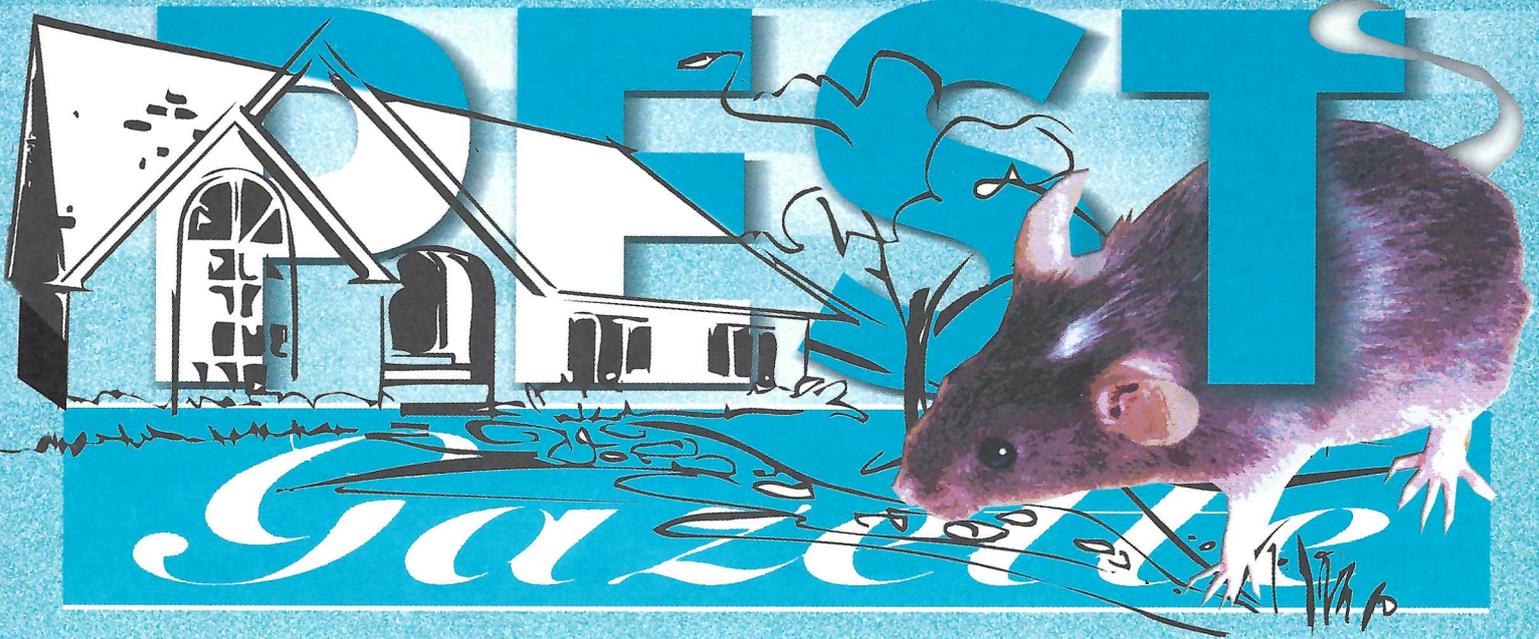




PIED PIPER PEST CONTROL PRESENTS...



It's been a very good year for many pests.

The warm, moist conditions following a mild winter have made it easy for larger than normal populations of many different pests to build up quickly and survive in great numbers. Now that there is a chill in the air, a lot of these pests may have already found places in your house where they can spend the winter. Others may still be trying to come into your homes or work areas.

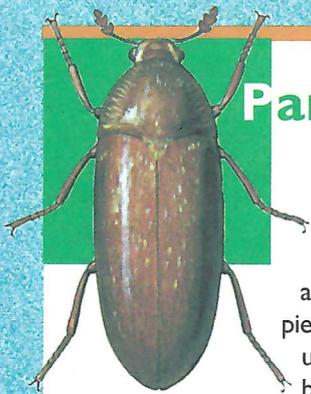
This issue of Pest Gazette will focus on some pests that are already inside, although you may not have noticed yet, and others, which may still make their way into your home. Some of these cause problems or concern just by building up to large numbers. Others can pose health threats or can cause serious property damage, or may scare off your family, friends or customers who don't like or fear "bugs."

Because there may be several different kinds of pests hiding in small numbers in your home or business, you might need the assistance of a

trained pest management professional. Our experts can help determine exactly what, and where, your uninvited guests are, how important each kind might be, how to get rid of them, and how to make your home or business less accessible and less inviting to them in the future.

We are ready and qualified to inspect your home or business for the presence of pests or the telltale signs of their intrusion. Our technicians can recognize most common pests and their signs. They are ready to provide you immediate information and assistance in controlling them. If you have an unusual pest problem, we have a good support system in place to get rapid identifications, information, and control advice from statewide or national sources. We will also give you advice on preventive measures you can take to avoid similar pest problems in the future.

For more information about our professional pest management services, call us. We hope the rest of your year is safe and enjoyable.



Pantry Pest Beetles

If you have ever poured cereal into a bowl then watched with alarm as several pieces began crawling up the side of the bowl, you may have already discovered one or more of these stored products infesting beetles. If your pancake mix or cake mix contained small brown-colored chunks that moved, you may have seen one or more kinds of flour beetles. A variety of small insects live in

and feed on the same foods we do. The most common ones are the Indianmeal Moth and Cigarette Beetle, but several other small beetles, described below, can become pests as well. Adults of many of these pests fly toward lights and may be found in other rooms or floors quite a distance from your food storage areas. These pests do eat at least a small amount of the food they infest, but their presence, their droppings, cast skins, and certain chemical excretions contaminate much more of the food. Those often cause a bad taste, or an odor in the food they

In This Issue.

	Pantry Pest Beetles
	Mice
	Fabric Pests
	Modern Pest Control

infest. In some cases, they may cause flour or powdered mixes to not rise or not bake properly. Some of the most common such beetles include:

- **Drugstore Beetles** are small, 1/16 - 1/8 inch long, reddish-brown beetles with hard wing covers with long rows of tiny punctures, covered by short,

Continued...

Some of the most common such beetles include:

fine yellowish hairs. Their head is usually held bent down, hidden from view when seen from above, giving them a hump-backed appearance. Their antennae have a "club" at the end that is made up of three equal-sized oblong segments (each about three times as long as it is wide). A complete life cycle (egg-to-egg) takes about 60-210 days, depending on temperature, moisture, and food supply. These beetles feed on a very wide range of materials; from grain to spices, and they may even feed on leather. They are one of the most common, stored products infesting beetles, and are distributed worldwide. The adults fly well and are attracted to lights. Control strategies for other stored products pests are usually effective against these beetles too. All stages can be killed by heating infested materials to at least 140 degrees F for more than one hour, making sure that the middle of the materials is held at that temperature for at least that period of time, or longer.

• **Red Flour Beetles** are small, about 1/8 inch long, slender, reddish-brown beetles with hard wing covers (elytra) that have long lines of indistinct punctures and are smooth and not covered by hairs. Their name comes from their red color. Their head is held straight forward, with compound eyes and antennae visible. Their antennae have an abrupt three-segmented "club" at the end. The sides of their thorax are rounded. A complete life cycle (egg-to-egg) takes about 49-120 days, depending on temperature, moisture, and food supply. These beetles feed on a range of processed grain materials such as flour. Although this species probably originated in the Indo-Australian region, they are one of the most common stored product beetles, and are distributed worldwide. In the U.S., they are most common in the southern states. These beetles often cause a bad taste and odor in flour they infest, especially if infestations are heavy. The adults' wings are functional, but they seem to fly only short distances. They are attracted to lights, and also to flour that has high moisture content. Control strategies for other stored products pests

are usually effective against these beetles too. All stages can be killed by heating infested materials to at least 140 degrees F for more than one hour, making sure that the middle of the materials is held at that temperature for at least that period of time, or longer.



'Their antennae have a "club" at the end...'

• **Confused Flour Beetles** are small, about 1/8 inch long, slender, reddish-brown beetles with hard wing covers (elytra) that have long lines of indistinct punctures and are smooth, not covered by hairs. These beetles look so similar to the red flour beetles that their common name comes from their often being "confused" with red flour beetles. Their head is held straight forward, with compound eyes and antennae visible. Their antennae have a gradual, four-segmented "club" at the end. The sides of their thorax are almost straight. A complete life cycle (egg-to-egg) takes about 49-120 days, depending on temperature, moisture, and food supply. These beetles feed on a range of processed grain materials such as flour. Although this species probably originated in the African region, they are now one of the most common stored products beetles and are distributed worldwide. In the U.S., they are much more common in northern states than are red flour beetles. These beetles often cause a bad taste and odor in flour they infest, especially if infestations are heavy. The adults have wings, but they have never been observed to fly. They have been found infesting toxic rodent baits.

Control strategies for other stored products pests are usually effective against these beetles too. All stages can be killed by heating infested materials to at least 140 degrees F for more than one-half hour, making sure that the middle of the materials is held at that temperature for

at least that period of time, or longer; or by freezing the food item throughout to 0 degrees F or below for at least four days. You should place dry food in a zip-lock type plastic bag before freezing to prevent it from getting wet due to condensation after removal from the freezer. Most foods can be eaten safely after pantry pests have been killed and removed, such as by hand or by sifting.

You can eliminate these pests, or avoid large build-ups of their populations, by taking the following steps:

You have to find the source of the infestation. Check packages you seldom use, especially items like cereals, grain products, nuts, flour, raisins, spices, dry pet food and birdseed. Make it a habit to thoroughly inspect all such items when you first bring them home from your grocery store. Pay special attention to all of the same items, and brand names, from the same store where any previously infested items were bought.

When found, you should wrap any heavily infested packages in a heavy plastic bag and dispose of them with your normal garbage.

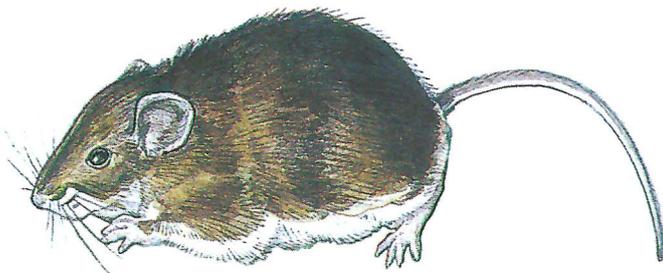
Store all susceptible foods in tightly closed glass, plastic, or metal containers.

You should consider heating or freezing (as directed above) all susceptible food items you have had for 60 days or longer.

Usually, no pesticide treatment is needed for these pests. Finding and disposing of all infested foods should solve the problem. However, thorough surveillance for several weeks after removing an infestation is wise. A residual crack-and-crevice chemical treatment might be needed to eliminate stragglers that have remained hidden in the edges of shelves, pantries, or cabinets. You may need professional help with these last two steps. Call us if you need help identifying or locating and assessing these or other pest problems.

Mice

By this time every year, throughout most of the U.S. and similar temperate zones, domestic mice and rats and some other local outdoors species will have already found the places they plan to spend the winter. There may not yet be enough for you to notice them, their droppings or other signs, but that could change quickly. They have most likely begun producing their next litters, and have found and laid down trails to the places where you keep the food and nesting materials they will need for the next several months. One morning soon, you may be surprised to find a hole chewed in your cereal box or rodent droppings on your kitchen counter, or even mouse hairs on your dishes.

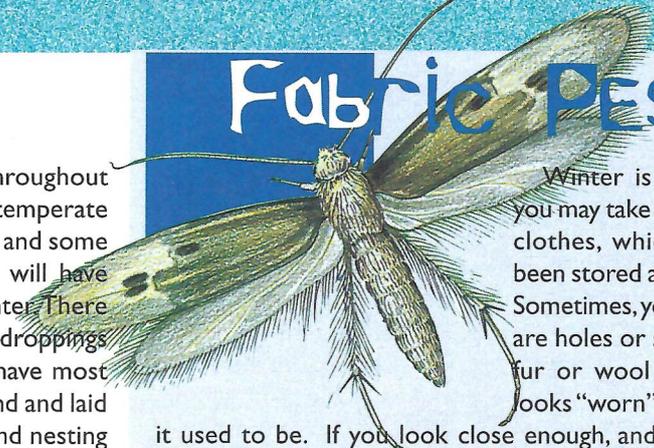


The house mouse is the most common pest in and around human living and working places. They damage and destroy materials by gnawing, eating your food (especially cereal products or nuts), attacking decorations such as floral or "harvest/grain" arrangements. They can carry human diseases and ectoparasites that may bite people or pets. The house mouse has a head-plus-body length of about 2.5 to 3.5 inches, and is gray with dull white belly fur. An adult only weighs about an ounce, but they eat often (nibble) and leave their typical 'calling card' droppings at places where they sat down to feed for a little while. Mouse droppings are long and pointed compared to the larger, blunt droppings of rats.

Mice may look cuddly, but they breed rapidly. A house mouse can breed 35 days after it was born, and can have its own first litter of up to eight pups by the time it is 60 days old. Although they usually live only about a year, if all their offspring lived and reproduced at a similar rate, one pair of house mice could produce a population of more than 500 mice in one year.

Mice are good at climbing and jumping. They can jump about a foot straight up, and can jump down more than six feet without getting hurt. An adult mouse can squeeze through a crack or hole as small as 3/8-inch across and can quickly climb straight up an eight-foot wall of brick or wood paneling in less than half a minute. Even though one mouse doesn't eat much, as their population grows, they can eat a surprising amount of food. They also damage food containers, and their droppings and urine droplets contaminate a lot more food than they eat. In a year, one mouse produces up to 18,000 droppings; and it will deposit hundreds of micro-droplets of urine every day as it marks its trails.

Fabric Pests



Winter is the time when you may take out your heavier clothes, which have usually been stored away for months. Sometimes, you will find there are holes or spots where the fur or wool liner of a coat looks "worn" or thinner than it used to be. If you look close enough, and there are little "worms" or tiny oval beetles crawling around near those holes or spots, then you have one of several fabric pests. There are several common, widespread insects that eat holes through fabrics or carpets. Most common are the clothes moths and carpet beetles. One common and widely distributed such beetle is discussed below.

Varied Carpet Beetles probably received their name because of the varied color pattern on their back. Adults are small, hard-bodied, oval beetles, about 1/16-1/8 inch long. Their body is black, covered with a pattern of yellow and white scales. When seen from above, there are two zigzag bands of white scales bordered by yellow scales across the back. The scales are 2-3 times as long as broad. The underside of the body is covered with grayish-yellow scales. Antennae are short, with a 3-segmented, compact club. Their head is more or less concealed from above and has a median simple eye. These are found worldwide. Adults are strong fliers and mainly feed on a wide variety of outdoor flowers, pollen, or plants. They may come into houses or businesses and deposit their eggs on nearly any natural animal or plant materials, on which the larvae then feed. Often they select fabrics such as wool, cotton, or as their name indicates, carpets which contain any natural organic fibers. The adults do not eat fibers and usually die in 13-44 days, before finding their way back outdoors. Larvae of these beetles are up to 1/4 inch long, stout, brown-to-black, and covered with a lot of brown hairs. There are tufts of special

Continued on back...

Mice can spread more than 20 kinds of organisms that can cause diseases of humans and pets. These include a variety of food poisoning bacteria like Salmonella, Shigella, E. coli, and others; tapeworms, mites, ticks, and rickettsial pox. Other rodents, which are widespread and may also come indoors for the winter such as deer mice, can carry and spread other disease organisms like hantavirus and plague.

If you see mice, or other rodents, or their signs such as droppings in your house or business, don't panic. Don't hurry to buy traps and poison baits and scatter them around helter skelter. The wisest thing to do is call a pest management professional. They can help determine what rodent(s) you may have, where they are, and the extent of any problem. They can help you plan and carry out an effective rodent control, exclusion and prevention program that will protect you, your family or customers, and your property.



It's been a very good year for many pests.

The warm, moist conditions following a mild winter have made it easy for larger than normal populations of many different pests to build up quickly and survive in great numbers. Now that there is a chill in the air, a lot of these pests may have already found places in your house where they can spend the winter. Others may still be trying to come into your homes or work areas.

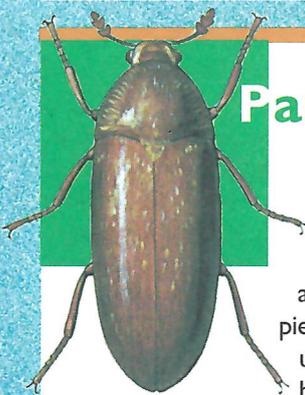
This issue of Pest Gazette will focus on some pests that are already inside, although you may not have noticed yet, and others, which may still make their way into your home. Some of these cause problems or concern just by building up to large numbers. Others can pose health threats or can cause serious property damage, or may scare off your family, friends or customers who don't like or fear "bugs."

Because there may be several different kinds of pests hiding in small numbers in your home or business, you might need the assistance of a

trained pest management professional. Our experts can help determine exactly what, and where, your uninvited guests are, how important each kind might be, how to get rid of them, and how to make your home or business less accessible and less inviting to them in the future.

We are ready and qualified to inspect your home or business for the presence of pests or the telltale signs of their intrusion. Our technicians can recognize most common pests and their signs. They are ready to provide you immediate information and assistance in controlling them. If you have an unusual pest problem, we have a good support system in place to get rapid identifications, information, and control advice from statewide or national sources. We will also give you advice on preventive measures you can take to avoid similar pest problems in the future.

For more information about our professional pest management services, call us. We hope the rest of your year is safe and enjoyable.



Pantry Pest Beetles

If you have ever poured cereal into a bowl then watched with alarm as several pieces began crawling up the side of the bowl, you may have already discovered one or more of these stored products infesting beetles. If your pancake mix or cake mix contained small brown-colored chunks that moved, you may have seen one or more kinds of flour beetles. A variety of small insects live in

and feed on the same foods we do. The most common ones are the Indianmeal Moth and Cigarette Beetle, but several other small beetles, described below, can become pests as well. Adults of many of these pests fly toward lights and may be found in other rooms or floors quite a distance from your food storage areas. These pests do eat at least a small amount of the food they infest, but their presence, their droppings, cast skins, and certain chemical excretions contaminate much more of the food. Those often cause a bad taste, or an odor in the food they

In This Issue.

Pantry Pest Beetles
Mice
Fabric Pests
Modern Pest Control

infest. In some cases, they may cause flour or powdered mixes to not rise or not bake properly. Some of the most common such beetles include:

- **Drugstore Beetles** are small, 1/16 - 1/8 inch long, reddish-brown beetles with hard wing covers with long rows of tiny punctures, covered by short,