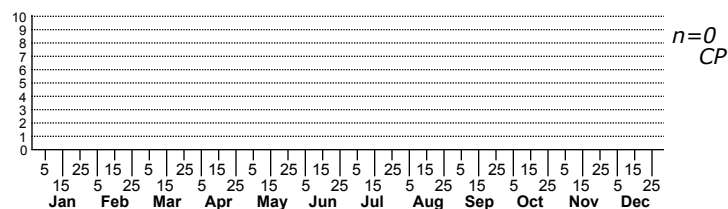
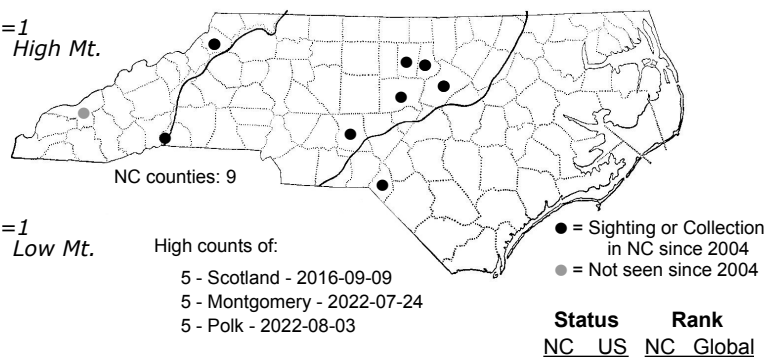
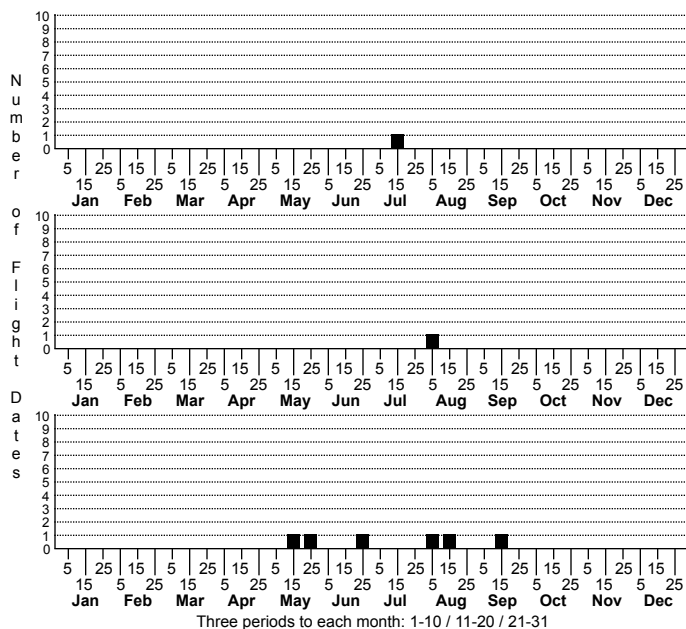


## *Cosmopterix clemensella* Clemens' Cosmopterix



FAMILY: Cosmopterigidae SUBFAMILY: Cosmopteriginae TRIBE: [Cosmopterigini]

TAXONOMIC\_COMMENTS: *Cosmopterix* is a very large genus of small, colorful moths that are found on every continent except Antarctica. There are 31 species that are currently recognized in North America, and all are leafminers.

FIELD GUIDE DESCRIPTIONS:

ONLINE PHOTOS:

TECHNICAL DESCRIPTION, ADULTS: Hodges (1978)

TECHNICAL DESCRIPTION, IMMATURE STAGES: Eiseman, 2019

ID COMMENTS: The following description focuses on forewing and antenna patterning, and is based on a more detailed description presented by Koster (2010). The antenna is shining dark brown with an interrupted white line from the base to beyond one-half, a short section at the base that is often uninterrupted, followed towards the apex by approximately ten dark brown segments, nine white segments (sometimes broken by two dark brown segments into two white bars, which is commonly the case in North Carolina specimens), ten dark brown segments, and seven white segments at the apex. The vertex and dorsal thorax region have two lateral and a medial whitish line. The forewing is dark grayish brown with three silvery white lines in the basal area. These consist of 1) a subcostal line from the base to one-quarter of the wing length that slightly bends from the costa distally, 2) a very short but thick medial line above the fold that ends at the distal end of the subcostal, and 3) a subdorsal line that is twice as long as the medial line and narrower. This line starts just before the distal end of the medial line. A yellow transverse fascia occurs just beyond the middle of the wing that narrows towards the dorsum and has a narrow and dorsally bent apical protrusion. The fascia is bordered on the inner edge by a tubercular silver metallic fascia that does not reach the costa, and by a small blackish subcostal spot. The outer edge of the transverse fascia is bordered by two tubercular silver metallic costal and dorsal spots. The dorsal spot is about four times as large as the costal spot and positioned more towards the base. Both spots are irregularly lined with dark grayish brown on the inside. A short white costal streak extends from the costal spot to the costa. A shining white apical line extends from the apical protrusion to the apex. The cilia are dark grayish brown, but paler towards the dorsum. The hindwing is pale brownish gray, and the cilia are grayish brown. The abdomen is yellow-ochreous dorsally. Koster (2010) noted that the most diagnostic combination of traits for this species is the very short medial line on the forewing, the outer dorsal spot that is four times as large as the outer costal spot, and the yellow-ochreous abdomen. As with other *Cosmopterix*, antenna patterning is helpful in identifying species.

DISTRIBUTION: *Cosmopterix clemensella* occurs across southern Canada from Alberta to Nova Scotia. In the US it occurs from the northeastern states southward and westward to Illinois, Kentucky, and North Carolina. As of 2022, we have only a few scattered records from the Coastal Plain to the western Piedmont and Blue Ridge.

FLIGHT COMMENT: Populations appear to be univoltine in the north, with adults emerging in May and early June. In North Carolina the adults have been found in both April and August-September, which suggests that populations are bivoltine.

HABITAT: The larvae feed on sedges and use species that prefer habitats that range from wetlands and floodplain forests to mesic and dry forests.

FOOD: Larvae feed on members of the Cyperaceae, including *Carex* and *Scleria* (Robinson et al., 2008). Eiseman (2024) has observed mines or raised adults from *Carex albursina*, *C. amphibola*, *C. arctata*, *C. glaucoidea*, *C. debilis*, *C. grayi*, *C. grisea*, *C. lupulina*, and *C. lurida*. As of 2022, all of our limited rearing records from North Carolina are for *C. lurida*, which is a common and widespread species in wetlands throughout the state.

OBSERVATION\_METHODS: The adults are occasionally attracted to lights and have been successfully reared from sedges. We recommend searching sedges for the mines and distinctive frass deposits on the undersides of leaves.

NATURAL HERITAGE PROGRAM RANKS: GNR S2S3

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

COMMENTS: We currently do not have sufficient data to determine the conservation status of this species within the state.