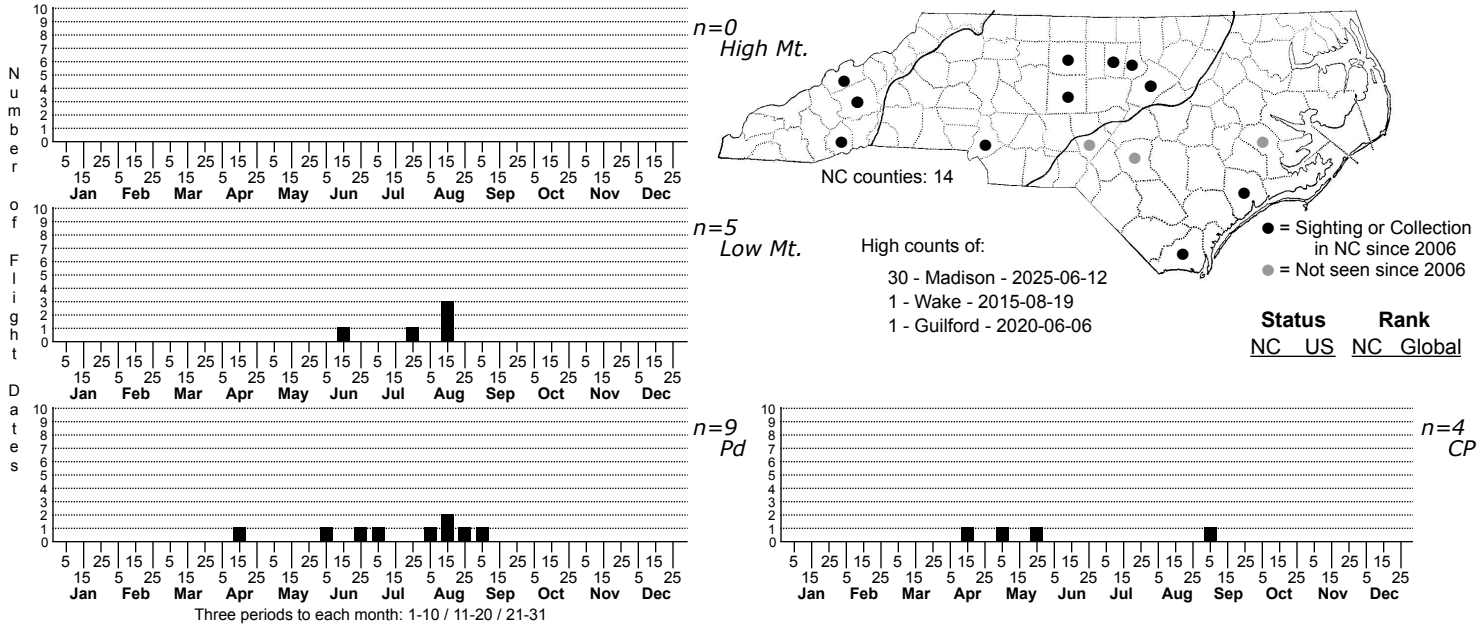
Synanthedon scitula Dogwood Borer Moth



FAMILY: Sesiidae SUBFAMILY: Sesiinae TRIBE: Synanthedonini
TAXONOMIC_COMMENTS: North America has 136 or more species in the family Sesiidae, and the large genus Synanthedon constitutes around half of the 37 species found in North Carolina, many being similar in appearance to one another. Some sesiids, known broadly as clearwing borers, are significant pests of commercial crops. Almost all are mimics of wasps and hornets.

FIELD GUIDE DESCRIPTIONS: Covell (1984); Beadle and Leckie (2012)
ONLINE PHOTOS:
TECHNICAL DESCRIPTION, ADULTS: Eichlin and Duckworth (1988)
TECHNICAL DESCRIPTION, IMMATURE STAGES: Engelhardt,1946; Solomon, 1995

ID COMMENTS: The males of this species are best identified using a combination of characters, including a bluish-black antenna; a yellow band on abdominal segments segment 2 and 4, with the latter broader; mostly transparent wings with yellow dusting along the basal half of the costa; and a fan-shaped anal tuft that is narrowly margined with yellow along the sides. The females are generally similar, but have an additional narrow yellowish band on the last abdominal segment, and a yellowish bar on segment 3. In addition, the anal tuft is more broadly margined with yellow. The following detailed description of the males is based on the descriptions by Engelhardt (1946) and Eichlin and Duckworth (1988).

The antenna is steel bluish-black, with a golden spot at the base beneath. The head is blackish above, with the front mostly white, while the labial palp is yellow and sometimes tipped with black. The collar is yellow and the thorax varies from black to lustrous steel blue or coppery. It has a narrow, long, yellow stripe along the sides on the patagia, and a small yellow transverse patch posteriorly. The abdomen varies from steel-blue to black, and has a narrow band on the posterior margin of segment 2 and a broader yellow band encircling segment 4. The ventral region is variously powdered with pale yellow medially on all segments except segment 3. The anal tuft is fan-shaped, black, and edged with yellow at the sides. The tibiae of the legs are mostly yellow, but banded with purplish black between the spurs, while the tarsi are yellow with narrow blackish bands at the joints. The forewing is mostly transparent, with the veins, discal spot, and broad outer border bluish-black to brownish-black. The area between the outer veins are powdered with golden-yellow, while the costa and inner margin are black with varying amounts of intermixed yellow scales. The hindwing is transparent, with the margins very narrowly bluish-black, and with the costa powdered with yellow.

Females are generally similar to the males but are larger and stouter, tend to have more yellow shading on the forewing, have a broader yellow band on segment 4, and an anal tuft that is more brushlike and more broadly banded with yellow above. In addition to yellow bands on segments 2 and 4, females frequently have a narrow yellowish band on the last abdominal segment, and a yellowish bar on segment 3. Ventrally, yellow coloration is mostly restricted on segments 4-6 (Engelhardt, 1946; Eichlin and Duckworth, 1988).

DISTRIBUTION: Synanthedon scitula is found throughout most of the eastern US and adjoining areas of Ontario, and has been introduced into the Pacific Northwest. In the eastern US, the range extends from Maine southward along the Atlantic Seaboard to northern Florida, and westward to central Texas, central Oklahoma, eastern Kansas, Colorado, eastern Nebraska, Minnesota and eastern North Dakota. As of 2024, we have records from all three physiographic regions of the state, but only a single site record from the Blue Ridge where this species appears to be rare.

FLIGHT COMMENT: The adults have a long flight period is southern populations such as those in Florida, Mississippi, Louisiana and Texas and have been taken mostly from March through October. Northern populations have shorter flight seasons and typically fly from May through September (Bergh and Lesley, 2003). As of 2024, our rather limited records are from mid-April through early-September. Leskey et al. (2009) ran pheromone traps for two years in an apple orchard in Lincoln County and trapped male adults from late-May through mid-October.

HABITAT: Local populations are generally associated with hardwood or mixed hardwood-conifer forests, in addition to semi-wooded residential neighborhoods. Populations often do well in residential settings or nurseries where Flowering Dogwood is grown. Rogers and Grant (1990) reported that infestation rates are low where Flowering Dogwood grows naturally in forests, and high in residential settings where the trees are often injured from lawn mowers and weed trimmers.

FOOD: Synanthedon scitula is thought to have the broadest dietary niche of any of the eastern species of clearwing moths (Forbes, 1923; Engelhardt, 1946; Pless and Stanley, 1967; Eichlin and Duckworth, 1988; Solomon, 1995; Heppner, 2003). It can be a major economic pest on Flowering Dogwood, Pecan and Common Apple where it can kill ornamental plantings, nursery stock and orchard trees, but uses many other species of trees and shrubs. The reported hosts for the eastern US include Flowering Dogwood (Benthamidia florida [= Cornus florida]), Supplejack (Berchemia scandens), birches (Betula spp.), hickories (Carya spp.), including Pecan (C. illinoiensis), American Chestnut (Castanea dentata), hazelnuts (Corylus), hawthorns (Crataegus), Quince (Cydonia oblonga), American Beech (Fagus grandifolia), Common Apple (Malus domestica), Northern Bayberry (Morella pensylvanica), Common Waxmyrtle (M. cerifera), Common Ninebark (Physocarpus opulifolius), American Plum (Prunus americana), Common Plum (P. domestica), Black Cherry (P. serotina), Peach (P. persica), oaks, including White Oak (Quercus alba), willows (Salix spp.), American Mountain-ash (Sorbus americanus), elms (Ulmus), viburnums (Viburnum), and Wisteria. In addition to these, other species of hardwoods are undoubtedly used.

OBSERVATION_METHODS: The adults are mostly diurnally active and are often seen resting on tree trunks or vegetation, and nectaring on flowers. They are also attracted to pheromone lures, and occasionally appear at lights in the early evening hours.

NATURAL HERITAGE PROGRAM RANKS: GNR SNR [S3S4]

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

COMMENTS: This species is probably much more common than our records suggest due to the fact that this species is mostly diurnally active and is not strongly attracted to lights.