

till all the arsenic is dissolved, then add 2 lbs. stone lime and let slake in boiling liquid. Add water to make up for what has evaporated. One quart of this when well stirred is sufficient for 40 gals. spray liquid. Arsenite of lime can be made in large quantities and stored. Label barrel "poison", and be careful to keep white arsenic itself labelled "poison." Keep barrel covered to prevent evaporation. Stir well before using.

N. B.—With Bordeaux, 1, 2 or 3, may be used; with commercial lime-sulphur only 1; the others cause burning.

4.—WHITE HELLEBORE—One oz. to 2 gals. water, or dust undiluted over the plants. For root maggot dust close to plants, or pour round roots.

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II.—CONTACT POISONS (chiefly for sucking insects).

1. KEROSENE EMULSION—

Kerosene (Coal Oil)	2 gals.
Rain water	1 gal.
Soap	$\frac{1}{2}$ lb.

Dissolve the soap in water by slicing and boiling; take from fire, and while hot pour in kerosene and churn vigorously for five minutes. For use dilute with 9 parts of water, so that the above 3 gals. of stock emulsion will make 30 gals. of spray mixture.

2.—WHALE OIL SOAP.—For brown or black aphids, 1 lb. in 4 gals. For green aphids, thrip and leaf-hopper, 1 lb. in 6 gals.

3.—TOBACCO WATER.—Steep 1 lb. refuse tobacco in 1 or 2 gals. of water for 1 hour, make up for water that evaporates.

4.—Black leaf 40 sold by Tobacco Product Co., Louisville, Kentucky. Directions on the cans.

5.—PYRETHRUM (or insect powder).

Pyrethrum Powder 1 oz.
Water 2 gals
Dry mixture. Mix thoroughly 1 part by

weight of pyrethrum with 4 of cheap flour, and keep in air-tight vessel for 24 hours before dusting over plants.

Note : Pyrethrum is useless if left exposed to the air.

6. LIME SULPHUR WASH.

(See under fungicides.)

THE APIARY.

Co-operation, Past and Future.

Editor "The Farmer's Advocate":

Some few years ago an effort was made to form a co-operative association for the purpose of purchasing apiarian supplies and disposing of its products. This was seized upon with much confidence by many of Ontario's progressive beekeepers, but for some reason was duly blasted with disappointment.

With disappointment. At the last annual meeting of the Ontario Beekeepers' Association the subject was opened again by some of those who believed that the beekeeper was not getting his own. Speaking generally, the new movement was supported by the younger beekeepers and discouraged by the more experienced. It failed. Each year the Provincial Association appoints a crop committee whose duties are to measure crop prospects and recommend wholesale and retail prices which the apiarist should receive for his honey. The work of this committee has been well done in the past. There is but little doubt that their suggestions have been helpful in making a more uniform and higher price for honey for the beekeeper. The price has been more in sympathy with the price paid by the consumer. But we have said all that can be said of its accomplishments. It could recommend prices, but it was left to the individual to secure or fail to secure the recommended prices. Very frequently he failed to get the price, and his product was left on his hands. Much of last year's crop is still on his hands, and at the mercy of the wholesaler.

Let us briefly review and summarize the causes of these failures. The crop committee failed to get the price recommended, because the beekeepers co-operated in recommending the price, but refused to co-operate in securing the price. The co-operative efforts of the beekeepers failed because of: First, the difficulty of financing the movement; second, the difficulty of retaining the loyalty of the members, and eliminating the selfishness of the individual; third, the want of sympathy between the apiarist and the consumer of his products; fourth, the difficulty of grading; fifth, the old beekeeper hesitated in putting his reputation, the result of years of honest and patient development, in the melting pot with that of the inexperienced beekeeper; sixth, the encouragement to beginners in the face of an already over produced market.

At the present time there is no co-operative company or association among the beekeepers of Canada for disposing of their products. The time is ripe for some such accomplishment. There is no product which lends itself so readily as honey to this end. It is non-perishable, and can be

graded and packed ready for the consumer by the beekeeper better than by any other person.

The grain growers of the West are the persons destined to eat the surplus honey crop of Ontario and Eastern Canada. At their late rate of increase the market expands much faster than the supply increases. They are the most thoroughly organized agricultural body on the continent. The Ontario beekeeper sells his honey for from 8 cents to 11 cents per lb. The grain grower pays from 20 cents to 25 cents per lb. The beekeeper should have from 12 cents to 13 cents per lb., and the grain grower is so anxious to get it at this price that he is prepared to lend his vast organization to this end. When this common good is accomplished the consumption will be doubled and trebled independent of increased population. People will eat more honey at 15 cents than at 25 cents per lb. When this is done the beekeeper will worry about where he can get more money instead of about where he can market the present crop.

A co-operative company is being formed by the interested beekeepers of Elgin County, Ont., to meet the demand of markets. It will be capitalized at \$2,000, divided into shares of \$10 each, one-half cash and one-half on call. The Association will charge ten per cent. commission for all sales. Each member may hold as few or as many shares as he wishes, and the profits will be divided at the end of each year among the shareholders.

It was estimated by the persons who formulated this company that there were two thousand colonies of bees in Elgin County. It will be noticed that if a member with one hundred colonies should take ten shares and sell his honey through the company his sale commissions would be returned on stock profit less the actual cost of running the company. If he subscribes for fewer than ten shares he would be paying an undue profit to the other shareholders. This arrangement of stock and sale commission is meant to encourage each person to assume his share of financial responsibility.

You may hear of the success or failure of this venture one year hence.

BLAKE MILLER.

Introducing Queens.

Editor "The Farmer's Advocate":

The cage and candy method of introducing new queens, is probably the method that has been used most, in the past, especially by beginners. From my experience in using this plan, I find that a good deal depends on the time that the new queen is introduced; also, the kind of bees that are to receive her. During a honey-flow, or if bees are being fed, so that they will be gorged with honey when the new queen is liberated, there is not much danger of her being destroyed. But if the bees have started queen-cells, they should be destroyed by the apiarist, as otherwise they may allow these to mature, with the laying queen in the hive, in which case they may cast a swarm with the new queen. If a virgin is allowed to hatch, chances are that the virgin will kill the laying queen; and if this should happen late in the season, a drone-laying queen would be the result the following spring, unless the change of queens was noticed by the apiarist and these conditions remedied. The safest way to use the cage plan of introduction, is to take a couple of frames of sealed brood with adhering bees from the colony that we wish to requeen, and form a nucleus along side of it. In twenty-four hours or less, all the old bees will have returned to the parent hive, and the young bees will accept a laying queen.

I usually clip my queen, before introducing, and in this case, she can be allowed to run out among the bees. If the bees seem disposed to ill-treat her, a little smoke will scatter them, so she can be picked up and re-caged. However, it is very seldom that they show any hostility towards the queen, as they know that they are hopeless when queenless. After the queen has been laying for a couple of days, the old queen can be hunted up and killed, and the new queen can be introduced by transferring the two frames of brood-bees, and queen back to their own hive. This should be done in a way so as to disturb the bees as little as possible.

The smoke plan of introducing queens seems to be meeting with general favor, and while I do not consider it always certain in good results; it is so far ahead of the cage method, that I contemplate using it almost exclusively in my own yard another season. The way I work the smoke plan is this: at any time through the day I hunt up any queens I wish to replace and kill them; then in the evening I contract the entrance to half inch by four inch—get the smoker going so that the smoke will come from it in clouds, a small quantity of leaf tobacco mixed with planer shavings or greasy waste makes good material, three or four strong puffs of smoke are blown into the entrance and the queen is run in, and a couple more puffs are given and the entrance closed for about ten minutes. After which time, the entrance should be opened about one-half inch

in width, the bees will be so busy ventilating the hive and restoring the general order of things that they don't seem to notice the new queen. There is more danger of the queen being balled two or three days later. This fact can be ascertained by quietly raising the front of the hive early in the morning and glancing at the bottom of the combs and bottom board. If a small ball of bees is seen on the bottom board, it is a safe guess that the queen is inside the ball. An examination of this kind should be made without jarring the hive and without smoke.

Virgin queens are harder to introduce than a laying queen, and I know only one plan that has always proved safe in my experience, and that plan is this: place as many frames of brood in top stories over excluders. In nine days this brood will be all sealed over. This work should be planned ahead, so as not to interfere with our plans later. Now let us suppose that we have a batch of virgins, four or five days old which we consider too old to be introduced by any ordinary method. We will take one frame of the sealed brood with adhering bees from over the excluder and place it in a hive. For convenience a few hives should be specially made with one or two bee-tight division boards, forming two or three compartments. One inch auger holes should be made at each side for the side apartments and one at each end for the middle divisions. Having placed our brood and bees into as many divisions as we have queens to introduce, we will add a frame of unsealed honey or sugar-syrup. Fix the hive quilts in such a way that each apartment will be kept strictly separate. These nuclei should be formed sometime in the forenoon and their entrances plugged with grass, then set aside in the shade till evening after which they should be placed on their permanent stand, the grass should then be removed from the entrances and the virgins allowed to run in from the cage, using a little smoke. This plan calls for an unusual amount of work, but it will more than repay the apiarist in so much as he will not have to figure on the loss of queens.

In trying any new experiments, I would advise beekeepers to practice on old queens or ones that are of little value. In this way, the apiarist may gain valuable information for future use at a small cost. In handling valuable queens for which a man has paid his hard-earned cash, it pays to take extra precautions, and I think the plans I have outlined in this article will meet all requirements where they are followed in detail.

Prescott Co., Ontario.

JOHN A. McKINNON.

FARM BULLETIN.

Our Real Rulers.

By Peter McArthur.

At the present time the three political parties—but wait a minute. I haven't explained why I speak of three political parties. Most people think that there are only two but that is a mistake. There are three parties and at the present time they are all visible to the naked eye. As it is now constituted our government like "All Gaul" in the Latin reader of our school days "is divided into three parts." We have a Minority, a Majority and The Authority. And of these three the last, The Authority, is the only one worth watching by anyone who is interested in the course of political events. The Authority is made up of the railways, banks and big corporations of the country and its gall is not divided into any parts. As a matter of fact, it has more gall than a Government mule. The Authority, like the mule is now feeding openly at the public crib and laying back its ears and threatening to kick anyone who interferes with it. The trouble seems to be that several of the corporations that make up The Authority have not wintered well. The Steel Industry, and the Canadian Northern Railway seem to be "on the lift" again this spring and they need a big feed of "Long Green" to put them on their feet. The situation is interesting and illuminative, but it is not nearly so funny as I am making it appear. As a matter of fact, it is deadly serious for the credit of the country and the rights of the people are at stake. The time has come for the supporters of the Minority and the Majority—the Liberals and the Conservatives—to take a good look at The Authority and make up their minds whether they are going to endure its exactions any longer. At the present time, the most flourishing industry in Canada is that of making millionaires—and paupers. But it is time to call a halt. With one group of men having the power to raise money by pledging the credit of the country abroad and other groups having access to the accumulated savings of the people in the banks, a situation has been developed that is rapidly becoming intolerable. The credit and the wealth of the country are now in the hands of a few men, the rate of interest is going up, and we