Clothes moth (Lepidoptera: Tineidae).

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Another type of moth common in homes is the so-called clothes moth. They belong to a different group of insects, the Tineidae family, of the Lepidoptera Order, with the *Tinea* genus being the most economically important in urban areas. One striking difference between them and book moths is that these moths are often called clothes moths. Several species found in domestic environments are known as clothes moths, after all, they are small moths from the Tineidae family [1-3].

They present holometabolic development with the presence of larva and pupa phases during the process. The size depends on the species. When we talk about wool moths, we are referring to an animal of about 0.65 cm long, identified by thick antennae, wings, and scales that cover the body. They form a cocoon while feeding and can remain inside it. Insects fly little and are not attracted to light. When the moths are ready to pupate, they look for holes or cracks for shelter (Figure 1) [4-6].

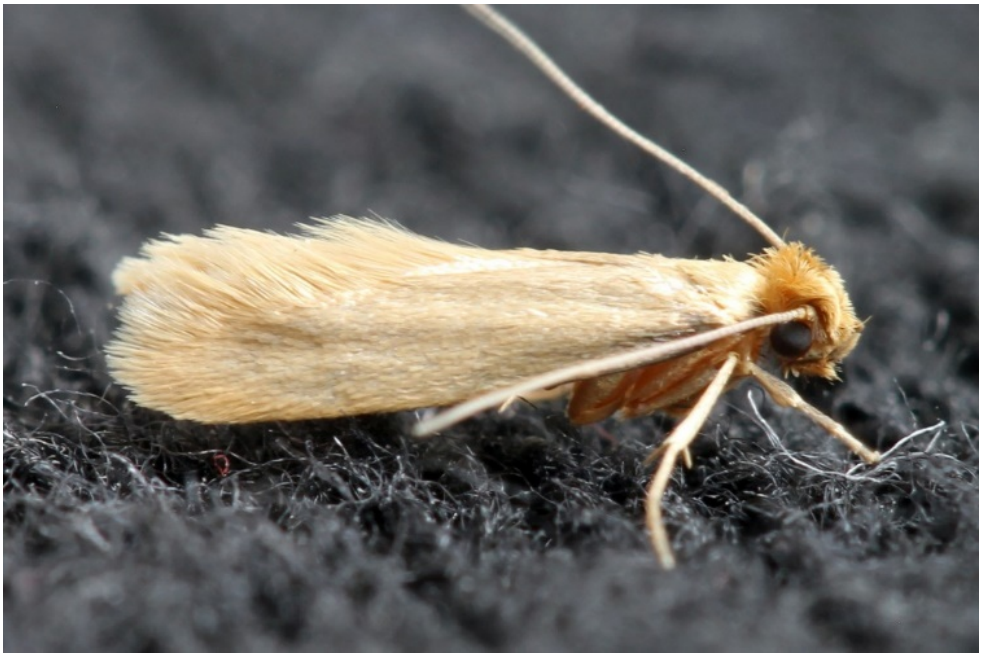

Figure 1. Although they cause headaches for dining in your wardrobe, webbing clothes moths *Tineola bisselliella* (Hummel, 1823). are unique creatures with fascinating specialized biology. They can eat hair and metabolize their water. They can chew through plastic and digest mercury. And that's not all. An entomologist studying these moths makes a case for appreciating their evolutionary feats. Sources: Photo by Andrey Ponomarev via iNaturalist, CC BY-NC 4.0, and https://entomologytoday.org/2023/03/21/defense-webbing-clothes-moths-marvels-evolution/.

The problem of these animals as pests occurs precisely at the young stage. After all, these adult moths have an atrophied digestive system, and only the caterpillars feed. It is inside the shield that the caterpillar feeds and transforms into a pupa, before transforming into an adult. Clothes, moths feed on keratin. Remember that adults (moths) do not feed. The problem begins when the female lays the eggs on some clothing, or piece of fabric, of animal origin, such as wool, fur, and cashmere. It is worth mentioning that synthetic fabrics, in general, are not a target for moths. As they do not have keratin, the nutrient is of interest to these larvae. What happens in your closet and other parts of the house is that female moths lay about 40 to 50 eggs there and then die. These eggs contain a secretion that adheres to tissue fibers (Figure 2) [6-8].

Figure 2. The digestive powers of the larva of the webbing clothes moth Tineola bisselliella (Hummel, 1823), mean materials like wool hats, rugs, and upholstery are an all-you-can-eat buffer for the tiny caterpillars. Such substances are chock full of keratin, a protein found in hair, skin, horns, and hooves and that is infamously difficult to digest. It is still unclear how webbing clothes moth larvae can process keratin—they may have a microbe in their guts that produces a helpful digestive enzyme. Sources: Photo by Andrey Ponomarev via iNaturalist, CC BY-NC 4.0, and https://entomologytoday.org/2023/03/21/defense-webbing-clothes-moths-marvels-evolution/.

When they are born, the larvae go on the attack. How to prevent this pest: Keep carpets, mattresses, and sofas sanitized; Wash clothes before storing; keep cabinets well-ventilated and lit; spread your clothes in the sun; Identify areas with moisture or leaks in the wall and repair them; pay attention to papers. **How to get rid of it:** How to get rid of it: Vinegar – mix 250 milliliters of water with white vinegar and put it in a spray bottle. Remove all clothes from the closet, spray the solution on them, and wipe the shelves with a cloth. Wash clothes before storing; keep cabinets well-ventilated and lit; spread your clothes in the sun; Identify areas with moisture or leaks in the wall and repair them; pay attention to papers and cardboard boxes taken into the house [9-12].

Clothes moth *Tineola bisselliella* (Hummel, 1823).

Popularly known as clothes moth, it is a species of Lepidoptera insect, more specifically moth, belonging to the Tineidae family. Adults of this species have yellowish wings, with a wingspan of 12 mm to 16 mm in length. Domestic larvae, in turn, feed on fur, wool, silk, and similar materials and do not form cocoons. This is a species present in Portuguese territory (Figure 3) [9-12].

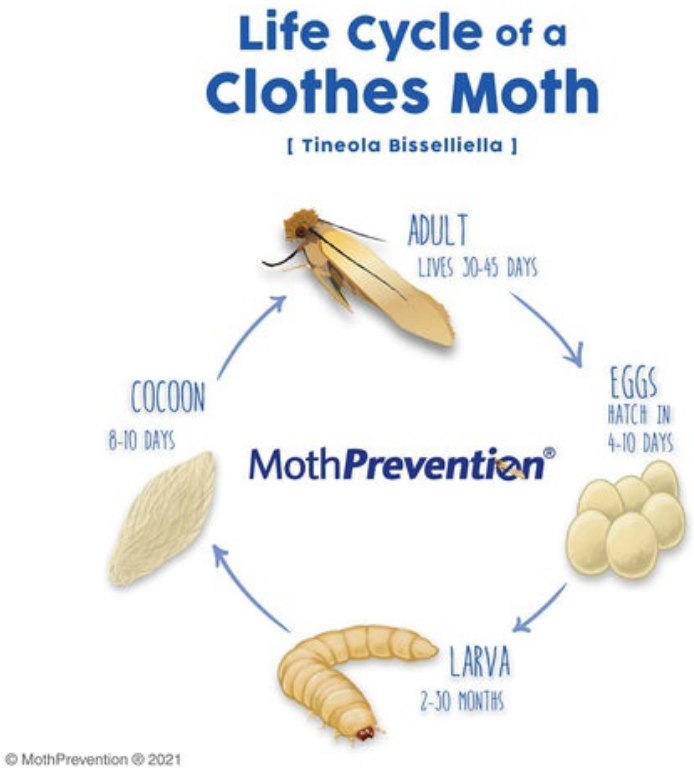

Figure 3. Importantly, within our cosy homes during winter the weather outside does not always have such an impact on slowing down insect activity. Moth larvae might continue to pupate and hatch as moths from late Fall through to next Spring! For this reason, we recommend keeping traps ‘active’ by replacing any old Strips with new Replacement Strips every 3 months. Source: https://www.mothprevention.com/blogs/the-art-of-prevention/how-to-maximise-the-effectiveness-of-your-moth-traps.

The eggs hatch in 2 to 14 days, giving rise to almost microscopic caterpillars. These grow as they feed. The moth larvae are white or cream with a round, brown head. When the caterpillars reach the desired size, they form a silk cocoon and pupae. In the case of moths, this phase usually lasts from 10 to 50 days. In ideal temperature and humidity conditions of around 24ºC and 70% humidity, the complete moth cycle lasts one month, although, depending on these factors, it can last several months or up to 2 years. Adult moths focus their activity solely on reproduction. Males die after copulation and females after laying eggs (Figure 4) [9-12].

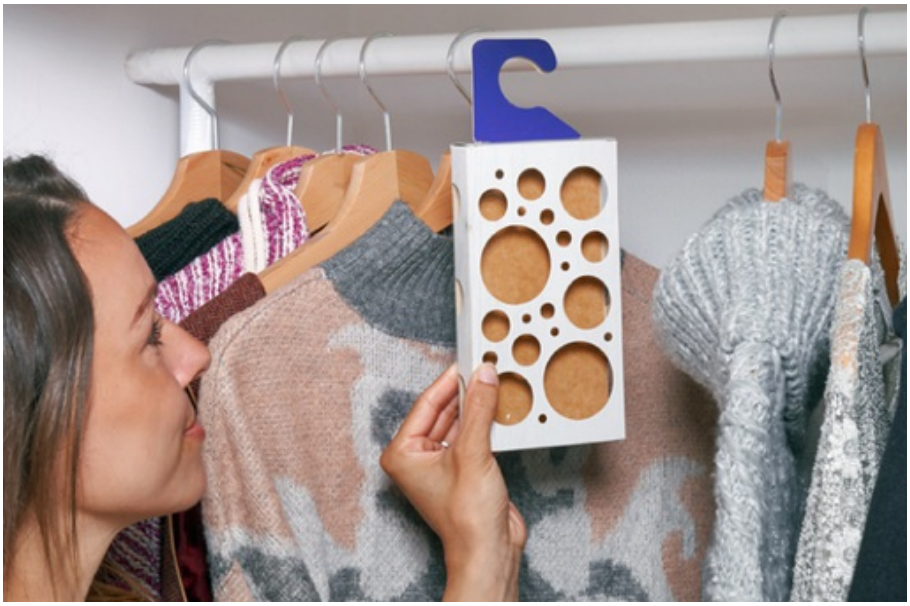

Figure 4. How to maximize the effectiveness of your moth traps. Source: https://www.mothprevention.com/blogs/the-art-of-prevention/how-to-maximise-the-effectiveness-of-your-moth-traps.

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