Thirty-five billion of these annually – blue tit with caterpillar of the winter moth (pictured below)

Nature Studies

By **Michael McCarthy**

An incomer's discovery of the natural world in the West Country

Winter wildlife is hardly superabundant. Were you to pick the least likely time of the whole year to spot anything interesting in the natural world, you might well choose now—and in particular, you might choose a January or a February night, might you not? But you might be surprised.

I have not a few times seen in the car headlights, while driving in the countryside in the Christmas season or in the weeks following New Year, a fluttering but unmistakeable moth. *Hey look! A moth!* I always blink with surprise because we are not talking that mothy time, the hot summer's night—just the opposite, in temperature terms. But this isn't some sort of mistake by nature. This creature is where it should be, because it is *Operophtera brumata*—the winter moth.

Spectacular it isn't. The male, the insect you will see fluttering around in the cold and dark, is smallish and drab—something between light grey and light brown, with a barely noticeable pattern. The female is even less noticeable, since she is one of about 35 of our 2,500 moth species to be wingless—when she emerges from her chrysalis she walks up a tree to lay her eggs and you will never set eyes on her. But a couple of points make this species fascinating.

First, as its name proclaims, it has found its ecological niche in the middle of winter, like only a few others. (One is the mottled umber moth, *Erannis defoliaria*, a much more attractive beast than the winter moth, whose female is also flightless. Is that a coincidence? I asked one of Britain's leading moth experts, Mark Parsons who lives in Walditch near Bridport, and he said, probably not—these females didn't need to fly, as there were many fewer predators hunting them at this time of year. "The migrant birds have gone and there aren't any bats flying around," he said, "so they can devote more energy to egg-laying.")

The other remarkable aspect of the winter moth (and to a lesser extent of the mottled umber) is the nature of its tiny caterpillars—just how numerous they are, and when they appear. For unlike some lepidoptera which will lay their eggs on only one type of plant, the winter moth lays its eggs on almost any broadleaved tree or shrub, in sometimes quite enormous numbers, so much so that the caterpillars can occasionally defoliate whole trees. And those caterpillars hatch out just as the new green leaves appear—"at budburst", Mark Parsons said.

And then, they are pounced on by blue tits. Winter moth caterpillars are the key food resource for blue tit fledglings in March and April. The relationship is a dependent one—blue tits will time the hatching of their eggs to coincide with the caterpillars' appearance, and research has shown that the fortunes of their breeding success go up and down with winter moth breeding success or failure. The numbers involved are humungous. Blue tits have large broods—they may have 14 chicks—and before they are ready to fly, such a single nest of blue tit babies may consume 10,000 caterpillars brought by the endlessly energetic parents. It has been estimated—and if you want chapter and verse, it was in *The State of Britain's Larger Moths* produced by Butterfly Conservation and Rothamsted Research in 2006—that the total number of caterpillars eaten by blue tit chicks in Britain each year is 35 *billion*. Not all of those will be winter moth caterpillars, but a large proportion will be.

It's the wonder of nature once again, folks. So remember, if just about now on a chilly February night you see a lone moth fluttering around, there might just be the one in the car headlights. But in the background, there are billions.

Recently relocated to Dorset, Michael McCarthy is the former Environment Editor of The Independent. His books include Say Goodbye To The Cuckoo and The Moth Snowstorm: Nature and Joy.