Moths in the wardrobe

If you ever open your wardrobe and find some of your clothes in tatters, the likeliest culprit is the clothes moth. This small insect (adults are only about half a centimetre long) has a yen for keratin, the protein found in wool, hair, fur, feathers, and skin.

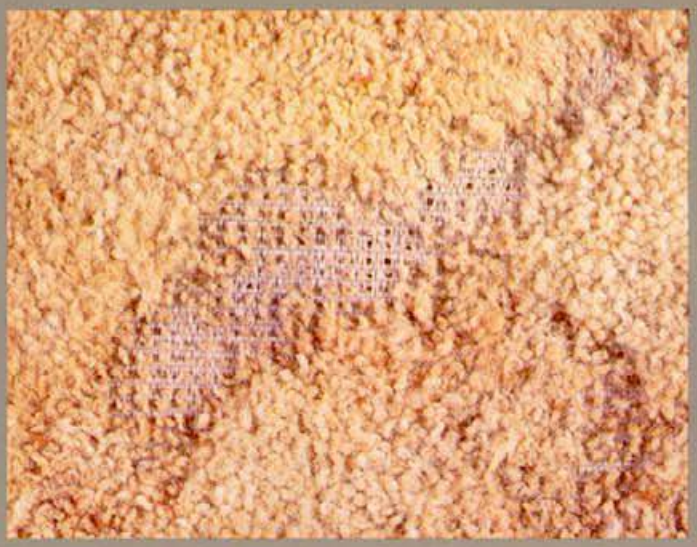
It is the larvae that feed so voraciously; the adult moths do not eat at all, and neither stage needs to drink. Only mammals and birds make keratin, so articles derived from plant products — for example, cotton, which consists mainly of the carbohydrate cellulose — are safe from attack. (The insects may chew the cotton, but will not eat it.)

But it's not just the wool in our wardrobes that suffers from the attentions of these little pests: woollen carpets, popular in the cooler parts of the country, can also be ravaged, and so can any leather goods.

Major damage won't happen overnight: the life cycle of the creatures from egg back to egg takes about 6 weeks under ideal conditions, and longer if circumstances are adverse, so the population builds up slowly, but — with females laying 200 eggs — very surely.

How can you tell if your wardrobe is a home for these bothersome insects? Unlike other moths, they are not attracted to light; in fact, they abhor it. They fly only at night, and spend their days in the darkest places.

These habits make them quite elusive, and it can be difficult to know that your woollens are infested until the damage is done. What makes it even harder is the fact that the larvae often live in tunnels, hollowed out of the material, or in 'cases' made from it.



Damage to a woollen carpet caused by clothes moths. The destruction took place — concealed by a potted plant — in less than five months.

Two of the culprits: at top, the male of the species *Tinea dubiella*, and, below, the female of *Tinea pallescentella*.

Naturally, these little homes are the same colour as the articles of clothing on which they sit, so a casual glance may not reveal them.

If carpets are infested, the insects will hide during the day only in dark undisturbed places such as underneath a potted plant or behind a piece of furniture that is rarely moved.

Clothes moths come in 13 different named, and several still unnamed, species. Six species are pests, and five of these occur here.

Just why the other seven are not pests, even though they are keratin-eaters, is not known for sure. Dr Ebbe Nielsen studies the taxonomy of these insects as part of his work at CSIRO's Division of Entomology, where he is the curator of butterflies and moths at the Australian National Insect Collection.

He suspects that our clothes moth pest species, like so many other pests, were brought to Australia, but it is now difficult to trace their exact origins.

Once here, they could survive without clothes — a type of naked opportunism! — by eating the keratin in a range of naturally occurring things. Animal carcasses contain keratin in the skin and fur; birds' nests and pellets are good sources of feathers; while a mammal's burrow, with its discarded hairs, is almost as good as a wardrobe. Carnivores pass out faeces containing the keratin from their prey and this would represent another life-line to a clothes moth.

These pests can sometimes be quite an expensive nuisance, and Dr Nielsen's work on their distribution and taxonomy is important if we want to take action against them. Until recently, for example, we didn't even know which of our species can cause damage. Also, it seems that different species may have quite different susceptibilities to insecticides, and unless we know one species from another, an expensive and unpleasant spraying may not be effective.

Naphthalene — the chemical found in moth balls — does not in fact kill any of them, despite its murderous odour! However, it does usually deter them.

But if you'd rather not use it, the scientist recommends regular airing of your wardrobe, to allow in light rather than fresh air, and suggests periodic hanging of woollens in the brilliant sunshine. As for woollen carpets, ensure you regularly move your furniture and pot plants, and clean underneath them like your mother always told you!

Roger Beckmann

The pest species of *Tinea* (clothes moths) occurring in Australia (Lepidoptera: Tineidae). G.S. Robinson and E.S. Nielsen. *General and Applied Entomology*, 1987, **19**, 45–8.