PROTECTING WOOLENS against CLOTHES MOTHS and CARPET BEETLES
Clothes moths are well-known pests of fabrics in the home.
Not so well known as clothes moths, but just as destructive to fabrics, are carpet beetles, or "buffalo moths." Carpet beetles are more abundant than clothes moths in most localities, and damage that they do often is blamed on clothes moths.
The larvae of clothes moths and carpet beetles damage fabrics by feeding on them. They feed on anything that contains wool or other animal fibers.

The adult moths and beetles do no damage.

Color illustrations are used in this publication to help you distinguish clothes moths and carpet beetles from other moths and beetles commonly found in and around homes.

THE PESTS

This section describes the pests and gives information on their development, habits, and spread.

Description

Two species of clothes moths and four species of carpet beetles commonly infest homes.
Both species of clothes moths (the webbing clothes moth and the case-making clothes moth) look very much alike. The adult moths are yellowish or buff, and have a wingspread of about 1/2 inch. Fully grown larvae are white and have brownish-black heads; they are about 1/2 inch long. They develop a silken feeding tube or a hard protective case, which often is found on fabrics.
FABRIC PESTS

BLACK CARPET BEETLE a, Larva; b, pupa; c, adult. Background shows damage to fabric.

FURNITURE CARPET BEETLE a, Larva; b, pupa; c, adult. Also showing damage.

WEBBING CLOTHES MOTH a, Larva and silken feeding tube; b, cocoon; c, cocoon with cast pupal skin protruding; d, adult. Background shows typical clipping of nap.

(All insects about six times natural size.)
Adults of the black carpet beetle have solid black bodies and brownish legs; they vary in length from about \( \frac{1}{8} \) to \( \frac{3}{16} \) inch. The larvae are yellowish, golden, or dark brown; their bodies are tapered from head to posterior, where there is a tuft of long, brown hairs; they grow to be \( \frac{1}{2} \) inch long.

Adults of the other three species of carpet beetles (the carpet beetle, the furniture carpet beetle, and the varied carpet beetle) have mottled colorings of white, brown, yellow, or black; they are about \( \frac{1}{8} \) inch long. The larvae are elongate and oval; they have brownish or black bristles, and grow to be \( \frac{1}{4} \) inch long.

**Development**

Female clothes moths and carpet beetles lay soft, white eggs in clothing and household furnishings, in cracks, and in other concealed places. Female moths lay 100 to 300 eggs, which hatch in 4 to 8 days in summer. Female beetles lay about 100 eggs, which hatch in 8 to 15 days in summer. Hatching takes longer in cool weather.

Under conditions normally existing in homes, the black carpet beetle has one generation a year; the other carpet beetles and the clothes moths have up to four generations a year.

**Habits**

The larvae of clothes moths and carpet beetles begin feeding as soon as they hatch. They feed on wool, mohair, hair, bristles, fur, feathers, and down. They attack clothing and a wide range of household furnishings: Blankets, comforters, rugs, carpets, drapes, pillows, hair mattresses, brushes, and upholstery.

Clothes moth larvae usually are found on their food material. But carpet beetle larvae crawl from place to place and may be found on cotton goods or other things on which they do not feed. They often live behind baseboards and moldings, in cracks in floors, in corners, behind radiators, in air ducts of heating systems, on closet shelves, or in dresser drawers.

Adult clothes moths prefer darkness, and do not flit about lights; but they may be seen flying lazily in darkened corners, or at the edge of a circle of light. When clothing or other objects on which they are resting are suddenly moved, the moths run or fly to conceal themselves.

Adult carpet beetles fly readily: they are attracted to sunlight, and sometimes are found on window sills. In spring many of them feed outdoors on the pollen of flowers.

**Spread**

In urban areas some infestations are started by adult carpet beetles or clothes moths that fly from house to house. Such infestations are more likely to be started by beetles than by moths.

Eggs and larvae of the moths and beetles may be carried into homes on articles containing wool or other animal fibers. The articles on which they hitchhike most commonly are secondhand clothing, upholstered furniture, and other home furnishings.

The practice of exchanging woolen scraps for use in making rugs accounts for some infestations. When woolen scraps have lain unprotected for long periods, they often are infested.

Carpet beetle larvae frequently crawl from one room to another. If a hall carpet in an apartment house becomes infested, it is almost certain that some of the larvae will crawl from the hall into rooms that open onto it.

Carpet beetles breed and feed outdoors in places such as bird and rodent nests; adults sometimes enter homes from these places.
WHAT TO DO

The best way to protect your clothing and furnishings against fabric insect damage is to use effective preventive measures. This includes (1) purchasing woolens or woolen-synthetic blends that have already been treated by the manufacturer with a moth-resistant compound, (2) applying protective treatments to susceptible articles, (3) practicing good housekeeping, and (4), when needed, spraying insecticides on surfaces over which the insects are likely to crawl.

If you have a heavy or widespread infestation, it is advisable to get the services of a reputable pest-control firm.

Protective Treatments

You can rid woolen clothing, blankets, and unupholstered furnishings of insects and their eggs and larvae by brushing and sunning them, or by having them dry cleaned.

If pillows, mattresses, or upholstered furnishings are infested, you should have them fumigated by a reputable pest-control firm, or you should dispose of the infested articles.

However, these practices give no protection against reinfection.

To prevent infestation you should mothproof articles with chemicals or store them properly.

See “Precautions,” page 7.

Mothproofing

Clothing and Blankets.—One of the best ways to protect clothing and blankets against clothes moths and carpet beetles is to spray them with an oil-solution insecticide containing DDT, methoxychlor, Strobane, or Perthane.

You may buy these insecticides in ready-to-use pressurized containers that deliver a coarse spray, or you may buy a liquid insecticide and apply it with a household hand sprayer that delivers a continuous coarse spray.

To apply the insecticide, hang the clothing and blankets on a clothesline and spray them lightly and uniformly until their surfaces are moist. Do not soak or saturate them. Excessive spray may cause a white deposit after the fabric dries. A slight excess deposit can be removed by brushing. A heavy deposit will require dry cleaning, which will remove the insecticide and leave the article unprotected.

Let sprayed articles dry before you wear or store them.

Rugs and Carpets.—Spray rugs and carpets with 5-percent DDT oil solution every 12 to 18 months. Use 1 1/2 to 2 quarts of spray on a 9-by-12 rug.

When spraying, give close attention to parts of the rug or carpet that are under a piano, sofa, bookcase, or other furniture, and to parts that are under radiators or around heat registers. If you have a rug pad that contains wool or hair and has not been treated by the manufacturer, spray it on both sides.

When spraying wall-to-wall carpeting, be sure to spray the edges—all the way around.

If you have expensive broadlooms or oriental rugs, and fear that lack of experience in spraying may cause you to mar their appearance or otherwise injure them, it is advisable to get the services of a firm experienced in treating rugs and carpets.

Trade names are used in this publication solely for the purpose of providing specific information. Mention of a trade name does not constitute a guarantee or warranty of the product by the U.S. Department of Agriculture or an endorsement by the Department over other products not mentioned.
Household Furnishings.—Spray furniture upholstery and drapes containing wool or mohair with any of the chemicals recommended on page 5. When sprayed on mattresses, pillows, or upholstered furniture, the chemicals help prevent infestation; they do not kill pests already inside the stuffing.

Felts and hammers in pianos often become infested and so badly damaged by clothes moths and carpet beetles that the tone and action of the piano are severely affected. Chemicals recommended on page 5 will protect the felts and hammers, but they may damage other parts of the piano if applied incorrectly. To prevent damage, it is advisable to have a piano technician do the job.

Furs.—Furs can be protected from insect damage during summer by placing them in commercial storage where they will receive professional care and can be insured against damage. If you store furs at home in summer, protect them with moth crystals, flakes, or balls in a tight container.

Do not apply any of the sprays recommended in this bulletin to furs.

Proper Storage

Paradichlorobenzene and Naphthalene.—You can protect woolen articles by placing paradichlorobenzene crystals or naphthalene flakes or balls (popularly known as moth crystals, flakes, or balls) in the container or closet in which the articles are stored.

As these chemicals evaporate they produce a vapor that, in sufficient concentration, kills both clothes moths and carpet beetles. The mere odor of the chemicals does not repel the insects and is no indication that the concentration of vapor is sufficient to kill them.

To be effective in holding the vapor, the container (which may be a trunk, chest, box, or garment bag) must be airtight. If you store woolens in a closet without first placing them in containers, see that the closet is tightly sealed. If there are cracks around the door, seal them with tape or fit the door with gaskets. If there are cracks in the closet walls, floor, or ceiling, fill them with putty or plastic wood. Protection is lost if the closet door is opened frequently.

In a trunk or closet, use 1 pound of the crystals, flakes, or balls for each 100 cubic feet of space. Because the vapors are heavier than air, the chemicals should be placed in a shallow container on a shelf, or suspended from a clothes rod or hook in a thin cloth bag or perforated container.

You also can protect woolen articles by wrapping them in paper or sealing them in a cardboard box. Before wrapping or sealing, be sure the articles are not infested. In making a paper bundle, carefully fold back and seal all edges of the paper with paper tape.

Cedar chests are good pestproof containers primarily because of their tight construction. Before placing woolen articles in a cedar chest, see that they are free of larvae. Scatter moth crystals, flakes, or balls in cedar chests after they are several years old.

Good Housekeeping

Clean your home often enough to prevent lint, dust, and hair from accumulating. Give close attention to—

• Rugs and carpets.
• Drapes and upholstered furniture.
• Closets, particularly those in which woolens or furs are kept.
• Radiators, and the surfaces behind them.
Corners, cracks, baseboards, moldings, and other hard-to-reach surfaces. The vacuum cleaner is your best tool for most of this cleaning. After using it, dispose of the bag contents promptly; they may include eggs, larvae, or adult insects.

In addition to cleaning rugs and carpets frequently, it is advisable to rotate them occasionally. Rotation is important because insects usually feed under heavy pieces of furniture where cleaning is difficult, rather than in the open where regular cleaning, light, and movement of people keep down infestation.

Search your home for unprotected woolen articles. If they are not worth protecting, get rid of them. They often harbor infestations that spread.

Surface Sprays

Treat surfaces over which insects are likely to crawl with a spray containing 2 percent of chlordane, 3 to 5 percent of premium-grade malathion or ronnel, or ½ percent of lindane or Diazinon.

If your problem is the control of clothes moths and not the control of carpet beetles, you may use a 3- to 6-percent DDT oil solution.

You may buy these insecticides in ready-to-use pressurized containers that deliver a coarse spray, or you may buy a liquid insecticide and apply it with a household hand sprayer that delivers a continuous coarse spray. When the spray dries it leaves a deposit (thin layer of insecticide), which kills insects that crawl over it.

Surfaces to spray are as follows: Along the edges of wall-to-wall carpeting; behind radiators; along baseboards and moldings; in corners, cracks, and other hard-to-clean places. In spraying closets, take clothing out of the closets and apply the spray to corners; to cracks in the floor, walls, and ceiling; along baseboards; around shelves; and at the ends of clothes rods.

See “Precautions.”

Aerosols. — Aerosol containers deliver a fine spray, which does not moisten surfaces as coarse sprays do; aerosol sprays do not give lasting protection. Do not use aerosols for surface spraying.

PRECAUTIONS

Insecticides are poisonous to people and animals. Use them only when needed and handle them with care. Follow the directions and heed all precautions on the container label.

Keep insecticides in closed, clearly marked containers and in a dry place where they will not contaminate food, dishes, and kitchen utensils and where children and pets cannot reach them.

Avoid spilling insecticides on your skin and keep them out of your mouth, nose, and eyes.

Keep children and pets away from sprayed surfaces that have not dried.

After applying insecticides, empty unused insecticide into its original container, clean the sprayer with soap and water, and wash all exposed surfaces of your body.

Infants' apparel. — Apply insecticide to infants' sweaters, blankets, or other woolen articles only if they are to be stored. Launder or dry-clean them before returning them to use.

Chlordane, malathion, ronnel, lindane, Diazinon. — Do not use these insecticides on clothing or furniture; on rugs and carpets, use only for surface spraying. Do not use these insecticides for overall spraying of rooms.
Oil-solution insecticides. — Do not spray oil-solution insecticides near open flames, sparks, or electrical circuits; or on silk, rayon, or other fabrics that stain easily.

Do not spray them on asphalt-tile floors, because they will dissolve the asphalt. They will also soften and discolor some linoleums and certain plastic materials; if in doubt about spraying such a surface, test the spray on a small inconspicuous place.

If you apply an oil-solution insecticide to the cracks in a parquet floor, apply it lightly; an excessive amount will dissolve the underlying black cement, and the dissolved cement will stain the floor.

Sprayed furnishings.—Do not put any weight or pressure on sprayed rugs, carpets, or upholstered furniture (as by walking, sitting, or pressing with your hand) until the spray has dried. Doing so gives the damp pile a mashed-down appearance, which lasts for several days.