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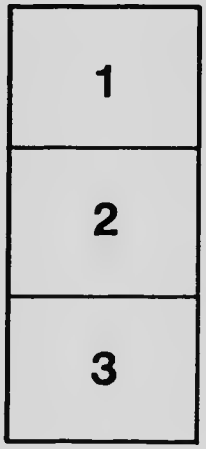

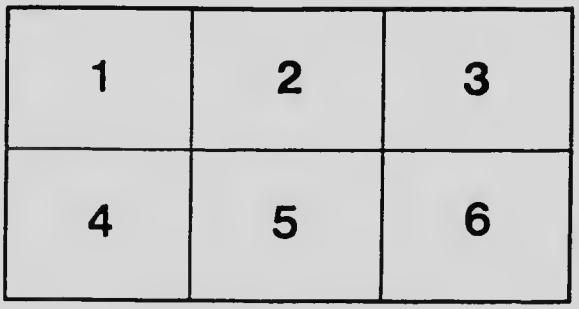

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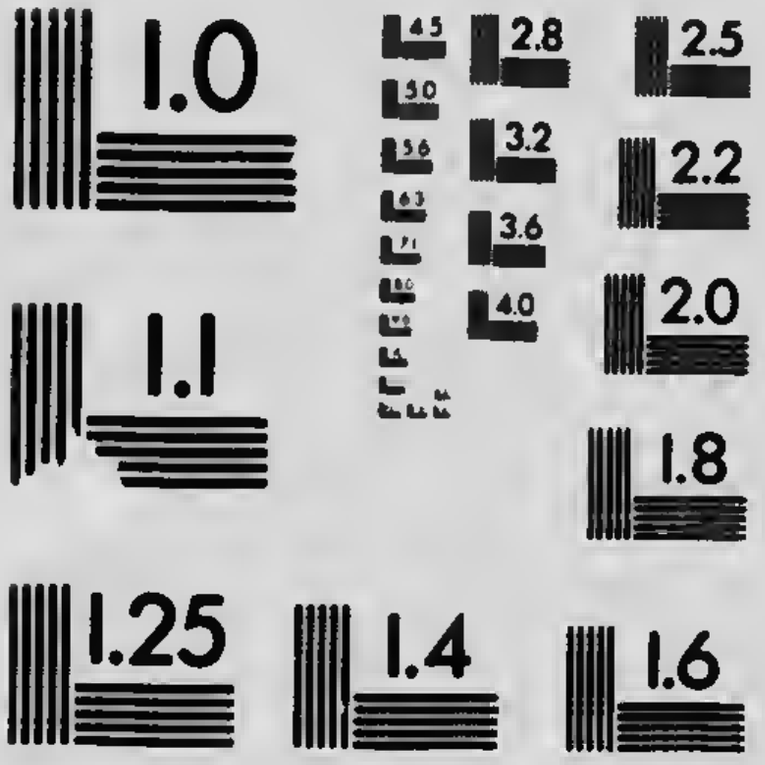

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PROVINCE OF BRITISH COLUMBIA.

DEPARTMENT OF AGRICULTURE.

(Live-stock Branch.)

KEEPING POULTRY FREE FROM LICE.

By H. E. Upton, Poultry Instructor.

POSSIBLY one of the most difficult and trying problems which the poultry-raiser has to contend with is that of keeping his houses and stock practically free from lice, mites, and other external parasites. There are several good dusting-powders, dips, and sprays put on the market to-day which are sold to the poultry-raiser with the intention that he may meet this end by their use and application. We have found from practical experience that most of these preparations are not strong enough to meet the desired end in bad cases, hence making them very costly for the poultry-breeder in the long run. Some of these preparations for sprays are made from a poor grade of carbolic acid diluted with crude oil.

It is with the idea of saving the poultry-breeder money, and also to help him to use a cheaper powder than many of the patent ones, that this circular is written.

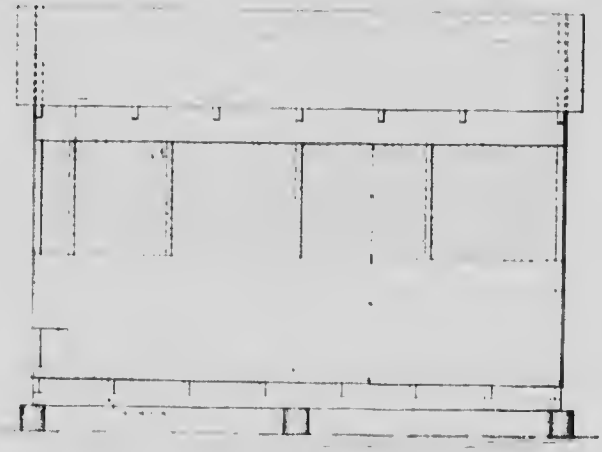
These formulæ are the only preparations that the writer feels free to attach his name to, that will give exceptional success, other than pyrethrum powder. The difficulty often found with pyrethrum powder seems to be that it cannot always be procured in its strongest state.

An instance came before the writer a short time ago where a certain resident of this Province sent to a seed firm in England and procured seed of the pyrethrum plant. He planted these seeds in his house-garden, and used the plants, after they were dried, in his nest-boxes with most exceptional success at a very small cost.

Tobacco, sulphur, poor grades of carbolic acid, and common crude oil do not have the effect that they are supposed to have in any extreme case of parasitical life. Professor Graham, of the Ontario Agricultural College, has recommended blue ointment. The writer has recommended equal parts of white vaseline and zinc ointment in severe cases, and it has been found to give great success. One must not use zinc ointment too freely, as it will cause great irritation and make the skin very raw.

To keep a poultry plant practically free from lice, mites, etc., we have two things to look to. Firstly, the birds themselves, which must be dusted or dipped in a liquid; and, secondly, the houses and all inside fixtures, including the perches, nest-boxes, etc. Naturally the best way to rid the birds from this sort of life is by using a good dusting-powder, and working the same into the feathers. One application of dusting-powder is not sufficient to rid the stock of all parasitical life, for when there are any lice present on a bird there must also be many nits

or eggs, which will hatch within a short period. When dusting birds, it is well to follow up the first application with a second one in about a week's time. The writer would also suggest a thorough dusting of all birds on a poultry plant each



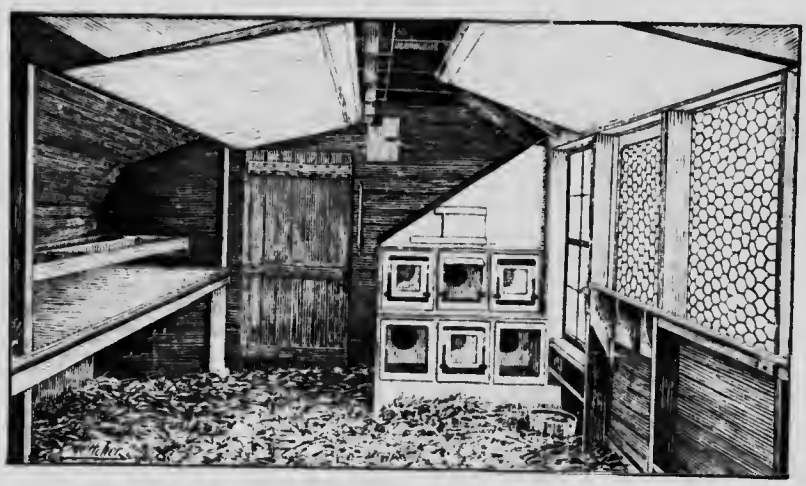
FRONT ELEVATION

Fresh air and sunshine, the essentials of cleanliness, are necessary to keep down lice and mites. This cut shows a good arrangement of wire front for a poultry house.

month after they have been put into the laying-house. The second part of our work, in ridding the plant of lice and mites, must necessarily be with some liquid in the form of a spray or paint.

LAWRY'S LICE-POWDER.

The lice-powder formula prescribed by Mr. Lawry is made at a very reasonable cost in the following way: First mix together three parts of gasolene and one part of crude carbolic acid. After these have been thoroughly stirred, a small quantity of plaster of Paris should be placed in another tub. The writer advises a person



A good interior arrangement of a poultry house, making the work easy to perform.

mixing the powder to gradually mould with the hand or stir with a stick the plaster of Paris while pouring the liquid on same. The liquid must be uniformly distributed

through the plaster of Paris in order to give the powder the strength one wishes to secure. The stirring must be continually carried on as well [illegible] at a hard mass will not result. When enough plaster has been added to the [illegible], a dry pinkish-brown powder with a strong carbolic odour should be left. The gasolene simply works as a carrier in the form of a gas, carrying the carbolic into the plaster of Paris. This powder should be worked into the feathers, especially into the fluff around the vent, on the sides of the body, and in the fluff under the wings. It has been said that this powder will demonstrate its killing power to the user. If he wishes to demonstrate its effect, by shaking the bird which has been dusted over a newspaper after a minute's time.

LAWRY'S LICE-PAINT.

A good spray or paint to be applied to the inside of the house and all its fixtures may be made up of the following: Three parts kerosene oil (paraffine) and one part crude carbolic acid. This should be stirred when used, and may be applied with the ordinary spray-pump or with a brush. In both of the above formulæ it is very important that the crude carbolic acid should be used instead of the purified product. Crude carbolic acid is a dark brown, dirty-looking liquid, and its value depends on the fact that it contains tar-oil as a basis in addition to the carbolic acid.

As the price of kerosene makes the above preparation somewhat expensive as a spray, the writer suggests the purchase of a cheaper grade of engine distillate. This may be mixed in the same proportions that one would use kerosene-oil, and the same results will be attained. Crude carbolic acid is rather expensive when purchased in small lots, but can be obtained in larger quantities by a poultry association through a co-operative plan at a much more reasonable cost. At the same time, better results will be obtained much quicker with fewer applications of the above paint and powder than from many of the so-called lice-killers.

A PROFITABLE WORKING ROUTINE.

A good routine to follow in order to keep down the lice problem is as follows: All hatching and rearing of chicks should be done in incubators and brooders. The growing chicks should never be allowed to come into contact with old stock. If these two points could be carried out, the pullets should go into the laying house in October practically free from lice. Such, however, is seldom the case; hence it is a wise plan to thoroughly dust the growing chicks about the last of May and again about the first of July.

[illegible]re to be hatched by natural methods, the hens should be dusted befo[illegible]mmences with a good strong lice-powder, and twice again during the [illegible]d with sulphur. A good dust-bath of loam should be accessible as w[illegible]atching, the chicks should either be dusted with sulphur, or one may [illegible]tle bit of white vaseline or glycerine on the chick's head in its stead. Grease should never be applied to any part of the hen's body while she is hovering and rearing the young chicks.

It is advisable to spray the colony houses at least once during the summer season, when chicks are in same. During August and early September the laying and breeding houses should be given a thorough cleaning and spraying. Oftentimes a great amount of dust accumulates on the plates and intricate corners of the houses. This dust should all be cleaned out by a hose, or by thoroughly dusting with an old broom. The above solution for sprays should meet with the desired results, but if it should be found that this spray is too expensive to go over the whole house, some of the patent sprays may be used in parts of the house, other than the droppings-boards, perches, and nest-boxes, and the floors and walls in the roosting part of the house.

The older birds, both male and female, which one intends keeping over should be given a thorough dusting once or twice during the late summer with the above-described lice-powder.

RED MITES.

The red mite, being a nocturnal insect, has more chance to cause trouble and a greater loss of money by stopping egg production than has the common hen-louse. These insects harbour in the cracks and crevices of the house, as also on the perches and nest-boxes during the daytime, where they can keep in the dark, waiting to prey on the stock at night. The writer has found several cases of these mites existent this year after the houses have been washed and sprayed thoroughly with a common disinfectant. The red mite's egg very much resembles a spot of lime, being white. These will be attached to any part of the house that is near where fowls roost. The mite itself when it has no food appears like a dark-grey insect, about the size of the head of a pin. Unless one has very keen eyes they will not detect this insect until it has spread so rapidly as to cause a great loss. The above paint of kerosene or engine distillate mixed with crude carbolic acid will rid any poultry-house of this trouble in a very short time.

During the months of May, June, and July is the time that the red mite does the greatest amount of injury; therefore the poultryman can see the reason why an early summer spraying would do a great deal of good towards keeping out this trouble. It has been stated by some that crude oil would rid the poultry-house of this parasitical life, but the writer met with one instance this year where the red mites were alive and swarming through the crude oil.

SCALY-LEG MITE.

Scaly leg is caused by a very minute mite which bores in under the scales of the leg, and lives upon the serum of the leg. This mite does not seem to be as disastrous on the egg record as the red mite, but still causes an amount of trouble and injures the appearance of the bird.

The writer is of the opinion that the nits of these mites can be picked up by non-affected birds, on the perches or on the droppings-boards, as they may be shaken from the legs of affected birds. There are several preparations for use to rid stock of this trouble described in printed form. The following will give exceptional success. Birds affected should be treated separately in the following way: Secure a pail of good warm water and make some soap-suds from carbolic soap. If carbolic soap cannot be obtained, a tablespoonful of some patent disinfectant in 8 quarts of warm soap-suds may be used. Hold the fowl's legs in the pail for about a minute, then remove the bird; now take a sharp quill or toothpick, and pick out the mass of dead scale and accumulated material from in under the scales, being careful not to draw blood. After this is done, an ointment made up of white vaseline and zinc ointment (equal parts) may be applied to the leg and rubbed in. A salve may be used in place of the ointment by mixing some zenoleum, izal, or creoline, or other good disinfectant, together with white vaseline, to obtain the same results. Another remedy as prescribed by some is by dipping the legs in kerosene. When kerosene-oil is applied by dipping the legs, nose, or nostrils, one should be very careful that the same does not fall upon the feathers, for it acts as a blister and causes intense suffering.

A VALUABLE BY-PRODUCT.

THE VALUE, PRESERVATION, AND ECONOMICAL USE OF HEN-MANURE.

Poultry-manure is more valuable than any other form of farm manures. An instance was given to the writer this year where all of a certain breeder's hen-manure was used on some blackberry-vines. In previous years this man had used horse-manure, but this manure induced a great leaf-growth. By the use of the hen-manure this year a wonderful crop of berries resulted. Yet we do not find the poultryman preserving this valuable by-product as he should, in order to gain the economical value to be derived therefrom. Under the nitrogen content of this manure is preserved the economical value is soon wasted.

It is estimated that a hen passes about 35 lb. of droppings on the boards in a year, while there is approximately as much voided in the daytime by each bird in the yard and on the litter. It is stated that "the night droppings contain 0.8 lb. of organic nitrogen, 0.5 lb. of phosphoric acid, and 0.25 lb. of potash." At the present price of fertilizers, this material should be worth about 30 cents. Thus, the poultryman can see that the night droppings from a thousand birds, if preserved properly, would be worth at least $300 per annum.

Hen-manure is very rich in nitrogen, due to the fact that all the excretion of the kidneys, given in the form of uric acid, is voided in a solid form with the faces. The nitrogen which poultry-manure contains is readily available to plant-growth, but this form of nitrogen is not stable. Bacterial action will readily change the nitrogen excreted in this way into an ammonia gas, so that the greater part of it will be given off and lost to the air unless conserved.

A good type of manure shed. We would advise one to follow the idea outlined in this circular.

On account of the peculiar condition of poultry-manure, being hard and lumpy when dried, and sticky when fresh, the farmer will not spend the time in conserving its fertilizing elements. Again, if hen-manure is used alone on the soil, it gives off nitrogen too quickly, due to the fact that it contains too great a proportion of this element in combination with phosphorous and potassium, which are not combined in this manure in great enough proportions to conserve the nitrogen.

The writer, without going into more detailed figures, would advise any one keeping poultry to make a compost heap in the yard (if possible with a cement bottom), boarded on the north side, with a high roof; and where possible, make a wire around the other three sides to keep the hens from scratching in the same.

In making a compost heap, we would advise one to lay alternate layers of sandy loam and hen-manure in the following way: On top of the cement floor place a layer of sandy loam about 4 or 5 inches deep. Then lay about 1 inch of poultry-manure on top of that. From now on, build up your layers with thickness of loam about twice that of the manure. When one uses this compost heap for fertilizer, the elements of the hen-manure are well preserved by the soil, which has absorbed any gas which might be given off.

To show the real value in pounds of poultry-manure, we quote these figures as given after experiments conducted by Woods and Bartlett:—

"An absorbent of sawdust was used to take up any escaping gases, and these figures are the result: A mixture of 30 lb. of hen-manure, 10 lb. of sawdust, 13 lb. of acid phosphate, and 8 lb. of kainit would carry about 0.25 per cent. nitrogen, 4.5 per cent. phosphoric acid, and 0.2 per cent. potash, which, when used at the rate of 2 tons per acre, would furnish 50 lb. of nitrogen, 187 lb. of phosphoric acid, and 80 lb. of potash."

Such a mixture as is quoted by these experimenters shows the farmer that hen-manure in itself is one-sided, so that by mixing some other fertilizers which have a good amount of phosphoric acid and potash in combination, in conjunction with an absorbent, a better result will be given. It is well known that phosphoric acid and kainit will prevent bacterial action in a manure, which would lose the nitrogen-content if they were not present. Thus, by using these elements in conjunction with the loam which is suggested for use in the compost heap, one can easily mix the phosphoric acid and kainit elements in the proportions quoted above, with no disastrous results.

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