

Mole Control

By Scott R. Craven

Moles are common in Wisconsin (and Minnesota), although they are rarely seen. They make their presence known by the raised tunnels and mounds of soil they make in lawns, gardens, fields and pastures.

There are two species of moles in the state: the common, eastern or prairie mole (*Scalopus aquaticus*), which is found mainly in the western and southern parts of the state, and the star-nosed mole (*Condylura cristata*), which is found primarily in the northern half. Both are small, stout mammals about 7-8 inches long. Moles are often confused with mice, but they are not rodents. They lack the long curved incisor teeth of rodents and are instead equipped with small sharp teeth suited to their diet of insects, grubs and worms. They have small and poorly developed eyes and ears.

In the hand, you can distinguish moles from other small mammals by their soft velvety fur and huge, flattened front feet equipped with large broad claws for digging. Moles and shrews are closely related, but are not alike in habits or appearance. The prairie mole is silvery gray, while the star-nosed mole is charcoal gray to black. The star-nosed mole is readily identified by the fleshy tentacle-like projections on the tip of its nose that give its name (see illustration). Both moles have short tails compared to mice; the prairie mole's is 1-1½ inches long and the star-nosed mole's is 2-3 inches.

Moles tunnel and live beneath the soil surface. The star-nosed mole prefers moist soils near water. It is an excellent swimmer and can often be found in the water. Because of its habitat preference, it rarely causes a problem. The prairie mole favors drier upland soils that are loose and free of rocks. It is the major problem species. The prairie mole digs tunnels at several levels. The surface tunnels seen in lawns and open areas are feeding tunnels. The



mole's nest and permanent residence are in tunnels 6-18 inches beneath the surface. It can move through loose soil with surprising speed.

Do not confuse moles with pocket gophers! Pocket gophers also live in western Wisconsin. The damage they cause is more severe and widespread than that of moles. Tunnels visible as

raised ridges are the work of moles. A mole "hill" results when a mole pushes soil up and out of a tunnel through a vertical shaft. This creates a circular mound with round "ripple marks" made by each new load of soil that is pushed out (see illustration). In contrast, a gopher mound results from soil that has been pushed in one direction from an inclined shaft. It tends to be heart- or fan-shaped and the hole is usually plugged with soil. Gopher tunnels are not visible at the surface.

Mole Problems

Moles are often blamed for the destruction of bulbs, seeds and garden plants. In fact, though, moles rarely consume plants or plant parts, although they will occasionally take a few seeds. They dig their tunnels in search of earthworms, grubs and other small creatures of the soil and leaf litter. Mice, ground squirrels and insects which also inhabit the mole's network of tunnels usually do the actual damage by eating or gnawing on plant parts.

Moles are not entirely guiltless. Their raised tunnels cause problems, particularly in well-manicured lawns in parks, golf courses and yards. The tunnels interfere with mowing and expose roots to air, killing the grass and leaving a yellow twisting strip in an otherwise green lawn. Plants are frequently killed when a mole tunnels directly

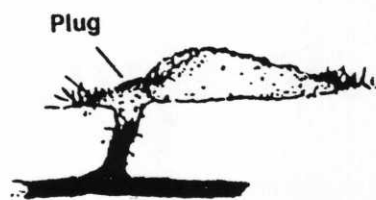
(Continued on Page 21)



Eastern or Prairie mole



Star-nosed mole



Gopher tunnel and mound



Mole tunnel and hill

Mole Control —

(Continued from Page 19)

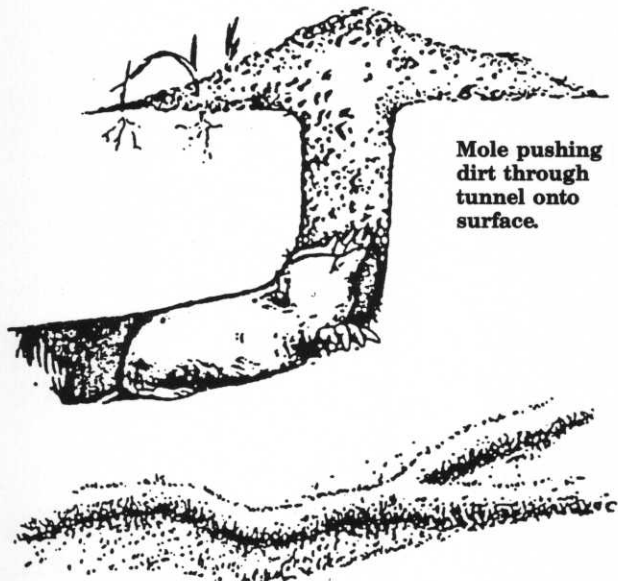
under a row of garden seedlings. The action is not malicious; the mole merely finds the going easier with more moisture and food in the freshly cultivated soil. Moles feed on both beneficial creatures, such as earthworms, and on harmful vegetable pests like grubs and other insect larvae or adult insects. Moles are not a problem during the winter.

Control

Poisons are often publicized as the solution to a mole problem. Peanuts, grains or other non-animal food materials are used as carriers for the poisons. However, since moles feed almost entirely on insects and worms, they do not readily take the poisoned baits. The result is poor control in most cases.

Mole poisons sometimes give a false impression of being effective merely by causing moles to abandon surface tunnels. This might happen if a mole is frightened by the disturbance associated with placing poisoned baits or the odor of the baits or if the poison kills the mole's food supply. Dry weather also sometimes forces moles into deeper tunnels in search of food.

Gas cartridges can sometimes be used successfully to fumigate a mole's tunnel system. Cartridges should be lit and inserted quickly into the tunnel, one every 15-20 feet, and the tunnel sealed with a piece of sod. Cartridges are available at some hardware stores or garden centers. The moles will be killed if you are lucky enough to catch them in their surface tunnels while you are fumigating. When using either poisons or fumigation, carefully read and follow all label instructions for safety and best results.



Mole pushing dirt through tunnel onto surface.

Only moles tunnel through the surface of the ground leaving ridges on soil surfaces.

Indirect Control

A serious mole problem indicates that moles have an abundant food supply. If the food supply can be eliminated or reduced, the moles will be forced to leave the area. There are several pesticides available that will kill white grubs (June beetle larva), other insects and even earthworms. Inquire at an Extension office or garden center about an appropriate pesticide.

There are several disadvantages to this approach. First, the necessary chemicals may be expensive, relative to other control options. Second, there is a delay of several weeks before any effect on the moles can be expected. Third, chemical control may harm beneficial creatures such as earthworms and may be detrimental to some ground feeding birds like robins by removing their food supply. Despite these problems, indirect control may be useful on valuable property where moles are a constant threat, such as golf greens.

Repellents

A plant called "Gopher Purge" or "mole plant" (*Euphorbia lathyris*) has been advertised in Wisconsin as a way to repel gophers and moles from a large area. The repellency of their plant has not been substantiated, and there is some potential that it could become a problem weed. It is also poisonous.

Trapping

Trapping is the most effective and efficient method of mole control in terms of time and cost. At first glance, the highly specialized mole traps that are available look brutal and dangerous to the user. In fact, the sudden death of the mole in such a trap is quite humane, and a reasonable amount of caution will prevent accidents to the trapper.

You'll have better trapping success, if you are mindful of moles' habits and behavior. For instance, a mole will become suspicious if its sensitive nose encounters something foreign in its runway. It's likely to back up and burrow around or under an ordinary trap set in its tunnel. But it won't be suspicious of dirt blocking a runway because farm machinery, people and animals frequently close burrows. A mole will usually push its way into such a dirt blockade, open it and continue on its way.

This habit makes the animal vulnerable to specially designed traps that straddle or encircle the runway — or are held suspended above it — with trigger pan resting on or hidden in a dirt blockade. With this arrangement, the unsuspecting mole can't detect the trap and, in retunneling through the dirt obstruction, either lifts the trigger pan or pushes the dirt against the hidden trigger arm, releasing the trap.

(Continued on Page 23)

Mole Control —

(Continued from Page 21)

Another thing to remember is that the mole is extremely sensitive to anything unnatural in its environment. Never tear up large sections of a mole burrow trying to locate a good spot for a trap. A poorly set trap is a detour sign for a wary mole.

Two good traps for catching moles are (1) the choker type and (2) the harpoon type. These traps are available at most garden supply or hardware stores or through garden catalogs. They are about equally effective. The harpoon type is more popular than any of the various styles of choker traps because it is more easily set.

Selecting a Trap Site. Another key to trapping moles is to place your trap in a frequently used tunnel. Traps must be placed in hunting tunnels, which are close to the surface and recognizable by their conspicuous ridges. Remember that these surface tunnels are made for the primary purpose of finding food. Many of them are not used more than once, while others serve as regular travel routes. Ordinarily, a tunnel that takes a more or less straight course for some distance, or seems to connect two systems of tunnels will be used frequently. On the other hand, a tunnel that has mouse holes or other openings is not being used; moles invariably repair such surface openings. You can identify tunnels in use by poking small holes in them or

(Continued on Page 26)

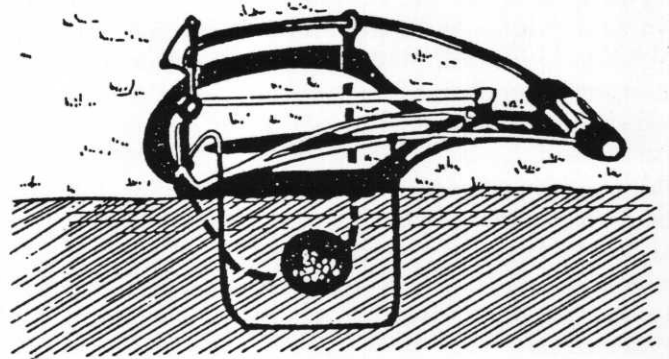
SETTING A CHOKER TRAP



Make an excavation across the burrow



Place set trap so jaws evenly straddle course.



Block section with damp soil, settle trap, and fill with loose dirt.



WAREHOUSE SALES INC.

- Maxi V, Maxi Basic, Maxi Freedom, Computerized and Linksmaster, Central Control Systems.
- Solid State and Electro-Mechanical Satellite Systems.
- Gear or Impact Driven Sprinklers, Valve-in-Head, Stopamatic, Electric and Hydraulic.
- Brass and Plastic Zone Valves, Electric and Hydraulic
- Pump Station Equipment VFD and Conventional Technology, New or Retro-fit.
- Piping, Fittings, Wire, Valves, Boxes, etc.

For Information on New Installations
or Upgrading Your Existing System,
CALL (800) 422-1487

P & H Warehouse Sales, Inc.
Distributors of Quality Turf Irrigation Products
Since 1968



RAIN-BIRD GOLF

PLYMOUTH

9835 10th Avenue North
Plymouth, Minnesota 55441
612-542-1188
FAX 612-546-7515

EAGAN

1971 Seneca Road
Eagan, Minnesota 55122
612-687-0282
FAX 612-687-0382

ST. CLOUD

415 Sundial Dr.
Waite Park, Minnesota 56387
612-259-6448
FAX 612-259-0165

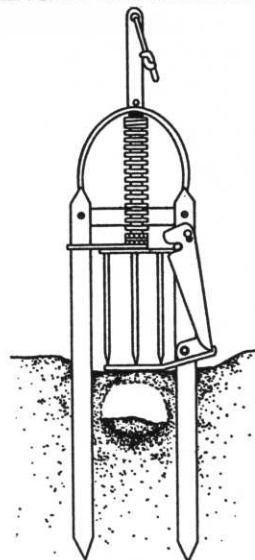
Mole Control —

(Continued from Page 23)

by stepping on them and determining next day which ones have been repaired.

Setting a Choker Trap. In setting a choker trap (see illustration), it is usually necessary to make an excavation across the tunnel. Make it a little deeper than the tunnel and just the width of the trap. A garden trowel is handy for this. Note the exact direction of the tunnel from the open ends and place the set trap so that its jaws evenly straddle — or its loop encircles — this course. Block the excavated section with loose, damp soil from which all gravel and debris have been removed. Pack the soil firmly underneath the trigger pan with your fingers and settle the trap so that the trigger rests snugly on the built-up soil. Finally, fill the trap hole with enough loose dirt to cover the trap level with the trigger pan and to exclude all light from the mole burrow. If the trap fails to produce after two days, it can

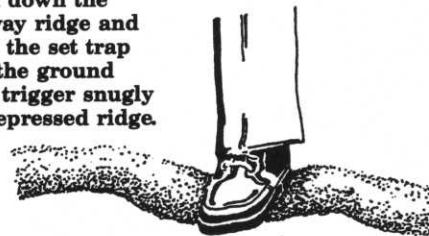
SETTING A HARPOON TRAP



mean (1) the mole has changed its habits, (2) the runway was disturbed too much or (3) the trap was improperly set and detected by the mole. In any event, move the trap to a new location.

Setting a Harpoon Trap. To use a harpoon trap (see illustration), merely pack down the tunnel ridge with your foot and push the set trap (with safety catch in place) into the ground so that the trigger pan rests snugly on the depressed ridge and the two pointed supports straddle the tunnel evenly. Release the safety catch, and the setting is complete. If the ground is hard or gravelly, spring the trap once to make sure that the impaling spikes easily penetrate into the soil for their full length. If they do, reset the trap without changing its position. If they don't, select a new place.

Pack down the runway ridge and push the set trap into the ground with trigger snugly on depressed ridge.



Much of the information about trapping techniques in this article came from "Controlling Problem Moles" by F. Robert Henderson, Cooperative Extension Service, Kansas State University.

Author: Scott R. Craven is a professor of wildlife ecology in the College of Agricultural and Life Sciences, University of Wisconsin-Madison, and a wildlife specialist with the University of Wisconsin-Extension, Cooperative Extension.

GOLF COURSE Product of the Month

ECHO

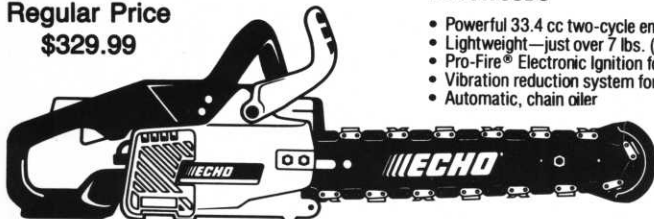
PROFESSIONAL
TOOLS

CHAIN SAW
CS-3450

Sale Price

\$279⁹⁹

Regular Price
\$329.99



**MAKE FAST WORK OF
TOUGH JOBS**

- Powerful 33.4 cc two-cycle engine
- Lightweight—just over 7 lbs. (without bar & chain)
- Pro-Fire® Electronic Ignition for easy starts
- Vibration reduction system for user comfort
- Automatic, chain oiler

POWER BLOWER

PB-4600

Regular Price
\$449.99



CRANK UP THE POWER!

- Commercial duty Echo 44.0 cc dual-piston ring engine with Pro-Fire® Electronic Ignition for fast, easy starts
- Maximum air speed: 180 mph
- Weighs only 22.3 pounds
- Covered by 2-year, 5-year and lifetime warranties
- 90-day commercial warranty

Sale Price

\$399⁹⁹

See your local Echo dealer or call 1-800-432-ECHO
for nearest dealer location