Acad. Sci. Pro. 5:232-47.
- Oshanin, B.**
1906-10. Verzeichnis der palaearktischen Hemipteren mit besonderer Berücksichtigung ihrer Verteilung im russischen Reiche. Annuaire du Musée Zoologique de l'Académie Imperiale des Sciences, St. Petersburg, xi-xv (Supplements). Vol. 1. Heteroptera. Lief. 1: lxxiv-393, 1906; Lief. 2: 395-586, 1908; Lief. 3: 587-1087, 1910 (1909). Vol. 2. Homoptera (1906-08). Vol. 3. Nachträge und Verbesserung zum 1 und 2 Bande. xvi+217 +1 pp., 1910.
- Parshley, Howard Madison**
1922. Report on a collection of Hemiptera-Heteroptera from South Dakota. S. D. State Ent. Tech. Bul. 2. 22 pp., 2 figs.
- Poppius, B. R.**
1914a. Übersicht der Pilophorus-arten nebst beschreibung verwandter Gattung (Hemiptera, Heteroptera). Annales de la Société Entomologique de Belgique 58:237-54.