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NEW SERIES
Vol. I, No. 3, 1894. JUNE.



Bee-Keeper

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PUBLISHED MONTHLY BY
C. A. OUELLETTE, TILBURY CENTRE.

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T. N. LEIGH, EDITOR.

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The Practical Bee-Keeper.

NEW SERIES
VOL. 1.

TILBURY CENTRE, ONT., JUNE, 1894.

No. 3.

A few spoonfuls of honey, mixed with vinegar, and used as a gargle will quickly relieve a severe cold.

Correspondents will kindly take notice that all communications for publication should reach this office not later than the 25th of the month.

Just received Thos. B. Blow's (Welwyn, Herts England) splendidly illustrated catalogue. This is a work of art, and at the same time is replete with valuable information.

This is the month for the apiarist who desires to prevent or limit swarming to add new combs in such a way that the bees will always have room in advance of their needs.—Le Rucher.

We beg leave to acknowledge the receipt of a very kind invitation to be present at the meeting of the Lambton B. K. A. and regret exceedingly that pressure of other business made it impossible to attend. We regret it the more as it was our intention to publish a complete report of the meeting.

Linwood, May 21st, 1894.

PRACTICAL BEE-KEEPER,

Tilbury, Ont.

Your premium queen just received and she is a dandy. Weather a little cold just yet for introduction.

Yours Truly.

A B.

We are in receipt of an interesting letter from Mr. Bussey, but regret to say it is too late for insertion in our already crowded June number.

Apropos of Hasty's criticisms in the Bee-Keeper's Review and Peter Piper's remarks thereon, we would call the attention of our readers to the Canadian talent in this number. Articles such as those written by A. E. Hoshal, Peter Piper, Bohemian, N. H. Smith, Allen Pringle, and other Canadian writers, evince not only a practical knowledge of bee-keeping, but also a degree of literary talent well worthy a place in the literature of bee-keeping. We would submit to our many subscribers the desirability of sending in items of interest that have fallen under their notice, and if they are not what Mr. Boomer calls professional writers, they will soon acquire a style and capacity for interesting others. The PRACTICAL, however does not intend to confine itself to Canadian writers but will give place to any matter which is likely to interest the majority of its readers and whether from home correspondence, translation or extracts from foreign journals, will endeavor to so improve the tone of this Journal that you literally, can not afford to do without it.

Just think, a bee-journal one year and a pure Italian queen for one dollar.

BEEES AND POLLINATION OF BLOSSOMS.

BY PROF. A. J. COOK.

[A lecture Delivered Before the Southern California Horticultural Society at Pasadena, on May 3rd, 1894.]

I am glad that I was asked to open the discussion on the subject of pollination. It is one that has interested me much in the past, and one to which I have given some thought, study and investigation. It is, I believe, one of first importance to the practical fruit-grower, and, when it is rightly understood, will change not a little the views and practice of many of our pomologists.

I need hardly state here that the essential organs of every flower are the pistils and stamens; and that for the plant to fruit, it is absolutely necessary, in most cases, that the pollen from the anther, or tip of the stamen, shall reach the stigma or end of the pistil, that it may send its tubular growth down to influence the ovules in the ovary at the base of the pistil. Unless these pollen-cells reach the ovules, the latter are unable to develop, and in nearly all cases there will be no fruit. It is possible that in very rare cases the so-called fruit may develop without pollination, but this is never true of the seeds. This process is known as pollination, or pollenization. Fructification and fertilization are also used, but the latter may be used and is in another sense, and is undesirable. We may speak of fertile stamens when they are able to produce pollen, and of fertile pistils when they are able to bear ovules.

It is also known that many plants, including most of our cultivated fruits, especially those with showy or sweet smelling flowers, must receive the pollen from other varieties, or pollination will be imperfect, or entirely ineffective.

That is, if the stigma of any flower receive pollen from the same flower, or from flowers of the same tree, or from those of trees of the same variety, either no fruit will be produced, or if produced it will be imperfect, perhaps small and seedless. In other words, much of our fruit bloom, that it may bear perfect fruit, or any fruit at all, must be pollinated from some other variety: as Bartlett from Anjou, or Anjou from Clairgeau, etc. The arguments in favor of this view are drawn from the structural peculiarities of the flowers, and also from experiments.

In many flowers, especially irregular ones like the orchids, the peculiar form of the flower precludes close pollination and makes the presence of insects necessary to any possible pollination. In dioecious trees—those in which the pistilate flowers are all on one plant, and the staminate all on another—crosspollination is absolutely necessary, and unless pollen is carried by the wind or insect, there can be no pollination. The willow and poplar are examples of this kind of inflorescence.

You all know that some of our common varieties of strawberry are almost wholly pistilate. In other plants termed monoecious, the flowers are all either pistilate or staminate, but both kinds are on the same tree or plant. In such cases there must be transfer of pollen, but not necessarily from a different tree. The oaks, walnuts and sycamores are all monoecious.

In many hermaphrodites, plants with perfect flowers; where each flower bears both stamens and pistils, there is a very curious provision which insures cross-pollination.

(TO BE CONTINUED)

Subscribe now.—Our stock of those beautiful 5 Banded Italian queens, is sure to give satisfaction.

PROSPECTS OF THE SEASON.

For the Practical Bee-Keeper.

The spring so far has been very fine and bee keepers have not the usual complaint about spring dwindling. Since the spring opened there have been but a few days that the bees could not work, and only a few days that they suffered from night winds, and as a result the hives now on the 18th of May are flowing over with bees and swarms may issue any day.

The apple bloom is very fine and the bees are gathering honey freely so that the indications are that with the fine start now made, there should be a large crop of honey this season.

Our chief dependance in this section is on alsike and white clover, basswood and the Canada thistle. There is not much alsike grown here as the farmers do not seem to care much for it, but white clover is abundant. Last season however was too wet in the white clover season, and it did not yield much honey and it was also the off year for basswood, so that the honey crop was not up to the average. This year will likely be better as we will have (most likely) a fine bloom of basswood and the usual flow from white clover.

As a result of the short crop last year, there is no old stock lying over, the grocers and other dealers are enquiring for it, and we expect a ready sale for the new crop, and at fair prices.

Whilst I may write a short article occasionally for the "Practical" I do not as yet assume to be a "Practical Bee Man." I am just a student, anxious to learn all I can and after reading the April number of the C. B. J. I determined to keep down swarming so far as possible. Then when the May number came in, the advice seemed to be to let them swarm once, and although I have as many as I can fairly handle, I have

now decided to let most of them cast one swarm and prevent further swarming by the "Heddon" process, then remove the old hive to an out apiary and leave them to build up for winter. This will be done to prevent mistakes as to the young Queens, and also for better pasturage.

Yours respectfully,
A. BOOMER,

If you receive a copy of this number of The Practical and if you are not already on our list you are respectfully invited to subscribe at once. We send out this month a number of sample copies, and on receipt of a friend's name we will send him or her a sample which may materially aid them.

To those among our subscribers who desire a good French treatise on bee-keeping we would say that we have made arrangements to handle:

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Avec la description de trois types de ruches, 3 planches et 91 figures.

Par Ed. Bertrand, Ny on, Suisse.
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PRODUCTIVE COLONIES.

Dear Mr. Editor.

It may be surprising to some, especially the novice, when I assert that the question of profitable honey production is not one of obtaining from our bees the largest yield of honey per colony, but rather that of obtaining it at the least expense per pound; and anything which frustrates, or makes this point a side issue, shows to a greater or less degree the way to financial loss. This as I have so often seen, is the case where to a greater or less extent impractical bungling implements, more especially hives,

are used, thus necessitating slow, tedious, troublesome manipulations which are more or less discouraging and exasperating to the bees, and unprofitable to the apiarist and not only that but sometimes impractical bungling methods are used in connection with good practical implements, that I cannot well forbear mentioning it in connection with this subject of "Productive Colonies," because so many, especially beginners, seem to think that profitable honey producing consists principally in obtaining large yields of honey per colony and are caught on this kind of chaff and often apparently never realize it.

Now I do not wish to be understood as advocating small colonies or small yields per colony but rather that in preparing our bees for the honey flow and in harvesting it we "must not pay too dear for our whistle" in time, labor and capital expended.

Colonies to be profitably productive, should by the opening of the clover bloom be crowding their hives with brood and bees. These bees should be of the proper age to be field workers. They should also be a strain of the best working quality, they should contain a queen capable of keeping the brood combs full of brood without forcing. They should be domiciled in a hive well calculated to secure their prosperity, and also to secure to the best advantage of their keeper, the surplus of their labor.

This as outlined is within reach of the practical, and in proportion as we fail in securing these ends, will we fail in making the most of the honey flow which follows.

To accomplish this it is necessary to begin the season before. Plans should be laid in June, and in some respects executed by the close of the honey flow in July. As far as the bees themselves are concerned, there are two things we must carefully attend to, (1) that they are of working strain. (2) that their queen

is normally prolific. Whatever other good qualities our bees may possess, these two are of the prime importance if they are to be good honey producers the following season. Careful selection and breeding is the key to the situation, and where this has been neglected, we will find in the same yard, colonies under like conditions, otherwise, some colonies producing three and four times the amount of surplus as others. This state of affairs ought not to be.

It is also equally important that our colonies shall be successfully wintered. Weak colonies, energy gone, spring dwindling, &c., all of which are against them becoming sufficiently strong in time to be profitably productive, are the results of bad wintering, and are prevented by early, careful, intelligent and thorough winter preparation.

Right in this same line and following the rigors of winter, comes spring management. It consists mainly in protecting our colonies from cold and robbers, seeing that they have sufficient stores for rapid brooding, and leaving them severely alone, until the season has become settled and well advanced and they begin to crowd their winter quarters with brood and bees, when their hives should be expanded according as their requirements demand.

Taking it for granted that this outline of management has been successfully carried out in detail, and at the minimum of expense, which is really the part that tests the ability of the apiarist, and that as already intimated, the matter of a practical hive has not been overlooked, the apiarist will be in a position with intelligent management, to obtain from nature such a supply of the sweet which she offers through the clover and basswood bloom, as to be able to say at its close, that his colonies have been profitably productive.

A. E. Hoshal,
Barmsville, Ont.

IN VINDICATION.

Continued from the last.

As to "scoffers," I have neither sympathy nor respect, for the man who would scoff at anyone's honest belief, no matter how untenable or absurd. I scoff at a man's bigotry, and sneer at his religious arrogance and hypocrisy but pity the man himself. Some Christians, however, persist in calling people who differ from them in religion, "scoffers," and those who choose to take reason instead of blind faith for their guide they stigmatize with the approbrious term "infidel."

The late and lamented Prof. Tyndall—the world renowned scientist who died recently—has left his opinions on record that if he wished to find an honest and honorable man—one whose word is his bond, and whose duties in this world to family and society are faithfully performed—he would seek him, not among those making loud professions of religion but among those whom the world calls "infidels" and "atheists." How far this is true let those who come in contact with the secularists and the religionists and have dealings with both, decide.

The leading scientists, philosophers, scholars, and literateurs of the world today are certainly infidels, if to disbelieve the creeds and dogmas of Christianity makes them so. And they are found among the intelligent of all classes. They are to be found in the churches and out of them—in the pulpit and out, and in the universities, theological as well as secular. Reason is coming to the front. Science is marching on and by its all-powerful search-lights is just withering superstition and scorching fable and falsehood. In these days everything must show its title deeds or expect to go to the wall. Nothing is too old or sacred to be examined. Nothing, no matter how hoary and musty, need seek to hide itself from the light. The so-called infidel is

quite content to abide by the result. It is not he who is afraid of investigation of an opponent's logic or his facts. He courts them all. He never shuts off discussion. He is seeking truth. His opinions and beliefs are not crystallized for him by antiquity. He does not care to take more of them from his worthy ancestors than will stand the crucible test of modern science and modern thought.

When the editor of the American Bee-Journal "lays the flattering unction to his soul" that most of his readers and the very best writers of bee literature today are of his way of thinking in matters of religion he is away off, and reckoning without his hosts and patrons. From personal and positive knowledge—which it would not be proper here to divulge—I could name some of his ablest, best and most valued correspondents on his side of the line, some of them distinguished apiarian writers and authors; and on my own side of the line in Canada, men among our ablest writers and best apiarists, who all would come fairly within his category of infidels and scoffers. At any rate they no more believe the dogmas of Christianity than I do.

Speak by the book and friend York's unsophisticated soul would be astonished at the truth. These men keep quiet for business or social reasons; and I am not blaming them for keeping quiet. It is their right to do so, and in some cases their duty to do so or be boycotted in business, or ostracised in society, if not persecuted in other ways, is certainly no credit to the popular religion. For myself I do not choose to keep mum. I have always been in the habit of expressing my opinions on all important matters on which I had an intelligent opinion whenever I thought it my duty to do so: and I have no idea of relinquishing the precious right, either for business, society, Mrs. Grundy or anything else. I believe, however, in exercising discretion in attack-

ing popular error. But while aggression is not always justifiable, defence is. I would not attempt to take advantage of the columns of a bee journal for theological controversy, and this article is written purely in self defence of those (and they are not a few) who think with me, and who are assailed without provocation.

In conclusion, I have a word of advice to editors of bee-journals. It is this:—keep your own religious opinions out of journals or else make up your minds to hear both sides. You may preach justice, honesty, veracity, kindness, purity of life, peace and good will, in your columns as much as you like and your space will permit and you will offend neither Christian nor Secularist; but keep your religion out or open up your columns like men and stand the fire of argument and refutation in reply."

ALLEN PRINGLE.

OTHER IMITATORS OF NATURAL SWEETS.

I notice that a bill has been introduced into the Commons, and been read a second time, which provides for the imposing of a penalty not exceeding \$400 and no less than \$100, and in default of payment imprisonment for not less than three months or exceeding twelve months upon any person convicted of manufacturing a substitute for honey from cane sugar, or from any other substances, as the act puts it, "than those which bees gather from natural sources." Natural sources, of course, mean from clover, flowers, sweet ruby lips and the like. When the framer of the bill was going into the business of providing for the punishment of the makers of imitation honey, he also should have included other imitators of natural sweets, especially makers of imitation maple sugar and maple syrup. The great bulk of the maple sugar and syrup sold

never saw the maple woods at all, and the juice of the maple tree is as absent from their composition as are lemons from circus lemonade. Maple sugar for the most part is made from brown sugar, and maple syrup from cheap molasses. Sometimes a very little of the juice of the tree is put in to give it a flavor, and sometimes a substitute flavoring is used. Surely, if the imitators of honey are to be punished by being fined from \$100 to \$400, or imprisonment for from three to twelve months, so should the imitators of maple sugar and maple syrup.—

Bohemian, in St. Thomas Journal.

EXTRACTING.

N. H. SMITH

June in these northern climates is the season when bees may be said to be "in full blast," and the "honey harvest is on."

To your readers who have transferred from box-hives as described in your numbers of April and May, and who have their bees all ready in frame hives, extracting is next in order provided they do not intend to run for comb honey.

In addition to their appliances already on hand, a honey-extractor and a honey-knife will be needed.

The former may be purchased at any price from \$6 to \$25, the price depending on the size and style. A good one may be bought for from \$8 to 14 and a knife from 50cts. to \$1.50.

Having provided everything necessary it will be well to proceed as follows:—Place an empty hive on top of every hive from which you wish to extract with a queen excluder between the brood nest and the empty hive. Now if you have empty combs, fill the hive on top with them; if not put in foundation comb and as soon as the bees get it filled (you can tell by lifting the cloth, when, if

you see that the bees are capping the comb) it is time to extract.

Raise one corner of the cloth and blow a little smoke on the bees which will cause them to run down out of the way. Then have ready another set of combs to take the place of those you are going to take out. This will be convenient as you will have to go but once to a hive. Place the full combs in a comb basket made for that purpose, and if there are any scattering bees on the comb, brush them off with a bee brush, and take your frames to your honey house where your extractor is.

Hold the honey knife in hot water so that it will not stick to the comb when uncapping. As fast as you uncap a comb, place it in the extractor, and be sure to have all the combs as near the one weight as possible, in order that the extractor will run more easily.

If the honey is new you will not require to turn very fast, a few turns will throw out all the honey on one side, then if your extractor is not of the reversible kind you will have to turn each comb so as to throw the honey out from the other side, although when uncapping the comb both sides should be uncapped at the same time.

Proceed in like manner with each hive. If there is a good honey flow you will have to extract two or three times per week unless you add another top hive.

I have always used full frames for extracting and by this method the brood nest is not disturbed. The queen excluder keeps the queen from entering the top hive, and you will not be bothered with any brood.

Another advantage in this method is that the different kinds of honey may be kept separated.

The criminal judge may be a man of few words, but he is not always a man of short sentences.—Philadelphia Record.

FORMIC ACID.

The greater part of apiculturists trouble themselves but little with the importance of the role which formic acid plays in the economy of the bees. If the pain from the sting did not remind them from time to time of its presence they would be led to ignore it completely.

Formic acid is found in certain plants such as the nettle and the pine and everywhere in the venom of bees, ants, etc.

Every one knows that, if we open a hive, the bees raise their abdomen in the air, present their sting, and throw out a tiny drop of venom; a penetrating odor, which induces sneezing, impregnates the air—it is the formic acid, an extremely volatile substance which is the cause. The whole of the interior of the hive is constantly impregnated with it; this fluid penetrates into the combs, into the wood and gives them their yellowish color.

Virgin combs, at first white as snow, quickly take on this color, when left for some time in the hive.

Formic acid has a very precious quality; it is perhaps the most powerful antiseptic known. Thanks to it honey may be preserved indefinitely.

There has been found at Dresden, the capital of Saxony, in the cellars of an old house, well preserved honey which dates from the fifteenth century. Thanks to formic acid, with which the air of the hive is constantly impregnated, the combs, the pollen, the food of the larvae, are preserved from fermenting. Mr. De Planta relates an experiment of Professor Erlenmeyer at Munich "In a certain quantity of beer in full fermentation, a small quantity of formic acid, well diluted in water, was placed and the fermentation was immediately arrested." It is only natural after this that apiculturists should say "if formic acid is an antiseptic powerful enough to kill the

ferment in beer would it not be equally powerful to destroy the germs of foul brood?"

And in effect, many, practical apiculturists claim that it is the best remedy for the prevention and cure of this terrible disease of the brood chamber. The *Schweizerische Bienenzeitung* gives many experiments which have been successful. Here is how they went to work.

The bees of a diseased hive were crowded together as much as possible on a few combs; all the other combs were placed to one side. Into an empty comb from a certain height, a thin stream, 100 grammes of formic acid of a strength of 20 per cent, was permitted to fall, and the comb placed immediately in the midst of the infected colony. If the weather is fine and permits the bees to fly, in eight days all the tainted brood will be evacuated, the cells will be cleaned, and all bad odor will have disappeared. Rarely is it necessary to repeat the operation. For the protection of the other hives, it will be well, to place in them a small flask of the acid, lightly corked with a little cotton. To hasten the cure this remedy may be placed in the food of the bees in the proportion of a teaspoonful to the litre (2½ pints wine measure). Three members of our society in whose apiaries, foul brood had made its appearance have used this remedy with success. At our visits we have found much brood in a state of complete putrefaction, but in a few days these colonies were much better, and they have been able to place them in winter quarters strong, and healthy.

From the above we are truly led to believe, that the bees not only recognize the gravity of this terrible malady, but also know the remedy for its cure. Lichtenthaler says on this subject; "No one can deny that the germs of foul brood are found everywhere

generally the one thing lacking is a favorable place to develop. Heat and dampness are necessary for this; but these conditions are found in the brood chamber, only the bees render them harmless by means of formic acid. A comb brood, with its nurses placed in a room heated to 35° will certainly become foul broody? In order to disinfect the air which enters when a hive is opened the bees immediately throw out their venom in such large quantity.

We have already said that honey owes its qualities in a great degree to the formic acid, and we are led to inquire how it is introduced there.

Is it contained in the nectar of flowers, does the stored honey absorb it from the air of the hive, or does it come from the sting of the bee. Dr. Mullenhop explains it in the following manner; "when a cell is filled the bee throws into it a tiny drop of the venom, and afterwards the cell is hermetically sealed with wax to hinder the evaporation of the honey.

This theory was not accepted by Schoeufeld who engaged our compatriote M. De Planta to furnish scientific and irrefutable proof that the acid contained in honey could come only from the blood of the bee. In several articles in the *Schweizerische Bienenzeitung* the indefatigable researcher, to whom apiculture already owes so much, refutes the opinion of M. Mullenhof by proving that 100 grammes of sealed honey contains 0.186 grammes of formic acid of a strength of 20%. One hundred grammes are the contents of 165 work cells. But the least little drop of venom would contain 0.54 grammes of formic acid, which would make for 165 cells 4.1910 grammes that is to say 260 times more than there is in reality. Such a quantity of acid in honey would render it absolutely unfit for eating.

M. De Planta proved next that the

nectar of flowers does not contain the acid, and that the air of the hive could only transmit it to the honey in insufficient quantity.

By analysing the blood of the bee, the contents of the craw, and the salivary glands he arrives at the conviction that the origin of formic acid is found in the blood of the animal. The blood circulating in all parts of the body, naturally permeates the salivary glands and deposits with them ferments necessary to digestion as well as formic acid. The nectar in passing to the craw of the bee receives a portion of the saliva impregnated with formic acid. In fact, in analysing the contents of the craw, the presence of the acid is determined whilst in the nectar there is found no trace of it.

"The honey is afterwards disgorged from the craw into the cells, where it remains until it contains not more than from 20 to 25% of water, after which it is sealed, and commonly called "ripe honey". Composed as it is of a dozen elements, it offers a food rich in plastic substances. Its time of preservation is unlimited and its hygienic virtues innumerable.

ULR. GUBLER.

Revue Internationale.

PETER PIPERS' NEWS NOTES.

Bees came out of winter quarters in good heart but, by and by, "a change came over the spirit of 'heir dreams," because when fruit trees were in bloom they were compelled to remain indoors much of the time through stress of weather.

The truth of Prof. Wilcox's statement was denied because of the impossibility of manufacturing honey comb, but this feat has been about accomplished. The British Bee Journal, of the 10th of May says. Among the novelities of 1884 already introduced, is that just brought under our notice by Otto Schultz of

Buckrow, Germany. "We have presented to us a sample of finished comb, made from genuine bees-wax with worker cells $\frac{1}{2}$ in. deep—which has never been touched by bees at all, but is just as it comes from the machine of the manufacturer."

Dr. Wm. R. Howard has written a carefully prepared scientific treatise, on the cause and treatment of foul brood. Mr. McAvoy's theory of the cause is noticed, but not endorsed—his treatment however is awarded the palm. Here are the Doctor's closing words on the latter subject and the closing words of the book too: "Thus it will be seen that though McAvoy's method of treatment, which at first was so unpopular, and seemed so far from being correct, has much to my surprise (and need I say disappointment?) been shown to be the only rational method laid down, among all the writers on this subject." This is a feather which Mc—may well stick in his cap and wear with pride.

"First they got kale to kale
Then they got cold kale hot again.
Next they got butter on kale
And curly kale to that again."

The above stanza of the old ballad recurred to my mind, on reading Hasty's summary of the preceding months literature, in the Review. He notes the tendency of a certain Journal to give over much of its space to the productions of a favoured few. Hasty is a clever fellow, and his monthly summaries of current bee literature is well worth reading. Like most reviewers he is somewhat lopsided, and his leaning is decidedly Stat's-ward. He does not entirely ignore Canada. He occasionally notices it en passant. It is clear he has not yet realized the fact that we have among us some of the foremost bee keepers in the world. But I suppose this fact has been overlooked by him, because of the other fact, that merit is never presumptive. He devotes most of his attention to those men who have served their kale to

hungry bee keepers for years past. That they succeed in making it palatable to their customers under such divers forms speaks for their skill on cookery, and stamps them as masters of gastronomic science.

"I would not enter on my list of friends,
Though graced with polished manners
And fine sense,
Yet wanting sensibility.
The man who would heedlessly put his
foot upon a worm."

The gentle poet was evidently particular about who he numbered amongst his friends, yet this is a term almost universally used in this country when one bee keeper addresses another—no where else—and amongst no other class is it so indiscriminately employed. "Why is this thus?" The answer must be, that those who thus use it are ignorant of what the word means.

"Merry sounds are sweet,
Most ravishing to the ear.
But sweeter none than voice of faithful friend,
Sweet always, sweetest heard on
loudest storm."

True friendship is a "union of hearts" and yet we find men who never met each other—who know nothing of one another's nature—who are not sure of one another's respectability, mutually bandy the sacred term "friend."

Whatever other people may do, let Canadian beekeepers cease to manifest a hollow hypocrisy, by addressing strangers, of whose character they know but little as friend

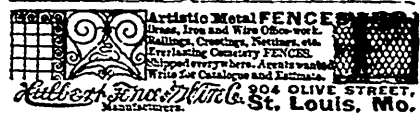
PREVENTION OF INCREASE.

BY J. H. ANDRE.

Although my experience in bee-keeping has been with considerably less swarms than the average, I often found myself with too many in the fall notwithstanding the great care I had practiced to prevent it. Since going out of the business two years ago I have been thinking of a hive

for new swarms which would run the strength of the swarm to surplus and admit of uniting with others in the fall and still prevent increase to any extent. The hive should be made the width of two frame spaces larger one way than the other. Probably three inches longer than square. Fill the centre of the hive with an inverted box with the exception of a space wide enough for a brood frame on each side. Put in two frames the short way of the hive. This will shorten the space on the long side to admit of the same length of frame. Put on a queen excluder and as many sections as desirable, probably three tiers. In the fall there will be but few bees left which may be united with another colony and the brood frames used to replace old ones in the colonies intended for wintering. Or if desired, three summer colonies could be united for wintering. A wide Langstroth hive with the frames the short way is nearly the size needed. The entrance to the summer colonies could be left open on all sides. My reason for thinking this plan an improvement on contracting at the outside, is, the bees will be more inclined to enter the surplus at the outside and finish the sections better than if the strength of the colony was confined to the center of the hive.

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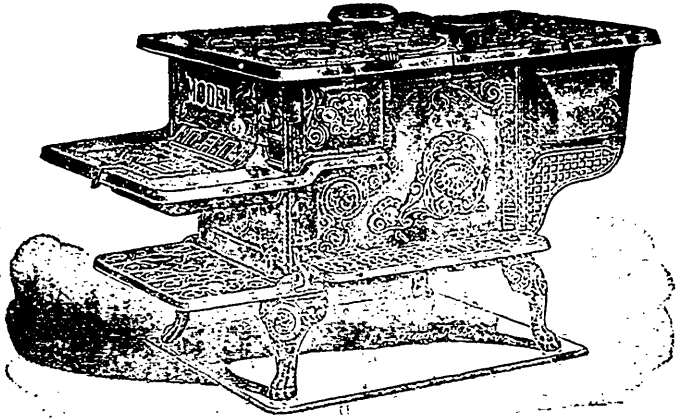
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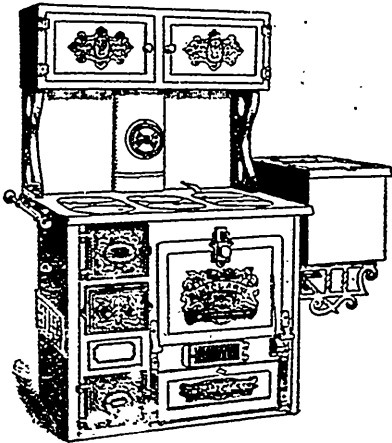
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