Brimstone (Early Stages)

Vince Massimo

It’s taken a while to produce this fairly short account of the early stages of this species. The images of eggs were taken in the wild, but the remainder were acquired by rearing 3 individuals over the course of 2 seasons (of which only 2 survived to maturity).

The adults of most butterfly species in Britain live for as little as a few days to a couple of weeks. The Brimstone however is generally acknowledged as being the longest lived of all, with some individuals lasting for 11 months. After hatching in early July the adults feed urgently in preparation for the forthcoming winter hibernation. At this time the males pay little attention to the females and both sexes can be easily approached. After entering hibernation, usually in a clump of evergreen vegetation, such as ivy or holly, they can become active on any sufficiently warm day in winter and so could possibly be seen in every month of the year. In mid to late March they start to appear regularly on the wing. These are mainly males which are now avidly searching for females which have yet to become active.

A female Brimstone is not only very good at finding isolated larval food plants (which are sometimes great distances apart), but she is also a very determined egg layer and can sometimes be seen barging through undergrowth to get to the host plant. Two plant species primarily support the larvae of this butterfly; Common Buckthorn (*Rhamnus cathartica*) found on calcareous soils and Alder Buckthorn (*Frangula alnus*) which prefers acid soils. A single skittle-shaped egg is laid on a developing leaf bud, but several eggs may be found on the buds of favoured bushes which are visited by numerous females.

The young larva commences feeding by biting holes in the top of the leaf, but soon progresses to the leaf edges and then whole leaves. When at rest it aligns itself along the midrib of the leaf.
Although well camouflaged, they are quite easy to detect in the wild due to this characteristic feeding damage and of course they get quite large towards the end of their development. At the slightest disturbance they adopt a characteristic posture where they raise the front half of their body slightly, tucking in the front 3 or 4 pairs of legs as they do so.

This is one of the species which produces droplets of an orange-coloured secretion at the tips of some of the short hairs which cover the body. This has also been observed on Orange-tip larvae, but is more noticeable on the Brimstone because it is a much larger beast. The purpose of this fluid has been the subject of some debate.

When ready to pupate the larva usually leaves the foodplant and seeks a safe site in vegetation nearer the ground. Here it suspends itself in a silken girdle in a head-up position.
The pupa is pale green, imitating a rolled-up leaf, and it takes approximately 14 days before the adult emerges. In the few days leading up to emergence the wing case area gradually changes to bright yellow while the antennae and wing root area show red-brown.
Although the wing colouration appeared quite yellow in the pupa, the emerging adult was a female which hatched on 27th June 2012. In 2011 I reared another female which hatched on 26th June 2011. Both were released into a suitable and safe habitat.

The uppersides of the adults are not seen at rest but can be displayed during courtship. In many cases this is when the female is rejecting the male.

Reference Images of Adults
Brimstone male and female
Coulsdon, Surrey 12-Aug-2012
Photo © Vince Massimo

Brimstone male
Woldingham, Surrey 25-July-2011
Photo © Vince Massimo