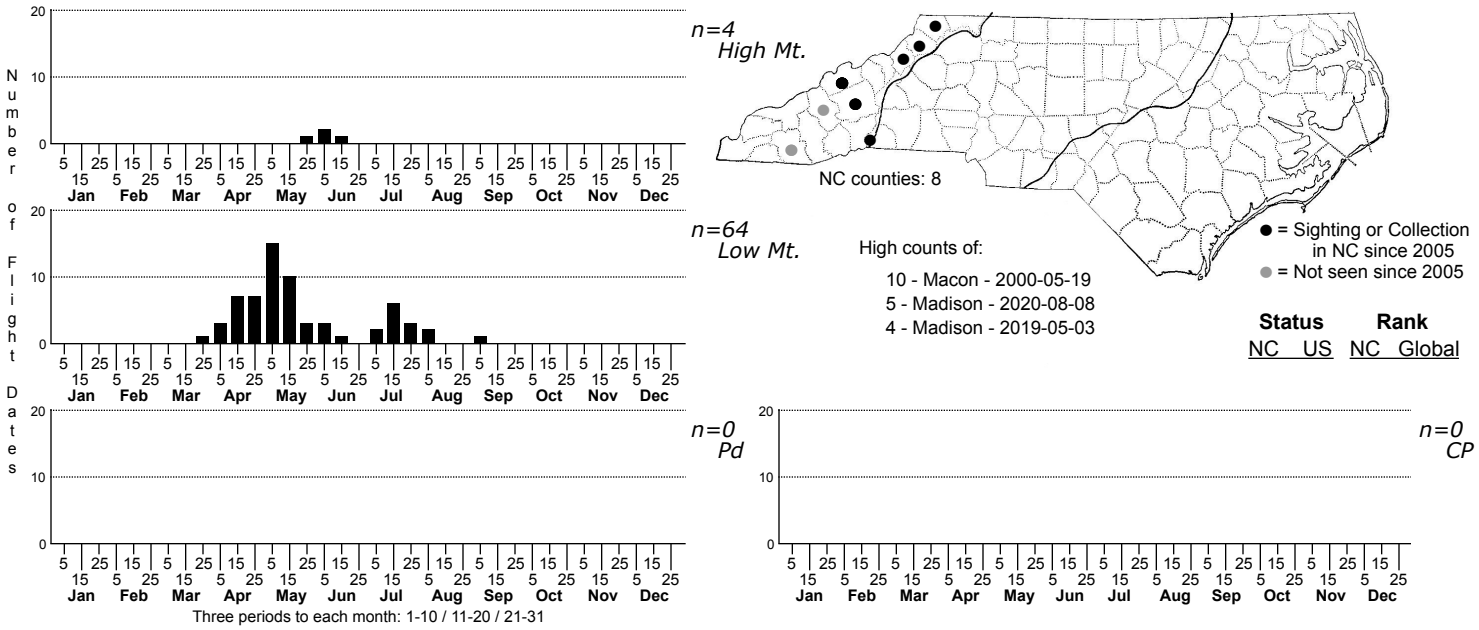
Ethmia zelleriella Zeller's Ethmia



FAMILY: Depressariidae SUBFAMILY: Ethmiinae TRIBE: [Ethmiini]
TAXONOMIC_COMMENTS: Ethmia is a large genus of small moths, with over 125 species occurring in the New World, and around 240 species worldwide. North America has 52 species, but only five occur east of the Mississippi River (Powell, 1973).

FIELD GUIDE DESCRIPTIONS: Covell (1984); Beadle and Leckie (2012)
ONLINE PHOTOS:
TECHNICAL DESCRIPTION, ADULTS: Powell (1973).
TECHNICAL DESCRIPTION, IMMATURE STAGES: Dyar (1904) and Braun (1925).

ID COMMENTS: The labial palp is dark gray basally, more whitish on the distal half, and lacks distinct color bands. The antenna is grayish and somewhat whiter near the base. The occipital tufts are white laterally and black in the middle. The thorax is white with four black spots, and the forewing is white with a series of elongated black spots and streaks that are more or less evenly distributed over the wing. There are two conspicuous black streaks in the basal and distal half of the cell, followed by a third smaller streak near the apex. Between these and the costa there is a second series of two or three smaller streaks. Below the inner margin there are 6-8 elongated black spots. At the wing terminus there is a row of small submarginal black spots that begin well before the apex and extend to beyond the tornus. The fringe is white. The hindwing is white basally, but becomes pale brownish towards the apex. The legs are yellowish-orange with black banding, and the abdomen has a yellowish-orange wash in places. This species superficially resembles E. zelleriella, but the latter lacks the yellowish-orange coloration on the legs and abdomen. It also has fewer spots below the inner margin (typically < 6 compared with 6-8 for E. zelleriella).

DISTRIBUTION: Ethmia zelleriella is found in eastern North America, including southern Canada (Quebec; Ontario) and portions of the eastern US from the New England states westward to North Dakota, and southward to Alabama, Mississippi, and Texas. Local populations are associated with areas with circumneutral soils that harbor the host plants, and are generally absent from much of the southeastern US. Ethmia zelleriella occurs sporadically throughout western NC depending on the presence of its host plants. It has not been found east of the Blue Ridge even though one of its host species (P. dubia) is patchily distributed throughout the Piedmont and Coastal Plain.

FLIGHT COMMENT: Adults have been found from March through September, with peak activity in May and June. As of 2020, our records for adults extend from early April through early September, with a peak from mid-April to mid-May. The presence of a second smaller group in July suggests that there are two broods per year.

HABITAT: This species is restricted to habitats where the host plants occur. Phacelia bipinnatifida is primarily found on moist rock outcrops and in rocky, mesic forests, while P. dubia is most common in alluvial floodplains, on moist slopes, and along moist road banks with sparse vegetation. Our native Phacelia species are either winter annuals or biennials and generally thrive in microhabitats with thin leaf-litter or bare soil that facilitates seed germination. P. dubia often increases in number for a year or two following low-intensity surface fires.

FOOD: Although Fernleaf Phacelia (Phacelia bipinnatifida) and Small-flower Phacelia (P. dubia) are the only known host species (Forbes, 1923; BugGuide - Charlie Eiseman), E. zelleriella may possibly use two other species (P. fimbriata and P. purshii) that are closely related to P. dubia.

OBSERVATION_METHODS: Is attracted to UV lights.

NATURAL HERITAGE PROGRAM RANKS: GNR [S2S3]

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

COMMENTS: The host plants for this species are considered to be rare or uncommon in NC (S3 rank for both P. bipinnatifida and P. dubia), and Ethmia zelleriella is susceptible to local extinctions when Phacelia populations are lost.