

**NOTE****Two *Catocala* (Lepidoptera: Noctuidae) species newly recorded in Nova Scotia**

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Underwings (Lepidoptera: Noctuidae: *Catocala* Schrank, 1802) are medium to large-sized moths, known for their cryptically patterned forewings and their brightly colored hind wings which are boldly striped with red, yellow, orange, and white. Adults, like most moths, are nocturnal insects, resting by day on tree trunks where their dull colored forewings provide concealment from birds and other predators. *Catocala* moths are world-wide in distribution, mostly in temperate regions, with a few species found in Central America, Southeast Asia, and Formosa (Forbes 1954). Currently, 110 species are recognized as occurring in North America (Hodges 1983), although taxonomic revisions presently underway will adjust this number (L.F. Gaul, Harvard University (HU), personal communication). The larvae feed on a wide variety of trees and shrubs.

In Nova Scotia, the earliest published records of *Catocala* sp. date from Walker (1857[1858]) who described *Catocala relictata* Walker, 1858 and reported *Catocala amatrix* (Hübner 1809-1913) from the province. Subsequent publications including Bethune (1869), Perrin and Russell (1909), and Perrin (1915) have all listed additional species. These records and many others were reported by Ferguson (1954) who listed 19 species as occurring in Nova Scotia. In spite of their popularity with collectors, the number of species recorded from the province has remained unchanged since this list was published. Consequently, the discovery of two previously unrecorded underwings for Nova Scotia is noteworthy. On the 3 August 1998, a *Catocala* specimen was collected on a store window in New Minas, Kings County, Nova Scotia. Initially, it was determined as *Catocala unijuga* Walker, 1858. A closer examination revealed morphological differences, and a comparison to figures and descriptions found in Sargent (1976) and Covell (1984) showed it to be a specimen of *Catocala meskei* Grote, 1873, a species new to Nova Scotia and the Maritime Provinces. This determination was confirmed by J.D. LaFontaine, Agriculture Canada, Ottawa, and L.F. Gaul, Harvard University. Subsequent collecting using ultra violet lights and banana bait revealed its presence in several localities in the western portion of Kings County.

*Catocala meskei* (Fig. 1a) is extremely similar in appearance to *Catocala unijuga* (Fig. 1b) but can be separated by the greyer, more diffuse appearance of the forewings; by the pale orange apex and darker red band on the hind wing. Nova Scotian specimens of *Catocala meskei* are smaller than *Catocala unijuga*, as are all specimens from eastern North America (L.F. Gaul, HU, personal communication).

*Catocala meskei* is a widely distributed species. In Canada it has been recorded from Nova Scotia, Quebec and Ontario west to British Columbia. In the United States, it is found from Maine, south to Florida and Texas, and west to Montana, Wyoming, and Colorado. (L.F. Gaul, HU, personal communication). Generally, *Catocala meskei* is considered a scarce and local species (Forbes 1954; Sargent 1976; Covell 1984) however records indicate that it is more common in the western part of its range. (L.F. Gaul, HU, personal communication).

**Records:** New Minas, Kings County, Nova Scotia, 3 August 1998, K. Neil (1♂ Canadian National Collection); Sheffield Mills, Kings County, Nova Scotia, 2, 5, and 11 August 2000, K. Neil, (3♂, K. Neil Collection); Sheffield Mills, Kings County, Nova Scotia, 2 August 2002, K. Neil, (1♂, Peabody Museum of Natural History); New Minas, Kings County, Nova Scotia, 6 September 2002, K. Neil, (1♂, K. Neil Collection); Coldbrook, Kings County, Nova Scotia, 30 July 2005, K. Neil, (1♂, 1♀, K. Neil Collection); Sheffield Mills, Kings County, Nova Scotia, 10 August 2007, K. Neil, (1♀, K. Neil Collection).

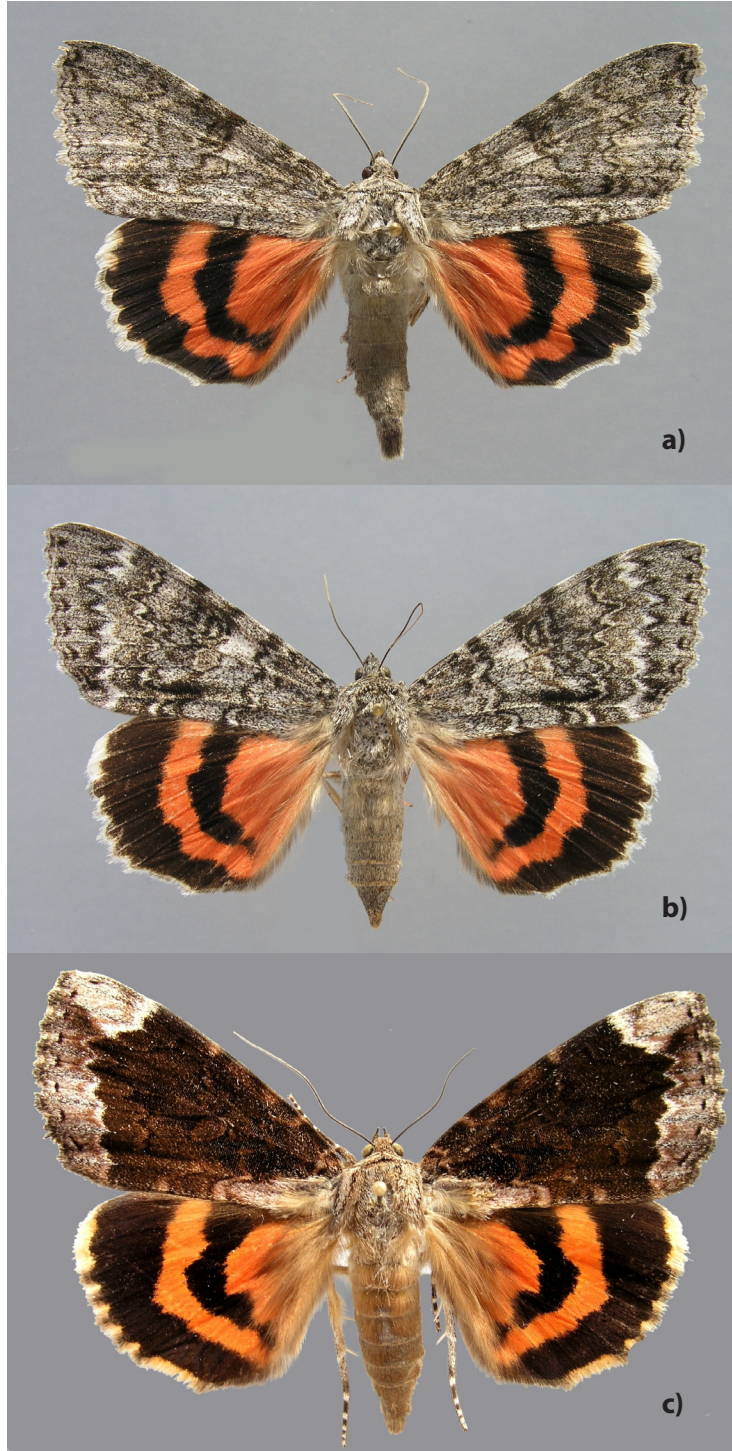
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**Fig. 1.** Dorsal habitus of a) a male *Catocala meskei* collected at Sheffield Mills, Kings County, NS, 11 August 2000; b) a female *Catocala unijuga* Walker collected at Coldbrook, Kings County, NS, 24 August 1999; and, c) a male *Catocala innubens* f. *scintillans* Grote collected at Lake McGowan, Queens County, NS, 11 August 2000. K. Neil Collection (photo K. Neil).



Voucher specimens have been deposited in the Canadian National Collection of Insects, Arachnids, and Nematodes in Ottawa, Ontario and the Peabody Museum of Natural History, Harvard University, in New Haven, Connecticut.

*Catocala meskei* is a mid-season species, occurring from late July through to September (Forbes 1954; Sargent 1976; Covell 1984) but averaging earlier in the season than the similar *Catocala unijuga*. The larval host plants have been listed as various species of poplars (*Populus* spp.) and willows (*Salix* spp.) (Salicaceae) (Forbes 1954; Sargent 1976; Clovell 1984). The larvae have been described by Forbes (*ibid.*).

Based on the number of specimens collected since 1998, it is likely that *Catocala meskei* has become established in the western end of the Annapolis Valley. It should be looked for in other localities in Nova Scotia, especially in the southern half of the Mainland, wherever the host plants grow. Any slightly smaller, greyer, more diffuse looking specimens of *Catocala unijuga* which are collected in late July and early August should be examined closely to determine their identity.

A second unrecorded species of underwing for Nova Scotia, *Catocala innubens* Guenneé 1852, was collected at Lake McGowan, Queens County, Nova Scotia on 11 August 2000 in mixed deciduous woods at a banana bait lure. The single specimen is a male and represents an example of *Catocala innubens* f. *scintillans* Grote & Robinson 1866 (Fig. 1c). *Catocala innubens* is a large underwing with dark brown fore wings and dark orange bands on the hind wings. It is a distinct species and not likely to be confused with any other underwings that occur in Nova Scotia. It occasionally resembles *Catocala ilia* Crammer 1776 which is larger and has much redder hind wing bands than that of *Catocala innubens*. Adults are on the wing from July to September but are most common in early to mid August (Sargent 1976). Larvae feed on honey locust (*Gleditsia triacanthos* L., (Fabaceae)) which is often planted as an ornamental in this region.

As only one specimen has been collected in Nova Scotia, it is not possible to say if *Catocala innubens* is established here. The presence of the host plant in the area, as well as the immaculate condition of the specimen, indicate that it may have emerged in Nova Scotia, however, additional collecting will be required to determine if this species is established in the province. It is clear that from the discovery of *Catocala meskei* and *Catocala innubens* in Nova Scotia that, even with respect to the underwings which are probably one of the best known groups of moth fauna in the Maritime Provinces, much remains unknown.

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