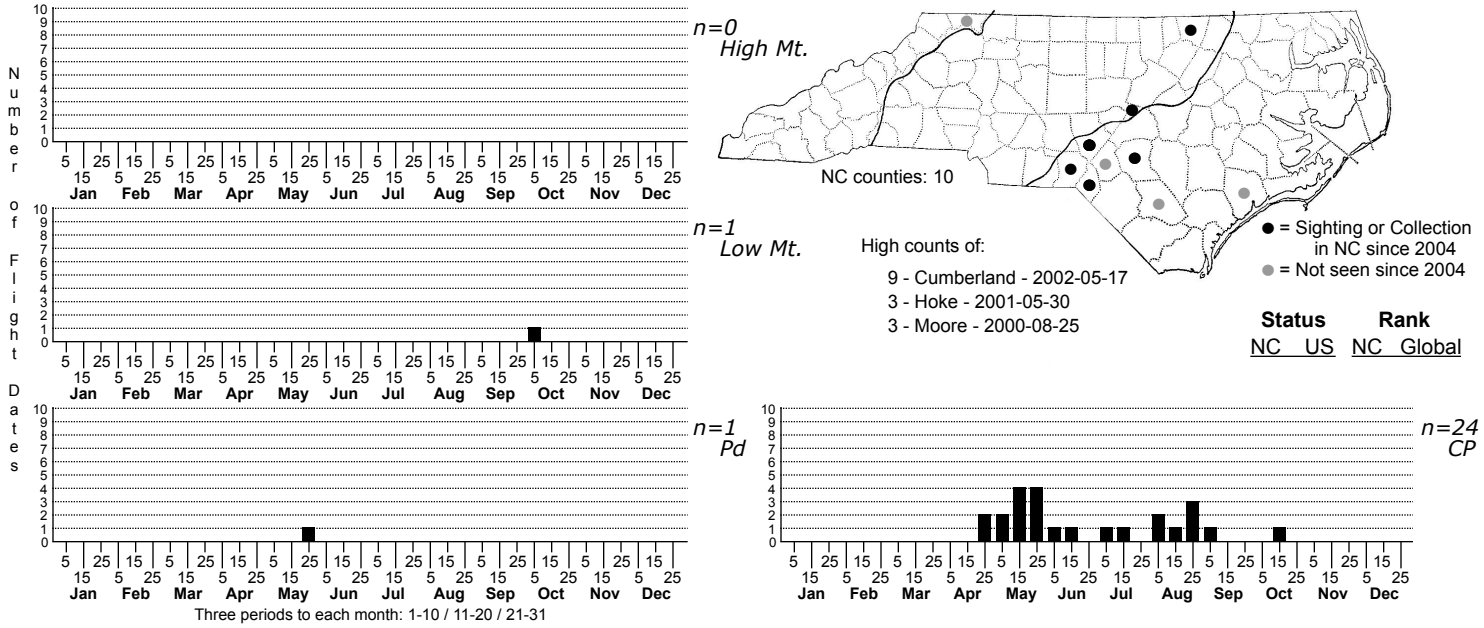
Apantesis placentia Placentia Tiger Moth



FAMILY: Erebidae SUBFAMILY: Arctiinae TRIBE: Arctiini
TAXONOMIC_COMMENTS: The genus Apantesis is represented by 43 species in North America, including 13 species in North Carolina.

FIELD GUIDE DESCRIPTIONS: Covell (1984)
ONLINE PHOTOS:
TECHNICAL DESCRIPTION, ADULTS: Forbes (1960); Schmidt (2009)
TECHNICAL DESCRIPTION, IMMATURE STAGES: Forbes (1960)

ID COMMENTS: A medium-sized, broad-winged, and boldly marked Tiger Moth that is fairly easily identified based on good quality photographs showing both the fore- and hindwings. Strongly sexually dimorphic. Fore-wings in the females are nearly all black with just a few small white spots; hindwings are crimson with a prominent black medial spot and a thin, usually broken subterminal black band. Fore-wings in the males are similar to those of A. phyllira and A. figurata, lacking vein lines but possessing well developed broad yellow stripes: a longitudinal sub-cubital band (following the terminology of Schmidt, 2009), intersected by a straight medial line and a slightly curved post-medial line and followed by a zig-zag sub-terminal band; broad lines are also present along the costa and inner margins. Males can be distinguished from A. phyllira, which have a similar fore- and hindwing patterns in both sexes, by their medial line intersecting the costa at a right angle and the sub-cubital at an acute angle; in A. phyllira, the medial line is somewhat bent and intersects the costa at an acute angle but is nearly perpendicular to the sub-cubital stripe (Forbes, 1960; Covell, 1984). Schmidt states that the distance between the costal junctions of the medial and post-medial lines is 3-4x the distance between the junctions of these lines with the sub-cubital; in phyllira, the costal distance is only about 2x the sub-cubital distance. Schmidt also notes that the last abdominal segment is entirely dark in A. placentia, but black and pale in A. phyllira.

DISTRIBUTION: Forbes (1960) stated that almost all specimens known at that time came from Southern Pines. Our records are certainly consistent with a concentration of occurrences in that area, although we have at least one record from the Outer Coastal Plain and recently one from the eastern edge of the Piedmont was added.

FLIGHT COMMENT: Forbes (1960) thought placentia probably had two flights. Our data are consistent with both a spring and summer flight, but possibly with three peaks in activity

HABITAT: Schmidt (2009) states that "placentia occurs in dry, sandy open wooded areas, primarily pine barrens of the Atlantic coastal plain"; in the New Jersey Pine Barrens, it is described as being "rare and local in occurrence" (D. Schweitzer, cited by Schmidt, 2009). Our data agree with this description: with one recent exception from Warren County, all of our records come from Longleaf Pine sandhill habitats. Moreover, the majority of these records are associated with Sandhills Seepage Bog habitats, which are highly localized. These habitats, however, are wetlands rather than xeric barrens. Unlike the more xeric habitats that surround them, these seeps support particularly rich assemblages of herbaceous plants, including many species of Dicots, and would seem likely places to find a highly localized species of Grammia. The one site where this species has been recorded in the Outer Coastal Plain, however, does not conform to this model: the site is very xeric with no savanna or other wet Longleaf habitats located close by. The general lack of records from Longleaf Pine savannas is also puzzling, since species that use seepage habitats in the Fall-line Sandhills usually also occur in savannas -- also rich in herbaceous species -- in the Outer Coastal Plain. The habitat used in the one Piedmont record we have for this species is unknown, but no Longleaf communities are believed to exist within the area, nor other xeric or fire-maintained pine barrens.

FOOD: Members of this genus are highly polyphagous, feeding on a wide range of herbaceous plants, with Dicots possibly preferred (Schmidt, 2009).

OBSERVATION_METHODS: Appears to come moderately well to blacklights, with up to nine individuals being collected in a single trap. The mouthparts are non-functional (Singer, 2000, cited in Schmidt, 2009), so it does not come to bait.

NATURAL HERITAGE PROGRAM RANKS: G3G4 S2S3

STATE PROTECTION: Listed as Significantly Rare by the Natural Heritage Program. That designation, however, does not confer any legal protection, although permits are required to collect it on state parks and other public lands.

COMMENTS: This species appears to be highly specialized on Longleaf Pine habitats, which have lost over 90% of their range over the past two hundred years and continue to do so due to habitat conversion and suppression of natural fires. Fire suppression has particularly affected the rich herb layer associated with savannas and sandhill seeps -- without fire, these herb-rich areas are quickly overtopped by shrubs and eventually hardwood trees, completely shading out low-growing species such as carnivorous plants, orchids, grasses, and other sun-loving herbs. If Grammia placentia is especially associated with sandhill seeps, it is likely to be in particular jeopardy: outside of Fort Bragg, only small remnants of seepage habitats remain over most of the Fall-line Sandhills region (Hall, 2009), and even formerly widespread seepage insect such as the Pitcher Plant moths (Exyra sp.) are increasingly hard to find. Although pockets of good quality habitats remain, the majority have been reduced to increasingly small, increasingly isolated remnants that apparently can no longer support the metapopulation strategy used by most of their Lepidopteran species to cope with frequent fire -- recolonization through dispersal between habitat units and the buildup of numbers within those patches needed to support and drive emigration no longer function within this increasingly fragmented landscape.