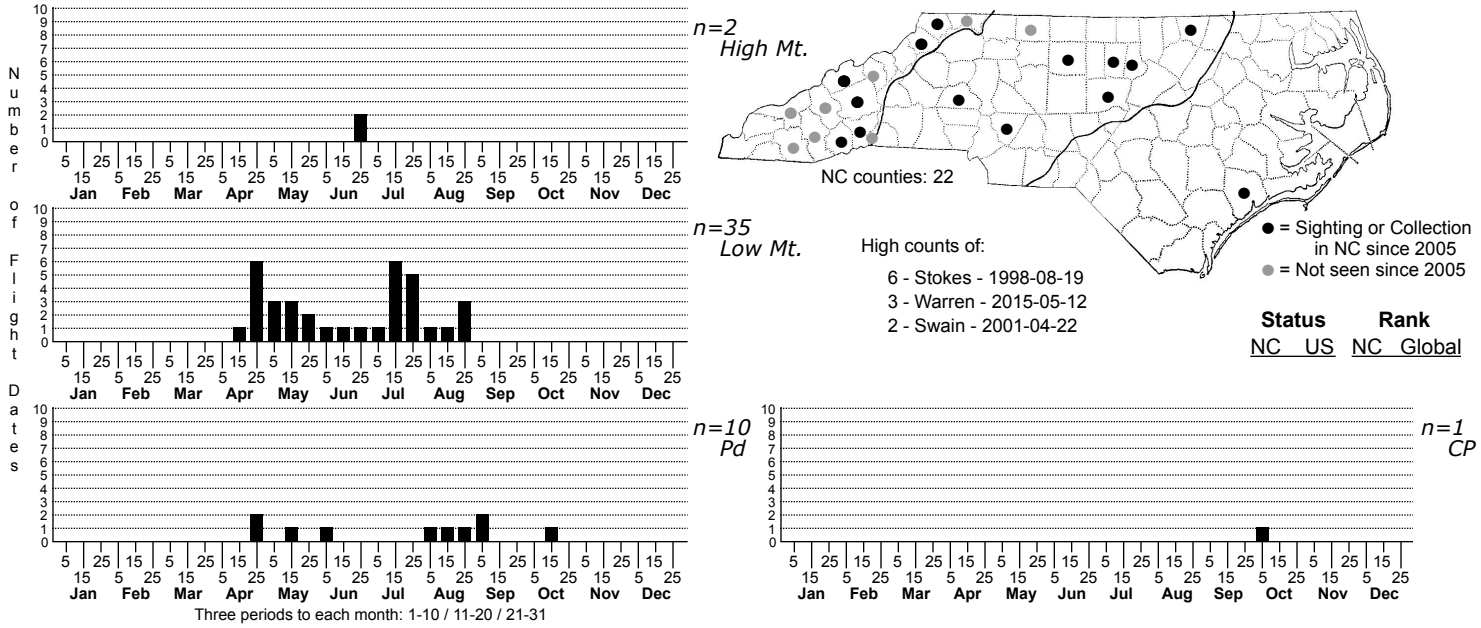
Paralobesia liriodendrana Tulip-tree Leaftier Moth



FAMILY: Tortricidae SUBFAMILY: Olethreutinae TRIBE: Olethreutini
TAXONOMIC_COMMENTS: Paralobesia is a genus of small tortricid moths, with the majority of species found in the Nearctic Region. Royals et al. (2019) recently completed a much-needed revision of the genus, which now includes 43 species. Only 19 species were described prior to their work, and there appear to be a few remaining undescribed species in North America where there is insufficient material or data to formally describe them (Royals et al., 2019). We currently have 12 described species in North Carolina, as well as one undescribed species (J.B. Sullivan, pers. comm.). Many are very similar in external coloration and patterning, and are best identified using either genitalia or rearing from host-specific plants.

FIELD GUIDE DESCRIPTIONS:
ONLINE PHOTOS:
TECHNICAL DESCRIPTION, ADULTS:
TECHNICAL DESCRIPTION, IMMATURE STAGES:

ID COMMENTS: Paralobesia liriodendrana and P. magnoliana were previously treated as a single species, but are now considered to be two cryptic species that cannot be distinguished based on external coloration and patterning (Royals et al., 2019). The following description applies to both species and is based in part on that of Royals et al. (2019). The vertex is pale reddish-brown and the labial palps pale-brown to reddish-brown. The thorax is mottled with reddish-orange and tan scales, and the posterior crest is mottled with dark-brown and orange scales. The ground color of the forewing is bluish-gray and is most prominent on the basal half of the wing where it is typically separated by a thin, outwardly angulated band at around one-fourth the wing length. The most prominent mark is a large median fascia that extends from the costa to the inner margin, with the dorsal half greatly expanded distally. The median fascia varies from uniformly dark brown to two-toned, with the dorsal half lighter and tending towards reddish-brown. The median fascia is followed by a prominent subterminal band (blotch) that is centered near the middle of the wing, along with several smaller blotches between it and the apical third of the costa. In North Carolina specimens, these tend to be lighter than the median fascia and are margined with light reddish-tan scales. The fringe is light reddish-brown, and the hindwing is uniformly brown to dark brown. The abdomen is grayish-brown above.

This species is best confirmed by using genitalia or DNA barcoding given that it is indistinguishable from P. magnoliana. Paralobesia viteana is very similar in overall patterning, but has dark-brown marks on the apical half of the wing, lighter-colored palps, and a bluish-gray fringe (Forbes, 1923) versus the light reddish-brown fringe of P. liriodendrana and P. magnoliana. In addition, the costal remnant of the post-median fascia (the small, dark costal mark between the median fascia and the subterminal band) is reduced in size relative to that of P. liriodendrana complex, which is larger and more rectangular-shaped.

Paralobesia liriodendrana and P. magnoliana appear to have essentially identical life histories, with the larvae feeding in a partial leaf-fold that is often made along the midrib of either Liriodendron or Magnolia leaves. Because these two species currently cannot be separated based on larval morphology, host plants, or other aspects of the larval life history, we are currently placing submissions of leaf-folds in the 'Paralobesia liriodendrana_magnoliana' account. Paralobesia magnoliana appears to be relatively rare in North Carolina, and the vast majority of these leaf-fold records are likely those of P. liriodendrana.

DISTRIBUTION: Paralobesia liriodendrana is found in the eastern U.S. from southern New York and Pennsylvania and vicinity southwestward mostly through the Appalachian and Piedmont regions to the Florida Panhandle, southern Alabama and southwestern Mississippi (Royals et al., 2019). it occurs as far west as southern Ohio. eastern Kentucky, eastern Tennessee and northern Mississippi. As of 2024, our records are all from the Blue Ridge and Piedmont, except for one isolated record from Onslow County near the coast.

FLIGHT COMMENT: Royals et al. (2019) identified specimens that were collected from late-February through mid-October from different areas of the range. As of 2024, our records extend from mid-April through mid-October. Local populations in North Carolina appear to produce two broods per year.

HABITAT: Local populations are restricted to mesic hardwood forests, semi-wooded residential communities, and other wooded habitats that have Liriodendron and Magnolia species present.

FOOD: The larvae feed on members of the Magnoliaceae (Kearfott, 1904, 1907a; Forbes, 1923; Heinrich, 1926; MacKay, 1959; Prentice, 1966; Lam et al., 2011; Beadle & Leckie, 2018; Eiseman, 2022). Tuliptree (Liriodendron tulipifera) is the most commonly used host, but the larvae are also known to feed on Southern Magnolia (Magnolia grandiflora) and Sweetbay Magnolia (M. virginiana). In North Carolina, we have records for all three host species.

OBSERVATION_METHODS: The adults are attracted to lights and the leaf rolls can be found on the host plants.

NATURAL HERITAGE PROGRAM RANKS: GNR S3S5

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

COMMENTS: This species appears to be common in North Carolina where mesic hardwood forests prevail.