

Mourning Cloak (known in the United Kingdom as the Camberwell Beauty) *Nymphalis antiopa* (Linnaeus) (Insecta: Lepidoptera: Nymphalidae: Nymphalinae)¹

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The Featured Creatures collection provides in-depth profiles of insects, nematodes, arachnids and other organisms relevant to Florida. These profiles are intended for the use of interested laypersons with some knowledge of biology as well as academic audiences.

Introduction

The mourning cloak, *Nymphalis antiopa* (Linnaeus), is a large distinctive butterfly and is one of our most widely distributed butterfly species. In northern areas where it overwinters, adults may be seen basking in the sun during almost every month of winter on warm days. The upper surfaces of the wings are very beautiful, but at rest with the wings closed, the mourning cloak is highly cryptic. In the United Kingdom it is known as the Camberwell beauty.

Synonymy

The most common synonym of *Nymphalis antiopa* is *Vanessa antiopa*.



Figure 1. Dorsal view of wings of an adult mourning cloak, *Nymphalis antiopa* (Linnaeus), reared from larva collected by Don Hall in Beltrami County, Minnesota.

Credits: Jerry Butler, UF/IFAS

Distribution

The mourning cloak is widespread from Alaska south to Venezuela and throughout Eurasia—rarely reaching England (Scott 1986). It is unlikely that mourning cloaks are permanent residents of Florida. Adult mourning cloaks have been observed infrequently in a number of locations

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in north central Florida and the Florida Panhandle (Jue & Jue 2011; Minno & Powell 2011). Repeated sightings of what appear to be recently emerged adults have been made in certain years (e.g., 2000 and 2011) with no sightings in intervening years. Mourning cloaks may occasionally breed in northern Florida, but most adult specimens found here have been believed to be winter migrants from farther north (Glassberg et al. 2000).

Kimball (1965) cited a record (Anonymous 1938) of mourning cloak caterpillars on *Rumex acetosella* in Alachua County, Florida, but this citation was inaccurate. Kimball confused reports of woolly bears on *Rumex* with a report of mourning cloaks from Colorado that appeared on the same page. Unfortunately, this erroneous report has been perpetuated in the butterfly literature.

The first documented instance of mourning cloak caterpillars in Florida occurred in March 2011 in Alachua County, when approximately 50 mature larvae were observed climbing down a large sugarberry tree, *Celtis laevigata* (Boisduval & Leconte) (Minno & Powell 2011). In addition to this being the first instance of breeding in Florida, it is also the first record of the mourning cloak feeding on sugarberry.

Description

Adults

The wing spread of adults is approximately 3.0 inches. The upper surface of the wings is deep maroon with a sub-marginal black band containing a series of powder blue spots and a yellow marginal band. The ventral side of the wings is black—resembling charred wood and with a marginal whitish-yellow band.

Eggs

Eggs are whitish but darken prior to hatching (Scott 1986). Photographs of eggs and young larvae can be found at Warren et al. (2009).

Larvae

Full grown larvae are approximately 2.0 inches in length (Minno et al. 2005). The head is black with white hairs. The body is black, covered with small white dots and numerous white hairs. There is a transverse row of stout branched spines (scoli) on each segment, and most segments have a mid-dorsal reddish orange patch.

Pupae

Pupae are approximately 0.8 inches in length. They are gray with two rows of ventro-lateral, red-tipped, sharp points.

The pupae hang vertically, attached by the terminal end to a small silk pad by the cremaster.



Figure 2. Ventral view of wings of an adult mourning cloak, *Nymphalis antiopa* (Linnaeus), reared from larva collected by Don Hall in Beltrami County, Minnesota.

Credits: Jerry Butler, UF/IFAS



Figure 3. Larva of a mourning cloak, *Nymphalis antiopa* (Linnaeus), collected in Montgomery County, Virginia.

Credits: Don Hall, UF/IFAS

Life Cycle and Biology

There is a single generation per year in most areas and possibly a second generation southward. Unmated adults overwinter and mate and lay eggs in the spring. The adults are long-lived and live for nearly a year (Allen 1997; Wagner 2005). Males perch and defend territories and fly out to meet females. Adults are known for their graceful gliding behavior. Adults may feign death if attacked by predators (Cech and Tudor 2005).

Eggs are laid in large clusters in a single layer around the stems of the host plants (Scott 1986). The larvae are gregarious throughout their lives, feeding within silken

webs as very young larvae (Allen 1997). When threatened, larvae twitch in unison—likely a defensive tactic to deter predators. Caterpillars mature in early summer and adults undergo aestivation (summer dormancy) (Young 1980).

Adults prefer tree sap and fermenting fruit but also visit mud and occasionally feed on flower nectar (Allen 1997; Opler and Krizek 1984; Scott 1986).



Figure 4. Pupa of a mourning cloak, *Nymphalis antiopa* (Linnaeus), reared from larva collected by Don Hall in Beltrami County, Minnesota. Credits: Jerry Butler, UF/IFAS

Natural Enemies

In addition to the generalist predators that prey on Lepidoptera larvae, there are at least 17 tachinid fly parasitoids (Arnaud 1978) and at least eight hymenopterous parasitoids (Krombein et al.) listed from *Nymphalis antiopa* larvae.

Hosts

Preferred plant hosts for larvae are mostly trees of many species in the family Salicaceae, particularly willows (*Salix* spp.), including the exotic weeping willow, and also poplars (*Populus* spp.). Members of the elm family Ulmaceae (*Ulmus* spp.) and hackberry family Celtidaceae (*Celtis* spp.) and less commonly a wide range of species representing a number of other families are also used (Scott 1986). Mature larvae often wander from the original host plant prior to pupation and are often reported from plant species on which they do not feed (Opler and Krizek 1984).

Table 1.

Tachinid parasitoids listed from <i>Nymphalis antiopa</i> (Arnaud 1978)	
Names from Arnaud (1978) p. 655	Updated names from O’Hara (2013)
<i>Bessa harveyi</i>	<i>Bessa harveyi</i> (Townsend)
<i>Compsilura concinnata</i>	<i>Compsilura concinnata</i> (Meigen)
<i>Dichaetoneura leucoptera</i>	<i>Neaera leucoptera</i> (Johnson)
<i>Doryphorophaga doryphorae</i>	<i>Myiopharus doryphorae</i> (Riley)
<i>Euphorocera claripennis</i>	<i>Chetogena claripennis</i> (Macquart)
<i>Euphorocera edwardsii</i>	<i>Chetogena edwardsii</i> (Williston)
<i>Eusisyropa blanda</i>	<i>Hyphantrophaga blanda</i> (Osten Sacken)
<i>Exorista mella</i>	<i>Exorista mella</i> (Walker)
<i>Hemisturmia tortricis</i>	<i>Hemisturmia parva</i> (Bigot)
<i>Lespesia aletiae</i>	<i>Lespesia aletiae</i> (Riley)
<i>Lespesia archippivora</i>	<i>Lespesia archippivora</i> (Riley)
<i>Lespesia dubia</i>	<i>Lespesia dubia</i> (Williston)
<i>Lespesia frenchii</i>	<i>Lespesia frenchii</i> (Williston)
<i>Madremyia saundersii</i>	<i>Madremyia saundersii</i> (Williston)
<i>Patelloa pachypyga</i> probably	<i>Patelloa pachypyga</i> (Aldrich & Webber)
<i>Pelatachina pellucida</i>	<i>Pelatachina pellucida</i> Coquillett
<i>Winthemia sinuata</i> probably	<i>Winthemia sinuata</i> Reinhard

Table 2.

Hymenopterous parasitoids listed from <i>Nymphalis antiopa</i> (Krombein et al. 1979)
<i>Apanteles atalantae</i> (Packard) (Braconidae), p. 243
<i>Thyrateles procax</i> (Cresson) (Ichneumonidae), p. 519
<i>Hoplismenus morulus morulus</i> (Say) (Ichneumonidae), p. 529
<i>Probocampe confusa</i> (Thomson) (Ichneumonidae), p. 569
<i>Pteromalus puparum</i> (Linnaeus) (Pteromalidae), p. 809
<i>Pteromalus vanessae</i> Howard (Pteromalidae), p. 810
<i>Entedon antiopae</i> Packard, p. 1042 - synonym for <i>Derostenus antiopae</i> (Packard) (Eulophidae) (Encyclopedia of Life) http://eol.org/pages/846159/overview
<i>Telenomus graptae</i> Howard (Scelionidae), p. 1168

Economic Importance

In northern areas where it is common, mourning cloak caterpillars (sometimes called spiny elm caterpillars) may become pests on shade trees—seriously defoliating willows and elms and less frequently poplars, birches, hackberries, and lindens, but they are readily controlled with insecticidal formulations of *Bacillus thuringiensis* (Johnson and Lyon 1988).



Figure 5. Carolina willow, *Salix caroliniana* Michx., a host of the mourning cloak butterfly, *Nymphalis antiopa* (Linnaeus).
Credits: Don Hall, UF/IFAS



Figure 7. Sugarberry, *Celtis laevigata* Willd., a host of the mourning cloak butterfly, *Nymphalis antiopa* (Linnaeus) in Florida.
Credits: Don Hall, UF/IFAS



Figure 6. Carolina willow, *Salix caroliniana* Michx., a host of the mourning cloak butterfly, *Nymphalis antiopa* (Linnaeus).
Credits: Don Hall, UF/IFAS



Figure 8. Warty trunk of the sugarberry, *Celtis laevigata* Willd., a host of the mourning cloak butterfly, *Nymphalis antiopa* (Linnaeus) in Florida.
Credits: Don Hall, UF/IFAS



Figure 9. American elm, *Ulmus americana* L., a host of the mourning cloak butterfly, *Nymphalis antiopa* (Linnaeus).
Credits: Don Hall, UF/IFAS



Figure 10. Eastern cottonwood, *Populus deltoides* W. Bartram ex Marshall, an occasional host of the mourning cloak butterfly, *Nymphalis antiopa* (Linnaeus).
Credits: Don Hall, UF/IFAS

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