

pounds wanted must be in 4½ in. by 4½ in. sections. That spoke well for the popularity of that size. Others favored a taller section.

DISEASES OF BEES.

Address by N. E. France, Foul Brood Inspector for Wisconsin, and the greatest authority on the subject in the United States:

This subject is one that underlies success in New York State. If the bees are diseased, pasture and all other factors count for nothing. The three main diseases are foul brood, black brood, and pickled brood. The two first are somewhat similar, but easily distinguishable. The latter is quite different, and seems to be caused largely by conditions of the season. Last season conditions were so favorable that 80% of the apiaries he inspected had the disease, and it was often as bad as foul brood.

There is a marked difference in symptoms between foul brood and pickled brood. The foul brood disease begins first in the feed of the larva, and in no other way is the disease transmitted. The first effect is in the circulation. The little bee, which is then only a little white grub, becomes restless, moves in agony, then straightens out and lies on its back lengthwise of the cell. It continues to grow, but the disease grows faster. The head turns black, and the tongue is thrown out and often sticks fast to the side wall opposite. If so, it never lets go. When the larva dies and dries down the tongue sticks there, and keeps the head turned up. The ropiness then appears and the odor. Then the larva dries down about where the shoulder of the bee would be, a brown scale glued fast to the cell.

Pickled brood will turn brown the same way, but the head of the bee becomes as hard as a stone and nearly black, and instead of the lower portion of the larva flattening out it becomes like a sack or bag. The bee can be easily drawn out of the cell, and the abdomen is found to be distended with a watery fluid never ropy or odorous. I do not know what causes pickled brood, but it seems to be a shortage of food and heat at the proper time. It is not a contagious disease, and can be prevented by feeding when needed and giving warm covering to hives.

Black brood is a disease similar to foul brood, and is very much dreaded in that State.

Getting Started with Bees.

By J. J. Gunn, Goror.

Among those who have begun the new year with resolutions to be better and to do better during the next twelve months, there are some, it would appear, who have decided to make their homes more cheerful and more interesting for the young folks growing up there, and, incidentally, provide an additional way to put money in their purse, by placing a few hives of bees in their dooryards. That this is the case, some enquiries already received go to show. These enquiries also go to show that not all who have made this commendable resolve have a knowledge of bee-keeping, or even know how to begin. They are timely, however, and besides replying privately it seems to me that some discussion of the points raised, through the columns of the "Advocate," could not fail to be of benefit to many others.

HOW TO START, AND WHERE TO LOCATE.

"Start small" is good advice to anyone who requires to be advised, and starting in that way it is safe, with certain precautions, to start wherever you may be.

The person who has kept bees before and knows all about their habits and requirements will also know where to locate and how to start, and does not need advice; and this is not for such. I have said "start wherever you may be." Yes, in city, town or country, it would be hard to find a spot where a few hives of bees would not pay well, and in more ways than mere money value, for the room and the care required. In this way one gets a knowledge of the subject, such as can only be gained by experience, without subjecting himself to the risk of a heavy loss in case of failure. He also gets a knowledge of the capabilities of his neighborhood for honey production, and can confine his stock to one colony or increase it to a hundred, as experience warrants. Of course, there are stretches of prairie so bleak and bare that bees cannot be expected to be commercially profitable there; but even in such places, if the homes are being improved as to appearance and comfort by the planting of shelter belts and shade trees, as they should be, there is no reason why those homes should lack the cheerful and companionable hum of bees about the door, or their wholesome and delicious product on the table.

Shelter from north and west winds can easily be provided for a few hives by trees and shrubs, or even a close board fence, and also some shade from the meridian sun. These are necessary, and if provided the little workers are sure to give a good account of themselves; though it is not to be expected that even then such results can be obtained as in localities where bush is plentiful. Here the honey-bearing flora is more abundant, and, apparently, more rich in nectar, owing, no

doubt, to the better conservation of moisture in the soil of such localities. Such situations, too, afford the bees great advantages in windy weather. There are many days when bees cannot work on the open prairie on account of high winds, but yet can forage quite successfully in the bush.

Now, to return to the point of starting: One should at once procure such a book as the "A B C of Bee-culture," and read it up during the winter evenings. This will assist one greatly in consulting it when the occasion arises—as it certainly shall pretty often.

If the start is made with one colony, this might easily be increased to five or six, or even to ten, during the first season, if so desired, but



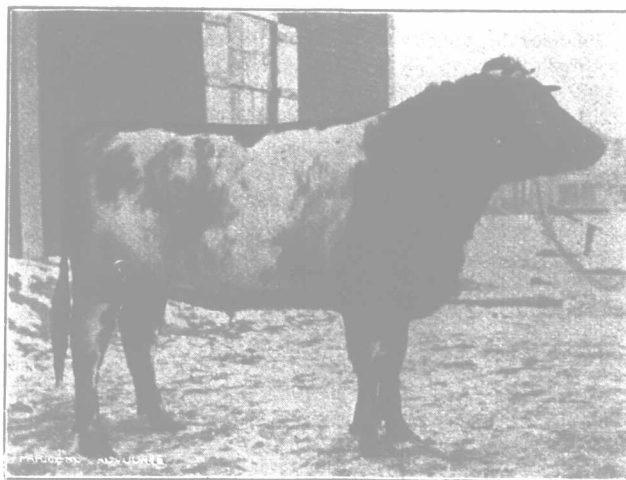
Seth Jones, of Sussex, N. B.

Winner of the silver cup donated by the Canadian Barred Rock Club, for the largest and best exhibit of Plymouth Rocks from the Province of New Brunswick at the Maritime Winter Fair.

it would be a risky thing for a beginner to undertake, and one very apt to result in loss. On the other hand, by providing lots of room it might be kept from swarming altogether, and a yield of honey procured which would pay not only for the bees but go a good way towards paying for the small outfit necessary for such a start. The best way of all, and perhaps the most convenient, would be to allow it to swarm once. This would increase the beginner's range of experience and his stock as well, without to any great extent lessening his honey harvest.

WHAT IS NECESSARY FOR A START.

Starting with one colony, at least two spare hives, complete with frames and comb foundation, should be provided. If extracted honey only is to be the object, a complete hive will mean a hive of two equal-sized bodies, with movable bot-



Shorthorn Steer, Gracie.

Owned by Harold Vernon, of Minudie, N. S. Winner of the \$50 cup donated by G. H. Giles, of Fredericton, N. B., for the best beef animal under two years old exhibited at the Maritime Winter Fair, also the \$25 special donated by Frost & Wood, and the \$20 sweepstakes given by Rhodes, Curvey & Co., Amherst, N. S.

toms, so that one may be set on top of the other and both accommodate the same size of frames. If comb honey is to be sought, half-stories, or "supers," with their necessary complement of sections, section holders and separators should be provided. In this case a complete hive will mean one full-sized body or brood chamber, and at least two supers. For extracting, of course an extractor is needed, and a knife for cutting the cappings off the combs. A veil, gloves, and a good smoker are also things that beginners ought to have, though with experience these are liable to fall into disuse.

POULTRY.

"The Chicken Mite."

One of the most formidable enemies of the poultryman is the chicken mite. Chickens infested with these parasites are exceedingly unprofitable. The cost of keeping is increased, and the revenue from them is greatly reduced; in fact, when badly infested, they are totally incapacitated for performing work. During the past season I found that from a part of my flock the egg production was greatly reduced, and in a few cases, entirely prevented during the spring and summer, when under favorable circumstances it should have been at its best. Hatching hens will often die on the nest or leave before the hatch comes off as the result of the mite infection. In one particular case, where a hen died on the nest, I thoroughly examined her and could find no trouble which would account for death, other than the fact that she was very pale in the comb and wattles, caused by an impoverished condition of the blood, such as would be produced by the sucking of the blood by the mites. Another important feature of the evil effect of mites is the almost fatal injury they do to young chicks. Should the hen survive the ordeal to which she is subjected during hatching, the young chicks are attacked by the mites as soon as they leave the protection of the shell, and, as a rule, a large percentage of them either die or are of comparatively little use. Chickens will become reduced in flesh and lose the energy for hunting and scratching which is so necessary for their welfare. The main peculiarity of these parasites is that most frequently they remain on a fowl only long enough to secure a good meal. During the day they hide in the crevices and nests, and under objects in the henhouse while the chickens are outside, and lie in wait for their return to the perch or nest. They lay their eggs, and the young are hatched on the walls and in the crevices, or wherever they can find a hiding-place. The best and most effective remedy I have yet found to exterminate these pests is the use of kerosene emulsion, made and applied as follows: Take one-half pound of hard soap and dissolve into a gallon of soft water; put on fire and bring to boil. Remove the solution from fire and stir into it while hot two gallons of kerosene. This makes a thick, creamy emulsion, which is made ready for use by diluting with ten times as much soft water, or about thirty gallons, and stir well. This can be placed in a barrel and used with splendid effect by a spray-pump. The spray should be directed with special care into all crevices, holes, joints, or other hiding places of the mites. The first spraying will kill within five minutes all of the mites and eggs with which it comes in contact, but many mites will be left in places where the spray has not reached, hence the operation should be repeated as soon as the first is completed. Three sprayings should be done in one day, and in rapid succession, which will nearly always rid your poultry-house of mites, but a constant watch must be kept and the spraying repeated when mites are seen at any subsequent time. E. W. B.

The Farmer's Poultry House.

A writer, in a recent issue of the Reliable Poultry Journal, describes his ideal of a poultry-house for thirty hens, put up at a cost of about \$30, and requiring 700 feet of inch boards and 200 feet of 2 x 4 studding. For thirty pullets, he says, you want a house of just 12 x 16 feet, no larger. That gives every hen an area of six square feet in which to live and move, and have her being—and scratch. Make the house four feet high at the rear, and six feet high at the front, with a joint in the roof near the front. It should be airtight everywhere, except in front. The hens at night will be as far back as possible on their perches at the rear of the house. You may have the entire front open wire-work from May 1st to November 1st, if you wish, but the back must be absolutely tight, so there can be no drafts of air on the backs of the hens or under them. Have at least the front boards planed so as to be painted. The dropping boards should be the smoothest of flooring, so they can be made both smooth and tight. All other siding may be hemlock boards, and, generally, they cost no more if surfaced on one side. Put the smooth side in. It looks better, for you must cover the roof, ends and back with three-ply tarred paper. This must be carefully put on. Coat it with tar twice the first year, once every year after that.

The hens at night are on their perches in the rear of the building, the roof, siding and droppings-board being absolutely tight. They have no drafts of air, and they have but a small volume of air about them to be heated by their bodies. In crowded quarters like this, it is, of course, of great importance to give to the fowls the required exercise. Every hen should scratch thoroughly over her six square feet of space every morning for her breakfast. If she does this, she does enough. Grain scattered through the litter (leaves, straw, etc.) covering the floor of the house will be a never-failing inducement.