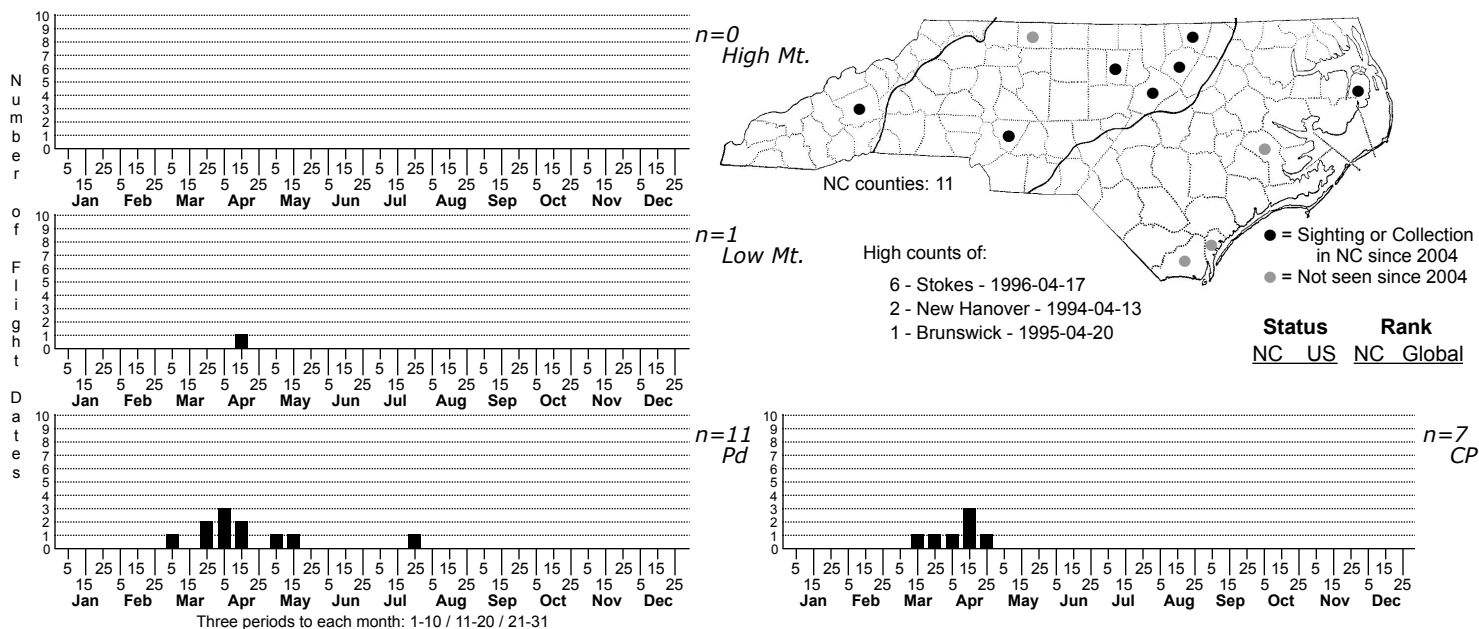


Zale submediana Gray Spring Zale



FAMILY: Erebidae SUBFAMILY: Erebinae TRIBE: Ophiuini

TAXONOMIC_COMMENTS: One of 39 species in this genus that occur north of Mexico, 23 of which have been recorded in North Carolina

FIELD GUIDE DESCRIPTIONS: (Not in either field guide)

ONLINE PHOTOS:

TECHNICAL DESCRIPTION, ADULTS: McDunnough (1943); Forbes (1954); Rings et al. (1992)

TECHNICAL DESCRIPTION, IMMATURE STAGES: Wagner et al. (2011)

ID COMMENTS: *submediana* is one of the larger species in the pine-feeding group, similar in size to *obliqua* and with at least some forms possessing a similar blue-gray ground color (Forbes, 1954; Rings et al., 1992). Differs from *obliqua* by possessing a medial line composed of three lines, the inner one crossing the forewing well in front (basad) of the reniform instead of along its inner edge (*bethunei* has a similar triple black medial line but is smaller and darker). *submediana* is generally more mottled than *obliqua*, and the hindwing lacks the blue-gray that is typical of *obliqua* (Forbes, 1954; McDunnough, 1943 and Rings et al., 1992). While fresh individuals should be identifiable on the basis of a good photograph, worn males may be more conclusively identified by dissection (see McDunnough and Forbes).

DISTRIBUTION: Ranges well north and south of North Carolina, so in theory should be fairly well distributed across the state.

FLIGHT COMMENT: Probably single brooded, with adults flying only in the spring

HABITAT: The sites where *submediana* has been recorded in North Carolina contain a mixture of both upland and wetland pine-containing habitats, including peatlands, floodplains, sandhills, and dry Piedmont ridges. More data are needed to resolve the habitat preferences of this species.

FOOD: Stenophagous, feeding solely on hard pines. Wagner et al. (2011) specifically mention Jack Pine (*Pinus banksiana*), which does not occur in North Carolina, and Pitch Pine (*P. rigida*), which only occurs at one of the sites -- Hanging Rock State Park -- where *submediana* has been recorded in the state. For the sites in the southern Coastal Plain, Pond Pine (*P. serotina*), Longleaf Pine (*P. palustris*), or Loblolly Pine (*P. taeda*) are all possible host plants.

OBSERVATION_METHODS: *submediana* may be poorly attracted to lights, which, along with its relatively early flight period, could be a factor explaining the scarcity of records in North Carolina. Bait is probably a more effective way to sample for it, as is true for several other species of *Zale*.

NATURAL HERITAGE PROGRAM RANKS: G5 S3S4

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

COMMENTS: Although an uncommonly collected species in North Carolina, too little is known about the distribution and habitat affinities of *submediana* to estimate its conservation needs.