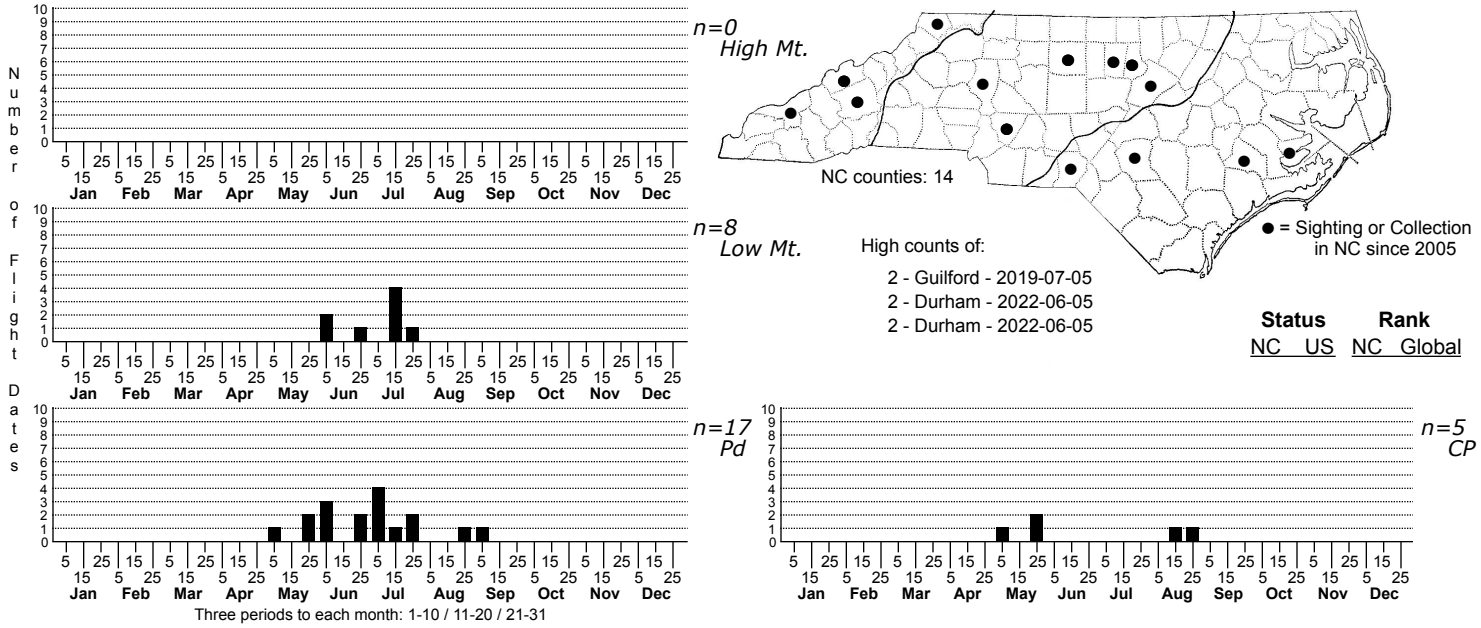
Olethreutes permundana Raspberry Leafroller Moth



FAMILY: Tortricidae SUBFAMILY: Olethreutinae TRIBE: Olethreutini
TAXONOMIC_COMMENTS: Specimens that have been referred to as Olethreutes permundana have generated a long history of confusion and likely represent a poorly resolved species complex, with BOLD showing five BINS (Gilligan et al., 2008). The larvae have been reported to use a wide diversity of hosts, but these may reflect misidentified specimens by Heinrich (1926) and other workers over the years. Gilligan et al. (2008) and McDunnough (1956) restricted application of the name O. permundana to the Rubus feeding species. Gilligan et al. (2008) also note that no one has proposed morphological characters that will reliably separate O. permundana from similar looking species reared on other hosts. Here, our assignment of specimens to this species are best treated as provisional.

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

ID COMMENTS: Olethreutes permundana most commonly has an overall brownish or reddish-brown appearance. The medial fascia and larger blotches on the forewing are surrounded by leaden-colored bands that are overlain with varying levels of tawny to light grayish-brown scales, along with darker internal lines. The medial fascia and other larger marks commonly vary from light brown or olivaceous brown to dark brown, and are margined with a narrow line of pale scales.

The medial fascia consists of three posterior projections that include a relatively large patch along the inner margin that narrows as it projects rearward, a relatively wide tooth in the middle that is widest near its middle and curves to a rounded point, and a narrower costal tooth that tapers to an acute point. All three projections are typically joined at their bases, with the fascia extending across the entire wing. Other marks on the apical half of the wing include a large pretornal patch along the inner margin that tapers basally and is separated from the patch on the median fascia by a gap, and an elongated, elliptical, outwardly oblique postmedial bar. The basal half of the wing has an irregular outwardly oblique dark patch that extends from the base of the inner margin before terminating near the center of the wing. The basal half of the costa has a series of paired strigulae that are often fused or nearly fused to form a zone of pale coloration along the costa, while the area of the costa beyond the costal tooth has a series of 4-5 small, brownish, triangular spots that alternate with pairs of pale strigulae that project towards the apical half of the outer margin. The fringe is tan with darker dusting and has a dark brown basal band. The hindwing is brown with a lighter fringe and also has a brown basal band.

Olethreutes permundana closely resembles O. tilianum, O. lacunanum, and certain forms of O. nigranum (Heinrich, 1926; Gilligan et al., 2008). Olethreutes permundana is generally similar in patterning to O. tilianum, but tends to be lighter-colored overall. The costal and middle teeth of O. tilianum are normally not joined at the base, or very weakly so, and are more finely tapered to a sharp point, while O. permundana typically has the two clearly joined at the base, with the middle tooth in particular, shorter and more bluntly rounded at the end. Olethreutes lacunanum also has the teeth joined at the base, but the middle and costal teeth are more pointed than that of O. permundana. These two species can be separated using genitalia (Gilligan et al., 2008). The light forms of O. nigranum are also similar, but the costal and middle teeth are shorter. Specimens of O. nigranum that we have found to date tend to have heavy black dusting along the inner margin and can be readily distinguished from O. permundana.

DISTRIBUTION: Please refer to the dot map.

FLIGHT COMMENT: Please refer to the flight charts.

HABITAT: Our records come from both residential neighborhoods and natural habitats, including mountain bogs, Piedmont lakeshores and marshes.

FOOD: The larvae are polyphagous and feed on a wide range of hardwood trees, shrubs, and vines (Brown et al., 2008); hickory (Carya), hazel (Corylus), sumac (Rhus), meadowsweet (Spiraea), huckleberry (Gaylussacia), blackberry (Rubus), and strawberry (Fragaria) are specifically mentioned. Gilligan et al. (2008) reported that larvae tie leaves of Rubus (blackberry and raspberry). Rearings from Common Ninebark (Physocarpus opulifolius) were reported by Wheeler & Hoebeke (1985). Other hosts reported by Heinrich (1926) likely are based on misidentifications of the moth (McDunnough, 1956).

OBSERVATION_METHODS:

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: