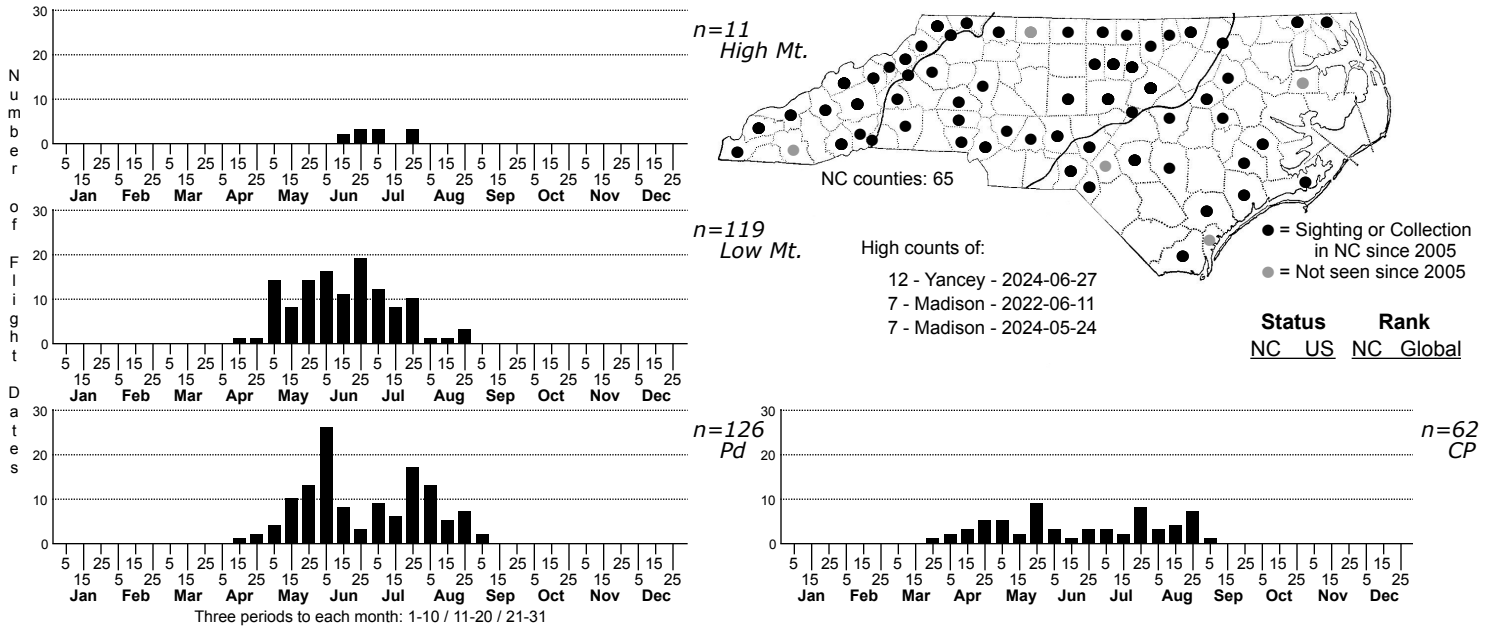
Callosamia angulifera Tulip-tree Silkmoth



FAMILY: Saturniidae SUBFAMILY: Saturniinae TRIBE: Attacini
TAXONOMIC_COMMENTS: One of three Callosamia species in North Carolina, all of which overlap in range in the Coastal Plain.

FIELD GUIDE DESCRIPTIONS: Covell (1984); Beadle and Leckie (2012)
ONLINE PHOTOS:
TECHNICAL DESCRIPTION, ADULTS: Forbes (1923), Ferguson (1972), Tuskes et al. (1996)
TECHNICAL DESCRIPTION, IMMATURE STAGES: Forbes (1923), Ferguson (1972), Tuskes et al. (1996), Wagner (2005)

ID COMMENTS: Sexually dimorphic, with both males and females similar in wing pattern and coloration those of the other two species of Callosamia. Female C. angulifera usually have an orange-brown ground color, always showing at least some degree of yellowish shading, particularly along the inner margin and basal area. Female C. promethea do not show any yellow shading and are either darker umber or a brighter cherry-red. Female C. securifera are more yellow than orange and differ in the degree of contrast along the post median line on the underside of the hindwing (see description of C. securifera). The discal spots of both male and female C. angulifera also tend to be larger than in the other two species. The males of all three species are a dark umber brown in the basal and medial areas of both wings but differ in amount lighter shading along the post median line and in the submarginal area. C. angulifera males are less darkly marked than in C. promethea (see description of that species) but are more difficult to distinguish from C. securifera. As with the females, the most reliable feature is the brightness of the pale line that borders the post median (which is black) on the undersurface of the hindwing; this line is a much brighter white in C. angulifera. In the Coastal Plain, good photographs or specimens are needed to confirm records for adults.

DISTRIBUTION: State-wide in occurrence but probably more continuously distributed in the Piedmont and Lower Mountains than in Coastal Plain or High Mountains

FLIGHT COMMENT: Reported to have two broods, particularly in the southern part of its range (Forbes, 1923; Covell, 1984). In North Carolina, our records indicate that it may be most clearly double-brooded in the Piedmont. In the Mountains, it may be single brooded and in the Coastal Plain, adults may be present throughout much of the growing season, although with a bimodal distribution of flights. Spring brood individuals tend to be lighter and more brightly marked than summer brood (Ferguson, 1972; Tuskes et al., 1996).

HABITAT: This species occupies a wide range of hardwood forests where its host plant, Tulip-tree (Liriodendron tulipifera), is common. In the Piedmont and Mountains, it probably occupies most mesic to dry-mesic stands of hardwoods, particularly on rich soils, which are the main habitat for L. tulipifera var. tulipifera (Weakley, 2012). In the Coastal Plain, however, it is restricted to the floodplains of blackwater rivers and creeks, including small streamheads in the Sandhills. Although these habitats are acidic, in contrast to the areas of richer soils occupied in the Piedmont and Mountains, L. tulipifera var. 1 is common in these habitats (Weakley, 2012).

FOOD: Larvae feed primarily on Tulip-tree (Liriodendron tulipifera) but also on other hardwood trees to some extent, including Black Cherry (Prunus serotina) and Sassafras (Sassafras albidum) (Forbes, 1923; Covell, 1984). Wagner, (2005), however, only lists Tulip-tree and Peigler (1979) also believed C. angulifera to be monophagous on that species. We do not have any feeding records in North Carolina.

OBSERVATION_METHODS: This species is much more nocturnal than the other two Callosamia in our area, with males as well as females coming fairly well to lights -- up to 53 males have been collected at a single trap (Sullivan, pers. obs.). In general, any male Callosamia showing up at lights at night is highly likely to belong to this species. Adults do not feed and are not attracted to bait, and the larvae typically occur well up in the canopy and are rarely seen. The cocoons do not remain attached to twigs during the winter, dropping into the leaf litter where they are difficult to find.

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: Populations are locally vulnerable to the effects of weather, outbreaks of disease, parasites, and predators, and to the effects of pesticides and artificial lights. However, given the commonness of their host plants, wide habitat range -- including suburban areas -- and statewide distribution, this species can easily recover from most of those losses. In the Northeast, however, population decreases have been linked to the spread of a parasitic fly, Compsilura concinnata, which was introduced as a control on Gypsy Moths (Boettner et al.; Schweitzer et al., 2011). No evidence exists in the Southeast that similar problems have shown up here, although such species would constitute a very pervasive threat that would not be easily recovered from. Compsilura has spread as far south as Virginia (Kellogg et al., 2003) and the situation in North Carolina needs to be monitored.