

FACTS ABOUT GRASSHOPPERS

Prof. Simpson of Idaho Publishes An Interesting Circular.

METHODS OF EXTERMINATION

These Depend Largely Upon Location And Other Conditions—Some Insect History.

Prof. Simpson of Moscow, Idaho, a prominent entomologist, is the author of the following circular with reference to Utah and Idaho grasshoppers: For many years past the yellow-winged locust, *Cannula pellucida*, has been a pest of the greatest importance in certain agricultural sections of Idaho and Utah. Its injuries are so great that the natural development of these sections is seriously interfered with, and often crops are almost a total loss. This insect is quite generally distributed over the northern portions of the United States, but is injurious only in comparatively few localities in the West.

It is quite variable in color, ranging from light yellow to brown, with all gradations between. The males are always smaller than the females, and can be easily distinguished by the difference in the end of the abdomen, which is more or less rounded in the male, while in the female it ends with four horny points. The nymphs or young locusts are of a dark color, sometimes almost black. The young locusts depend entirely upon their legs for locomotion, as the wings in the earlier stages consist only of small pads.

LIFE HISTORY OF INSECTS.

The life history of this insect is not so well known as that of many other injurious species. The eggs are laid in the ground during August in pod-like sacs containing from 20 to 30 eggs each. The female usually chooses sandy or gravelly spots in which to deposit eggs. In the latter part of May and in June the eggs hatch, and in about a month the locusts become full grown and winged and begin to migrate, and if in sufficient numbers they strip the vegetation in their path. Many of them remain along the path of migration and deposit their eggs, and thus cause several years of abundance. In a few sections they are numerous enough to cause great damage only three or four years out of every ten.

This locust is a general feeder, and is especially destructive to hay, oats and wheat, the principal crops grown in these sections. Apparently the insect dislikes alfalfa, as this crop is usually but little injured.

REMEDIAL MEASURES.

The application of remedial measures against the pest depends largely on the locality in which the insects are at work, and every possible advantage should be taken of the natural surroundings. The breeding grounds must be accurately located; and if there are periods of years in which the insects are few in numbers and consist of scattering colonies, these colonies should be located and destroyed as a preventive measure. Many methods have been devised to combat the insect when it has reached the adult or winged stage, but at best these measures are very expensive, and are in most cases of but little value. If success is to be obtained in the destruction or control of this insect, it must be attacked in the breeding grounds, either when it is in the egg stage or before becoming winged.

PLOWING.

By observing the insects during the egg-laying period, or stirring the ground and exposing the eggs, the breeding grounds can be easily located. By plowing these grounds in the fall many of the eggs are buried so deep beneath the ground that when the young hatch in the following spring they perish because they cannot reach the surface. Others are killed by exposure to the weather, and their numerous enemies have a better opportunity to feed upon them.

SPRAYING WITH OIL.

In many sections of the west, where crude petroleum can be obtained at very little cost, the method of spraying with oil has been found very successful. The petroleum is sprayed over the breeding grounds upon the young locusts, which are killed by contact with the oil. The effectiveness of this treatment depends primarily upon the thoroughness with which it is applied. Additional effectiveness can be secured by burning over the ground after it has been sprayed, as this will kill those which have escaped the spray.

HOPPERDZERS.

Hopperdzers are long, shallow pans of any convenient dimensions, made of galvanized iron or other material mounted upon runners about an inch thick. The pan is partly filled with water, a small quantity of kerosene is added to form a film, and a screen is placed upright on the back to prevent the locusts from jumping over the pan. As hopperdzers are drawn over the ground by either men or horses, the young locusts jump into the oil, fall into the pan, and are wetted and killed by the kerosene. This method has been found to be less effective against other species. Success in breeding in the breeding grounds often renders it difficult to use the hopperdzers, and it is quite necessary to drive or sweep the young locusts of this species into the pan when it is drawn along, as but comparatively few of them jump high enough to fall into it.

POISONING.

Poisoning the young locusts with arsenicals has been found to be one of the most effective measures that can be used against this insect. There are many mixtures which are very effective, but the greatest success has been obtained by a combination of arsenic and fresh horse droppings. One pound of Paris green, or some other convenient arsenical, together with two pounds of salt, are thoroughly mixed with 60 pounds of fresh horse droppings. The resulting mixture is scattered among the young locusts or around the edges of fields, which it is thought may be invaded. A very convenient receptacle in which to make this preparation is a half-barrel. A trowel or paddle can be used in scattering the mixture in the desired places.

BEGIN WORK NOW.

The importance of beginning work against the younger stages cannot be too strongly emphasized, because little can be done to destroy these locusts after they have wings and have begun their migrations by short flights. By means of a voluntary organization of farmers a general survey of a locality in the fall, aided by the experience of previous years, will render it comparatively easy to forecast if the locusts will be abundant the ensuing season. During the years when they are few, a small amount of work will keep them within bounds, or by more ex-

tended work they may be nearly exterminated. Climatic conditions, parasites and diseases, although often effective, cannot be relied upon, and it is necessary that well-directed and persistent campaigns be undertaken if success is to be obtained.

SETTLING IDAHO LANDS.

Riverside Irrigation Company Doing Big Things Near Parma.

C. B. Hurt of the Riverside Irrigation company, which has 32 miles of canals and irrigates 15,000 acres near Parma, Ida., arrived in Salt Lake yesterday on his way back from Chicago. Mr. Hurt states that the company has about 1,000 settlers already on the lands and others are arriving daily. As the company is very careful as to whom it brings in the settlement is one of the choicest of communities in the Gem state. Mr. Hurt on his way home had an experience with the floods which he says are worse than he ever saw them during the days he used to reside in Illinois and was in the newspaper business. In eastern Nebraska he says that the small towns are completely submerged with water and for miles along the Chicago & Northwestern tracks there is nothing but water on all sides. So bad are the floods he says that the Rock Island and the Burlington are running their trains over the Union Pacific tracks from Kansas City to Omaha.

A Serious Mistake.

E. C. DeWitt & Co. is the name of the firm who make the genuine Witch Hazel Salve. DeWitt's is the Witch Hazel Salve that heals without leaving a scar. It is a serious mistake to use any other. DeWitt's Witch Hazel Salve brings into the settlement the Union Pacific tracks from Kansas City to Omaha.

A CLEVER CATCH.

Officer Takes in Hetty Green, a Professional Shoplifter.

Officer Frank Lincoln accomplished a good piece of work on Friday evening when he arrested a woman who gives the name of Hetty Green. She is believed to be a professional shop lifter, but whether professional or amateur she apparently understands the game pretty well as she had succeeded in getting away with nearly \$200 worth of goods from various stores in the city, nearly all of which were recovered when the police searched her room. She went into Abernethy's on Friday night, and after looking at some articles, slipped a couple of silk waists under her coat. One of the clerks saw her take them and he promptly took them away from her but turned her over to go. She had some other articles which the clerk did not know, and hurrying into an alley she tried to hide them. A couple of small boys saw her take the things and they notified Officer Lincoln. He found the articles where the boys told him they were, and then he started out to find the woman. He located her in a rooming house on West Temple street and placed her under arrest. At first she tried to appear indignant and assumed an air of injured innocence. She was taken to the station and later taken to the county jail. The officer searched her room and found several silk skirts, one of them worth \$50, which had been stolen from Walker's. In addition to silk skirts and waists, there were some very costly furs and other articles of feminine apparel. She will probably be charged with grand larceny.

'T WAS DONE THUS.

Reno Paper Chronicles Downfall of Utah's Debutants.

The Reno, Nev., State Journal in a recent issue tells this story of the Utah-Nevada debate:

The question is a live one, and both sides had the pros and cons at their finger tips. Mayor Turritt, beloved by all Renoites, acted as president of the evening. Hon. Judge Massey, Rev. Van Deventer and Dr. H. C. Craig acted as judges.

D. R. Sullivan opened the arguments for affirmative. He stated the question: "Resolved, That municipalities should own and operate street railways, lighting plants and telephones."

Mr. Burgess of Utah was the next speaker. He cited the difference between municipalities in the United States and England. Further, he argued that the affirmative was begging the question when they spoke about corruption in large cities. The speaker said that it takes two parties to cause corruption; the one who gives and the one who receives.

Louderback, the second speaker for the affirmative, spoke about corruption in the abstract. He cited conditions in Chicago, and endeavored to show how municipal ownership benefited the city. This speaker's arguments were clear cut and to the point. He was undoubtedly one of the best speakers of the evening.

After Louderback concluded his arguments, Holman of Utah arose to the occasion and said: "This question very seriously concerns you and I." His vehemence surprised the audience, but his arguments were good.

Miss Emily Berry, the only girl speaker of the evening, stated that in cities in England municipalities own and operate plants. In Liverpool alone over \$3,000,000 is saved by municipal ownership.

At this point Reese, for the negative, arose and accused Miss Berry of quoting passages from Bellamy, word for word. The speaker said that common decency demanded that when an author is quoted he should be given credit for what he had written.

Burgess took the rebuttal. He endeavored to tear down the affirmative's arguments. The fact that politics in cities were corrupt when corporations owned plants was no sign that municipal ownership would better conditions, argued the speaker.

Louderback, who probably was the man who won the debate, lifted all his opponent's arguments, and called on the judges not to be deceived by conditions, but by facts. He took his seat and was loudly cheered.

Dr. Patterson expressed his regrets that Miss Berry was the only lady in the debate. This he said, looked bad for Utah.

The judges decided that Nevada had won the debate. The score stood Nevada 2, Utah 1.

Half the people in the gymnasium, however, expected the decision to go the other way.

Josh teams repaired to the Overland grill room and made merry at a banquet given in their honor.

A REMARKABLE ORGAN.

That is what Lemare Says of the Tabernacle Instrument.

Organist Lemare and his wife arrived Sunday afternoon, and are being entertained by Mr. and Mrs. L. C. Miller. The distinguished performer called on Prof. McClellan at the Tabernacle, accompanied by his wife, Mr. and Mrs. Miller and Prof. Radcliffe. Prof. Lemare was a welcome visitor, and on being invited to the organ seat, played for an hour and a half, improvising most of the time, although he did play the Andantino he composed in honor of Mrs. Lemare. Prof. McClellan says the visitor is easily one of the greatest if not the greatest organist in the world, and he was charmed with his work. The distinguished Frenchman sized up the great instrument, after trying the various combinations, and then said it was a magnificent instrument, and then he made the following recommendation: "You need a 15 inch wind pressure on the solo organ. Then the reeds are too mild and gentle. Get your solo organ in a small box. I think the vox humana and softer tones in the instrument are most remarkable."

OPENING OF THE RESORTS

All Were Liberally Patronized on Memorial Day.

FOUR THOUSAND AT SALT LAKE

Lagoon, Salt Palace and Calder's All Drew the Usual Holiday Crowds—Bookings at Saltair.

Despite the rains of 100 per cent on the fare to Saltair and Lagoon this season the Decoration day crowds in gala attire swarmed on the cars bound for the two resorts named in the same manner that has marked the opening days in previous years when the fare and admission was but 25 cents.

The attendance at Saltair on the opening day was in the neighborhood of 4,000 and admissions with about 500 on Sunday. The management is to be congratulated upon the splendid manner in which the train service was handled. Every train was on time and there was no uncomfortable crowding. Dancing was the attraction on Saturday, while numerous venturesome parties undertook to take a bath. The water was found not to be so cold as anticipated, in fact it registered about 75 degrees. Considerable favorable comment was heard on the new point, which is very much in evidence at the pavilion, both inside and out having received new coats, while even the benches have not been forgotten. A new merry-go-round was patronized and proved to be quite an attraction. The work of moving the bath houses to deeper water is being pushed, with indications that it will be cleaned up this month. Taken altogether the opening of Saltair this season gave promise of a successful summer.

Lagoon entertained 3,000 patrons on Saturday with 50 on Sunday. The picturesque resort at Farmington looks very pretty this year with the lawns in well kept condition, numerous beds of choice flowers and the trees in luxuriant foliage. Manager Critchlow was on hand to see that everybody enjoyed themselves and both the trip out to Farmington and the time spent at the resort were enjoyed. The train service was all that could be desired and there were no accidents or evidences of rowdy conduct to mar a successful opening day. The management announces that a number of bookings for excursions have been made for this month and at the present all indications point to this season being the best in the history of the resort.

The Salt Palace drew the largest crowd in its history for Decoration day. During the day more than 4,000 people passed through the gates, the major portion of which number witnessed the bicycle races.

an account of which appeared yesterday in the "News." Mr. Myers announces that he has a number of attractions up and sleeve for the resort which he has put on in the near future. He states that it is his object to make the Salt Palace a strictly family resort and that he will see that it is kept free from objectionable characters.

The horse races at Calder's on Memorial day were responsible for a turnout that taxed the capacity of the street car company. The new boats that have been put into commission on the lake were patronized, as were the other attractions that have been installed by the management. In all over 1,000 people visited the park during the day and a great many of them brought baskets of picnic and remained all day.

Liberty park both on Memorial day and Sunday drew big crowds. The flowers and foliage are now in their glory, while the free band concert added to the attractiveness of the free park.

Bookings for the various resorts are being made daily. Owing to Excursion Agent Bean of Lagoon being confined to his home by an attack of lumbago, it was impossible to secure those who have been put into commission on the lake were patronized, as were the other attractions that have been installed by the management. In all over 1,000 people visited the park during the day and a great many of them brought baskets of picnic and remained all day.

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THE STATE'S FINANCES.

Report for May Shows a Balance on Hand of \$173,000.

The report of State Treasurer Dixon for the month of May was filed yesterday with State Auditor Tinney.

The report shows a balance on hand on May 30 of \$173,159.84. The receipts for the month were \$24,386.41, which, with the balance on hand on May 1 of \$243,209.21, makes a total on hand during the month of \$267,595.62. The disbursements were \$94,435.78.

The balance on hand on May 30, of \$173,159.84, is divided among the various funds of the state as follows:

General fund	\$82,527.89
State district schools	2,306.15
Trust fund	473.47
State school lands	4,089.94
University	6,577.25
Agricultural College	4,594.39
Public buildings	1,432.34
Reservoir	37,812.36
Insane Asylum	2,161.40
School of mines	3,419.16
Deaf and dumb asylum	2,401.82
Reform school	2,598.12
Normal school	583.98
Institution for blind	1,933.70
Miners' hospital	3,851.30
Suspense account	8.91
Total	\$173,159.84

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