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The Pocket Gopher.¹

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THE number of pocket gophers has been steadily increasing during the last several years, due, largely, to the increased acreage of alfalfa. Almost every field contains some of them, which are extending their burrows in every direction in search of the thick and succulent roots which grow deep enough to supply the wants of the animal. Living in these conditions the homes of the pocket gophers are rarely disturbed by the plow, and unless vigilantly fought by the landowner nothing prevents them from extending their tunnels and increasing their kind. Although extermination is almost impossible, yet by co-operation a community may so lessen their number that the damage to crops is practically negligible.

Distribution and Habits.

Two species of pocket gophers are found in Kansas. The prairie pocket gopher (*Geomys bursarius*) is abundant in the central and northeastern part of the state, but is replaced in the western part and in the Arkansas valley by the plains pocket gopher (*G. lutescens*). Although this latter species is not so numerous in the dry regions, it becomes as abundant in the lower Arkansas valley as the prairie pocket gopher does in any part of the state.

Unlike the greater number of burrowing mammals which spend much of their time above ground searching for food, the pocket gopher remains in the tunnels he has excavated, extending them in all directions and bringing the excavated earth to the surface, where it is deposited in mounds. It rarely comes

1. This is a résumé of Bulletin 172.

out on the surface, except at times when it is necessary to push back the dirt from the opening, and then only for a brief space of time. Occasionally one is found wandering about on the surface, probably in search of a better food supply.

The gopher is not a prolific breeder, the average number of young being about four. They are usually born during March and April and are ready to establish burrows of their own by the next fall. At this season the young may be found running around, apparently in search of suitable fields for their work.

Crops Damaged.

While the most active season is in the late fall and early spring, the pocket gopher remains active all the year except at times when the ground is frozen too hard for mining. In the fall the animals are busy extending their burrows in search of food, which they store up in pockets excavated for that purpose. In the spring this activity is renewed, but later, during the breeding season and when the time comes for rearing the young, less earth is excavated.

Many crops are damaged by the gopher. However, none suffer as does the alfalfa. It is not only the growing alfalfa that is damaged by the roots being eaten off, but there is considerable loss due to the mounds thrown up in the fields, which hinder the harvesting of the crop. Often it is necessary to cut high in order to keep the machine from being clogged with dirt. Meadows of native grass are also damaged in this way. The roots of young trees in orchards and nurseries are often eaten off, causing a loss to the fruit grower. Occasionally large trees may have their roots so damaged that they fall during heavy winds. Potatoes, beets, turnips, parsnips and other fleshy rooted vegetables are also taken. Potatoes in piles are often stolen from beneath by gophers mining into a cellar and filling in the cavities with excavated dirt.

Gopher Legislation.

While there have been laws passed with the aim of combating the gopher, most of them have a weak place which makes them almost ineffective. There is a bounty law which requires all counties of the state to pay a bounty of five cents, or permits ten cents per head on the gophers killed. This law, however, discourages poisoning, which is by far the most effective means of getting rid of them.

Methods of Control.

Being an underground animal, the gopher has few natural enemies. Hawks and owls will take them, but as such a small amount of time is spent above ground these birds do not kill many of the rodents. Many house cats learn the trick of capturing them as they thrust their heads from the burrows when throwing out dirt. In some localities weasels and bull snakes are efficient enemies. However, the former are not numerous enough to be a great factor in the control, and few landowners and tenants are thoughtful enough to permit the increase of the bull snake to numbers sufficient to make him an aid in the destruction. Another animal that is important in the control is the little striped skunk. This animal is able to dig into the burrow at any point and corner the gopher in a pocket and make a meal of him. Even should the skunk take an occasional fowl, he more than pays for it in gophers killed.

POISONING. As stated above, poisoning is the most effective and easily applied method of ridding a badly infested farm. By this means one man can accomplish as much as half a dozen could with traps in the same length of time.

Several years ago the Kansas State Agricultural College began the manufacture of a poison which has proved to be very effective. This mixture is now sold by the College at \$1.10 per quart, f. o. b. Manhattan. The method of using this poison is more favorable than other poison methods in that it is a great time-saver. Pour boiling water over as much shelled corn as needed—a quart poisons a half bushel—and let stand to swell and soften. Drain off the water and pour the poisoned syrup over the corn, and mix thoroughly so that the grains are well covered. (Sweet potatoes chopped fine may be substituted for the corn.) The corn as treated is introduced into the burrows by means of an old spoon. Openings into the burrows are made with a sharp iron or stick. This method is used to introduce other poisoned bait into the burrows. After the poison is introduced the mounds should be smoothed off so that fresh dirt may be recognized when thrown up.

Pieces of potato, apple, or sweet potato poisoned with strychnine crystals answer the purpose very well. Raisins and prunes treated thus have been found to give very good results.

Fumigation as a means of eradication has been tried, but results of experiments carried on at this station indicate that

this is a very expensive method, considering the number of gophers killed. Besides being expensive, it is not as thorough as the poison, and in order to get satisfactory results must be repeated.

TRAPPING. While slow, there is no surer means of killing gophers than by traps. This method works well if the area to be cleared is small or if the animals are not numerous. Steel traps set in many different ways have been tried, but have been found, on the whole, to be less satisfactory than those designed especially for this animal. The principle of these traps is that of the spring rat trap, but built in the form of a box, into which the gopher thrusts his head when bringing dirt to the surface. The "California" gopher trap and the "O. K." gopher trap are similar in construction and of the above-mentioned design. Either will give good results, as will many others now on the market. The traps should be run twice a day to get the best results, and often a second gopher may be caught by resetting the trap at the same burrow.

Trapping or poisoning, to be most effective, should be carried on during late fall or early spring when the gophers are most active.