

## Special Feature

# A Natural Spectacle in the Wychwoods

We have all seen the great natural spectacles on TV, herds of wildebeest stampeding across the veldt or flotillas of turtles crawling ashore; but did you know that we have our very own spectacle here in the Wychwoods? Every year, for a couple of weeks in the spring, literally millions of mayfly emerge from the river Evenlode, sparking a feeding frenzy amongst the trout, ducks, swans, swallows and anything else that can catch them.



from one to two inches in length. The larva has a segmented pale cream coloured body with brown markings on each segment. There are two feelers at the head and three tails at the back. They have six legs from the word go. Like

most insects, mayflies grow by undergoing a number of *instars* whereby their skin stretches until it can grow no further, at which point it is shed and a new, larger skin develops.

## Not So Ephemeral

The mayfly is an *Ephemera*, a class of flies named for what was thought to be a very short life span of just a day or so. In fact they live for somewhat longer than that, but they do it where we cannot see them. Mayflies start their lives as microscopic eggs. How small they are can be judged from the fact that a single two-inch long mayfly can produce up to 6,000 of them. The eggs are laid in small batches on the water's surface during late May and early June and they drift down through the water until they lodge on the stream bed. The eggs will usually hatch within about three to four weeks and the tiny larvae that emerge quickly burrow into the silt on the bottom. Having formed a burrow, the larvae use the gills along the sides of their bodies to fan water into themselves and feed on the organic particles suspended therein. They continue to do this for one or two years during which time they grow to anything

## The Mating Game

Mayflies do not go through a pupation stage. Rather, when the time is right, their wings develop inside the larval skin and the insects leave their burrows and swim to the surface. At the surface the larval skin splits for one last time and the winged insect crawls out. Known as *sub-imagoes*, the mayflies drift on the surface while their large, upright wings dry out. In cold weather this can take several minutes while in warm conditions it might be only a few seconds. They then take flight and head for cover, usually on the underside of leaves near the river, where they undergo their final transformation into the adult or *Imago*. This entails crawling out of the sub-imago skin, leaving behind a perfect empty shell, wings and all. The winged mayfly does not have a functioning mouth or digestive system and cannot eat. Its only function now is to develop eggs or sperm and to breed. To do this, the males fly back to

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the river and take up station, usually over a bush or tree, where they commence their mating dance.

### **Dancing for Life**

This consists of a rapid vertical climb, followed by a slow drop using their wings to break their fall. The females return and select a mate based on the quality of the dancing. Mating takes place, initially in the air, with the mating pair slowly sinking earthwards and frequently finishing on the ground, or even the surface of the water. The female then flies out over the water and releases her thousands of eggs a few at a time. As the process goes on she starts to tire and rests for a few seconds on the surface. The rest breaks become longer and longer until eventually she does not rise again, her wings droop and touch the surface where they become trapped and she dies. The cycle is complete.



Of course, this does not happen in isolation. Mayflies are an important food source for many creatures that live in and around the river and the period of their emergence leads to a feeding frenzy. The mayflies' strategy of emerging in huge numbers over a short period ensures that a good proportion survives to procreate, but countless thousands also die at every stage of proceedings. As the larvae move up to the surface they are preyed upon by fish, notably trout. Fish also take advantage of the sub-imagoes drifting on the surface as they dry their wings, and again when the adult females return to lay their eggs. Waterfowl also ravenously consume drifting mayflies while ducklings can often give a hilarious display as they leap from the surface in their attempts to catch the recently

airborne insects. Nor is there safety in the air as swifts, swallows, martins, wagtails and flycatchers crisscross the river in pursuit of prey. Neither is it unknown for less agile birds such as robins to join the feast.

### **Watch the Show While you Can**

The good news is that you can witness this spectacle without leaving the Wychwoods. Hang over a bridge on the Evenlode in the late afternoon during late May or early June and you can see all of this happening. The big mayflies rising from the surface and dancing in the treetops are unmissable and you have the chance to witness a cycle that has been going on for millions of years. How many more years this will go on for is less certain. The Evenlode is not in the pristine state it should be; frequently turbid, infested with alien signal crayfish and with its fly life already massively reduced. Fortunately, this has been recognized. The EU Water Framework Directive requires all member states to restore their rivers to good ecological status by 2015. This is an ambitious target, but at least work is under way.

**The Cotswolds Rivers Trust**, of which I am chairman, was formed to ensure that the rivers in the area benefit from any funding which becomes available. We have just completed a major project on the Coln and we have secured funding for an even bigger project on the Windrush next year. We hope to do much more and would love to include the Evenlode. If you would like to see what we are doing, or even to support us, check out our website at [www.cotswoldsriverstrust.org](http://www.cotswoldsriverstrust.org)  
**Trevor Cramphorn**