

SYLVANIA: Monroe Co., Long Pond, and Schuylkill Co., Frackville, numerous records during study.

*Biology.* The habits of *P. olseni* have not been recorded in the eastern United States. Described from the New Jersey Pine Barrens (holotype, Lakehurst) and several localities in the Long Island barrens (Knight, 1923), it is a characteristic species of northeastern pine barrens. It also is common on shrubby oaks in sand scrub habitats in Florida (Wheeler, unpubl.). Knight (1941) placed *olseni* in a phytophagous group of the genus. Oaks are known as hosts in the West, specifically gambel oak (*Q. gambelii* Nutt.) in Colorado (Stonedahl, 1988). Stonedahl, however, noted that western populations of *P. olseni* possibly represent a distinct species.

At Frackville, overwintered eggs of this univoltine mirid hatched in early to mid-May, third instars usually were present by late May, and fifth instars by early or mid-June. Field observations suggest that early instars feed on staminate catkins. The first adults were seen in mid- to late June and were present until mid- or late July; at Long Pond they were collected as late as mid-August. In the Albany Pine Bush, third and fourth instars were found on 10 June, and fifth instars and adults on 30 June.

#### *Phytocoris purvus* Knight

*Distribution.* Reported from District of Columbia, Iowa, Illinois, Maryland, Missouri, North Carolina, South Carolina, and West Virginia (Blinn and Yonke, 1985; Henry and Wheeler, 1988). New records are MAINE: York Co., Shapleigh and Waterboro barrens, Aug. 7-9, 1990. MASSACHUSETTS: Plymouth Co., Myles Standish State Forest, Aug. 5, 1990. NEW JERSEY: Sussex Co., High Point State Park, July 28, 1990. NEW YORK: Ulster Co., Minnewaska State Park, Aug. 3, 1990. PENNSYLVANIA: Schuylkill Co., Frackville Barrens, several collections during study.

*Biology.* This species, taken mainly at light, has been collected (1 specimen) on bald cypress [*Taxodium distichum* (L.) L. Rich.] in Illinois (Knight, 1941). A Missouri specimen was taken on a sticky board in "oak hickory canopy" (Blinn and Yonke, 1985).

Uncommon at Frackville, *P. purvus* was collected during July and August; fifth instars were taken throughout July. This species was common on scrub oak at High Point State Park in New Jersey and in the Shapleigh-Waterboro barrens in Maine, where late instars and adults were beaten from lichen-covered branches.

#### *Phytocoris salicis* Knight

This widely distributed (Henry and Wheeler, 1988) predator of soft-bodied arthropods and their eggs on apple (Braumah et al., 1982), which also is known from other trees and shrubs (Knight, 1941; Wheeler et al., 1983), was seldom taken on scrub oak (Table 1). A few adults were observed at Frackville in early July; they were seen in larger numbers at Long Pond in early July and were present until mid-August.

#### *Phytocoris spicatus* Knight

A wide-ranging (Henry and Wheeler, 1988) but poorly known mirid reported from *Quercus alba* in Missouri (Blinn and Yonke, 1985). Pennsylvania (Frackville Barrens) is a new state record. At Frackville, fifth instars were collected in late May and adults