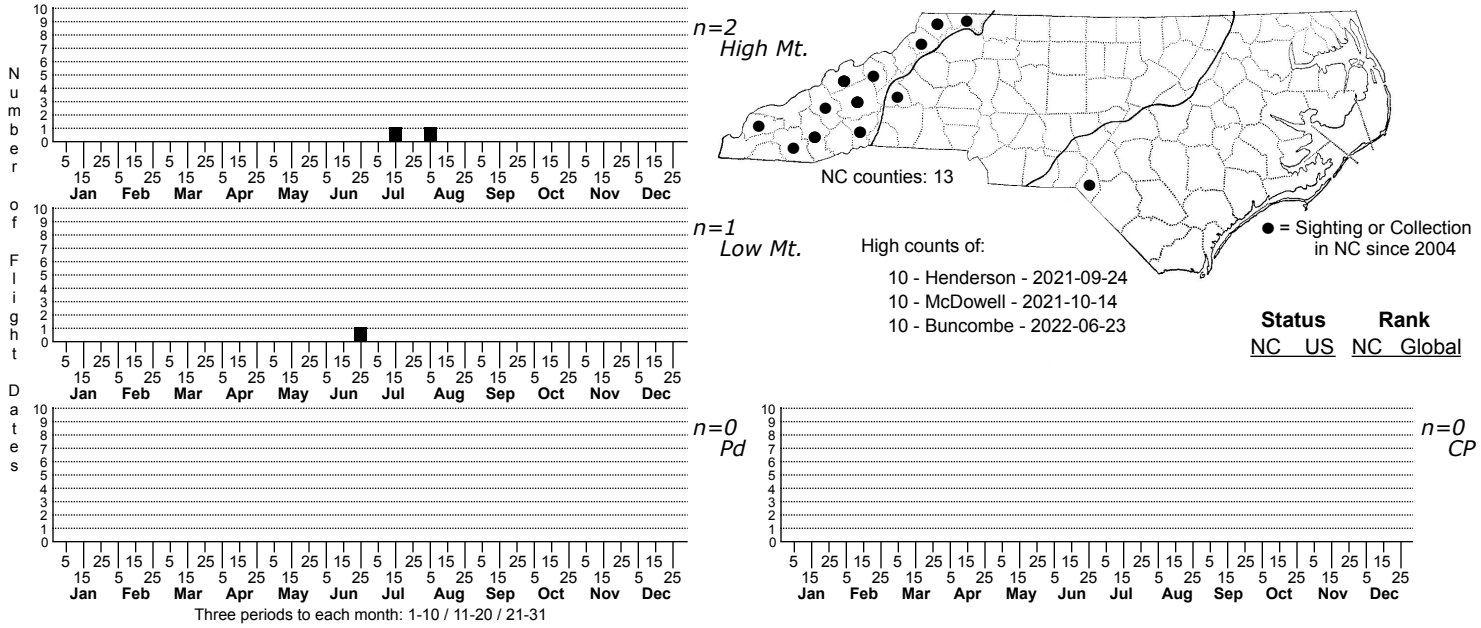
Stigmella quercipulchella No common name



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: Wilkinson and Scoble (1979)
TECHNICAL DESCRIPTION, IMMATURE STAGES: Wilkinson and Scoble (1979); Braun (1917).

ID COMMENTS: The following description of adults is based on Wilkinson and Scoble (1979). The palps are whitish and the antenna is grayish brown with a gray luster. The eye-cap is shining white to silvery. The tuft on the front of the head is deep ocher, while the tuft on the vertex is brownish black. The collar is dull white. The thorax and abdomen are black with bronze reflections. The ground color of the forewing is grayish black with brilliant reflections that include violet, bronze, golden, red and green coloration. There is a single white postmedial fascia that shines silver (rarely greatly reduced and inconspicuous). The fringe is gray with purple reflections. The hindwing is grayish brown with purple dusting, and the fringe is gray with purple reflections. The legs are dark gray, but become whitish with a white luster towards the tarsi. External characters that help to distinguish this species include the shining white eye-cap, the black tuft on the vertex, the brilliant reflections on the forewing, and a narrow, shining silver fascia. Positive identification is best achieved by using genitalia, DNA analyses, or raising adults from leaf mines.

DISTRIBUTION: Stigmella quercipulchella is widely distributed in eastern North America (Eiseman, 2019). It is found in southeastern Canada (Ontario; Quebec; New Brunswick; Nova Scotia) and the eastern US from Vermont, Massachusetts, and Connecticut, westward to Illinois and Ohio, and as far south as Kentucky and North Carolina. As of 2020, our only records are from the high mountains and the Coastal Plain.

FLIGHT COMMENT: There are at least two generations and up to as many as four (Braun, 1917).

HABITAT: In North Carolina, local populations occur in a wide variety of mesic habitats that support oaks. Populations have been found at sites ranging from rich hardwood slopes in the mountains to riparian and wet hardwood forests in the Coastal Plain.

FOOD: Northern Red Oak (Quercus rubra) appears to be an important primary host, but S. quercipulchella will use other oaks, including Scarlet Oak (Q. coccinea), Bear Oak (Q. ilicifolia), Blackjack Oak (Q. marilandica), Water Oak (Q. nigra), and Pin Oak (Q. palustris). As of 2022, North Carolina specimens have been found mostly on Northern Red Oak, but also on Scarlet Oak and Water Oak.

OBSERVATION_METHODS: The adults appear to only occasionally visit lights, so we recommend searching for active leaf mines on Quercus rubra or other oaks and rearing the adults.

NATURAL HERITAGE PROGRAM RANKS: GNR S3S4

STATE PROTECTION:

COMMENTS: We currently do not have adequate information to assess the conservation status of this species in the state.