

WAR ON FARMERS' PESTS

THEIR DISEASES NOW THE SUBJECT OF SCIENTIFIC STUDY.

Novel Scheme For Destroying Grasshoppers and Chinchbugs—Scattering the Germs—Tumblers Full of Pestilence—How a Bacteriologist Can Win Fortune.

The use of diseased bugs to produce wholesale pestilence among their kind and ultimately effect extermination thereof is an ingenious scheme lately devised by Uncle Sam's scientists.

The idea of enlisting the dread disease germ in a useful service is, indeed, a novel one. Our medico-legal authorities have considered its danger as a factor in deliberately plotting homicide. But who has dreamed of its possible value as an agency of insecticide?

The entomologists of the Agricultural Department lately learned how to concoct several deadly and malignant bug diseases, how to bottle them for shipment, how to spread them among the vast insect fraternity and how to make infected bugs carry the scourge to their unsuspecting kind. The peculiar diseases in question are not communicable to man; otherwise they would not be employed, of course.

The discovery of malarial germs in the mosquito has directed scientific attention to bugs as a means of transmitting contagion. It is being discovered that these minute disturbers of the farmer's and householder's peace and happiness have their characteristic distempers, some of them highly contagious. To artificially propagate their baneful germs in incubators, where the latter are fed and multiplied, is found to be an easy matter.

GRASSHOPPER DISEASE IN BOTTLES.

Mr. Grasshopper is one of the chief victims proscribed by the conspiring bugologist. He has been cutting unbecomingly capers in our farm lands since lo, these many years, annually flecking thousands of dollars from the industrious tiller of the soil. Did wily Mr. Grasshopper but guess the ghastly fate awaiting him he would hasten his kinsmen to pack up, bag and baggage, and to seek asylums where bugs enjoy their natural rights and privileges. The American grasshopper has always been a healthy bug. In Australia and South Africa, however, have been discovered cousin species which suffer a hideous disease compared to which human leprosy is a means toward pleasure and adornment. The unsparing bacteriologists are importing from the biological institute of Cape Town phials filled with the pestilence, and eighteen such vessels have lately been shipped to flourishing grasshopper colonies in Mississippi, Nebraska and Minnesota. And this is how the new grasshopper disease is prepared.

Grasshoppers killed by the disease are collected in large quantities, dried and ground into a meal. This meal is mixed with a gelatinous substance and put up in the glass phials for shipment. In these vessels the disease elements multiply until capable of killing manifestly more grasshoppers than originally used in the preparation of the deadly concoction. On receiving the phials the Yankee farmer is instructed to thoroughly mix the contents of each with two teaspoonfuls of sugar. He adds this dose to three-fourths of a tumbler of water, previously boiled and allowed to cool. Into the tumbler he places several pieces of cork.

SCATTERING THE GERMS.

After allowing the mixture to stand a day, during which time the disease has attacked the cork and thoroughly contaminated the fluid, he dips various and sundry grasshoppers, alive and kicking, into the liquid, the more thus doing being the merrier for the promised result. After being vigorously ducked and thereby terrified the protesting victims are imprisoned in a box and fed on green plants well moistened with the same fatal liquid. Having been fed on this poisonous diet for twenty-four hours, the prisoners are liberated, generally in the evening hours. Then they hop gleefully away to mingle once more with their anxious friends. Returning to their haunts they innocently disseminate their contagion far and wide, among all of their kind which approach to rejoice at their safe escape and marvel at the accounts of their terrible experiences. And as a result of repeated hoppings and gallivantings here and there, from one green field to another, the scourge is spread. Then other grasshoppers, big and little, soon begin to feel indisposed and as each surveys himself he is horrified to discover that he is becoming covered with a furry, mouse-colored crust. This increases until eating into his very vitals. Then he gives up his ghost to the realm where the dead grasshoppers go.

Mr. Farmer soon appears on the scene, bears away the corpse together with all others he can find, dries them all into state of mummification, grinds them into powder and conceals many more tubersful of the liquid pestilence. The contagion is thus sown to multiply over and over again, a greater harvest of death being reaped each time until extermination is complete.

Ground fairly covered with dead grasshoppers thus killed was seen in Bechnanland, South Africa, after an experimental distribution of the disease there. But the black natives of this territory, who eat grasshoppers, objected to such wholesale contamination of their diet.

FATAL TO CHINCHBUGS.

Mr. Chinchbug is "it" in a very similar game devised by the enterprising bugologist. This avocuous insect yearly costs the American farmer millions. The most deadly ill to which its flesh is heir is discovered to be the "white fungus." It attacks him in much the same manner as the afore-

mentioned furry growth infests Mr. Grasshopper, save that a white rather than a mouse-colored crust covers his body and eats out his life. The disease is highly contagious among his kind. The seed with which the pestilence is sown is prepared in this manner:

A bottle of raw cornmeal, mixed with beef broth, is sprinkled with the white particles of the moldy growth previously separated from the dried insects dying of the scourge. The mold rapidly multiplies after taking root in the new media and soon contaminates the contents of the bottle. Live and healthy chinch bugs, caught in the wheat and corn fields, are confined in "contagion boxes" wherein quantities of the infected mixture of broth and batter have been left exposed. The insects thus brought in contact with the pestilence saturate their systems with it. They are then liberated in the fields where originally found.

Mingling with their healthy kinsmen they effect just such a widespread pestilence as noted in the above case of the grasshopper. Death ensues a few days after exposure to the disease. After death the white mold increases in numerous spores. The mold is then collected, placed back in the cold broth and batter and left to multiply.

THE DISTRIBUTING CENTER.

Uncle Sam's agricultural experiment station at Urbana, Ill., is being utilized as a distributing center for chinch bugs thus artificially infected. This institution has been corresponding with farmers in various parts of the country requesting them to box up and ship by express as many of the live insects as they can collect. After exposure to the disease-laden broth and batter at the experiment station the contaminated bugs are shipped back to the farmers. The latter are instructed to keep the bugs confined until dead from the disease. The farmers then capture as many live infants as can be caught and confine them with the carcasses of their relatives until they show symptoms of the disease. Then they are let loose in the fields in time to create a wholesale pestilence. Some farmers not only distribute the live bugs thus, but scatter the dead ones left in their contagion boxes, attaching them to vegetable growths threatened. Other farmers have applied the broth and batter mixtures directly in plants preyed upon by large colonies of the ravenous insects.

Caterpillars, seventeen-year locusts and various other insect pests have been experimented with, the object being to determine some infectious disease capable of their eradication. But in these cases difficulty is as yet met.

Insect diseases are little understood. Man was ignorant of the ailments of domesticated animals until comparatively recent times. Now the Government annually spends thousands of dollars a year for studying diseases of such beasts. Such studies were originally devised by man with the direct motive of self-protection against poisonous bacilli and parasites. Doubtless in the future wise governments will be instituting laboratories for research in diseases of the insect kingdom with the selfish motive of sowing seeds of such diseases among ill-behaved bugs. And perhaps in those progressive days there will have sprung up anti-vivisectionist societies for the protection of such unfortunate insects or for the dictation of the mode of slaughter to be meted out to them.

STUDYING DISEASES.

Insects no doubt suffer from as many characteristic disorders as do men and beasts. It must be a terrible ordeal for one of the many three-stomached species of bugs to suffer indigestion pains in all of his dinner receptacles at once. And imagine what a poor butterfly would suffer if all of his 25,000 eyes were sore and running as a result of hay fever. Then pity the centipede attacked with "rhenmatiz" in all of his legs. And think of the ravages of a hereditary disease which might be bequeathed by our persistent friend the housefly to the 746,496 offsprings which she produces in the three months of summer.

A fortune of uncountable millions is certainly in store for the practical bacteriologist who can successfully concoct and patent a brand of deadly mosquito snailpow, housefly plague, caterpillar yellow fever, cockroach diptheria or some pestilential means of erasing any of the famous insect names now upon the black list of the farmer and housekeeper. And perhaps science will some day brew malignant diseases fatal to such larger pests as rats, mice and snakes.—John Elfreth Watkins, Jr., in the Washington Star.

Educated Men in Demand.

Never before was the call for trained men so loud as now. They are in demand everywhere. Not only in the professions, but also in business houses, manufacturing establishments and even on the farm, they are in great demand. The farmer who understands chemistry, who is able to analyze the forces of nature, to mix brains with his soil, will be the great farmer of the future. There is an increased demand everywhere for college-educated men. We find them occupying the best positions in our insurance, banking, manufacturing and transportation institutions. Never before was the call for liberally educated men and women so great as to-day.—Success.

End of His Career.

A man drifted into town . . . day penitence, and with holes in his shoes, and his friends are recalling that when he left Atchison four years ago, giving up a good position, they complimented him upon his ambition to "get out of the old rut."—Atchison Globe.

NEW WAYS OF COWBOYS

CHANGED METHODS ON CATTLE RANGES OF THE SOUTHWEST.

Old-Time Cattle Earons Would Become Bankrupt in These Days of Economy—Cowpunchers Toned Down—The Texas Steer's Lost Horns—Greater Humanity.

A Holbrook, Arizona, village on the red, muddy bank of the Rio Colorado in northeastern Arizona is the most important cattle market in the Territories and is the rendezvous of cowboys and vaqueros from all this region, writes a correspondent of the New York Sun. From April to December, almost every day, carloads of cattle are started from Holbrook toward Kansas City, Chicago and Omaha. Last year more than 136,000 head of cattle were shipped eastward from this little frontier town, and there is little doubt that the shipments this year will foot up about 148,000, worth, on the cars here, about \$3,350,000. In the early spring months, when the shipping season opens, it is common to see 10,000 or 12,000 cattle bunched together in the enormous corral along the railroad tracks.

There is an abundance of material for the seeker of picturesque in this cattle community. At almost any hour in the day during the spring and fall months the main street in Holbrook is the main street in Holbrook is lively with from 100 to 200 horses from the ranges. Every horse carries a huge saddle a lazar hanging in coils from the pommel and a blanket rolled and tied at the rear. Some saddles are elaborately decorated with silver tacks and emblems, and the bridles on many horses cost several times more than the animal themselves are worth. There are knots of cowboys here and there on the street, while all the saloons are filled with them 20 out of every 24 hours. They wear great gray felt sombreros with gaudy leather straps for bands, skin tight trousers and short fancy coats with showy buttons. All of them wear high boots with high and sharp heels, and four-fifths of them carry a belt of cartridges about the waist and one or two shining and finely constructed revolvers at their hips. Sometimes there are drunken, swaggering, swearing cowboys who raise a din in Holbrook, but a large majority of the cowboys, in the Southwest, at least, are decent sort of fellows, who are proud of their adventurous work and their skill among cattle, and despise the drunken fellow who brags about a bar and thinks it fun to shoot to frighten other people.

The changes in the methods of cattle ranching in the Southwest during the last ten years have removed a large element of romantic picturesqueness. The famous cattle barons of the West of 25 and 30 years ago could not keep out of bankruptcy in these days of strict business methods and careful economy on the ranges if they followed the old methods. Economy and commercial prudence are at the bottom of the innovations on the cattle ranges. The financial disasters which de-throned many a rich cattle king from 1887 to 1898 have necessitated economies where prodigal waste once prevailed. Tricks of saving, once thought contemptible, are in vogue in all up-to-date ranges. Nowadays the bones of cattle are saved and sold. No one thinks of leaving the pelt on an animal found dead on the range. Time was when such economy was despised and left for the poor half-breed Indians. Even the piles of horns left after de-horning operations are over and are now collected and made a source of revenue. The fertilizer that went to waste on the ranges is shipped at so much a ton to horticultural districts in California and Colorado for use in the orchards. Cowboys are fined for drunkenness on the range nowadays. A generation ago the cattle kings bought whiskey and brandy by the barrel for the cowboys to help themselves to.

By new methods time and wear and tear on the horses are saved. A half dozen horses and cowboys to do twice as much work and cover twice as much territory as formerly. The branding of calves is done by time-saving contrivances. A dozen inventions have been made in cattle cars whereby the loss from the tramping to death of animals while in transit to market has been minimized, and, also, by which more stock may be put in a car.

In other particulars the conditions have changed also. In former years the round-ups each spring, generally about May, were trying times with the cowboys. Where 15,000 or 20,000 calves were to be cut out of a herd and branded the work often extended over a month, but under the later methods the work is very materially lessened. Now, instead of having to throw and tie each unbranded calf and steer the animals are cut out and run into a separate herd. They are then driven into an inclosure where is an outlet so narrow as to permit the moving of only one animal at a time. There, as fast as the string of animals pass, a branding iron is extended through the open cracks of the heavy fence and the necessary decoration made upon the flank of each calf.

Yet even with all the improvements the round-up remains a feature of ranch life. Here is the greatest opportunity for the cowboy to display his dexterity with the lasso and his horsemanship. Some ranches at the round-up season require 400 or 500 horses. The riding is always fast and furious and seldom is an animal used more than two hours consecutively.

The famous Strasburg clock, which gave all the movements of the sun, moon and planets, was constructed 650 years ago.

TRAMP NUISANCE IN SIBERIA.

Years of Transportation Have Depleted the Land With Criminals.

Says Solomon, Russian director-in-chief of prison administration, in The Independent: From 1807 until 1899 Siberia received from European Russia 864,549 transported persons, including their families. That is nearly the sixth part of the actual population of Siberia. If we confine ourselves to the last dozen years we shall see that Siberia has received in that space of time 100,582 transported persons, of whom 95,876 were men and 4706 were women. Of the families of transported persons there were 155 husbands, 17556 wives and 40,000 children. Siberia has thus received in the course of 12 years 159,191 individuals, one-thirty-sixth of the total population. If one takes into consideration the number of the transported only without their families we shall see that during that period Siberia has received for each 57 inhabitants a criminal or a man recognized as more or less dangerous in the country of his origin. These figures permit us to draw certain important conclusions. First—Transportation does not contribute to the colonization of a country, owing to the great preponderance of unmarried persons. Second—The number of vicious elements introduced into the country passes all reasonable proportion. Of the number of transported males, only 17,556 were married; the other 78,322, or 81 1/3 per cent., were unmarried.

These conclusions are completely confirmed by a detailed study of the conditions of transported persons. The number of transported persons residing in Siberia in 1896 was 298,574, or nearly 300,000 individuals of both sexes. Half of these were criminals condemned to transportation under the criminal code, the other half under administrative authority. But they can hardly be distinguished one from the other. The opprobrium of their situation and the misery of their existence have reduced them to an absolutely uniform mass. The third of this mass, 100,000 men, escape all control. The place of their residence is unknown to the police. They steal on the highways and in villages, they beg and extort money in every way possible. In the summer they bivouac under the stars and conceal themselves in the forests of Siberia; in the winter they move toward the cities and use every method to secure a lodgment in the local prisons. The second 100,000 men are equally in a state of vagabondage, but they change their residence to find work. If they have not lost the habit of work, and if they preserve some spirit of honesty, they may succeed in establishing themselves again; if not, they soon augment the ranks of criminal vagabonds. Of the 100,000 who are left, about 30,000 are cultivators of the earth and furnish an element of order. It is remarkable that this number corresponds to the number of the transported married persons. The other 70,000 are workmen. So long as they are young and in good health they gain their daily bread, but when infirmity comes many of them take to begging and often terminate their existence in prison, which they have avoided until that time.

SAVED BY PALMISTRY.

Tattered Individual Proves His Case by Showing His Hands.

"Reasoning from antecedent probability," said Justice Kersten to a prisoner with a sopping straw hat and a turned-down mouth, "I would say that when this policeman accuses you of being a tramp he is speaking with a high regard for the truth."

"Knowing little about logic," the defendant replied, "I am unable to say whether I am guilty on that proof. But by palmistry I am innocent. My life line is good, my capacity for hard work is simply astonishing, and my confidence in my own ability is superb."

"Score one for palmistry. Now hold up your hands."

"I can't tell whether you have worked by the looks of those hands," said the justice. "But in the interest of the spread of knowledge I will digress and say to you that an article known as soap was invented some years ago."

"Never heard of it," said the prisoner cheerfully, "and I know just as much about my guilt or innocence as I do about soap. You might try me by a jury of my peers."

"Your peers are too busy telling fairy tales to bartenders on this muggy morning to come out to help the ends of justice. The dollar they'd get for jury service would make them die of heart disease."

"A doctor told me I'd never have that," the prisoner said.

"I'm not intensely interested in the state of your health," Justice Kersten said coldly. "I don't know whether you're a tramp, and neither do you. I am inclined to the opinion that you are, but I guess no policeman will arrest you between here and the corner."

The prisoner made the trial trip successfully, and was seen no more.—Chicago Journal.

Anticipation and Realization.

Whenever a mother tells her daughter to sweep a room, the girl thinks eagerly of the day when she will be married, and "her own boss." And the manner, by the way, in which a married woman is "her own boss" is enough to make that noble bird, Freedom, drop its tail feathers and close its eyes in death.—Atchison Globe.

Thought Him An Angel.

The late Gen. John M. Palmer used to enjoy telling of being once mistaken for a person of greater dignity than the President of the United States.

"While I was military governor of Kentucky," said he, "a disturbance occurred in some town in the interior. I was at a distance, but was needed at the scene. There was no train, no carriage, no buggy to be got; the only vehicle available was a big girdled circus chariot left by some stranded show company. I didn't like it, but there was nothing else to do, so I got in. You may imagine, I cut a great dash as I drove through a small town. People turned out in droves to see me pass. When I left the town behind me and reached the plantations the negroes saw me and stared with open mouths. They followed me at a respectful distance, until presently they were joined by an old, white-haired preacher, who, on seeing me in my magnificent chariot, raised his eyes and his arms on high and, in a voice that stirred all within hearing, cried:

"Bress de Lord, de day of judgment am cum, an' dis gemman am de angel Gabriel hisself. Bredren, down on you' knees and pray, fo' yo' hour am hyar!"

Siberia Settled Largely by Exiles.

Deportation to Siberia began as long ago as 1591, and at the present moment many of the principal towns are almost entirely peopled by exiles who have completed their terms of imprisonment, and by their descendants. Now, however, that Russia is intent upon the development of the country, they no longer send criminals, but encourage and aid the respectable peasant class to emigrate, giving them pieces of land, which they hold at a nominal rent direct from the Crown.—London Sphere.

Hops Grow Wild in English Counties.

It is a somewhat remarkable fact that the hop, although only cultivated in a few districts in a few English counties, yet grows freely in a wild condition in very many places. It is a perennial, flowering in July and August, and to be found in hedges and thickets. The plant is only cultivated, for instance, in the northeastern portions of Hampshire, and about Petersfield, and even there it does not cover 3,000 acres in all. It grows and flourishes, however, in a wild state all over the country, including the Isle of Wight.—London Express.

A pound of phosphorus heads 1,000,000 matches.

A Great Boon to Humanity.

Bioxide of sodium seems to be one of the greatest boons to humanity which the century has given—that is, if the reports as to the recent demonstration of its qualities before the French academy of science prove to be substantiated.

It is said that this product possesses the property of renewing oxygen, the life-sustaining principle in air, as well as of absorbing carbonic acid as it is given off. Two men with a new apparatus containing dioxide of sodium are alleged to have put on diving dresses from which all air was excluded, and remained for the space of two hours under these conditions. Subsequently they remained under water for half an hour under similar conditions.

The availability of this new means of vitalizing air in the case of submarine craft seems obvious. But its use is likely to be very extended, enabling firemen to penetrate the densest smoke without danger of suffocation, and miners to pursue their calling safely, by depriving "fire damp" and noxious gases of their power to work harm and death.—Boston Globe.


Pessimists in the Days of Jefferson.

The wails about the young men being crowded out or opportunity being denied them were just as prevalent in the days of their fathers and their grandfathers. Such lamentations against the Federalists and the "aristocrats" were common in the times of Jefferson. It was the popular complaint, for example, that men like Robert Morris were enriching themselves at the expense of the poor, that youth no longer had a chance to compete with the favored few, that the way to education was open only to the opulent.—Philadelphia Bulletin.

Big Trees in Danger of Being Logged.

Lumbermen are cutting down the big trees of California. The finest of all, the Calaveras grove, which has the biggest trees, came into possession of a lumberman last April. Some of these trees are from 4,000 to 5,000 years old; older than the pyramids and most of the temples in Egypt. Congress can save these groves by making National parks of them, as an effort will be made to have it done next winter. But it will have to be done quickly if it is to succeed. It comes near being sacrilege to put these venerable monsters through lumber mills.—Harper's Weekly.

Possibly the reason why the Japanese are so progressive is because they are so cleanly. Public baths are provided on every street. Japanese workmen bathe once or twice every day.



"Oh! Dear I'm so Tired."

The ordinary every-day life of most of our women is a ceaseless treadmill of work. How much harder the daily tasks become when some derangement of the female organs makes every movement painful and keeps the nervous system all unstrung! One day she is wretched and utterly miserable; in a day or two she is better and laughs at her fears, thinking there is nothing much the matter after all; but before night the deadly backache reappears, the limbs tremble, the lips twitch—it seems as though all the imps of Satan were clutching her vitals; she goes to pieces and is flat on her back.

No woman ought to arrive at this terrible state of misery, because these symptoms are a sure forerunner of womb troubles. She must remember that **Lydia E. Pinkham's Vegetable Compound** is almost an infallible cure for all female ills, such as irregularity of periods, which cause weak stomach, sick headache, etc., displacements and inflammation of the womb, or any of the multitudes of illnesses which beset the female organism.

Mrs. Gooden wrote to Mrs. Pinkham when she was in great trouble. Her letter tells the result.

"DEAR MRS. PINKHAM—I am very grateful to you for your kindness and the interest you have taken in me, and truly believe that your medicines and advice are worth more to a woman than all the doctors in the world. My troubles began with inflammation and hemorrhages from the kidneys, then inflammation, congestion and falling of the womb, and inflammation of the ovaries. I underwent local treatment every day for some time; then, after nearly two months, the doctor gave me permission to go back to work. I went back, but in less than a week was compelled to give up and go to bed. On breaking down the second time, I decided to let doctors and medicines alone and try your remedies. Before the first bottle was gone I felt the effects of it. Three bottles of Lydia E. Pinkham's Vegetable Compound and a package of Sanative Wash did me more good than all the doctors' treatments and medicines. I have gained twelve pounds during the last two months and am better in every way. Thanking you for your kind advice and attention, I remain,

Yours gratefully,
"MRS. E. J. GOODEN, Ackley, Iowa."

\$5000 REWARD Owing to the fact that some skeptical gentlemen have from time to time questioned the genuineness of the testimonial letters we are constantly publishing, we have deposited with the National City Bank, of Lynn, Mass., \$5,000, which will be paid to any person who will show that the above testimonial is not genuine, or was published before obtaining the writer's special permission.—LYDIA E. PINKHAM MEDICINE CO.