

They appear to eat of these foods for a time, then possibly go for a drink, after which they run over the range hunting bits of grass or insects, or sit down in the shade. The method certainly does away with the crowding of chicks at meal time, and the little fellows have plenty of opportunities to get all they want to eat, and usually at almost any time. When the chicks are varied in size, and are in flocks of over 100, the advantages are many.

To the farmer who is busy harvesting, the method is well worth a trial for both old and young stock, as there is not much fear of the birds being neglected as far as feed is concerned. I am not sure that the method would be a success during the winter months, when the birds are not likely to take sufficient exercise.

The farmers whom I know that have tried this method of feeding appear to be well satisfied. I would say, in conclusion, that the method is worth a trial where there is plenty of range for the birds, but it is best to go slow at first, and do not jump at conclusions.

O. A. C., Guelph.

W. R. GRAHAM,
Poultry Manager.

The Mystery of Results.

No matter how long the poultryman may have studied results in breeding, he cannot fail to strike new mysteries as the years go by. He may take a dozen females, all scoring equally high, with a male bird that is the best that money can buy, and the chances are more than even that the progeny will run all the way from the very best to the worst.

There seems neither rhyme nor reason in the results. The trouble lies in the fact that we have not records of the individual breeding of the birds for generations back. Pedigree is just as important in poultry as in other animals. Trap nests and pedigree-breeding will work wonders in the way of results. We must develop our poultry as Booth and Bates developed the Shorthorn. There must be a lifetime of effort in fixing certain definite qualities of true worth before the ideal of perfection can be reached.

Proved Foods for Young Birds.

Experiments with ducklings and chickens at the Maryland Experiment Station, led incidentally to the conclusion that the unfavorable effect of an unsuitable ration is most marked during the first few weeks of the bird's life. Differences tended to disappear as the chicks or ducklings became older. It is essential that young poultry be fed rations made up of foods known to be palatable and healthful. Older birds can utilize to better advantage some more questionable materials.

Never before have we felt so sympathetic for the hen-men. The packers have been found guilty of substituting a bovine Jacob for a white-meated Esau.

The washed egg is not a good keeper. Clean nests are more essential to success in profitable egg production.

GARDEN ORCHARD.

Some Reasons Why Spraying Fails.

Wisconsin Experiment Station Bulletin No. 135 suggests the following reason why spraying potato vines with Bordeaux mixture to prevent blight is not always so successful as it should be:

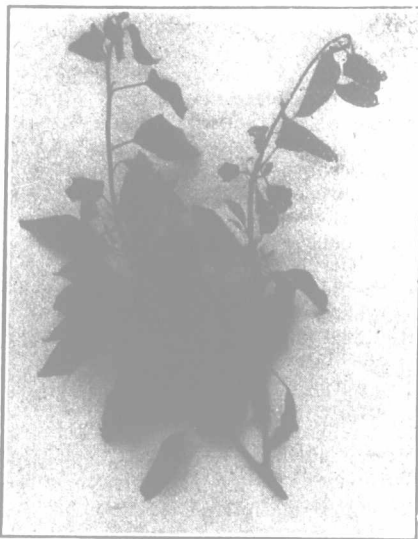
The most common failure is that the spraying is done too late, or at improper times. Many farmers do not start to spray before the disease has made considerable progress, and it is then next to impossible to stop the ravages of the disease. Others spray, regardless of weather conditions. It is necessary, for the best results, to repeat the application should a heavy rain follow immediately, as it will wash off a large portion of the mixture, thus leaving the foliage unprotected, and the next regular application may be applied too late.

The application must be thorough; indifferent work produces indifferent results. All the vines should be covered, even though it requires more time and materials.

The Bordeaux mixture is generally improperly made, and a number of failures can be traced directly to this cause alone. Follow closely the directions given for the making of the Bordeaux mixture. It is just as essential that care should be taken in doing this work as it is in any other operation requiring skill and patience. The materials used must be of the best quality. Lime is especially important in regard to this. The mixture must be fresh and should not sit for any length of time. If these simple directions are followed, the results will be far more successful.

Twig Blight.

In "The Farmer's Advocate" of July 1st, 1903, attention was called to a serious bacterial disease of pear and apple trees, known as twig blight, very prevalent over Western Ontario. This year it is mentioned in the June Fruit Crop report of the Fruit Division, Ottawa, under the sub-heading, "Fungous Diseases," although it is not really a fungus, but a bacterial affection. Though particularly destructive to the pear, it is also troublesome on apple trees. Unfortunately, it favors the best-cared-for orchards. The accompanying illustration was made from a photograph of an affected twig, gathered by a member of "The Farmer's Advocate" staff. The two crosses show the points where the blight begins.



TWIG BLIGHT.

The portion above the cross, on each twig, is visibly affected, the leaves being curled up and brown.

Unfortunately, the coloration cannot be shown clearly in an engraving. The bacterium enters through the blossoms, and perhaps through wounds and insect punctures. Usually the terminal flowers, leaves and twigs are first killed, the diseased plants appearing as if scorched by fire. The bark becomes black or brown, and the inner bark and cambium are destroyed. The disease progresses backward into the branches, so that in time the entire tree may be killed. The disease is conspicuous by reason of the bunches of dead leaves appearing here and there among the green foliage. It is believed by some that bees are the unconscious agents of infection of the blossoms, as they have been seen to feed on the drops of a gummy excretion containing multitudes of bacteria which ooze from ruptures in affected twigs, and then to visit soon afterwards the blossoms.

Treatment consists in cutting off and burning affected twigs and branches whenever they appear. Cut six inches below the diseased part, for a few bacteria may be in what still appears sound wood, and these will continue to increase and do their work, and in a short time the blight will be showing again. Spraying is of no use to prevent or cure twig blight. Harrison, in his bulletin, "Some Bacterial Diseases of Plants," makes the following suggestions about time and manner of removing blighted twigs:

Cutting of affected parts may be done at any time in the winter and spring. In the growing season fresh cases may be constantly occurring, which, owing to lack of sufficient development, would not be seen.

The best time for cutting out affected branches is towards the fall, or when the trees have stopped forming new wood, when most of the blight has developed, and when the contrast between the discolored leaves and branches and healthy tissues is easily seen.

Trees should be carefully inspected for blight during the winter, and in the spring, before the blossoms come out, in order to destroy any affected parts that may have been missed at previous inspection.

All trees of the pome family in the vicinity should be examined as well, as these, if blighted, may serve to re-infect an orchard which has been carefully treated.

In cases where the bark of the trunk is affected, it can be cut out, and the wound covered with a disinfectant. The cut surface of the trunk should be about half an inch in diameter should also be treated.

Small Fruit Variety Tests in New York.

Our fruit-growing readers will be interested in the following synopsis of the results of some variety tests of small fruits, made at the New York Agricultural Experiment Station, Geneva, and extending over many years. The author recognizes the limits of variety testing, and cautions readers against accepting the results on the heavy soil of the Station as final. "The Farmer's Advocate" commends to its readers the results of our own Experiment Stations, but it never does harm to be posted on the results of outside experiments as well. Among the strawberries especially noticed are: Cardinal, many good qualities; Ernie, valuable, if not subject to leaf blight; Fairfield, valuable only on account of earliness; Joe and Mead should be planted closer than most varieties; Mark Hanna, most productive, but low in quality; President, of large size, an excellent show berry, but deficient in quality; Glen Mary, Kansas, Marshall, Ridgeway, Rough Rider and Senator Dunlap, standard commercial kinds.

Among red raspberries: Bradley No. 1 and Brilliant have not been fully tested, but appear to be of doubtful value; Cline, valuable only because early, fruit being small, and plants unproductive; Cuthbert, still the most popular variety throughout the State; Herbert, good record, and worthy of testing; King and Royal Church, inclined to crumble; Loudon, desirable, but varies in growth of cane; Marlboro, canes dwarf, but very productive; Pomona, unproductive on some soils; Turner, an old variety, hardy and productive, but fruit averages small. Purple raspberries are superior for canning. Columbian and Shaffer both desirable kinds; Haymaker, productive, not fully tested, but appears hardy, equal to Columbian and Shaffer. Black raspberries of note are: Black Diamond, variable, worthless on some soils; Cumberland, Gregg, Mills and Onondaga, produce fruit of excellent size and color; Eureka, Mohler and Palmer, desirable early kinds; Ohio, less grown than formerly, an evaporating berry. Blackberries winter-kill badly, but best of hardy kinds are Agawam and Ancient Briton, producing large crops of medium-sized or large berries; Chautauqua and Florence, new and promising; Eldorado, Mersereau and New Rochelle, fruit of large size; Snyder, most cosmopolitan of all varieties, fruit small, but canes hardy and productive.

Further Experiments on Potato Spraying.

Again the subject of potato-spraying is brought to the front by a bulletin from the Experiment Station (Geneva), No. 279, recording the results of seventy distinct experiments, and showing forcibly the value of a good coat of Bordeaux mixture on potato foliage.

In the fourth year of the ten-year test at Geneva, three applications of Bordeaux increased the yield at the rate of 107 bushels per acre, and five applications 119½ bushels. At Riverhead, the corresponding gains were 31 1-3 bushels and 82 bushels, respectively.

In thirteen experiments conducted by farmers under Station supervision, spraying increased the yield on 166 2-3 acres 7,750 bushels, at a cost of \$708; and in fifty other farmers' experiments, not under Station supervision, the average gain on 407 acres was 59½ bushels per acre.

In other tests at the Station, the regular lime-Bordeaux mixture was found superior to the soda-Bordeaux, and was also proven the best medium for carrying insecticides, either Paris green or arsenite of soda. No injury resulted from the use of two pounds of Paris green or one quart of arsenite of soda stock solution to the acre, with Bordeaux.

Bordeaux mixture made with very cold water produced no unfavorable effect on potato plants.

APIARY.

Don't Barrel Honey Direct from the Extractor.

Barreling up extracted honey, as some advise, right from the extractor, is something I cannot endorse. If one is very careful it might do; but with some careless honey-producers it is liable to do much harm. Even if of good quality when extracted there will be a little scum rising to the top after a few days. This, if left in the barrels, gives it a bad appearance, and many times hurts its sale. Then if there should be a little thin honey in the barrel, this will also rise to the top, and have a tendency to ferment. Here is one of the reasons why we have always used large storage tanks. With them, whatever rises to the top can easily be skimmed off; and in drawing off from the bottom of our tanks we get only the thick pure honey of the finest quality. We are sure that giving this part of the business special attention, as we do, has much bearing on the ready sale we find for all we can produce. If you expect to make beekeeping a success, you must look close to all these things. Don't be afraid to give a dollar's worth of good honey for every dollar you