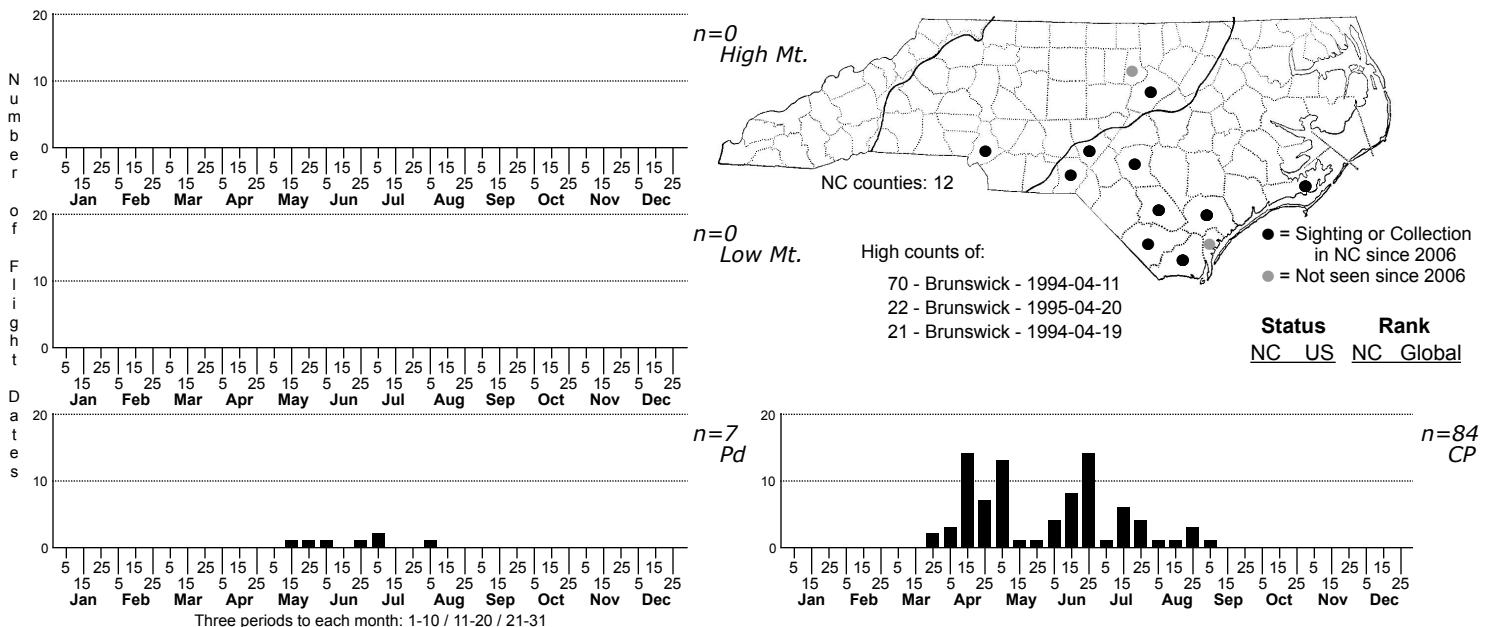


Eumacaria madopata Brown-bordered Geometer



FAMILY: Geometridae SUBFAMILY: Ennominae TRIBE: Macariini

TAXONOMIC COMMENTS: The sole species in this genus and entirely confined to North America (Ferguson, 2008).

FIELD GUIDE DESCRIPTIONS: Covell (1984; as *Eumacaria lateferrugata*); Beadle and Leckie (2012)

ONLINE PHOTOS:

TECHNICAL DESCRIPTION, ADULTS: Forbes (1948); Ferguson (2008)

TECHNICAL DESCRIPTION, IMMATURE STAGES: Forbes (1938); Wagner et al. (2001); Ferguson (2008)

ID COMMENTS: A medium-small Geometrid that is similar to *Trigrammia* and *Macaria* species in possessing subfalcate forewings and angled hindwings. The ground color is typically pale gray, crossed by fine brown antemedial, medial, and postmedial lines. The antemedian is bent or strongly angled where it crosses the radial vein and the medial line may also be bent close to the costa (Ferguson, 2008). The postmedian is usually strong, even, slightly sinuous and edged on the outward side by a fine pale line (Forbes, 1948). In some individuals, the area between the postmedian and the outer margin is much darker than the median and basal areas, and crossed by fine pale lines along the veins. In others, the outer portion of the wing is more concolorous, with only a slightly greater amount of dark dusting than in the basal portion. Although the paler form is supposedly more typical of Southeastern populations (Forbes, 1948; Ferguson, 2008), both forms occur in North Carolina, with the darker form possibly being more prevalent. Pale form individuals can be confused with *Trigrammia quadrinotaria*, which has a more even antemedian line and possesses dark dots in the subterminal areas of all four wings. Both dark and pale forms may be confused with *Digrammia* species, which again have an evenly curved antemedian and also possess more rounded wings.

DISTRIBUTION: Recorded primarily in the southern half of the Coastal Plain, including the Fall-line Sandhills. A few records also exist for the Piedmont, including as far west as Mecklenburg County

FLIGHT COMMENT: Found throughout the growing season in the Coastal Plain with two main peaks, in spring and summer.

HABITAT: Apart from a few sites in the Piedmont where habitats were not recorded, our records come from Longleaf Pine habitats or from adjacent wetlands in the Coastal Plain. Most records are from wet savannas and flatwoods, but there are also some from dry sandhills habitats, although usually where wetlands are present, including Carolina Bays, depression ponds, or riparian edges. Although these habitats are similar to the sand plains and barrens used by this species in the Northeast (Wagner et al., 2001), species of *Prunus* are far more marginal in Longleaf Pine habitats than they are up north and some other species of Rosaceae may be the principal host used in North Carolina. Chokeberry (*Aronia arbutifolia*) seems like an especially likely candidate, since it is strongly associated with wet savannas, pocosins, bogs, and swamps (Weakley, 2015). While Black Cherry could be used in some of these areas, *Eumacaria* occurs only marginally in the Piedmont, where that species is more frequent, and has not been recorded at all in the Mountains where other species of *Prunus* occur that are used in the northern and western portions of its range.

FOOD: Larvae are reportedly oligophagous, feeding on woody species of the rose family. Forbes (1948) and Wagner et al. (2001) specifically list apple (*Malus*) and cherry (*Prunus*), with Black Cherry (*P. serotina*) and Fire Cherry (*P. pensylvanica*) being preferred in some areas (Wagner et al., 2001). The distribution of this species in North Carolina, however, suggests that other host plants are also used, possibly including Red Chokeberry (*Aronia arbutifolia*).

OBSERVATION METHODS: Comes well to blacklights but we have no records from bait or flowers.

NATURAL HERITAGE PROGRAM RANKS: G5 SNR [S3S4]

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

COMMENTS: Ferguson (2008) noted that despite the wide distribution and frequency of the host plants used by *Eumacaria* (referring to *Prunus* species), this species is generally uncommon to rare over most of its range. In North Carolina, moreover, it appears to be strongly associated with Longleaf Pine habitats, which have undergone a severe reduction since European settlement. Like all species associated with those habitats, its security in the state depends on appropriate management of its few remaining habitats, including through the careful use of prescribed burning.