

THE FOOD WEB WEEKLY

SUMMER 2006

THE LIFE AND DEATH OF THE HOLLY LEAF MINER

Next time you walk past a holly tree look closely; you may find a small invader feasting on the cells of the leaf. The invaders are the larvae (miners as they are fondly known) of the leaf mining fly (*Phytomyza ilicus*). These larvae have hatched from eggs laid on the holly leaves by the leaf mining fly. Eventually the larvae will pupate into the pupa. From the pupa will emerge the successful fly. The whole cycle may begin again.

Sadly not all miners are successful. Some miners never make it to 'fly hood'. Birds, such as the blue tit, feed on the larvae, leaving a v-shaped tear on the leaf as evidence of doing so. Blue tits are predated by sparrow hawk. Blue tits also feed on greenfly and aphids which are pests in gardens.

Parasites also feed on the miners. A parasitic wasp called *Chrysocharis gemma* inserts a single egg through the leaf into the body of the miner. It feeds on it, eventually killing the miner. Evidence of this taking place will be a very small neat hole left on either side of the leaf.

Although less common, another parasite (*Pleurotropis amyntas*) that feeds on the miner is also found to feed on other parasitic species too. Thus making it a primary and secondary parasite.

Never again will you look at a holly bush in the same way. Continuous battles are taking place for nutrients and therefore life!



Top: leaf mine opened by blue tit.
Bottom: Mined Holly Leaf

INTERESTING FACTS:

- Holly leaf miners only have one new generation each year.
- Adult flies survive for one month only (May/June).
- The holly leaf miner has limited effect on the holly tree.

LIFE OR DEATH? ANSWER THE QUESTIONS

1. Draw a life cycle for the holly leaf miner. Use the following words; **larvae (miner), eggs, adult fly, pupa**
2. a) What is a parasite? b) How do they stop the holly leaf miner from maturing into a fly?
3. Some energy does not continue along the food chain. Where does this energy go?