# Two New Conifer-Inhabiting *Phytocoris* from Western North America (Hemiptera: Miridae)

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Abstract.—The new plant bug species *Phytocoris nobilis* and *P. occidentalis* are described from western North America. *Phytocoris nobilis* was collected on *Abies* spp. and *P. occidentalis* was taken on several species of *Pinus* and also collected at light. The adult male of *P. nobilis* and male genitalia of both species are illustrated.

Relatively little is known about the plant bug fauna of the northwestern United States. A recent survey of the *Phytocoris* species that occur in this region has revealed the presence of several undescribed species. *Phytocoris nobilis* and *P. occidentalis* are described to provide names for a forthcoming study of the Miridae of Oregon. *Phytocoris nobilis* was taken at several localities in the Coast and Cascade Ranges of Oregon on *Abies* spp. *Phytocoris occidentalis* occurs throughout much of coastal western North America on pines and also has been taken at light.

The following abbreviations are used for specimen depositories cited in the locality data: American Museum of Natural History (AMNH); California Academy of Sciences (CAS); California State Department of Food and Agriculture (F&A); Los Angeles County Museum (LACM); Oregon State University (OSU); San Diego Natural History Museum (SDNH); University of British Columbia (UBC); University of California, Berkeley (UCB); University of California, Riverside (UCR); National Museum of Natural History, Smithsonian Institution (USNM).

## Phytocoris nobilis, New Species (Figs. 1, 2–4)

Male (Fig. 1).—Length 7.68–8.85 mm, width 2.50–2.74. Head: width across eyes 1.20–1.27, vertex 0.36–0.39; dark reddish brown to nearly black; frons, gula, and ventral margin of lorum marked with white or pale yellow; base of jugum with conspicuous pale spot; vertex and frons with scattered, erect, black bristles. Rostrum: length 3.36–3.69, extending to 6th or 7th abdominal segment. Antennae: dark brown or black; with closely appressed, recumbent, light setae; I, length 1.50–1.71, with scattered, pale, often indistinct spots, and stout erect black bristles; II, length 3.46–3.93, narrowly pale at base; III, length 1.86–2.18; IV, length 1.14–1.27. Pronotum: mesal length 1.12–1.18, posterior width 1.98–2.05, white or pale yellow, lateral margins broadly fuscous. Scutellum: moderately convex, white or pale yellow, pale midline bordered by broad fuscous band. Hemelytra: opaque white, densely marked with small to large fuscous patches, particularly along

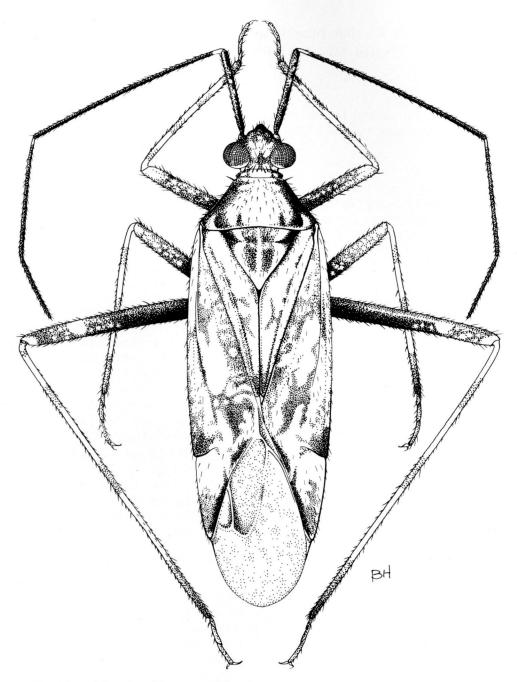
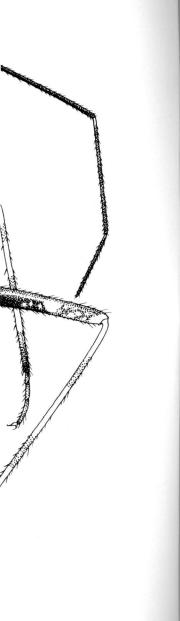


Figure 1. Phytocoris nobilis, n. sp., adult male.

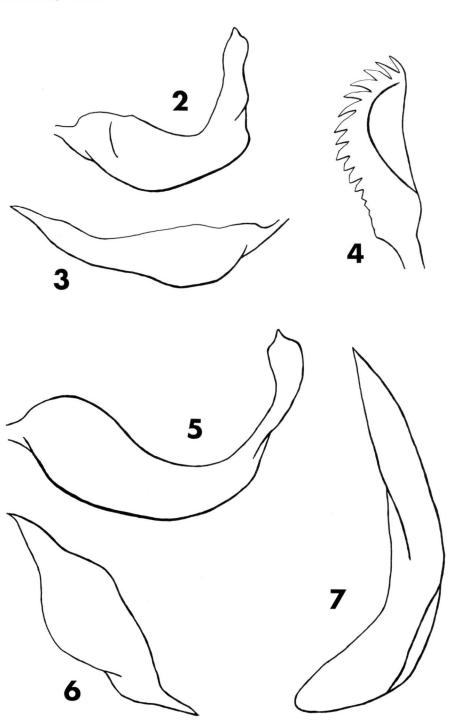
claval, cubital and radial veins; apices of clavus and cuneus, posterolateral angle of corium, and posterior margin of paracuneus fuscous; membrane conspurcate, veins dark, becoming pale posteriorly. Venter: dark brown or black, shining, with scattered pale setae. Legs: coxae white or pale yellow; femora fuscous, apical half



Figures 2–4. *Phytocoris* vesica. 5–7. *Phytocoris* vesica.



osterolateral angle orane conspurcate, black, shining, with fuscous, apical half



Figures 2-4. *Phytocoris nobilis*. 2. Left paramere. 3. Right paramere. 4. Sclerotized process of vesica. 5-7. *Phytocoris occidentalis*. 5. Left paramere. 6. Right paramere. 7. Sclerotized process of vesica.

marked with scattered pale spots, metafemora with preapical, transverse, pale band; tibiae fuscous, triannulate with white; tarsi fuscous; tarsal claws yellowish brown. Vestiture: pronotal disk, scutellum, and hemelytra with semierect, black setae intermixed with recumbent, silvery setae. Genitalia: Figures 2–4. Genital segment with large, broad tubercle at base of left paramere, and similar but smaller tubercle at base of right paramere. The male description is based on the examination of nine specimens.

Female.—Similar to male in color and vestiture; hemelytra with fewer fuscous patches, often nearly entirely white. Length 6.78–7.26 mm, width 2.32–2.60. Head: width across eyes 1.12–1.20, vertex 0.44–0.47. Rostrum: length 3.63–3.82, extending to base of ovipositor. Antennae: I, 1.46–1.63; II, 3.19–3.57; III, 1.67–2.05; IV, 0.95–1.18. Pronotum: mesal length 1.01–1.12, posterior width 1.79–1.98. The female description is based on the examination of 12 specimens.

Type data.—HOLOTYPE male, Oregon, Lane Co., H. J. Andrews Experimental Forest, T15S, R6E, Sec. 29, NW ¼, 1450 meters, July 31, 1979 (G. M. Cooper; USNM). PARATYPES: OREGON. Benton Co.: 2 males, Marys Peak, T12S, R7W, Sec. 21, SW ¼, 1097 meters, Aug. 6, 1975 (J. D. Lattin; OSU); 1 male and 3 females, Marys Peak, T12S, R7W, Sec. 20, SW ¼, 1070 meters, July 25–Aug. 17, 1979 (G. M. Cooper; OSU); 1 male and 2 females, Marys Peak, T12S, R7W, Sec. 21, SW ¼, 1097 meters, Aug. 3, 1979 (G. M. Cooper; OSU). Lane Co.: 1 female, same data as holotype (G. M. Stonedahl; USNM); 2 males and 5 females, H. J. Andrews Experimental Forest, T15S, R6E, Sec. 29, SW ¼ and SE ¼, 1480 meters, July 20 & 31, 1979 (G. M. Cooper, G. M. Stonedahl; AMNH, OSU); 1 male and 1 female, same data as above but July 13, 1980 (G. M. Cooper; CAS); 1 male, H. J. Andrews Experimental Forest, T15S, R6E, Sec. 7, SW ¼, 1329 meters, July 31, 1979 (G. M. Stonedahl; OSU).

Specimens were collected on noble fir, *Abies procera* Rehd. and silver fir, *Abies amabilis* (Dougl.) Forbes.

Remarks.—This species belongs to the junceus species group formed by Knight (1974) and discussed by Kelton (1979) and Henry (1979). Phytocoris nobilis keys to P. rainieri Knight in Knight (1974:126) based on the predominantly white pronotal disk and hemelytra, and the relatively short first antennal segment. The two species can be separated on the basis of color and vestiture of the dorsum, legs, and antennae. The dorsum of P. nobilis has a lighter, grayish white cast compared to the reddish brown cast of P. rainieri. The hind femora of P. nobilis are fuscous with scattered pale spots that are largely restricted to the apical half of the femur. In P. rainieri, the hind femora are pale yellow with a reticulate, reddish brown pattern that extends to the base of the femur. The tibiae of P. nobilis are clearly triannulate with white, but banding is indistinct or lacking in P. rainieri. The femora and first antennal segments of P. rainieri are more densely set with erect, black, bristle-like setae than are those of P. nobilis. Male genitalia were not compared since the male of P. rainieri is unknown.

### Phytocoris occidentalis, New Species (Figs. 5–7)

Male.—Length 4.43–5.83 mm, width 1.53–1.71. Head: width across eyes 0.90–0.94, vertex 0.29–0.32; pale yellow to testaceous; buccula, lorum, jugum, and clypeus marked with red or reddish brown; frons with 6–8 fuscous striae each

side of midline. R segment. Antenna recumbent, black rowly pale at base 0.90. Pronotum: 1 or grayish yellow, 6 slightly elevated tellum: testaceous pecially along mid dish cast, areas bor translucent, confu larger fuscous pate cated basally. Ven or reddish brown; pale yellow with s red or reddish bro sively infuscated spots, pale marking testaceous to fusco and hemelytra wit like setae and whit a finger-shaped tul is based on the ex

Female. – Very mm, width 1.51–1 trum: length 1.98-I, 0.68–0.80; II, 1. 0.70–0.86, posteri examination of 29

Type data.—HC on US 199, Aug. 8 PARATYPES: OI 9 males and 3 fem OSU).

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formed by Knight occoris nobilis keys dominantly white anal segment. The re of the dorsum, trayish white cast mora of *P. nobilis* to the apical half with a reticulate, The tibiae of *P.* inct or lacking in are more densely lis. Male genitalia

across eyes 0.90– rum, jugum, and scous striae each side of midline. Rostrum: length 1.89–2.30, extending to 5th or 6th abdominal segment. Antennae: dark reddish brown to fuscous; I, length 0.68-0.79, with recumbent, black setae and 10-12 erect, pale bristles; II, length 1.78-2.03, narrowly pale at base; III, length 1.03-1.30, narrowly pale at base; IV, length 0.68-0.90. Pronotum: mesal length 0.71-0.81, posterior width 1.28-1.42; testaceous or grayish yellow, collar and calli marked with red; posterior submargin with 4-6 slightly elevated tubercles outlined posteriorly by a wavy, fuscous band. Scutellum: testaceous or grayish yellow; frequently marked or tinged with red, especially along midline. Hemelytra: testaceous or grayish yellow with distinct reddish cast, areas bordering claval suture darker brown; cuneus deeper red; membrane translucent, confusedly sprinkled with fuscous spots which often coalesce to form larger fuscous patches, veins pale, usually tinged with red and sometimes infuscated basally. Venter: testaceous or grayish yellow, extensively mottled with red or reddish brown; base of 9th abdominal segment broadly fuscous. Legs: coxae pale yellow with scattered, reddish patches; femora pale yellow, reticulated with red or reddish brown so that pale areas appear as spots, metafemora more extensively infuscated apically; tibiae reddish brown to fuscous with scattered, pale spots, pale markings on front tibiae often appearing as three distinct bands; tarsi testaceous to fuscous; tarsal claws testaceous. Vestiture: pronotal disk, scutellum, and hemelytra with semierect, black setae intermixed with brown or black, scalelike setae and white, scale-like setae. Genitalia: Figures 5–7. Genital segment with a finger-shaped tubercle at bases of left and right parameres. The male description is based on the examination of 46 specimens.

Female.—Very similar to male in color, vestiture, and size. Length 4.37–5.29 mm, width 1.51–1.71. Head: width across eyes 0.80–0.95, vertex 0.33–0.41. Rostrum: length 1.98–2.47, extending to 5th or 6th abdominal segment. Antennae: I, 0.68–0.80; II, 1.76–2.11; III, 1.12–1.30; IV, 0.76–0.94. Pronotum: mesal length 0.70–0.86, posterior width 1.19–1.49. The female description is based on the examination of 29 specimens.

Type data.—HOLOTYPE male, Oregon, Josephine Co., 4 mi NE Cave Junction on US 199, Aug. 8, 1979, ex *Pinus ponderosa* Dougl. (G. M. Stonedahl; USNM). PARATYPES: OREGON. 3 males and 1 female, same data as holotype (OSU); 9 males and 3 females, same data as holotype but Aug. 24, 1979 (AMNH, CAS, OSU).

Additional specimens.—CANADA. BRITISH COLUMBIA. Goldstream, Aug. 4, 1927 and Aug. 16, 1929 (W. Downes; UBC). UNITED STATES. CALIFORNIA. Alameda Co.: Berkeley, Aug. 28 and Oct. 1, 1965, at light (R. L. Langston; UCB). Butte Co.: Oroville, July 13, 1926 (H. H. Keifer; CAS). Contra Costa Co.: Moraga, July 24 and Sept. 23, 1976 (D. G. Denning; AMNH); San Pablo Dam Res., June 29, 1978, ex Pinus radiata D. Don (C. P. Ohmart; OSU); Walnut Crk., Aug. 20, 1969, at blacklight (J. A. Powell; UCB). Mariposa Co.: Feliciana Mtn., July 26, 1946, ex Pinus attenuata Lemmon (R. L. Usinger; UCB). Plumas Co.: Johnsville, Sept. 2, 1967, light trap (H. Pini; F&A). Sacramento Co.: Sacramento, June 15–26, 1968 (R. A. Belmont; F&A). San Bernardino Co.: San Bernadino Mts., Mill Crk., 1829 meters, Sept. 2, 1950, at light (Timberlake; UCR); San Bernardino Mts., South Fork Camp, 1890 meters, Sept. 10, 1944, ex Pinus ponderosa (Timberlake; UCR); San Bernardino Mts., Camp O-Ongo nr. Running Springs, 1920 meters, Aug. 31, 1971 (C. L. Hogue; LACM); 4 mi S Twentynine

Palms, March 30, 1970, ex *Yucca schidigera* Roezl (UCB). San Diego Co.: Laguna, Aug. 21, 1927 (SDNH). Shasta Co.: Lakehead, 350 meters, June 26, 1981, ex *Pinus sabiniana* Dougl. (J. D. Lattin; OSU). Siskiyou Co.: McCloud, 1073 meters, Aug. 9 & 20, 1980, ex *Pinus attenuata* (G. M. Stonedahl; OSU). Yolo Co.: 5 mi N Rumsey, May 2, 1973 (J. C. Miller; OSU). OREGON. Grant Co.: Malheur Nat. For., Dixie Campground, Aug. 24, 1981, ex *Pinus ponderosa* (G. M. Stonedahl; OSU). Hood River Co.: Mt. Hood, Cloud Cap, 1829 meters, Sept. 5, 1979, ex *Pinus contorta* Dougl. (G. M. Stonedahl; OSU); T1S, R10E, Sec. 31, Sept. 13, 1979, ex *Pinus contorta* (G. M. Stonedahl; OSU); T3S, R9E, Sec. 18, 1311 meters, Sept. 13, 1979, ex *Pinus contorta* (J. D. Lattin; OSU). Josephine Co.: O'Brien, Aug. 2, 1968 (P. Oman; OSU); 2 mi W O'Brien, Aug. 10, 1979, ex *Pinus ponderosa* (G. M. Stonedahl; OSU). Linn Co.: 1 mi W jct. State Hwy. 22 on US 20, Sept. 19, 1979, ex *Pinus contorta* (G. M. Stonedahl; OSU); 0.5 mi N jct. US 20 on State Hwy. 22, 1158 meters, Sept. 1, 1977, ex *Pinus contorta* (J. D. Lattin; OSU).

Remarks.—Phytocoris occidentalis will key to P. miniatus Knight in Knight (1968:219) but is easily separated from miniatus by the submarginal, fuscous band on the pronotal disk and the black, scale-like setae on the dorsum. Phytocoris occidentalis is much larger than P. miniatus which has an average size of only 3.4 mm. The geographic ranges of these two species also are different. Phytocoris miniatus is known only from Arizona and Utah.

Phytocoris occidentalis is superficially similar to another pine-inhabiting Phytocoris species, P. stellatus Van Duzee. Phytocoris stellatus is easily separated from occidentalis by the absence of black, scale-like setae on the dorsum and the structure of the male genitalia, particularly the absence of the genital tubercles.

#### ACKNOWLEDGMENTS

I wish to thank John D. Lattin (OSU), Paul W. Oman (OSU), and Thomas J. Henry (USDA, SEL, % USNM) for reviewing the manuscript; and special thanks to Richard C. Froeschner (USNM) for loaning type specimens of *P. abiesi* Knight and *P. rainieri* Knight for comparison. I also thank Bonnie B. Hall for the fine illustration of *P. nobilis* and Julie A. Stonedahl for help in preparing the manuscript. The Theodore Roosevelt Memorial Fund (AMNH) and the Oregon State University Foundation provided funds to study additional type material at the USNM.

#### LITERATURE CITED

- Henry, T. J. 1979. Descriptions and notes on five new species of Miridae from North America (Hemiptera). Melsheimer Entomol. Ser., 27:1–10.
- Kelton, L. A. 1979. Two new species of *Phytocoris* from western Canada (Heteroptera:Miridae). Can. Entomol., 111:689–692.
- Knight, H. H. 1968. Taxonomic review: Miridae of the Nevada Test Site and the western United States. Brigham Young Univ. Sci. Bull., Biol. Ser., 9(3):1–282.
- ——. 1974. A key to the species of *Phytocoris* Fallén belonging to the *Phytocoris junceus* Kngt. group of species (Hemiptera, Miridae). Iowa State. J. Res., 49:123–135.