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Lucerne for Bee-keepers

Address by Dr. Cherry, Director of
Agriculture, at the Annual Con-
ference of the Victorian Apiarists'
Association, Melbourne, Australia.]

When asked to speak to the bee-keep-
ers Dr. Cherry said he was at a loss
to know what subject to choose; he
eventually decided on addressing them on
the subject because he thought he
could get bee-keepers to act as propa-
gandists in the cultivation of lucerne.
There is no question if lucerne were
universally provided the bees would
produce more honey. Honey produced
from the leguminosa is of the best qual-
ity; this family of plants produces ni-
trogen and material of which the gum
is lacking. Last year he spoke
of nitrogen as being associated with
the production of bees, and from our
experience there was a difficulty of supply-
ing such in the form of protein, and
as protein food for larvae of high
quality is within the reach of bees, it
is probable the bees reared with such
food having a deficiency of protein.
They do not have a proper stamina. Lu-
cerne is at the head of all protein pro-
ducers, and he thought there was an
every possibility of lucerne culture

in Victoria. If they could get five
million acres planted with lucerne in
Victoria there would probably be dou-
ble the production of honey. While
lucerne does best in irrigated districts,
it will grow almost anywhere except
on the dry Malee and the southern
portion of the colony; little flats in
the bottom of gullies, and between
hills will grow lucerne luxuriantly.
Every bee-keeper should remember
that by growing one or two acres of
lucerne for fodder purposes he will
have an abundance of fodder for his
live stock. Most bee-keepers in Vic-
toria have had the experience that
they have had to buy food for their
stock; if they planted lucerne they
would be able to supply them with
all food, and be helping on their in-
dustry. Lucerne will grow almost
anywhere where bees are kept, and
when once established will go on in-
creasing. Lucerne paddocks in Mexico
are known to extend over 300 years.
He has had a sample of lucerne root
grown at Bacchus Marsh, in Victoria,
which was over 20 feet in length. Any
place where fruit will grow lucerne
will do well; deep alluvial is not neces-
sary, for he finds lucerne doing well
where brick-clay is only 6 inches from
the surface. To get the best out of
lucerne there should be no water
around the roots. When once estab-
lished there is a life-long possession.
Everyone should have at least a quarter

ter of an acre and an acre is worth £100 per year. It will give three or four cuttings without irrigation, six or seven with irrigation. One ton of hay is just as valuable as a ton of bran. Taking bran at 1/- per bushel, lucerne is worth £5 12s. ton. Bacchus Marsh growers sell lucerne hay from £3 10s. to £4 10s. a ton, paying £100 an acre for land. To keep lucerne in good order it is necessary to get it to blossom as often as possible, and it is best cut when it is just a little past full bloom. It should be mowed often in the summer, and should not be grazed over very much, as it does not like grazing, and would give out then in about six years, as is found in the Goulburn valley, where it is generally eaten off by stock. One of the best ways to improve a worn-out lucerne paddock is to harrow it in the spring. This will increase the luxuriance of the growth. Its greatest value for stock is when it is in full leaf and flower. When cut in the morning and raked in the evening, and then allowed to be cured in the air before being stacked, the cultivation would not only do good for the bees, but would provide food for stock and even chickens and poultry value most highly from the fact of it being a plant containing a great deal of nitrogenous matter, and as such it is the most valuable plant we have. Lucerne has from 10 to 15 per cent of protein, bran about 11 per cent, so it is valuable to the farmer. One reason why he would like bee-keepers to be apostles of lucerne-growing is your neighbors would follow suit, and your bees would get the gain. If several million acres were sown in the northern parts of Victoria, bee-keepers would abandon the forest, with its strong honey, and produce a better quality of honey in these districts. No farmers who

start lucerne-growing will abandon it, its growth over Australia is extending rapidly, and farmers will find hay-making better than grazing, and he suggested that several members should grow some plots as an experiment. It does not require much surface water in summer unless it is grazed. To get roots down deep is to get it to flower frequently; while attempting to flower, which is the sole object for which the plant lives, the roots go down deeper and deeper; every attempt to flower causes growth of root in depth, so that every cut or crop causes the root to go down deeper. It happens that the present time in most districts is the time to sow lucerne, but in planting large areas it is generally sown in the autumn with oats, which shelters the lucerne for the first crop from frost, and when cut the lucerne grows up itself, and generally during the summer there is sufficient moisture to keep it growing. In the colder districts it is more difficult to get lucerne to start, and then September planting will be found best. He advises the use of Superphosphate, say about 1 cwt. to the acre, to be sown with the seed; by December a crop of flowers will be produced, and another in January. During winter lucerne goes to sleep, and may appear smothered with weeds which, cut in October for fodder, weeds and all, will then grow of itself, and give a good crop by the end of the year. Every agriculturist can find ample use for every bit of hay he can produce, and it is the most valuable fodder that can be raised, and he recommends every farmer to go on increasing. Those who read American literature will look upon the bright accounts given there of the Alfalfa regions of the west coast, where bee-keepers' holdings are more numerous

than in any other part of the world. The thought that lucerne would be copied in small blocks, and that the farmer will soon be able to derive very much from the pollen they obtain, is admitted to me, it is a fact that lucerne plants give a high percentage of protein; as much as 15 per cent, shown on the total dry weight, weeds 10 per cent, and lucerne to generalize we would say that the most valuable the fruit of the lucerne plant is more than any other plant I have ever been acquainted with. It contains much nitrogen and is very heavy, and the more you get the lucerne cut, the more it will be for bee-keepers. Mr. Bingham—Very good, tree lucerne and lucerne mania. Dr. Cherry—The use of superphosphate combined; no two more adverse conditions for the animals are to be found in moist places they are growing to the present day, and blossoms one of the very early forage plants, and it is included that for bees it is the average for quality, and one of the best plants the beekeepers could grow, and the poultry will find it a most valuable gives shelter and shade. Mr. Anderson—He has made Dr. Cherry's remarks a fact, and he finds that it is not so early. Is there any other plant? Owing to the quantity of flowers, bees have a great deal of nectar at the nectar.

than in any other part of the world. The thought that bee-keepers should start growing it, when their example would be copied by others cultivating it in small blocks, and the general farmer will soon follow suit. The bees will derive very much benefit by the pollen they obtain from it. From the analysis of the samples of pollen submitted to me, it will be seen that cultivated plants give the best result in protein; as much as 27 per cent is shown on the table, eucalyptus 20 per cent, weeds 10 per cent. If we were to generalize we might see the more valuable the fruit the better the nitrogen. Lucerne produces more protein than any other plant that we are acquainted with. Lucerne hay has as much nitrogen as bran, weight for weight, and the more general we can get the lucerne cultivated the better it will be for Bee-keepers generally.

Mr. Bingham—What do you think of tree lucerne and cultivation for Tasmania.

Dr. Cherry—The two lucernes can be combined; no two trees grow under more adverse conditions. In dry places the animals are fond of it, and in moist places they neglect it, probably owing to the presence of other foods. Its blossoms one of the earliest, and is a very early forage for bees. He concluded that for bees it was well up to the average for quantity, and thinks it is one of the best plants that bee-keepers could grow. Those who run poultry will find it a valuable plant, as it gives shelter and is an ornamental tree.

Mr. Anderson—He can bear out Dr. Cherry's remarks about tree lucerne, that he finds that it blossoms a little too early. Is there any way to arrive at the quantity of nectar secreted by the plant? Owing to the shape of the flowers, bees have a difficulty in getting at the nectar.

Mr. Morgan—Is there any way in getting the hay from lucerne except when cutting it in full bloom; that is, could it not be cut when it is past full bloom, as it would then give a better chance for the bees to get the honey?

Dr. Cherry—There would not be much loss by letting it get a little past full bloom and so get the nectar.

Mr. R. Beuhne—Is development necessary to induce deep roots?

Dr. Cherry—Grazed lucerne does not get such good root stems as cut lucerne.

Mr. Cottman—What would be the better way to treat hill soil of 4 or 5 inches of sandy loam with a sub-soil of quicksand and clay, the sub-soil becomes so hard as to need a crowbar to break through?

Dr. Cherry—Such soil will be much improved by draining; too much moisture causes it to set too hard; the department has some places under observation; the true soil lies under the dry cement.

Mr. McFarlane—Is the food value of hay grown on poor land as good as that grown on rich land?

Dr. Cherry—Yes; there would be less quantity, but the quality would be good.

Mr. W. L. Davey intended planting 20 acres. If lucerne were allowed to go past the full bloom, would that affect the plant?

Dr. Cherry—No! plenty of seed was obtainable on the market.

Mr. Cottman—Can Dr. Cherry give any directions for treating dodder in lucerne?

Dr. Cherry—There is no difficulty if treated in small quantities. Take a spade and scuffle the ground just under the surface; take away and burn and cover with manure, and the young plants will come through.

Mr. G. Bingham—What influence will

the allowing of lucerne to go to seed have on the plant?

Dr. Cherry—Don't let the first crop seed on account of weeds, but afterwards it may be allowed to seed, when the only effect will be the loss of crop for hay; the plant will not be injured by allowing it to seed.

Mr. R. Beuhne—Referring to the samples of pollen from dwindling hives, is it possible that there is some foreign poisonous substance in the pollen, as an alkaloid?

Dr. Cherry—He does not know of any; he had turned up all literature bearing thereon, and could get no information. Forming an opinion, he would say it was hardly likely. The more lowly-organized, the least effect a poison could have. The more human the animal the greater effect the poison would have.

Mr. Beuhne—We know from experience bees are liable to take poison.

Dr. Cherry—Mineral poisons affect all forms of life in the same way; with alkaloidal poisons things are different.

Mr. Cottman related an experience he had in the old country. A gentleman, a naturalist, who set up a fine specimen of a sparrowhawk he had poisoned with strychnine, and had neglected it. It became fly-blown; he fed the blow-fly larvae to a favorite snake he had, and the snake died. Here was an instance where the poison did not destroy the fly larvae, and yet these larvae contained sufficient of the poison to destroy the snake.

Question—Will lucerne grow on 6-inch sand with gravel under and no bottom?

Dr. Cherry—Yes.

Mr. Beuhne—Is it possible the percentage of protein in pollen depends on the moisture of the soil? That is,

would there be a difference between that produced on a dry soil and that produced on moist soil?

Dr. Cherry thought there would be a difference.

A vote of thanks was passed to Dr. Cherry for his address and was acknowledged.—Australasian Bee-keeper.

CARNIOLAN BEES, DIVISIBLE HIVES, ETC.

Notes on Recent C. B. J. Articles by E. F. Atwater.

Occasionally I note in the "Canadian Bee Journal" an item regarding Carniolan bees. This is a race surely possessing some grand good qualities, but it is somewhat difficult to get pure stock. Even this summer I received a number of Carniolans from a prominent advertiser, and I am quite sure that most of them are crossed with black drones, as they have more the appearance and traits of the blacks. I had much rather buy the Carniolans if I can't have pure stock rather than introduce black blood into a locality where there is no such blood at present. This summer, with but a few colonies of Carniolan blood, and hundreds of Italians, one colony of nearly pure Carniolans gave 6½ cases of comb honey; the best Italian colony gave 7½ cases; each also gave one colony of increase. The average among the Carniolans was far better than among the Italians, also we had practically no winter loss among colonies of part Carniolan blood, while of the Italians we lost over one-third.

Mr. Aikin of Colorado is now praising the divisible layer-cake hive (C. B. J., page 58-59). Such hives have been before the bee-keeping public for many years, yet so staunch an advocate of such hives as W. Z. Hutchinson

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for bees, but where the percentage is not too great in the honey it may be improved by boiling after some water has been added to it. A thick scum will rise to the top, which should be carefully skimmed off. It is usually found to be much improved, and may be fed without much risk. A great deal will depend on the winter. If the bees are wintered outside and are confined to the hives by low temperature, such honey, unless boiled, will be likely to cause dysentery; if, however, they can get frequent flights no harm will result from such stores.

R. H. SMITH.

St. Thomas, Ont.

INTRODUCING QUEENS.

(W. L. Couper.)

I have read with much interest Mr. Whiteside's article on introducing queens, in the September number of the C. B. J.

My experience in introducing queens received by mail has been very limited. I have generally placed such queens in nuclei, building up afterwards. In July of this year I undertook to replace a number of indifferent queens with young ones of my own raising. I first tried the ordinary plan of allowing bees to eat the queen out, giving sufficient candy to keep them occupied about 24 hours. This resulted in the loss of three out of five. I then tried giving only sufficient candy to confine the queen a few hours, and this proved successful in four cases out of six. I attribute the better success of this plan to the fact that bees had no time to get cells started before the young queen was released. Still, even in this plan the percentage of loss was far too large and after some further experimenting I hit on the following plan, which has proved quite successful to me:

For the sake of convenience, let us call the colony to be re-queened A. From A take four frames of brood, the more completely sealed the better. Put them in an empty super B, filling the spaces in both A and B with empty combs. On A place a queen excluder and B on top of that. In a week's time remove B, setting it on a bottom board beside A. Examine the brood frames in B cutting out all queen cells. Place new queen in B in such shape that bees can release her in eight hours. In three days' time the queen should have eggs in several frames. Remove A, putting B in its place. Hunt up and destroy A's queen, replacing it on top of B. I do not know whether this plan will succeed with other people, but personally I have yet to find it fail, and it has the advantage of introducing a queen to a full colony without stopping egg laying for a single day. I must add that these experiments were all made in a steady, slow honey flow; just fast enough to stimulate brood raising and promote swarming. Under other circumstances different results might follow.

Cannington Manor, Sask.

TO PUNISH ADULTERATION.

OTTAWA, Oct. 25.—It has been a reproach for a long time that the Department of Inland Revenue has been inactive in the matter of prosecutions for adulterating food products. A recent departmental bulletin showed that maple syrup and maple sugars collected in all parts of the country had been greatly adulterated. Mr. Templeman has now placed the matter in the hands of the Department of Justice to prosecute the guilty parties.

The Canadian Bee Journal and The Weekly Mail-Empire from now until January 1st, 1908, with The Mail-Empire's beautiful premium picture, "Grace," (a reproduction of the original oil painting by M. Galleo Galli, the eminent Italian artist) for \$1.60.

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COLOR AND BEES' TEMPER.

It is frequently claimed that bees have an antipathy to dark clothing and dark colors. They are said by some to detest garments according to their approach to a funeral shade, and many good housekeepers believe this. Lately I saw it claimed that white leg-horn chickens and fowls could run about freely amongst the hives with perfect immunity; buff fowls got an occasional sting, but a dark chick was at once attacked on showing its black person. Following out the same reasoning, a black dog should pay a forfeit every time he came near the bees, and a light colored one should escape scot free. In reality the opposite is the case in one instance known to me. A white spaniel will not go within "miles" of the bees; a very dark terrier is always quite at home, shaggy though his coat is. In my observation bees make for the dog and not for the color.

I don't profess to be immune from stings, but they very rarely come my way, yet my garments are black or invariably of a dark hue. My veil is a piece of fine silk net, black as black can be, yet it never suffers; but if thrown loose over the head, as it generally is, it slips down off my cap, I know of one white spot near the back of the crown of the head that some bees seem to have a special fancy for. Also my wrists are white, and the garment reposing on them is generally of the same hue. Yet this is another favorite spot for the bees' favors. As I never wear gloves or gauntlets, they have full swing at times. A friend suggests that it may be the dark, and to them illimitable void further up which rises their ire, but a simple cause may be sought in the pressure brought to bear by the movement of the coat or shirt cuff. Whenever pressed, a bee invariably stings, whether

the pressure is brought about by black or white.

I note that the dark eye-brow is another favorite spot in which bees delight to leave their love tokens. That might give color to the contention that they hate black, but I fear that brown, red, or even white eye-brows would suffer alike. On second thoughts, too, a more substantial cause can be assigned for the partiality shown by bees for one's eyes. We wink without being conscious of it. The movement, however slight, does not escape the bees' vision, and so they take it as an insult—and a bee never forgives an insult. Try it!

My boots are always black, but even when I forget to be tender with bees which by any chance have been thrown down, they never to my knowledge make a dead set at the black object which may be unwittingly working destruction to numbers of them. Their treatment of fawn or tan, too, would be much the same.

Our editor, I presume, is generally clad in reverend black, so he should be able to say from experience whether bees in a temper are discriminating in regard to color, and if they show a preference for voiding their vitriolic venom on robes of sable hue.

The height of evidence I am able to adduce is of a negative type. A further feature to one of an analytical mind is the question: "Do bees stop to think whether an object is black or white when it raises their ire?" That they do discriminate whether a thing is pervious or impervious, sensitive or insensible to their ire, I feel certain, but that they worry themselves over the particular shade of their master's shirt, or their mistress's stocking, as has been asserted, is more than I am prepared to admit without further proof, even although I may place myself in a small minority by taking such a stand.

Pressure, however slight, rouses the bees' ire, and it stings sharp and quick; odour, if offensive to its susceptible olfactory organs, makes it ready for the war-path. Possibly many of the stings set down to the color "theory" may be brought about by one or other of these, which are looked on as merely subsidiary causes.—D. M.M., in "Irish Bee Journal."

ABOUT RETAIL PACKAGES.

On page 219 of the C. B. J. for October, Mr. J. L. Byers' remarks on the subject of retail packages for honey are quite interesting, but would have a tendency to lead the reader to suppose that at our little Labor Day "convention" I had advocated selling honey chiefly in one-pound glass jars, which was not the case, or, at least, was not intended to be. Mr. Byers thinks that more honey can be sold in five- and ten-pound pails than in one-pound glasses, in which all sellers of honey will agree with him. But will any one contend that as much honey can be sold in ten-pound tins alone as can be sold in fives and tens set side by side? Or that as much can be sold in fives and tens as can be sold in ones, twos, fives and tens? That is the point I was trying to get at; that the more variety and choice you give the buyers the more they will buy. Put yourself in the position of the shopper who has not acquired the honey habit. Half a dollar is too much for him to spend on experiment, but he will buy a pound just for a treat. Then he will buy another if he likes the first one, and keep right on buying. Sometimes he will grow into a ten-pound buyer, and sometimes he will stick to the little glasses, simply because they are nice to look at. There are all kinds of people, and they will buy more of all kinds of things than they will of any one thing.

An hotel up here bought pound bottles by the dozen this past summer, paying 15 cents each for them. I suggested five, ten, twenty-five or sixty-pound cans, but the buyer said: "No; I want the glasses. You see, we set the glass right on the table and let the

guests dig right in for themselves, and they like it that way—won't eat plum jam any more," and other things like that. But when those same guests were leaving they would take ten or twenty pounds in tins with them, providing it was guaranteed the same as what was in the glasses. And the guarantee was forthcoming whenever asked for. In this way the glasses help the sale of pails rather than hinder it. Then there are customers who buy pails right along—never bought anything else. They are good customers, too. Some of them won't take honey unless it is liquid, and some will have only "the frozen kind," as they call it.

The way to sell the most honey is to be ready for all these people. It is very little more work than being ready for only one class of them. It takes a little more time to prepare and fill one-pound glasses than it does pails, but they are worth more when full, and you can hire a boy for a dollar who will fill upwards of a thousand in a day if everything is handy for the work.

Country people—farmers—as a rule, buy things in larger quantities than town people do, because they cannot buy so often. Consequently they buy honey mostly in pails, and more in large pails than small ones. Fully half the ten-pound pails sold here go out of town, but nearly all the small packages stay in town. The farmer is also as a rule, a more shrewd buyer than the villager, and will buy what is most economical. If he could get nothing but one-pound glasses of honey he would buy very little more than would the man in town if he could get only ten-pound pails.

If a man can sell all his honey in pails, there is no need for him investing in glasses, but if he has more than can be moved in pails, glasses will help to move the remainder. Mr. Byers' village of 1,200 people used 2,000 pounds in pails and not a pound in glass. My village of about the same population used 4,000 pounds in pails and 700 pounds in glass—and the glass netted 1½ cents per pound more than the pails.

Please, Mr. Byers, was that 2,000 pounds—all the honey you had last year?

Fenelon Falls, Ont. E. G. HAND.

BUILDING UP THE ALE

(Dr. Miller)

Putting a weak one, after the utter failure her demn the plan. ceeded with it things—a big thing learn is the con- failure. Did I fail bees? You say, first trial you fail why?

[I have said to the Alexander plan all of them, succeeded with it and in was before our M to take charge of to him that I wish discover if possible possible cause of cases. He did succeed when the some instances? except that he say ul to have always w, as Mr. Alexander thought it was when putting the strong one, to be e to disturb the lowe ngly put perforate strong colony two ating the weak n then ready to do l he cover only parti erated zinc honey- in the upper store- one or two fran division-board n same. This was d not to force the e upper bunch. I sles so treated h ys, both lots of andously, the lowe

BUILDING UP WEAK COLONIES BY THE ALEXANDER PLAN.

(Dr. Miller and Editor Root.)

Putting a weak colony over a strong one, after the Alexander plan, was an utter failure here. That does not condemn the plan. So many have succeeded with it that I believe it's a good thing—a big thing. The thing now to learn is the conditions of success and failure. Did I fail because I had hybrid bees? You say, Mr. Editor, that on first trial you failed. Can you tell us why?

[I have said that our first trials of the Alexander plan of uniting were not all of them successful. In some cases it worked and in some it failed. This was before our Mr. Wardell had come to take charge of the bees. I explained to him that I wished him to try it and discover if possible wherein was the possible cause of failure in the few cases. He did so, and in every case he was successful. Now, why did he succeed when the other boys failed, in some instances? He does not know, except that he says he was very careful to have always a strong colony below, as Mr. Alexander stipulated. Then he thought it was very important, when putting the weak nuclei over the strong one, to be extremely careful not to disturb the lower bees. He accordingly put perforated zinc on top of the strong colony two days in advance of putting the weak nucleus on top; then when ready to do the uniting he lifted the cover only partly, sealed to the perforated zinc honey-board. He next put in the upper storey, very gently with one or two frames of bees, placing a division-board next to the outside frame. This was done very quietly so as not to force the lower bees up into the upper bunch. In every case of colonies so treated he found in a few days, both lots of bees thriving tremendously, the lower bees having come

up in the meantime supplying the nucleus with its lack of bees, at which time the queen would begin to "spread" herself in egg-laying. He says it is surprising how such a nucleus will increase in strength, and apparently, too, without any diminution in the force below. The philosophy seems to be this: When the two forces of bees are put together, one on top of the other, the work is done so quietly that the lower bees do not for a matter of 24 hours mingle with the upper ones. In the meantime both lots of bees gradually take on the same scent. When the two lots of bees begin to mingle they smell alike and there is no fighting. As the queen has the same scent she is not molested. The result is that the two forces of bees together can do far better than either one of them separately, because they have the egg-laying capacity of two queens.

Try it again, doctor, in your uniting this fall, and report. That reminds me that Mr. Wardell tried the Alexander plan on hybrids with the same result.—Ed.]—Gleanings in Bee Culture.

POLLEN-CLOGGED COMBS—HOW TO CLEAN THEM.

The question of what to do with pollen-clogged combs is continually being asked by readers of the B.B.J. Personally I am deeply indebted to your correspondent, "D. A. V.," for the advice given in B.B.J., April 13, 1905. Here, bees gather pollen every month in the year, and all combs are so filled with pollen as to be practically useless after the second season, oftentimes after the first.

For your inspection I am sending herewith a comb, half of which has been freed from pollen. I found getting the pollen out entirely by syringing took rather too much time. I soak the combs in water for three or four days; this softens the pollen, and the syringe quickly does the rest. It took five minutes to syringe the pollen out of the half comb sent (part of the time was occupied in seeing that a four-year-old assistant did not fall into the river).—British Bee Journal.

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Editor, W. J. Craig.

November, 1906

EDITORIAL NOTES.

As announced in our last issue, the annual meeting of the Ontario Bee-keepers' Association will be held in the York County Council Chamber, Toronto, Wednesday, Thursday, and Friday, November 7, 8, and 9. First session Wednesday afternoon, at 2 o'clock. The Palmer House, well and favorably known, and whose regular rate is \$2.00 per day, offer a special convention rate of \$1.50 per day to the bee-keepers.

Off to California! Have just been to the station to say good-bye to friend Jacob Alpaugh, who, passing through on his way to the far West, phoned us that he had an hour to wait for the "Chicago Flyer." Jake left his whiskers in Dobbington, and so had the joke on our not recognizing his new face in the crowd; and no wonder—such a face! He sends good-bye to all old friends, and his regrets at not being able to attend the Ontario meeting.

Mr. W. J. Smith, of Fergus, the well-known lumber dealer there, purchased the Dobbington apiary of 115 colonies after they were thoroughly packed and ready for winter. Alpaugh has not lost a colony in wintering for years, and is confident of the result unless some unforeseen catastrophe occurs over which he has no control. He says that the great secret of successful out-door

wintering is in plenty of stores, feed early and abundantly when required, and pack well and leave them alone.

Friend Alpaugh had a fair honey crop, notwithstanding the poor season, and would have had more had he taken it off immediately after the flow ceased. He says it was wonderful how the loose honey disappeared. He attributes this to the amount of brood there was in the hives to be fed at that time, but the fact of this has left the colonies in great shape for winter and next spring. His nephew, P. G. Alpaugh, who has been assisting him for several years, will manage the apiary for Mr. Smith. We wish the new proprietor every success.

Bulletin No. 122, issued recently by the Inland Revenue Department at Ottawa, gives the results of the examination of 54 samples of honey collected by the Department during the months of March and April last, also the names and addresses of the venders and manufacturers or furnishers, and a full description of each sample. The following table gives the number of samples obtained in each inspection district, and the opinions arrived at concerning their character:

Inspection District	Genuine.	Adulteration Declared	Adulterated.	Total.
Nova Scotia	4	0	0	4
Prince Edward Isl'd.	2	0	0	4
New Brunswick	4	0	0	4
Quebec	3	1	1	5
St. Hyacinthe	3	0	1	4
Montreal	6	0	0	6
Ottawa	5	0	0	5
Kingston	3	0	1	4
Toronto	5	0	0	5
London	4	0	1	5
Manitoba	1	0	1	2
Calgary	1	0	1	2
British Columbia ..	3	0	1	4
Totals	44	1	9	54

The examination of the Laboratory of the Inland Revenue, under the direction of Thomas MacFarlane, as shown above, 44 samples were found to be of a portion amounting to the same as found in 1903. Evidently the amount of adulteration is decreasing in shipments sent to the West.

It is with pleasure that the readers of this journal are informed that the photograph of our friend, Mr. W. J. Smith, of Hamilton, Ontario, who has on one occasion contributed to the Canadian Bee Journal" was a valuable contribution. It will be remembered that we had a series of sketches of his trip to California, his experiences of bees, fleas, and other matters, and his address on "Bee-keeping in Canada." The next convention of Ontario Bee-keepers would convince most of us that the honeying did not find its way to the bee-keepers' paradise, nor did it to any one else. Mr. Laing is an ardent Honey Building enthusiast, and his exhibition, Toronto, was a neat exhibit, and the originality of design and effectiveness. He has never had any named of, and general fair share of the prize. In reply to a number of our friends who have given us their views on his bee-keeping, to which we are afraid we are afraid we tampered with it as nearly as possible:

The examination was conducted in the Laboratory of the Department of Inland Revenue, under the supervision of Thomas MacFarlane, Chief Analyst. As shown above, 44 out of the 54 samples were found to be genuine, the proportion amounting to 81.5, and about the same as found in the collection of 1903. Evidently the larger proportion of adulteration is done in the West, or in shipments sent from the East to the West.

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It is with pleasure that we present the readers of this issue with a photograph of our friend, Mr. Arthur Laing of Hamilton, Ontario, who has on more than one occasion favored the "Canadian Bee Journal" with interesting and valuable contributions.

It will be remembered that two years ago we had a series of bright, racy sketches of his trip to Jamaica, and of his experiences on that island with bees, fleas, and other things. His address on "Bee-keeping in Jamaica vs. Bee-keeping in Canada," before the last convention of Ontario bee keepers, would convince most people that friend Laing did not find Jamaica a bee-keepers' paradise, nor would he recommend it to any one in search of such.

Mr. Laing is an annual exhibitor in the Honey Building at the National Exhibition, Toronto, and always puts a neat exhibit, and with considerable originality of design that adds to its effectiveness. His honey, too, he has never had any reason to be ashamed of, and generally comes in for a fair share of the prizes.

In reply to a number of questions, our friend has given us a brief sketch of his bee-keeping, to be used as we see fit. We are afraid we might spoil it if we tampered with it at all, so will use it as nearly as possible in his own

"On my birthday in the summer of 1886 a swarm of bees passed slowly over my head as I was plowing on my father's farm in the county of Nor-



MR. ARTHUR LAING, HAMILTON, ONTARIO

folk. These I secured, and purchased another colony later that season, but lost both the following spring. That fall I moved with our family to the village of Acton, in the county of Halton, and the following spring I bought ten colonies from my cousin, George Laing of Milton, and from that time to the present I always had quite an apiary of bees, sometimes more than a hundred hives and sometimes a little less. This summer I have had about the usual number—one hundred—but am doubling up a little for winter.

"I do not run my bees as a side-line to any other business, but owing to the great misfortune of getting foul brood in my apiary when I had just succeeded in bringing my yard up to about one hundred hives, I have been forced to use a side-line occasionally.

be much more virulent in the western part of the United States than in the East.

European Foul Brood.

European foul brood (often called "black brood") is not nearly as widespread in the United States as is American foul brood, but in certain parts of the country it has caused enormous losses. It is steadily on the increase and is constantly being reported from new localities. It is therefore desirable that bee keepers be on the watch for it.

Adult bees in infected colonies are not very active, but do succeed in cleaning out some of the dried scales. This disease attacks larvae earlier than does American foul brood, and a comparatively small percentage of the diseased brood is ever capped. The diseased larvae when first attacked show a small yellow spot on the body near the head and move uneasily in the cell. When death occurs they turn yellow, then brown, and finally almost black. Decaying larvae which have died of this disease do not usually stretch out in a long thread when a small stick is inserted and slowly removed. Occasionally there is a very slight "ropiness," but this is never very marked. The thoroughly dried larvae form irregular scales which are not very strongly adherent to the lower side of the cell. There is very little odor from decaying larvae which have died from this disease, and when an odor is noticeable it is not the "glue-pot" odor of the American foul brood, but more nearly resembles that of soured dead brood. This disease attacks drone and queen larvae very soon after the colony is infected. It is as a rule much more infectious than American foul brood and spreads more rapidly. On the other hand, it sometimes happens that the disease will disappear of its own accord, a thing which the author never knew to occur in a genuine case

of American foul brood. European foul brood is most destructive during the spring and early summer, often almost disappearing in late summer and autumn.

Treatment of Infectious Diseases.

The treatment for both American foul brood and European foul brood is practically the same. It is impossible to give minute directions to cover every case, but care and common sense will enable any bee-keeper successfully to fight diseases of brood.

Drugs—Drugs, either to be given directly in food or to be used for fumigating combs, can not be recommended for either of these diseases.

Shaking Treatment—To cure a colony of either form of foul brood is necessary first to remove from the hive all of the infected material. This is done by shaking the bees into a clean hive on clean frames with small strips of comb foundation, care being taken that infected honey does not drop from the infected combs. The healthy brood in the infected combs may be saved, provided there is enough to make it profitable, by piling up the combs from several infected hives on one of the weakest of the diseased colonies. After a week or ten days of the brood which is worth saving will have hatched out, at which time these combs should be removed from the colony treated. In the case of beehives or skeps the bees may be drummed out into another box or preferably into a hive with movable frames. If hives are hard to inspect for disease and are a menace to all other bees in the neighborhood in a region where disease is present.

The shaking of the bees from combs should be done at a time when the other bees in the apiary will not be disturbed and thus spread disease, or under cover. This can be done safely in the evening after bees have ceased to fly, preferably during a good honey-flow.

Great care should be taken to destroy all infected material, and bees until it is destroyed or the wax. Wax from infected combs should be rendered innocuous by which high heat, or with a solar wax melter. Wax from a diseased colony should be melted to prevent it from a diseased colony. Thoroughly sterilized for at least half an hour, and fed back to the colony. If again used, it should be thoroughly cleaned, and it should be taken that the comb be left in place. It is frequently the treatment by fresh foundation for four or five days. The inspector must do as necessary, but doubt it is safer to destroy rather than infection. If repeated the bees from the foundation the hive or a colony at the entrance. Treatment With shaking treatment instead of shaking the combs the hive and in its frames and foundation is at once removed, and the new hive, and the bees they next re-locate the infected hive or close beside the escape place the hive contain the younger bees and emerge from the colony, but cannot re-join the colony. Fall Treatment—Treat a colony so

Great care should be exercised to keep all infected material away from other bees until it can be completely destroyed or the combs rendered into wax. Wax from diseased colonies should be rendered by some means in which high heating is used, and not with a solar wax extractor. The honey from a diseased colony should be diluted to prevent burning, and then thoroughly sterilized by hard boiling for at least half an hour if it is to be fed back to the bees. If the hive is again used, it should be very thoroughly cleaned, and special care should be taken that no infected honey or comb be left in the hive.

It is frequently necessary to repeat the treatment by shaking the bees onto fresh foundation in new frames after four or five days. The bee-keeper or inspector must determine whether this is necessary, but when there is any doubt it is safer to repeat the operation rather than run the risk of re-infection. If repeated, the first new combs should be destroyed. To prevent the bees from deserting the strips of foundation the queen may be caged in the hive or a queen-excluding zinc put at the entrance.

Treatment With Bee Escape.—The shaking treatment may be modified so that instead of shaking the bees from the combs the hive is moved from its stand, and in its place a clean hive with frames and foundation is set. The queen is at once transferred to the new hive, and the field bees fly there when they next return from the field. The infected hive is then placed on top or close beside the clean hive and a bee escape placed over the entrance of the hive containing disease, so that the younger bees and those which later emerge from the cells may leave the hive, but cannot return. They therefore join the colony in the new hive.

Fall Treatment.—If it is desirable to treat a colony so late in the fall that

it would be impossible for the bees to prepare for winter, the treatment may be modified by shaking the bees onto combs with plenty of honey for winter. This will be satisfactory only after brood rearing has entirely ceased. In such cases disease rarely re-appears.

In the Western States, where American foul brood is particularly virulent, it is desirable thoroughly to disinfect the hive by burning the inside or by chemical means before using it again. This is not always practiced in the Eastern States, where the disease is much milder. Some persons recommend boiling the hives or disinfecting them with some reliable disinfectant such as carbolic acid or corrosive sublimate. It is usually not profitable to save frames because of their comparatively small value, but if desired they may be disinfected. Great care should be exercised in cleaning any apparatus. It does not pay to treat very weak colonies. They should either be destroyed at once or several weak ones be united to make one which is strong enough to build up.

Recently some new cures have been advocated in the bee journals, particularly for European foul brood, with a view to saving combs from infected colonies. The cautious bee-keeper will hardly experiment with such methods, especially when the disease is just starting in his locality or apary, but will eradicate the disease at once by means already well tried.

In all cases care should be exercised that the bee-keeper may not himself spread the infection by handling healthy colonies before thoroughly disinfecting his hands, hive tools, and even smoker. Since it takes but a very small amount of infected material to start disease in a previously healthy colony, it is evident that too much care can not be taken. In no case should honey from unknown sources be used for feeding bees. Care should also

be exercised in buying queens, since disease is often transmitted in the candy used in shipping cages. Combs should not be moved from hive to hive in infected apiaries.

"Pickle Brood."

There is a diseased condition of the brood called by bee-keepers "pickle brood," but practically nothing is known of its cause. It is characterized by a swollen appearance of the larvae, usually accompanied by black color of the head. The larvae usually lie on their backs in the cell, and the head points upward. The color gradually changes from light yellow to brown after the larvae dies. There is no ropiness, and the only odor is that of sour decaying matters, not at all like that of American foul brood. In case the larvae are capped over, the cappings do not become dark, as in the case of the contagious diseases, but they may be punctured. So far no cause can be given for this disease, and whether or not it is contagious is a disputed point. Usually no treatment is necessary beyond feeding during a dearth of honey, but in very rare cases when the majority of larvae in a comb are dead from this cause the frame should be removed and a clean comb put in its place to make it unnecessary for the bees to clean out so much dead brood.

Chilled, Overheated and Starved Brood

Many different external factors may cause brood to die. Such dead brood is frequently mistaken, by persons unfamiliar with the brood diseases, for one or the other of them. Careful examination will soon determine whether dead brood is the result of disease or merely some outside change. If brood dies from chilling or some other such cause, it is usually soon carried out by the workers, and the trouble disappears. No treatment is necessary. Brood which dies from external causes often produces a strong

odor in the colony, but wholly unlike that of the American foul brood, merely that of decaying matter. The color of such brood varies, but the characteristic colors of the infectious diseases are usually absent, the ordinary color of dead brood being more nearly gray.

Washington, D. C., Oct. 3rd, 1906.

FOR SOME SUBSCRIBERS.

Once on a time a man went down to his front gate one morning and stopped the milkman, "Say," he called, "I want you to leave milk here after this. How much is it a quart?" "Five cents," responded the milk man. "Well, here is thirty-five cents. That will pay for a week." And that worthy citizen went in to his breakfast. For all that week the milkman faithfully left the milk on the door-step each morning, and after the week was up he continued to leave it and the citizen continued to take it inside every morning and use it. Things went on this way for a year, and finally the milkman presented a bill for milk for fifty-one weeks. "But I only ordered milk of you for one week. You should have stopped when the time was up," said the citizen. "Have you not received the milk each morning and used it?" asked the milkman. "Yes, but I thought you was giving it to me," said the citizen. "You're a blamed fool or else you are a terrible liar," replied the quick-tempered milkman. "And if you don't pay for that milk I'll have the law on you. The man paid up. Should you ask us the name of this protesting citizen, we can only tell you that it is the same man that took the local paper for seven years and then refused to pay for it, because he had only paid for a year when he subscribed, and claimed he thought that the publisher was giving it to him—
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BRANT COUNTY MEETING

Brant County Bee-keepers' Association met in the Court House, Brantford, Saturday afternoon, October 27th. There was but a slim attendance owing to the downpour of rain, those who were present, however, felt well repaid for the effort, hearing Mr. McEvoy, inspector of apiaries, talk on feeding colonies and preparing them for winter. Mr. McEvoy believes in contracting the brood chamber to five or six combs and that these combs should be solid stores. From past experience with this system he has absolutely no fear of wintering. Feeding when it has to be done late, he said, should be done from underneath rather than from above the cluster, in order that the bees take it readily and store it. For this purpose he recommends the Miller feeder, only that it be made the full size of the hive, the food apartment to have a handful of hay or straw so that the bees will not drown, and the feeder placed underneath the brood chamber on the bottom board, having the usual rim to give an entrance. The bees in passing in and out use the centre opening of the feeder, which, of course, has its cover removed for this purpose. Another plan which friend McEvoy recommended, when feeding from underneath is not practicable or possible, is something after what is known as a pepper box feeder, or an air feeder, simply an ordinary feeder with the glass cover removed and in its place a disc of perforated zinc, perforations about one-sixteenth of an inch, the usual rubber ring is placed on the top edge of the mouth of the feeder, the zinc disc put on instead of the glass cover, and the metal ring is screwed down upon it, making it secure. A hole or holes may be cut in the quilt and one or more of these

feeders upturned on the frames, according to the requirements of the colony. Being an air feeder, the syrup will percolate only as fast as taken by the bees. The feeders must necessarily be placed in an empty super, but this gives the opportunity and advantage of packing them around with chaff or other material in cold weather, thus maintaining the warmth of the syrup for a day or two. The feeder should rest on two little splints of wood, raising it above the frame sufficiently for the bees to pass underneath. A hearty vote of thanks was accorded to Mr. McEvoy for his valuable hints.

The Association's report to the Ontario Bee-keepers' Association showed an average of about 26 pounds to the colony; the smallest average for years.

Considerable discussion took place regarding the proposition to send delegates to the Ontario convention, as the distance to Toronto is short and the rates low, quite a number purpose attending the convention at any rate, and it was decided that the money usually spent in this way be used to pay the expenses of one or more leading American beekeepers to address the United County meeting in January next.

At the election of officers, Mr. James H. Shaver, Cainsville, was appointed president, Mr. Chris. Edmondson vice-president, W. J. Craig, Brantford, secretary-treasurer.

If you want to get on, get in with the people in your line of business or in your profession. Try to make yourself popular with them. If a business man, associate with the best men in your business; if a lawyer, keep in with lawyers. Join the lawyers' clubs or associations. The very reputation of standing well in your own craft or profession, will be of great value to you.—Success Magazine.

MOST INTERESTING MEETING OF THE O.B.K.A., 1906.

(Letter From the President)

The poor season just passed and consequent slender incomes will tend persuade beekeepers that they cannot afford to attend this year's convention. When really they cannot afford to miss it, and should more than ever keep enthusiastic and up to date ready for the great big season of 1907. The program is full of practical subjects with bright successful beekeepers to introduce them.

The new Foul Brood Act, the outcome of last year's meeting, is ripe to bear fruit, only waiting the further endorsement and pressure of the body of beekeepers.

Amendments to by-laws are rendered necessary by the new act respecting agricultural societies. This act gives societies power to fix by by-law the number of directors and districts they are to represent. Makes provision that the president and vice-president shall be appointed from and by the directors instead of by annual meeting. Some changes may be made affecting the affiliated societies.

The directors will be called to meet the day before the convention to consider these matters and get them in concise form for the consideration of the meeting. So that the meeting this year will be the most important and interesting for years and it is the wish of the executive committee that it be largely attended. Splendid railway rates have been obtained as follows:

People attending the exhibition from points in Ontario outside of Toronto will be able to do so at lowest one way, first class fare as follows:—

On Wednesday and Thursday, November 7th and 8th, special excursions will be run by the railways to Toronto from all points in Ontario, at lowest one way, first class fare. Railway

tickets bought on these dates will be good for return up to and including November 10th. People desiring to attend the exhibition on other dates will be able to do so at the same rate, but



H. G. SIBBALD, CLAUDE, ONT., PRESIDENT O.B.K.A.

it will be necessary for them to obtain standard certificates from their station agent when they purchase their ticket to Toronto. One way tickets to Toronto, with standard convention certificates, can be purchased from November 2nd to 10th inclusive, and will be honored for the return journey free, regardless of the number in attendance, up to and including November 14th, 1906. These certificates must be endorsed by the Secretary at the Exhibition in Massey Hall before they will be honored by the railways for the return trip. A fee of 25 cents will be charged for each certificate used.

Meeting to be held at the York County Hall, 57 Adelaide street, East, 7th, 8th and 9th November.

H. G. SIBBALD, President.
Toronto, Ont., Oct. 24, 1906.

—“Yesterday for you—to-day for me.”
—Sancho Panza's Favorite Proverb.

COLOR AND

That color has stinging propensity. D. M. M. in the endorsed by the friends, Scotch: an you a whole lot of but positive, that, have their “favorite” terday I stopped w change a colored s because the little d ing my back throu Although I worke with the white shi get. Yet I have kr as to sting throug Miller, in “Gleanin

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Editor Canadian Be

Mr. Arthur Lain; what average yiel from 75 colonies in vicinity of 100 acres gives me credit for experience with bu a (h) infant at the b to C. W. Post; and especially along the and, Quebec, where buckwheat. I have Lain moved his b the information I th tical use to him. T tion intelligently to know the condi the weather and the ordinary hives are swarmed, for one, I s worth while moving wheat is a very sometimes does I

R. F.

COLOR AND BEE STINGS.

That color has no effect upon bees' stinging propensities is ably argued by D. M. M. in the "Irish Bee Journal," endorsed by the editor. My good friends, Scotch and Irish, I can bring you a whole lot of proofs, not negative but positive, that, in this locality, bees have their "favorite colors." Only yesterday I stopped work in the apiary to change a colored shirt for a white one, because the little demons were peppering my back through the colored shirt. Although I worked hours afterward with the white shirt, not a sting did I get. Yet I have known bees so savage as to sting through a white shirt.—Dr. Miller, in "Gleanings."

[You are right, Doctor. According to our experience, too. Have often counted the stings left in my black felt hat by the dozen, and commented on the folly of the insects.—Ed. C.B.J.]



Editor Canadian Bee Journal

Mr. Arthur Laing wants to know what average yield one may expect from 75 colonies in the immediate vicinity of 100 acres of buckwheat, and gives me credit for having an extended experience with buckwheat. I am only a (h)infant at the business; let him go to C. W. Post; and hundreds of others especially along the St. Lawrence river and Quebec, where they grow more buckwheat. I have already, before Mr. Laing moved his bees, given him all the information I thought of any practical use to him. To answer the question intelligently one would first have to know the conditions of the land, the weather and the bees. If small or ordinary hives are used that have swarmed, for one, I should not think it worth while moving them at all. Buckwheat is a very risky blossom, but sometimes does big things.

R. F. HOLTERMANN.

PREPARING FOR WINTER.

Preparing bees for winter ought to now be the order of the day, providing any preparation is needed. Lack of stores, weak colonies, and old or poor



R. H. SMITH, ST THOMAS, ONT., VICE-PRES., O. B. K. A.

queens are the main points that need correcting. Unite the weak colonies, supersede the poor queens, and feed when it is needed—don't put it off until cold weather. Don't get the idea that wintering is going to rectify any of these shortcomings. Some people have an idea that poor or unripe fruit is all right to can. It isn't. Canning does not change its character. It's the same with a colony of bees. If you expect it to be a good colony in the spring it must be good now—have plenty of bees and plenty of good stores, and a good, prolific queen. Such a colony kept through the cold weather in a warm cellar, say 45 degrees, is almost certain to be a good colony next spring. Now is the time to lay the foundation for next year's honey crop.—Editor, Bee-keepers' Review.

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THE Canadian Bee Journal one year with the following well known and popular Monthly Magazines. Note the regular price of these.

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