

Mike's Musings: environment and conservation

Autumn 2012

The weather reports for October and November

The weather in October and November

It has largely been an unsettled two months. There were few days in October (four), when it did not rain at all; admittedly the daily amounts between the 21st and the 30th of the month were quite small. The wettest period was over the two days of the 16th-17th when 42mms. (1.65 ins.) of rain fell. On the last day of the month the rainfall was 18mms. (0.7ins.). The month's total rainfall was 83.1mms. (3.27ins.).

This pattern of weather was largely repeated in November until the middle of the third week when a series of depressions with strong winds and prolonged heavy rain occurred continually for over 48 hours between the 20th and the 22nd. With a gap of only one day there was torrential rain again when 30 mms. (1.18ins.) fell. The total for the four days was (69.5mms. (2.7ins.)). Fortunately the local area escaped the worst of the rain and the devastating floods that paralysed parts of the South-west, Wales and the Midlands. The total rainfall for the month was 116.0mms. (4.57ins.).

During the last four days of the month the rainy and windy weather gave way to slightly more settled conditions. It was dry with quite long sunny periods, but it was quite chilly with ground frosts overnight when temperatures fell to minus three to four Celsius.

Introductory note

The environmental and conservation topics covered in this Musings, which are currently in the news with relevance locally, range from the concern over the diseases being suffered by our native tree, proposed trial cull of badgers and the continuing effects of pesticides on insect populations.

Imports not wanted in the UK

While acknowledging that some diseases afflicting our native trees are possibly airborne infections, it seems in a number of cases, that they are increasingly succumbing, sometimes fatally, to bacterial, fungal and insect borne infections largely derived from shrubs and trees imported from abroad. The onset of such tree diseases first came to the public's attention with the virtual extinction of elms, emanating from the Netherlands in the early 1970s, thus becoming known as 'Dutch Elm Disease'.

Our trees have been affected for many years by a number of diseases from different causes, for example the predation by the Asian Longhorn Beetle and other borers, bacteria and funguses that can cause leaf wilt and induce rot of the bark, trunks and branches of trees.

Many diseases new to the UK have been discovered in the late 20th and early 21st centuries, for instance Great Spruce Bark Beetle (found in 1982), Oak Pinhole Borer (late 1980s) and Oak Processionary Moth (1990s). More recently Horse Chestnuts have been attacked by the caterpillar of the Leaf Minor Moth, suffered from scale,

caused by the insect *Pulmaria regalis*, infected by leaf blotch (a fungus) and bleeding canker (a bacterium) that can be fatal. Blight (a fungus) was discovered in Sweet Chestnuts in 2011. Oaks are now increasingly being afflicted by what is thought to be several bacteria referred to as Acute Oak decline, again possibly fatal. Other species of trees subject to attack by various organisms are Pines (by the Lappet Moth and Needle Blight). There are also a number of specific *Phytophthora* fungal pathogens that infest shrubs and trees in the UK, such as Beech, Bilberry, Juniper (under threat of extinction, confirmed in 2011), Larch, Lawson Cypress (recorded first in 2010) and Rhododendron.

This brief account of the most significant infections suffered by our native shrubs and trees suitably illustrates how serious and damaging uncontrolled introductions of diseased specimens can be. It does seem that over the last 40 or so years the number of instances are more numerous, widespread and catastrophic.

The most recent, Ash Die-back (*Chalara fraxinea*), is a fungal disease, of an order of severity as the Dutch Elm one, that is spreading rapidly westwards and northwards from the south-east of England. Originating from Eastern Europe, it entered the UK, reputedly via Denmark, from Ash saplings which were imported to garden centres. Ash die-back has already been discovered in Berkshire. Indeed it has been identified in Inknep.

It has caused much heart-searching by The Department of Environment, Farming and Rural Affairs (DEFRA) as it is apparent that the disease's transmission to the UK might have been prevented. Such is the concern to try to prevent its spread to all of the estimated 80 million native Ash trees, an extremely important commercial species, that the precautions to take if visits are made to woodland has been disseminated by The Forestry Commission* and DEFRA. Action has been taken by the latter body to combat the disease[∞]. Richard Benyon, in his capacity as both Environmental Minister and a local MP, refers in his current online newsletter[×], to the threats to our native trees which appear to be more and more serious.

Benyon has asserted that in DEFRA there is a strong sense of determination to nail this outbreak as it has ordered the destruction of 100,000 saplings earlier this year. In addition, he emphasised the focus of a cross-Government assault on affected trees that are being tracked down and destroyed, movements orders imposed ahead of the planting season and the banning of imports. Despite these measures, experts have stated that it is already too late and that Ash Trees will suffer the same fate as Elms. However, there is some evidence that some trees have a natural resistance to die-back and by harvesting the seed of these a healthy stock of Ash trees can be generated.

*www.forestry.gov.uk/chalara

[∞]www.defra.gov.uk/news/2012/11/09/action-ash-tree-disease

[×] Richard Benyon MP- Autumn 2012 Newsletter

The badger cull

This issue has been reported and commented on over quite a long period. The writer of this page has refrained from examining it until now on the grounds that it is not a locally crucial concern in what is a largely arable and sheep-rearing agricultural area.

Moreover, given the claims and counter claims of both opponents and supporters of the trial cull of badgers in an often heated and confusing debate, it seemed to be more informative to await the outcome of the trial culling this autumn, however mistaken this stance might be. Notwithstanding vociferous calls for abandoning the whole project from the outset it could be argued that the present position of taking no action is untenable. Is it possible to adopt a disinterested and neutral perspective on what appears to be an intractable problem? The postponement of the cull until next autumn (2013) has prompted opponents of the cull to claim a victory and doubts amongst those in favour as to whether it will ever take place.

What is the basic issue? It stems from the huge increase in badger populations after the Protection of Badgers Act of 1992, the enactment emanating from concerns over the decline of the numbers of the animal. It has been estimated that there are now over a third of a million badgers in the country.

There certainly is a connection between the presence of badgers and Bovine Tuberculosis (BT) in cattle and there is evidence that badgers are the vectors of the infection. On the one hand badgers are seen by the public at large as attractive and endearing animals with a right to exist. On the other hand cattle farmers, if BT is diagnosed, have to have their beasts slaughtered; currently the number is 30,000 each year. Though compensation is paid, the loss of often rare breeds is hard to bear and a setback to farmers' being able to make a living from rearing beef cattle or dairying. Currently, the compensation paid to farmers of £500 million per year falls on taxpayers.

Two approaches to deal with the problem of BT have been proposed in place of continuing the present policy. The first is to vaccinate either badgers or cattle or both to prevent them from carrying BT. The second is to control the numbers of badgers

However, to vaccinate badgers is hideously expensive, it being an extremely labour-intensive task and time-consuming procedure and it would only be feasible to treat young animals. Also, this approach would only become effective when diseased mature badgers (long-lived creatures) had died out.

Vaccination of cattle would be less costly and more feasible. Unfortunately, the only vaccine at presently available has not been specifically developed for cattle and is unlikely to be more than 50% successful in giving them immunity. Notwithstanding that research is already being undertaken to derive a fully effective vaccine, it will take several years to achieve a fully tested and marketable one.

It is for the reasons given above that the control of badger numbers is the preferred option. Nevertheless, this is not without several shortcomings as pointed out by those against the trial culls, and indeed acknowledged by those to be involved in the cull. In no way would it be possible to secure a 100% elimination of badgers in the Gloucester and Somerset test areas. Even if two thirds were killed, cases of BT would decline by only about 30%.

A factor resulting in the postponement of the trials has been a discovery that the numbers of badgers in the two test areas are much larger than expected and therefore the cull would take longer than planned. This factor may well apply should

a full scale cull be contemplated, assuming the trials are considered to be successful.

Given the opposition to the killing of badgers and the actions protestors have stated they would take to disrupt the trial culls, it is beginning to look less and less likely they will ever take place. It may well be that the current slaughtering policy will be continued until such time as a specific BT cattle vaccine is developed and employed.

Nevertheless, in the longer term, even if vaccination becomes the accepted method of control of BT in cattle, the badger population will almost certainly continue to grow and the outcome will echo that which has occurred with the overpopulation of deer. The damage to our forests and woodlands caused by this animal and knock-on effect on bird and plant life is likely to be paralleled by there being too many badgers as they are predators of ground-nesting birds and their eggs and young. Ultimately there will be a need to control badger numbers; the question is whether and how this will be done.

Another visit to the neonicotinoid pesticides issue

In the high summer 2012 Musings, the alleged impact of nerve-agent neonicotinoid pesticides was examined. It was reported that there was evidence from a number of research projects of the adverse effect of such pesticides on honey bees, bumblebees and other insects. The results of the studies suggest that insects become disorientated when foraging for nectar so impairing their ability to locate their hive or nest again. This contributes to the decline and eventual demise of the colony.

Since last looking at this issue more research evidence has emerged of the impact of nerve-agent insecticides. Moreover, pyrethroid types pesticides have also been found to have the same effects as the neonicotinoid ones. Pressure from researchers and environmental bodies has until now failed to persuade the government to act to restrict or suspend their use.

However, there are signs that the government has changed its mind. As recently as November 20th, the Environmental Secretary, Owen Paterson, has requested DEFRA to look into the consequences for agriculture and chemical industries if a ban were to be introduced. The Food and Environment Research Agency has been asked to accelerate its field studies of the likely effect on insects in the wild as at present research has been confined to laboratory experiments only.

There is an interesting angle on the refusal of the government to ban nerve-agent pesticides outright. Michael McCarthy, (Environmental Editor of the *Independent* newspaper[^]) argues that the Advisory Committee on Pesticides had previously considered that there was no need to change the government's existing position, ie there was no evidence that insects were adversely affected by the use of the pesticides indicted. Furthermore, he implies that the Chemicals Regulation Directorate, which is responsible for pesticides safety, has too cosy a relationship with the agro-chemical industry which might explain why a ban on nerve-agent pesticides has not been instituted. It is almost certain that Musings will yet again return to this matter once the results of the field studies are revealed early in 2013.

^ “ DEFRA has ignored the evidence of pesticide dangers to bees” Independent, Thursday, 22nd November 2012, page 13.

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