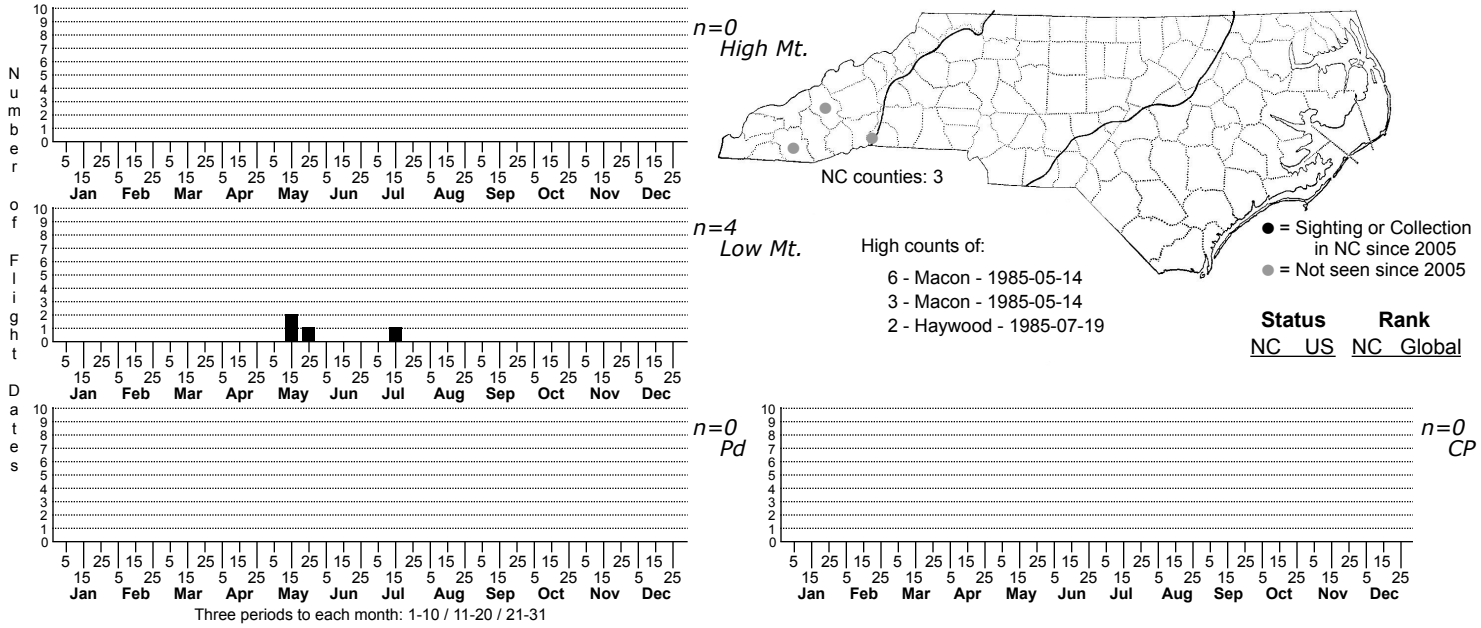
Synanthedon castaneae Chestnut Borer Moth



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:
ONLINE PHOTOS:
TECHNICAL DESCRIPTION, ADULTS: Engelhardt (1946) and Eichlin and Duckworth (1988)
TECHNICAL DESCRIPTION, IMMATURE STAGES:

ID COMMENTS: The antenna is black and scarcely dilated towards the tip. The labial palp varies from yellow or whitish yellow below. It is black above and has a few sprinkles of yellowish scales mixed with the black. The vertex of the head is black and mixed with some yellow scales posteriorly, while the front is black with a broad white area before the eyes. The occipital fringe (collar) is brownish-black. The thorax is bluish-black or coppery-black, with two narrow, yellow, lateral stripes above, and two broader, yellow marks on the underside before the wing base. The forewing is mostly transparent, with a very narrow outer margin and fringes that are purplish to rusty black. Light yellow powdering is often present on the margins, veins, and distal margin of the discal spot, which are otherwise black. The yellow powdering is noticeably stronger on the underside of the wing. The hindwing is also transparent, with the costal margin yellow, and the fringe yellow near the wing base. The abdomen is black, with blue or coppery reflections, and with segments 2, 3, and 4 very narrowly banded with pale yellow above. One or more of the bands may be broken, with the band on segment 4 usually complete. The band on segment 4 continues onto the venter where it becomes broader. The anal tuft is wedge-shaped and black. The legs have a mostly yellow coxa and a bluish-blackish femora. The foretibia is mostly yellow, while the midtibia and hindtibia are bluish-black except for a whitish tuft at the posterior spurs. The tarsi of the hindleg are bluish-black dorsally, with a yellow patch at the junction of the first and second segments. The females are very similar to the male, but average slightly larger, have slightly broader outer wing margins, and have more pronounced banding on the abdominal segments.

Synanthedon pictipes is very similar to S. castaneae, which was rediscovered in North Carolina in 1985 after it was thought to have been extirpated due to the loss of American Chestnut. The easiest way to distinguish between the two is by examining the collar behind the head and the hind tibia. In S. pictipes the collar is yellow and the tibia is tufted with yellow at both the anterior and posterior spurs, whereas in S. castaneae the collar is black and the tibia is tufted with yellow only at the posterior spurs.

DISTRIBUTION: Synanthedon castaneae occurs in the eastern Atlantic Coast states and Appalachian Mountain system to northern Florida. It may have become extinct in Ontario. As of 2024, all of our records are from the southern Blue Ridge.

FLIGHT COMMENT: The adults have been observed from May through July in different areas of the range. As of 2024, our records are from mid-May through mid-July.

HABITAT: Local populations are generally associated with the American Chestnut, which is commonly found is mesic to drier sites that are often rocky.

FOOD: American Chestnut (Castanea dentata) is the only reported host, but it is possible that other chestnuts such as Allegheny Chinquapin (Castanea pumila) are used. Girault (1907) noted that adults were reared from American Chestnut in Polk County. These were reported as S. pictipes but were very likely S. castaneae.

OBSERVATION_METHODS: The adults as probably best collected by using pheromone traps.

NATURAL HERITAGE PROGRAM RANKS: G3G5 [S2S4]

STATE PROTECTION:

COMMENTS: This species was once thought to have become extinct following the die-off of the American Chestnut (Eichlin and Duckworth, 1988). However, it has recently been rediscovered in North Carolina, South Carolina, and Alabama (Snow and Eichlin, 1986; Eichlin and Duckworth, 1988). Eichlin and Snow (1986) speculated that this species may be able to use Allegheny Chinquapin In our mountains, however, there is some chance that it could be surviving on sapling American Chestnuts, which remain fairly common in that area.