

KEEPING TIME IN THE NATURAL WORLD

Plants and animals (including humans) have a 24 hour 'body-clock' known as the circadian rhythm. This biological timer gives them an inbuilt ability to measure time. For example, plants know that sunrise is coming and adjust their biology accordingly. The ability to keep time is vital for a range of biological processes, such as flowering in plants. Although circadian rhythms are inbuilt, they are adjusted to the local environment by external cues, which include light and temperature.

Depending on where they originate, plants and animals are also able to keep in tune with the seasons and, in a temperate climate such as ours, this is critical, so that they can survive periods when conditions are bad, perhaps too cold or too hot, or there is too little light or a shortage of food. Some species deal with this through migration whilst others 'shut down' in the winter (hibernation), or even shut down in the summer (aestivation) if it is too warm. Most species 'anticipate' these adverse conditions, generally responding to changes in daylength; their responses sometimes being modified by temperature or other factors. Think, for example, of deciduous trees.

Most insects that are native to the UK spend the winter in a 'cold-resistant' stage that they enter some time before the winter arrives.



They may overwinter as an egg, larva, pupa or adult, depending on the species. Perhaps surprisingly, some butterflies and moths avoid the winter through migration, like birds. The most famous example is the Monarch Butterfly which migrates between North America and Mexico. However, we have our own examples, such as the Silver Y Moth. Spring migrants use fast-moving airstreams

to travel northward from their winter-breeding grounds in North Africa and the Middle East to breed in northern Europe. In the autumn, their progeny fly south to their winter breeding grounds.

Rosemary Collier

YOUR LETTERS

Dear Editor

Building Resilient Communities to help the climate emergency

I was recently in Devon with my wife celebrating our 10th wedding anniversary. We treated ourselves to some books from a wonderful independent book shop in Totnes. One of the books was by Rob Hopkins. Rob started the Transition Towns movement. The basic idea is that a community comes together to think about the future it wants. For instance, how can the community respond to the climate emergency which is upon us?

The idea behind the Movement is that the future is not handed to us by outside bodies, often far away, but that the community can take action to prepare itself for the decisions to be made to avoid a climate catastrophe. Actions include local supplies of renewable energy and switching from faceless, retail behemoths to local shops and growing more food locally and sustainably for the community to reduce our impact on the planet. Waiting for government to respond to this existential crisis seems futile. Can Tysoe do more?

Mark McCartney

Dear Editor

The 2021 United Nations Climate Change Conference

COP26, to which you refer in the September edition, will be a litmus test for all worldwide leaders.

If they emerge with clear commitments to immediate worldwide measures aimed at reducing our reliance on fossil fuels and at reducing global warming, it will be very encouraging for the future.

If, on the other hand, it is about paying lip service and “doing a bit of green stuff” but otherwise it’s business as usual and no lifestyle changes, it will be clear either they have still not grasped the gravity of the climate emergency or they’re afraid politically to take the necessary action.

Simon Forrester