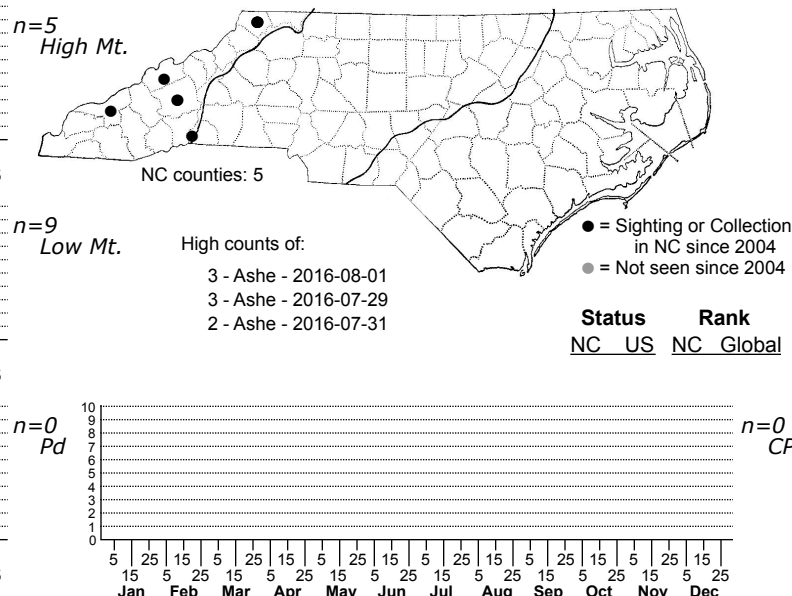
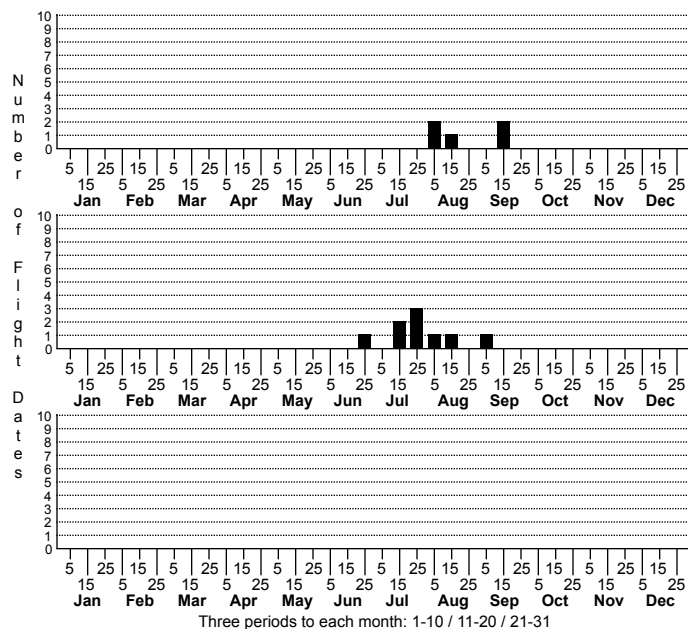


Agonopterix robiniella Four-dotted Agonopterix Moth



FAMILY: Depressariidae SUBFAMILY: Depressariinae TRIBE: [Depressariini]

TAXONOMIC COMMENTS: *Agonopterix* is a large holarctic genus with more than 125 species, with most occurring in the Palearctic Region. Currently, there are 47 recognized species in North America. Our species are largely confined to the western mountains.

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

ONLINE PHOTOS:

TECHNICAL DESCRIPTION, ADULTS: Clarke (1941); Hodges (1974)

TECHNICAL DESCRIPTION, IMMATURE STAGES: Packard (1869)

ID COMMENTS: The following is based on descriptions by Clarke (1941) and Hodges (1974). The labial palp is whitish ochreous basally, and gradually becoming more yellowish toward the apex. The second segment is mottled with brick red and fuscous exteriorly. The third segment has two annuli; a sub-basal annulus that is brick-red, and a subterminal annulus that is more fuscous than the sub-basal annulus. The antenna is fuscous with considerable red scaling basally. The head, thorax, and ground color of the forewing is yellow, mottled and overlaid with brick red, and shaded with fuscous and black. Small black flecks are scattered throughout. At the basal third of the forewing there are two black discal spots. The one nearer the inner margin is less distinct than the one towards the costa and is sometimes not readily evident. The discal spot at the end of cell is either absent or very indistinct. The dark patterning on the wing is variable, but most specimens have a dark, diffuse curved band that extends from slightly beyond the middle of the costa to the inner margin near the wing base. A lateral branch is usually present that extends posteriorly from near the cell towards the inner margin. Before the termen, there is a poorly defined dark band or blotch that does not reach the costa. A series of indistinct blackish spots occurs along the costa and around the termen. The cilia is light fuscous and tinged with red. The hindwing is grayish fuscous with the terminal edge narrowly blackish fuscous. The cilia is light fuscous with narrow sub-basal and sub-terminal bands. The legs are whitish ochreous and suffused and mottled with brick red and fuscous.

This species is similar to *A. thelmae*, which has a red to reddish-orange streak along the cell (almost always absent in *A. robiniella*) and a small dark blotch adjoining it on the costal side. *Agonopterix thelmae* also lacks a brick-red sub-basal annulus on the third segment of the labial palp (present in *A. robiniella*) and has two dark anterior discal spots that are oblique. In many cases the inner spot is greatly reduced in *A. robiniella*, giving the appearance of a single spot. *Agonopterix dimorphella* also superficially resembles *A. robiniella*, but is darker and smaller, and has a pale yellow spot at the end of the cell.

DISTRIBUTION: *Agonopterix robiniella* is found in eastern North America in southern Canada (Ontario; Quebec; Nova Scotia; New Brunswick), and from the northeastern states westward and southwestward to Minnesota, Oklahoma, Arkansas, Alabama, and western North Carolina. This species is absent from most of the southeastern Piedmont and Coastal Plain, and appears to have expanded its range substantially since European colonization due to the planting and escape of Black Locust outside of its native range. As of 2020, all of our records except one are from the lower elevations in the mountains.

FLIGHT COMMENT: This species is univoltine, with breeding occurring after Black Locust is leafed-out. Adults have been found from April through October in different areas of the range, with peak in June-Aug. As of 2020, our records extend from June through August.

HABITAT: Local populations are strongly dependent on Black Locust for successful reproduction. This species is common in edge habitats such as along roadways or fencerows, but also occurs in mesic hardwood forests in the mountains, particularly where past disturbance has allowed seedlings to become established.

FOOD: The larvae rely heavily on Black Locust (*Robinia pseudoacacia*), but will occasionally use Honey Locust (*Gleditsia triacanthos*) and possibly other species of *Robinia* (Schaffner, 1959; Prentice, 1966; Ferguson, 1975; Robinson et al., 2010). Isolated reports of this species using an oak (Covell, 1984) and snakeroot (*Sanicula*; Robinson et al., 2010) are questionable and need to be verified with additional observations.

OBSERVATION METHODS: The adults are attracted to lights. Additional information is needed on the larval ecology, so we encourage naturalists to search for the larvae on Black Locust and document the life cycle.

NATURAL HERITAGE PROGRAM RANKS: GNR SU

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

COMMENTS: We have only a few records for this species as of 2020, which suggests that it may be uncommon in the state. Additional information on its distribution and abundance is needed before we can accurately assess its conservation status.