

## The Apiary.

### Successful Bee-Keeping.

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To be successful the apiarist must have a simple, movable frame hive of some kind, and for box honey the brood chamber should not contain over 1,550 cubic inches inside the frames. All know that bees gather honey, and that eggs laid by the queen produce bees; consequently the more eggs the queen lays, the more bees we get; and the more bees we have, the more honey they gather. In fact the queen is, indirectly, the producer of the honey; therefore, if we wish good returns, we must see to it that we have good prolific queens, and that they fill the combs with brood before the honey-season commences, so that when honey-harvest comes the bees will be obliged to place the honey in the boxes, as there will be no other place for them to store it.

But how shall we secure combs full of brood and plenty of bees to carry on the labors of the hive by the time the honey-harvest begins? As soon as spring opens our bees should all be examined by lifting out the frames of each hive, and if the stocks are weak the bees are shut to one side of the hive by means of a division-board, so as to keep up the necessary heat for brood-rearing, on as many combs as they can cover.

As soon as the queen has filled these combs with eggs we spread them apart, inserting an empty comb between those occupied with brood, and in a few days' time the queen will fill this one also; and so we keep on until every available cell is filled with brood. Thus it will be seen that, instead of the queen laying her eggs on the outside of the cluster, she lays them in the centre of the brood-nest, where they should be. After the hive is full of brood and bees it does not make so much difference if the weather is warm and bees are plentiful, so that the queen may deposit her eggs anywhere in the hive.

### The Reason why Bees Work in the Dark.

A life-time might be spent in investigating the mysteries hidden in a bee-hive, and still half the secrets would be undiscovered. The formation of the cell has long been a celebrated problem for the mathematician, whilst the changes which the honey undergoes offer at least an equal interest to the chemist. Every one knows what honey fresh from comb is like. It is a clear yellow syrup, without a trace of solid sugar in it. Upon straining, however, it gradually assumes a crystalline appearance—it candies, as the saying is, and ultimately becomes a solid lump of sugar. It has not been suspected that this change was due to a photographic action; that the same agent which alters the molecular arrangement of the iodine of silver on the excited collodian plate, and determines the formation of camphor and iodine crystals in a bottle, causes the syrup honey to assume a crystalline form. This, however, is the case. M. Scheibler has enclosed honey in stoppered flasks, some of which he has kept in perfect darkness; while others have been exposed to the light. The invariable results have been that the sunned portion rapidly crystallized, while that kept in the dark has remained perfectly liquid. We now see why bees work in perfect darkness, and why they are so careful to obscure the glass windows which are sometimes placed in their hives. The existence of their young depends on the liquidity of saccharine food presented to them; and if light were allowed access to the syrup it would gradually acquire a more or less solid consistency; it would seal up the cells, and in all probability prove fatal to the inmates of the hive.

## CLEANINGS.

The ravages of the Cut Worm seem to have been unusually severe the past season in many localities. Quite a number of our readers write that these worms have cut off the corn badly, in some cases compelling a second, and even a third planting, and remedies or preventives are asked for. The usual devices employed in gardens and small patches, such as hand-picking, paper funnels, etc., are not applicable, of course, to large corn fields. A wholesale method must be employed here, if any. The best we know of is salt and lime—two parts salt to one of lime—applying a handful to the hill after planting. Salt alone has been found efficacious when used the same way. We frequently see it recommended to soak seed corn in various solutions to prevent the ravages of this worm, but this will have no effect whatever, as the worm does not work on the seed, but on the young plant after it has pushed through the surface of the soil. A judicious application of lime and salt to the land, previous to planting corn, is also recommended, and we have known this to be very effectual in ridding land of this pest.—[Ohio Farmer.

At a recent meeting of the Dairy Committee in Chicago Mr. Dexter asked Prof. Piper if it was possible, under any condition whatever, to develop living organisms in fresh butter such as he had found in oleo under the microscope. The Professor replied that it was not. Scientists held that nothing exists except from eggs. You consider it demonstrated, then, said Mr. Dexter, that oleomargarine in its best state, made from the fat of perfect animals, will exhibit living organisms? As to oleomargarine from perfect animals, that would be a difficult question to decide, said the Professor. In the examinations I have made, extending over six months, I have never found a specimen which, on being treated with boiling water, and washed with ether to get out the fat, did not reveal very active living organisms.

"G. W. W." giving his experience on cows feeding and breeding says to the average farmer:—"Do not rush off to purchase an extra cow or a thoroughbred animal; but rather rush to the cow stable and see what is being done there. Learn first the art of feeding, by practical experiment, and by so doing you will learn the animals you now have. You may be surprised to find what great milkers you have. You may be surprised to learn how some of your cows will take on flesh while giving a little poor milk. Test every cow's milk; you may be surprised to learn how much butter some cows will make from a small quantity of milk. Should you find you had no good milkers, buy a thoroughbred bull, if the pedigree is right. If you make butter exclusively, have a pedigree for butter; if cheese, a pedigree for cheese; if beef is your object, a beef pedigree. But if the pedigree is for blood only, don't buy."

A well-drained soil is seldom injured by too copious a supply of water, but one that is imperfectly drained may easily be made in a quagmire. Good drainage, therefore, should be the first thing provided for. The only soils which do not require draining are those which do not overlay sandy or gravelly beds.—[P. E. B., in F. G. A. Report.

Canada is not the only British colony that stringently prohibits the importation of diseased stock. The Australian Government has issued orders that sixty days' notice must be given of all intended importations of live-stock into that country, and all animals are subjected to a rigid quarantine of ninety days after arrival; and if any disease has appeared among the shipment the entire lot must be slaughtered on landing.

The outbreak of pleur-pneumonia at Liverpool is by far the most important event of the week. There is no doubt whatever of the identity of the disease with contagious lung disease, of which we have had such disastrous experience here. It is anticipated that the importation of cattle from Canada will not be affected, as there has been a very efficient quarantine in force in that country.—[Agr. Gazette.

## Experience with Seed Potatoes.

As potatoes have some years been quite scarce and dear, I have planted small ones, and the result convinced me that all the widely varied experience in the matter reported by different farmers was owing more to other circumstances than to the size of the seed. And now when a farmer tells me that his crop from small potatoes grew and yielded best, I almost invariably find that when he planted it was a very hot, dry time, generally rather late in the season; also that his large potatoes, cut a few days before planting, had dried up more or less, and were put into dry ground, and if dry weather continued there would not be vitality enough left in the cut seed to overcome all these adverse conditions, but the growth would be materially checked for the season; while the small seed, not being cut, retained its moisture, and the warm soil favored speedy germination and growth, so that the crop from small seed proved better than from the cut. But my observation has been that when all the conditions for both are equally favorable, the cut seed from large potatoes yields 8 to 10 per cent. better than small ones planted whole. Again, one will plant small potatoes too thick and too many in a hill, thinking they are so small and cheap he will use enough of them, while his neighbor, judging more correctly on the growth they will make, will plant them as far apart as he usually does better seed of the same variety, and put only one potato in a hill. The result will be the latter will have a fair yield of fair-sized potatoes, with perhaps twice as many little ones as from large seed, while the first only gets a lighter yield of nearly all small potatoes. So the product in either case would seem to be largely dependent on management. I believe it will answer occasionally to plant small potatoes for a crop; but when I do it I am particular to get such as were well ripened, and only use the largest of those too small to cut; mark the part of the field they are planted in, and be sure at digging time that their product is all sent to market, and that the seed for next year is saved from where the best seed was planted, and on those matured the best.—[Henry Ives, Genesee Co., N. Y.

## Fowls in Orchards.

Last fall we visited an orchard in which fowl were kept, the owner of which told us that before the fowls were confined in it, the trees made little or no growth, and only a corresponding amount of fruit was obtained. But what a change was evident now. The grass was kept down, the weeds killed, and the trees presented an appearance of thrift which the most enthusiastic horticulturist could not but admire and envy. The growth of the trees was most vigorous, and the foliage remarkably luxuriant; the fruit was abundant, of large size, and free from worms and other imperfections. The excellence was accounted for by the proprietor, who remarked that the "hens ate all the worms and curculio in their reach, even the canker worm." He found less trouble with their roosting in trees than he expected, and that a picket fence six feet high kept them within bounds. His orchard was divided into three sections, and the fowls were changed from one to another, as the condition of the fowls or the orchard sections seemed to require.—[Planter and Grange.

CHEAP PAINT.—"Take a barrel, put in a peck of unslaked lime, a pail of boiling water, cover tightly and let stand two minutes; then add four quarts of gas tar and let stand two minutes longer. If the tar is thoroughly warmed put in more boiling water and stir thoroughly till the mixture is about as thick as paint; add four quarts of fine salt and the paint is ready. Take four or five quarts of this in about the same quantity of water, or what is better, skim-milk, and apply two coats to fences and posts. The color will be a light lead, but it can be made any color desired."

THE NEW YORK *Graphic* of a late date says: "Some scientific tests which have been in progress for several months by one of the most distinguished professors of agricultural chemistry in the country, have developed rather a startling fact that the sprouting qualities of last year's crop of No. 2 spring wheat, have been seriously damaged, owing to the excessive heat which prevailed just before the harvest of last year in various parts of the West, notably Minnesota.