

gregate in a cellar or cup before they can make any connection with those in the brood chamber, and then they have to travel through an enclosed passage way, which entirely separates them from the bees which are in the upper or lower stories.

When the bees in the upper story find themselves shut off from the queen and brood, their whole energies are bent on getting back to where the queen and brood are. The more completely they are shut off from those in the lower hive, the greater will be their effort to get to the other bees; while, on the other hand, if the connection between them is not so complete, they will be more tardy in leaving the super, thus taking a longer time to clear the super of bees. I have often put on a Porter Escape and had every bee out of the super in three hours, while nearly all the other kinds that I have tried would take fully double the time to get the bees out. In using bee-escapes care should be taken to avoid leaving them on the hives too long, as the bees, when crowded into the lower story seem to take a delight in chinking in pieces of comb between the tops of frames and the escape-board; of course, if more than bee-space is allowed between tops of frames and escape-board, it makes things worse; but they seem to have a great desire to do so even when the right bee-space is left between them. Now, just imagine, if you can, the ease and comfort there is in going to a hive and removing the whole of the top story with scarcely a bee in it to bother you, to what it was when we had to lift the combs out one by one and brush off the bees and place them in the comb bucket. Now you have only to lift off the top story and place it on the barrow and wheel it in to extract. No bees in the way to bother a person, and I believe one can take off and extract fully double the quantity of combs as he can in the old way. The bee-escape is one of those things that has come to stay. Of course, a person should have a quantity of them according to the number of colonies he has; not necessarily one for each hive, but enough so he can put them on in time to have all the bees out before he needs to take off the super. I like to have as many as I think I will want to extract in one day. The evening before, I go and slip them between the brood nests and supers, and then I can commence extracting as early as I like the next day; the bees having all night to leave the super. Of course, if there is any brood or a queen in the super, the bees will not go down and leave it.

Removing the Combs.

If it were not for the stings many more people would keep bees than do now. And without a knowledge of the work, and very careful manipulation, there is no more certain time of being stung than when removing the full combs. Mr. S. T. Pettit gives his method, in the Canadian Bee Journal, which agrees with our ideas of the work. This is the method he recommends:—First give a couple of smart whiffs of smoke in the entrance, then blow smoke smartly under the quilt and the bees will rush downwards, then remove the quilt or cloth and for a moment rush the bees down with smoke; now is the time to lift the combs out quickly and shake off what bees you can quickly and lean the combs against the back part of the hive or any other convenient thing, or place them in a light box for the purpose. Now keep working lively and as soon as the last card is out, drop in and adjust the empty combs and close up the hive. All this must be done before the reaction or return of the bees sets in and the bees are still in good humor, and their zeal for gathering honey is not decreased by the presence of those empty combs and work goes on as usual. The process of brushing the remaining bees from the combs is pleasant and easy, for by this time they feel lost and lonely, and they are in no mood for self-defence. Mr. Pettit goes on with this work in the robbing season. He places a robber cloth over the comb box, and just when commencing operations fills said box with smoke; this keeps the robbers at bay. At such seasons he has an assistant to keep the air over and about the hive pretty full of smoke.

The North American Bee-keepers' Convention at Toronto.

The convention of the North American Bee-keepers' Association will be held in the Normal School auditorium, Toronto, and will begin at 8 p. m., Sept. 1. The Hon. John Dryden, Minister of Agriculture, will give an address of welcome, and also probably President Mills, of the Ontario Agricultural College. Besides the Canadian speakers we expect many noted men from the United States, amongst them Thos. G. Newman; G. W. York, Chicago, Ill.; Dr. C. C. Miller, Marengo, Ill.; A. L. Root, E. R. Root, and J. T. Calvert, Medina, Ohio; Jas. Heddon, Dowagiac, Mich.; H. R. Bondman, East Townsend, Ohio; Capt. J. E. Hetherington, Cherry Valley, N. Y.; Hon. R. L. Taylor, Epeere, Mich.; G. M. Doolittle, Borodino, N. Y.; E. D. Stilson, York, Neb. The most of those mentioned above will take part in the programme, and among them are men who have as high as 1,000 colonies of bees. Any one is welcome to attend the meetings. It is desired that the Toronto convention be the best in the 27 years' history of the organization. Every bee-keeper able to attend should do so; over a hundred have already promised. A special session of the Ontario Bee-keepers' Ass'n will be held in conjunction with the above.

POULTRY.

Some Details of Incubator Management.

BY MRS. TILSON.

My incubator experience is not exhausted yet, nor will it be for some time. The eggs were first put haphazard in the machine, as some direct, imitating hens' nests, but were afterward all pointed one way, and I thus found, by actual trial, they turned easiest and most uniformly in second case. Two pointed ends coming together, have room to slip by each other and clog, whereas a point next a head cannot do so. A lady who had used the same incubator with good success, also placed the eggs all one way. Inquiry being made of a cold storage proprietor here, he said they put them in their racks haphazard, but he had sometimes trouble through eggs bunching up, as it were, and he should experiment with placing them precisely alike. Of course this does not apply to incubators where eggs simply rest on a cloth, etc., but to those where eggs lie between slats, in parallel rows, one deep. Our West Salem cold storage house belongs to the Richer system, and Mr. Richer holds the only patent I know of for turning eggs in Mass. His arrangement is much like those incubator methods wherever a rack, with room for play, turns eggs by moving back and forth. It is a digression, but I would like to say the cold storage house here tried part of their eggs unturned, packed in the customary and sweet basswood boxes, but those frequently turned in racks kept best. I picked my eggs, as for sitters, rejecting small specimens, because either from immature pullets or the run-out end of an old hen's clutch. Large eggs, I have found by experience, do not hatch as well; they are apt to be double-yelked, for one thing, and certainly do not turn as well in a rack. I put in one very thin-shelled egg, which the incubator did not break, as mother biddy certainly would. It hatched, but I do not know the chick, and should fear such eggs would hatch sooner than an average shell, or give some of those deformed chicks so often found in incubators. Because after several days' heat at 103°, infertile eggs come out little changed, many say they can be boiled and fed fowls. Others declare they make sick birds, and cause bowel complaint. I never enjoy any experiment at all likely to make sick birds, hence those eggs were buried. Where embryonic chicks die at every stage, it is evidently the fault of the eggs; where many perish about the same time it is probably the fault of the operator.

It is best to have one person running an incubator—on the old principle that "too many cooks spoil the broth." A certain man requested his pantaloon made shorter. Late and hurriedly every woman in his household, three in all, remembered, and, unknown to each other, acted upon his request. When he put on those trousers he thought time had turned backward in its flight, and they were trying to return him to knee breeches. So a lady friend, getting up in the morning and finding the temperature of her incubator too low, turned up the blaze. Her husband coming in before the thermometer had time to respond, turned the lamp a notch higher. Neither saw the other, nor soon revisited the machine, and those eggs were cooked. One gentleman, with quite a family, told me he kept his incubator under lock and key.

A thick and double-walled incubator, with air space between walls, of course suffers least from outside variations of temperature. The popular feature of top heat most resembles a sitting hen's position and heat. A hot-water machine may not respond so readily as a hot-air one, but probably remains unchanged longer. Some of the former kind make much of the fact that their tanks may be taken out, which does not seem absolutely necessary since copper is so durable and unlikely to leak. Some hot-water machines have the heat receiver end in a coil of pipe under the tank; said coil warms all portions of reservoir more evenly, and causes any part of the egg-chamber to vary little from every other part. But when the receiver simply expands, and does not continue in a coil, there is less danger of soot accumulating. I enquired of one manufacturer how the pipes could be cleaned, should anyone carelessly burn lamp too high, and he wrote me thus:—"Apply a good hand-bellows to either end of the tubing." Those eggs left unhatched by the machine I used were not confined to any particular section of the egg-chamber, but were scattered throughout. There is a coiled tubing under the reservoir. My machine had no self-regulator, nor did I care, because I have not yet met a person using such that could entirely trust it. Thermostats help, but are not sensitive enough, do not respond so quickly but that the harm may be done before they get ready to act. With too many makes the thermometer has a poor tottering standard, or none at all, and lies on the surface of the eggs, to be tipped over by every egg as it hatches or moves. We finally had to open the incubator so often to right the thermometer, unfortunately lowering the temperature every time, that my father invented a home-made but improved standard. A few makes have a small window in front of the thermometer, so there will not be that continual opening of outside door to look through the glass window inside, which opening must jar the eggs a trifle, and glare a great deal of light on the hatching chicks, especially when one goes with a lamp at night. Others object to the window because of its little constant stream of light, and those who have experimented find hatches are better in darkness than in light. But a small slide or curtain would open more softly than the whole outside front, as usually constructed.

QUESTIONS AND ANSWERS.

[In order to make this department as useful as possible, parties enclosing stamped envelopes will receive answers by mail, in cases where early replies appear to us advisable; all enquiries, when of general interest, will be published in next succeeding issue, if received at this office in sufficient time. Enquirers must in all cases attach their name and address in full, though not necessarily for publication.]

Veterinary.

RED-COLORED URINE OF MARE.

W. H. M., Victoria Co., N. B.:—"I have a mare, seven years old, that, after drinking or work of any kind, passes very dark water of a reddish tinge. She does not want to make water more often than would seem natural, but will hold it until put in the stable. Can you tell me what is the cause and what is the cure?"

[It does not appear from your letter that anything is seriously amiss with the mare. It is quite natural for urine, under some circumstances, to be dark in color, especially if fed on heavy grain, such as oats, beans, peas, wheat, etc., and is due to what is known as an over-nitrogenous condition of the body. It is also quite common for some animals, especially horses, not to urinate until they stand on some bedding or straw in a stable, and will not perform this natural function until they are placed there. Read my article on the use of salt in the last number of the ADVOCATE. You might also give her the following alternative powders for a week:—Nitrate of potash, two ounces; sulphur, one ounce; resin, one ounce; aniseed, two ounces; salt, two ounces. To be well mixed and a tablespoonful given in the food every night.

DR. WM. MOLE, M.R.C.V.S., Toronto.]

Miscellaneous.

KILLING GRASSHOPPERS.

THOS. BURNLEY, Camlachie:—"Can you recommend anything to stop grasshoppers from eating cabbage, turnips and other roots?"

[Spray with Paris green and water in the proportion of two teaspoonfuls of the poison to two gallons of water. This is not strong enough to render the vegetables dangerous for consumption.—[Saunders. A mixture which has been successfully employed consists of arsenic, sugar, bran and water; the proportions being one part by weight of arsenic, one of sugar, and five of bran, to which is added a certain quantity of water. The arsenic and bran are first mixed together, then the sugar is dissolved in water and added to the bran and arsenic, after which a sufficient quantity of water is added to thoroughly wet the mixture. A sprinkling of this mixture is thrown upon the ground along the line of the rows and left to do its work. This method cannot be adopted where fowls are allowed to run.—[Weed. One pound of Paris green mixed with fifty of plaster dusted over the plants would have the desired effect. It would be well to have it done when there is dew on the leaves, as the powder will then stick better. The most convenient way of applying this powder is to make a bag of cheesecloth, or some such material which will let the powder through easily, and put about two pounds of powder in the bag, leaving enough slack at the top to allow it to be shaken freely.—[Fletcher.]

ALFALFA AND ORCHARD GRASS.

N. S., Nova Scotia:—"Would you kindly give in the ADVOCATE all you can about alfalfa. It does well in Montana and also in England. Also give something about orchard grass. Why are they not grown more in these Provinces? Is it from ignorance, or the idea of its not being likely to withstand Canadian winters?"

[Our issue of April 15th and July 15th, 1895, contained good articles on alfalfa or lucern. Orchard grass is one of the most popular grasses of Europe, and is well-known to many farmers of Canada and the Northern and Eastern States. It is a perennial of strong, rank growth, about three feet high. It is more highly esteemed and commended than any other grass by a large number of farmers in most countries,—a most decided proof of its great value and wonderful adaptation to many soils, climates and treatments. It will grow well on any soil containing sufficient clay and not holding too much water. If the land be too tenacious, drainage will remedy the soil; if worn out, a top-dressing of stable manure will give it a good send-off, and it will furnish several mowings in a single year. It grows well between 20 degrees and 48 degrees latitude. It must be lack of knowledge of the value of lucern and orchard grass which hinders their more general cultivation in the Maritime Provinces.]

MANGELS AND THE FROST.

A SUBSCRIBER, Amberley:—"The mangels in this section are very poor on account of the drouth. How would they do seeded in the autumn?"

[All mangels that were up this year where the May frost was at all heavy, were entirely destroyed and had to be re-sown. Fall-sown mangels would probably fare about the same, whether they sprouted in the fall or early spring.]

FEEDING.

W. H. STEWART, Tintern:—"The dry weather in our locality will necessitate my buying feed for cattle and horses. Please give method of finding out the different ingredients that food is made up of, viz.: albuminoids, fat, carbohydrates, and fibre; also how to figure out the nutritive ratio; so that a person may know which food to buy that will