

pockets and buckets with nuts; and this makes me wish the entire row of trees were of nut-bearing kinds; for I have not forgotten that I was once a boy myself, and enjoyed and appreciated such "pickings" far more highly than I would now the most elaborate and costly dinner that a Prof. Blot could possibly produce.

The Kerosene and Soap Emulsion.

Prof. Cook, of the Michigan Agricultural College, writes as follows in regard to the mixture of kerosene oil and soapsuds as a safeguard against plant lice and other destructive insects:

"Among the orchard pests of the United States none hold a more prominent place than the plant and bark lice. The rapid increase of the former and the great numbers of the latter make these pests almost innumerable, and that, too, at the very dawn of the season, when the trees and plants are most susceptible to injury. Every farmer knows how slow the young animal—lamb, colt, or calf—is to recover from an early setback in its growth. Young plants, like our corn, are subject to the same law, too. The young first growth in foliage and wood, if blighted, shows in the lessened vigor of plant or tree the season through. The bark lice attack our many shade trees so that they need attention as closely as the orchard. The big-headed borer (*Chrysobothris femorata*) and old apple-tree borer (*Saperda candida*) are also common enemies of the apple trees all through our country, and often destroy whole orchards. The big-headed borer is especially to be feared in young orchards. These insects seem drawn toward trees with enfeebled growth, and so trees just from the nursery or after a severe winter are more frequent victims. Thus the orchardists all through our country may well be on the lookout the present season.

"Fortunately, the same remedy may be applied to all these pests, and thus the apple grower may kill three birds with one stone. This remedy is the kerosene and soap mixture. To make it, first make a strong suds by mixing and heating soap and water to the boiling point. Then stir in while still hot a pint of kerosene to a gallon of the suds. I have used a quart of soft soap to the gallon of water. Hard soap or whale oil soap are equally good. The precise quantity of soap is not material, though I have found it very desirable to have strong suds. I have never found this mixture to injure any kind of foliage, but as foliage varies in power to resist injury, it is always well to exercise caution, and dilute by adding more water in case any injury is done. This mixture should be forced on to the apple trees in a fine spray about three weeks after the blossoms fall. This is about the time the young bark or scale lice are leaving the scale and are most vulnerable. With all the bark lice the application should be made just as the young lice hatch to be most effective. With many species that attack our shade trees this is not till late in June. The eggs of the beetles which develop into borers are laid during June and July in Michigan; South it would be a little earlier, thus the application the first of June would be in season for these insects. I always rub the trunks and main branches with the liquid, and have for the first two or three years after setting the trees made the application twice, once the 1st of June and again the 1st of July.

"In a recent article in one of our leading papers, it is stated that this mixture will not kill the plant lice, unless so strong as to injure the trees. I must beg this writer's pardon, as I have repeatedly used the mixture as described above with entire success and without the least injury to the trees.

"To make the application use may be made of the Fountain pump, or any force pump with a fine nose for a nozzle. The Cyclone nozzle is excellent, as it creates a very fine spray, and thus economizes the liquid. On small plants the Woodason spray bellows is most excellent for the same reason."

This same preparation has been found to be an excellent preservative of melons, squash, and cucumbers against the various insects which infest these plants.

Poultry.

Diseases of Fowls.

It is not pleasant to think of failures and losses and worries of the past. I would go far to see the individual keeping a flock of fifty fowls who has never lost one from disease. It is very easy to keep two or three times that number, if they are in perfect health. It will be seen from the statements made in my previous letters that my profit in some years was very small. Many mistakes were made. All was not fair weather by any means, and, in that time, I became all too familiar with roup in almost all forms, indigestion, cholera, etc. There is no place in which the adage "an ounce of prevention is worth a pound of cure" is more applicable than in the case of poultry. Pains should be taken each day to keep them in health—free from lice, which weaken and reduce the system; free from drafts, by which they catch cold; overcrowding on roosts, thus making the air impure, etc. A really sick bird is a sorry sight, and, unless it be a valuable one, the best remedy is a severe one—decapitation; but a sure one, also, for not one bird, but a whole flock, is to be considered. As most of the diseases are contagious in every case, an ailing fowl should be taken from the flock and put in a separate coop at once; but, if one is ailing, there is a cause, which must be found and remedied, if possible, or more trouble will of course follow. The moulting season is a trying time, as are also the fall and early spring months, when we have sudden changes of weather, often cold winds and rain, for several successive days. So if, as is often the case with Leghorns especially, the fowls are not only late in moulting, but if the feathers nearly all come off at once, leaving the body almost bare, it will be almost impossible to avoid their taking cold. They may seem all right; nothing unusual is noticed, but do not be too sure. Go after they are quiet on their perches and listen. A cough is heard occasionally (I know no better term to use), or some may breathe hoarsely and laboriously, showing that some have taken cold, and, as in human beings, a cold neglected may end in death.

I have often cured fowls so affected by giving to each one a small teaspoonful of composition or capsicum mixed with lard. The remedy may seem severe, but it is a good one. It is also a good thing to put a few drops of aconite in the drinking water for all the flock as a preventive.

Do not consider time lost in watching a flock. Some great trouble may be saved by timely care. I like to see a fowl quick in picking up food, for when one is slow in feeding, occasionally taking a grain and then moping about, something is wrong. One can soon become expert in detecting other symptoms of disease, as ruffled plumage, lustreless eyes, pale comb and wattles, droppings sulphurous, green or watery. It is best in giving medicine first to be quite sure what the disease is before giving the remedies. But in my experience I give a dose of powdered charcoal and sulphur mixed with castor oil or lard, to be safe at all times, and if given at the first symptoms of indigestion will usually effect a cure. If left a week, the bird may be past help.

Undigested food, dry or fluid, is injurious to the crop, stomach and bowels, the contents of

the crop becoming full and watery, or hard and cakey, and if not seasonably attended to the bird will surely die. If full and watery, the only remedy I know, but one not always effectual, is abstinence from drink for several days, feeding light, cooked food. If the crop is hard and cakey—"crop-bound"—the remedy is a simple operation, but it must be carefully performed. Make an opening in the upper part of the crop. First, with a sharp knife, cut the outer skin; then, a little at one side, so as not to have one incision directly over the other, cut the crop itself, and carefully pick out with a smooth flat stick all the contents, even rinsing the crop with tepid water, as it is usually very sour and offensive. Then, with a fine needle and white silk, sew up the outer incision, being careful not to draw the thread too tightly. Afterward feed light food and not much water. Do not fear to do it all, thinking it a difficult thing. The first incision is a great relief, and very soon the bird will eat, whereas, before, it had refused food. We have opened the crop of a chick three months old with success—indeed, have never lost one if seasonably so treated. The cause sometimes is indulgence in too much food, which sours and ferments in the crop. Sometimes it is packed with dry grass, and sometimes by dry, bad food, damaged grain, etc. Never feed mouldy grain or mouldy feed of any kind. It is inhuman and far from economical. A tonic and disinfectant known as the "Douglass mixture" is used by many poultry-keepers. It is made by adding one-half pound copperas and one-half ounce sulphuric acid to one gallon of water. One tablespoonful of this mixture to one gallon of drinking water, given about twice a week regularly, when fowls are in confinement, goes far to keep them in health.—[Mary Moody, in Philadelphia Press.

Give no food to young chicks for the first twenty-four hours. Then feed hard-boiled egg, crumbled fine. After the third day feed oatmeal, bread crumbs soaked in milk, and egg once a day until they are a week old. After the first week give a variety, including meat and green food. One part corn meal, one part middlings, and two parts ground oats, mixed with fresh or sour milk, and seasoned to taste; should be cooked in the shape of bread, and crumbled up for them.

The instinct of a fowl leads it to scratch even in feeding on a heap of whole grain. This causes it to stop long enough to swallow. We give fowls too much at a time, and this causes them to stuff themselves so as to injure their crops if fed dampened meal. A little whole grain scattered among straw will make poultry scratch for what they get and conduce to their healthfulness.

A single rat in the neighborhood of a coop of chicks will gradually carry them all off. As they are very shy, the best plan to adopt is to close the coop in such a manner as to compel the rat to pass across a steel trap over which a piece of muslin is laid. As the muslin will deceive the rat, the probability is that he will spring the trap and be caught.

At a recent sale of Holstein cattle at Troy, Ohio, a herd, including a lot of calves, were sold at an average price of \$226.