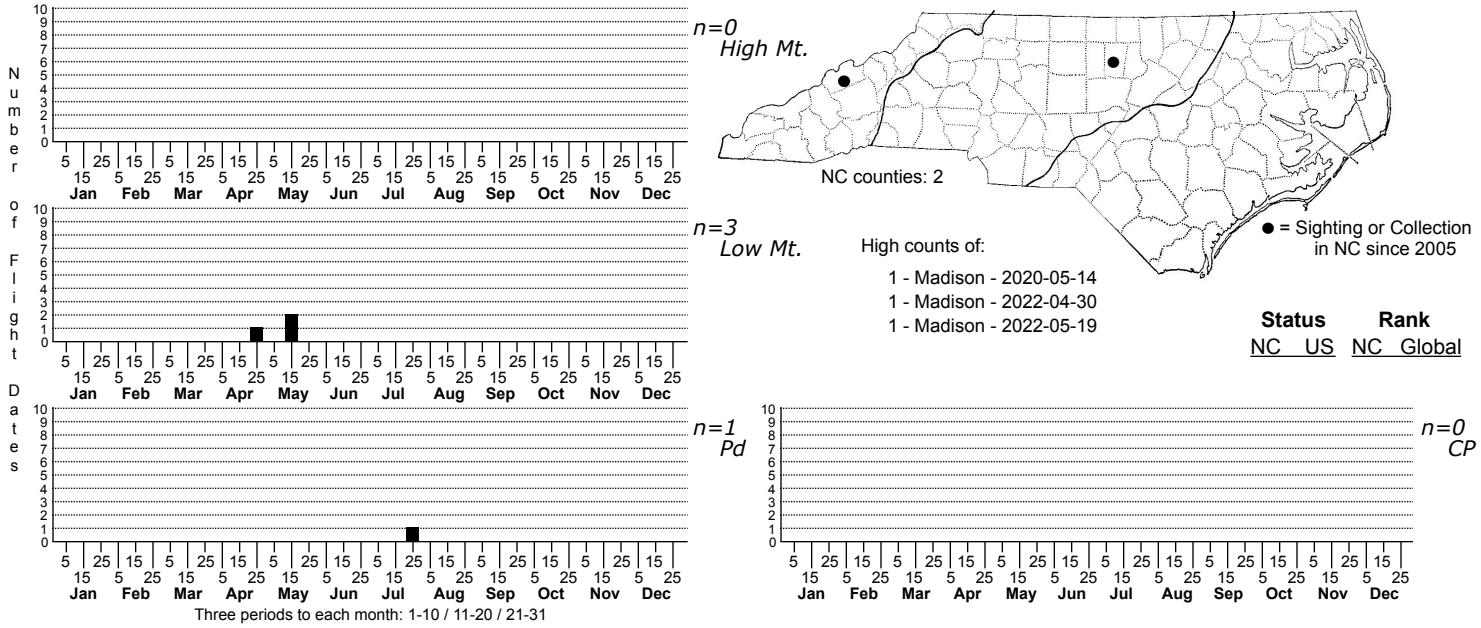
Stigmella macrocarpae None



FAMILY: Nepticulidae SUBFAMILY: TRIBE:
TAXONOMIC_COMMENTS: Members of the genus Stigmella are a group of small leaf-mining moths that typically create linear mines, although a few species form linear-blotch or blotch mines. Newton and Wilkinson (1982) recognized 51 species in their revision on the North American fauna, and new discoveries have since raised the total to around 57 species. Almost all species are specialists and rarely use more than one genus of host plants. Host-specificity, mine characteristics, and genitalic differences are helpful in recognizing closely related forms that are externally similar.

FIELD GUIDE DESCRIPTIONS:
ONLINE PHOTOS:
TECHNICAL DESCRIPTION, ADULTS: Van Nieukerken et al. (2016).
TECHNICAL DESCRIPTION, IMMATURE STAGES: Eiseman (2022).

ID COMMENTS: Stigmella macrocarpae is a distinctive species that is mostly creamy to buff-white, with a contrasting dark and relatively narrow sub-basal band on the forewing, along with a relatively wide band on the apical third of the wing. The scale tuft on the face is ocherous to dull-white, while the tuft on the vertex is dark-brown to blackish. The collar, eye-cap, thorax, and extreme base of the forewing are creamy white to buff-white. The remainder of the forewing is dark-brown to blackish, except for a very broad buff-white band near the middle. The white band is usually immaculate or nearly so, but specimens are occasionally found with substantial dark speckling in the band. The cilia along the terminal margin are creamy-white, but often fade to light gray towards the inner margin and costa. Both the hindwing and cilia are light gray. S. nigriverticella resembles S. macrocarpae, but has a relatively narrow white band near the middle of the wing that is about the same width as the blackish sub-basal band that adjoins it. In S. macrocarpae, the central white band is about twice as wide as the sub-basal band.

DISTRIBUTION: As currently recognized, S. macrocarpae is found in both western and eastern North America. In the West it occurs in British Columbia, Oregon and California, while in the East it is more broadly distributed in southern Canada (Ontario eastward to New Brunswick and Nova Scotia) and the eastern U.S. from the New England states southward through the Atlantic Coast states to Florida and westward to Alabama, Tennessee, West Virginia, Indiana and Iowa. There is at least one isolated record from Colorado. As of 2024, all of our records are from a lower-elevation site in the central Blue Ridge.

FLIGHT COMMENT: Local populations appear to be at least bivoltine (Eiseman, 2022). Adults have been collected from January through October in different areas of the range, with the great majority of records from May through October. Our very limited records as of 2024 are from late-April through mid-May.

HABITAT:

FOOD: The larvae mine the leaves of oaks, including species in both the eastern and western U.S. (Eiseman, 2022). The known hosts including White Oak (Quercus alba), Gambel Oak (Q. gambelii), Oregon White Oak (Q. garryana), California Black Oak (Q. kelloggii), Valley Oak (Q. lobata), Bur Oak (Q. macrocarpa), and Post Oak (Q. stellata). Eiseman (2022) noted that literature records from Scarlet Oak (Q. coccinea), Pin Oak (Q. palustris), and Northern Red Oak (Q. rubra) need confirmation. In North Carolina, Tracy Feldman has a record (BugGuide, 2016) for a mine on Southern Red Oak (Q. falcata).

OBSERVATION_METHODS:

NATURAL HERITAGE PROGRAM RANKS: GNR[S2S3]

STATE PROTECTION:

COMMENTS: This species is currently known from only one site in North Carolina. Much mire information is needed on its distribution and host use before we can accurately assess its conservation status in the state.