

DESTROYING GOPHERS.

Methods Recommended by the Department of Agriculture.

GUY ELLIOTT MITCHELL.

Pocket gophers would be most formidable animals were they enlarged to the size of the prehistoric dinosaur. Their teeth are huge in proportion to their heads and their bifurcated front claws are strong, sharp as eagle talons and extraordinarily long. The gopher however is a little animal; yet because of his abundance and exceeding industry, he becomes more than a nuisance—a menace in fact—to many farming communities.

Pocket gophers infest all the States and Territories west of the Mississippi, and parts of Illinois, Wisconsin, Florida, Georgia, and the greater part of Mexico. All the species live underground in ramifying tunnels, and all bring to the surface quantities of earth, which is heaped up in the shape of mounds. The habits of these animals are everywhere much the same.

Throughout their range pocket gophers are very destructive to crops, much more so than moles. They eat the roots of fruit trees and in this way sometimes ruin whole orchards. They eat both root and tops of clover, alfalfa, grasses, grains, and vegetables, and are especially harmful to potatoes and other tuberous crops. In addition to all this, they throw up innumerable mounds of earth in meadows, pastures, and grain fields, which cover and destroy far more of the crop than is either eaten by the animals or killed

are active, all the animals should be destroyed by the first application of the poison.

Trapping Pocket Gophers.

Trapping is a successful method when followed intelligently and persistently. It is especially adapted to small fields, orchards, and gardens, where only a few of the animals are present; but in the case of large areas that are badly infested, the method involves too much labor.

For trapping, an ordinary No. 0 steel trap may be employed but there are a number of special gopher traps on the market that are better adapted for general use. In using the ordinary steel trap, the first step is to make an opening into the main tunnel. The trap should then be sunken so that the jaws are level with the bottom of the runway and lightly covered with green clover or alfalfa or grass, or even loose soil, care being taken that these do not clog under the pan, or trigger. No bait is required. The holes should be just large enough to receive the trap and should be covered so as almost to exclude the light.

Carbon Bisulphid.

Carbon bisulphid has been employed for killing pocket gophers, and under favorable conditions its use is recommended. If the burrows are extensive

TYPHOID FEVER ON THE FARM.

C. J. Blanchard, U. S. Geological Survey.

"More than 40 per cent. of the farm wells so far examined in this State have been found to be polluted." This is a significant statement made by the director of a State Board of Health laboratory, in which several thousand well waters have been examined. It helps to explain why the death rate from typhoid fever is greater in the country than in the city.

It is a popular notion of city folk that a vacation in the country is a safeguard against all the diseases to which the flesh is heir; physicians recognize this when they send their patients away from the city. The country life is unquestionably the ideal one; the popular cry "back to nature" has a large measure of justification, yet there are thousands of people who return from such an outing consumed with typhoid fever. Why should this be true?

Typhoid an Index to Water Purity.

A century of experience has shown that the typhoid rate in any place is a good index of the purity of the water supply at that place. Therefore, when we find that the typhoid rate in the country is higher in the aggregate than in the city, it can be fairly assumed that country water supplies are not as safe as city supplies, and this in spite of the fact that many of our city waters are notoriously bad. The state from which the above mentioned testimony comes is a typical one so far as its proportion of rural population is concerned and that there is no reason to believe that if the matter were investigated in other states, the conditions of farm wells would be in any degree superior.

In connection with its investigations of the character of water supplies, the United States Geological Survey has noted repeatedly that typhoid fever is continuously prevalent in many rural sections. In some cases this condition has been maintained for so many years that it is accepted by the communities as one of the ordinary incidents of life and becomes a matter of general comment only during periods of especial virulence. The facts are, that there are comparatively few farm wells located at points not subject to local contamination.

Farmer's Swear by Their Wells.

It is commonly observed that nearly every farmer believes in the purity of his well water, especially if the well has been in use for generations. The fact that his grandfather believed the water to be pure is sufficient evidence for him to defend the well, even though his family be devastated by typhoid fever. It is sometimes the case that a well is used even after its taste and odor ought to be sufficient to demonstrate that it is polluted. A notable instance occurred not long since, in which a certain farmer could not use the water from his well if it were drawn up by a pump, but if a

thoroughly typical of conditions which may be found repeatedly in rural districts. It is probable that typhoid fever will prevail in the country as long as the habit is common of sinking a well in a convenient, rather than in a safe place.

Curing Persimmons.

From a report recently prepared by David G. Fairchild, an explorer of the Department of Agriculture, it appears that persimmons as they are eaten in Japan are as firm in texture as a Northern Spy apple, free from astringency, and of a delicious flavor. They are not allowed to ripen to the squashy consistency of the fruit as it is eaten in America. Investigations as to Japanese methods of curing persimmons show that the Japanese put the persimmons in sake (Japanese beer) casks as soon as the casks are emptied. The heads of these casks are immediately replaced and the package made air-tight. In from 5 to 15 days, according to weather conditions, the persimmons are cured and can be removed and marketed, keeping in a firm, edible condition for a long period.

Forcing Rhubarb.

Experiments have shown that the most satisfactory results in cultivating rhubarb, are attained by growing the roots from seed and forcing when the plants are one year old. Drying the roots has been found to have the same effect as freezing. Either drying or freezing serves the same purpose as a long rest, which is otherwise required, and the product is more vigorous.



FORCED AND UNFORCED RHUBARB

When thus grown in darkness the leaf blade is greatly reduced, the green color is wholly absent, the texture is more crisp and delicate, due to a lessened development of woody fiber, the skin is much thinner than when grown in light, the water content is increased 6 to 10 per cent., and the flavor is generally improved. Rhubarb thus grown commands a fancy price.

Strong Light Injurious to Plants.

Strong light has been found in some instances to hinder the growth of pollen tubes of plants. This is thought to be the reason why tomatoes and cucumbers do not bear fruit in mid-summer in Arizona. Strong direct sunlight in summer also prevents the plant leaves from assuming the usual green color. Thus, strawberry plants in Arizona are yellow for about three months in summer even when grown under shade of cheese cloth. When grown on the north side of a dense shade of sorghum or cotton the plants remain green and dense all summer and are probably the most vigorous in the garden.

Telephones in the Forests.

The usefulness of the telephone becomes more and more apparent as its territory of operation is extended into remote corners of the globe. Nowadays, the traveler in the heavily wooded sections of the north country is amazed when he sees how the march of progress has extended in the shape of telephones in the forest.

Useful as the telephone is in the city, where the steps it saves could sometimes be compensated for by the use of the automobile, the electric car, or the fast express, it is far more useful in the forest, where none of these conveniences, and where the canoe or bateau is the common vehicle of travel. In logging operations the telephone now plays a most important part. The dams along the river are built not only to hold water against a time of drought but also to control the flood, so that the river flow may be properly regulated. To this end a considerable crew of men is kept at the dams all the time, to open or close the gates on short notice. Before the telephones came into use, instructions to the dam crew were conveyed up or down the river by relays of men, stationed at frequent intervals along the banks, and the message was shouted from one to another. The telephone lines are being extended every year, and it will not be long before telephones are almost as common in the woods as they are in the city. Recently the telephone has been called into use to aid the wood wardens in fire fighting in the northern and western forests.

Fooled by Cleveland's Double.

A large man with an impressive face and bearing a striking resemblance to an ex-president of the United States walked into the Great Northern Hotel, Chicago, Tuesday evening and registered as follows on the hotel book: "Grover Cleveland, Princeton, N. J." Two or three bell boys fell over one another in an endeavor to pick up the guest's baggage and the clerk smiled hospitably and searched for his best room. This was a luxurious apartment with a double bath. The guest accepted it, took his key, and then, turning to the register scratched off his signature and wrote: "F. L. MacElroy, Lafayette, Ind."

"Just a bet," he explained to the astonished clerk. "I manage to double my salary this way. I have tried it successfully on every hotel from New York to San Francisco. I'm a traveling man."

Mr. MacElroy secured a more modest apartment, after which he went out to collect his bet.

James Lick, founder of the great Lick Observatory on Mount Hamilton, not far from San Jose, California, was in early life a poor Pennsylvania Dutch piano-maker.

Because of the growing scarcity of good match timber, matches are being made in vast numbers of paper rolled spirally and dipped in wax or stearine.



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Items of Interest.

A man, to be perfectly proportioned, should weigh, stripped, 30 lbs. for every foot of his height.

Making rag dolls is an industry in which many women are employed. The doll is popular with children and sells well in department stores.

Great herds of elephants range th Abyssinian country drained by the Upper Nile. Menelik, the King of Abyssinia, recently sent President Roosevelt one of the longest elephant tusks in existence.

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THE POCKET GOPHER.

by having the roots cut off. These mounds also prevent close mowing, so that much of the hay crop is lost, while the pebbles they contain often break or injure farm machinery. The loss due to gopher mounds in the clover and alfalfa fields in some of the Western states has been conservatively estimated at one-tenth of the entire crop. In many of the fertile valleys where gophers abound they are by far the most formidable of the farmer's animal enemies.

Pocket gophers may be destroyed by poison, by traps, and by the use of carbon bisulphid.

Poisoning Pocket Gophers.

Poisoning with strychnine is the most effective means known for killing these little animals, and, as it involves the least expenditure of money and labor, the Biological Survey recommends it for general use. As a rodent poison to be used by farmers, strychnine has several advantages. Its action is sure, its deadly character is known to most persons, and its bitter taste is an additional safeguard against mistaking it for a harmless drug. Strychnia sulphate is the most convenient form of the poison, since it is freely soluble in hot water and in the natural juice of vegetables used as bait. To disguise its bitterness so that rodents may not be deterred from eating the baits, sugar is often employed, or the strychnine may be mixed with its own bulk of commercial saccharine. A sugar syrup poisoned with strychnine may be used with excellent results. It is prepared as follows:

Dissolve an ounce of strychnia sulphate in a pint of boiling water. Add a pint of thick sugar syrup, and stir thoroughly. The syrup is usually scented by adding a few drops of oil of anise, but this is not essential. If preserved in a closed vessel, the syrup will keep indefinitely.

The above quantity is sufficient to poison a half bushel of shelled corn or other grain (corn recommended), the cereal being steeped in hot water and allowed to soak over night. It is then drained and soaked for several hours in the poisoned syrup. Before using, corn meal may be added to take up the excess of moisture.

Dry crystals of strychnine also may be used. They are introduced by means of a knife, into small pieces of potato, carrot, or sweet potato, or into entire raisins or dried prunes. A single large crystal (or several small ones) is enough for each bait. Raisins are especially recommended because they are easily handled and contain enough sugar to disguise the bitterness of the poison.

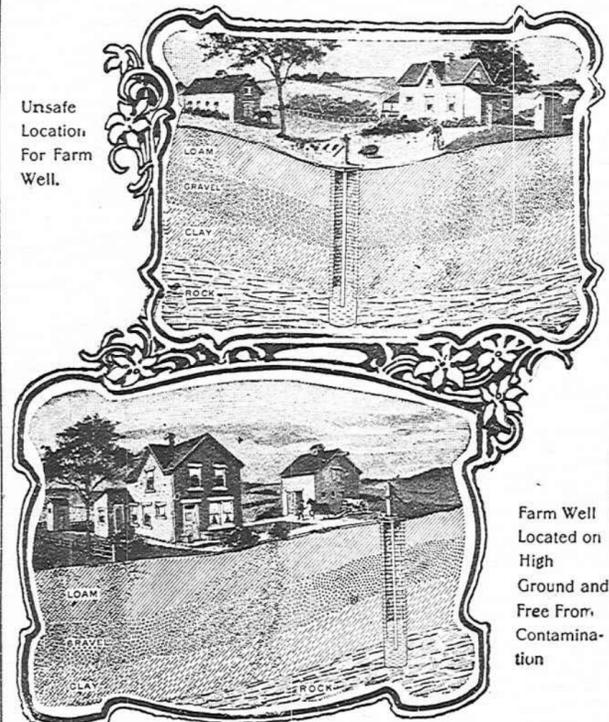
The prepared baits are placed in the underground runways of the gophers and are conveniently handled with a spoon. A stout dibble is used to make holes into the runways. Having located the runways by use of the dibble, it is moved from side to side to make the soil firm about the hole, and then withdrawn. A piece of the poisoned potato or raisin or a teaspoonful of the poisoned corn is dropped into the hole which is left open. Some farmers prefer to cover the holes, but the experience of the Agriculture Department is against such practice.

By this method little labor is necessary, and the operator soon acquires skill in finding the runways. The bait should be placed in the main runways and not in the short laterals near the mounds. If placed in the laterals, the animals are likely to cover it with soil or throw it out without finding it. A skillful operator can go over 20 to 40 acres of badly infested land in a day, and, if the work is carefully done at a time when the pocket gophers

or the soil dry, the gases are dissipated so rapidly that a large quantity of the liquid is required to kill the animals and the method becomes too expensive. If, however, the burrows are simple and the soil moist, bisulphid may be used successfully. For pocket gopher an ounce of the liquid for each burrow is sufficient. The carbon bisulphid is poured over a bunch of cotton, rags, or other waste material and this quickly pushed into the burrow, which should be closed at once.

Co-Operation Necessary.

Any farmer may readily rid his premises of gophers by the use of poison or traps. Unless, however, the entire community unites in active and intelligent co-operation on the destruction of the animals, the cleared area will be sooner or later invaded from neighboring premises, and the work of destruction must be repeated. Co-operation only will effect a radical cure. When



Unsafe Location For Farm Well.

Farm Well Located on High Ground and Free From Contamination

co-operative efforts for the extermination of gophers over a considerable area are attempted, careful attention must be given to waste lands along fences, streams, public highways, and railroads. Such places are favorite haunts of the animals, because in them are found loose, sandy soil, moisture, and succulent roots for food. It is from such resorts that adjoining farms are often restocked with pocket gophers.

There are 21,000 colored school teachers in the United States—7,700 men and 13,300 women.

Blind horses never err in choosing their diet when grazing. Their sense of smell guides them infallibly in the selection of food.

The caaba, or sacred stone of Mecca, is re-covered every year with damask sent by the Sultan or Khedive. A single covering has, on occasion, cost \$75,000.