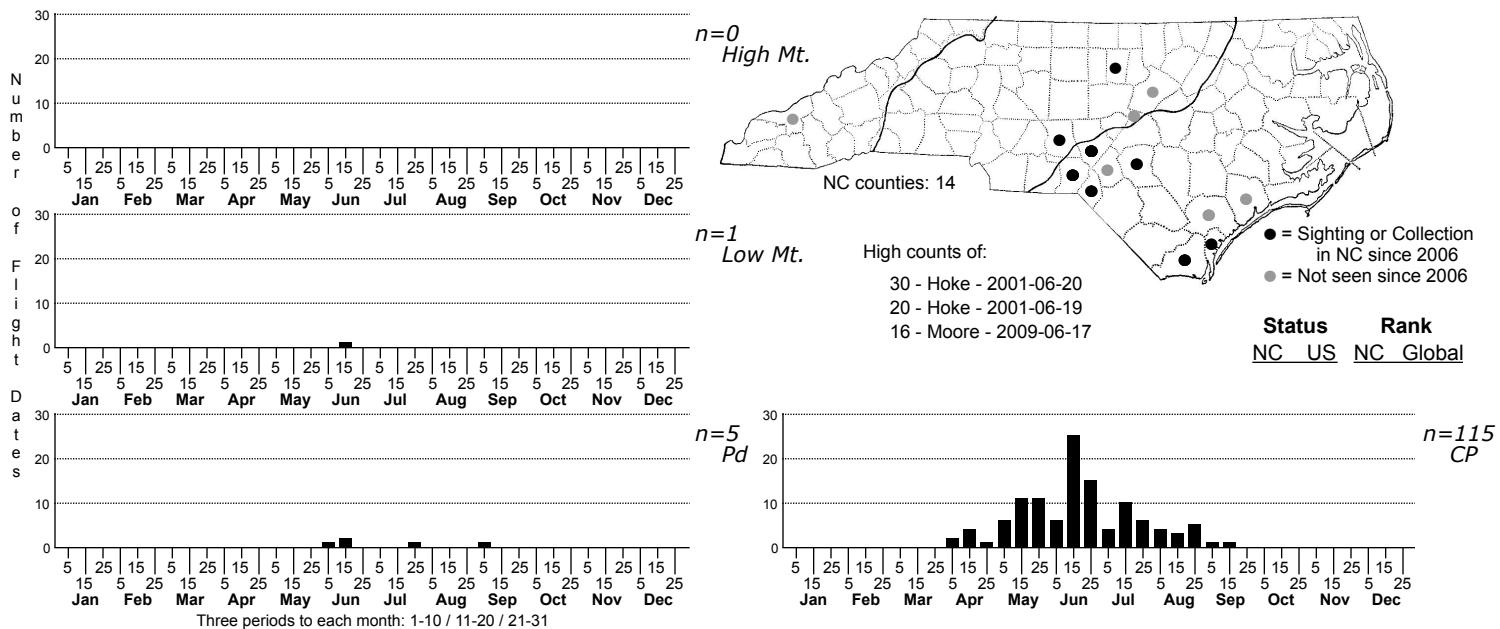


Diagrammia eremiata Three-lined Angle



FAMILY: Geometridae SUBFAMILY: Ennominae TRIBE: Macariini

TAXONOMIC COMMENTS: One of 49 species in this genus recorded in North America (Ferguson, 2008), six of which occur in North Carolina. *Diagrammia eremiata*, *ordinata*, and *ocellinata* were placed in the legume-feeding Eremiata Species Group by Ferguson.

FIELD GUIDE DESCRIPTIONS: Covell (1984; as *Semiothisa eremiata*)

ONLINE PHOTOS:

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

TECHNICAL DESCRIPTION, IMMATURE STAGES: Ferguson (2008)

ID COMMENTS: A medium-sized, grayish- to violet-brown Geometrid. The antemedian, median, and postmedian lines are dark and usually conspicuous; the postmedian is typically more continuous than in *ocellinata* and *ordinata*, where it is usually represented by a chain or series of separate dark spots (Ferguson, 2008). The ground color is usually darker beyond the postmedian line, unlike in *ordinata* and *ocellinata*, where it may be as pale as in the medial and basal areas (Forbes, 1948).

DISTRIBUTION: Found primarily in the Coastal Plain and at least marginally in the Piedmont and Mountains. Host plants occur more widely and the species may eventually be found over a larger portion of the Piedmont and Mountains.

FLIGHT COMMENT: Adults are present throughout the growing season, from early spring to late summer.

HABITAT: Almost all of our records come from Longleaf Pine communities in the Coastal Plain, where several species of *Tephrosia* occur (*Astragalus* as well). The majority come from dry sandhills habitats but there are also several from mesic-to-wet savannas and flatwoods. In the Piedmont, recent records also come from a Hillside Seepage Bog with an open canopy of Longleaf Pines. Habitat is not well documented from the one site where this species has been recorded in the Mountains.

FOOD: Larvae are stenophagous, recorded on Milkvetch (*Astragalus* spp.) and Goat's Rue (*Tephrosia* spp.) (Ferguson, 2008). J.B. Sullivan has reared larvae collected on Goat's Rue at Weymouth Woods State Natural Area in the Fall-line Sandhills.

OBSERVATION METHODS: Comes well to lights, including 15 watt UV blacklights. Also frequently flushed during the day.

NATURAL HERITAGE PROGRAM RANKS: G4 SNR [S2S4]

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 a specialist on fire-maintained habitats. In the Coastal Plain, it is associated exclusively with Longleaf Pine habitats, which have severely declined since the Colonial era due to the combined effects of over harvest of Longleaf Pines, conversion to agriculture or silviculture, and suppression of wildfires. Apart from several large tracts on lands managed through use of prescribed burning, these habitats are likely to continue to decline into the future. Although *D. eremiata* may also use monadnock and dry ridge habitats supporting populations of its host plants, these habitats also depend on fire to maintain their open character and are for the most part even more fire-suppressed than Longleaf Pine habitats in the Coastal Plain. While *D. eremiata* still occupies a fairly large range in the Coastal Plain, it should be considered only provisionally secure, being highly dependent on appropriate management for its continued survival.