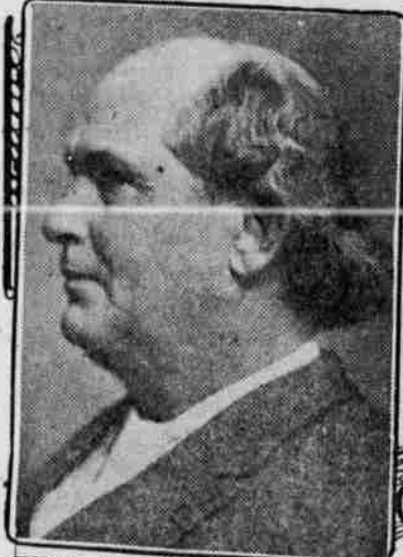


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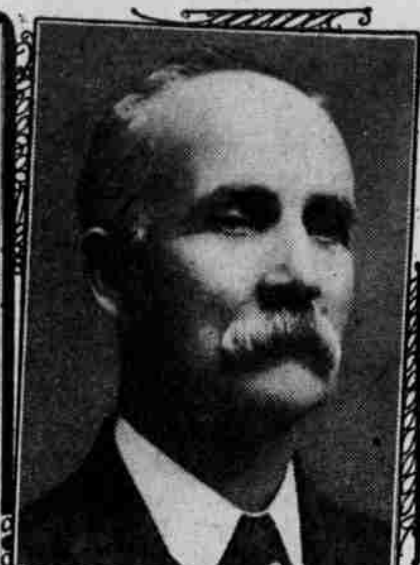
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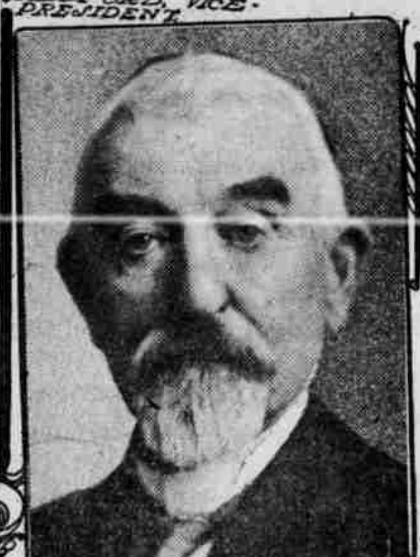
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Much business is to come before the delegates to the Oregon Development League which meets at Astoria during the Astoria Centennial pageant. The convention dates are August 14, 15 and 16, and the men whose pictures are printed here are the ones who will map out the program of work for the assembled delegates.

While meeting at Astoria, the delegates will be entertained by the Astoria Centennial committee and much of the success of the work of the league will be developed at this convention in "Astoria, City of Lights," at a time when the ocean breezes are most acceptable to sweltering humanity.

The complete program of the convention topics has not been announced by Secretary C. C. Chapman as yet.

FARM AND ORCHARD

Notes and Instructions from Agricultural Colleges and Experiment Stations of Oregon and Washington, Specially Suitable to Pacific Coast Conditions

THE CHICKEN MITE.

By A. G. Lunn, O. A. C.

Of all forms of vermin which prey upon poultry probably none are more harmful than the chicken mite. This little fellow is called by scientists "dermanyssus gallinae redi." With such a name we would suppose him to be quite a large creature. However, the mite is so small that in many cases it escapes notice from the farmer or poultryman, and thus may be permitted to carry on its work of devastation.

It has been noted that in some cases where hens have been infested with mites, egg production has ceased. Often setting hens will die upon the nest, and when examined they appear to be literally covered with mites. Death seems to be due to an impoverishing of the blood caused by the sucking of the blood by the mites. In other cases it has been found that a setting hen has left the nest, and when the nest was examined it was found to be alive with these mites.

Not only do mites attack setting hens, but laying hens and young chicks as well. As high as 90 per cent of young chicks have been lost by the evil work of the mite. In such cases the setting hen has been able to withstand the attacks, but when the chicks leave the shell the mites crawl upon them and suck their life blood, leaving them in such a condition that death results.

Habits of the Mite.

The term "robber" may be truthfully applied to the mite, for most of its work is done at night or in the darkness. Their hiding places are in the cracks and corners, also under the roosts and in any place where they may be hidden from view. In these secure places they lay their eggs and hatch their young. Great masses have been found at some distance from the chicken house. For instance, where the chicken house is built against the barn, mites have been

found in the adjoining lofts, thus showing their tendency to wander. A very common place for the mite to hide is under the straw in a nest. When the chicken goes on the roost or in the nest the mite leaves its place of hiding and crawls upon the fowl. It will only stay upon the fowl, as a rule, long enough to obtain its supply of food, which is the chicken's blood. It then leaves the fowl and returns to its place of hiding. Thus it escapes the attention of the attendant.

How Mites Are Carried.

There are various ways by which mites may be introduced into a flock of chickens. Probably the most common of these is by introducing of a new fowl to the flock from a neighbor's without first taking the precaution in seeing that it is free from mites. They may also be carried from one farm to another upon clothes or shoes of the farmer. Or they may be transported upon farm wagons or machinery.

These are only a few of the innumerable ways by which the distribution of mites is made possible. Every precaution should be taken, and when a new fowl is introduced into the flock it should first be examined well, and if infested should receive a thorough dusting before being placed with the other fowls.

Getting Rid of the Mite.

There are a great many methods of destroying the mite. Some of which would be fumigating, burning with a torch, and spraying.

Fumigating as a rule is impracticable, for in order to fumigate the house thoroughly it must be made air tight. Burning with a torch is not to be advised, for not only is there danger of fire, but it is impossible to reach any of the mites but those upon the surface. It has therefore been found that spraying is the best method, for by the thorough application of the spray it has been found possible to reach most of the hiding places.

The following formula for mixing a spray is given in bulletin No. 69 of the Iowa experiment station: "Take one-half pound of hard soap and shave it into one gallon of soft water. Put it on the fire and bring it to a boil. By this time the soap will have dissolved. Then remove the soap solution from the fire and stir into it at once while hot, two gallons of kerosene. This makes a thick creamy emulsion which is made ready for use by diluting with ten volumes of soft water and stirring well. It can be used as a spray, dip, or wash."

The above spray will kill all the mites and eggs it comes in contact with in five minutes. However, there will no doubt be some which the spray does not reach. It will therefore be necessary to repeat the spraying two or three times. The Iowa bulletin suggests that after applying the spray two or three times, repeat the following day.

There are numerous preparations upon the market which have given good results. At this station we have used a product called "Firolium."

This we spray upon the roosts and sides of the house, and by applying it twice a year there is very little trouble with the mite question.

BACTERIA IN THE DAIRY.

New Methods in Creameries as Result of Use of Bacteria.

By Dr. E. G. Peterson, Oregon Agricultural College.

Creameries and dairies which are run on any considerable scale now use what is called a starter. A starter is simply a growth of lactic acid bacteria (bacteria which produce lactic acid from the sugar in the milk) upon some suitable food, as sterile milk, or beef extract. The starter is added to the pasteurized milk or cream to produce the right kind of change in the milk or cream for butter and cheese making.

Usually the right kind of souring occurs naturally, but it cannot be depended upon. Very frequently the product becomes ropy or stringy or bitter, or it tastes or smells in an undesirable way. It is to avoid these undesirable conditions that cultures of the right kind of bacteria are prepared in bottles and poured into the

cream which has previously been pasteurized in order to remove the undesirable bacteria. The inoculated cream is after inoculation allowed to ripen.

In the use of a starter, to be successful the dairyman must be first of all extremely cleanly. It is obvious that it would be valueless to inoculate milk with a desirable organism and at the same time allow by slovenly methods the entrance of other kinds of bacteria.

The work done by the right kinds of organisms would be offset by the work of the others.

The culture is sent out in a small bottle. A bottle of milk is pasteurized and the culture added to the milk, which is next set aside until it coagulates, when it is added to cans of pasteurized milk.

The principle back of the use of the starter is that of replacing harmful or useless bacteria by those with the power to produce exactly the right sort of chemical change in the cream. It is obvious therefore that a method which would destroy all the bacteria in the bottles of milk which are to be added to the cans for ripening purposes would be most desirable.

For this reason there has recently been put into use a method of sterilizing instead of pasteurizing (pasteurizing, of course, destroys only a certain percentage of the bacteria present.) The apparatus necessary in this operation is a simple metal retainer of some sort which can be connected with the main steam supply of the creamery. A simple boiler is sometimes used. A rather close fitting lid on this sort of steamer will allow a temperature of 100 degrees C. inside. Heating at this temperature for thirty minutes on four successive days will completely sterilize the milk in a quart bottle. To this sterilized milk is added the commercial culture of lactic acid bacteria, which of course rapidly multiply and after an incubation of twenty-four hours may be added to the cans of pasteurized milk.

In these operations loose cotton plugs are used to prevent the entrance of the bacteria of the air into the bottles. In making transfers, or if for any other purpose the plugs are removed, care must be taken to prevent the plugs coming in contact with any surface, which of course would result in a contamination of the milk when the plugs are replaced.

This method of handling starters by means of sterilized milk has met with success, and is recommended to those who have the facilities and inclination for its use. It has been used with entire success in the Corvallis creamery; and results from outside the state, notably from Michigan, where it was applied under the direction of the experiment station of the state, justify its recommendation. It requires only absolute cleanliness on the part of the operator and attention to the details of the operation.

The department of bacteriology of the Oregon experiment station proposes to publish a bulletin on this subject which will give instructions for the use and results of the use of the sterile method of handling starters.

PLAN AERIAL LINE

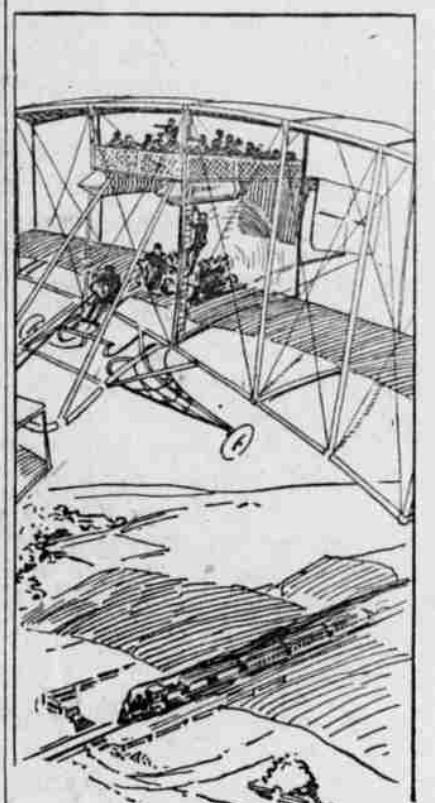
To Run Express From Boston to Washington.

Airships Which Will Make Long Runs Are to Carry at Least 20 Persons and Will Keep Regular Schedule.

Boston.—Charles J. Glidden, donor of the Glidden tour automobile trophy, is at work in the east on a new project. He is seeking landing sites for stations of the aerial passenger line that the Boston Aerial Navigation company purposes establishing throughout the east within the next two years and is examining Philadelphia, Washington and Baltimore. He has already decided upon sites in Worcester, Springfield, New Haven and Bridgeport.

Mr. Glidden is president of the Boston Aerial Navigation company. He is a firm believer in the practicability of carrying passengers in great aeroplanes, and he thinks the time has come for commercial airships.

"We stand ready," said Mr. Glidden, "to buy and start with anything that can carry 20 passengers, and I expect to see the first aerial fleet launched by the end of 1912. The company will begin with a route from Boston to Washington. It has already laid out the way from Boston to New York. Stops are to be made at all of the larger cities. I have looked over the ground in New York



The Aerial Express.

and virtually picked the site for our main station there.

"All we are waiting for now is the reports of engineers upon various types of aeroplanes. The recent flights in France by an aviator who carried 12 passengers shows what aeroplanes can do.

"Personally I am banking on aeroplanes, for I believe heavier-than-air machines will be the mode of travel in the future. I am not impressed with the qualities of dirigibles, although I have one engineer in Germany studying with Count Zeppelin and another in France."

Predicts Iron Famine.

Philadelphia.—Speaking on the subject of the conservation of iron, Dr. Allerton S. Cushman, director of the bureau of industrial research at Washington, declared at the Franklin Institute that at the present rate of production the iron supply of the United States will be exhausted in thirty years.

Wild Horses for Soap.

San Bernardino, Cal.—Within a few months 500 head of wild horses on the San Bernardino desert will have been transformed into cakes of soap and be in use in the homes of New York and Chicago.

Felipe Queros and George Tyler have contracted with Los Angeles agents for eastern soap factories for the sale at \$5 a head of the mustangs that now roam the region between Victorville and Holcomb valley.

Most of the horses are scrubs and useless for anything but cattle driving.

Germany to Send Bacteria.

Berlin.—The scientific paper Umschau announces that a great collection of bacteria is to be sent by Germany to a scientific museum in New York. The collection is modeled and maintained by Prof. Kral of Prague, and is supposed to be the most extensive in the world.

New York will be used as a distributing center for all scientific institutions in America that wish to use the bacteria.