

TO BREED UP A DISEASE.

Efforts of the Government to Start a Plague Among Destructive Varmints.
GUY ELLIOTT MITCHELL

Did you ever see a rat or mouse or wild rabbit sick from what might be termed natural causes? Any one who can contribute such an animal to the Department of Agriculture will unwittingly confer a benefit of millions of dollars annually on this country. What the Department wants is a fatal and contagious malady, which it is working hard to get now, but up to date the work is merely promising, there having been no satisfactory result to record. So if any one has a hutch of rabbits swept off by a sudden and mysterious disease, or if he notices any swift and sudden mortality among the rats and mice in his locality, that may be the very thing the Department is looking for,

be bought by the pound and spread on bread. The contagious quality has not developed yet in any of the foreign countries tried.

THE RABBIT PEST.

The biological survey has been able to do a good deal in a practical way with the rabbit pest. Some time ago the forest service set up a hawl of indignation. It had planted some hundred thousand young trees, nursery stock, in one of the California forest reserves, and the rabbits ate them up in about a week. Then it seeded several hundred acres with white pine to restore the land after a fire, and the rabbits cheerfully set to work, dug up all the seeds and ate them. But

Egg Farms of California.

By T. F. MCGREW.
Many years ago I assisted a friend in the loading of a car of poultry for California. This car was shipped from Central Ohio, and the fowls contained therein were very well selected from flocks of desirable varieties. The owner of this car crossed the continent in care of his birds and settled in Central California. Reports from there a few years later told a direful story of the impossibility of success in poultry-growing in California.

It is unnecessary to relate the many troubles experienced, except to say that the amateur in poultry at that time imagined that the birds would live and prosper in the California climate without proper shelter within houses during the cold, damp weather. A close study of these conditions has entirely eliminated all these mistakes, and to-day there is no place in the United States where there is an enthusiasm equal to that found throughout California with reference to this industry.

The construction of proper houses, the selecting of proper breeds and the proper caring for them has built up an enormous egg business through that section of the country.

In the neighborhood of Petaluma, more Leghorn fowls are probably kept for producing the white-shelled eggs for the California city markets than can be found within the same number of miles in any other place in the world. One enthusiastic visitor to that locality has made the statement that every acre in the fifty thousand acres visited contained a hundred Leghorns. The climate of Southern California, the beauties of the scenery, the pleasure of fruit cultivation and the profitable growing of poultry have attracted many hundreds to that section to embark in these pursuits under pleasant conditions.

A Mr. Brownlow who purchased a few acres of ground in that locality ten years ago has built up for himself, with the assistance of his wife and children, a most profitable combination of poultry, fruit, bees and squabs, all of which thrive continually under the softer climates of that locality, enabling these people to produce broilers every month with a minimum amount of care and attention, the fruit and bees being a remarkable source of profit during the greater part of the year.

PROTECTION AGAINST DAMP IMPORTANT.

The buildings used for poultry in these localities need not be so expensive in construction as is necessary in that portion of the country visited

and other necessities is not so high as in the colder parts of the country, as much of it is usually produced near at hand. All of these things combine to make the regions of Southern California most attractive to poultry growers, who may be seeking a softer climate to lessen the aggravation which the rigors of winter heap upon some member of the family. Many have gone there seeking a place merely to benefit their health, and have been much improved by so doing; but they have also been able to make a living for themselves and their families through the combination above described.

ALL CANNOT SUCCEED.

All do not succeed. This can not be in any following of life. Those who do succeed usually have more or less experience in the business before they embark upon it. The failures come to the inexperienced, and those who are unable to contend with the difficulties always confronting one in the upbuilding of a new home in any locality.

What are known in the San Francisco market as "range" eggs, the N. Y. market designates as "fresh-laid" eggs. Ranch eggs of California are the fresh-laid eggs that are brought direct to the market and sold as such. During November and December last this quality of eggs sold in the markets of San Francisco as high as fifty-one cents a dozen, and as low as thirty cents, influenced, no doubt, by the supply and demand, governing this product in every locality.

Eggs sold in Chicago during the year of 1905 as low as fifteen cents. In San Francisco the lowest price quoted for the year was fourteen cents. When the lesser expense of caring for them is considered, the advantages or profit from poultry growing should be fully equal to, if not better than would be the same pursuit in Illinois.

BUSINESS METHODS IN FARMING

Successful Kansas Farmer Who Has Kept Trace of Receipts and Expenditures for Twenty Years.

The Kansas City Journal of the success of A. L. Hollinger, a well-to-do Kansas farmer who opened a set of books when he began farming twenty years ago and who has kept his accounts as accurately as a bank does its. The other day he struck a trial balance and found himself \$50,000 to the good. He has now retired from the farm and will make a tour of America.

The compilation of his long record beginning with 1886 shows the total figures given as follows: He has raised 5,265 acres of wheat, a yearly average of over 263 acres, and on that area has raised 98,701 bushels, or an average per acre for twenty years of 18 1/2 bushels. During all the two decades he never had an entire failure of wheat, although an average of 1 1/2 bushels an acre in 1895 came very near to it.

His corn record is equally interesting. He has raised 2,846 acres of corn, a yearly average of 142 acres. The total number of bushels was 72,672, or an average per acre for twenty years of 25 1/2 bushels. The corn

averaged for the twenty years 25 1/2 bushels per acre. In all these figures the number of acres sown is given and the number of bushels harvested.

"During the twenty years," said Mr. Hollinger, "I have aimed to carry enough cattle to use up the roughness and the corn raised on the farm, usually from 100 to 400 head. Of late years I have paid more attention to cattle and alfalfa, and have found that it was a far more reliable combination than purely grain farming in which I was chiefly engaged in the earlier time of my experience. There is no question but that any intelligent farmer can make a competency, and support his family in abundant comfort in central Kansas. I have done no more than any of my neighbors did or might have done. Each year the same income approximately can be secured if the work is carefully planned and such crops are raised as are adapted to Kansas soil and Kansas climate."

As an example of Mr. Hollinger's stock raising it may be mentioned that he came to Kansas City recently with \$9,500 worth of stock which he sold off his farm. He has lived on the same place for thirty-three years and is not leaving Kansas because he is entirely satisfied with his wealth but because he wants to give his family a broader education and to secure recreation for himself. "I think I have enough to keep me from want," he said, "and I am entitled to get something more out of life than I have heretofore done."

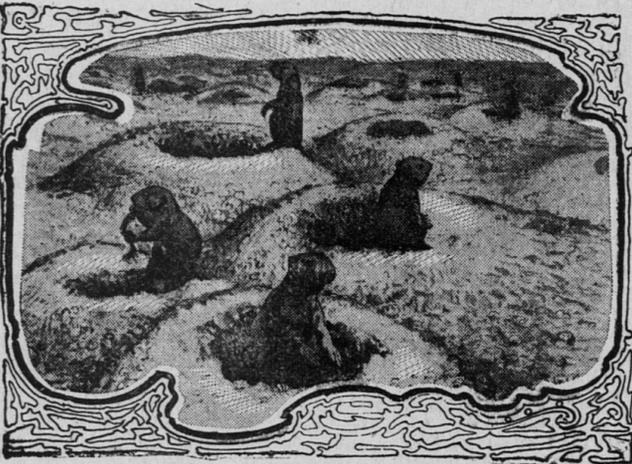
GREAT BEAR COUNTRY.

Representative Bede of Minnesota Tells the President About Big Game Hunting in Duluth.

How it happened that the war correspondents at Washington found out about J. Adam Bede's conference on bears with President Roosevelt does not appear. However, a full report of the Minnesota Congressman's tales has been made, and was made public in the New York Evening Post. It makes an alluring document. Mr. Bede, who is the acknowledged wit of the House, sought the President with the friendliest intention. "You like to shoot bears," said "Jadam," diplomatically. Mr. Roosevelt admitted it. "But you don't have to go into the wild West for your sport," went on the Minnesota statesman. "Think of this fact: thirteen bears were shot in the streets of Duluth last year—in Duluth, the pride of the Northwest, that beautiful city on the great unsalted sea." The statement had a perceptible effect on the President, and Mr. Bede was encouraged to go on. "It's the only place in the whole world, Mr. President, where you can go bear hunting by trolley car, under the electric light, and on asphalt pavements. We have all the conveniences so dear to the heart of the true sportsman, and without leaving your hunting ground you can walk across the street to the mail box and drop in a postal card to your friends, telling them all about the game you have bagged."

With the Congressman was a Duluth constituent, a lady with first-hand knowledge of bear hunting in that city. She added her corroborative statement: "Oh, yes, Mr. President, a short time ago a friend of mine heard a noise outside his window, and on looking out saw that it was a bear trying to climb a telegraph pole. He shot that fellow without leaving his bedroom." Then, to the joy of the President, Mr. Bede took up the tale: "Why, bears are common things with us up in Minnesota, Mr. President. Last year five bears held up one of our trolley cars. They were two old ones and three cubs. This occurred right in the streets of Duluth. The big fellow got in front of the car and put his paws on the dashboard, driving the motor-man off, while mamma and the cubs went around after the conductor. After they had had enough of this sport they raised the siege and trotted off toward the outskirts of the city. Oh, no, we don't let the bears trouble us much. When they get too bothersome we turn them over to the police, who drive them out of town; but it's a great bear country up there, and I'm sure you would like to see a bit of it." Now, if it is announced that President Roosevelt means to take a vacation up in the Minnesota woods, the correspondents may go straight to Duluth, where, as Mr. Bede is a true prophet, the great bear slayer may be found sitting in the door of an up-to-date hotel, a rifle across his knees, waiting for the promised sport.

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PRAIRIE DOGS. One of the Pests of the West.

and one of the rodents should be forthwith dispatched to Secretary Wilson. He will be glad to get it.

Of course, every one knows that the gopher problem is a serious one in many parts of the West, and the rabbit pest has at times threatened to devastate Australia, and even California. Altogether the small animals do a great amount of damage, but most people do not realize what its aggregate really is. Yet in one county of the state of Washington last year field mice destroyed at least half a million dollars worth of property, while in the same time wolves in Wyoming alone mulcted the stockmen of \$1,000,000 worth of cattle, while the damage from field mice, and similar little "varmints" throughout the United States, especially in the West and South, amounted to many millions.

TASK OF THE SCIENTISTS.

To cope with these pests is one of the most interesting tasks of the biological survey of the Department of Agriculture. It has been working in a quiet way for several years, and has about come to the conclusion that although it is possible to trap, poison and otherwise reduce the pests in many instances, the thing that is really needed is a contagious disease that can be bottled up in the laboratory and distributed to do its own work on an infinitely more effective scale than can traps and poisons. That there is some such disease, or that one can be produced, the scientists of the department do not doubt. The trouble up to date has been to find it. The biological survey is working in conjunction with the bureau of animal industry. Some promising leads have been struck, but none of them have turned out to be just what was wanted. For instance, while they are working with one disease now that is fatal to a certain breed of field mice, it will not touch others, and the rats laugh at it in conscious immunity. Also there are plenty of contagious animal diseases that could be turned loose on the rats, ground squirrels, and rabbits, but as they would kill a horse just as quickly as they would a rat, they are not wanted.

ERNEST THOMPSON SETON'S FIND.

Some years back the survey lost just the chance it has been looking for. Ernest Thompson Seton was in Canada, where there was a pest of rabbits, and noticed that they were rapidly dying off. Some mysterious disease was carrying them off, and it was not long before the country was almost cleared of them. He realized that this disease might prove valuable and managed to catch some sick rabbits in New York, but the problem was not just in the biologist's line, and he did not realize the immense importance of it, so the secret was not grasped. Now the biological survey is looking out for similar occurrences, and if the opportunity offers, will make the most of them.

There is a field mouse disease that is harmless to domestic animals, and the survey is trying hard to make it virulent enough to do business with some of the larger pests. It promises well, but the scientists have had too many disappointments to be bragging in advance. They are, however, actually trying to reinforce the disease and make it worse than it has proved up to date. This is getting pretty deep into the network of germology and toxic science. It means really breeding up disease germs on somewhat the same plan that plants and animals are now bred by the department. But there is a hope that they may be able to do something with it. Anyhow they are trying.

There has been a number of reports from abroad of the wonderful things foreign bacteriologists have succeeded in doing in the line of contagious diseases for small animal pests, but though cultures have been bought abroad and tried faithfully here, no results have ever been obtained. Some of the germs have proved fatal to the animals that ate them, but the same is true of any sort of poison that can

the biologists were loaded for rabbit, so to speak, and they furnished the forest people with a harmless wash to soak their pine nuts in before planting, and with a cheap dip for the nursery stock which a self-respecting rabbit will no more nibble than will an ordinary human being smell automobile odor for a perfume.

In this the biologists confessedly took a leaf out of the book of the Plute and other desert-dwelling Indians. The Plutes have been caching food supplies of pine and pinon nuts in the desert for hundreds of years and they found that the rabbits, the ground squirrels and prairie dogs would clean out their cache. But they found by experience that there was a little desert weed that the ground animals disliked excessively and that anything dipped in a tea steeped from the bark of the weed was rabbit-proof for a long time thereafter. So the rabbits were checked out on that play and the forest officers have no more trouble from that quarter.

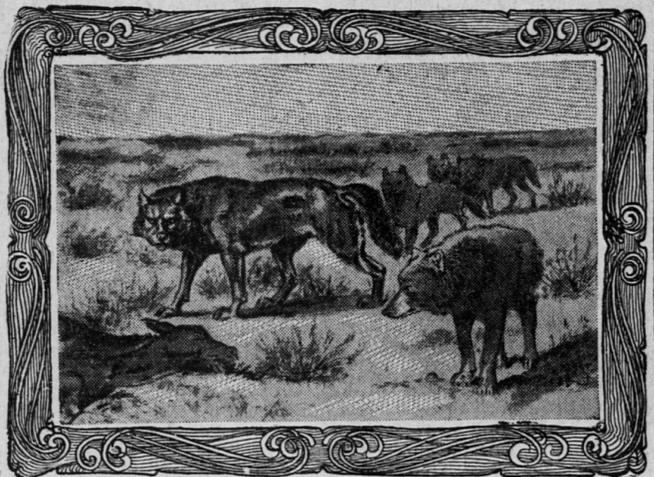
PLAGUE OF THE WOLVES.

But it is the very presence of the forest reserves that has bred the present plague of timber wolves in the West. No hunting is allowed in the reserves and they form nurseries for game of all sorts. But it seems that they breed wolves quite as fast as they breed anything else, of which fact the cattle raisers have been made painfully aware.

In the days of the buffalo on the plains, thousands of wolves lived on the herds. When the buffalo were killed off the wolves disappeared also, till there was not one where there used to be a thousand. Then the cattle men began to stock the ranges, and the wolves found conditions much the same as in the buffalo days. They promptly multiplied and increased till they are now doing an immense amount of damage, aided largely by their asylum in the forest reserves.

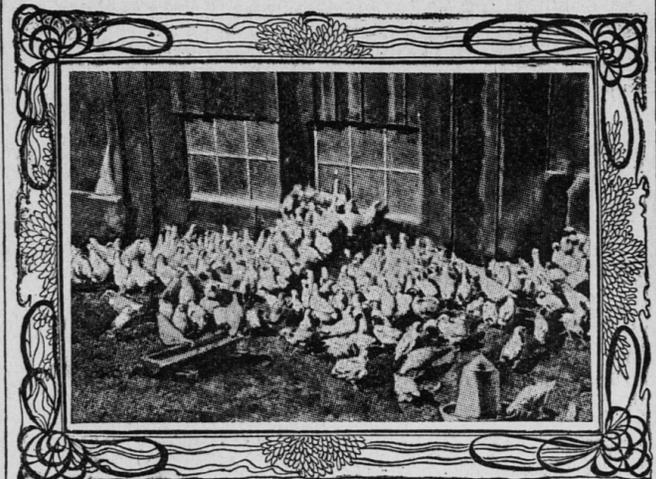
The biological survey has sent out Mr. Vernon Bailey, one of its best men, to study the wolf problem, and he has been skeeving and snowshoeing through Wyoming and Montana while the snow was on the ground and the wolves were particularly easy to track and study. He has not done any shooting, but is trying the effects of poisons and traps. But the wolves are about as cunning as foxes, and after you have trapped and poisoned a few in a given district the rest grow wary

feeding the fowls; and the facility with zero weather during the winter months. Protection from rain, damp and vermin is the most necessary adjunct to a properly constructed poultry house when the poultry can not run at large and range over the land. There is no month in the year in which they can not find more or less animal and vegetable life for food upon the range. This 12 months of food supply reduces the expense very materially in



THE SCOURGE OF THE CATTLE COUNTRY.

made two entire failures, one in 1895 and one in 1901. In 1895 it was very near a failure, only 3 bushels per acre. Less attention was paid to oats and only 679 acres were raised. This



AN OUT OF DOOR BROODER AND FLOCK OF YOUNG WHITE LEGHORNS.

and the poisons and traps are relegated to seat 23. The wolves get so crafty that they will not swallow a piece of meat without mouthing it, and if they get the bitter taste of strychnine or arsenic they drop it and look for something else to eat. Whether or not the survey will be able to kill them off with some contagious disease is a question, but they are rapidly becoming as great a pest and are far more dangerous than the smaller "varmints."

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