S100 Moth Research

Clip: S100_19_clip4

Transcript:

Peggy Varley:

Moths fly by night but we can catch them because they're attracted to light sources, often from quite far away. This moth trap has a bulb which emits a brilliant greenish light which is why I haven't turned it on for you. It also emits ultraviolet light which is attractive to moths and they fly towards it and then try to settle below the bulb which takes them into the trap. Now if I take away the top of the trap you can see that the moths come to rest under these egg cartons and when they're disturbed, many of them fly away, as they're doing now. In May to July, some of the moths we catch are specimens of the Peppered Moth and I have two here. Although they look very different these two are in fact varieties of the same species the Peppered Moth, differing from just one gene. If the black is crossed with the pale then the black is dominant. A hundred years ago the black form was very rare which is why we call the pale form variety Typica and we recognise the black as being a mutant.

About twenty years ago, Dr Kettlewell of Oxford University carried out a survey of the Peppered Moth populations. This map shows his results. The circles represent his sampling sites, the area represents the total number of moths he caught, and the black and white segments show the relative proportions of the black, of the pale and dark mutants. Now let's look at the distribution. Here in the industrial Midlands and the North and the South and South East the dark form is far more common than the light form and this is also true downwind of these industrial areas. But in the west of Britain the pale form is the common one. Now how can we explain this? We must think about how the moths live. They fly by night but in the day they rest on tree trunks. This trunk has grey bark and it has lichen growing over it and the pale Peppered Moth is quite inconspicuous. The dark form here is rather more obvious. In industrial districts the tree trunks are black, black with soot, and here the pale form is very conspicuous whereas the dark form is almost impossible to see.