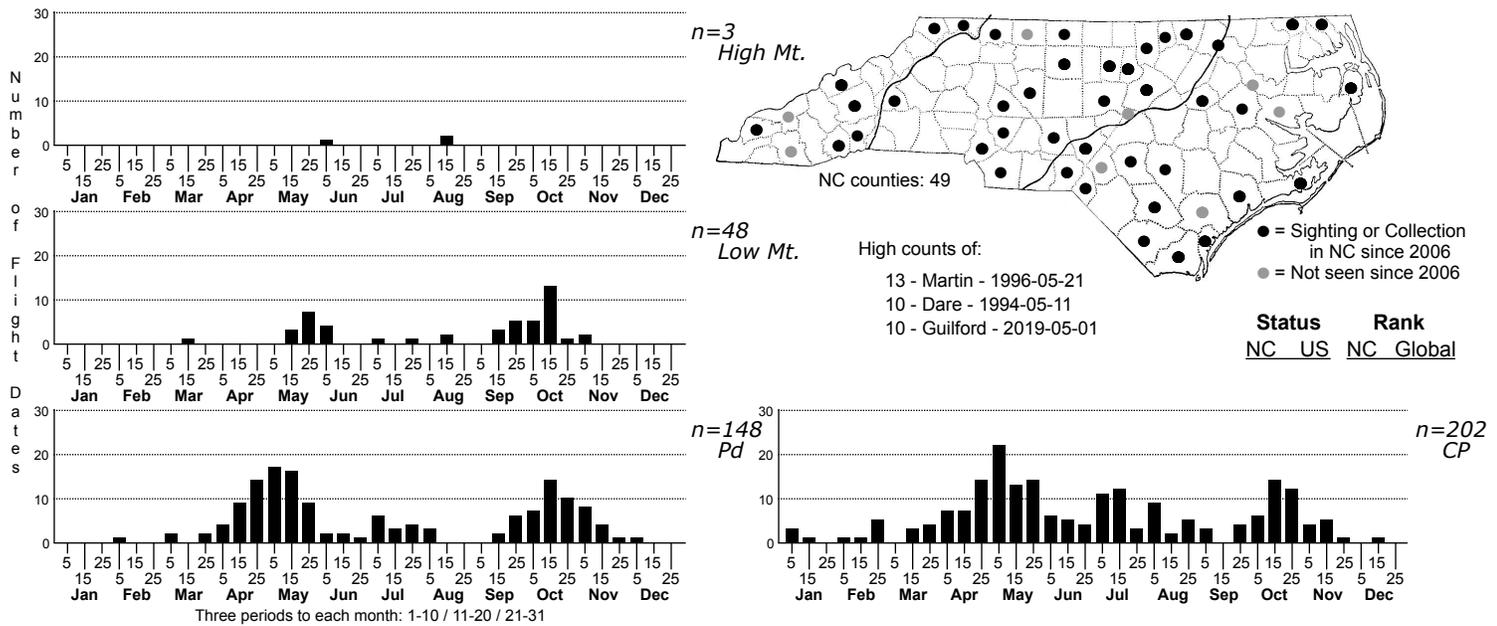


## *Nemoria lixaria* Red-bordered Emerald



FAMILY: Geometridae SUBFAMILY: Geometrinae TRIBE: Nemoriini

TAXONOMIC COMMENTS: One of 35 species in this genus that occur in North America (Ferguson, 1985), nine of which have been recorded in North Carolina. Ferguson (1969) included *lixaria* within the *Lixaria* Species Group (Group V), which comprises only *lixaria* and *saturiba*.

FIELD GUIDE DESCRIPTIONS: Covell (1984); Beadle and Leckie (2012)

ONLINE PHOTOS:

TECHNICAL DESCRIPTION, ADULTS: Forbes (1948), Ferguson (1969, 1985)

TECHNICAL DESCRIPTION, IMMATURE STAGES: Ferguson (1985); Wagner (2005)

ID COMMENTS: A medium-sized Emerald. *Lixaria* has fairly dark green wings, with white, sinuous to dentate lines; the postmedian is somewhat excurved, running parallel to the outer margin. A red terminal line is present and the fringes are white but conspicuously checkered with bright red. Strong, black discal dots are usually present on both sets of wings. Winter specimens may have a brownish edging to the lines or the wings may be suffused with a blackish shade, but no reddish cool season forms exist similar to those of *N. bistriraria*. The abdomen has three large white spots (sometimes more) surrounded by red. The green summer form of *bistriraria* is very similar in size, color, and pattern, but has a much straighter and more even postmedian line and a less contrastingly checkered fringe. *Bistriraria* also lacks the black discal spots found in *lixaria* (Forbes, 1948).

DISTRIBUTION: Found statewide, but less commonly in the Mountains

FLIGHT COMMENT: Adults can be found at nearly any season in North Carolina, although less commonly in the winter. Possibly has three peaks in abundance.

HABITAT: *Lixaria* has been recorded from a wide range of hardwood forests in North Carolina, including Maritime Forests on the barrier islands, riverine and non-riverine swamp forests, xeric sandhills, and upland stands in the mountains.

FOOD: Larvae are reportedly polyphagous. Wagner (2005) lists oak (*Quercus*), Red Maple (*Acer rubrum*), and Sweet-fern (*Comptonia peregrina*). Ferguson (1985) reported that captive larvae fed well on oaks, particularly on Red Oak (*Q. rubra*). In North Carolina, J.B. Sullivan recorded larvae on Turkey Oak (*Quercus laevis*) and Sparkleberry (*Vaccinium arboreum*).

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

NATURAL HERITAGE PROGRAM RANKS: G5 SNR [S5]

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

COMMENTS: Given its wide occurrence and use of multiple, common host plants and habitat types across the state, this species appears to be secure in North Carolina.