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THE PRAIRIE DOG AS A RANGE PEST

AND

METHODS OF EXTERMINATION.

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Probably the lowest estimate we can reasonably make is that two per cent. of the land in Eastern Colorado is occupied by prairie dog towns. Most persons would put the amount at ten per cent. This would equal 412 square miles. In some counties fully ten per cent. of the land is used by the dogs. To estimate the loss to the state by the existence of these pests, we must consider how many steers the range occupied by them would support. The average square mile will keep twenty head of steers ; but the average square mile of dog town will not support more than five steers. This makes a net loss, in carrying capacity, of fifteen steers per square mile caused by the presence of the prairie dogs. So, the 412 square miles would support 6,000 steers. These, at three years old, are worth \$150,000, making an annual loss of \$50,000 at this estimate. But, as the country becomes more thickly settled, the dogs increase more rapidly than they do on the open range, far from settlements.

Increase.—Female prairie dogs seem to bear from four to eight young at a birth. This rate would tend to double the dog population yearly. If the number did double annually, the whole territory would be fully occupied by them in six years. But it is only where the presence of man protects them from their natural enemies—the hawks, snakes and badgers—that they really do increase so rapidly. We feel the necessity for destroying the rattle snakes; but the bull snake should be encouraged, as he is ordinarily a harmless ally of man in the fight against prairie dogs. One well-grown bull snake will probably destroy the increase of at least ten pairs of prairie dogs.

Means of Extermination.—When man has, from necessity, ignorance or choice, destroyed the natural enemies of the prairie dogs, he must rely upon other means to hold the dogs in check. A few of these are suggested below :

Carbon Bi-Sulphide Treatment.—Carbon bi-sulphide is a colorless liquid which quickly changes to a very heavy, poisonous gas. It is used by pouring the liquid on some absorbent material, as balls of rags, cotton, or horse-dung balls, and placing the saturated material in the burrows. About one tablespoonful is enough for an average burrow. The burrow is then packed full of earth to prevent the dogs digging out. This remedy is most economically used by using it to finish those dogs which have failed to take the poison which usually destroys most of the dogs in a town. Carbon bi-sulphide has failed in places where the soil is very porous, as the gas goes into the surrounding soil so quickly that the air in the burrow is not sufficiently poisoned to kill. It also fails when not enough liquid is used to fill the burrow with gas, as the gas goes to the bottom, leaving the upper air free from poison. This remedy can be used at any time of the year.

Poisoning.—This is one of the most common methods of extermination. Poisoned grain is used in winter, and poisoned fruit or vegetables in summer. Strychnine is the safest poison for general use, and usually the surest. Dissolve two ounces of strychnine sulphate in warm water, and add one quart of molasses. Thoroughly mix this with one bushel of wheat. After all the liquid is absorbed, add enough corn meal to prevent the grain sticking together. Put about one tablespoonful of the poisoned grain about each hole, putting it at three or four places, so as to avoid, as far as possible, attracting cattle which may be passing through the dog town. Kansas uses a mixture containing cyanide of potassium and strychnine, and some minor ingredients put in to make the dose more palatable. The cyanide of potassium soon evaporates and becomes useless. The advice given by the field agent in Kansas is to put the poison out just after a storm in winter, when all the dogs are hungry. Strychnine put into pieces of potatoes may be used in summer; this has been used quite successfully on a small scale.

Introducing Contagious Diseases.—This is a remedy which has been used occasionally with success. There are some companies who make virus for inoculating animals with contagious diseases. Great results are claimed for this method. But it may be best to confine such work to methods which we can control.

Work in Kansas.—In 1901, the Legislature of Kansas appropriated \$5,000 for work aiding the extermination of prairie dogs. An agent was appointed to manage the investigation. He tested several remedies, and finally decided that poisoning with a mixture containing strychnine was the most economical. He bought material at wholesale rates, prepared the poison, and furnished it to users at cost. During the first year he distributed 3,300 cans, which is enough to poison grain for the treatment of 132,000 acres.

The Kansas law authorizes township trustees to hire men to work at exterminating prairie dogs. A great many townships in which large tracts of unoccupied lands were located availed themselves of this privilege.

The Problem in Colorado.—In Eastern Colorado, even if each man living in the country should kill all the dogs on his land, only a small proportion would be destroyed, as nearly all the land is owned by either the Government or by non-residents. As men cannot afford to spend much money on land over which they have no control, the prairie dogs on neighboring land would soon overrun them after they had destroyed those on their own land.

The only way by which prairie dogs in Eastern Colorado can be exterminated is by the working of a state law authorizing counties to spend money in exterminating the dogs located upon the land of non-resident owners and upon Government land.

If there is sufficient demand, some one may take up the manufacture of the poison as a business. The greater the demand for the poison, the cheaper it could be furnished. The Kansas Experiment Station has recently been compelled to advance the price of the poison it prepares, on account of an advance in the price of strychnine.