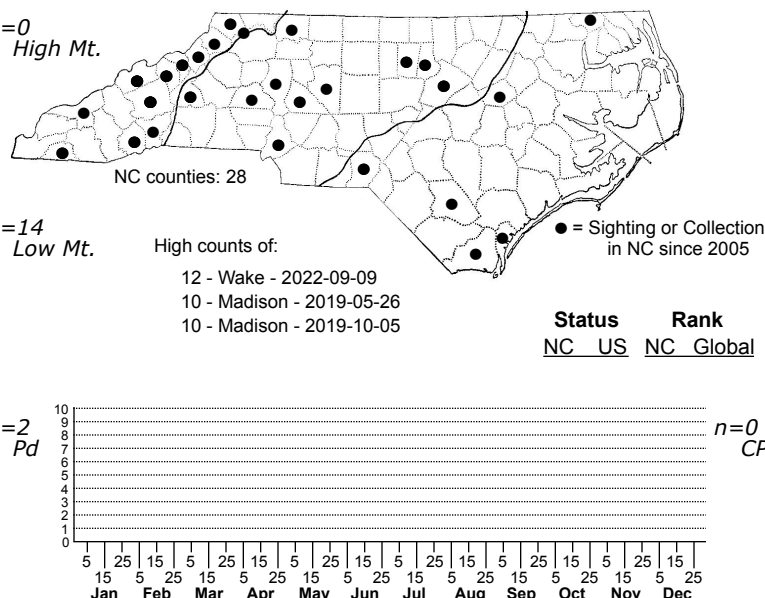
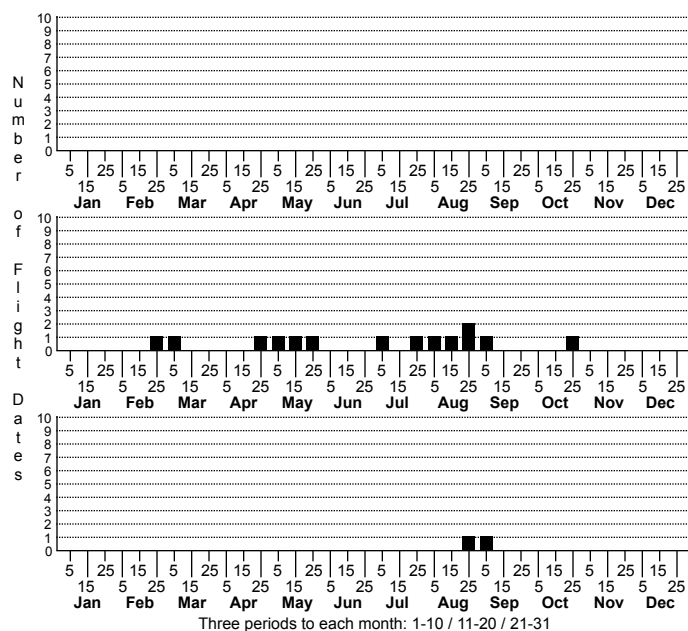


# Phyllocnistis insignis None



FAMILY: Gracillariidae SUBFAMILY: Phyllocnistinae TRIBE: [Phyllocnistini]

TAXONOMIC\_COMMENTS: <i>Phyllocnistis</i> is a large genus with more than 125 described species worldwide, with 16 species currently recognized in North America. Davis and Wagner (2011) surmised that there may be hundreds of undescribed species in the neotropics. The adults of some species are very similar, and knowledge of the host plant and mine characteristics is helpful in identifying morphologically similar species (Eiseman, 2019).

FIELD GUIDE DESCRIPTIONS:

ONLINE PHOTOS:

TECHNICAL DESCRIPTION, ADULTS: Forbes (1923)

TECHNICAL DESCRIPTION, IMMATURE STAGES: Forbes (1923)

ID COMMENTS: The adults are boldly marked with gray, orange, white, and black patterning and are not easily confused with other species. The head and thorax are lead-colored, and the forewing is mostly lead-colored from the base to the middle. The lead-colored region is bordered by a thinner orangish region that is black-edged and extends almost to the apical margin. The costal margin is black and expands into a dark, triangular region near the middle that often has light grayish or whitish marks within. Light spotting continues from there along the costal margin to the apex. A conspicuous black spot occurs on the outer margin.

DISTRIBUTION: <i>P. insignis</i> is widely distributed in eastern North America from Ontario, Nova Scotia and Wisconsin southward to Texas, Louisiana and Florida. In North Carolina, this species appears to be common in the Piedmont and Blue Ridge, but uncommon in the Coastal Plain.

FLIGHT COMMENT: The flight season in North Carolina is poorly documented. Jim Petranks observed larvae overwinter in Madison Co. The larvae were inactive during cold weather, but resumed mining during brief bouts of warm winter weather. Adults emerged from mature mines that were collected in early February in Madison Co. on 22 February, after three weeks at room temperature. Adults emerged from mines that were collected on 18 February in Buncombe Co. on 8 March. This suggest that the adults in natural populations first emerge in March or early April in the mountains. This species has multiple broods and is active through early autumn (Eiseman, 2019).

HABITAT: <i>P. insignis</i> uses a variety of host plants that occur in habitats that include dry to mesic forests, woodland edges, fields and roadsides, and highly disturbed, weedy habitats.

FOOD: This species is a specialist on members of the Asteraceae. Except for one observation of <i>P. insignis</i> using <i>Prenanthes</i>, it specializes on members of the tribe Senecioneae (Eiseman 2019). Host taxa that occur in North Carolina include <i>Arnoglossum</i>, <i>Erechtites</i>, <i>Packera</i>, <i>Senecio</i>, and <i>Tussilago</i>. Larvae in the mountains frequently overwinter in the basal leaves of Golden Ragwort (<i>Packera aurea</i>). The most commonly used host plants during the spring and summer months are species of <i>Packera</i>, <i>Arnoglossum</i>, and <i>Erechtites</i>. In North Carolina, we have feeding records for Pale Indian-plantain (<i>Arnoglossum atriplicifolium</i>), Great Indian-plantain (<i>A. reniforme</i>), American Burnweed (<i>Erechtites hieraciifolia</i>), Small's Ragwort (<i>Packera anonyma</i>), Golden Ragwort, Butterweed (<i>P. glabella</i>), and Common Groundsel (<i>Senecio vulgaris</i>).

OBSERVATION\_METHODS: The easiest way to document local populations is by searching for the conspicuous leaf mines that occur on host plants. Species of <i>Arnoglossum</i>, <i>Erechtites</i>, and <i>Packera</i> are commonly used in North Carolina. Several species of flies (e. g., <i>Phytomyza</i> and <i>Liriomyza</i>) produce long, linear mines that superficially resemble those of <i>P. insignis</i>. However, these generally either exit the mine to pupate elsewhere, or complete the mine on the underside of the leaf where they spin cocoons. <i>P. insignis</i> can be reliably identified based on the enlarged, terminal pupal chamber on the upper surface and the presence of a pupal skin on the upper surface. If mines with pupae are held in captivity, the adults will typically emerge within 1-2 weeks. The adults appear to only occasionally visit lights.

NATURAL HERITAGE PROGRAM RANKS: GNR S4S5

STATE PROTECTION: Has no legal protection, although permits are required to collect it on state parks and other public lands.

COMMENTS: This species is probably more common than records suggest due to the fact that little effort has been put forth to document leafminers in the state.