

Eco hero The honeybee expert

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Francis Ratnieks is Britain's only professor of apiculture. He has studied the honeybee all over the world, and has begun a five-year project at the University of Sussex to investigate its decline. **Interview by Sarah Stephens**

The number of honeybees in Britain has been in decline for 100 years. It is this general long-term decline that we need to reverse, not just the recent disappearances. One hundred years ago there were a million hives in this country, now there are only a quarter of a million.

The biggest short-term problem is disease. There are many diseases that affect the honeybee.

We've had the varroa mite for 20 years in this country – it breeds in the honeycomb cells. We used to control it using chemical strips, but that no longer works because the mites have become resistant. Part of our work is to find the best ways to control it.

In the long run, the problem is a lack of flowers. The British landscape has become less good for bees. People have suggested that all sorts of things might be responsible for the decline, from mobile phones to insecticides. The mobile phone argument has been discredited. Insecticides are a very minor concern, and we have the data for that. Insecticide deaths of honeybees have actually dramatically declined.

Last October I helped start a £2 million project: the Sussex Plan for Honeybee Health and Wellbeing. So far we have raised £500,000, through donations from the public and businesses. One part of the project is breeding disease-resistant hygienic black honeybees – our native British bee – which help to clean out the hives and keep them free of disease. We also want to provide breeder queens to beekeepers so they can breed their own queens. **We are particularly interested in wellbeing,** asking how good the British landscape is for honeybees. For this we need to decode the bees' waggle dances to determine where they are

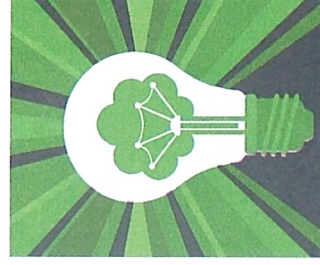
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foraging. The bee repeats the same message many times. The amount of time the bee waggles tells the other bees the distance to the nectar source: if it takes two seconds to waggle, the source is 200 yards. The direction of the flowers is indicated by the angle of the bee's body.

Bee colonies have a very effective policing system. Worker bees kill eggs laid by other workers, so that only eggs by the queen are raised. It makes for a much more harmonious colony. It's like a human policing system. The worker bees solve the 'crime' of the egg being laid, and our research shows it also prevents crime – it stops more eggs being laid.

Photograph by Will Woods

Next week: **Monty Don**



I have one simple recommendation: **appreciate the natural world** and realise we are dependent on it for survival. This is as true today as it was for our hunter-gatherer ancestors. The only difference is that we sometimes forget it. The natural world can also be a source of great beauty. So please do the following: **relax for a few minutes in a garden or park** where you can see some honeybees buzzing from flower to flower – Yeats dreamt of living near a 'bee-loud glade', and this glade is on your doorstep. Consider, too, that **these small insects are essential to agriculture** and also amazing in their own right, living in a complex society with sophisticated communication systems and law and order in the hive. Their work as pollinators is one of many things we take for granted. **The honey and wax is a bonus.**

ILLUSTRATION BY LUCY VIGRASS