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Thirty or Forty Colonies for sale, in good condition with lots of honey for wintering, at reasonable prices Enquire of

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## The Canadian Bee Journal.

*D. A. JONES & Co., Publishers.*

### OUR EXHIBITION NUMBER.

WE are proud of the privilege of presenting to the bee-keepers of Canada the twenty-fourth number of the CANADIAN BEE JOURNAL. Many into whose hands this number may come will perhaps have seen the C. B. J. for the first time—we hope it may not be the last. Since commencing the publication of the JOURNAL, we have been extremely successful in securing the aid, unsolicited, of many of the best bee-keepers of the present day—to them is due any measure of excellence and praise which it merits—and to them we extend our warmest thanks. Our aim shall, as in the past, be to further the interests of bee-keepers and if after reading this, which is only a sample of what we hope to make every number, you think that fifty-two of them will be worth ONE DOLLAR to you we shall be pleased to add your name to our list.

### OUR OWN APIARY.

#### BUSINESS GENERALLY.

SEVERAL of our readers have asked "how many apiaries and how many colonies of bees have you? We have eight apiaries just now; during part of the season we had but five, but as the number of colonies got too numerous for the five apiaries we made the other three. As to the number of colonies we have now, or the number we started with in the spring it would be impossible for us to say as there is hardly a day that the number is not changed by increase or sale. We have sold nearly \$6,000 worth of bees and queens this year, and we can spare \$4,000 worth more, and still have as many as we can care for another season. With the CANADIAN BEE JOURNAL and other business

to attend to our time is so much occupied that we are not with the bees quite as much as we would like to give them our personal supervision. The supply business has not been up to our expectations this year as we made extensive preparation last winter and spring for the season's trade. We will carry over a stock of \$10,000 to \$15,000 worth of stock and supplies till next season. Taking into consideration the great mortality among bees last winter and spring our trade has, under the circumstances, exceeded our expectations.

#### LIGHT COLONIES, FEEDING, ETC.

On the first of September we had quite a heavy frost which we were sure would destroy the more tender fall flowers—boneset, golden-rod, mint and asters would not be much affected by it, especially the latter, as only those in favored locations have come into bloom. In many places where fall flowers are not sufficiently abundant nor the prospects good for a fall yield it would be better for each bee-keeper to carefully weigh up his colonies. When the combs are filled with brood is a good time to feed, because the bees will then place the honey along the top bars of the frames lengthening out the cells, if fed plentifully, and as the brood hatches out the cells below will be extended. By this means the upper portions of the frames are filled with stores and sealed, while the lower portion forms a comfortable place for the bees to cluster. Many have doubtless been increasing largely this season and are likely to have a number of colonies, which, if not looked after at once, will go into winter quarters with very few bees. Many bee-keepers practice making their colonies from others by dividing late in the season. Although these new colonies may be strong at the time and for a month or two afterwards, yet we must remember that all the bees in that colony for the next twenty-one days are the bees

placed there when the colony was made, and it will be readily seen if the brooding is not carried on rapidly to supply their places that as these bees become old and die off and the colonies, although apparently strong early in the fall, will be weakened down and go into winter quarters with very few bees. All such colonies should be liberally fed, first feeding just enough to stimulate brooding, and after sufficient brood is in the combs forcing them by rapid feeding to place the stores around the brood nest.

LATER.—We have just returned from one of our bee-yards where there are about 200 colonies, and although there is a very large quantity of Fall flowers in the locality the weather for the past few weeks has been so unfavorable that scarcely as much honey has been gathered as was consumed. Some of the strong hives have stored a little, especially those that were not brooding very fast; others that were brooding rapidly seemed to have less. Several hives that were weighed a month ago now weigh from five to nine pounds less. It is annoying to have to be troubled with visits from light-fingered gentry. These visits are made at rare intervals, we are glad to say as we very seldom have anything stolen.

#### OUR EXHIBIT AT TORONTO.

We will exhibit some new features in connection with bee-hives, wired frames machinery for frames, three or four different kinds of bee-tents—an extracting house and tent combined, a swarm catcher or miniature bee-tent, a folding tent—new features in connection with the production of comb honey, new styles in reversible section crates and reversible section cases or supers, honey boards, a new system of arranging sections in the wide frames as described in one of the first numbers of the JOURNAL, and a liquid feeder called the "Canadian feeder." We shall be pleased to explain the working of any and every im-

plement connected with our exhibit, and experienced and willing assistants will help us. Our endeavor will be to make it worth while for any visitor interested in bees to call at the "Honey House" and spend an hour or two with us.

### COMB HONEY.

A SPLENDID METHOD OF MARKETING.

YOU all know, or at least you all will know before you have been engaged in the honey business very long, that this sweet nectar requires to be put upon the market in just the same



way as all other goods to command the trade and sell at ready prices—neatness cleanliness and attractiveness are the points of excellence needed to find ready

sale for any article. You cannot take your butter to market in an untidy and slovenly looking way and get the price for it that a person does who prepares it neatly and offers it to the merchant in a tempting shape. No more can you take your honey to market in a soiled and dirty state and get the same price that does the man who delivers his honey in nice shape. If you do, then we decide at once that the merchant who buys of you doesn't understand his own business.

Nice glass jars and tins of various styles are largely used for extracted honey, but until lately it has been impossible seemingly to design any method whereby comb honey could be placed on the market in a tempting shape. Now, however, we believe the package has been found. It consists of a manilla box put up much the same as confectionery packages now-a-days, and of a size to hold the one pound sections, as that seems to be the size in general use. Of course they can be made to hold any

sized sections. They are folders and can be shipped quite readily in the flat making the freight light. They carry by a neat little tape handle and when labelled with a nice lithographed label are beautiful to look upon. Our engraving will show this particular package off to good advantage. Each label may bear the name of the producer, and, to create a name for yourself as a honey producer, all the honey you sell should have your name and address on the package. Then when people get a nice article they are sure to look at the name, or brand, and when buying again they inquire for your particular product. Thus you win for yourself a name which it should be your greatest anxiety to keep untarnished; then, instead of hunting a place to market your honey you will find the purchasers *coming to you*. These packages for comb honey do not cost a very great deal, and what they do cost will be more than made up in the increased price obtainable for your honey when put up in this manner. The prices are: per 1000, \$16; per 100, \$1.75; each, 2 cents. The labels cost per 1000, \$3.50; per 100, 45c. Printing name and address per 1000, \$1.25; per 100, 30c.

FOR THE CANADIAN BEE JOURNAL

### THE C. B. J. AFTER SIX MONTHS.

To the Publishers and Readers—Greeting:

**P**ROBABLY no bee-keeper in Canada six months ago would have ventured to predict such a degree of success as is already attained by the CANADIAN BEE JOURNAL. Only a few of us thought the times were ripe for the venture; many thought the contrary and apprehended failure, but these had not adequately gauged the popular interest in bee-culture then so rapidly developing and still deepening and expanding. But the semi-annual anniversary of our thriving little JOURNAL finds it in a position which amply proves that the times were ripe in Canada for the commencement of a journal devoted entirely to bee-culture. The field was wide, and open, and even inviting, and the C. B. J. opportunely came forward to fill the breach, and no one will venture to say that

it has not more than filled the bill of expectations. Those who doubted the feasibility of the prospect, and some even who predicted failure, have all, it is pleasant to know, fallen into line and are contributing their part by putting their shoulders to the wheels of the new vehicle of apiarian progress and development. The great success of the JOURNAL is still more surprising when we remember that the launch was made at a particular juncture most unpropitious so far as secondary influences are concerned—at a time of a great mortality among the bees throughout the country, which continued throughout the Spring, and hence a time most discouraging to bee-keepers and those thinking of going into the business. But the result proves two things: it proves the deep popular interest in the subject, and it proves the stuff that Canadian bee-keepers are made of. That they are not to be easily discouraged is plain. They are not the "summer soldiers and sunshine patriots," we read of, but genuine and persistent devotees of the science and art of apiculture. But, then, we must also remember that the new Journal of nascent, Canadian bee literature, though the field was open and the times inviting, never could have made such progress had it not fallen into good hands. It is seldom that a good publisher makes a good editor, and *vice versa*, but here we have an exception. Mr. J. has proved himself not only good in the *mechanism* of publishing but in the *mead* of editing—being thoroughly versed in everything appertaining to bee-culture, thoroughly practical in his editorial functions, and last, but probably not least, thoroughly peaceable with all men. This last, let it be remembered, is in these "degenerate days" a rare quality in an editor. Mr. D. A. J. is evidently no relation to the proverbial "fighting editor," but says in effect with Grant "let us have peace!" Now, every bee man will say this is just as it should be. Let the political and partizan editors fight away and sling slush to their heart's content: let the mere *literateurs* with polished blades split their metaphysical hairs, and fence never so dextrously, and flourish their gall-tipped quills; but let the bee-editors attend to more important work and be liberal and courteous towards each other like their constituents, for we all know that wherever two or three bee-keepers are gathered together, whether in the bee-yard, in the domicile, on the street corner, at the Toronto Fairs, or elsewhere, there is amity, equity, and joviality, and hilarity, and a great many other *T's* too numerous to mention. Thus has Mr. Jones, after six months trial, proved himself to us to be a success as a bee-editor—peaceable, as already noted,

practical, as we all know, patient, as the answers to beginners prove, and prompt, as the regular appearance of the JOURNAL itself every week, as well as goods ordered, would fairly indicate.

If, then, the publishers of the CANADIAN BEE JOURNAL have undertaken to meet the financial risk of giving to Canadian bee-keepers such a journal at so low a price, and *weekly* at that, it certainly behooves us to do our part? What is the duty of Canadian bee-keepers in these premises? Just this:—Every one of them ought, if he is not already a subscriber, to become one at once. This number of the JOURNAL, through the medium of the Toronto Industrial Exposition and the annual bee-keeper's Convention will find its way into new hands. Let none such forget to lend their assistance to Canadian bee-culture by subscribing for and supporting its organ the C. B. J. Then let each one induce his neighbour bee-keeper to subscribe. From a purely business point of view no bee-keeper, even though he may have but a couple of colonies in old box hives, can afford to be without the JOURNAL. In the course of a year he cannot fail to get information from its pages worth many dollars instead of one to him; while to those handling a considerable number of colonies without having had much experience (and this class is now quite numerous) one number of such a journal might prove to them of more value—money value—than the amount of a dozen year's subscriptions. Why? Simply because the best and most scientific thought and information of the age on Bee-Culture are to be found in its pages. The leading bee-keepers of Canada—the editor at their head—give freely of their knowledge and the fruits of their long experience to its columns. Some of the best practical and scientific bee-keepers in the United States also contribute their valuable productions to its pages. And as to British bee-culture and that of other foreign countries our editor, being a wide-awake man, will never fail to notice and note anything new and useful on the subject in trans-atlantic countries—or trans-pacific either for that matter.

These are some of the reasons why every Canadian bee-keeper, aye, and American bee-keeper too, ought to read the CANADIAN BEE JOURNAL. But the bee-keeper's duty is not all done to the JOURNAL and to himself when he becomes a subscriber. It is only commenced. First and foremost he must be a *paying* subscriber, and pay always in advance if it is a possible thing for him to do. It surely must take a considerable amount of money weekly—and ready money—to get out such a journal; and considering the very low subscription price the subscriber ought to be very prompt in his

payments. Then it is the further duty of the subscribers to send to the JOURNAL important facts and items which may come under their notice and within the range of their experience.

Reports from subscribers in different parts of the country, which would include a notice of the flora of the locality or the leading honey plants, the character of the season, the honey crop, success or failure in wintering, etc., etc., make interesting reading, and subscribers can do much in this way. It is satisfactory, however, to learn from late issues of the JOURNAL that there is no lack of original matter to fill its pages.

ALLEN PRINGLE.

Selby, Ont.

We thank Friend Pringle for the eulogies which he sees fit should be placed upon the CANADIAN BEE JOURNAL. If we have given the readers of the C.B.J., value for their money we are satisfied, and Friend Pringle thinks we have. We have striven earnestly and diligently to have "peace with all men," and our strivings have for the most part not been in vain. Not a single line has ever appeared in the JOURNAL with the intention of wounding the feelings of any reader or non-reader whatsoever, and our endeavors have been to so conduct it that even the semblance of such an intention could not be construed. Whether we have done this or not, our readers are the judges. If all those who receive this issue of the JOURNAL will put their "shoulders to the wheel" as Friend Pringle suggests, the success of the CANADIAN BEE JOURNAL will be an assured fact, if it is not such already. It *does* take considerable money each week to get up the C. B. J., and our outlay thus far is much in excess of our income, but in all new enterprises that is to be expected. All, however, is encouragement.

BEES ALL DEAD.

MRS. J. BENTLY, BLYTH, ONT.—Accept my thanks for the beautiful samples of labels you sent me, but I am sorry I do not need a quantity of them. My bees are all dead—died last winter—and I am lonesome without them, but Mr. B. will not hear of my getting any more.

FOR THE CANADIAN BEE JOURNAL.

### A HASTY GLANCE AT WINTERING THEORIES

VOLUMES have been written on wintering troubles, and volumes more will probably be written before its true causes and cures will be fully understood. As you already know, Mr. Editor, I am one of those who believe that the causes of winter disease among our bees are not one, but many, and that the causes are changing, more or less, as the character of seasons and climates change. Many of us had supposed that we had solved the difficulty and got the upper hand of it, only to be met with an entirely different season, with new conditions, and the old, old story of disease and death has again to be told. I do not believe that any one will ever discover the causes and cure for this disease at one bound, but that the work will take years of patient investigation on the part of scores and hundreds of investigators, each of whom will add a little to our stores of knowledge, and bring us a step nearer success. Again I do not believe that we will ever have absolute mastery of this matter of successful wintering, for seasons are always changing more or less, and new causes of trouble will always be arising.

Undoubtedly, we now have a much better knowledge of these causes than we had a few years ago; each year's experience adding to these stores. Probably the greatest impediment to any accurate knowledge of the causes, is the well known fact that bees quite often winter well when some or nearly all of the supposed causes of loss are present. This fact is continually leading us astray in our conclusions.

Of course no special pleadings can do away with the fact that our long cold winters, with their attendant conditions, are the prime causes of the winter disease, there being none of it known in warm climates. We can neither prevent cold weather here, nor practice moving our bees to warmer localities in Winter, therefore we will have to study into all the reasons why cold weather causes disease.

Many are the supposed causes of loss, among them being long confinement, want of proper protection from extreme cold, dampness, poor quality of food, starvation, too many old and two few young bees, the use of pollen, improper ventilation, too great exposure to sweeping winds, etc.

I am fully satisfied that all these alleged causes may at times be prime factors in causing loss, yet bees quite often winter in excellent condition, with one or more of these conditions present in a marked degree.

"Long confinement" is one of those causes which materially aggravate all the others, yet bees frequently live five and even six months without a flight in excellent condition, when other conditions are all right. The "proper protection" from extreme cold is one of the disputed points. Some think no place is equal to a cellar, while others are just as certain that some form of protection out of doors is best. Undoubtedly each way is best in certain localities, and I cannot agree with any one who advocates either of those ways as being decidedly superior generally to the other way. Cellar wintering has, I think, been gaining in favor during the past three or four years, but I have of late heard more inquiries from experienced bee-keepers about the details of out-door wintering than ever before, showing that the current is turning the other way. In the section of country in which I reside it seems almost impossible to find cellars that will winter bees successfully, while 50 or 100 miles south of here cellar wintering has proven much the safest. Prof. Cook is reported to have asked, "What is packing in such a Winter as the last?" As a partial answer, I would say that in this county, situated in extreme northern Iowa, Chickasaw, and which contained last Fall considerably over 1000 colonies owned by at least a score of bee-keepers, good chaff packing saved 75 per cent. of all colonies wintered that way, while cellars saved about 45 per cent. We have much yet to learn in both cellar and outdoor wintering, but as yet no one is, I think, justified in claiming a decided general superiority of either method over the other.

How far "Dampness" is an important cause of Winter disease, is still an earnestly disputed point. The principal argument against dampness being a cause is the undoubted fact that bees have wintered well in cellars so damp that water stood in drops on the walls, and in other cellars containing running or standing water, but a similar argument can be used against every alleged cause. A neighbor tells me that he has an underdrained cellar in which water sometimes stands all winter, that during such winters nothing in the cellar moulds, but at all other times mould forms abundantly on everything. Right here is a vital point, Any kind of dampness that causes mould to form freely is highly detrimental to bees, but any other kind of dampness is, I think, beneficial. I think there is no doubt but the weight of testimony is, that dampness is a decided injury in a majority of cases.

A "poor quality of food" being one of the causes, has many advocates, and seemingly with good reason. I presume that nearly all old bee-keepers have noticed the fact that the heavier

the flow of honey the better its quality, the poorer the flow the poorer honey we get. The fact has also been noticed that poor seasons, if followed by a hard winter, almost always prove disastrous to bees, and trouble follows in different sections, almost exactly in ratio as the honey flow in those sections was good or bad. This is accounted for on two theories, "poor food" and "starvation," the two being closely connected in cause and effect. The poorer the quality of food the more they have to eat, the more they eat the more uneasy they get, the more uneasy the more liable they are to disease and the more danger there is of their using up all liquid food within reach, this last being usually followed by disease and death.

The experiences of the last two or three winters point very strongly to the conclusion that starvation is by far the commonest cause of disease that we have, and I see by the papers that others have come to the same conclusion. This theory, that partial starvation not only causes death, but disease before death, is a new one, and needs to be observed more closely before we attempt to either write it up or down. I am so well satisfied of its correctness that I shall take more pains than ever before to see that my colonies are extra well supplied with stores.

The "Pollen" theory has given rise to more discussion, both pleasant and unpleasant, than any other theory yet advanced, but the amount of truth there may be in it seems about as much unsettled as ever.

"Too many old and too few young bees" undoubtedly cause serious losses during such late backward springs as the last one was, but I doubt whether it has ever been a serious cause of disease during the winter. One of the most disastrous winters Iowa has ever seen followed a Fall when hives were full of young bees, while I have never seen bees winter better than they have done after falls when breeding ceased very early. I doubt whether old bees are any more, if as much, disposed to contract disease during winter confinement as are young ones, the trouble with old bees coming during the Spring.

"Improper ventilation" as a cause of disease has many advocates, with good reason too I think, but facts and experiments are so conflicting on this point, that it is very difficult to decide which way is right and which wrong.

"Too great exposure to direct Winter winds" is a very decided cause of disease where bees are wintered out of doors in this high northern latitude. I think I have never known of a single instance of good success during a hard winter, where bees were not protected by some form of

windbreak from our direct prairie winds. Whoever attempts to winter bees out of doors must pay particular attention to the point.

Whether deep or shallow frames are best for wintering is a much disputed point, nearly or quite every one who uses deep frames think they are best for wintering, while many who use shallow ones think so too and would use deep ones if successful wintering were the only object. A very simple method of packing hives in cellars so as to practically transform shallow into deep frames has lately come under notice. Dr. Jesse Oren, of La Porte City, one of the oldest and most successful bee-keepers in Iowa, has used for two or three winters the plan of setting his Langstroth hives in the cellar in rows, tilted up against each other at an angle of about forty-five degrees. They are placed with the sides of the hives against the wall, instead of the ends as is usual. When one row is placed a board is laid on top, then another row of hives, etc. Dr. Oren has been uncommonly successful since using this plan. He adopted it for the purpose of keeping the bottom of the hives free from dead bees during the winter, but many members of the convention at which he gave the plan, thought its real value was in making deep frames out of shallow ones for the time being. I think the plan will be quite largely used in this section during the coming winter.

The "dry feces" theory has been receiving considerable attention lately, and the fact seems to be quite well settled that bees do sometimes void dry or nearly dry feces, but whether the refuse usually found on bottom boards at the close of winter are really dry feces or something else is not fully determined in the minds of all. I am quite well satisfied myself that dry feces forms but a very small, if any, part of this dust. I have noticed that almost invariably, when bees are compelled to use sealed honey, at a time when chilly weather confines them to the hive for a day or two, that plenty of this dust deposit will be found directly under the frames of sealed honey, even when entirely to the one side of the main cluster.

What a wide field for investigation and research is outlined by this very imperfect sketch of facts, theories and opinions.

O. O. POPPLETON.

Williamstown, Iowa, August 29.

The above article is just like Friend Poppleton himself, practical and to the point. We need hardly tell our readers that Mr. Poppleton is one of the most successful bee-keepers in the North-Western States. He winters his bees

with great success generally, unless perchance something prevents him from giving them the necessary attention. In the fall we believe he packs all his bees out-doors and if we remember rightly it is with timothy chaff. The immense yield of honey he has taken in years past is a pretty sure guarantee that his bees receive the proper attention. That he is an unusually close observer there is no question. We believe he takes more extracted than comb honey and uses the deep frame. Many of our Canadian friends who met him at the Convention at Toronto, two years ago, will remember him, we are sure, with pleasure. The points that he discusses are handled in a clear manner that leaves no doubt in the minds of his readers that he is a master of his subject. We feel glad that he is again able to give us some of his valuable experience and trust to hear from him more frequently in future.

For the CANADIAN BEE JOURNAL.

#### DRY FECES—DIARRHOEA.

ON page 229 of the C. B. J., Mr. Heddon says, "If Mr. Corneil will give a colony of bees stores of honey thoroughly loaded with pollen, I think that by no method of preparation can he keep them from having diarrhoea." It so happens that last Fall I prepared fifty-seven stocks in just that way, and the result was the reverse of what Mr. Heddon would have predicted. Every stock not only came out alive, but in such condition as to leave nothing to be desired. In fact I do not expect to ever succeed better. The bees were confined 173 days, being placed in the cellar on the 14th of November and taken out on the 6th of May. The hives had not been disturbed during the fall and were well provided with natural stores only. In about one half the hives the frames were 7x14 inside measure, about twenty had frames 10x16, and there were about half a dozen box hives. The top stories were left on the shallow hives when the lower story seemed to be light. In all the frame hives sticks were laid across the frames and holes were bored in the tops of the box hives. All wintered equally well. The cellar was simply a hole in the ground, beneath the living room of a log dwelling, built on a bank of limestone gravel.

No observations as to temperature or humidity were made, but potatoes did not freeze in the cellar except a little near an opening under the foundation log of the house through which a ventilating pipe was introduced, but withdrawn when the cold became severe, and the hole closed with pea straw. Vegetables for family use being kept in the cellar, lights were frequently taken down, but otherwise there was no disturbance. I think the conditions favorable to the bees were, no breaking up of the brood-nest late in the fall, hives fairly populous, plenty of stores of honey and pollen, good ventilation of the hives, and a warm covering over the cluster, passing off the exhalations, and keeping the bees comfortable. It is probable too that the roaring fires which were necessary in such a dwelling last winter, not only kept the cellar warm, but caused upward currents of air from the cellar through cracks in the floor, keeping up a constant change of air about the hives. The combs contained plenty of pollen, and a sample of the honey—which I have preserved—contains, at least, the usual quantity of pollen granules. The bees ate either the floating pollen in the honey, or the pollen in the combs, or both, and they did not "spit it out again," nor was it "digested" husks and all, so as not to appear in the feces, but it passed through the stomachs, into the intestines, and was voided in long stringy masses by the bees, when they were set out in spring. The debris on the bottom boards was not saved for me, so I do not know whether they voided dry feces in the cellar or not.

But, Mr. Heddon says, "This (voiding of stringy feces consisting mainly of pollen) never takes place except in the last stages of disease, bee-diarrhoea, after the bees have held their feces till they are sick." On another occasion he says, "a rule of bee-diarrhoea is the thicker and darker the excreta the worse the disease." This is begging the question. Such a state of matters does not indicate diarrhoea at all. The liquid nature of the evacuation is always a characteristic of diarrhoea in any animal. Mr. S. A. Shuck is quite correct when he says, "Many colonies, wintering on natural food, and in as fine condition as the very best, show a larger per cent. of pollen in their excreta than those suffering most severely from diarrhoea." Mr. Heddon, himself, says Prof. Cook wrote him regarding some bees which had died of diarrhoea that "he found their bodies nearly bursting with the dark turgid excreta, which when microscopically examined, proved to be pollen grains held in a watery mixture." And again the Professor says "The bees which die of dysentery looks dropical, and seem fairly oozing with liquid excreta." In

his excellent article, on page 327 of the C. B. J., Dr. Tinker, says, "In all the cases I have ever seen of true diarrhoea, the large proportion of water was the most marked feature."

That my hives were populous, and the bees in healthy condition, when set out, is proven by the fact that, although there was a week of bad weather after the 6th of May, and a snow storm on the 10th, yet on the 21st, when I went out to take them home, several stocks had built full sheets of new comb in vacant spaces in the upper stories, from the bloom of the hard maple. There was no spring dwindling in this lot of bees, and from some of the hives I took sections for market on the first of July, which, Canadian readers will admit, was pretty early.

As to the suitability of pollen as a part of the food of bees in winter Mr. Heddon is radically in error. Prof. Cook says bees never hibernate, they are always active. Very well. The largest experience shows that activity causes waste of tissue, and that it is the main function of nitrogenous food to construct and repair tissues, and that the amount to be supplied must augment with the work to be done. Further, one of the great aids to digestion is proper variations of food, as to its nature, so that the appetite may not fail or be wearied; and Lethby in his "Lecture on Food," says of the nitrogenous elements "They assist the assimilation of the hydrocarbons, and in this way help the development of heat or force without contributing directly to it." Since it is evident from the foregoing that the want of nitrogenous food for a considerable time must result in impaired vitality and death, and since it has been shown by actual experiment and observation that its consumption causes no evil effects from the accumulation of feces, when the temperature of the cluster and temperature of the hive are right, therefore, any method of preparation for winter, which deprives the bees of pollen, for six months at a time, is unscientific.

In regard to the quantity of air necessary for a stock of bees while in winter quarters, I fear Mr. Heddon's kind effort "to lead his companions out of the darkness" will result disastrously to those who may accept his assistance. I too once believed the teaching that bees require little or no air in the cellar, and the mistake cost me \$100. Anyone who believes that a hive full of air is sufficient to last a stock of bees all winter, and acts on that belief, will be very likely to lose his bees. Let us consider the matter in this way. The least quantity of honey consumed in 160 days is, say, five pounds. Five pounds of honey contains an ascertained quantity of carbon, which on being oxidised in the blood of the bees,

requires a known quantity of oxygen, the whole of which must be derived from the surrounding air, by breathing. Let those who think that a hive full of air contains sufficient oxygen for this purpose, figure it out, and they will find it fall very much short of the required quantity. The oxidation of the carbon contained in five pounds of honey during the process of assimilation produces an ascertainable quantity of carbonic acid gas, and aqueous vapor. Even if the oxygen were in sufficient quantity, the carbonic acid and vapor exhaled would so vitiate a hive full of air that it would be incapable of supporting life, long before the winter had passed. It may be replied that a hive has been sprinkled with water in freezing weather till it was hermetically sealed with ice, and then covered over with snow, and yet the bees lived. Everyone knows that the internal heat from a hive of bees when covered over with snow, will soon melt the snow for several inches around it. Allow me to cover the whole exterior surface of a hive with pitch, so as to prevent the entrance of air, or the diffusion of gas through the joints, or through the pores of the wood, and I will defy any bee-keeper to save the bees. By leaving only a very small entrance open in such a hive, and placing it in a cellar, I believe I can produce genuine diarrhoea without a particle of pollen. This has been called the "crucial test." As soon as I can find some way of preparing bees for winter, absolutely without pollen, I shall make the experiment.

The test for carbonic acid is so simple that every bee-keeper may know whether the air in his repository is impure or not. Pour some clear lime water into a tumbler and blow the breath into it through a straw, and observe the milky appearance it produces. Procure from a druggist five bottles, containing half an ounce, eight ounces, ten ounces, twelve ounces, and sixteen ounces, respectively. Fill the sixteen ounce bottle with rain water, take it into the apartment, the air of which is to be tested, and pour out the water. Emptying the bottle allows it to fill with the air of the room. Pour into the bottle a half ounce full of lime-water. Cork the large bottle and shake it well. If the lime-water does not become milky in appearance, and shows no precipitate after standing for some time, the air does not contain more than four volumes of carbonic acid in 10,000, which is as pure as it is outside. If there is no milkiness when the 12 oz. bottle is used, it shows that there are not more than five volumes, and when the ten oz bottle is used, not more than six volumes, which is as much as can be allowed. If there is turbidity when the eight oz bottle is used, it shows that there are more than eight volumes in 10,000, which is too much

for health. I am of opinion that Mr. Doolittle's bees were poisoned with carbonic acid gas, from a coal oil stove placed in a compartment from his bee-cellar, separated by a thin wall, the winter before last. Had he applied the above test, early in the winter, it is probable he might have remedied the defect in the arrangement, and so saved his bees.

S. CORNEIL.

Lindsay, 31st August, 1885.

This exceedingly interesting and valuable article contains many very practical hints which it will be well to read and digest carefully. One point reminds us of what occurred with ourselves many years ago. We built a bee-repository and made the floor so tight that no carbonic acid gas could possibly escape; about a hundred colonies were placed on shelves in the room and a few hives on the floor. After they had been in their winter quarters for some time we took a small hand lamp and went in to examine them. We heard a tremendous roaring coming from the bees on the floor, while those on the shelves appeared perfectly quiet; could not imagine at first what the trouble was, so placed the lamp on the floor and knelt down with the intention of tipping up the hive (a large box one) and looking in to see what was wrong, but the lamp had scarcely touched the floor, before it went out. Thought we had set it down too suddenly so lit it the second time and took the precaution to set it down more slowly but out it went again as quickly as if it had been placed in water. It then struck us that the carbonic acid gas was the cause of it. By lighting matches and holding them down we found that it was about six inches deep on the floor; opened the ventilator and allowed it to pass down into the cellar. In a short time the lamp burned without difficulty, and as soon as the air became pure the bees quieted down. Since then we always make provision for the escape of the gas. We quite agree with Friend Corneil as to keeping the brood chamber sufficiently

warm that the bees may evaporate the moisture, when little or no trouble will be experienced from dysentery. The great care with which Mr. Corneil conducts all his experiments is a sufficient guarantee as to their accuracy.

FOR THE CANADIAN BEE JOURNAL.

### PREPARING FOR WINTER.

**M**ANY seem to suppose that November is the month to prepare bees for Winter, or at least their actions show that they do, for from personal knowledge and numerous correspondence, I find that the majority of the bees in America are left without attention, regarding fixing them for Winter, until Jack Frost has several times shown his grim visage throughout the north. This is a great mistake, as the thousands of dead colonies of last Spring too plainly showed, and the object of this article is to influence all who read it, to prepare their bees during the present month (September) for Winter, if such are not already prepared. Where fall flowers do not abound, so that the honey harvest ends (as it does here) by the middle of August, the latter part of said month is the time to get all in readiness for Winter. As this is just what I am doing at this date, August 25th, perhaps I can do no better than to tell the reader how I manage. Every colony is carefully examined by lifting out every frame in the hive and the exact condition regarding brood, queen, and stores, noted on a piece of honey section, which piece is to be left on top of the quilt of the hive until next Spring. If the colony has enough honey in from five to seven combs to insure their safe wintering, these combs are placed all on the one side of the hive, and a division board placed next to them, so as to make all as compact as possible. If any frames still have brood in them with but little honey, these combs are placed next to and at one side of the five full ones, and thus left till the brood hatches out, not adjusting the division board until later on. By the middle to 20th of September all brood will be hatched when the combs are to be taken out, the bees shaken off, and the division board placed where it belongs. I find it a good plan to have the combs a little farther apart for the winter months than they are during the Summer, and also to set the combs having the most honey in them in the centre of the given number, and those having the least in on either side. Probably one-half of all the bees which died the past Winter, starved to death with plenty of honey in the

hive, but on the side of the hive opposite of the cluster of bees. This came about by allowing the combs to remain in the hive during the Winter the same as in the Summer, which was right the opposite from the directions I have just given, for the bees, when left to themselves, have the least honey in the central frame. As they cluster here for Winter, they soon eat all the honey above them, when they begin to move toward one side of the hive or the other for stores, and when all the stores are consumed on that side, they must starve unless the weather is warm enough to admit of their carrying honey across to the brood nest, for by this time a brood nest has become established. By placing the combs of honey as I have recommended, the bees begin Winter on one side or the other, instead of in the centre, and as they consume the stores, move toward the centre, so that when the brood nest is established in February, the bees are right in the midst of their honey. As soon as I get the bees properly provisioned for Winter, the space behind the division board is packed with chaff, and if in chaff hives to be wintered on the summer stands, a sawdust cushion four inches thick is placed over the quilt above the hive. The cushion is made in a box-like form, out of ordinary cotton cloth, and is filled with fine dry basswood sawdust, saved during the Winter while I am sawing sections. Basswood sawdust I find superior to anything else, inasmuch as it is a non-conductor of heat and cold, and will, if occasion require, absorb nearly its bulk in moisture, thus keeping the bees dry at all times, while most of the other packing recommended allows of a partial conduction of moisture in and about the hive. Thus the bees are prepared as far as all have honey enough. If any are deficient in stores, the quantity they need to be fed is noted on the piece of section, and a little stone placed on the cover to the hive in such a position that it tells me that said colony needs feeding. As soon as the brood has hatched out I feed them the required amount. For a feeder I use a pan, basin, or any dish which is set in the cap to the hive, when the feed is poured in, after which a handful of grass is pulled up and scattered over the top to keep the bees from drowning. Now turn up one corner of the quilt a little and place the piece of section from there to the top of the pan for a runway for the bees, after which a little syrup is dropped on the section and down on the corner of the quilt. Close the hive and in twenty-four hours you can take the feeder away and use it on another hive, for it does not take a good colony even that length of time to carry down from ten to twenty-five lbs. of syrup. For

feed I prefer the following, after trying everything else I ever read of. Take fifteen pounds of water and bring it to a boil, when thirty lbs. of granulated sugar is to be poured in and stirred for a minute or two until mostly dissolved, when the whole is allowed to boil. Now we remove it from the fire and pour in five lbs. of good honey, stirring enough to mix. When cool, it is ready to feed. This gives a feed which will neither candy, nor granulate, as does nearly every other preparation of feed ever tried. After having all these fed and fixed, I try to let the bees alone until Spring arrives, (except to carry them in the cellar about Nov. 10th, which are to be wintered there), but I love the little pets so well that my curiosity often overcomes me, and mild days in Winter often find me peering in to see how they get along.

G. M. DOOLITTLE.

Borodino, N. Y.

Thanks, Friend Doolittle for your very able article on Wintering. It requires no comment; anything from you is eagerly sought after by everybody. We have learned something from this article that we never knew before—that basswood sawdust was the best for cushions on top of bees. We tried it on several occasions for packing and found when moisture came in contact with it unless there was enough heat to drive the former away, it moulded apparently more readily than pine and much more so than cedar. We have found cedar sawdust, especially when it is very fine, to be very valuable as a packing. We burn tons of beautiful white basswood sawdust from our section saws, which is almost as fine as dust, which would according to Friend D. be valuable for packing purposes. We always imagined that the softer the wood that the sawdust was made from, the more readily would it resist the cold and retain the heat.

FOR THE CANADIAN BEE JOURNAL.

#### HONEY PLANTS.

**H.** H., St. Thomas:—Do not think this is the "Simpson Honey Plant." It is a stranger, and with so small a tip of the plant, it is quite impossible to identify

it.

A. B. DURHAM:—No. 1 is a valuable honey plant, *Eupatorium foliatum*, called also Boneset and thoroughwort. It is extensively used as a medicine by "herb doctors."

No. 2 is also one of the Bonesets, *Eupatorium purpureum*, and like No. 1 is found in all our swamps, growing sometimes to the height of ten feet. It is scarcely so valuable to the apiarist as *E. perfoliatum*.

No. 3, one of the Compositas *Solidago Canadensis*, (Golden Rod). Found everywhere in this country and is one of our most valuable honey producing plants. It blossoms from July till frost. Of this plant there are some forty species, all more or less frequented by bees.

C. MACPHERSON,

Prescott, Sept. 2nd, 1885.

## QUERIES AND REPLIES

UNDER THIS HEAD will appear each week, Queries and Replies; the former may be propounded by any subscriber, and will be replied to by prominent bee-keepers, throughout Canada and the United States who can answer from experience, as well as by the Editor. This Department will be reserved for the more important questions, others will be answered in another place. We hope to make this one of the most interesting departments of the JOURNAL.

### BEEs BUILDING QUEEN CELLS.

QUERY No. 31.—Bees have been building queen cells for three weeks, looked as if ready to seal over. On examination nothing but bare eggs were found in them, often entirely empty. Hives were full of bees and brood, and apparently ought to have swarmed. Is this usual?—A. B. C.

DR. C. C. MILLER, MARENGO, ILL.—No.

DR. A. B. MASON, WAGON WORKS, O.—No.

H. D. CUTTING, CLINTON, MICH.—Not with me.

R. MCKNIGHT, OWEN SOUND, ONT.—Not usual.

DR. J. C. THOM, STREETSVILLE, ONT.—Never met with a case of the kind.

S. T. PETTIT, BELMONT, ONT.—Rudimentary queen cells are to be found, and sometimes the bees work at them quite a while before eggs are deposited in them. Yes, it is usual.

PROF. A. J. COOK, LANSING, MICH.—This is not usual. I have never seen such a case. I am afraid there is not harmony in the hive. The queen wishes to migrate and so lays in queen cells, the workers like the old home and so withhold the royal jelly. The bees should have a

good lecture on domestic unity.

M. EMIGH, HOLBROOK, ONT.—It seems natural for bees to build queen cells at certain seasons or stages. Cold weather or scant honey flow might cause them to change their minds.

ALLEN PRINGLE, SELBY, ONT.—Yes, this is a common occurrence, frequently noted by experienced bee-keepers. It happens, I trow, in this wise:—During a brief season of abundant honey-flow the bees (like some humans) get unduly inflated by a little success and forthwith begin to invest in embryo queen cells. This laudable ambition and enterprise is presently chilled by a cold "Nor'-Easter," and the royal work is stopped; and this may be repeated several times before the work is gone thro'.

G. M. DOOLITTLE, BORODINO, N. Y.—This is owing to the peculiar weather in some localities during June. Here we had it warm the latter part of each week for a day or two, while all the first of each week was cold, cloudy and windy. The result was preparation for swarming the latter part of each week, with an abandonment of the same the fore part. I had several fine lots of queen cells destroyed after they were sealed, others had the larvæ taken out of them.

O. O. POPPLETON, WILLIAMSTOWN, IOWA.—No, it is not usual for bees to have queen cells in their hives for three weeks, that "looks as if ready to seal over," other conditions being as stated. The questioner is probably mistaken in saying the cells looked as if ready to seal over.

BY THE EDITOR.—It is usual in some seasons. We have known queen cells to be built, have larvæ in them and every indication of swarming, sometimes even capped over, when a slight change in the honey flow, cold nights, or removal of brood from the hives, in fact the slightest change in the atmosphere has frequently caused them to remove the larva. We have even known the cells to be torn down. A sudden flow of honey has caused them to be replaced, and the bees have swarmed before the last cells were capped over.

W. H. SANFORD, TOTTENHAM. — Commenced in Spring with 29 colonies, increased to 75 by natural swarming. Have extracted 1,260 pounds and taken 1,000 of comb honey in two and three pound boxes, making 2,260 pounds of honey for the season. A rather good showing, isn't it?

# THE CANADIAN BEE JOURNAL.

D. A. JONES.

F. H. MACPHERSON

## D A. JONES & CO.,

EDITORS AND PUBLISHERS,  
BEETON, ONTARIO.

WEEKLY, \$1.00 per Year, Postpaid

BEETON, ONTARIO, SEPTEMBER 9TH, 1885

The labels for glass bottles, of which we sent out over 1500 sets of samples, are generally admired, and we are getting lots of orders. We will have pleasure in sending samples to all those who have not received them.

We publish this week over 8000 copies of the CANADIAN BEE JOURNAL, and we have had to work hard to do it, too. Our boys worked all one night to get through with the rush, and the neighbors next door didn't get much sleep, with the noise of our big press.

### THE BUSY BEE.

Is the title of a neat little eight page paper gotten up by Rev. E. T. Abbott, Supt. Bee Department of the St. Joseph Exposition, St. Joseph, Mo., designed for distribution to visitors to the exposition, who are, or may be, interested in bees. Friend A. deserves credit for the very hearty interest he takes in our favorite pursuit.

### THE KANSAS BEE-KEEPER.

We learn that the *Kansas Bee-Keeper* has ceased to exist under that name, and that hereafter it will appear as an amalgamation of the *Texas Bee Journal*. We are sorry that Friend Scovell has found it necessary to discontinue his publication, but we believe it was not a paying speculation.

The *personel* of the firm of A. J. King & Co., New York, publishers of the *Bee-Keeper's Magazine*, has been changed by the retirement of Mr. A. J. King, who has for years been the editor of that *Journal*. Messrs. John Aspinwall and W. B. Treadwell constitute the new firm. We extend them our best wishes.

The Ontario Bee-keepers meet in convention in the City Hall, Toronto, on Thursday evening, Sept. 10th, at, we presume, about 7.30 or eight o'clock. It is to be hoped that there will be a large attendance, as important matters will come up for discussion. There will also be sessions on Friday, either forenoon or afternoon, and in the evening. We expect so at any rate, as that has been the custom in former years.

## SUNDRY SELECTIONS.

### WINTER STORES.

W. Dickson, Linden Vale, Ont.—Which do you consider best for winter stores for bees, good sealed honey, granulated sugar syrup, or a mixture of syrup and honey?

We consider that good sealed sugar syrup has no superior. Good honey is alright. When they have not sufficient honey stores, sugar syrup may be added. If the bees are properly put into winter quarters either of them will make wintering a success.

### HOW TO PREPARE WINTER STORES.

How do you prepare sugar syrup to prevent crystallization in the cells?

We merely bring it to the boil for five minutes, feeding it to the bees without adding any drugs, and having wintered thousands of colonies in that way we cannot see the necessity of making patent medicine out of bee-feed. Granulation has never troubled us.

### FEEDING.

How early in the Fall should it be fed?

As soon as the honey harvest fails the feeding should be done that it may be sealed up, well ripened, and the bees be clustered for winter before cold.

### EXTRACTING AND FEEDING.

Is it advisable to extract all honey and feed syrup for winter stores when honey is selling at 15 cents and granulated sugar at 8½?

If the honey harvest closes early and the bees were not fed, they would go into winter quarters with all old bees and brooding would stop after the honey harvest failed; then if you extract at the end of the season you would have room to feed them sugar syrup liberally, keeping them brooding much longer.

The Wabash County Bee-keepers' Convention will meet in G. A. R. Hall, no. 6 East Main st. North Manchester, Ind., Oct. 10, 1885. All bee-keepers are earnestly requested to be present.

J. J. Martin, Sec.

Mount Forest Bee-keepers convention, will be held in the Council Chamber, Town Hall, Mount Forest, Sept. 23rd, at 2.30 p. m.

J. H. Davison, Secretary.

ADVERTISEMENTS.

Red Clover Queens by Return Mail.

I am now up with my orders, and can send queens by return mail. My queens are almost without an exception purely mated, and my bees worked just thick on red clover from the time it bloomed until the present.

J. T. WILSON,
Nicholasville, Ky.

150 COLONIES OF BEES FOR SALE. - Mostly Italians, in eight frames L. hives for \$750. Single colonies, \$6; 10 to 20, \$5.50. Strong with twenty to twenty-five lbs. good honey per colony.

IVA ORVIS
Whitby, Ont.

NOW IS THE TIME TO INVEST.

One Hundred Colonies of Italian Bees, and 4000 pounds Extracted Clover and Basswood Honey for Sale. Also want to exchange Italian Bees for a 4 or 5 or 6 Horse Power Engine and Boiler, new or second hand or will pay cash for Engine and Boiler. All kinds of hives made to order. Write for prices.

JAMES ARMSTRONG,
Cheapside, Ont.

MUTH'S HONEY EXTRACTOR

Is second to none in the market. Square Gears, Honey Jars, Tin Buckets, Langstroth Bee Hives, one-piece Sections, etc., etc.

Circulars mailed on application. Send ten cents for 'Practical Hints to Bee-Keepers.' Address

CHARLES F. MUTH,
976 and 978 Central Avenue, Cincinnati, O.

BIG OFFER.

WE HAVE MORE COLONIES THAN WE CAN POSSIBLY CARE FOR, WITH THE EXTRA WORK ENTAILED BY OUR INCREASING SUPPLY BUSINESS. TO REDUCE OUR PRESENT STOCK WE WILL SELL

500 COLONIES

-AT FROM-

-\$6.00 TO \$8.00 EACH.

STRONG AND IN GOOD CONDITION.

- Colonies containing 6 frames (all that we use to winter on) with good laying queen \$6.00
Colonies containing 8 frames..... \$7.00
Eight frames with extra fine queen.... \$8.00

These prices are for delivery at once. We will make special arrangements with those who may want fifty or one hundred colonies.

D. A. JONES,
BEETON, ONT.

SECTIONS.

THE NEW ONE-PIECE SECTION.

Though these sections cost more to make than the old style, still we are supplying them at the same price. We keep in stock 3 1/2 x 4 1/2 (ours), and 4 1/2 x 4 1/2 (Langstroth), and can make any other sizes to order on short notice. Prices:

Table with 2 columns: Quantity (Per 1,000, 5,000, 10,000) and Price (\$ 6 00, 27 50, 50 00)

Sample sections sent on application.

D. A. JONES,
Beeton, Ont.

FOUNDATION MILL FOR SALE.

Root's Improved cell, 10 inch. In order to make room for larger mills I offer this for sale. In tip-top order, used but little, nearly new, cost me \$32.00. Samples of its work free. \$20.00 at express office.

F. W. JONES, Bedford P. O., Que.

GLASS JARS!

We have several gross of these jars ready for shipment by return freight or express, at the following prices:

Table with 4 columns: Brand (Crown, Crown, Crown), Quantity (1 Pint, 1 Quart, 1/2 Gallon), Gross Price (\$14.75, 15.75, 19.00), Half gross Price (\$7.50, 8.00, 9.75)

They are put up in half-gross cases—no charge for packing or cases.

D. A. JONES.

150 COLONIES OF BEES FOR SALE.

These bees are mostly of the Heddon strain, only about half a dozen Italians colonies remaining that I consider, d worth keeping. I killed a few weeks ago the only Holy Land Queen that I ever possessed as her progeny did not come up to the standard. Nearly one-half of the above are reared from one Heddon queen whose offspring gave such good returns, season of 1884. I have found them vastly superior to the Italians being much less inclined to swarm, as a rule only doing so when crowded for space. As I must dispose of the above before another season I will sell as follows for present delivery.

One Colony of Bees, queen and brood, on eight Jones' frames (specially selected so that the queen can lay to the top bar on nearly all) and 25 lbs. of Winter stores for \$6.50. Two frame nuclei containing bees, honey and brood, \$2.00.

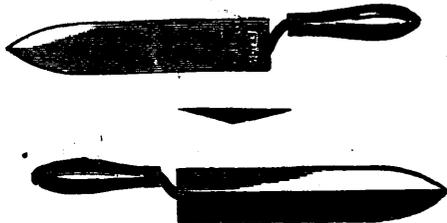
Four frames of nuclei, as above \$3.50. One Jones' frame of comb and one pound of bees, \$1.50. Empty combs 25 cents each, or 20 cents each by the 100.

The above are nett prices, packing or hives will be extra, excepting for empty combs. The cost of packing or hives as follows: Box for nuclei 25 cents each; for colonies, 50c; a 10 or 12 frame hive from \$1.20 to \$1.80 or \$3.75 for my special 20 frame story and a half hive, which is double sided below, with one-inch chaff space, two chaff division boards, one chaff cushion (full length of hive), twelve empty frames (20 in all), and which has a special feeder whereby you can feed 50 colonies in 20 minutes without any work of lifting off covers and disturbing cushion. This hive has the entrance at the side which makes it much cooler in summer. For a partial description see "Gleanings" for 1884, page 691. It is well painted, comparatively light, as my son when not five years old could carry them. This hive is excellent for either comb or extracted honey as I frequently have it full of frames below for extracted honey and a case of forty-five one-pound sections on top, removing all at once at the close of the honey season unless they should swarm, which they seldom do. I will Winter full colonies in my cellar and deliver in good condition next Spring at the express office, for 75 cents extra if ordered and paid for in August. Cash to accompany all orders unless otherwise agreed upon.

G. A. DEADMAN,
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*These Knives are made of the Finest Razor Steel.*

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**FLAT-BOTTOM COMB FOUNDATION**, High side-walls, 4 to 14 square feet to the pound. Wholesale and retail. Circular and samples free.

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CHAS. HERTEL, jr., Freeburg, Ill.,  
E. L. ARMSTRONG, Jerseyville, Ill.,  
ARTHUR TODD, Germantown, Philadelphia Pa.,  
E. KRETCHMER, Coburg, Iowa,  
E. F. SMITH, Smyrna, N. Y.,  
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