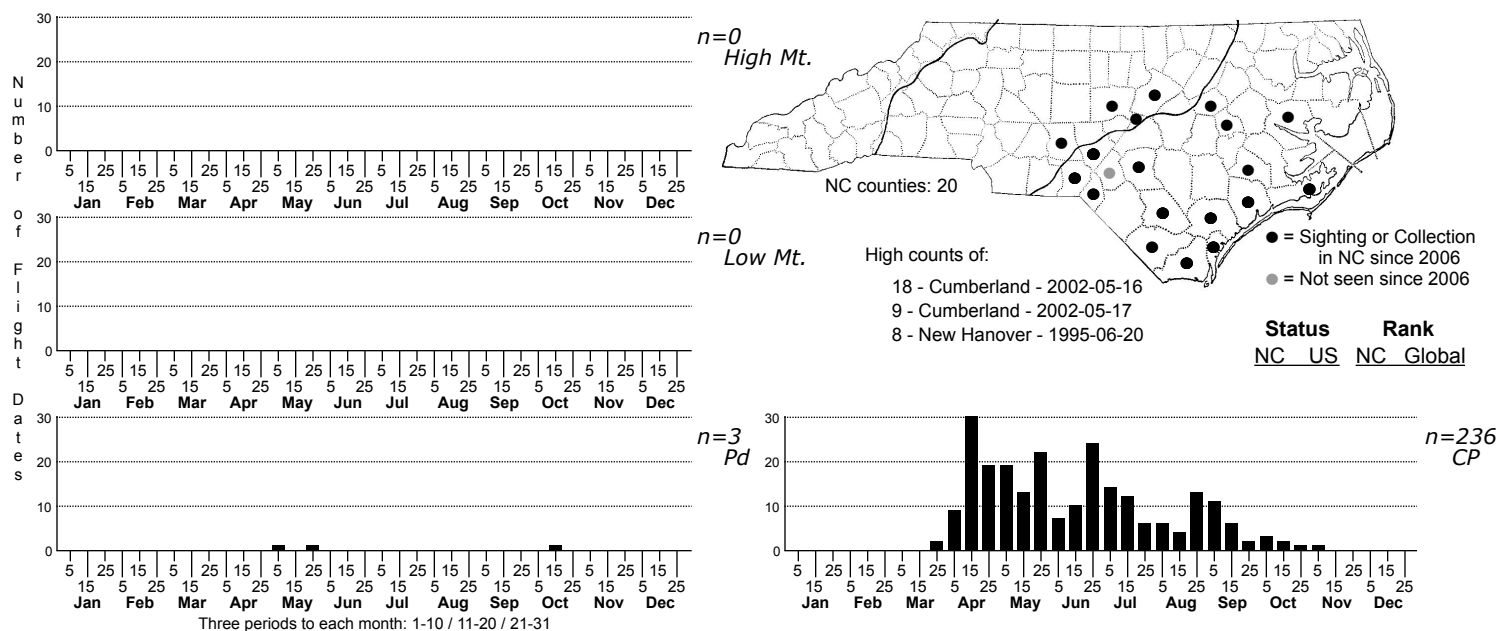


## *Macaria distribuaria* Southern Chocolate Angle



FAMILY: Geometridae SUBFAMILY: Ennominae TRIBE: Macariini

TAXONOMIC\_COMMENTS: This is one of 73 species in this genus that occur in North America, with 17 species occurring in North Carolina. In the latest checklist of North American Lepidoptera (Pohl and Nanz, 2023), North American members of the genus *Speranza* and *Epelis* were treated as junior synonyms of *Macaria*.

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

ONLINE PHOTOS:

TECHNICAL DESCRIPTION, ADULTS: Ferguson (2008)

TECHNICAL DESCRIPTION, IMMATURE STAGES: Wagner et al. (2001)

ID COMMENTS: *Macaria distribuaria* is a medium-sized Geometrid but the largest of our species of *Macaria*. The pattern lacks the large spot blotch and darkened notch in the subapical area typical of other species of *Macaria*, but the lines and shadings are otherwise more pronounced. The antemedian and postmedian are both fine, black, and waved -- bends in these lines approach one another at the postcubital fold, creating a constriction in the medial space (Ferguson, 2008). A more diffuse median line may also be present. The basal and medial areas are usually shaded with pale gray; both areas may be striated or flecked with gray-brown. Beyond the postmedian, a reddish brown to chocolate shading fills the subterminal area, followed by another pale gray shade in the terminal area. Apex is usually paler than the rest of the terminal area, which is often shaded with darker brown. As in other members of this species group, the head is red or ocher, contrasting with the paler gray thorax and abdomen.

DISTRIBUTION: Nearly all of our records come from the Sandhills and the southern part of the Outer Coastal Plain. One record also exists from a site in the eastern Piedmont where a disjunct stand of Longleaf Pine occurs.

FLIGHT COMMENT: Adults fly essentially continuously from late spring to fall, with three apparent peaks in abundance.

HABITAT: With the possible exception of the historic record from Wake County, all of our records come from habitats dominated by Longleaf Pine. These range from wet to mesic savannas and flatwoods to dry to xeric sandhills. Our one Piedmont record comes from a relict stand of Longleaf Pine growing on a slope covered with pitcher plants and other Coastal Plain species associated with seepage. None of our records come from areas that have other species of pines but not Longleaf, including peatlands dominated by Pond Pines and floodplains and other habitats dominated by Loblolly or Short-leaf Pine. We cannot rule out at least some use of Slash Pine, however, but that species usually occurs in plantations with naturally occurring Longleaf either mixed in or located in the near vicinity.

FOOD: Larvae are reportedly stenophagous, feeding primarily on Longleaf Pine (*Pinus palustris*) in our area but also using Slash Pine (*P. elliottii*) -- an introduced species in North Carolina -- farther to the south (Ferguson, 2008).

OBSERVATION\_METHODS: Comes well to 15 watt blacklights but we do not have any records from either bait or flowers.

NATURAL HERITAGE PROGRAM RANKS: G4 SNR [S3S5]

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

COMMENTS: As a specialist on Longleaf Pine ecosystems, the habitat of this species has been greatly reduced and fragmented since colonial times. However, it has been less affected by fire suppression than species associated with the herb or shrub layers of these communities and is still found wherever stands of Longleaf exist. In the Uwharries, it was the only Longleaf Pine associate found in a survey conducted by the Natural Heritage Program in 2010-11.