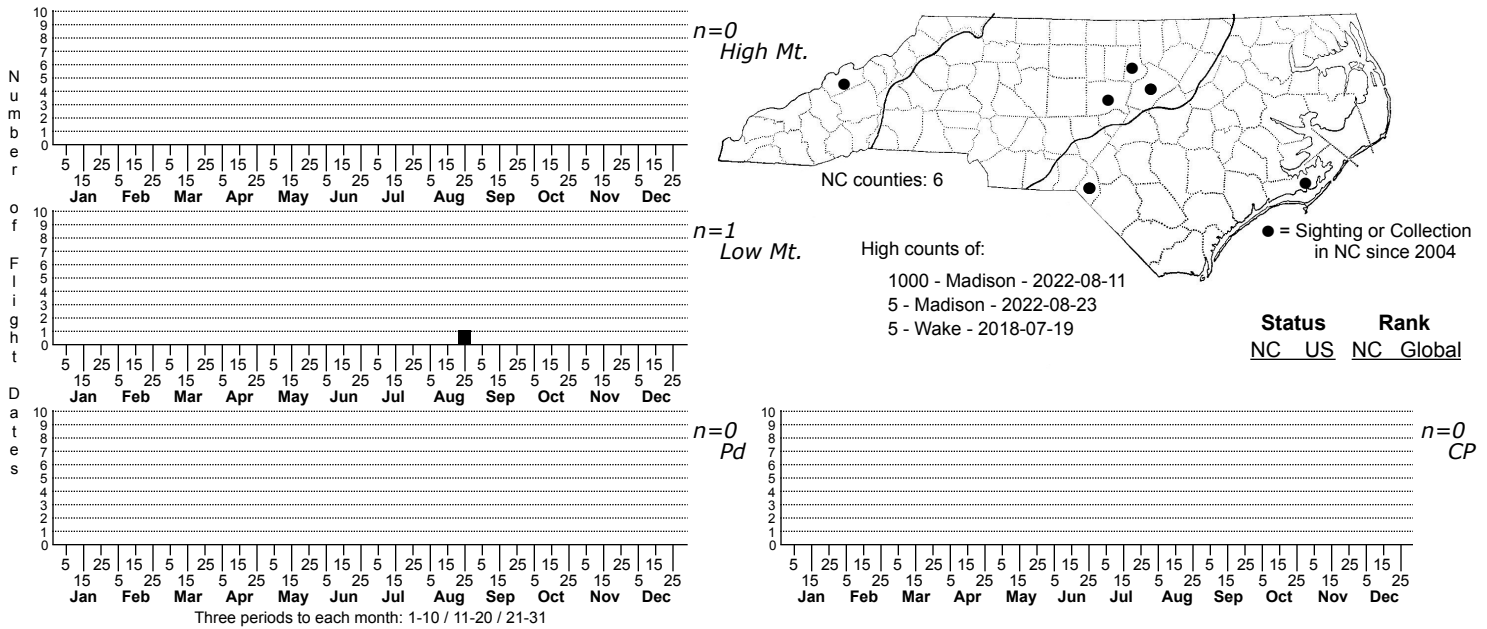


Porphyrosela desmodiella Tentiform Bean Leafminer



FAMILY: Gracillariidae SUBFAMILY: Lithocolletinae TRIBE: [Lithocolletini]

TAXONOMIC COMMENTS: *Porphyrosela* is a genus of small leaf-mining moths that feed on legumes. There are 12 described species that occur worldwide, including in North and South America, Africa, Asia, and Australia.

FIELD GUIDE DESCRIPTIONS:

ONLINE PHOTOS:

TECHNICAL DESCRIPTION, ADULTS: Braun, 1908.

TECHNICAL DESCRIPTION, IMMATURE STAGES: Eiseman, 2019.

ID COMMENTS: This is a tiny but distinctive moth that is about the size of a small gnat. The following is based in part on the description in Braun (1908). The forehead is silvery white and the head tuft brown. The antenna is slightly shorter than the forewing and is black with a white tip. The thorax is silvery white, while the ground color of the forewing is orange with brown metallic highlights. The forewing has several silvery white streaks with black scales on both margins. The first is posteriorly oblique and occurs at about one-third the wing length. It extends from the costal margin to near the dorsal margin. In some specimens it may continue to the dorsal margin to form a complete fascia. A similar streak or fascia runs obliquely in the opposite direction near the middle of the wing. Near the apex there are two silvery white patches with black margins. One is a small, triangular-shaped mark on the dorsal margin at the beginning of the fringe. Just posterior and opposite to this, there is a short, anteriorly oblique streak that extends into the fringe. The fringe is silvery gray with darker shading often evident near the base. The hindwing is narrowly lanceolate and brownish gray, with a fringe of long hairs around the edges. The legs have a mixture of dark coloration with silver or copper highlights.

This species closely resembles *P. minuta*. Eiseman et al. (2017) noted that when *P. desmodiella* is viewed laterally, the second fascia is approximately perpendicular with the wing margins, and bends somewhat so that it parallels the first fascia toward the costal margin. The space between the fascias along the costal margin is approximately 20–30% larger than on the dorsal margin. In *P. minuta*, the first and second fascias are angled equally, but in opposite directions, such that the space between them on the costal margin is about twice that on the dorsal margin. The two are further distinguished by the absence of the well-defined, black terminal line on the forewing of *P. desmodiella*.

DISTRIBUTION: *Porphyrosela desmodiella* is widespread in eastern North America, and occurs as far west as Arizona and as far south as the Caribbean. In eastern North America, the range extends from Ontario and Maine southward to Florida and westward to Iowa, Kansas and Texas. As of 2022, our records are from the eastern Piedmont, Coastal Plain, and low elevations in the Blue Ridge.

FLIGHT COMMENT: Many local populations appear to be bivoltine, with an initial brood in April and May that is followed by a second brood that peaks around August. The second generation overwinters in the pupal stage.

HABITAT: The larvae are polyphagous, but generally tend to use species that are associated with open, sunny habitats such as old fields, meadows, roadbanks, clearcuts, and the edges of woodland roads and paths.

FOOD: The larvae mine the leaves of several genera of legumes (Eiseman et al., 2017; 2019). The reported hosts include Spurred Butterfly-pea (*Centrosema virginianum*), Florida Tick-trefoil (*Desmodium tortuosum*), Velvety Tick-trefoil (*D. viridiflorum*), Japanese Clover (*Kummerowia striata*), Bicolor Lespedeza (*Lespedeza bicolor*), Roundhead Lespedeza (*L. capitata*), Thunberg's Lespedeza (*L. thunbergii*), Small-flowered Sand Bean (*Strophostyles leiosperma*) and possibly Naked Tick-trefoil (*Hylodesmum nudiflorum*). As of 2022, we have records of this species using several other lespedezas, including Creeping Lespedeza (*L. repens*), Sericea Lespedeza (*L. cuneata*), and Wand Lespedeza (*L. violacea*).

OBSERVATION_METHODS: The adults appear to only occasionally visit lights, and many records are based on leaf mines or adults reared from mines.

NATURAL HERITAGE PROGRAM RANKS: GNR S3S4

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

COMMENTS: As of 2022, the few records that we have for this species are based on leaf mines and reared adults. The species is presumably more common than our records suggest due to the limited effort to document leafminers within the state.