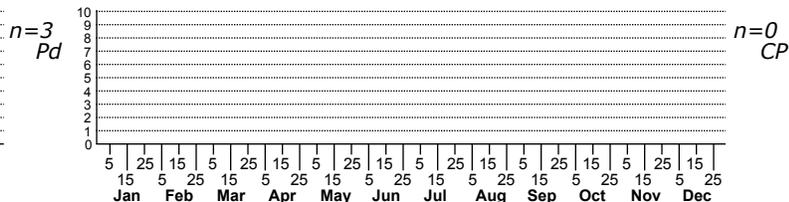
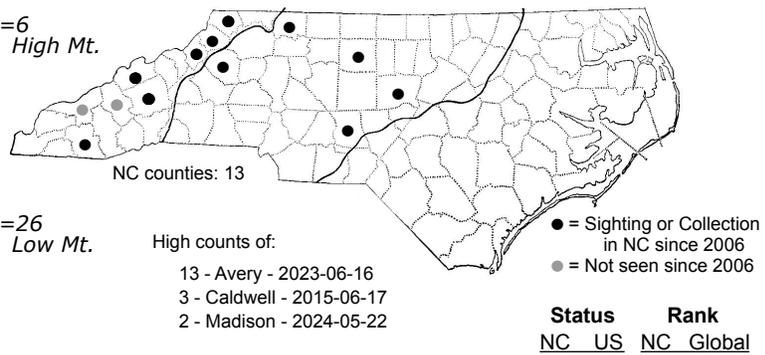
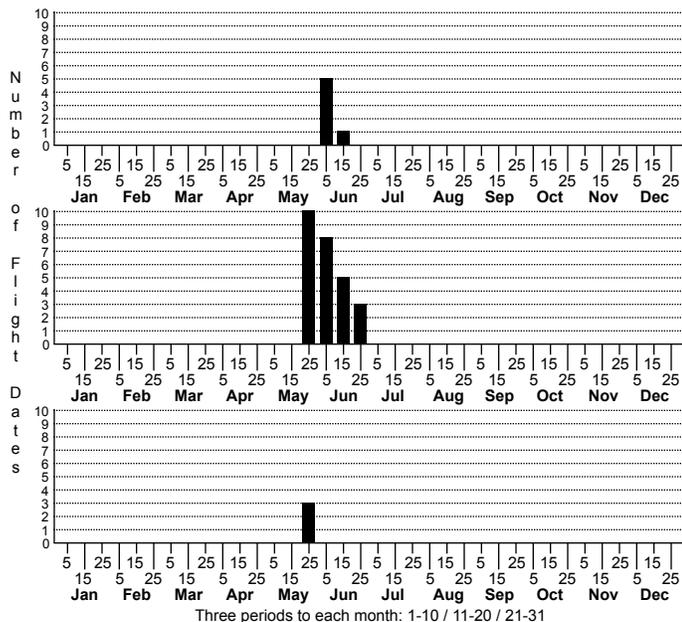


Olethreutes astrologana Astronomer Moth



FAMILY: Tortricidae SUBFAMILY: Olethreutinae TRIBE: Olethreutini

TAXONOMIC COMMENTS: *Olethreutes* is a large genus with over 130 recognized species worldwide. North America has around 80 recognized species, with at least 37 species occurring in North Carolina. Some species are very difficult to identify due to interspecific similarities in color and forewing pattern and only subtle differences in genitalia (Gilligan et al., 2008). In many instances, knowledge of the host plant is essential for a confident determination. All of the Nearctic species are leaf-tiers or leaf-rollers on deciduous trees and shrubs.

FIELD GUIDE DESCRIPTIONS:

ONLINE PHOTOS:

TECHNICAL DESCRIPTION, ADULTS:

TECHNICAL DESCRIPTION, IMMATURE STAGES:

IDIOMENTS: In this species the palps are dull yellowish to yellowish-white with varying amounts of darker dusting. The head, thorax and ground color of the forewing have a mixture of orangish to brownish-yellow scales that are intermixed with dark-brown to blackish striations and specks. The darker marks are more concentrated on the apical half of the wing and are sometimes organized as one or two large, diffuse patches. The entire wing has scattered silvery-blue dots. These are evenly scattered across the wing except for the apical third where they are often organized as two or three broken or irregular lines that originate from the costa and slant towards the outer margin where they tend to break up or terminate near the center of the wing. The fringe is pale to tawny with a dark brown to blackish basal line and darker dusting on the dorsal third, while the hindwing is light to medium brown with a fringe that resembles that of the forewing.

Olethreutes astrologana, *O. ferrolinaeana* and *O. coruscana* are similar species that all have mixtures of orangish to brownish-yellow scales that are intermixed with dark-brown to blackish scales, along with silvery-blue dots and lines. These species can all be identified by genitalia, but specimens in North Carolina also exhibit differences in maculation. *Olethreutes astrologana* has a forewing with a ground composed of orangish scales that are intermixed with darker striations and specks throughout. The silvery-blue dots are uniformly scattered across the wing except where they are organized as lines that extend from the costa. The two most posterior lines in the subapical area tend to break up into dots and usually terminate near the center of the wing. The fringe is pale to tawny with a dark line near the base. *Olethreutes coruscana* has the orangish and blackish marks segregated to form a series of alternating dark patches with orangish areas between them. Specimens typically have a large basal, medial, postmedial, and pretornal patch, and the silvery-blue dots are more concentrated around the margins of the dark patches. This species has a series of black spots along the entire length of the costa that is not present in *O. astrologana*. The fringe is darker and the hindwing is typically dark brown.

Olethreutes ferrolinaeana is often intermediate between these two in some respects. The dark blotches are poorly developed relative to those of *O. coruscana*, but specimens almost always have a postmedial bar that is orangish and margined with a silvery-blue line on both sides. The basal line that margins the bar may be complete or broken, and usually extends nearly to the tornus. The postmedial bar is preceded by a diffuse medial patch that is darker than the general ground color and marked with silvery-blue spots. The black costal spots are not as well-defined as those on *O. coruscana*, and there usually are one or more short, silvery-blue, costal strigulae on the basal half of the wing. *Olethreutes astrologana* typically has the strigulae confined to the apical half of the wing, while *O. coruscana* often lacks them altogether, except for two associated with the postmedial blotch or bar. The fringe of *O. ferrolinaeana* is usually orangish, with a dark basal line and several dark blotches in the posterior half, with the largest occupying the dorsal third or more of the fringe. *Olethreutes astrologana* has reduced blotching on the fringe relative to the other two species. Certain forms of *O. ferrolinaeana* and *O. coruscana* look so similar that genitalia are the only reliable way to obtain a positive identification.

DISTRIBUTION: *Olethreutes astrologana* is widely distributed across the northeastern and north-central US, and in Canada from British Columbia and Alberta eastward to New Brunswick, Nova Scotia and Prince Edward Island. In the US the range extends from Maine and other New England states southwestward through the Appalachian region to eastern Tennessee and North Carolina, and westward to central Oklahoma, eastern Kansas, Missouri, Iowa and Wisconsin. As of 2024, all of our records are from the Piedmont and Blue Ridge.

FLIGHT COMMENT: The adults have been found from April through August in different areas of the range, with a seasonal peak commonly in June. As of 2024, our records range from late-May through late-June.

HABITAT: The adults often found in open habitats such as fields, forest edges, and semi-wooded residential neighborhoods.

FOOD: The host plants (if any) are undocumented.

OBSERVATION_METHODS: The adults are attracted to lights.

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: This species has likely been under collected due to its short flight period.