

Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

Coloured covers/
Couverture de couleur

Coloured pages/
Pages de couleur

Covers damaged/
Couverture endommagée

Pages damaged/
Pages endommagées

Covers restored and/or laminated/
Couverture restaurée et/ou pelliculée

Pages restored and/or laminated/
Pages restaurées et/ou pelliculées

Cover title missing/
Le titre de couverture manque

Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées

Coloured maps/
Cartes géographiques en couleur

Pages detached/
Pages détachées

Coloured ink (i.e. other than blue or black)/
Encre de couleur (i.e. autre que bleue ou noire)

Showthrough/
Transparence

Coloured plates and/or illustrations/
Planches et/ou illustrations en couleur

Quality of print varies/
Qualité inégale de l'impression

Bound with other material/
Relié avec d'autres documents

Continuous pagination/
Pagination continue

Tight binding may cause shadows or distortion along interior margin/
La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure

Includes index(es)/
Comprend un (des) index

Title on header taken from:/
Le titre de l'en-tête provient:

Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/
Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.

Title page of issue/
Page de titre de la livraison

Caption of issue/
Titre de départ de la livraison

Masthead/
Générique (périodiques) de la livraison

Additional comments:/
Commentaires supplémentaires:

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	14X	18X	22X	26X	30X
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12X	16X	20X	24X	28X	32X

Canadian Bee Journal

PUBLISHED MONTHLY.

NEW SERIES
VOL. I, No. 9.

BRANTFORD, ONT., MAR., 1894.

WHOLE No.
349.

We are pleased to note the improvement in the appearance of *Gleanings in Bee-culture*.

The new headings to the *Gleanings* various departments are very pleasing. The January 1st, number contains a bird's eye view of A. I. Root's establishment. We have visited the home of the honey bees several times and can say the engraving is true to life.

.

Last fall we put into winter quarters the majority of our bees upon the Pettit principle. Cushions on Sealed Covers top, the back of hive raised and $\frac{3}{8}$ of an inch from the bottom board. Some, however, were put in with sealed covers and not raised from the bottom board. Those raised are undoubtedly wintering better. Have any others experimented in this direction?

.

The statement made by us at the Chicago convention that it was an important matter in the production of Ventilation comb honey, to prevent and so-called upward ventilation Comb Honey appears to have received but little notice.

With the exception of those bee papers which published the address in full, no one has drawn attention to it. We again state it is an important secret in the production of a first class comb honey. We have now the endorsement of such men as J. B. Hall, Jacob Alpaugh and S. T. Pettit. To produce first class comb honey,

air should enter and pass out of the surplus compartment in no other way than through the brood chamber.

.

In this number of the CANADIAN BEE JOURNAL will be found the result at the Government Experimental Foundation Apiary, Michigan, of experiments made with foundation in sections. The experiments have a value so far as they determine the merits of the various individual samples under experimentation for that season. But when any attempt is made to compare the value of foundation made upon the various machines we can see no shadow of ground upon which to base this conclusion. The foundation was purchased from various sources, and it is reasonable to suppose that every sample varied, not only in the nature of the wax, but in the methods of handling. We venture to say these conditions have more, far more, to do with the way in which the bees accept the foundation and the extent to which they thin it out, than whether it is made upon a roller machine or a Given press.

The editor has the permission of the Gould, Shapley and Muir Co. (Ltd.) to give, what they consider an important secret in the successful making of comb foundation and one which has been known to them for years. There is a difference in natural comb and wax made by the bees. The indications are strongly in the direction, that wax used for containing

honey only, is whiter and different than that intended by the bees to become a part of the brood chamber. Therefore for section foundation the light wax only should be used while for brood combs darker may be used. The difference in wax makes a marked difference as to the thinning out by the bees.

Again, when milling, it is important to have the sheet of wax as warm as possible, and yet pull safely through the mill. It is not necessary here to give the method of gaining this end. To test the advantage of one machine over another, 1st. the wax must be alike; 2nd. it must be dipped and cooled under similar conditions; 3rd. it must receive its impressions under the highest possible temperature. Until these conditions are complied with any experiments with different thickness and makes of section foundation will be comparatively valueless.

.

The annual report of the Bee-keepers' Union is to hand. The General Manager Thomas G. Newman, 147 Bee-keepers' South Western Avenue, Union Chicago, Ill., gives his usual able report. The membership for 1892 was 461, the balance on hand, \$721.71.

We have been asked several times if Canadians joining the Union would have the same privileges as our brethren in the United States. The editor has for a number of years been a member. Perhaps Mr. Newman will kindly give our readers some information upon this question.

.

Every one will feel inclined to endorse the action of the Ontario Bee-keepers' Association in concluding that the names of those Bee-keepers whose bees With Foul Brood have been found to have fowl brood should be reported only to the President and the Minister of Agriculture at Toronto. In the first place the public can receive no benefit from merely adding the secretary to the list of those receiving the names. To

publish in the annual report the names of those who have had foul brood during the past season would mean in 95 cases out of 100 to publish the names of men who have had foul brood, yet at the time of publishing have it no longer. In nearly every instance no good purpose can be served. We can see that with the prospect of having one's name published would be a tendency to not report the disease, to attempt to cure by individual effort, to cover up and hide from the brood inspector what might otherwise be fearlessly reported. This danger is so apparent that every friend of bee-keeping will admire, after mature deliberation, the action of the Board of Directors.

.

The Ontario Bee-keepers' Association are giving as a premium the CANADIAN BEE JOURNAL for one year. Bee-keeper's can therefore have Premium that journal and be a member of the Ontario Bee-keepers' Association for the sum of one dollar. Membership fees should be sent to the Secretary, S. Corneil, Lindsay Ont.

.

When honey is mentioned as frequently as other foods; when honey is looked upon in its proper light as an economic and staple Speech From The Throne article which should be found upon every table as butter now is;—when that time comes bee-keeping will have reached its proper development. The indications, in Canada, are that we are moving in this direction. May the good work continue.

At the opening of the Ontario Legislature we find in the Speech from the Throne the following: "The signal success of the province at the World's Columbian Exposition has been a matter of just pride and satisfaction to our people. By our exhibits of live stock, grain, fruit, honey, cheese, minerals, timber, natural history and education, we have shown that Ontario possesses great natural resources, and in their development has kept pace with wealthier and more populous countries.

The Central Farmers Institute upon motion of J. B. Muir seconded by T. Raynor, passed the following resolution. "That whereas, Canada, and especially Ontario, in its recent triumphs at the World's Fair, Chicago, and in the past elsewhere, has shown itself able to compete with any country in the world in the production of first-class honey; therefore, it is resolved that the Dominion and Provincial Governments be requested to do all in their power to develop the bee-keeping industry of Canada."

With an increase in the production of honey, we require an increase in the demand for honey at home and abroad. That this can be secured we have no doubt. The subject is worthy of the attention of any government. Whatever is to be done, should be well and thoroughly done.

.

The Canadian Horticulturalist for January is full of valuable hints for fruit growers. The Japan Horticulture plums are described, and the frontispiece is a beautiful colored plate of the Burbank plum. It also contains much information on floriculture.

This journal as the leading magazine on fruit growing and is deservedly very popular. Sample copies will be sent free on application to the editor, Mr. L. Wolverton, Grimsby, Ont., who has the largest fruit farm in the province of Ontario.

.

The articles which have appeared upon wintering must do a good deal of good.

The information brought to Wintering light upon this subject in Mr. Pettit's articles, if put into practice cannot result in anything but a vast amount of good to the country. Just before going to press, Feb. 20th., we would say those hives in our cellar wintered upon Mr. Pettit's plan appear to be in excellent condition, very few dead bees, the entrances dry and bees all quiet. We have about a dozen hives not raised in the rear from the bottom boards. Although they show no signs of dysentery they are more restless,

have more dead bees and the entrance is less free from moisture. We have only our own interest to serve to the extent that it is our best interest to guide our readers in the direction of better methods of bee-keeping and we know of no more important subject than the wintering problem.

THE BEE-KEEPERS' PARLIAMENT.

REORGANIZED—IMPORTANT CHANGES.

Last month we announced the opening of "The Bee-keepers' Parliament." A number appear to object to the competitive system. That system has therefore been withdrawn, and there will be no awards, but as we feel we can afford it, we intend privately rewarding from time to time, those who are painstaking contributors to this department. For some time to come, a subject will be given several months in advance. The contributions to this department must be received by the 15th. of the month previous to the number in which the subject is to be dealt with. This will allow but little time for contributions to be received for the April number; yet there is sufficient time. The subjects will be sufficiently broad, and limited to a certain number of words, to allow ample scope for ample thought and study, to concentrate the best ideas of the writer. We trust every one will take part to make this movement one of interest.

FOR APRIL NUMBER OF JOURNAL

Best method of building up twenty-five or more stocks, for the honey flow. Begin with earliest outdoor flowers. (Not more than two hundred words.)

FOR MAY NUMBER OF JOURNAL.

To what extent is the prevention of swarming desirable? What method shall be adopted.

FOR JUNE NUMBER OF JOURNAL.

Artificial ripening of honey as opposed to ripening of honey by the bees in the hive. What benefits are to be derived from either system? Which is preferable?

Convention Notice.

The next regular meeting of the Norfolk Bee-keepers' Association will be held at the Revere House, Simcoe, on Saturday March 3rd, at 2 p. m.

ANNUAL MEETING OF THE ONTARIO BEE-KEEPERS' ASSOCIATION.

(Continued from page 156.)

In the discussion which followed, D. Chalmers, Poole, thought honey ought to be ripened, it should be capped, even then under certain conditions it might not be ripe. When capped under such conditions it should, after extracting be put into a warm room. Mr. Chalmers referred to the thistle honey upon which he took the prize at Chicago, it was barely capped at all, but the cells were shining, as if ready to cap.

S. T. Pettit—There is a time when the cells are ready to cap, having that shining appearance, but not capped. It may then be extracted.

Wm. McEvoy—I saw Mr. Chalmers' honey, it was thistle and very fine. Although not sealed it was ripe, and must have been ready to seal. But take as Mr. Holtermann says, honey generally, throw it out unripe and the thick goes on the bottom and the thin unripe goes to top. He was an advocate of thorough ripening of honey. In referring to the World's Fair he stated he told Mr. Pringle to keep the proceeds from his honey for his (Mr. Pringle's) trouble, but Mr. Pringle had not done so.

J. B. Hall—In Mr. Chalmers' locality, they had a ten days honey flow, the weather dry and honey was ripened very quickly. These conditions were exceptional.

S. Corneil—Nectar varies in density in the flowers, hence a difference. He disagreed with Mr. Holtermann's views on ripening honey artificially.

Mr. Holtermann—I wish to go on record that to advance the idea of ripening honey artificially, as it had been advanced, is injurious to the bee-keeping industry, besides it is impractical.

Mr. Aches—I agree entirely with Mr. Holtermann, to advocate the artificial ripening of honey when it can be done by the bees is injurious.

Mr. Chalmers—I do not think it pays.

Mr. Pringle—I think, after all, there is not much difference in views. I think it unwise to take uncapped honey with the idea of ripening it. Honey may however be ripened afterwards.

In reply to a question, Mr. Pringle stated he certainly advocated the capping of honey first.

Mr. Aches—We should put our foot upon anything but a capped well-ripened honey.

R. McKnight, Owen Sound—I have practiced the artificial ripening of honey, when I deemed it necessary. I think artificial ripening quite satisfactory.

J. B. Hall—It is safest to make the statement to have honey capped before extracting.

S. Corneil—I think honey can be taken when thin and ripened artificially to good advantage.

Mr. Pettit—I agree with Mr. Pringle re ripening of honey. Mr. Corneil may be right, but it is a question of *what pays best*. The best way to ripen is to get plenty of surplus combs and tier up. The bees are like millionaires in their desire for more, and the more honey the bees have the more they want. There is no necessity for keeping linden honey free from clover etc.

Mr. Corneil—I do not claim that a man gets more honey when he ripens artificially.

W. C. Wells, Phillipston—I think it wrong to teach to extract honey before it is ripe.

J. K. Darling—Since 1886 he condemned, putting unripe honey on the market. He mentioned instances where people had preferred dark well-ripened honey to light unripe. Unripe honey had a sharp twang, flavor which is not desirable.

Mr. Holtermann stated if it was admitted that by ripening artificially no more honey would be secured, and by tiering up the bees would themselves ripen the honey, was it not impractical and visionary to advocate artificial ripening.

The time for district or county societies to affiliate with the Ontario Bee-keepers' Association was extended to June 1st. of each year.

The committee on legislation, consisting of Messrs. S. T. Pettit, Belmont, J. K. Darling, Almonte; and J. E. Frith, Princeton, then reported upon their work during the past year. Mr. Pettit reported that the committee had gone to Ottawa where they had received a hearing. It was urged by them that bee-keeping increased the wealth producing powers of the country, increased the exports and would increase the comforts of those in the Dominion. It was urged that it had to be gone into more largely if Canada intended to have a foreign market. They urged the importance of having everything done that would give our product a reputation for purity abroad. With butter in Canada people did not sit at the table and eat sparingly of it, thinking it might be buttered. The bill in this respect had given confidence in butter. They urged the same was desirable with honey. Mr. Pettit gave the methods adopted to advance the interests of bee-

keepers and the object in view. He mentioned the letter of Mr. Thos. Cowan, of England, which had done such good service. He expected no serious difficulty in securing the legislation desired if followed up. After a lengthy discussion, the committee was re-appointed to act as they saw fit in furthering the interests of bee-keepers in this direction. The committee, also Messrs. W. J. Brown and M. B. Holmes received a vote of thanks for their services.

Mr. Allen Pringle, Selby, late superintendent of Ontario honey at the World's Fair, Chicago, gave an address upon

APICULTURE AT THE WORLD'S FAIR.

Mr. Pringle recounted much of interest in connection with the World's Fair. He referred to its triumphs in honey and other lines, and pointed out that the indications were that the time was coming when the United States would not be able to supply its own honey. There were States in which the honey crop was failing year after year. There was, with the exception of that from England and Scotland, and a few states in the Union, no honey equal to Ontario honey. Mr. Pringle related the great difficulties he had encountered in connection with customs formalities, how in selling honey of exhibitors to save expense, he had made a point of personally delivering hundreds of pounds, a duty it is unnecessary to say, he was in no way called upon to perform. The United States imposed a specific duty of twenty cents per gallon on honey imported. In comb honey particularly, it required peculiar arithmetic and guessing, of which the customs had rather the best, making the duty, finally, from two to three cents per pound.

Mr. Pringle had placed the honey which had been on exhibition, and finally sold in Chicago in such a way as to open the greatest demand for Canadian honey. The exhibitors had netted 7 to 8½ cents for extracted, and 13 to 14 cents for comb. Free of duty it would have netted them 8 to 11 cents for extracted and 15 to 17 cents for comb. He thought that the next honey would sell at an advance, because this honey had paved the way for more. Many buyers had come back to him for more Canadian honey, he was proud to say it stood higher in the market than the native product, and brought a higher price. He had been hampered by duties, they had the prejudice of consumers on account of adulteration.

His eyes had been opened in a marked manner whilst in Chicago, upon the question of adulteration. He knew there was but little adulteration in Canada, and

he never dreamed there was as much there. He could only speak of Chicago, and it might not be so bad in the east. The people were reluctant to buy any honey in extracted form out of the shops. He did not, for a moment, say the producers were the offenders, in fact, he thought adulteration by them was very rare. The people still appeared to have confidence in comb honey and in connection with this Mr. Pringle said "and if American bee-keepers are wise, they will endeavor to preserve that confidence by burying that 'sugar honey' project, so promptly and deeply that it will know no resurrection." Under these circumstances the advantages of Ontario would be seen in the United States markets, not only for extracted, but for comb honey, so long as we kept it pure and undefiled. He could take a hundred tons of Canadian honey to Chicago to-morrow and sell it readily at excellent prices to dealers and consumers, but mostly to consumers. In endeavoring to get the best possible prices for exhibitors, the honey was disposed of in the best possible way, to advertise it, and when he got through he had the way open for almost unlimited sales. He found it not advisable to sell to dealers. He took care that every customer who bought honey from him knew that he was buying Ontario honey and they generally came back for more. In his own words he stated, "I tell you, Ontario honey stood high in Chicago when I turned my back on Jackson Park." When people knew they were getting a pure product, they were willing to pay a good price. Prof. Wiley, in an address at Chicago in October last, before the North American Bee-keepers Association, had not allayed the suspicion of the consumers as to adulteration. He had made startling reports upon many samples, from many quarters, of honey analyzed. Prof. Wiley was the analysis for the United States Department of Agriculture, Washington. The bee-keepers of the United States were not altogether satisfied with the reliability of the analyses, but adulteration there was certainly which required no science to unearth.

Mr. Pringle stated that bee-keepers were not to blame for the injury done by Prof. Wiley's original slander on the comb honey, a slander now dying out, but they might be justly held responsible for whatever evil may accrue to them on account of their "sugar honey" speculation or project, as it was apparently born and bred among themselves.

Again Mr. Pringle in his own words states, "Our apiarian exhibit at the

World's Fair cannot fail to enhance the standing, and promote the future interests of apiculture in Ontario. Some five or six hundred weight of the choicest of the Chicago exhibit, both extracted and comb, was disposed of to the Dominion Government for the Antwerp Exposition, which opens in Belgium next May.

Mr. Pringle had but little faith in the availability of those — that is markets for honey — that are trans-Atlantic or trans Pacific, while every opportunity of seeking and entering them should be taken, he would strongly urge the cultivation and development of the home market and those nearer home. The consumption of honey appeared to be increasing in about the same ratio as the increase in production, there being but little imported and very little to export. Let the production go on increasing as it may. It was safe to say that the consumption might be doubled and quadrupled and there still was abundant room for home market. Manitoba and the North West would consume large quantities and he had his doubt about her capabilities of honey production within her own territory. The adjacent states could not supply her as they could not now supply themselves. Honey was as yet but little more than a luxury on Canadian tables. With nothing but the pure article on the markets, at reasonable prices, it must become, more or less, a staple article of food.

The question with us was, has Ontario seen the best days in its honey producing capabilities? However this may be, one thing is certain, the Ontario Linden honey stands at the very head, and the linden tree is rapidly disappearing down the open and capacious maws of the pulp machines, the saw mills and the fallow fires. It was disappearing much faster than the uprising sprouts and saplings (spontaneous and cultivated) are taking its place. The basswood tree ought to be planted and cultivated by every farmer bee-keeper. If his circumstances require him to remove the basswood from his woodland, let him plant it around his domicile, along the fences and by the roadsides. Within a few years he has planted nearly a thousand and he would not have to live long to see some of them yielding nectar for the honey bee. Mr. Pringle closed his address in appropriate terms. During his address he was interrupted with repeated applause.

J. B. Hall—Do you know who will have charge of the comb honey which is to go to Antwerp?

Mr. Pringle—I packed the honey and gave the instructions.

Mr. Pettit—I arise to express my pleasure at what Mr. Pringle says, it reiterates what I said at Walkerton, that across the line in the United States is our best market. The closest market is the best and we must keep our hands clean and have a pure article, to give us the best advantage there.

Mr. McKnight, in a pleasant and fitting manner, moved a vote of thanks to Mr. Pringle for the services he had rendered to bee-keepers as a representative at Chicago.

The remarks were emphasized by Mr. Hall and carried with applause.

Mr. Pringle said he did not deserve all that had been expressed. He had endeavored to serve bee-keepers and if he had been able to do this to their satisfaction he was amply repaid.

The election of officers resulted as before stated.

EVENING SESSION.

The newly elected President, A. Pickett, Nassagawawa, in taking the chair, thanked the Association in fitting and appropriate words for the honor conferred upon him.

J. K. Darling, Almonte, gave an address upon the influence everyone has for good or ill in the world, also the great responsibility resting upon us as individuals. The address with its elevating influence was well received.

Music, well rendered, and a recitation by Miss King, which was heartily enjoyed was followed by an address by Mr. Pettit.

Mr. S. T. Pettit, Belmont, thought that bee-keepers did not value their calling sufficiently. It was a calling worthy of our best affections and attention. Mr. Pettit thought each county should have an association affiliated with the Ontario. These should send delegates to the Ontario. The Ontario should ask for more of a government grant to carry on their work. He gave a list of grants received by other associations, showing that the Ontario was fairly entitled to an increase in grant.

The question drawer was now taken in hand.

What effect has upward ventilation on bees in winter and summer? —

R. H. Smith—In summer it reduces the temperature of the hive. I used to think ventilation went up, but I found at Mr. Alpaugh's, when shown, that ventilation went down when an opening was made at or near the top of the hive. In the cellar, the upward ventilation should allow moisture to escape.

Wm. Couse, Streetsville—My ideas are pretty well along the line of Mr. Smith's.

Mr. Aches—I like ventilation but not upward. Let the ventilation in cellaring

be from below. I want heat in the hive.

Mr. Myers—When does upward ventilation cease?

J. B. Hall, Woodstock,—Last winter I had 108 stocks packed, In May I had 50 left. I had a large number in the cellar, the fronts raised, the quilts sealed they wintered well. Those outside were lost through snow remaining over them during and after a heavy thaw.

Jacob Alpaugh, St Thomas—As regards upward ventilation in winter, it depends upon whether the bees are wintered outside or in. Inside at 45° it matters not if not upward, but then good ventilation should be given below. If bees are wintered outdoors there must be a little ventilation on top, say the sealed quilt broken loose late in the fall or ventilation in some way. For summer, I sometimes give a little at the top which means *downward*, this for extracted honey does no harm. For comb honey I allow no opening at the top. If this is allowed the cold air rushes in and prevents capping and evaporation.

A. E. Sherrington, Walkerton.—I want the top well covered, under such conditions the bees work better in the sections.

Wm. McEvoy—If wintered outside there must be a little upward ventilation.

Mr. Storer, Lindsay, related that he had a hole in the hive one inch in diameter half way up the front of the hive. The bees wintered for four years perfectly. He used a cushion on top and in the cellar.

M. B. Holmes, Athens—I formerly removed propolized cloth, this year I did the opposite.

Mr. Pettit—For cellar wintering I would advise every one to raise one end of the hive, put on cushion and leave sealed quilt. No opening should be allowed, nor current of air, either by direct opening or through quilt from above, to get the best comb honey.

This closed the evening session.

(to be continued.)

Wintering Bees.

SHOULD THEY HUM?

"Now high, now low, then hid.

Progressive, retrograde or standing still.

Success in wintering bees with many, is so uncertain and fluctuating that it does seem right to help when we can, but there is no reasonable room for doubt that careful and painstaking experimentation, judicious and careful observations, coupled with the general knowledge of the requirements of animal life; will in time drive away all the fogs and mists that obscure the vision, brush aside all the mistakes and

errors that are now by many held to be truths, and that the true and scientific method of wintering bees, stripped of all erroneous theories will give confidence, and enable the average bee-keeper, to place his bees in spring upon their stands, in practically the same condition that they went into winter quarters—ready to take the very first honey available and flourish right along.

Those who have a great deal of trouble building up in spring have a good deal yet to learn.

They should not rest satisfied where they are.

On page 133 C. B. J., Bro. Doolittle complains that I do not exercise charity, when I state, that when bees are wintering perfectly they drop into stillness and deep repose, thus opposing opposite views held by himself.

Now Bro. D. you will believe me when I tell you I had no thoughts of being uncharitable, but take note that just a little farther along you flatly contradict me, and say that bees "always murmur." Now would it not be uncharitable in me to hint at uncharitableness? But enough of that.

In this connection in justice to this live question, I am compelled to point out that you honestly state what you believe, but I state what I know. You will observe that there is a wide difference between believing and knowing.

Nosir, I am not ignorant of the fact that you have an overwhelming majority with you, but on that very account, at this juncture the facts are more important, or rather all the more important that the facts be prominently set forth. It would be most cowardly for me to wait for backing before writing, as I have done. But the daybreak will break forth—I have no fears for the future verdict.

It may be well to state in passing that bees that hum all winter are generally if not always predisposed to spring dwindling and are comparatively short lived, and must have more or less building up in spring. Further along you go into a series of arguments to prove that your bees always hum. Now my dear sir, you might have spared yourself all that trouble, for no one has any desire to dispute you on that point; but the fact that your bees always hum does not prove that they are wintering in the best possible condition, nor does it at all prove that they can be so fixed, placed, ventilated and managed that most of them will keep quiet nearly all the time in the cellar.

The question at issue is, can bees be so wintered that during most of their time in the cellar they are still, and if so which

condition is the better for perfect wintering stillness or humming? I champion stillness.

Will you kindly tell us how your hives were ventilated on that November evening, to which you refer and found your bees humming?

I suspect that your hives were not sufficiently or rather properly ventilated, and that they were gently fanning to drive the foul air out of their hives, or it may be that the draught through the cellar made them uncomfortable. No one can decide without knowing all the conditions, but I cannot think for one moment, that their contentment played any part at all in producing that hum. But the very reverse.

In closing I will say that when hives are set in and ventilated for winter: no draught should be allowed through the cellar, it disturbs the bees and usually makes them hum.

S. T. PETTIT.

Belmont, Ont, Jan. 1894.

P. S.—When I got home from Lindsay O. B. A. meeting, last week the mercury in my bee cellar stood 41°. I took my cap and coat off and moved about in the open air, until the insensible perspiration was pretty well suspended and I was just on the point of taking cold, then I took some peppermint candy into my mouth and a lighted candle in my hand (coal oil is very offensive to bees), and slipped into my bee cellar to make observations. I found a part of one row near the stone wall just a little noisy, but most of the bees were so far as I could detect, as Eliza Kellogg would put it, "as still as the breast when the spirit has departed" and I was happy.

S. T. P.

Underground Cellars.

BEE S DIARRHEA, ETC.

After I had kept bees four or five years and tried to winter them in all kinds of cellars of various temperatures I bought a building and under it built a cellar 26x38 feet, inside the walls. The top of this cellar came even with the outside ground. This cellar was double-walled so that vegetables in it were safe from frost.

In the centre I began to dig again and built another cellar about 7x30 feet. Two-foot walls of solid masonry were put in and joists laid over the top and it was lathed and plastered on the under side of the joists. On the top of the joists it was floored and 6 or 8 inches of sawdust spread on the top of the flooring. This was a

cellar within a cellar. I sought to obtain in this cellar the natural temperature of the earth. Then the cellar was divided into two apartments, separated by two doors 3 feet apart, one apartment was arranged to accommodate the hives and the other contained a stove to assist the earth in keeping up the required temperature and also ventilation.

The natural temperature of the earth is supposed to be between 44 and 45 degrees. One hundred and more colonies wintering in this cellar failed to raise this temperature two degrees or perhaps not one, in fact 115 colonies went through the winter in this cellar and the temperature did not go below 43 nor above 44 degrees from November 20th to April 15th. Not a variation of one degree in five months. I experimented with all kinds of ventilation and found that the bees would always winter when there was enough food and the covers were not sealed. An unsealed hive of bees in this cellar were as safe as a dollar note in a United States vault. But the trouble came in the spring in the bees being short lived. I believe the ventilation of the hives necessary to prevent excessive accumulation of moisture caused the bees to be cold and uneasy and keep up a constant activity that helped to wear them out and shorten their lives. If this was not the trouble then it may be that the air of the cellar, was so impure that their lives were shortened from a lack of oxygen.

The colonies did not dwindle out entirely but they got so weak that it was hard work to build them up in time for the clover harvest. After trying this cellar two or three winters and experimenting with higher temperature the better the bees stood the spring. In order to keep a temperature of 47 to 50 degrees it was necessary to keep fire in the stove nearly all winter and I came to the conclusion that it was cheaper and less labor in a cellar that was affected by the weather outside, than in the cellar where during warm spells the temperature remained at 44°.

In the summer of 1885, (I think it was in the month of August) during a long drizzling rain storm a man returned from the timber and told me that a bee-tree had been cut a day or two before, the honey all taken and the bees left to starve. Every comb had been removed and a piece of new comb the size of my hand had been built and brood started in it. The hollow was turned upward about like a "wet moon (!)" so the bees and comb were at the mercy of the storm. On first examination I noticed the same sour smell that is always present with a diseased colony in the cellar. They

were taken home, kept in a warm room and the next day when they flew they spotted the hive and everything near. There was no honey and no pollen and no chance to gather any. No lack of ventilation, no foul air. What caused the disordered, disturbed bodies? Their bodies were so bloated and heavy that instead of flying into the air they simply tumbled off the alighting board.

About this same time I was running about 40 nucleus colonies in a dense patch of corn which was along the side of my apiary. As the nuclei were made they were set out in the corn so the young queens would mark their hives. Down under the corn it was constantly shady and damp. The cloths under the covers were always damp and often dripping with moisture and this in the hot midsummer. Stronger colonies remained dry, probably because their greater amount of warmth may have driven the dampness out. These little colonies flew just like diseased colonies in the spring and often specked and daubed the front of their hives.

In the spring when the bees are raising much brood and consuming much pollen they have their flies before the hives and their droppings fall upon everything. This faeces contains little or no water and has no sour stench. A whole cellar full of such bees would not befoul the atmosphere as much as one colony of diarrhetic ones. Brood rearing does not create a stench inside or outside the hives. It may be possible that this healthy condition may sometimes be mistaken for disorder.

I have seen clusters of bees, hang on the fronts of the hives in swarming time through two and three days of rain and get wet, and after the rain was over and they began to fly there were no noticeable spottings to be seen. The only reason I have been able to find for the bees becoming diseased when they get wet on the inside of the hive and remain healthy on the outside is because they may have sipped up moisture that ran upon their brood. The weather being such that they were obliged to hold it in their stomach for a day or two would cause indigestion and a disordered condition. Being confined inside for *several days* would aggravate the case and transform disorder into disease. These observations were all made in northern Iowa, but there sometimes come chilly, rainy spells in California, and I have seen indications of the same disorder here. But as it takes confinement to cause actual disease, Californians have nothing to fear along that line

C. W. DAYTON,
Pasadena, Cal.

Dec. 10th, 1893.

FIRST STEPS IN BEE-KEEPING.

KEEPING EVERLASTINGLY AT IT
BRINGS SUCCESS.

QUESTIONS SENT IN BEARING UPON FIRST STEPS
IN BEE-KEEPING WILL BE ANSWERED IN THIS
DEPARTMENT BY THE EDITOR.

QUESTIONS TO ANSWER.

There are so many questions to answer that we have this month decided to take some of them in hand. It is pleasing to receive questions, it shows our readers are taking an interest in THE CANADIAN BEE JOURNAL. In the first questions by W. we should be pleased to have the opinion of others. We are surely all open to receive apicultural information.

QUESTIONS No. 1.

Please give what you consider the best plan of ventilating hives (where bottoms are nailed on) both for hot weather and for wintering indoors. I have the generally recommended plan of raising covers in hot weather but consider it a slip-shod plan, as just when the bees require the ventilation most when the hives are crowded with heated bees in the sultry weather just before and during thunderstorms, the covers must be jammed down (causing clustering out and working off) or run the risk of having covers scattered all over the yard. I tried boring a $1\frac{1}{2}$ inch hole in the back end of a few hives covering inside with a wire cloth and outside with a wooden button, but most of them are completely covered with propolis. What is Mr. Pringle's experience in this plan? I think he recommends it. Let us hear from you all.

ANSWERS.

To begin, the best way to handle hives with tight bottom boards is to have them movable. It took me years to find this out and now we would *never* go back to the old system. I think there is no better way of ventilating a hive than to have the hive standing well up from the ground to allow a free current under the hive, next have a ventilator in the bottom of the hive which can be closed by means of a solid slide or have in its place a wire clothscreen. This device costs something but is effectual. See report of discussion on ventilation by members of the Ontario Bee-Keepers Association.

In cellar wintering I think it important to have a warm cushion on top of the hive and abundant ventilation below. In order

to secure as much as possible automatic ventilation we must have the temperature of the hive considerably higher than temperature of the cellar, by upward ventilation in the cellar this cannot readily be secured.

Question No. 2. Please let me know, what kind of sugar do you give the bees during the winter time when they are short of honey?

How many times a week do you feed it and what quantity do you give? I. N. F.

Ans? In the absence of stores for winter no sugar other than granulated should be fed. In the fall of the year two parts by measure granulated sugar to one of water is the proportion. The water wants to be brought to a boil first and then the sugar added. All should be carefully boiled for a moment and after removing from the stove add two or three per cent or more of good honey. This syrup is to be fed to the bees in the fall of the year. If this has not been done no liquid should be fed when the bees cannot fly out. Some supply dealers sell a specially prepared candy for bees when short of stores. Sufficient for winter should be placed under the quilt and on top of the frames, over this a warm packing should be placed to keep the bees in the hive warm. Failing this, make a flat sugar cake of granulated sugar and honey, sufficiently hard to prevent the candy from running when warmed by the bees. This flat cake should be laid in the place of candy. All the above operations with the bees should be done quickly, disturbing them as little and as seldom as possible.

"Good Morning Booful World."

Baby in her nightgown
By the window stood
As the sun was peeping
Above the dark fir wood.

The lawn was bright with dewdrops
Scattered by the night;
Sweet buds along the borders
Were opening to the light.

The climbing morning glories
Bore many a tinted cup
Pretty pansy faces
Were opening sweetly up.

Our darling gazed an instant
At the marvelous new day--
The hills, the trees, the blossoms
That graced the garden way;

At the lovely lady lillies,
With petals all uncurled--
Then clapped her hands and shouted,
"Good morning booful world!"

WORK AT THE MICHIGAN EXPERIMENTAL APIARY.

BEST FOUNDATION FOR USE IN SECTIONS

At the above apiary, Mr. R. L. Taylor, conducted a series of experiments for the Government and reports along the following lines.

Mr. Taylor says: He has noticed that much interest is taken in the best methods of extracting the wax from old combs, and in machines that make the thinnest foundation, but that little care has been exercised with regard to the best methods of manipulating wax to be used in making foundation, so as to secure the readiest acceptance and the most thorough manipulation on the part of the bees, and that to the interrogatory: "Does the thinness of foundation bear any relation to the thinness of the Septum of the comb made from it?" He has heard hardly an enquiring answer.

The plan adopted was to procure a conveniently large variety of foundations made for use in sections by procuring from several makers samples of each kind made and comparing them by putting them into cases alternately with no separators and giving them as thus arranged to the bees to work out and fill.

He had been asked whether in publishing the results of these experiments he should give the names of the manufacturers of the different foundations. The object of the experiments was to obtain for the use of bee-keepers generally, as much new and valuable knowledge with regard to their tools and business as possible, and it was evident that in the particular experiments of which he was reporting the value of the results depended almost entirely upon a knowledge of the names of the makers of the several varieties of foundation used, and he believed he should be doing injustice to any maker of foundation to suppose that he desired his name withheld. The dealer could if not making the best, remedy it. He thought therefore he could not do otherwise than give all the knowledge he possessed in the matter. Not that he thought there was anything so far that could very injuriously affect any manufacturer, but he hoped there was what might prove an entering wedge to make a way of escape from the domain of theory and an entrance to the domain of fact in the matter of found-

dition which would lead to an effort to make it to please the mandibles of the bee instead of the eye of the purchaser. There might be something yet to learn about the manipulation of wax as well as the peculiarities of foundation machines.

To use Mr. Taylor's own word he states: In the experiments now under consideration eight varieties of foundation were employed of which the sources and other distinguishing peculiarities are sufficiently indicated in the following table:

- A Dadant's Thin, Sheets 12x4 in., 15 to 1/2 lb.—10 ft. to the lb.
- B Dadant's Extra Thin, Sheets 12x4 in., 18 to 1/2 lb.—12 ft. to the lb.
- C Van Deusen's Flat-bottom, (procured of A. I. Root) Sheets 16 1/2 x 3 1/2 in., 16 to 1/2 lb.—13.75 ft. to the lb.
- D Root's Thin, Sheets 16 1/2 x 3 1/2 in., 12 to 1/2 lb.—10.31 ft. to the lb.
- E Root's Extra Thin, Sheets 16 1/2 x 3 1/2 in., 14 to 1/2 lb.—12.03 ft. to the lb.
- F Foundation made on the Given press, Sheets 15x3 13-16 in., 12 1/2 to 2 1/2 lb.—10.09 ft. to the lb.
- G Foundation made on Given Press, Sheets 15x3 13-16 in., 12 to 1/2 lb.—9.37 ft. to the lb.
- H Fdn. three years old, made on Given Press, about 9 ft. to the lb.

Each variety of the foundation was designated by a letter of the alphabet as indicated and the letters were used for marking the sections to indicate the sort of foundation each contained and also as labels to distinguish the septa of combs made from the foundation when they (the septa) were cut out and sent away for the measurements hereinafter explained.

The foundation was cut to the same size 3 1/2 x 3 1/2 inches and after being fastened in sections were placed in Heddon cases alternately as already stated so that each kind appeared seven times in each pair of cases. In all, eight cases were thus prepared, but misfortune attended them in other ways than indicated in the foregoing; some were not well-filled, two contained more bread than I ever found I think in any other two cases and their was only one pair that was filled to my entire satisfaction so that the material that could be fairly used for comparison by weighing was comparatively meagre and consisted of five of each sort from the two cases that were well filled, four of each from two other cases and three of each from still another pair. The cases were selected with a view to their giving an opportunity of selecting well filled sections of each sort from the same relative positions in the cases and the sections compared were so selected. The following figures give the results in pounds and ounces:

	A	B	C	D	E	F	G	H
5 each sort	1-13.5	1-11.5	4-13.5	5	4-15	4-15.5	4-11.5	4-15
1 "	3-13.5	3-12.5	3-19.5	3-15	3-16.1	3-16.1	3-16.5	3-15.1
3 "	2-11	2-14.5	2-14.5	2-15.5	2-13.9	2-14.5	2-16.5	2-15.1
Total	11-9	11-6.5	11-11.5	11-14.5	11-11	11-12	11-13.5	11-11

This indicates pretty clearly what I have been aiming at as well as the course with the modifications already suggested which I think should be pursued in making further investigations in this line. Of course it would be rash to claim any very definite result from the experiment so far but the totals here given will be found very interesting matter for comparison with the weights and measurements given further on which were procured with the expectation of evolving something that would assist in the solution of the general problem under consideration.

I suppose it would not be denied by any one that so far as the amount of wax contained in comb honey is concerned we must take the amount of wax contained in natural comb when used as the receptacle of honey as the standard of perfection. How near does comb produced from foundation prepared for use in sections approach that standard? And do combs produced from all sorts of such foundation approach equally near to that standard? It was with the purpose of making a beginning if possible at answering these and similar questions that I undertook the experiment with section foundation. It first occurred to me that samples of honey made from different kinds of foundation and from natural comb might be submitted separately to several careful individuals experienced in the production of honey for comparative tests with the hope that the reports of such tests would

give the light sought. With further thought that hope gradually grew dimmer until the committee of the N. A. B. K. convention to whom the septa cut from comb made from the several foundations were submitted for comparison with a view to a report, gave the matter up in despair, when it went out altogether."

Mr. Taylor then gives the methods employed to get accurate measurement and gives the average result as follows :

	A	B	C	D	E	F	G	H	I
Washburn's Av.	105	87	87	91	91	89	74	79	57
Reed's Average...	93	68	68	90	87	67	60	67	50
Hubbelt's Av....	95	89	65	75	70	62.5	70	70	62.5
Total.....	283	268	220	269	251	209.5	201	216	169.5
Average.....	91	89	73.3	89.6	83.8	69.8	68	72	56.5

Mr. Taylor sums up the results as follows:

1st. No comb made from foundation quite equals in fineness the natural, though in some cases it approaches it very closely.

2nd. In foundations of the same make the thinner has but very slight advantage over the heavier in point of producing comb of lighter weight.

3rd. That foundation kept for a long time before using has but a slight disadvantage, if any, as compared with that freshly-made. The slightly greater thickness of the septum of comb made from "H," as compared with that made from "G," may well be accounted for by the fact that H was heavier than G.

4th. Granting that different methods ordinarily in use of manipulating wax do not make a difference in the character of foundation made from such wax, that founda-

tion made on the Given press has a pretty decided advantage over that made on the roller machines.

If these investigations lead manufacturers of foundation to strive to learn the best methods of manufacturing wax and to find out what peculiarities characterize the best foundation machines they will not have been made in vain.

Question Drawer.

Please answer the following questions through the CANADIAN BEE-JOURNAL :

1st. In running for Comb honey with a hive so constructed that the bees have to pass through the surplus apartment, and a queen excluder, before reaching the brood combs (the hive being not contracted) will there be any liability of having pollen stored in the sections?

2nd. During the honey flow, if all the unsealed brood and the queen of a colony of bees be confined to one side of the hive by a tight, wire-cloth, division board, how long can the remaining bees outside the division board be kept queenless, without fertile workers appearing queenless?

And are they queenless?

3rd. Will bees gather any pollen (during a honey flow) when they have a queen, but no eggs or unsealed brood to care for? Also when they have no queen under above conditions.

St. Thomas.

B. E.

It would depend upon the hive and the locality, also upon the method of handling the story. With the new Heddon hive there would be that danger. With the Langstroth frame or one as deep there would be no danger unless in a very exceptional locality, providing you used drawn comb full sheets of foundation or starters upon which the bees had commenced to work. In very exceptional localities there is a danger of the bees carrying pollen into sections under the best of conditions. For comb honey I do not advise the use of a queen excluder unless the bees are hived on starters or a very shallow brood chamber is used.

In reply to question No. 2. I cannot speak from practical experience but think all such tinkering should be avoided.

Yes they are queenless, sometimes however they do not realize it.

In reply to both parts of question No. 3. I would say, yes they may.—Ed.

Two Foul Brood Propositions.

—Dr. Wm. R. Howard.

On page 301 *American Bee Journal*, of Sept. 7th, 1893, a request was published to send me specimens of foul brood for microscopical examination; the request was made by Mrs. Jennie Atchley, of Beeville, Texas, whose desire it was to have the subject thoroughly investigated, trusting to me entirely the course to be pursued.

This was the source of furnishing me with specimens of foul brood from several sources, from which I have made more than one hundreds cultures. For the benefit of bacteriologists, I will state that the culture media employed were potato, gelatine on plates and in tubes and stab cultures in agar-agar.

Proposition I—That the queen does deposit eggs in cells containing the dark coffee-colored dried mass, resulting from the drying of the viscid ropy remains of foul brood, which, though tougher than the wax, yet easily dissolved in water, contains the germs of foul brood with sufficient vitality to produce the disease.

Proposition II—That honey is stored by the bees in these foul cells, and sometimes capped, thereby retaining the germs of foul brood as long as the comb last; that the honey in these cells is not detrimental to the vitality of either *spores* or *bacilli* which are productive of the disease, and that in such cells the *spores* and *bacilli* are found suspended in the honey still retaining their vitality.

I received from Hon. R. L. Taylor, of Lapeer, Mich., Sept. 11 1893 the first specimen of foul brood, which contained brood from five or six days old up to sealed brood. On careful examination it was found that the youngest brood was diseased, and in a few cells there was the brown dried mass of foul brood which attracted my attention, and cultures were made from those found in the empty cells, and besides the *bacillus alvei*, other micro-organisms were found which I shall merely mention here.

The next important specimen was received from D. D. Johnson of Summit Mills, Pa., this was interesting as many cells contained the dried mass, the remains of foul brood, though the cells were empty, besides, dead sealed and unsealed brood. This was received Sept., 19th, 1893.

From C. P. McKinnon, of Bangor, Iowa, Sept., 27th, 1893, I received a very foul

specimen which was found to contain the same as the first. Cultures were made from each of these specimens.

No one up to this time had sent me combs containing honey which I had hoped to receive, so I wrote to Wm. McEvoy, of Woodburn, Ont., asking him to send me combs of foul brood with honey in the adjacent cells; and not receiving word from him in due time, I addressed him a second time, stating explicitly what I wanted. He sent me two combs six by eight inches containing brood of all ages, foul brood of all stages, and honey stored by the bees in the adjacent cells, some of which were capped or sealed. It was the foulest mess I ever saw and the foulest smell I ever smelt. Of this specimen I sent to Mrs. Jennie Atchley of Beeville, Texas, a piece four inches square out of the worst, and in a few days received the following regarding its characters:—"It is sure enough *foul* and as dangerous as yellow fever."

The work dissecting these combs revealed the same facts as before in regard the young brood in the foul cells; and further, in regard to the honey, very few cells were sealed. In nearly all the unsealed cells was found the hard dark coffee-colored mass of decayed foul brood, containing the *spores* and *bacilli* of foul brood. To make sure that I might not be deceived, I carefully examined the cells, every one, which were capped by the bees, and in nearly every instance was found the same hard mass of old foul brood; these were carefully dissected out and examined and found to contain both the *spores* and *bacilli*, from which cultures were made. With these I had less trouble in obtaining pure cultures as I had fewer micro-organisms to contend with which was as I anticipated. My next move was to take the honey dipped out of these sealed cells, without disturbing the cell-walls, and examine with the microscope, which revealed both *spores* and *bacilli* suspended, from which pure cultures were obtained.

After communicating these facts to Mrs. Jennie Atchley and Mr. Wm. McEvoy in detail, they urged me to make known at once the results of my investigations in this line. Not wishing to be in too great haste to rush into print, I carefully went over my work again, taking extreme precautions that no error might be made. I arrived at the same conclusion as before.

In making these last cultures from honey twelve were on potato, six on gelatine plates both excluded from oxygen, and eight stab cultures in agar-agar, each giving satisfactory results.

I am now preparing the manuscript for the entire report of my investigations, to be

published in pamphlet form, in which these experiments are given more in detail, bringing to light many more important facts regarding the biology and histology of the bacillus of foul brood, and its pathological relations to the disease, which when fully understood will greatly simplify its eradication.

Appended to this report will be given a review and free examination of the theories held by the writers of the day, in which each one will be treated fairly and honorably, without bitter personalities, but from a scientific standpoint, and should I differ from any one, I am willing to go over the ground with them and let further demonstrations prove the right.

Fort Worth, Tex., U. S., Dec. 28th, 1893.

To Protect Bee-keepers.

At our last meeting of the Illinois Bee-keepers' Association, the following was adopted, relative to the petition following etc.: That each member be requested to send a copy of the petition to his various members of Congress, soliciting their assistance in having it enacted into law:

To the Honorable—the Senate and the House of Representatives of the United States;—

The Illinois State Bee-keepers' Association, in meeting assembled, by unanimous vote, petition your honorable bodies to make and enforce laws forbidding the sale of any article under the name of "honey," unless it be the natural product of flowers and plants naturally gathered by the bees from the plants themselves, and marked with the name and address of the bee-keeper.

Your petitioners further beg leave to state that the Conger "Pure Food Bill," as presented at the last session, is in accordance with the wishes of the Association.

JAS. A. STONE, Sec.

The Illinois State Bee-keepers' Association, are taking a wise step in the above direction. Canada will probably be the first to pass a bill in this direction, may Illinois be second.—Ed.

AT THE FIRE.—Fireman to (captain): "This engine won't work, sir."

Captain: "See if you ca'n make it play, then; that's what we want."—Selected.

BE IS CONVINCED OF IT.—"This is a hard world," said one laborer to another, "Yes. Oi do be thinkin av that ivery time Oi put me pick-axe intil it."—Washington Star.

WINTERING BEES.

For the Canadian Bee Journal—C. C. Miller.

FRIEND PETTIT:—Reading your interesting article on page 126, I don't find that we are very far apart on most points as to wintering, and perhaps we are nearer than seems, if we fully understand each other.

Perhaps I ought to give some definite idea as to the actual success or failure I have had in wintering. You know it is only too often the case that successes are trumpeted and failures mentioned softly. Possibly I have erred in the other extreme, for there seems to prevail an idea that I generally make bad work wintering. A book before me gives the figures for several years ago. Commencing with the winter of 1873-4 I find the average loss for ten years was more than 10 per cent. This includes the winter of 1880, which I spent in the east, leaving my bees unattended, and the following spring I had 67 left out of 162. Leaving that winter out and the loss of the remaining winters was a trifle less than 5 per cent. Since then I think I have done at least as well, until the last two winters, so I think I am safe in saying that my ordinary loss is not more than 5 per cent. Yielding to a desire to try what some commended—doing without fire in my cellar—I met with a heavy loss this last two winters, and taking those along with the winter of 1880, I am satisfied with experimenting in that direction, fully believing that artificial heat in the cellar is a good thing for me, whatever it may be for others.

We don't agree about ventilation. Perhaps we would if we were talking about the same thing. If by ventilation is meant a current blowing directly on the bees, then I agree with your views perfectly. But the ventilation I want is that which displaces the old air with new in such gradual manner that there shall never be anything like a current on the bees. And if you manage to have the same amount of ventilation all the time, then you are that much ahead of me. Possibly you may have, but I doubt it. For I think that whatever ventilation you have is effected by the wind. If on a very calm day the air of your cellar is displaced at a certain rate, then on a very windy day it may be displaced in half the time. That gives twice as much ventilation, and if there is no current directly on the bees in either case, I can hardly see that harm

can come from the increased ventilation other than the increased lowering of temperature.

On one point I'm afraid we will have to agree to disagree, for I can hardly believe in such a grievous mistake to have only one opening for the ingress and egress of air, providing that opening be large enough. If the whole bottom of the hive should be open that would be only one opening, and I hardly think it would be any improvement to add other openings. The opening to my hives is 24 square inches. Of course there's diffusion, and so is there diffusion if the whole bottom is gone. After all, what harm is there in diffusion? Isn't all ventilation by diffusion or currents, and isn't diffusion better than currents? Providing, of course, there be diffusion enough. Suppose there be currents enough and diffusion enough, so that all the air in a hive shall be displaced in the same time by one as by the other, which is better? In each case the air has been displaced with pure air, only that in one case a current blows the bees.

I wish you had told us what advantage you think it is to have floors to hives in winter in the cellar. I supposed it was a little disadvantage in the way of ventilation, although not enough to be serious, but much over balanced by the advantage of having the floors left ready for spring, and having mice shut out. I am curious to know whether you find other advantages.

You may be all right about the matter of dampness. Although little is said about it in this country, much is said in Europe about the thirst of bees in winter. I've tried sometimes offering sponges of water to them at the entrance of the hives, but never got them to take it. The sub-ventilator may bring all the moisture needed, still the air seems quite dry enough for the cellar bottom to be dusty at times.

However else we may differ, I think we agree upon the importance of good air for bees. And I think we agree on the importance of having the cellar well ventilated. It seems to me that a good many attach the most importance to the least important part of ventilation. They take great pains to find out just how to put the hives in the best shape to have the right amount of upper ventilation, or of lower ventilation, or of absorbants, while all the time it may be the air of the cellar is unfit to be breathed. If they would only stop to think, they might see that no matter how the hive may be arranged, there can be no pure air got into the hives if there is no pure air in the cellar. On the other hand, if pure air surrounds the hives constantly on all sides, no

matter how the hives are arranged, the bees are pretty likely to get a fair share of that air.

With kindest wishes to yourself and all the C. B. J. family. C. C. MILLAR.
Marengo Ills., Feb. 8th, 1894.

Wintering Again.

MARENGO, Ill., Dec. 28, 1893.

FRIEND HOLTERMANN,

Here's a letter of interest, and you may want to make some use of it for C. B. J. While I feel averse to taking any extra trouble, it may be that it would be better for me to do something in the way of covering in cellar for winter.

I suspect, however, that if some of my Canadian friends were to come to Marengo and winter exactly as they have been doing, that they would not achieve the success they have in the past. In other words, the climate here may be more severe than 200 miles farther north. A steady hard wind, with no let up for 24 hours or longer, is, I suspect, a good deal harder on a colony of bees than a still atmosphere ten or twenty degrees lower.

With best wishes, I am,

Yours truly

C. C. MILLAR.

LINDSAY, Dec., 23 1893.

Dr. C. C. MILLAR,

DEAR SIR:—I was surprised when I read the last clause of your letter in the C. B. J. for December. Just to think that such an able bee-keeper, should fold his hands and practically say, I cannot winter bees outside.

I used to have a good deal of trouble with outside wintering, but of late years I dropped on a plan practiced by a Mr. French of Oshawa, which has proved a success, it is good for outside or cellar wintering. I will try and describe it to you.

I use a Quinby hive with hanging frame it is practically the same as a Langstroth only that the frame is 1 7/8 inches deeper with bottom board fast. Now right in the front of the centre of the hive, I bore a one inch hole, this is left open all winter, whether outside or in the cellar. Those that are left out have a packing case made to allow four inches of packing around sides and ends and the same under the hive, but on the top I put a surplus case about nine inches deep and the full size of the hive; in this case I put a chaff cushion from six to eight inches thick, then put a water tight roof on. Plainer shavings, make a fine packing but don't put your flat covers.

Word From Columbia.

Loch Levin, B. C. Mines, C. B.,
22nd, Jany. 1894.

To the Editor of The Canadian Bee Journal.

near them. You will understand that a bridge must be made for the front entrance and the one inch hole. (the entrance in my hives are five inches long) I generally lean a board up in front of the hives to protect them from the storm and never touch them from November till April. For cellar wintering I put an empty section case on top of the cotton quilt, first putting a few sticks across the frames, then put a small chaff cushion on, then put the flat cover on top, put them in the cellar and never trouble about the temperature. Last year I put my bees in the cellar November 12 and took the last of them out on the 6th of May. The last taken out were the best, all were good. Last winter was very severe here, and out of twenty-three hives outside I lost one by spring dwindling and one queenless out of twenty four in the cellar. I lost one by my own carelessness. If you do not quite understand this rambling description, let me know and I will try and make any of the points plainer. I have "A Year Among the Bees," and rather enjoy it, and admire the stray straws in "Gleanings." I have kept bees since 1879, and always expect to keep some. I might add a wintering case costs about \$1 and I have had mine in use ever since 1879, and they are good yet.

Yours truly,

J. STORER.

Personal.

Mr. R. H. Smith, Bracebridge, gave an address upon "Extracted Honey" at the O. B. K. A. convention, Lindsay, his name not being attached to the paper it was only indirectly mentioned.

E. T. Abbott, President, North American Bee-keepers' Association, St Joseph, Mo., is contributing apiarian literature to the leading agricultural papers. He also has out a circular of bee-keepers' supplies.

Brother York has also new headings to the various departments in The American Bee Journal. The headings are neat and add much to the appearance of the Journal.

Later—Since writing the above, the report of the North American Bee-keepers' Convention published by G. W. York & Co. 56 Fifth Avenue, Chicago, Ills. has come to hand. It is profusely illustrated, and by far the best report ever printed of this organization. We congratulate Bro. York. Bee-keepers can secure this report by remitting 25 cents to the above address.

DEAR SIR.—I am very much pleased with THE JOURNAL and to my fancy it is improving in many features, particularly sticking more and more to bees. "First Steps in Bee-keeping" is a very helpful article, and I made up my mind to stick everlastingly at it, but I began to think that for this out of the way place, (geographically speaking) I did not calculate close enough the difficulties to be overcome; but if I get my single hive through the winter in pretty fair condition, I shall feel very much encouraged, as this is the second attempt, the first being a complete failure. I have read much about "if the bees get a cleansing flight etc.," during the winter season. Well my bees must be a very stupid lot of Italians, quite different from other peoples'. For having them packed out for the winter, I think I have lost thousands as the result of *cleansing flights* on very fine days, for I never could find that one in a hundred got back to the hive, the snow being thickly spotted in a radius of a hundred or more feet (perhaps some of the old bee-keepers will have something to say about this.) Consequently I removed them about a week ago into the house cellar, where I lost a hive last winter, but acting on the principle, "of two evils choose the least," I left one set of sections on removing the cover, and piecing instead a cushion stuffed with cotton wool, about three inches thick leaving entrance wide open, protected by wire cloth, temperature 35 to 40.

I would now like to know why I lost so many bees and can I carry them out on a very fine day for the proverbial cleansing flight. 2nd, What do you consider the best (name only one) for comb honey. I have two hives (one empty), one much larger than the other, both purporting to be Jones combination. I find this inconvenient and desire a change. If so must I throw away the old supers, sections, queen excluder etc. Thanking you for former reply and kindness.

Yours &c.

J. H. L.

This will be taken up next month in "First Steps."—ED.

"Ma, can I go over to Sallie's house and play awhile?" asked four-year-old Nellie.

"Yes, dear; I don't mind if you do."

"Thank you, ma," was the demure reply: "I have been."

Advertise.

A SOVEREIGN REMEDY.

From the Housefurnishing Review.

He was rather blue, and his wife noticing it, asked what the matter was.

"Matter enough," he sighed, "I've been looking over my books, and I find I have lost money every month for the last year."

"How did you lose it?" she inquired.

"Oh, I don't know," he said wearily, shaking his head.

"Nor where?"

"No."

Then she thought a minute and remembered what she did when she lost her pocket book, and her face brightened.

"Why don't you advertise for it?" she asked innocently.

"By George!" he exclaimed, "I never thought of that," and the next day he had a big display ad in the paper, and the next, and the next, and in three months' time he was in clover up to his chin.

WOODBURN, Ont., Feb. 7th, 1894.

I am pleased to see such valuable letters of warning from Messrs. McDonnell and Deadman to bee-keepers to keep the snow away from the entrance of the hives. I can fully endorse every word they said and could give plenty of such evidence along the same line. I am also pleased to see the Canadian Bee Journal so greatly improved.

Yours truly,

WM. McEVOY.

BEEVILLE, Texas, Feby 5, 1894.

After looking through your excellent Journal and noticing the many great changes and improvements over the old parent. I feel as though all bee-keepers should read it. You are using a nice, clean, high toned paper and your illustrations and engravings show up well. Then your reading matter is clear, and all in all, you have a bright spicy and terse journal, hard to excell. May the new series of the Canadian Bee Journal succeed beyond your most sanguine expectations is the wish of

JENNIE ATCHLEY.

WORTH REPEATING.

If you trust in God and yourself, you can surmount every obstacle. Do not yield to restless anxiety. One must not always be asking what may happen to one in life, but one must advance fearlessly and bravely.

PRINCE BISMARCK.

Strictly Business



One good friend in complimenting us on the qualities of the Journal says "give us more pictures" so here you are.

Now don't imagine that this is any "funny" matter, it is especially serious for the man going down, and besides since a brother Editor, over the lines, reproved us for levity, I have not even smiled in the vicinity of the Journal.

There is a peculiar timeliness about this picture for it illustrates the sad, sad end of a man who committed suicide through remorse. He lived in China (if I remember right), he was a bee-keeper, he subscribed for the leading Bee Journal, but it is so sad a story I must pause.

This poor man allowed his subscription to expire and turned a deaf ear to the solicitations of the publishers for a renewal. Months rolled by, from August to January and then February and still the publication came and was accepted but he paid not. He then requested his postmaster (the postal system in C. is very complete) to return the Journal marked "Refused."

I would my story ended here but alas there are a few chapters yet to record. Did his conscience begin to prick? Did he have visions in his disturbed slumber of the Editors children eating dry crusts and crying for No. 1 Extracted? Did he feel compunctions because he had acted dishonestly? I fear me not, but our Editor, being more charitable, thinks he did.

The fatal day came however, the sun got up at its scheduled time, the early trains come dashing in (the introduction of railways into C. is very recent) bringing in the mail bags messages from friends and creditors. One innocent envelope contained the fatal missive that drove him head first to a wet and untimely end.—It was from the publisher of the C. B. J. (China Bee Journal) and it read this way, "You must pay for your Journal for bylaw any man who accepts a paper or periodical must pay for it. Send the money at once or take the consequences."

**

"Let us draw the mantle of charity over his memory and conclude that his tender conscience goaded him to the frenzied act," said the Editor, but I wish he had proved the genuineness of his remorse by sending the publisher the \$1 due before he went down. What say you? This is

STRICTLY BUSINESS.

An Old Friend.

In a series of interviews with members of the last Congress, 31 out of 43 remarked that they were readers of The Youth's Companion. For definite and trustworthy information on the questions of the day it is really unique, while the high character of its stories, the wide fields covered by its special articles, and its contributions from the most famous writers in Europe and America, are well known.

Its programme for next year seems brighter than ever. Some of the important stories are, "The Deserter," by Harold Frederic; A Tale of the Great Mutiny in India, by Sara Jennette Duncan; Several Romances of the Sea, by W. Clarke Russell; Tales of the War, and the Frontier in Early Days. Henry M. Stanley contributes two thrilling narratives from Darkest Africa, and Archibald Forbes writes of his "Closest Call." Naval Battles are described by Admirals and Military Life by Generals. Then there are articles on Choosing an Occupation, Boys Who Should not Go to College, Physical Training, Recreations of all kinds, and many other practical subjects.

Another pleasing feature is the charming picture of a young lady of colonial times, "Sweet Charity," reproduced from painting by Ferris, which is sent to all subscribers who send their \$1.75 for a new subscription or a renewal.

The Cosmopolitan for February introduces a famous European author to its readers - Valdes of Madrid, and the artist Marold, of Paris, well known as a French illustrator.

WANTS OR EXCHANGE DEPARTMENT.

Notices will be inserted under this head for 25c. five lines or under each insertion; five insertions \$1.00. All advertisements intended for this department must not exceed five lines, and you must say you want your advertisement in this department, or we will not be responsible for errors. You can have the notice as many lines as you please; but all over five lines will cost you according to our regular rates. This department is intended only for bona fide exchanges. Exchanges for cash or for price lists or notices offering articles for sale, can not be inserted under this head, unless offering full colonies of bees or honey. For such our regular rates will be charged, and they will be put with the regular advertisements. We can not be responsible for dissatisfaction arising from these exchanges.

WILL take honey, bees or beeswax for one or more of the celebrated Knoll, double action pressure and suction WASHERS. Correspondence solicited. GOOLD, SHAPLEY & MUIR Co. (Ltd.) Brantford.

For Sale or Exchange.

AT half price, about 70 Langstroth Hives, 200 supers, some never used, balance good as new, painted. C. M. NEWANS, South London, Ont.

WANTED—Beeswax or extracted honey in exchange for new and second-hand comb foundation mills, section, foundation or other supplies. F. W. JONES, Ont.

About fifty Langstroth Hives nearly new, eight and ten frame, and twenty, sixty pound Honey Cans some never used, in exchange for first class Honey, Oats, or Peas.

Address, A. B. SNYDER,
Hespeler, Ont.

Will take comb or extracted honey, beeswax, or bees in Langstroth hive for beekeepers supplies or subscription to THE CANADIAN BEE JOURNAL. Address,
GOOLD, SHAPLEY & MUIR, Co. (Ltd.)
Brantford, Ont.

HONEY AND WAX WANTED.

Comb or Extracted honey in exchange for supplies. Wax wanted in exchange foundation, or other supplies. Address,
W. A. CHRYSLER,
Box 450, Chatham, Ont.

FOR SALE.

A1 Honey (3,000 lbs.) In 25, 30 and 60 lb cans, Prices moderate. Address,

W. F. RIDDELL,

Prospect Hill.

READERS Of this Journal who write to any of our advertisers, either in ordering, or asking about the Goods offered, will please state that they saw the advertisement in this paper.