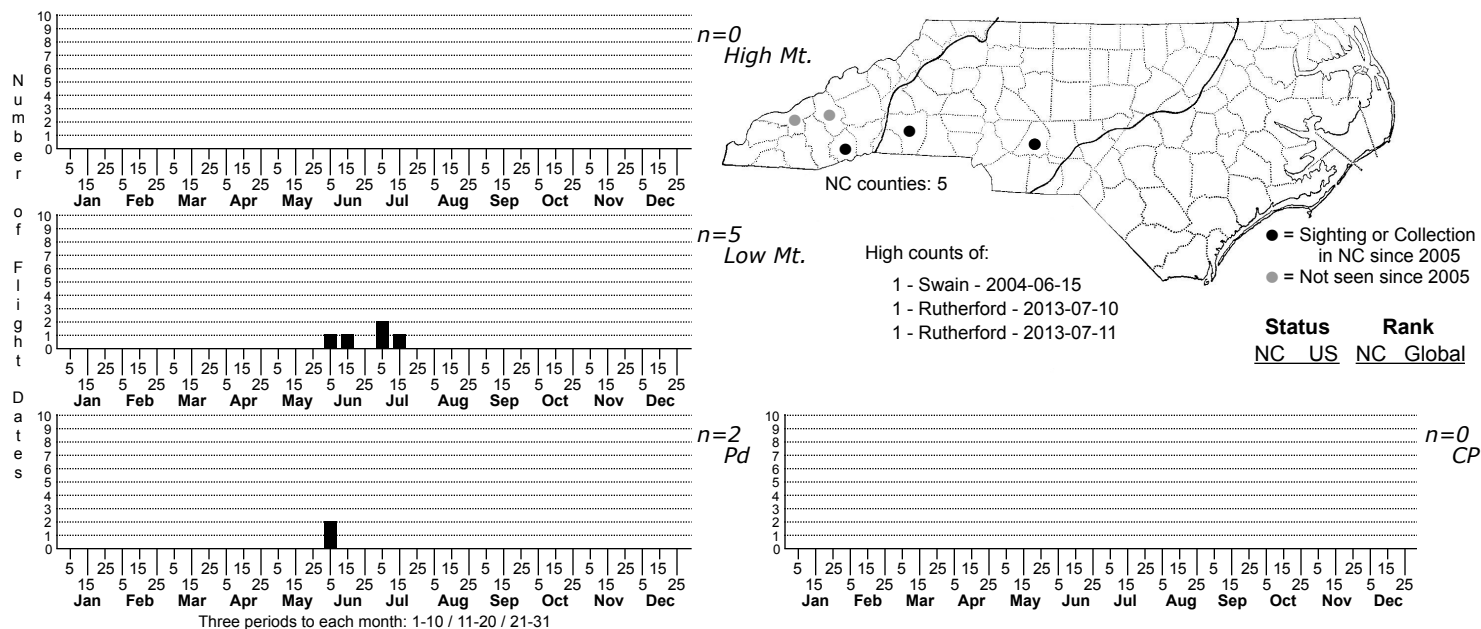


Catocala miranda Miranda Underwing



FAMILY: Erebiidae SUBFAMILY: Erebinae TRIBE: Catocalini

TAXONOMIC_COMMENTS: One of 103 species in this genus that occur in North America (Lafontaine and Schmidt, 2010, 2015), 67 of which have been recorded in North Carolina. Miranda was included by Barnes and McDunnough (1918) in their Group XVII (also adopted by Forbes, 1954), which feed mainly on members of the Rosaceae; 12 other members of this group (as redefined by Koons and Borth, 2015b) also occur in North Carolina.

FIELD GUIDE DESCRIPTIONS: Covell (1984)

ONLINE PHOTOS:

TECHNICAL DESCRIPTION, ADULTS: Forbes (1954); Sargent (1976)

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

ID COMMENTS: A medium-sized *Catocala* with a pale gray forewing and black hindwings. It differs from *C. orba* primarily in size (Sargent, 1976); our specimens of *orba* exceed 50 mm in wingspan, whereas Sargent states that *miranda* ranges only from 40-45 mm. Schweitzer et al. (2011) also mention that *miranda* usually has some darker shadings, particularly towards the inner margin, whereas *orba* is more uniformly pale. *C. miranda* additionally resembles *C. judith* in color, and pattern, but is smaller, paler, and has narrower forewings. The pattern on the undersides of the wings easily separates the two: *miranda* possesses nearly all black hindwings but those of *judith* have a broad pale area located towards the base (Forbes, 1954; Sargent, 1976). Records submitted for this species should give some indication of size (e.g., a coin included in the photograph).

DISTRIBUTION: Our records all come from the southern half of the Mountains, including the eastern slopes of the Blue Ridge escarpment and the southeastern slopes of the Great Smoky Mountains

FLIGHT COMMENT: Univoltine, with individuals recorded in North Carolina from mid-June to mid-July

HABITAT: Habitats at the Graham and Haywood County sites probably consist of rich cove forest. While rich cove forest is present at the Rutherford County site, the collection site itself was located in a cedar barrens associated with a knob of a somewhat mafic rock formation.

FOOD: Larvae are stenophagous, feeding on a narrow range of hawthorns. Littlehip Hawthorn (*Crataegus spathulata*) was specifically listed as a host plant for a population in Florida (Wagner et al., 2011). In North Carolina, that species is sporadic in the southwestern portion of the state but occurs in both bottomland forests as well as occasionally drier, rockier sites where mafic substrates exist, matching the two locations where our records come from for *C. miranda*. We do not have any feeding records in North Carolina.

OBSERVATION_METHODS: Schweitzer et al. (2011) suggest that this species may be particularly hard to observe, flying late at night, possibly coming poorly to lights, but also not coming to bait. While tapping has had some success in Florida, it is not known to have produced any results for this species elsewhere.

NATURAL HERITAGE PROGRAM RANKS: G3? SU [S2S3]

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

COMMENTS: This species has long been regarded as very rare and local (Sargent, 1976), with very few records known from North Carolina. Schweitzer et al. (2011) speculate that it might simply be undercollected due to its late night flight period. However, overnight moth traps have been used extensively in North Carolina, including many areas in the southern half of the mountains. Its possible association with a somewhat rare species of hawthorn may also provide an answer, but areas in the Piedmont and Coastal Plain where *Crataegus spathulata* is more common have not been sampled. Until that is done, or the host plants used in North Carolina are more certainly documented and their distribution clarified, it is difficult to make an accurate assessment of the conservation status of this species.