Synanthedon decipiens Oakgall 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 <i>Synanthedon</i> 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) TECHNICAL DESCRIPTION, IMMATURE STAGES: MacKay (1968)

ID COMMENTS: <i>Synanthedon decipiens</i> is best identified by a combination of traits, including a black head, yellow collar, black thorax that lacks yellow lateral bands, an orange to reddish discal spot, and an abdomen with yellow banding on segments 2, 4, 6, and 7, with segment 4 noticeably broader than the others. The following detailed description of the male is based on descriptions by Engelhardt (1946) and Eichlin and Duckworth (1988).

The antenna is black and often powdered with yellow on the basal half. The labial palp is strongly roughened and golden-yellow, with black on the first segment that extends laterally onto most of the second segment. The vertex of the head is black, the collar yellow, and the front black with white laterally. The thorax is black with a large yellow patch beneath each wing. The posterior margin has a yellow, transverse band and lateral yellow tufts that create a broad band that resembles one on the abdomen. The abdomen is black, with a narrow yellow band on segments 2, 6, and 7, and a broad band on segment 4. Segments 1 and 2 have yellow along the sides, and segment 4 is the only segment that is banded with yellow underneath. The anal tuft is wedge-shaped and mostly black, with a whitish to yellowish edge. The legs are broadly banded with yellow and black, and most conspicuously so on the hindleg. The forewing is mostly transparent, with the costa heavily scaled, and with a mix of black and orange scales. The veins are black, with the area between the veins below the outer margin dusted with orange. The discal spot is orangish-red, the fringes brown, and the underside heavily shaded with golden-yellow. The hindwing is transparent with very narrow margins, and has a discal spot that is very small and orange.

The females are generally similar to the males, but differ in having broader wing margins and denser orange shading between the veins, including on the basal half. The discal mark is bright red, and the abdomen has a narrow yellow band on segments 2 and 6, with the band on segment 4 twice as broad as those on segments 2 and 6. The anal tuft is short, rounded, and black with a yellow edge.

DISTRIBUTION: <i>Synanthedon decipiens</i> is widely distributed throughout most of the eastern US and in adjoining areas of southern Ontario and Quebec. The range in the US extends from New Jersey and Maryland southward along the Atlantic Seaboard states to central Florida, and westward to central Texas, eastern Oklahoma, Missouri, Illinois, Iowa, Wisconsin and Minnesota. Scattered records are also known from Colorado, southeastern New Mexico, western Texas and northeastern Mexico. This species is largely absent from much of the

Appalachian Mountains. As of 2024, all of our records are from the eastern Piedmont and Coastal Plain.

FLIGHT COMMENT: The adults have been found from March through November in different areas of the range. Southern populations have long flight seasons and appear to have two broods per year, while northern population produce a single brood and fly mostly from May through July. As of 2024, our records are from mid-April through early-October. Populations in North Carolina appear to produce at least two broods, and perhaps a partial third, with the first flight from April through early-May, and the second from early-July through early-October.

HABITAT: Local populations are associated with forests with oaks, and often at sites that vary from moderately dry to xeric.

FOOD: The larvae feed on oaks, both as borers in the trunks and limbs, but far more commonly in the galls of cynipid wasps that form on oak trees (Engelhardt, 1946). The known hosts include Water Oak (<i>Quercus nigra</i>), Pin Oak (<i>Q. palustris</i>), Black Oak (<i>Q. velutina</i>), Live Oak (<i>Q. virginiana</i>), along with 'scrub' oaks (species not specified) in Florida and Alabama.

OBSERVATION_METHODS: The adults are mostly diurnal, but have occasionally been collected in light traps. They can be found resting on vegetation or nectaring on goldenrods or other wildflowers during the day. The moths are attracted to pheromone traps, and the adults can be reared by harvesting oak galls in the spring or early summer.

NATURAL HERITAGE PROGRAM RANKS: GNR [S2S3]

STATE PROTECTION:

COMMENTS: <i>Synanthedon decipiens</i> is uncommon in North Carolina, perhaps because of its reliance on oak galls as a larval food source. More information is needed on its host plants, distribution and abundance before we can accurately assess its conservation status. March 2025 The Moths of North Carolina - Early Draft