

ANNUAL REPORT
OF THE
BEE-KEEPERS' ASSOCIATION
OF THE
PROVINCE OF ONTARIO
1899.

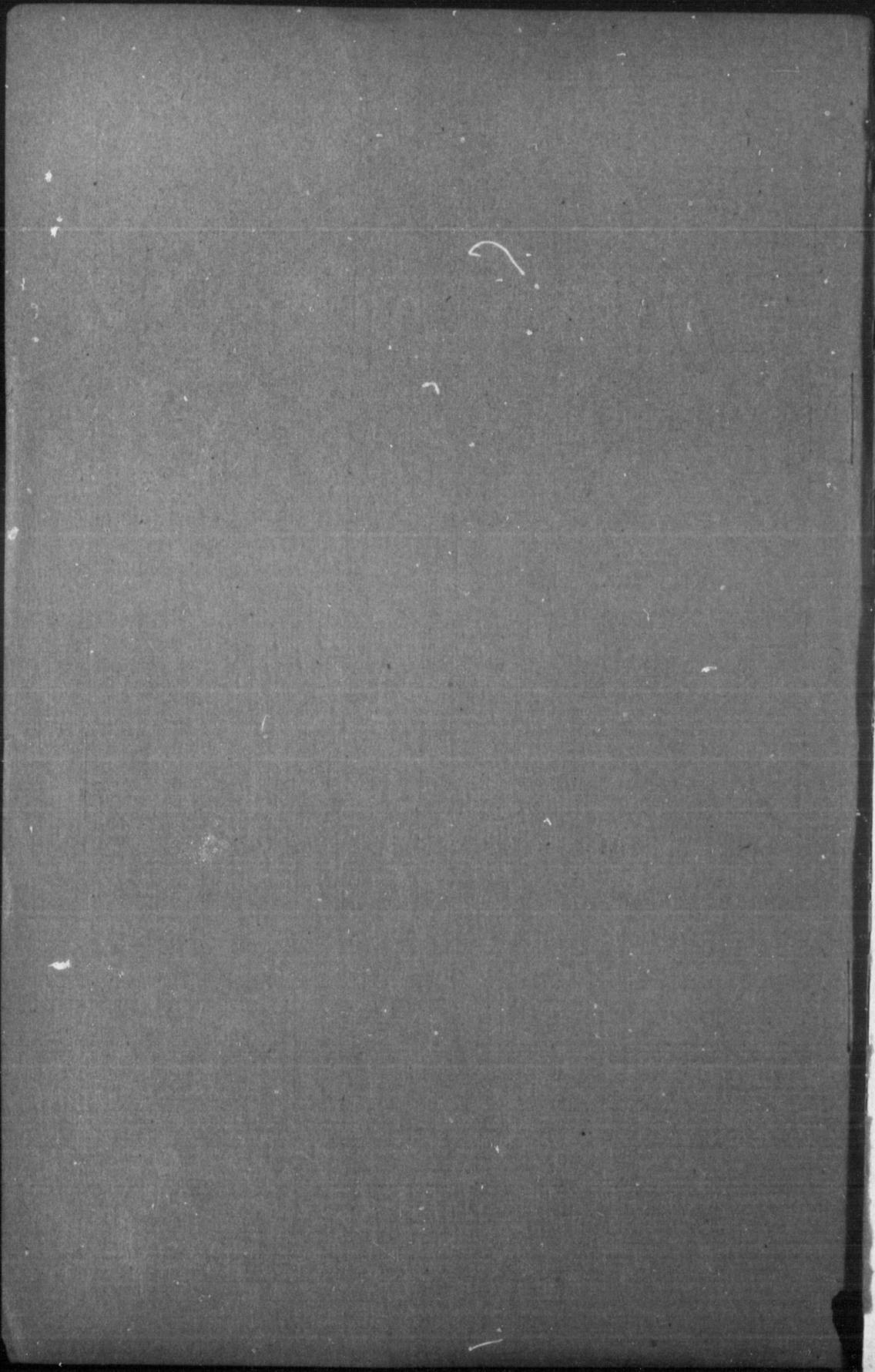
(PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE.)

PRINTED BY ORDER OF
THE LEGISLATIVE ASSEMBLY OF ONTARIO.



TORONTO:
WARWICK ERO'S & RUTTER, PRINTERS.
1900.

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ANNUAL REPORT
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1899.

To the Honorable the Minister of Agriculture

DEAR SIR,—I have the honor to submit herewith the twentieth Annual Report of the Ontario Bee-Keepers' Association, in which will be found the papers read at the Annual Meeting held in the City of Toronto, on the 5th, 6th and 7th of December, 1899, and a full report of the discussions thereon. The report of the Inspector of Apiaries and also the audited statement of the finances of the Association are also submitted.

I am

Yours truly,

W. COUSE,
Secretary.

OFFICERS FOR 1900.

President, - - - - - C. W. POST, Trenton.
1st Vice-President, - - - - - JOHN NEWTON, Thamesford.
2nd Vice-President, - - - - - J. D. EVANS, Islington.
Secretary, - - - - - WM. COUSE, Streetsville.
Treasurer. - - - - - MARTIN EMIGH, Holbrook.

Directors :

District No. 1 W. J. BROWN, Chard.
 District No. 2 J. K. DARLING, Almonte.
 District No. 3 M. B. HOLMES, Athens.
 District No. 4 C. W. POST, Trenton.
 District No. 5 J. W. SPARLING, Bowmanville.
 District No. 6 J. D. EVANS, Islington.
 District No. 7 A. PICKETT, Nassagaweya.
 District No. 8 JAMES ARMSTRONG, Cheapside.
 District No. 9 JOHN NEWTON, Thamesford.
 District No. 10 F. A. GEMMELL, Stratford.
 District No. 11 W. A. CHRYSLER, Chatham.
 District No. 12 SAMUEL WOOD, Nottawa.
 Ontario Agricultural College..... DR. JAMES MILLS, Guelph.

Auditors, - - - - - { WILL J. CRAIG, Brantford.
 { EDW. E. DICKINSON, North Glanford.
Inspector of Apiaries, - - - - - WM. McEVOY, Woodburn.
Assistant Inspector of Apiaries, - - - - - F. A. GEMMELL, Stratford.
Representative to Industrial Exhibition, Toronto, - A. PICKETT, Nassagaweya.
Representative to Western Fair, London, - - - JOHN NEWTON, Thamesford.
Representative to Canada Central Exhibition, Ottawa, J. K. DARLING, Almonte.

Next place of meeting, Niagara Falls.

Name

Armstrong, Jar
 Armstrong, Joh
 Brown, W. J.
 Brenton, F.
 Boomer, A.
 Ballow, Joel
 Byer, J. L.
 Beaupree, M. C.
 Blais, Adolphus
 Couse, William
 Chrysler, W. A.
 Comire, A. O.
 Cummer, D. W.
 Craig, Will J.
 Cox, William
 Colson, I. T.
 Darling, S. F.
 Dickson, Alex.
 Darling, J. K.
 Davidson, B.
 Davidson, C. W.
 Dickinson, Edw
 Davison, John B.
 Emigh, Martin
 Evans, J. D.
 Farmer, Thos. V.
 French, Augusti
 Farran, C. C.
 Gemmell, F. A.
 Gale, H. E.
 Goodfellow, Ale
 Gemmell, John
 Gray, A. W.
 Hand, E. G.
 Holmes, M. B.
 Hall, J. B.
 Heise, D. W.
 Jeater, W. H.
 Johnston, Geo. E.
 Kennedy, J. A.

LIST OF MEMBERS FOR 1900.

Name.	Address.	Name.	Address.
Armstrong, James.....	Cheapside.	Kendrick, J	New Dublin.
Armstrong, John	Streetsville.	Munro, J. A.	Munro Mills.
Brown, W. J.	Chard.	Munro, J. G.	Clenroy.
Brenton, F.	Corbyville.	McEvoy, Wm.	Woodburn.
Boomer, A.	Linwood.	McEwen, Robert	Renfrew, Box 69.
Ballow, Joel	Delta.	Miller, F. J.	London, 223 Dundas St.
Byer, J. L.	Markham.	McLaughlin, D. H.	Vankleek Hill.
Beaupree, M. C.	Simcoe.	McKnight, R.	Owen Sound.
Bailey, John	Bracebridge, Box 41.	McLaughlin, Alex.	Cumberland.
Blais, Adolphus	Glensandfield.	Madden, Michael	Sarsfield.
Couse, William	Streetsville.	Nolan, Dennis	Newton Robinson.
Chrysler, W. A.	Chatham.	Newton, John	Thamesford.
Comire, A. O., M.D.	St. Francois du Lac, Yam.	Pickett, A.	Nassagaweya.
Cummer, D. W.	Florence. [aska Co., Que.	Pierie, John	Drumquinn.
Craig, Will J.	Brantford.	Post, C. W.	Trenton.
Cox, William	Hamilton, 12 Bruce street.	Potter, D. M.	Elora.
Colson, I. T.	Purbrook.	Ross, D. D.	Martinton.
Darling, S. F.	Perth Road.	Reaman, Josiah	Carville.
Dickson, Alex.	Lancaster.	Robinson, Geo. E.	Hatchley Station.
Darling, J. K.	Almonte.	Sloan, W. H.	Milford.
Davidson, B.	Uxbridge.	Smith, R. H.	St. Thomas.
Davidson, C. W.	Mount Albert.	Sparling, J. W.	Bowmanville.
Dickinson, Edw. E.	North Glanford.	Smith, H. C.	Athens.
Davison, John F.	Unionville.	Sibbald, H. G.	Cooksville.
Emigh, Martin	Holbrook.	Saunders, Geo. E.	Hornby.
Evans, J. D.	Islington.	Smart, N.	Collingwood.
Farmer, Thos. W.	Ancaster.	Shaver, J. H.	Cainsville.
French, Augustine	North Glanford.	Stewart, Alex.	Canfield.
Farran, C. C.	Farran's Point.	Switzer, J. F.	Streetsville.
Gemmell, F. A.	Stratford.	Schilz, Mathias	Renton.
Gale, H. E.	Ormsdown, Que.	Shantz, Aaron	Haysville.
Goodfellow, Alex.	Macville.	Shultz, H. G.	Clontarf.
Gemmell, John	Lanark.	Sarrizine, Maxime.	Rockland.
Gray, A. W.	Burridge.	Sherrif, G. G.	Clarence.
Hand, E. G.	Fenelon Falls.	Taylor, Alex.	Paris.
Holmes, M. B.	Athens.	Thomas, Joshua	Deacon.
Hall, J. B.	Woodstock.	Wisner, Isaac G.	South Cayuga.
Heise, D. W.	Bethesda.	Wood, Samuel	Nottawa.
Jeater, W. H.	Kineardine.	Wood, George	Erasmus.
Johnston, Geo. E.	Bracebridge.	Walton, W. S.	Ballantrae.
Kennedy, J. A.	Glenroy.		

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FINANCIAL STATEMENT

Of the Ontario Bee-keepers' Association made to the Department of Agriculture for the Province of Ontario for the year ending Dec. 5th, 1899 :

RECEIPTS.		EXPENDITURE.	
Cash on hand from last year	\$ 46 60	Grants to other societies, fairs, etc.....	\$205 00
Members' fees	114 00	Expenses of meetings	3 00
Legislative grant	500 00	Officers' salaries	75 00
Affiliated societies' fees.....	40 00	Directors' fees and expenses	139 08
For copy of stenographic report	15 00	Postage and stationery.....	25 89
		Printing and advertising.....	9 79
		Periodicals for members	74 10
		Cost of reporting	30 00
		Executive, re Paris exhibition	32 90
		Auditors' fees	4 00
			\$598 76
		Balance on hand.....	116 84
Total	\$715 60	Total	\$715 60

W. J. BROWN, President.

MARTIN EMIGH, Treasurer.

Examined and found correct this 5th day of December, 1899.

H. G. SIBBALD, }
G. E. SAUNDERS, } Auditors.

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ONTARIO BEE-KEEPERS' ASSOCIATION.

ANNUAL MEETING.

The twentieth annual meeting of the Ontario Bee-keepers' Association was held in the Albion Hotel, Toronto, on Tuesday, Wednesday and Thursday, December 5th, 6th and 7th, 1899. The President, W. J. BROWN, of Chard, occupied the chair.

The minutes of the last annual meeting were read by the Secretary, Mr. WILLIAM COUSE, and, on motion of Mr. W. A. CRYSLER, seconded by Mr. J. H. SHAVER, they were confirmed.

THE PRESIDENT'S ADDRESS,

BY MR. J. W. BROWN, CHARD.

It was with some misgivings that I assumed the honored position of presiding over your deliberations, but, when called upon to do so, I took up the task with a determination to do my duty without fear or favor from any source, and never to relinquish the one object I ought to have in view, namely, your interests at every turn. My success is largely due to the two worthy gentlemen whom you elected to co-operate with me. Those two gentlemen have done all in their power to assist me to carry out the work for the past year. Each Director responded at every call, and, with very few exceptions, every man in the ranks fell into line and offered every assistance in his power. And, knowing this, it is with perfect confidence I stand before you to-day, believing that you will again assist to make this annual meeting one of the most pleasant and profitable in the history of the Association. Let our watchword be, "Peace and harmony in our ranks," for a house divided against itself will surely fall.

The past season has been a very unfavorable one in nearly all portions of the Province; scores of bee-keepers have been compelled to feed their bees in order that they might have sufficient stores to winter on.

There are many questions which will be laid before you for your consideration. Among others, I might mention the question of the Association purchasing from the Gould, Shapley & Muir Co., of Brantford, the *Canadian Bee Journal*, and assuming the management of that journal. With this question I am not prepared to deal at any great length. However, I would like to hear your opinion as to the probable cost of such a purchase, the probable cost of running the *Journal*, and as to whether we could have all this done for less money than it costs us at present, or would we be in any better position by purchasing the *Journal* than we are now in?

Another matter is the Paris Exposition in 1900. It will be remembered that at our last annual meeting a motion was passed to the effect that if the Executive Committee deemed it advisable to make an exhibit at Paris, that the matter be arranged. It was deemed advisable by your Executive Committee to make an exhibit at Paris, but not at Earls Court; therefore, your Committee spared no pains to arrange with the Canadian Commissioners of the Paris Exhibition to have a creditable exhibit of honey at Paris next year, the cost of said exhibit to be borne by the Department of Agriculture at Ottawa. This question may require some further explanation, which I have no doubt will be given by the Commissioner himself in the course of his address before you. There are many features in connection with this matter which are of much interest to you: the fact of this year's crop not being in all cases of an A 1 quality; there is the question of your being permitted to send over a supply of next year's honey to replace what will be sent of this year's crop; as well as the question of your being allowed to recommend the person to whom the care and setting up of the exhibit will be assigned. I would not recommend the sending of an exhibit to a foreign country that would not do justice to our industry and our country, and unaccompanied by a fit and proper person to look after it.

So far as I can learn, our Inspector of Apiaries has been overcoming foul brood wherever he met that pest in a bee-yard. His report will be laid before you in due time, as will also all other official reports.

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In compliance with another motion passed at our last annual meeting your committee saw fit to recommend the names of Messrs. J. K. Darling, M. B. Holmes, J. E. Frith and Fred. Gemmell as fit and proper persons to lecture at Farmers' Institute meetings, and forwarded the names to the superintendent of Farmers' Institutes.

Before closing I take this opportunity of thanking you all for your able and generous assistance to me in carrying out the work of the Association during the past year, and hope that during this meeting every officer and member will continue to assist me to preserve the best of order, and not allow anything to mar the harmony now existing among us all. (Applause).

Mr. DARLING: In discussing the President's address I do not know that I will say very much about it. With regard to the taking over of the *Canadian Bee Journal*, I do not know whether now would be the proper time to air my opinion on that or not, but I might say that I do not know that it would be just wise, and perhaps it would be as well to give a reason: a great many of us have been dissatisfied in the past with what we received for our money, and also in the way we were treated at times, but I am convinced by what I have seen during the last two or three months that there is a very great prospect of a change for the better, and if we can be as well served, as there is a possibility of being served, and at the same time refrain from taking up something we do not know very much about, I think we would be wise to let people who understand such things run that part of the business and pay them a fair remuneration for what we receive. With reference to the crops of the season I am sorry there has been a good deal of truth in what Mr. Brown has said. Some odd individuals have secured what some of us would call in any season a large crop—perhaps they would not call it a large crop this year owing to the locality in which they live being better than the general run, but take it all over the country, the crop has been from small down to nothing; and we are not alone. This may tend to the raising of prices. In fact the price of honey has been on the downward tendency for a good many years past. What is in the future for bee keepers is more than I can tell, but I do not think it is altogether an unmixed evil.

Mr. GEMMELL: With regard to taking over the *Journal*, I remember some five or six years ago there was quite a talk of doing the same thing, and there was a good deal of opposition to it. It was thought by some that it would be better if the *Journal* was managed independently, while other thought if the Association took the matter up our interests would be better served. I do not know what the opinion of the Association is now; but as far as I am concerned I am quite willing to help in any way that may be decided upon by this meeting, whether it be taken over or left as it is. There are a number of things to be considered which would take quite a little time to state now.

Mr. MCKNIGHT: I had not thought of the subject at all, but I see by the *Journal* it has been canvassed, and a variety of opinions expressed upon it. As Mr. Gemmell says, this is not the first time in the history of the Association when a movement of this kind has been on foot. When it was about to pass from the hands of The D. A. Jones Company into that of the present proprietors, there was a pretty strong movement made in the same direction, and there were a number of the members of the Association strongly in favor of taking over the *Journal*, and in fact, I think two or three special committee meetings were held in connection with the matter. Some of the members thought it would not be a wise course. I was among the number, and I am of that opinion still. I do not entertain that opinion because of any fear I have of lack of sufficient material to conduct the *Journal* properly; the difficulty I see in the way is a very important one, and that is, available funds. You cannot conduct the paper for nothing, and I do not think this Association is sufficiently large to warrant us in undertaking the conducting of a special journal in connection with its own proceedings.

Mr. W. J. CRAIG, Editor: While I am not officially appointed to say anything in this connection, you have been made aware through the *Journal* that our company would willingly hand over the management of that publication to the Association if so desired, and it is for this purpose, to find out the minds of the members of the Association, that our President has brought it up. At the same time we want, perhaps, more than anything else, your co-operation in connection with the management of the *Journal*. We cannot get along without that, and I think the members of the Association who have extended to me their sympathy and,—indeed more than their sympathy—their help in

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this connection. There may have been things that we have not liked, and there are some things that our firm of publishers did not like. However, these things all belong to the past, and we would like the hatchet to be buried at this time, and all to pull together once for all.

Mr. BROWN : With regard to what Mr. Craig has just said ; the proprietors are not over-anxious to dispose of the *Journal*, but would dispose of it at a fair remuneration. On the other hand, with the active co-operation of the Association, we will have a better journal than we have had in the past, and I think that under the present management it will be all right in the future. Of course, there were things which appeared in it which were not very pleasant for some of the members ; and I question if the Association was the owner of the *Journal* to-day, whether there might not appear things in it that would not be very pleasant to some of the members. It is impossible to please everyone.

Mr. CRAIG : When I took the position I occupy with the *Journal*, it was on the distinct understanding that they would not interfere with the reading matter of the *Journal*.

Mr. FRISE : While I think it would perhaps be in the interest of the Association to conduct a journal, my opinion would be identical with that of Mr. McKnight. Under the present circumstances I do not see how it could possibly be done with the funds available.

The President asked Mr. Couse to express an opinion upon the matter of taking over the *Journal* :

Mr. COUSE : I suppose the first matter we would need to consider would be the financial matter. I feel that we cannot afford to take it over ; I feel, though, that we can afford, each of us, to do a little better than we have done before, which will result in the *Journal* being more useful to us all, and in that way we can, perhaps, assist Mr. Craig. That is about as brief as I can put the matter.

Mr. PICKETT : Those who look after the business of the Association know that our means are limited, and we should not go into anything that has even the appearance of extravagance. I am not sure but that the success we have met with on other occasions, would warrant us asking for that amount under existing circumstances. I think the Government would require to know that we really need this, and that it would be a vast improvement upon what we have had, and also that it was the wish of the Province at large that such a *Journal* be maintained. In approaching the Minister of Agriculture for an increase some years ago I found, as perhaps many another has done, that the Government are very careful, and, while our demands were not extreme, we did not succeed in getting all we asked for. At the present we are not suffering with any very great amount of indebtedness, and if we incur the liability that a journal would necessitate, I fear they would think we were asking rather much at their hands, and I see no hope of any other source of gaining that point ; and while I need not lay any claim to supporting the present *Journal*, I am in hearty sympathy with those who are willing to try. I think the only method open at present is to leave it in the hands of the present owners.

IN MEMORIAM.

Moved by M. B. HOLMES, seconded by F. A. GEMMELL, " That whereas the Ontario Bee-keepers' Association has, since its last annual meeting, lost an honored and respected officer by the sad death of Herbert N. Hughes, of Barrie, and whereas during the years he had served as a Director in the Board of Management of this Association, he had, by the deep interest ever manifested in matters pertaining to our industry, shown that the interests of bee-keepers were being well studied and advanced at every opportunity, while at the same time his straightforward and gentlemanly bearing, coupled with his genial and friendly manner, won for him a very warm place in the hearts and affections of all who knew him ; be it therefore resolved that we, the Ontario Bee-keepers' Association, take this, our first opportunity, of giving a united expression of the grief that possesses us in the separation from our friend and co-worker, and that we extend to the family of our late colleague our heart-felt sympathy and condolence in their great grief, and we trust that the shadow and gloom pervading the home in consequence of this bereavement

may be dispelled by the presence of the Great Comfortor, the Wonderful Counsellor, who brings consolation, comfort and cheer even in the darkest hour to all who commit their ways unto Him. And be it further resolved that this resolution be recorded in the minutes and an engrossed copy, signed by the President and Secretary, be sent to the family of the late Herbert N. Hughes." Carried.

SPRING MANAGEMENT IN THE APIARY.

By D. W. HEISE, BETHESDA.

On receiving notice from our worthy President some time ago that the Executive Committee had seen fit to place my name on the program for a paper on spring management, with the request that I at once endorse the action of the said committee. I replied saying, that while I thought very little of the subject assigned me, yet I would endeavor to have something to say upon it at this convention. My reason for saying that I thought very little of the subject was not because I considered it one of slight importance, but from the fact that it has within the last few years received considerable attention at conventions and through the different journals, and more particularly from the fact that the subject was so ably and thoroughly handled only a year ago at the city of Gaelph by our esteemed friend, Mr. Sibbald. So while it would seem to be pretty well exhausted, yet perhaps after all there are always those in our ranks who could largely improve on their spring management, and with the thought before me that "keeping everlastingly at anything will eventually bring success," I take encouragement, and will endeavor to briefly outline what I would consider "ideal" spring management in my locality when bees are wintered on the summer stands.

The first step towards proper and successful spring management should be taken not later than the fifteenth of September of the fall previous, (that is when there is no fall flow,) by contracting the brood chamber with a division board to a size accommodating the strength of the colony, which may be from four to seven combs. The remaining combs in the space so contracted, whatever the number may be, should contain not alone what we might consider was sufficient stores, but a supply that we are absolutely certain will be an abundance to carry the colony safely, not only through the winter but right up to the time of fruit bloom. By preparing the stocks in this way the bee-keeper will have no occasion to open up the hives for an examination until the weather is sufficiently warm that all danger of chilling the brood or breaking the cluster will be reduced to a minimum. The first examination of bees in the spring should not be made until some calm day when the thermometer will register seventy degrees or more in the shade, and after the bees have been permitted for some days to gather both water and natural pollen. When the above conditions are present the hives should be opened, and the strength and condition of the colony ascertained. All hives should now be contracted to a capacity best suited to the size of the cluster, that is, in case such had not been attended to the fall previous. As the colonies of average strength will be found at this date, with from two to four frames of brood in different stages of development, these frames should be raised up sufficiently high so the honey along the top bars and in the corners can be uncapped. This will cause the bees to move it, and they will certainly store it in the cells that surround the brood, where it will be of most advantage. In the case of no honey being along the top bars of the frames which contain the brood, frames of honey (first having been uncapped) should be placed one on each outside of the brood next proper. Uncapping in this way serves a twofold purpose: first, by providing the liquid honey for larvæ food, and of easy access; and, secondly, by clearing the coast for the queen to widen out her circle. All garbage and dead bees should be removed from the hive floors at this time—a very simple matter indeed if the bee-keeper has been so wise as to use only loose floors; unfortunately some of us are still hampered with permanent floors. All the foregoing having been attended to, the operation will be completed by replacing the clean quilt (if such is used) with a gum cloth, putting on top of this three or more thickness of paper, return the top packing, contract the entrance, and close the hive. While it takes some little time to outline the above manipulation, yet in actual practise

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only a very few minutes are required for the whole operation. Any queenless colonies that are found at this time should be forced on not more than three frames, and united at the very first favorable opportunity and given a queen. In eight or ten days, if the weather be propitious, and the bees have been able to gather from the fields moderately, more uncapping should be done, the brood chamber enlarged, if found necessary; frames containing honey should be placed outside of the division board "a la Sibbald," which is a positive preventive of starvation, and an excellent stimulant for the extension of the brood nest. Do anything and everything that will not disorganize or endanger the colony, but that which will compel them to convert honey into brood; because it is bees we must get at this time, if we expect to have our supers rapidly filled when the main harvest arrives. From this time up to fruit bloom, frames should be added to the brood chamber, and frames of honey inserted, as often as the condition of the colony and the amount gathered from outside may demand, always selecting a fit and proper day for the operation. At the opening of fruit bloom is the time when all full winged queens should be clipped. Having recently noticed considerable discussion in the bee journals regarding this operation, I am persuaded to mention the method I practice, and for which I am indebted to Mr. McEvoy: As the queen is heading for the top bar when the frame is held on an angle, I catch her by the wings with the finger and thumb of the right hand, and then pass her over to the finger and thumb of the left hand, securing her by the two legs on her left side. When held in this position she cannot squirm, and the operator's right hand is at liberty to remove (with a pair of scissors) any portion of the wings desired. When completed, simply hold her close to the comb, relax the pressure suddenly, and she is at liberty without her body ever having been touched.

Now, to come back to the time of fruit bloom: all strong colonies, and those of average strength, will be in a condition to have their full quota of brood frames returned to the brood chamber. Any colonies that are above the average strength and appear crowded, should be provided with supers filled (or partly so) with brood frames, allowing the queen to occupy them if she chooses to do so. By this method we get the dark fruit bloom and dandelion honey swapped off for bees, which at the opening of the white flow should be given to the weak colonies, a certain number of which, I think, most bee-keepers have on their hands at this season. Another very important detail requiring attention at this time is scraping all propolis from the frames and out of the rabbets, also removing brace and bur combs. Making everything clean and smooth at this time greatly facilitates the manipulation of frames in the busy season. Neither should we forget that the less propolis we leave in the brood-chamber the less we are likely to have in the supers. Having the colonies up to our ideal of strength when fruit bloom is past, our every concern should be to guard against famine striking the bees during the gap between fruit bloom and clover. This tidied over, spring management ceases and summer management commences, and I will let the other fellow tell about it. I have said nothing about supplying the bees with water, neither have I said anything about having everything in readiness for the season's work. As the journals are keeping these matters vividly before bee-keepers' eyes, I conclude that a word to the wise is sufficient. Now, I do not wish to be understood that I practise in detail what I have been preaching; neither do I wish to be understood that the above is the sole and only system of spring management that can possibly lead up to success; but it is what I would practise were I not sometimes prevented from doing so through pressure from other business duties.

Mr. F. GEMMELL: Mr. Heise has done the thing so well that I do not know that I shall hammer him. In regard to weak colonies, I do not care to bother with them when they are very weak; I would sooner have the colonies as nearly as possible the one strength. If I have three or four colonies that are not very strong, I would prefer doubling them up and giving them all about the same amount of combs. As far as queenless bees are concerned, I have found that, as a rule, they do not pay for the bother with them. As to uncapping the honey, I think what Mr. Heise has suggested is all right.

Mr. McEvoy: I have followed that plan off and on for seventeen or eighteen years, and I have made it pay after I got right into it and understood pretty near how to do it; but I have had it go the other way at times. I have always made it pay between fruit bloom and clover. There is a gap in most localities, and it pays to uncap some. I have

uncapped sometimes too much, and have made a mistake ; but it is well to uncap two or three in an evening in the bare time, in order to supply them with unsealed stores and to feed the larvæ. I get the honey used up rapidly, and I increase in bees. A little later on I uncap more. Some bees will not uncap the old sealed honey fast enough, when they are caught suddenly, to keep pace with the amount of larvæ on hand ; then it pays to look after uncapping or bruising. This year I went through the colonies three times between fruit bloom and clover, and with 95 colonies I had it so arranged that almost every frame was filled with brood clear up to the top bars and from end to end to the outside wall. Did it pay ? Yes ; I never did anything in my life that paid so well. I would not advise every one to do it ; some might go on a morning of a spring day when there was not much to get and uncap too much. You must use judgment.

Mr. J. B. HALL : Mr. Heise's paper is excellent ; the only part I object to seriously is that which says he does not practise it himself. I differ with him a little in the crowding of the bees in the fall. Bees are like communities : sometimes in the community there are no deaths, and other times deaths are large. If you contract them in the fall, they still want contracting in the spring. My practice with bees several miles from home is to leave them just as they are in the fall, and give them sufficient to last until fruit bloom. Do not unpack your hives ; don't clean them out ; they will clean themselves out. The contraction, if any, should be done in the spring and not in the fall. I think Mr. McEvoy will differ from me.

Mr. McEvoy : Certainly, on that point.

Mr. HALL : My experience is this : the weak colonies winter better than the very strong colonies. The middle colonies are the ones that winter best ; the very strong colony is dead, generally speaking, in the spring, or very weak, and that is the time they want contracting ; so do your contracting in the spring instead of the fall. The bees will contract themselves and get into a small compass. We never clip our queens like Mr. Heise said. We clip our queens, of course ; we cannot run after swarms. We hunt our queen and, after finding her, we simply set her outside at the hive, and we get down on one knee at the business with a very sharp knife (shows), and we simply get the queen by the wings and use the knife, and take away the part we lay hold of.

Mr. HEISE : Mr. Hall says a colony of bees will contract themselves in the fall. We know that : why then not contract the space to accommodate the size of the cluster ?

Mr. HALL : In the spring, when you open up the hive at the time of fruit blossom, you will have eight cards of brood, with perhaps four or five pounds of honey in them. Then, as far as taking weak bees and uniting them with others, you are wasting your time. If they cannot pull through themselves you are better without them.

Mr. HEISE : I would not attempt to equalize the bees by taking from the strong to build up the weak. But would it not be better to take the weak ones and put them together ?

Mr. HALL : My experience of over twenty years is that if you take nine weak colonies and put them into three, you will have three weak colonies ; if you shut them down and do not meddle with them at all, there will be sure to be some of those that will come up and be good colonies, and the others that are no good will die out ; and if you put them together one of the poorest queens might be the one saved.

Mr. HEISE : I did not advocate uniting weak colonies in my paper ; I advocated, where there were queenless colonies, to unite them.

Mr. HALL : That is worse still ; these queenless bees were born the fall before.

Mr. HEISE : Mr. Hall, referring to about 10th to 20th April, how many young bees would you find hatched in that hive ?

Mr. HALL : If it is a good stock of bees there will be more bees than we put in in the fall.

Mr. HEISE : Your colony differs from mine.

Mr. HALL : We do not open them except they are hungry. We do not open a stock of bees in our yards until the fruit blossoms. We let weak ones die if they choose.

Mr. DICKSON : Between apple blossoms and clover is a blank ; sometimes there is a week and sometimes possibly a week and a half—I am down in the extreme

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east end of Ontario. My practice is not to sell the buckwheat, and we save this buckwheat to feed the larvæ; and when these bees arrive you will have workers, and you will have a strong swarm which will work—and the honey will come, too.

Mr. McEVOY: I wonder how many here would be able to catch the queen by the wing like Mr. Hall does. I think we would be likely to cut a little bit more than the wing.

Mr. HALL: Not with a knife.

Mr. McEVOY: Take an ordinary farmer, and I think he would take half the bee. I admit that Mr. Hall's remark is true, speaking generally, that medium bees winter best, the weak ones fizzle out and the strong ones will go to pieces, that is, without contracting in the fall of the year; but take good strong stocks and go back to the crowding system in the fall of the year, and put them on combs solid sealed and they won't go to pieces, because I have stopped the queen from breeding.

Mr. HALL: This is outside business.

Mr. McEVOY: In or out the strong ones go to pieces, and I am going to fix it so that I can stop that. Coming to the weak colony, I will agree with you in the spring of the year. I will put two or three of them together in the fall of the year, and I will bring out a colony in the spring on the crowding system and not keep them spread or give them the whole comb or too much territory. During ten days in February in last winter we here in Ontario had a sort of Klondike weather. If the bees are spread out the steam condenses in all the combs outside the cluster and some bees starve to death, with honey in the outside, and if they had been crowded in the centre, when they wanted honey all they had to do was to lean forward. It is a sure system, and it is better than Mr. Hall's.

Mr. F. GEMMELL: Mr. McEVOY is all right; he crowds them on to four or five combs, and there is no place for the queen to lay until they have wintered, and then they commence to boom right along.

Mr. WALTON: Why do strong colonies succumb?

Mr. McEVOY: You can break up almost any colony. Take good strong colonies, spread out when going into wintering outdoors and empty, and there is all the chance in the world to lay in the centre, and the bees have to care for the young. The bees become restless and are worn out to no purpose, and you have spring dwindling and fizzling out. You can check that; just give them the sealed combs, and rest your queen.

Mr. WALTON: When do they commence to breed in the other case?

Mr. McEVOY: Later on; as they consume a little more and more they are getting further out to the spring, and you can get more fly-days; you have rested your bees and you have saved them. I am speaking from practice.

Mr. McKNIGHT: Does not your system prevent bees from clustering?

Mr. McEVOY: No.

Mr. McKNIGHT: I understood you to say that all the bees had to do was to lean forward.

Mr. GEMMELL: They are clustered on the honey.

Mr. McKNIGHT: They are practically spread over the comb.

Mr. McEVOY: They are crowded up solid, and some of them are behind the division board. Speaking of the division board, I would like to improve on the division board. I like to have a bee space at the ends and bottom, and if I do happen to crowd a few outside they will get in there. I do not want division boards to fit so close that I have to rip them up.

Mr. GEMMELL: I have contracted in the fall and they wintered first rate, because there was no space for the queen, and in the spring they boomed right along.

Mr. DARLING: Reference has been made to the strong colonies breeding early. I know what some of my experience has been. The seasons vary greatly in the eastern part of Ontario. I have seen me put out good strong colonies in the latter part of April or first of May with scarcely any bees in the hives; I have seen me put out strong colonies in the last week of March and first of April with young bees crawling all over the combs. I found the young bees crawling over the combs by the 10th April.

Mr. HALL: Mr. Heise's paper spoke of wintering them outside, and with a very large population there will be more deaths than with a small population; for instance,

the city of Toronto has more deaths than the locality where Mr. Darling lives, simply because there are more to die; the dead bees clog the entrance and smother the balance. I might relate that one year we got no honey six or seven miles from home, and the lady of the house had a baby and the eldest girl was down with typhoid fever, and they did not want a stranger to feed the bees; and I had to go out and feed them in the latter part of October or first of November. We had thirteen nuclei. I fed my bees first, and after I got through I had some syrup left. I did not want it to be kept over to the spring, and I went to these nuclei and made two colonies of them. Allow me to tell you, contrary to my expectation, those were the two best colonies in the apiary of about eighty colonies. I would not advise anyone to do this, but sometimes things turn out different from what our expectations or calculations are. I would not run the risk of buying sugar for them, but I had it made.

Mr. DARLING: I am firmly of opinion that our bees sometimes breed in the winter and we sometimes do not know. I had one colony in particular that had a spot of brood as large as my hand on one comb and I think there were three combs altogether, and I expected that colony would be no good. It was the best colony I had when I put it out next spring. I do not think it is the breeding altogether; I think there is something else which we have not got at the bottom of.

Mr. McEVoy: For twenty years or more I have had more or less that was not crowded on five combs, sometimes ten and fifteen. I guess this year I have about ten crowded on five combs, but I noticed in the spring of the year ten or fifteen that were not crowded, and, although they had the weight and were heavy with honey, they would not average up with the crowded ones.

Mr. DICKSON: Some would advise doubling up and trying to keep your colonies, but I say it is all very well for an amateur to try that, but since we have carried on the business exclusively we have found it does not pay to double up, neither does it pay to doctor a poor colony in the spring; let them go.

Mr. HOLMES: My experience in the matter of the small colonies tallies exactly with what Mr. Hall told us. On more than one occasion it has happened to me that the small colonies have come up and done excellent work, as good as those of a great deal more pretentious dimensions.

Mr. ARMSTRONG: My experience has been about the same as Mr. Hall's with his nuclei. When I put two or three colonies together and put them into proper shape, as a general thing they were my best colonies in the spring; that is, if they did not start breeding before the spring. I have had them to come out and cluster outside in February. I was sure that colony would go up and be no good next spring, but if they were closed up tight with full sheets of sealed honey, no room for the queen to do anything until they got some consumed, those colonies came out all right.

Mr. HALL: I have great faith in Mr. McEvoy, and I think it is four or five years ago since we hived our bees on contracted hives of five combs instead of eight. I fed them up as much as they would take, and therefore, I presume, it was solid combs they had, and in the spring they were in a nice condition. But allow me to tell you that I had to go into them and give them room for breeding purposes, and I did not get so much honey from them as in other cases. It may be my location or stupidity.

Mr. ARMSTRONG: Do you not think the reason you did not get good returns from the strong colonies was that there was a time before the main flow came that they would run down in stores?

Mr. HALL: I will tell you decidedly on that. They had too much stores. They could not consume it to raise brood, and as I was lazy I did not take out this division board until fruit bloom. But they wintered well.

Mr. GEMMELL: If you have weak colonies in the fall and double them up they will come out all right, but give them room afterwards.

Mr. HALL: But suppose they are weak in the spring?

Mr. McEVoy: You are going on the idea that there are going to be a lot of them weak.

Mr. HALL: Do you not have weak colonies in the spring?

Mr. McEVoy: Certainly, some.

Mr. HALL: You lose all of your nice queens. Let them be, and those that are

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Mr. HEISE : Would you leave them on as many as 8, 10 or 12 frames ?

Mr. HALL : Whatever it is I do not meddle with them. I look under the bottom to see if they are strong. I do not touch the top at all.

Mr. WALTON : If the weak ones winter that way without being contracted, why do not the strong ones do so ?

Mr. HALL : I give you the reason : With a small entrance and large population there would be more dead, and they would drop on the bottom board, and they would suffocate.

Mr. WALTON : It is a somewhat interesting question to this convention. This spring management of bees has drawn out quite a discussion. With all the experienced bee-keepers here, I may be away behind the times, but I tell you my bees are not. I contract neither spring nor fall.

Mr. HALL : Neither do I.

Mr. WALTON : We ought to get to some settled point on this question. With reference to the weak colonies in the fall with Mr. Hall I would allow them to stay so. If they have stores enough do not meddle with them. I practice out-door wintering, but last year I wintered 25 in the cellar—they were queens I had not sold. They were rather weak, but they surpassed all the ideas and opinions of the writers in the journals. I could give the temperature and a good many things along that line, but I do not think it is necessary. I would leave the weak ones quietly alone if they were any ways protected for the winter. Also as to clipping queens, I am not in favor of clipping with scissors. I am afraid there is a liability to clip the queen in two.

Mr. DARLING : I lay my finger right on the back of the thorax and the wings come up that way, and I clip what I catch, one, two or three, and let her go.

Mr. McEVoy : Mr. Walton, how much do you take off ?

Mr. WALTON : I take off both wings, one on each side. I think I like to have the queen evenly balanced.

Mr. GEMMELL : It is astonishing how easily they will fly if they have wings the same on both sides.

Mr. WALTON : I do not get down on one knee ; when the queen is coming right down some comb I catch her thus with the two wings. (Shows). We are always in haste in doing this thing, and I think it is the nicest way to clip wings. I suppose I learned it from Mr. Doolittle. I think Mr. Heise's paper is very good.

Mr. NEWTON : I am sure this paper has been pretty well discussed, and a good paper it has been. I think any paper that will bring out the discussion that this has led to this afternoon, is worthy of the thanks of this Association. There are some things I agree with, but most of you know I am of Mr. Hall's school, and of course, I fall in with a great many of his ways. With reference to the clipping of the queen, Mr. Heise's plan seems to me to be a very awkward one. I think if I were to try Mr. Heise's plan I would be very apt to kill the queen the first go off. In working with my hive, I sit down on the hive top ; I place my comb between my knees, and catch her as she runs up the comb, and in somewhat the same way as friend Hall does, I strike a knife across the finger, and I take about one-eighth or a quarter of an inch off one wing, which is sufficient to prevent her flying away, and this does not disfigure the queen. I do not believe in contracting in the fall. I give them a good letting alone in the spring until we have time to work with them in fruit bloom, and sometimes, if it is an extra good spring and they have been shut up, I have in mind two cases where there have been four or five cards of new combs built in. I generally find that medium stocks winter best.

Mr. WALTON : Do those who change from one hand to the other ever break the legs ?

Mr. GEMMELL : Never.

Mr. McEVoy : Never ; if you get the two legs it is all right.

Mr. NEWTON : But we touch only the part we take away.

Mr. PICKETT : The matter which I have risen to speak of is this uniting of weak colonies in the spring. I think one of the first things we require to take into considera-

tion is the temperature at which our hives should be when breeding ; and another is, how are we to get that temperature at the earliest possible moment so as to secure the required amount of bees to bring in the honey at a proper season ? I presume these are two, at least, of the many things that are required. The more bees there are together and the more closely they are confined the sooner will that temperature be arrived at ; the more room you give them the longer it is going to be, and the later in the season before they are going to start to breed, and the sooner they commence the sooner you may have something to replenish those old bees that have been laying back ; because if they were light colonies in the fall, the chances are that there are a great many more, and therefore, even if they are left to themselves I do not wonder if you have a number of them that are no use in the spring and die, because it is so long before they can replenish their number that they outlive themselves. My impression is that if you unite them in the fall, and they are still light in the spring, which sometimes they are, I would say unite them then ; you had better have one good one than half a dozen otherwise.

Mr. HALL : But you are not making them good by so doing.

Mr. PICKETT : The method we take to get them good is by increasing the number of bees at the earliest possible moment, and, if they have not got the heat, you know as well as I do all the honey you could pile into your bee-hive would not amount to much. You cannot get the bees if they have not sufficient heat.

Mr. McEVoy : What do you do in the last of May with weak colonies ?

Mr. HALL : The last of May with weak colonies, if we have any—sometimes we have and sometimes we have not : last year I think we had five—but, whether we have few or many, we simply go to a hive that will hold the brood, and we pick out what we think is the best queen, we take all the brooding bees away from the others and place into the hive with the best queen. Then we have a hive full of brood just fit for coming out, and just in right condition to commence on the clover bloom, and will give you lots of honey. We have a slate on every hive, and we mark what we have done, and we do not give that queen credit for anything that is good. We start with A, and we go down and go up. If you come into my yard and see the mark A 1, XX, you will know that the queen is worth her weight in gold.

Mr. WALTON : Before the end of May our weak colonies are nearly all dead. Then, it looks to me, when we have our colonies contracted to four or five or six combs of sealed honey, we do not give them an opportunity to breed until late in the season, and then we have to manipulate them. If the bees breed earlier in the season, and are left to themselves and have plenty of stores, I believe we are not troubled much with spring dwindling.

Mr. SIBBALD : There is another point in favor of contraction that has not been spoken of yet, and that is, getting the brood filled into the combs right up to the top bar. One reason why I favor contraction is because in the spring when we have only four or five they commence, and being good and strong they fill it right up to the very corner, and when we slide that back and put in two or three more they are ready to fill them up to the corners, and when we fill our hive we have it properly filled. It is hard to get them to fill like that, unless we practise contraction.

Mr. HALL : Mr. Sibbald does not keep a record on his hives. There are more than half the queens if left to themselves will fill those combs full from corner to corner. You saw the comb I had in Hamilton. That came out of the middle of a stock of bees.

Mr. SIBBALD : How many more had you like that ?

Mr. HALL : I will take you to one half of my hives and have them like that. If you had a record slate on your hives you would raise your stock from that sort of queens. If you keep your record on your hives, and just save those queens, you will see they fill up from end to end, from top to bottom, and you will find they are all like that, unless you live near a neighbor who raises drones.

Mr. ARMSTRONG : Do I understand Mr. Sibbald opened the brood nest and put two or three combs into the centre ?

Mr. SIBBALD : I did not say that. We slide back the division board, and, if the first comb has honey and no brood in it at all, it will go back with the division board, and then the added combs we put in next to the brood, and if there is brood on the outside combs we would leave them in too.

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SPRAYING OF FRUIT.

The PRESIDENT called upon Mr. JOHN NEWTON, of Thamesford, to open a discussion upon the "Spraying of Fruit," who said: I think this is one of the most important matters we could have before us, because we have this law and it is neglected right in our midst from spring to spring, and bee-keepers are losing bees by the thousands every spring. I feel we ought to have some more force with what we have in order that we may put a stop to it more easily than we do. Last spring I happened to be going through our village and saw a man spraying some trees, and naturally I went over to see what he was doing. He was spraying trees with Paris green. I said, "You should not do that." "Yes, I should; the spraying company men told us to do it." I said, "We have a law which says you must not do it." He said, "I do not know of any such law, and until I am informed of such a law I will keep on spraying." I said, "I will give you the law to-morrow morning, and in the meantime you do not want to do any more of it or there will be a way to stop it." I felt, to my own interest, I ought to be independent and try to stop it. I think there are bee-keepers in all localities who are affected just the same. There are men who go around with these spray pumps who do not seem to care for anybody except themselves, and the little money they get out of them in selling the spray pumps. I think we should have the law put up in places where it can be seen. I sent down to Mr. Hall, at Woodstock, and got three or four copies of the law, and sent one down to the house, and his wife looked at it, and she said, "I know he won't do it any more." I know he took warning from the slip I sent. I think if we would do this there would be thousands of bees saved.

Mr. PICKETT: I have not had any experience in the last five years in this matter. Before that I had some neighbors that indulged in spraying their plum trees, and for some considerable time I could not understand what it meant. Our bees appeared as if someone had given them liquor, and they wandered about in a listless way, eventually dying. After a time we learned it was caused from trying to gather from these sprayed trees. As the law is very explicit, I presume there is no better way under present circumstances than the way suggested by Mr. Newton, that is, letting people know what is and what is not.

Mr. WALTON: I believe there is not a bee-keeper present but is very much interested in this subject of spraying, and who has not been materially injured through it. I am glad this has been brought up. We have a law against it, but there is very little done towards educating the people to spray their trees at a certain time. Even the agents selling the spray pumps will tell you that the proper time is to spray just when the bloom is coming on, and they will argue black and white that that is the proper time.

I think it would be a good thing if the editor of the *Canadian Bee Journal* would publish this law of spraying in the spring number of the journal. Could not, too, this Association by some means have pamphlets distributed to scientific bee-keepers, who should have them distributed in their neighborhoods? It is a serious thing to have our bees die off at that time of the year; and sprayers through different parts of the country are very careless. They think they have a right to spray, and they do not know anything about the law, and therefore, they spray at any time which suits them.

Mr. DICKSON: In my section, especially around my neighborhood, I make it a point every spring to get hold of these pamphlets, and I put them up in the post office. In regard to publishing the law in the *Journal* I hardly think it will do much good, because it will come pretty much only to bee-keepers and members of our Association. We could do nothing better than to distribute these notices.

Mr. SHAVER: Just a few years ago our Government sprayers went right across the road from a bee farm, and the farmer said that every morning he could find fifty to sixty bees lying around the hive.

Mr. McEVoy: I think our friend Shaver is not quite correct in his statement. He says the "Government sprayers." Mr. Orr is the Government sprayer, and there is no man who has gone farther out of his way to warn people against wrong spraying. Mr. Orr got an immense quantity of pamphlets printed, and on the back of these is a warning not to spray while trees are in bloom, and gives instructions when to spray, and how to spray. These will be given free, and if you get a lot of these and distribute them to all the fruit growers in the locality they would see the proper time to spray.

Mr. CRAIG : It is only a couple of weeks ago that I got a copy of the Act referred to, and I have it reserved for publication in the spring *Journal*. Would it not be well to have a notice of the Act put up in local post offices, or in such places where the public would have an opportunity of seeing it and knowing what the law is in regard to this matter.

The PRESIDENT : A great many of those who spray in fruit bloom do so through ignorance, and an endeavor should be made to inform them of the law. I think sometimes pamphlets are distributed in the wrong way, and when the people get them they throw them to one side and never read them. When a man consciously breaks the law the bee-keepers are wrong in letting him slip through their fingers. It was through the voice of the bee-keepers that this law was established, and such persons who willingly and knowingly break the law should be punished.

Mr. NEWTON : I think it is a good idea to post the pamphlets in the post offices through the country. I remember the case of an old lady in our village two years ago, who sprayed while the trees were in bloom. I spoke to her about it, and she said she did not care, she was going to save her apples. I spoke to her this spring before the time came on, because I thought she might do it again. She said she did not care whether it killed my bees or not, she was going to save her apples. I said : " We have always been friends, and I do not wish to be anything else ; but if you will do it, I will have to do something to stop it, because it kills my bees in such large numbers." She did not like it a little bit. There should be something done to such people as those.

Mr. WALTON : The law is all right, but I think we ought to let them know the time to spray. If they do not know the time when to spray, and you try to prohibit them from spraying, they will begin to kick terribly. I should think pamphlets ought to be distributed through the country, and it would be a good thing for the bee-keepers or someone else to see that it was put in the daily papers, or put into the county papers all through the country. It will be a grand thing to teach people when to spray, because then they would not kick against the law, because it is not the time to spray when the tree is in bloom, as I understand it.

Mr. NEWTON : Speaking with reference to that lady, she said : " The sprayers told me I should do it when the trees are in bloom, and I am going to do it."

Mr. HALL : I relate an instance that came under my personal notice. Two years ago a certain lawyer, a Queen's counsel, was spraying his trees in fruit bloom, and when remonstrated with and told it was against the law, said, " Nonsense, it is not." I pulled out copies of the pamphlet which has been referred to and showed him the law, and he was surprised to find that it was the law.

Mr. A. STEWART, Canfield : A neighbor of mine was spraying against the law, and when told about it he said he did not care for law or anybody else. I said if he kept on spraying I would bring the law to bear on him. He did not care, he was going to spray. He was an ignorant man. These parties who are stubborn should be dealt with according to the law.

Mr. DARLING : The great difficulty we have to deal with is the fact they do not know. The agents of spraying pumps tell them to spray in bloom. I have thought that we ought to take it up in the proper time of the year, and have all the local papers publish an article giving the time to spray for the different pests, and above all things to emphasize the fact that under no circumstances should trees be sprayed when in bloom, because it injures the fruit.

QUESTION BOX.

The question box was opened by Mr John Newton, of Thamesford.

Q. What success, if any, are drone and queen traps at out-apairies ?

Mr. NEWTON : I can only say that I have no experience personally on the matter, but I have met with some parties who use drone traps, and who were away from home during the day and came home at night and attended to their bees that had swarmed during the day, and I have been told they worked with very much success.

Mr. DICKINSON : I have a large scale, amount to a queen-cage. Mr. POST : The queen-cage seems to be a drone trap want. I want. Mr. DARLING : Mr. EMERSON : Mr. DARLING : no success unless so strong they. Mr. EMERSON : Mr. MCKENZIE : Knight put the the bee-keeper. Mr. NEWTON : and I think h. Q. What Mr. NEWTON : We have had I was surmising probably comb advantages in contracting in way I work, w nice comb hon with division l get our combs percentage of sections. Mr. POST : you get the m I think you c before the ma and if it is a Mr. HALL : get on without method, and it and they work it prevents ten contraction is honey season— brood, and not them on five sta especially if the Mr. MCKENZIE : particular troub deal in my lifet want to know serving heat and Mr. HALL : Mr. MCKENZIE : that a division b is perfectly tight Mr. HALL :

Mr. DICKSON: I will give you a little experience myself. If you carry business on a large scale, and if seven or eight were to go off at once your drone traps would not amount to anything, and with a large apiary the queen-catcher would be troublesome, but the queen-catcher is a good thing other ways.

Mr. POST: I have had no experience with them.

Mr. MCKNIGHT: I have no experience, and the fact that very few have had experience seems to me to imply their employment does not commend itself.

Mr. EMIGH: I have had no experience at all. I have no out-apiaries, but if the drone trap would get two or three swarms together that would be just what I would want. I want those big swarms.

Mr. DARLING: Mr. Emigh, did you ever get your colonies too strong?

Mr. EMIGH: No.

Mr. DARLING: I have had them so strong that they would not work. I have had no success until I destroyed the queen and gave them a sheet of brood. Where they are so strong they are so very apt to ball the queen.

Mr. EMIGH: Possibly strange bees coming back might ball the queen.

Mr. MCEVOY: I have not had experience along that line at all. I think Mr. McKnight put the whole thing in a nut-shell, that if it had been of much practical value the bee-keepers would have been on to it.

Mr. NEWTON: I find in my own yard I like to have a drone trap once in awhile, and I think having one or two in the yard comes in very handy.

Q. What are the objects of contracting by division board?

Mr. NEWTON: The writer to this does not say whether it is spring or fall, or when. We have had a discussion this afternoon on the fall part of it and partly in the spring. I was surmising that he meant probably during the swarming time in connection with probably comb honey. He also follows with the following question: What are the advantages in clipping queens? So I would take it for granted that he was speaking of contracting in connection with the comb honey. I think it is a great advantage in the way I work, working for comb honey. I think that the swarms are the ones we get the nice comb honey from, and are the ones we get the most from, and by contracting them with division boards and filling up with dummies, we get them into such a space that we get our combs mostly all workers. By crowding them on five cards we get the biggest percentage of worker comb, and also crowd the bees into the sections and get nicer filled sections.

Mr. POST: I think it depends a great deal on the time the bees swarm whether you get the most or best comb honey. If you can keep bees from swarming together I think you can get far better honey and more of it. If they swarm two weeks before the main honey flow they will be the poorest swarms you have in the yard, and if it is a little too late it is just about the same.

Mr. HALL: That is something I would give fifty dollars to know. He might get on without swarming. His location is different from mine. I have tried his method, and it is good for many things: it ventilates the bees, it retards swarming, and they work better; but as far as preventing swarming with me I do not know that it prevents ten per cent. of them. I think it must be the location. As far as the contraction is concerned I want my bees to swarm right in the commencement of the honey season—not one day before. My hive is a large enough hive, and they fill that with brood, and not much honey. If they swarm from the first to the twentieth of June I want them on five starters for comb honey. We get a very small percentage of drone comb, especially if the queen is old.

Mr. MCKNIGHT: I asked the question, and I do not think anybody could have any particular trouble in discovering what the meaning of the question is. I have heard a great deal in my lifetime in thirty years' experience about divisions boards and contraction. I want to know if the use of division boards has any other purpose than that of conserving heat and confining bees.

Mr. HALL: I know of no other use than those two.

Mr. MCKNIGHT: I never use a division board, because I never was yet persuaded that a division board was necessary for either of these purposes unless the division board is perfectly tight.

Mr. HALL: We don't want them that way any more.

Mr. MCKNIGHT: Unless it is of that character it cannot conserve heat to any great purpose. I asked the other question that grows out of this. What is the object in clipping queens in a home apiary or any other yard where the bee-master himself is present? The only object in the world that I see of clipping queens is to control swarms, and to prevent the queen from flying away. I do not think it prevents the queen from being lost. I never clipped a queen, and therefore, I cannot say anything upon the various methods of performing that surgical operation.

Mr. HALL: I do not want the division board for confining heat. I want it during the swarming season if I am taking comb honey. I want it to contract the hive. Sometimes I want to raise five, ten, fifteen or twenty queens from one stock of bees that have swarmed, and to do that I pile a lot of brood combs into the same hives, and a few days after I cut out the cells and put one into each comb, and I put a division board in to make a hive. If you did not put that in, they would then build comb on each side, which you do not want them to do, because they generally build drone comb.

Mr. MCKNIGHT: Would not the removal of the unnecessary frames answer the same purpose to a great extent.

Mr. HALL: No. When you get busy a man cannot attend to these little things; and when you go back to it she has built three or four small combs, outside of the division board.

Mr. MCKNIGHT: I admit its use to confine bees, but I never could admit its use to confine heat.

Mr. HALL: With regard to Mr. McKnight's second question as to the advantages of clipping queens, I venture to say if I did not clip my queens I would have ten times the work. Another reason is, to know the age of the queen. I am working in my workshop where I can see the whole yard; I know my queens are all clipped, and when I see a swarm come out I am not in a hurry to drop my tools and run. Sometimes we have five or six out at one time.

Mr. NEWTON: I know it is a great saving of labor to have the queens clipped.

Mr. WALTON: It has a great many advantages in my experience. You are not in a hurry when the swarm issues. You may be engaged in something else. I use some swarm catchers, and when I pick up the queen I put her in a cage and slip her on the swarm-catcher.

Mr. McEVoy: Mr. Hall has given the advantages of the division board, and I think Mr. McKnight will have to acknowledge its advantages. Now it is just as necessary to crowd these bees for outdoor wintering into smaller space. By crowding them up they cover the comb with the honey, and if the honey is warm and if we get Klondike weather it will not affect that honey.

Mr. DICKSON: I use the division board pretty freely. I never heard people say that they use it to increase the honey crop.

Mr. HALL: Mr. Newton and I use it to increase the worker comb.

Mr. DICKSON: I used it to increase the extracted honey. Take a young swarm: I put in eight frames with two division boards. I look upon it that the honey goes up above; when the feeding time comes, to prepare for winter, which is the great secret of spring management, I pick out these two division boards.

Mr. McEVoy: How many frames do you use in your hive?

Mr. DICKSON: Ten—We take out these division boards and replace them with combs of honey. In our locality there is a good flow of buckwheat honey, and these buckwheat combs are put in the place of these division boards, and I look upon it that we get more extracted honey, and more of the clover honey in the supers.

Mr. HALL: That would lead on to another thing. I have an out apiary nine miles out where we get a buckwheat flow, and we simply hive them as we would for comb honey, on five starters, and as soon as the white honey ceases we take out the dummies and put in sheets of foundation. We just simply divide two, and stick in three sheets of foundation for the bees to fill up with buckwheat honey for wintering, and they do it.

Mr. McEVoy: This gentleman has struck a very important point; the more honey that is stored below the less you get above, and if he contracted ten to eight he really went into business.

Mr. SHAVER: Then, an eight-frame hive is better than a ten.

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Mr. DICKSON : I find the eight deficient for wintering.

Mr. DARLING : With regard to making bees carry honey upstairs by placing division boards below, I was bothered with one of those queens that seemed determined to go away, and when I say the queen I think we should blame the whole stock of bees. I wanted to get some comb honey. I piled up supers, two, three, or four high, and they were not satisfied unless they would go. Finally I cut the queen's head off. They came out after that and fortunately, or unfortunately, they got a young swarm with them while in the air, and got mixed up with the bees that had the young queen, and I concluded if they would not do as I wanted them to do, I would see if I could make them do otherwise. I took one of those Jones' hives and filled up part of it with those dummies. I went to the hive the swarm had come out of, and I took off the three supers and carried it and put it on top of those three frames, and put the swarm in. After that time I had all the honey they gathered. It was a virgin queen, and she did not get to laying for some ten days. When I took the sections off there were three cards of solid brood from top to bottom, put in as pretty as ever I saw. There were not two pounds of honey in the hive.

Q. Foul brood is now better understood by the bee-keepers than when the Foul Brood Act was passed. Could it not be better cured and sooner exterminated by appointing a number of sub-inspectors, whose duty it would be to inspect every colony in their districts and attend to the curing of any disease found by visiting the apiary as many times as necessary.

Mr. NEWTON : I might say I have thought of this question a good many times. It seems a lot of work for our inspector to pass from one end of this country to the other and do ample justice to every bee-keeper in our country. We have talked it over in our Oxford convention. If there was one appointed in connection with our local conventions, I think the disease could be sooner done away with than it is. I know how it is with our friend McEvoy. He will visit some place in the west, and then he is away to the east. Sometimes he may not get back for weeks, and probably months. Well, we do not know whether that man is doing his duty or not. If there was a man in that district to see to it, I think the thing could be cured quicker.

Mr. MCKNIGHT : There is one point in connection with this which, perhaps, has been overlooked. In order to carry out the suggestion that has been made, the law affecting foul brood will have to be changed. There is nothing in the law now which would clothe a local officer with the necessary power to carry on the work.

Mr. McEVoy : Sometimes I run up into a yard where a man has not done his duty, and is not likely to do his duty, and needs to be looked close to. If he has a mind before I go into the yard he can challenge me to produce the authority, and I have to show that I am legally and lawfully appointed, with the President's signature, or he can show me the gate and tell me to get. I have no power to go on any man's premises without the legal document. This fall I went to carry out the law in one place, and I was afraid I would be driven out, but fortunately I was not challenged. I was going to enforce the law very forcibly.

Q. Is it advisable to re-queen with virgin or young mated queens in order to diminish or prevent swarming, and with a view also of obtaining a large amount of surplus ?

Mr. NEWTON : I used to think at one time that if we could prevent swarming and keep our stocks from swarming we would always get the largest crop of honey. The last few years I have changed my opinion. I think that if the colonies seem determined to swarm, the sooner they do so the better, and then, when the swarming fever is over, I think they are in a position to give us honey. I have seen no advantage in what I have tried of re-queening or running virgin queens in to prevent that, because sometimes the hive is at the point of swarming when we undertake to do that, and putting the young queen in when the swarming fever is there won't prevent swarming.

Mr. SIBBALD : I do not think putting a young queen in will prevent the swarming, if they are determined to swarm. That has been my experience.

Mr. HOLMES : It seems to me that has changed the view of the question somewhat. Are we not supposed to give them the young queen before they get that determination to swarm ?

Mr. NEWTON : The question does not say that.

Mr. HOLMES : In reference to the desirability of having the swarm issue, in my experience I prefer to have the bees all in one hive. I would expect to get better results

from that than to have them swarm. I do not want my bees to swarm if I can avoid it. Of course, as to the effects of placing the young queen in in the spring to prevent swarming, I am not prepared to speak definitely, but I have experimented on that sufficient to give evidence, and the little experience I have had would be to answer the question in the affirmative, that it would hinder swarming.

Mr. DARLING : We try lots of things we do not know how to manage, and perhaps that was the way when I tried this re-queening business some years ago. I found sometimes they would not accept the young queen, and they would just simply wait until some of their own hatched, and I had a first swarm with a virgin queen. They would start a lot of queen cells, and would refuse to accept the queen I put in, and they came out determined to swarm. There was a good deal in the bee journals pro and con with regard to swarming some years ago, and I thought, like a good many others, that if I could keep the bees at home I could get a good deal more honey. It never worked. That which has given the most satisfaction is to let the bees swarm.

Mr. HEISE : I think the reason for Mr. Darling's non-success was the fact that he left introducing the young queen until the colony had made preparations for swarming. If he had introduced the queen early enough no doubt it would have had the desired effect.

Mr. HOLMES : I would like to emphasize the statement I have made, that at the beginning of the honey season I would rather have one hive full of bees than to have two hives half full.

Mr. HALL : They are stubborn things, and with me if they want to swarm, I have, of late years, never tried to retard them.

Mr. DARLING : Mr. Heise suggested that I was too late. I think that was one difficulty, but just there I have had a little experience which would not probably make it so sure if it was done earlier. I have had colonies swarm, and in the course of three or four weeks the prime swarm swarmed again. That, of course, was the old queen. I have had colonies swarm, the young queen hatched out, become fertilized, and went on and went to work, and in six weeks swarm.

Mr. HALL : Last year we had four cases of that kind.

Mr. GEMMELL : Those are exceptions to the general rule.

Q : Is it wise or unwise to allow the bees to clean out the combs after last extracting ?

Mr. NEWTON : I would say yes. Of course, we all have different ways of doing this. We would not like to put away sticky combs into our storeroom after we have got through in the fall. Some put them on the hives again. I think from the tone of this that the questioner means not to change combs for fear of foul brood or something to that effect. But if he is afraid of that, put them on the hive again and have them cleaned, and if he is not afraid of that, why put them outdoors and let the bees at them.

Mr. McEVoy : How far from the apiary would you put them ?

Mr. NEWTON : I would not care if they were just about thirty or forty feet.

Mr. GEMMELL : What time ?

Mr. NEWTON : I always put mine out in the morning before the bees fly ; space them and have them ready, and in a couple of hours they will be perfectly clean.

Mr. McEVoy : I draw the line at any certain time, because if you lived in town or village just after the honey-flow you would start the bees in such a cross way that they would clean out all the cats or elephants.

Mr. DICKSON : I have experience in that. We always do it in the evening when the bees are all quiet—never in the morning. We carry them away from the yard possibly eighty feet. They kick up the first morning for possibly an hour or two, and after that those fellows know that road just like cattle to a well—no trouble in the world.

The PRESIDENT : That has about been my experience. I remove them probably eighty feet, or thereabouts, and after they get the road there they will go there, and I do not notice that they do much damage to cats or elephants.

Mr. NEWTON : As soon as they get started out, as our friend here says, they will make it a business transaction just as much as if they were going off to the field to work.

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Mr. WOOD : Do you not find if they get it used up before night they are apt to get to robbing ?

Mr. NEWTON : That has never been my case.

Mr. WOOD : To take it away through the day I find it starts them to robbing, or if they finish it up before night.

Mr. NEWTON : Do not understand me that I take mine away during the day.

Mr. WOOD : But if they have cleaned them up it is all the same as taking them away.

Mr. NEWTON : If they get through with the empty combs, and they leave them, then you can take them away safely at night.

Q : What is the best way to do with combs having small quantities of honey in them in the fall ?

Mr. HALL : I have not any time when I go down. It is about nine miles down ; and I go down and pick off every super and pile it up where it is going to stay for the winter ; and we keep them shut down till we get them all off, and then we simply put a chip or nail into the top piece and let the bees at it, and I tell you there is music, but we never had any trouble ; we never had any robbing. I have to finish the job up. Sometimes there may be 150 pounds of honey, but they move it home pretty quick.

Mr. SIBBALD : Two years ago I did not get my combs all cleaned up, as had always been my habit, and I put them on next spring, and I found the bees rushed up readily into them and filled them right up, and I intend to practice that again. I would like to have the combs left with a little sweet on them, and the bees will go into them much more quickly in the spring, and if they are put on between the apple bloom and the clover this will be very useful in stimulating the bees, and it will save quite a bit of trouble, and I think it is an advantage to have them in that shape.

Mr. POST : That is all right if honey is coming in, but if there is no honey coming in, I will guarantee they will not go up and put honey in.

Mr. SHAVER : I have followed that practice two or three years, and my combs keep better and I never found them granulating.

Mr. McEVOY : Suppose it does, the sieve catches the granulated.

Mr. NEWTON : If you have some buckwheat honey—

Mr. SHAVER : I never have any buckwheat honey.

Mr. GEMMELL : I want my combs clean, because very often if left in that way it granulates.

Mr. NEWTON : We very often get inferior honey in the fall.

Mr. WALTON : When the extractor is used to the combs is it any detriment to the combs to leave a small amount of liquid honey in them ?

Mr. GEMMELL : I do not want to put my extracting combs down in the brood chamber ; they will clean it out if it is granulated down there if they get a little water.

Mr. McEVOY : If they are stored in a proper place they will do no harm.

Mr. SHAVER : After basswood flow with us we hardly ever have much honey of any account. They put in maybe three or four combs a little patch ; I extract them and never dry them, and they are not badly mussed, and there is always a little honey, and I find the bees go to them next spring.

CANADIAN HONEY.

A discussion arose as to whether it would be possible and advisable to withdraw what had been done towards forwarding a honey exhibit to the Paris Exposition, because it was felt that the bee-keepers of the Province would hardly be able to do justice to themselves, as the honey crop this year had been so poor. It was decided that it would not be advisable to withdraw, now that the matter had been proceeded with so far, but the bee-keepers would endeavor to obtain consent to replace the honey, which had been sent, with samples of next year's crop, which it was believed would be much better in quality.

AFFILIATED SOCIETIES' REPORT.

There have been eight county Societies in affiliation during the present year, as follows: Russell, Halton and Peel, Haldimand, Norfolk, Oxford, York, Glengarry, and Brant. Each Society received a grant of twenty dollars, and these grants have been expended as directed by the by-laws governing such expenditure.

The reports of the increase of bees and the production are not as full and satisfactory as usual, two Societies (York and Norfolk) not reporting.

	Colonies, Spring.	Colonies, Fall.	Honey, Comb.	Honey, Ext.
			lbs.	lbs.
Russell Co. Association . .	184	267	2,450	6,310
Halton & Peel " . .	1011	937	...	7,500
Haldimand " . .	414	414	20	6,270
Oxford " . .	621	699	4,234	15,465
Glengary " . .	540	685	...	7,400
Brant " . .	338	400	975	10,150
	<u>3,108</u>	<u>3,402</u>	<u>7,679</u>	<u>53,095</u>

Average extracted honey per colony, 17 1/2 lbs.

Average comb honey per colony, 2 1/2 lbs.

Average increase in colonies, about 9 1/3 per cent.

These averages show a very poor yield of honey, and we take it for granted that if all the societies had reported the average would have been less.

W. COUSE, Secretary.

DIRECTORS' REPORT.

The Directors' report for the present year differs from former years in that one cannot report a prosperous season generally over the Province, and also that we have to report the death of one of our number since our last meeting. We are sure the friends of Mr. Hughes will have your deepest sympathy.

The general business of the Association has been fairly well looked after, but owing to the severe and protracted illness of the Secretary, some matters have not been as well attended to as we could wish, the chief difficulty being want of experience.

The sum of \$200.00 was set apart for affiliated Societies, of which \$160.00 was paid to eight societies, that being the number affiliated.

The usual grants of \$25.00, \$10.00 and \$10.00 were made to the Toronto Industrial Exhibition Association, the Western Fair Association of London, and the Canada Central Fair at Ottawa. These grants were expended in accordance with the law.

The *Canadian Bee Journal* has been sent to each member of the Association. They have also received a copy of the annual report.

We are pleased to be able to report our finances in good condition, there being a balance of about \$116.84 in the hands of the Treasurer.

All of which is respectfully submitted.

INSPECTOR OF APIARIES REPORT.

During 1899 I visited bee yards in the counties of Haldimand, Norfolk, Middlesex, Oxford, Brant, Wentworth, Lincoln, Wellington, Halton, Peel, York, Ontario, and Simcoe. I inspected one hundred and twenty-six apiaries, and found foul brood in forty-seven of them.

In places where I had never been before is where I found nine-tenths of the foul broody apiaries the past season, and over three-fourths of the owners of these diseased apiaries did not know that their colonies had foul brood when I first visited them. I

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took the greatest of pains to explain to the bee-keepers how to manage the business so as to have every colony a good strong one, and in fine condition, when they were cured of the disease.

In looking back over the nine years that I have inspected the apiaries of the Province of Ontario, I noticed that I had found foul brood very widely spread through thirty counties. I succeeded in getting thousands of foul broody colonies cured and the disease driven out by wholesale, and peaceful settlements made in every case where diseased stocks were sold through mistakes of the parties selling, not knowing of their colonies being diseased at the time of sale.

Nine years ago very few of those that kept bees then were able to tell the disease from other kinds of dead brood, and not over half a dozen men in Ontario could cure an apiary of foul brood, and end the season with every colony in first-class order. The instructions that I gave while on my rounds through the Province, and the driving out of the disease by wholesale, will make Ontario one of the safest places in the world to keep bees in.

Mr. F. A. Gemmill, of Stratford, is the man that deserves the credit for all the work that I have done, and the Government of our country that has paid for it. In 1890 Mr. Gemmill took hold and worked hard until he got the Foul Brood Act passed, which has proved to be a great benefit to hundreds of bee-keepers.

I am greatly pleased with the way the bee-keepers took hold in the past season and cured these apiaries of foul brood. Where I found a few worthless colonies almost dead from the disease late in the fall (and near fine, sound apiaries) I burned them. The total number that I burned in the Province was twenty colonies, after the owners and I had reasoned out things nicely together.

For the courteous and very generous way that I have been treated by the bee-keepers of every locality that I went into, I return my most heartfelt thanks.

My time, car fare and livery hire, \$734.30.

WM. McEVoy.

WOODBURN, Dec. 4th, 1899.

Mr. HOLMES : In order to place the subject before the meeting I would only say that I think I would be voicing the desires of the meeting in saying we have all confidence in our Inspector of Apiaries ; he does his work well, without fear or favor, and I would move the adoption and endorsement of Mr. McEvoy's report.

Mr. NEWTON : I have great pleasure in seconding Mr. Holmes' motion. I believe our Inspector has worked faithfully, not only in this season but in past seasons.

After several members had expressed their appreciation of the work Mr. McEvoy had done, the motion was carried unanimously.

BEE-KEEPERS' ASSOCIATIONS: THEIR PAST, PRESENT AND FUTURE.

By W. Z. HUTCHISON, FLINT, MICH.

The time was when a man who owned some bees would walk a mile or two to see an article "on bees" in some paper. The time was when a bee-keeper would come home from a convention fairly loaded down with the new things he had learned. If the wives of the bee-keepers who now attend conventions should ask their husbands upon their return what new things they had learned, I think some of them would have to scratch their heads before replying. The time was when the principal feature of any association was the dissemination of methods for managing bees. This is no longer true. The social pleasures are now the paramount feature of a convention. Perhaps no one has admitted this ; but look deep into your heart and see what answer you find to the question, "Why did you come?" Editors of bee journals and the supply dealers may go to a convention to further the interests of their business, and it is entirely proper that they should, but the producer of honey comes mostly, principally, and all the time "to see the boys, and have a good time." I will admit that many things in regard to the management of bees for profit are still learned at conventions ; and these gatherings would still be as valuable for this purpose now as in days of yore were it not for the great number of most excellent

and low-priced journals devoted to the business. No sooner does a bee-keeper make some discovery than he reports it to his favorite journal; the other journals copy it; and by the time that a convention meets there is nothing new to talk about—it has all been told.

But the social feature of a convention is not to be sneered at. The friction of mind against mind, this rubbing up against our fellows, brightens us, sharpens our wits, gives us broader views, and makes us better bee-keepers and better men. Then, there is the pleasure of it. This life is not simply a life of dollars and cents. At least it *ought* not to be. The man who has worked at home all summer owes himself and his wife an annual outing with kindred spirits.

From a business point of view the usefulness of bee-keepers' associations in the future will be the accomplishment of those objects that require united action—those that bring to mind the motto: "In union there is strength." Associations can accomplish things that are beyond the power and purse of the private individual. See what legislation has been secured for bee-keepers both in the United States and in Canada, through united action—through association. Foul brood laws, laws against the spraying of trees while in bloom, laws against adulteration of honey, the protection of bee-keepers in their right to keep bees, lower freight rates, etc., have all come from association. The Bee-keepers' Union stands ready to defend bee-keepers in their rights, to assist in the passage of needed laws, to prosecute adulterators, to help its members in any way wherein is required united action. United action, in the shape of exchanges, has done much for bee-keepers in the way of buying supplies and selling honey. It is in such directions as these that lies the work of associations in the future.

Mr. HALL: I think Mr. Hutchison's paper is a very valuable one. It tells us things we know and gives us a hint of what we are doing and have to do. Of the methods of bee-keeping in the past, of course, we have learned a great deal in conventions. The reading of journals is all very well, but we get no debates in them, and I think all the instruction we get at the meetings of this Association is practical instruction for the young apiarist. I think these conventions are beneficial to them in the instruction they may get from the older heads. Last night's discussion would have been worth twenty dollars to me when I started twenty-four years ago. When I commenced bee-keeping we had no bee journals. We had what was called a bee journal, but the management did not know what they were writing about, and they put us on the wrong track, and we lost money. At a convention if you do not understand what a man says you can button-hole him and ask him to explain it. It is a great benefit to the young men in this Association who are just starting, or have started, or intend to start, to have the practical old heads hit each other pretty hard knocks in good humor. The Association has been successful in obtaining a foul brood law, and this I feel is important to the country. We have also succeeded in obtaining a law against spraying, although it is not enforced as it should be. And, in respect to the adulteration of honey, if we report the adulteration to the Government, they will see the offender punished. We know we had a pretty good time yesterday afternoon in the social part. Sometimes the old heads get ideas from the young men, but for the old and young our present associations are doing a work, not to amuse only but to give men a chance of knowing and encouraging each other in their work. As far as prosecuting bee-keeping in the future is concerned I cannot say anything about it. I think in the future it will go on as it has done in the past and is doing in the present. The young fellows will come to take our places; others will want information, and they will simply do the work we have done with the assistance we leave behind. We leave the property to them, and they can go on and impart what they learn themselves to the younger ones coming up, and I think the association work should be carried on for that reason.

Mr. DICKINSON: I think there is a good deal of truth in the paper, and there is quite a bit of truth in the remarks made in connection with it by Mr. Hall. We might think we know all about bee-keeping, and there is one advantage in coming to these conventions that we find out we do not know it all, and that there are other men who know just as much as we know, and perhaps more, and from whom we can learn something helpful to ourselves.

Mr. DICKSON: I like Mr. Hutchison's paper. There was one slight hint about our coming to these conventions—do not call them conventions at all, call them bee-meetings—

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where we learn something about bees. That was the hint in regard to taking away information. I believe that is a fault with a great many of us. Something was said about scratching our heads when we get home and wondering where the information was. I remember one man coming home last summer, and he said, "I do not know that I will attend our meetings again; when I get home I cannot remember anything." "Can you read and write?" "Yes." "Why not take notes?" When we attend our meetings we should take notes. I learned some good things here yesterday afternoon, and I am taking notes of things that I think will be helpful to me. Another good thing hinted at was the running to the journals when you find out something new. That is a mistake. If there is anyone who finds out anything new he had better try it pretty hard, and give it the fullest test, and tell us about it then. It has been the means of flooring many a one in the bee business by trying some of the things that came out in the journals. Sometimes we think we have found out something that was not really a success at all. I think we should encourage the ladies to attend, because—whether it is a fact or not—I give them credit for taking in more than we men do. I find it very hard to keep my wife at home when there is any other good work going on in the line of attending meetings.

Mr. NEWTON: I am sure I have always looked forward to our conventions as a pleasure, but I have always looked forward to having a profitable time. I like to meet the boys from winter to winter and spend a good time with them, but I always think of taking something home with me, and I generally do, that has been of profit to me during the convention. I believe the same in the bee industry as in most of the other societies—unless we keep in touch with each other in the different ways of working we will never make a success of our business.

Mr. McEVoy: I think if we could tell of the mistakes we make as well as of the successes we have had it would be a sort of guide to others not to go and do as we have done.

On the motion of Mr. PICKETT, seconded by Mr. CRAIG, a vote of thanks was passed for Mr. Hutchison's able and valuable paper.

MARKETING OF EXTRACTED HONEY.

By H. G. SIBBALD, COOKSVILLE.

My experience in marketing honey may not be as great as that of many of you, but, as you know, I am not altogether responsible for being in the position you find me; therefore need not apologize. After having secured a crop of honey, it is of the utmost importance to the experienced bee-keeper, and not a little concern to the beginner, to market his product so as to have the largest return in dollars and cents. With this end in view, then, let us be sensible. If a large crop has been obtained, do not tell everybody about it; do not publish it in every journal you know of. If you do it will have a tendency to lower the price of honey, increase the number of bee-keepers, and, of course, cover you all over with glory as the greatest bee-keeper on earth.

Next, do not be in a hurry to sell your product. Wait until there is a demand for it. Occupy your time finding out all you can about crops in other locations. Take into consideration the fruit crop, and anything else that will affect the price of honey. Make up your mind to have a fair price, and do not get faint-hearted when the dealer tells you about the big crops of honey in California and the rest of the earth. Be in a position to jolly him about how scarce it is here and there; but if he wants honey he will soon talk business, and you will get your price.

After the small fruits are out of the market the demand for honey will commence. Supply your local trade first with a good article, selling at a fair retail price. See that the grocers in your nearest town or city are supplied with an assorted stock, say half pound jars, one pound jars, two, three, five, and ten pound tins, also some in bulk all nicely melted in liquid form. Charge them twenty per cent. less than retail price. If you have still more than this trade will be likely to handle, sell it to the wholesale commission merchant at ten per cent. less than grocers' prices, or look for an export trade.

Then there can be no cutting of prices, and all will reach the consumer at an even price. Be honest, give good weight, more rather than less. If you sell by sample let the sample be a fair representation of your product, and that of the very best quality. In fact, make your customer's welfare your own, for the more he can sell the more you will be able to supply him with.

It was not my intention when I promised to read a paper on marketing extracted honey before this convention to go much into detail, but rather to place the matter before you with a view to organization of bee keepers for the purpose of selling their product so that an even and fair price might be maintained, and also that our honey might be distributed more evenly over the Province, and shipped abroad in a conservative and business like way. As we are marketing our honey at present, if a man in England wants 25,000 lbs. of honey he would not know who to apply to for it. Only a few months ago a Winnipeg man wanted 10,000 lbs put up in 5, 10 and 25 lb. tins, naming a certain number of each. I could not direct him to any one who would be likely to supply him. This ought not to be so. We ought to have a place where a reasonably large stock of honey is carried, and where dealers at home, as well as in other countries, could apply with a reasonable assurance of having their demands supplied. Business is being carried on in quite a different way from what it was twenty or even ten years ago. Now, large large business concerns are amalgamating, trusts are formed, companies seek monopolies, large departmental stores have sprung up and are flourishing. What does this mean? I believe it means that the old adage, "Competition is the life of trade" is recognized to be the death of the trader, and that people have more faith in combination being the life of trade; and for my part I feel that if bee-keepers had an organization and headquarters for honey distribution, a bureau of information concerning honey crops, we would fare much better than we do, going it blind as it were, cutting prices on one another, selling our products through commission men who do not know clover honey from buckwheat, or basswood from bug juice, and whose only aim is to get rid of the consignment, get their commission, and be ready for another lot. One season those who sent the honey to the west did well; the next season everybody ships west and the market is glutted, prices down, bee-keeper disappointed. Another season very little is shipped to that market, not enough to supply the demand. One year shipments are made to England that pay well; another season when we are short at home and England well supplied by countries that were short the year before, we make larger shipments and come to grief. Can the members of the O.B.K.A. do anything to improve our condition in this respect? I believe it can, but will leave that for discussion.

The PRESIDENT: We have had a very interesting paper, in my estimation—one that is worthy of consideration and attention. Anything that commences to affect the public is worthy of note.

Mr. NEWTON: I am sure that it is a pleasure for me to be down as starting the discussion on the paper which we have had before us, because it is a very able paper, and there is plenty of room for discussion. The best recommendation we have for selling honey is to produce a good article to start with. If you sell a good article, and people buy once, they will usually buy from you again. If you sell something that is watery you do not often sell the second time. (Shows some samples.) Here is a sample which was taken unripe; you can see how soon it has granulated. This one is a ripe sample. The unripe will granulate far sooner than heavy-bodied honey. With reference to that thought concerning the Guild in our Oxford Society, we had talked over the formation of a Guild very much, and last spring it was the subject of one of our half day discussions, that we might collect honey together and secure a better way of getting rid of it than in the past. I know there are lots of things to contend with. We cannot get all bee-keepers to think of this point, because they would not attend bee-keepers' societies nor take bee journals, and if you try to persuade them they can get better prices by waiting a little longer, they will say, "We will do what we think," and when we come to sell we find the price is down. I think if we had small societies formed into guilds it would be beneficial. I do not believe in combines very much, but this seems to be the day of them at least, and I think we could get rid of our product to better advantage and divide it more equally than the way it is being done at the present time. As to cutting prices, it generally comes through these men that have a few hives of bees and who are afraid it

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is going to spoil, and never think of waiting until they find out the demand for honey, but rush to the market and sell it. If these people would only wait a little while until prices were fixed I think it would be more satisfactory to bee-keepers in general and to themselves also. Do not rush on the market before the demand for it comes. Then we do not want to blow our own horn too much for fear people think there is such a large crop. I remember some years ago coming into a store in Woodstock and speaking to a grocer. It was a year when there was not very much honey and I gave him my figures. "It is too high altogether." I said, "Friend, there is not much honey in the country, and in a month or six weeks you will have to pay more for it." He commenced to jolly me, and I said, "Who gave you your information?" "Oh, the traders' report; they tell us everything." He would not buy from me. Three weeks after he wrote to me to send him 25 cases, and I sent my prices with an advance of ten cents a case, and he took them. Then we must look after the different crops of fruit, and govern ourselves accordingly. If fruit is scarce honey must come in demand to take the place of the fruits. As far as the local trade is concerned, I have alluded to that before, at other conventions. I think it is the main thing to look after our own home markets and keep them well supplied with a good article and not cut prices, and always give good weight. It does not pay to give short weight in anything. For the local trade I think the glass is more suitable, and in the liquid shape. For my own trade if they keep honey and it begins to granulate, I take it home and liquify it for them gratis; glad to have the opportunity to do so, because I think it pleases customers far better in the liquid shape. We are trying to educate them, but we cannot do it very fast. We ought to do what we can to please our customers.

Mr. DARLING: I feel somewhat interested in this discussion. One thought I have is with regard to the cutting of prices, and I do not know that we can get over that difficulty. I believe co-operation among bee-keepers would work as well as among any other class of individuals; but we have found, and we think we always will find, there are individuals who are a law to themselves. There was an old gentleman, a member of this association for two or three years, and he was in my house one day. I said, "You sell your honey too cheap"—and he did not bring a very bad article of honey into town, although perhaps not as nicely handled as a good many others. What was his answer? He says, "You fellows have got the honey and you sell it; they do not know anything much about me, and if I do not sell my honey cheap then I cannot sell it at all." There was one time we had better prices than now. I sold at ten cents, and I found other people were selling at nine cents. I had a pretty good supply, and I sold at nine cents, and then the parties sold at eight cents. Where will this go? As soon as they get our prices they will go and put it in a little bit under that. I fully endorse what Mr. Newton has said with regard to liquifying honey for the local dealer. I had an experience which I will relate: I sold some sixty-pound tins, and one man told me one tin was not as good as the other. I looked at it; it was really dark near the bottom. "What have you been doing with it? That is burnt." He said, "I will tell you; it got hard and I took it home and put it on the stove to melt it, and I put a little water in it because I thought it would burn, and after it had got melted up I was afraid it was too thin and I put a little sugar in it." (Laughter).

Mr. NEWTON: That just brought one thought to my mind. We had a gentleman at our Oxford convention this fall, and he was telling us about the thickness of his honey—I think it went 14 pounds to the gallon. Of course he thought he was giving too much weight for the money, and we tried to advise the man that was the best way to do it, as it would always hold the market. He had been experimenting and putting water in, and trying to thin it down. I think the advice he got at our Oxford convention convinced him on that point. Then, as Mr. Darling says, the grocers are not bee-keepers, and they do not all know how to liquify extracted honey without burning it.

Mr. PICKETT: This is a thing that ought not to go out without explanation. The grocers will be placing your honey on the scales and it will not weigh fourteen pounds to the gallon. We must be careful not to put an estimate on our honey that one half of it will not reach. Our good friend is not saying anything so terribly amiss, but it is the effect that may follow. He knows as well as I do honey does not average that. As to this paper on marketing honey, I believe it is one of the most able papers that has ever-

been presented to this Association. I think our young friend is making his mark. I have been many years a bee-keeper and I speak from experience in this matter of selling. There are a few things we need to do: first, we need to be strictly honest. If a man asks you if you have ten thousand pounds of honey, if you have say so, but do not say it in such a way that it will be heard right down to Toronto. If you have a poor crop, say it in the same manner.

Mr. HALL: I am sorry the last speaker spoke as he did. He is a man I respect very highly. However, let me advise young and old never to offer for sale, except to a manufacturer, any honey that does not weigh fourteen pounds to the imperial gallon, or twelve pounds to the gallon, wine measure.

Mr. PICKETT: That gentleman is correct in his statement, but in the honey business most of us have been handling wine measure.

Mr. HALL: Then twelve pounds to the wine measure is very good honey, and if it is less than that it has something wrong with it, and we should let grocers know that twelve pound honey, wine measure, is good honey, and twelve pound honey will keep for years. I think good honey should be fourteen pounds to the imperial gallon, or twelve to the wine measure.

Mr. DICKINSON: I consider this one of the most important papers in connection with the bee industry, and hearing it read takes me back to two years ago, when the matter was being discussed of what we were to do with our surplus honey. I think the present state of affairs in connection with the bee-keepers generally through the Province has greatly changed since 1897. At that time, I think, we had a pretty good crop, and expected a very large crop the next year; therefore, it made us discuss that. If we have a large surplus it means the price must be low, and I had an idea at that time, 1897, that we might be able to put some honey on the British market if we could once establish there a reputation for Canadian honey. I had the opinion of a friend in Liverpool that there would be a very large demand, as the British people, when they give an order, give a large one, and I thought it would make a wonderful difference with regard to the amount of surplus we would have if we could once establish ourselves in the British market. With regard to how to market extracted honey, I undertook to try what could be done, as far as Canadian honey was concerned, in that market. I had letters in my possession that would discourage Canadian bee-keepers with regard to what Canadian honey would do there. However, I sent over my samples to my friend, stating when a man undertook to find new markets he must be prepared to take all chances, and I was prepared to let my goods speak for themselves. In 1898 I sent over a nice shipment. My friend said, "Do not send less than twenty-five cases." I sent that. I was very well pleased with the results. He has kept me posted with regard to what the market price is there, that is for California honey, and I think as far as my information goes at the present time that that is the honey the Canadian has to compete with in the British market. It is just as important in connection with marketing extracted honey to keep posted with regard to the markets of the world. I think you want to get to know pretty nearly as much as they think they know over there. No doubt you will be told there are large crops in Chili or California, which would have a tendency to make you be satisfied with a low price. I think a bee-keeper who is putting honey on the foreign market ought to be ready to take what the market allows in competition with the world, because if there is a large crop in California he certainly will have to take less for Canadian honey on the British market than if there was a small crop there. I have in my possession a letter which would satisfy any bee-keeper in Ontario how we stand in respect to quality. I will read it for the benefit of the members of the Association. This is just in two years. It is not necessary for me to tell the bee-keepers that it is imperative to send a good article. It is always necessary to sell a good article of honey even in your home market, and it is more important to send the very best clover honey into the British market.

"I have pleasure in sending you account sales for 78 cases of new Canadian honey, with draft on the Bank of Montreal, Hamilton, for £176.4, net proceeds of the same. I hope the result will be satisfactory. I sold it net cash terms, the buyers paying landing charges, namely, dock and town dues, master portorage, which makes the price about 47s. 6d., no other lot having brought so much. The highest price paid so far this season is

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46s. 6d. The buyers are very much pleased with the quality, but thought we were rather stiff in the price. They expressed their regret, however, that they are not able to get more. Should you be able to get any more of equal quality, that you can ship at the price, we would have no difficulty in placing it. We hope there will be a larger crop next season, and, if quality is maintained, you will have no difficulty in getting a price equal to the best on the market."

I do not think we can for a moment imagine we are always to get high prices for honey in the British market, because supply and demand nowhere more affects the market. This friend sent me samples of Chilian honey. He had made a sale of three hundred barrels of Chilian honey. As soon as I tasted the honey I found my honey does not come up against that class of honey at all, and he would have to sell it for half, and he did sell it for 23 shillings. On the other hand I have a sample of California honey, and found that honey to be a superior honey to the Chilian honey, and it goes right up against first-class Canadian honey. Therefore, it will depend a good deal on what is their crop in California. I do not know so much about other foreign countries, but I know Chilian honey is an inferior article. Therefore, it is quite necessary to be posted on what the California market is before we can expect any great things. We will be governed by supply and demand in that matter. I think it is necessary for some of the largest bee-keepers in Canada to find a new market, and let the smaller bee-keepers get the benefit of the local market, and also keep the local market supplied all the time. By doing this the prices will be better all round. In good seasons we must ship out our surplus honey.

EXTRACTING WAX.

By MR. J. B. HALL, WOODSTOCK.

Allow me to introduce this talk by saying a little about myself. We tried the solar wax extractor, the Swiss extractor, the boiling and skimming process, and so on. All these things were slow and mussy jobs, and I thought I had pretty near all the wax out of some old combs I melted down. Mr. Gemmill was telling me how much more wax he got out of the refuse he had thrown away, and I thought he was mistaken. He was confident that I was wrong, and said, "I will send the machine down and you can try it." So, I said, "All right." His son, about 20, came down with the machine, and we had some refuse from the Jones extractor and the sun extractor which he saw lying in the yard, and which had been there eighteen or twenty months in the snow, frost and dirt, and the boy wanted to show off the qualities of the extractor and suggested we take that. I said, "All right." He melted it down, and he says, "You see the wax there?" "No." He got a kettle of cold water, and he took out the boxes. "Now, sir, do you see the wax?" "Yes." "You thought you had got all the wax out of that?" "Yes." "Do you believe that you had now?" "No." So, then, we tried after that some very old combs about eighteen or twenty years old, that had been used for brood purposes, and those I weighed, and I got $3\frac{1}{2}$ lbs. and a trifle over, which I thought would have to be deducted for the soil or dirt. That was out of the one hive of old comb. That satisfied me. I have tried it considerably since then, and it takes out about one-third more wax than we can get out in any other known process that I have tried, and we take it out with less trouble, and I think I can take out eighty pounds a day. I have taken out forty-five pounds just part of the morning and part of the afternoon.

Now, as to the way to do this. (Explains with aid of extractor.) We first melt our combs in a pan on the stove, cutting the comb out of the frames and put it in here, and we melt one hive at a time; and we keep stirring it with a ladle. We have a kettle of water first put in, and there is a spout here so that the water can run out, and then we have this large canvas, which should be very open. We pull the pan out and spread the canvas on the pan. We stir the wax until just before it begins to boil, and then pour it on to the canvas in the pan. The water will begin to run into the pan. We then gather the canvas from the four sides so that it will be like a bag. Then we put the block on and screw down the screw. You will notice the arm of the screw is moveable, so that you can get a good leverage. When we get the block down we wait a moment be-

tween the last few turns of the screw. If we are in a hurry we pour a pail of water in, but afterwards you have to pour in a pail of hot water. We then take out our block and put it by the stove to keep it warm, and pull out the canvas and shake out the refuse in the canvas. We can get three packs of refuse in one day. One thing about this wax is it is very soft and pliable, not harsh and brittle. The cost of the machine is trifling—about \$1.50. I have been saving my own combs until this winter. I am going to melt up sixty supers of comb, because I can get wax and give foundation in return. If it was not for this machine we would simply use them for extracted honey.

Mr. HEISE: What percentage of water do you add to the old comb?

Mr. HALL: It makes no difference. The more water you have the easier it is to get it out. I have my boxes two inches deeper than the box of this extractor.

Mr. McEVoy: Do you think you would double the wax that you would get out of the Jones steamer?

Mr. HALL: One third more, with one sixth the trouble.

Mr. J. D. EVANS: Do you use it in the first instance, or for the refuse of the other extractor?

Mr. HALL: In the first instance. It would not pay with the refuse of the other extractor. I made one this summer, and made twenty-eight pounds of the refuse of what I usually throw away.

Mr. McEVoy: You made foundation from the wax made from them?

Mr. HALL: Yes, sir.

Mr. McEVoy: Did you notice any difference in that wax sagging more than the ordinary wax?

Mr. HALL: I cannot answer you that.

Mr. McKNIGHT: Suppose we used a screw, such as used in ordinary cider mills, would we get more wax?

Mr. HALL: I do not think you would get more wax, but less labor. You get a better sample of wax with this extractor, but it is soft. I do not know whether that is against it.

Mr. CHRYSLER: In regard to soft wax, I do not think there is any supply dealer or comb foundation manufacturer that will object to the wax on account of it being soft. They can get it so that it won't be too soft, if necessary.

Mr. HALL: You can counteract that?

Mr. CHRYSLER: Yes; it is easily got rid of.

Mr. McKNIGHT: Suppose low pressure was employed to harden, do you think the foundation itself would be as strong from that wax as from ordinary wax?

Mr. CHRYSLER: It would be making foundation improperly to do so.

Mr. HALL: I know for sections the bees accept it quicker than they do hard.

Mr. DICKSON: Is there any one here has had any experience in using foundation wax from that machine?

Mr. HALL: I don't know as to that. I know it was all right in cool weather. (Turning to Mr. Newton.) Do you know whether foundation made from this machine sags?

Mr. NEWTON: I could not say. I only say I could not mill it at the same temperature as I could mill harder wax. I was speaking to a gentleman and his experience was similar to what mine has been.

Mr. McKNIGHT: What is the cause of it being softer?

Mr. NEWTON: I once thought probably the pressure on it. Whether that has anything to do with it, I don't know.

Mr. McEVoy: If that wax is taken and put through the Weed process you would find that foundation from the Weed process would be a great deal tougher, because it is made on the principle that the more is it worked the tougher it is.

Mr. CHRYSLER: The Weed process and this process is not to be compared at all. The Weed process deals with the grains of wax, and this with the wax itself. It will squeeze out more of the very, very fine dirt, and there is some of that incorporated with the wax, and by re-melting in the way I do in refining my wax you will get it just as good, and the same texture as any other was I ever got. I have tried this same process a little different to what has been tried. I have used probably one half barrel of water so that my refuse would go in nicely before it is pressed, and the product I had was very

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light in color, and as far as texture goes it was no softer than the average run of wax. The greater quantity of water I used I account for affecting the softness of the wax.

Mr. NEWTON: I think, as far as its use for foundation is concerned, it is just as good as the other.

Mr. HALL: I find no difficulty whatever in milling and no difficulty in sheeting. Whether it would stretch with full sheets in the large frames I do not know; but for foundation for sections it is just the wax. It has a better smell.

Mr. McEVoy: All wax made from old comb is softer than in capping.

Mr. HALL: Then, this has nothing to do with the sagging.

Mr. DICKINSON: Would wax that I would take from old combs with this process sag any more than the wax from the same combs with the other process?

Mr. McEVoy: I do not think it would.

Mr. SHAVER: Your wax will be a little softer.

Mr. CHRYSLER: All wax will sag to a greater or less extent with the bees working it. The grains are just as good in that wax as in any other, and they will not slip past one another.

Mr. DARLING: With regard to softness and hardness of wax, take wax from a solar extractor, and it is harder than that rendered by either steam or water. Mr. Chrysler, over there, says he can manage the wax even if it is soft. I suppose he is one of those who melts his wax dry. Some say never let a drop of water touch it. If this wax is likely to be too soft, for either one reason or another, I would advise people to have a solar extractor, and use it to have this hard wax to mix with the soft. There is certainly an advantage. If I had 500 colonies of bees in five yards, and had a press like this in every yard, I would have a solar extractor in every yard.

Mr. McKNIGHT: Do you know why wax from old combs should be softer than capping?

Mr. DARLING: I do not know.

Mr. CHRYSLER: I did not say how I would fix this wax to make it suitable for making foundation, and Mr. Darling has supposed that it would be done by melting with a dry mill on making the foundation. If I found any I thought was too soft in that manner I would melt it up by steam in the way I refine wax; I would thoroughly refine it, as I do ninety per cent of all I use. There is no more than ten per cent. of wax that I get in but what is thoroughly refined by steam and a small quantity of acid. I then get it as near perfect as I can generally see wax by that way, and it then is melted for foundation dry and kept so until it is thoroughly done.

Mr. DARLING: Then we understand that all wax that is refined by the acid process is harder for being refined.

Mr. CHRYSLER: This propolis, or pollen, or dirt, whatever it may be, that causes this softness, that process will remove; and we do not care very much what it is from as long as we can successfully treat it.

Mr. DARLING: That is, the effect of refining with acid makes the wax harder?

Mr. CHRYSLER: Oh, yes; that is, where it is too soft, but where it is real hard I have not found it to make it appreciably any harder.

Mr. McEVoy: Because it is softer wax that is no detriment to it, because bees will use it up quicker; the only detriment is in sagging, and that is easily got over, by using wire.

OUR OWN AND FOREIGN MARKETS FOR HONEY.

BY PROF. J. W. ROBERTSON, DAIRY COMMISSIONER, OTTAWA.

This is the one Association with which I have had least to do of all the associations of men in Canada who are working for the development of our natural industries. So I came more to learn than to give you information. However, I must say this, that I recognize that the bee-keepers of Ontario have been doing capital work, not merely for the commerce in bee products, but for the people of Ontario, who have been improving their farms through growing clover. That is outside your business, perhaps, but I know a good deal more about clover than I know about bees. Then, I recognize this further, that one of

the main means of improving the status of farming in Ontario to-day is through the growing of clover crops. There is no means now whereby the fertility of the fields in this Province can be renewed economically except by growing clover. I need not detain you with a talk on farming, but I will mention one experiment conducted for thirty-two years with the growing of clover between grain crops, and the average yield was 114 per cent. of grain more where clover went between the grain crops. That is thirty-two years work in one of the fields of England. That is not a little thing; it is one of the big things of the Province to grow clover. It is not always possible to get the clover into blossom as pasture for bees, but many of the pastures in Ontario would have more food for bees of various kinds. You cannot grow clover seed without the fertilizing action of the bees on the blossom, because where clover plants have been screened in from bees the seeds do not form, because the germ is not fertilized by the pollen at the right time and the right way. I will speak a little this afternoon on the home and foreign markets for honey. I have watched the home markets a little bit, because I have to, in looking after the markets for agricultural products, and I learned that in Ontario and in other places in Canada there is a very large market that is not nearly met by the products that are in abundance in the country. I think one of the best markets for honey is what I would call not merely the home market in Ontario, but the personal house market. Honey is one of the things for which every housekeeper will pay a bigger price direct to the producer than any other way. Just a word as to the essential difference between the personal house market and the general market. There is a general market for wheat, and by the very greatest of care a man can raise about two cents to the bushel. In the personal house market anybody can raise the price fifty per cent. in any product. We pay thirty cents a pound at the house for butter—paying twenty five cents all last summer to a woman who brought it from her house in the country. By making the things dainty-looking as well as excellent the personal house market will give you a big profit, and honey is one of the things the producer can afford to take to the house of the consumer. Some people in the Province of Quebec have been sending me samples of mustard and clover honey which they are going to send to Paris. I pay them twenty cents a pound for those samples. I took a sample to my wife, and I have consumed more honey on my table in the last month than in the previous twelve. I have guests there at my table and they go back and say, "We will get honey." Honey is a thing you cannot get in the best condition in the retail stores. There is an unexplored market to the people who will supply it to the houses in towns. That is true in regard to everything I have touched—true of dairy products and fruit, and it is true of honey so far as I have observed the market. Then there is a general market, which means that the one that supplies that market takes the general average price. If the bee-keepers would say to two of the leading shopkeepers in every town of any size, "Why do you not handle honey? we will supply it to you," these people could push honey and the customers would take it. Commerce has got into this line in late years, that the article which gives to the shopkeeper the least trouble, the largest profit and the easiest turn over is the one that sells, because he advised them to take that. I have gone about with old clothes into the shops of England many times when I looked into the markets there for Canadian products, and the shop-keeper would advise me to take something that was in a very easy package. If you could spend one half day in each town and just get the man to take these little packages you would make an unlimited market for the honey. I am not saying anything more than to just indicate these lines.

In regard to the export demand, there is no market in England for honey of a common quality at more than four cents a pound. There is plenty of honey offering in England, at about four to five cents a pound, common, cut still honey, and said to be pure honey. There is a very good demand in England for exquisite honey, of good body and of fine color, and the English people do not object to a little yellow tinge in the color, at about 15 cents a pound in the original packages, retail price. Again, you see there is a tremendous glut of the common stuff, but there is a scarcity of the very nice stuff done up in nice packages. Just an illustration—three days ago I had a letter from England. I had asked an agent there to buy three packages of the nicest apples he could get. He bought three packages of Fameuse apples sent from Montreal, and they cost him 21 shillings a package, plus 1s. 6d. for carriage—that was 22s. 6d. for Canadian apples with little more than a bushel in a package. They were sold by the Army and Navy stores, which are, perhaps, the biggest retail dealers in London. In the same letter he sent me a report

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from Bristol, where he had been a week before, that he saw a large quantity of Fameuse apples in barrels, and that they were being offered at six shillings a barrel and could not be sold at that; whereas I had paid 22s. 6d. a box for apples, and there was not enough of that kind of apples to go around. It meant I had paid as much for the box as they could get for three barrels and a half of the same things, but not selected. We had some honey experimented in England two or three years ago which did not much more than pay commission charges, because they said it had a peppermint flavor, and if there is any kind of thing that an Englishman can hang an objection on he will find it; but if it is the best quality he will give you the best price all the time. I know of some honey sent last year to England that sold readily at fifteen cents a pound in pound jars. The two members of that firm were in Canada last fall, and they said, "We have a good demand for honey which is put up in nice packages and looks nice on the outside as well as on the inside. If you need a market in England you can get a good market for honey of excellent quality in nice small packages, preferable one and two pounds glass jars. It is hard to get a sale in England at anything like a good price that you merely just put on the market as a job lot. There must be regularity in the supply and regularity in the quality. An Englishman never wants anything more than what he is satisfied with. The success of nearly all large things that go to England—in bacon, cheese, butter and flour—is to get a first rate good thing, and then stay at that dead level, and they will have no fault to find. If you can do that in the English market with your honey you can get a good price.

The only thing you are interested in in sending honey to Paris is the impression that may be made on the British public through the exhibition. We expect through the exhibition to attract a great deal of notice through the English press, because they will have special correspondents writing up exhibits, and we expect to make that a feature of the exhibit from Canada, the recognition of that by the British. Apart from the business aspect altogether, a very fine display of good honey from Canada would give a new phase of commendation to the country's resources, and would give the country a good name, and it would attract population, capital and travel this way. I do not think we need dream of having such an exhibition in Paris as in London in 1886. There is not the space available as then, and the space will be comparatively small, and the response to applications for supplies of honey have been so generous and general that we have been lately refusing exhibits and cutting down the quantities by one-half, and sometimes one-quarter, because it is not possible to find room for all the honey that is being offered. We have been offered altogether something like three or four tons of honey of very good quality from New Brunswick, Nova Scotia, Quebec, Ontario, and I think two lots from the far west. We have some honey arranged for in comb. Most of the extracted honey is to go in large packages and be liquefied and properly put up in attractive glass vessels in Paris, so as to make a good exhibit there.

I came, after all, to learn from the Bee-keepers' Association in what ways our Department can serve you than to give instruction. If you can indicate any way in which our Department can be of any use in helping to exploit the home market, or in meeting the foreign market, I think we will be very happy to do anything we can to help you; and if there is anything we have not done in connection with the Paris exhibition which can still be done we will be very glad to hear suggestions from you in that respect. So far your President has not allowed me to forget the honey part of the exhibition, but everything he has written has been directly along the line, and on the point of giving suggestions. I think it will be a splendid display and of benefit to the honey industry in Canada.

Mr. EVANS: I have been waiting for a year to ask Prof. Robertson a question. I would like to know did the Government last year ship forty thousand pounds of honey to England or was it handled by one man, and did it net twelve and one-half cents a pound clear of expenses?

Prof. ROBERTSON: Last year the Government did not ship any honey at all. There was no honey sent by the Department. Last year—that is, 1898—when I was in England, I had some correspondence from Brantford telling me that a shipment of honey had been made to a firm in London, and they complained of the quality; and they asked me if I could not look into the subject when I was there. I did give enough time to learn that the complaint was that the honey had a very decided peppermint flavor and

odor. It was not saleable at a good price. Then I made enquiries as to whether they could not handle honey, and I got the names of two firms who seemed to be in the best position to handle honey. I gave the names to Mr. Hall and others, and some of these people sent honey themselves direct to those firms, and we never got an official report from the firms or from the senders; but I got some letters about the thing, not officially, and one of them told me that the pound jars were selling for fifteen cents a pound, and there was a good demand for honey in those jars. I will give the names of two or three firms in England to anyone who would like to know.

Mr. EVANS: Did the Government ever ship any to the old country?

Mr. ROBERTSON: Not the Dominion Government. We did not ship any honey, but we took part of that shipment in England and gave it away. We paid for it, of course. I think I arranged to take about 200 pounds of that honey on Departmental account. I sent some, with our compliments, to editors of some of the newspapers, in order to get them to write it up. We did not handle any honey in a commercial way.

Mr. DICKENSON: With regard to Prof. Robertson's remark in connection with the packages, from information I can get, it is not best to send it to England in glass. They asked me in what shipments I made to send it in 60 pound tins, as they melt it up and put it in the glass themselves. The reason they gave was simply it would not be convenient to have glass shipped such a long distance, and there would be a very great danger of breakage. I do not doubt but what the glass would be the best if we could get the glass there, and that it would bring fifteen cents a pound; but I prefer the sixty pound tins, with no loss, to run the risk of the glass.

Mr. McEVoy: As to the Paris exhibit, will the honey sent from all the provinces of the Dominion be permitted to be changed for some of next year's crop? This season has been very poor in some places, and the quality of the honey will not be as good as usual; and I think we would like to replace the honey with some of next year's.

Prof. ROBERTSON: It has been arranged that all products may be replaced through the course of the exhibition, and if any exhibitors will supply honey of next season's crop of superior quality the Department will arrange for transportation of that and for the replacing of the others in Paris. (Applause.)

Mr. HALL: That is quite necessary in the case of comb honey. Comb honey, by going over on the vessels, may be injured. Comb honey has a great affinity for water, and it will absorb it; technically speaking, it sweats and bursts the capping, and runs, and does not look well. Comb honey, to keep, must be kept in a very dry and warm place. I think we can supply a better quality next year.

Prof. ROBERTSON: The reports I had from England were against sending comb honey for commercial purposes, because it was too risky, and too many of the sections were broken, but they did not complain of any of the honey in glass arriving in a damaged or broken condition; but if anyone could have an agent in England who would refill the glass bottles from bulk there, that is the safest and cheapest way. One firm in London say they will do the refilling there and charge only for the bottles and labor. That is George Nicholson & Son.

Mr. CRAIG: I know a little of this manner of packing and shipping in glass, and certainly that is a feature that is perhaps against us in sending honey in that form to the old country. The glass is expensive and the manner of packing costs a great deal, and it takes away a great amount of the profit we would otherwise derive from it.

Mr. DICKINSON: Is it desirable to send this kind of honey that the Englishmen complained of being flavored with peppermint? I have got some correspondence in connection with that matter now in my possession, and I cannot think it is anything else than our honey from basswood. We call that first-class honey in Canada.

Prof. ROBERTSON: I have been advised even to send buckwheat honey to Paris. I refused to send large quantities, but I have sent some. Some have advised sending buckwheat honey to bring out the qualities of the honey by contrast.

Mr. DICKSON: How is it in small tins, such as two and a half or one's and two's?

Prof. ROBERTSON: I am afraid I could not tell you, but I will tell you what I will do. If you will write me at Ottawa I will give you the names of three of the best firms in England with whom correspondence may be opened before the season opens. One firm in Liverpool are interested in Canadian products. They have forty travellers, and they are willing to push Canadian goods. They have recommended one or two pound

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Mr. COUSE: In what way will samples be judged that are being sent over to Paris? Prof. ROBERTSON: I am not able to say what the action of the Department will be: Those of us who are Commissioners have advised the Commission as a whole to appoint experts for certain classes of works, and I have advised the appointment of a special honey expert, both to have it examined in Canada and have it put up in Paris, and be mainly under his care. Then, the name of every exhibitor of honey is going on the official list, and whatever award the Government may get for this joint exhibit will be made for the joint exhibit with the name of those whose honey composed the exhibit, and then a copy of that will be sent to every exhibitor.

Mr. MCKNIGHT: Respecting the question as to the popularity of the smaller tin vessels for the sale of honey in England, I do not know what revolution has taken place in the tastes of the people over there in 13 years, but I know at that period such vessels were not profitable to the bee-keeper to put in for the simple reason that the same quantity of honey put in glass vessels would bring a greater price than the difference between the cost of the tin and the cost of the glass. The customer there generally buys in small quantities, and wants to see what he buys, and it is not convenient to show honey done up in tins. I may say for years I put all my honey in glass vessels until honey got so cheap it was not profitable to do it. I imported from London pound glass bottles, such as are generally used in England for putting up honey. They cost me £1 a gross in London in five gross original crates. If honey is put up in glass here you would have to import the glass, pay freight and duty, and then freight again to England. If an arrangement could be made, as suggested, so that some responsible and reliable firm over there could be got to do that work and provide the necessary glass vessels it would save that extra expense, and I have not the slightest doubt but this arrangement could be made. Prof. Robertson has brought out the point that we must do something that will cause honey to be regarded as a staple article for all time—the uniform supply for the uniform demand. The nature of the bee-keeping business is such that the producer cannot meet this condition. There is only a limited portion of the year he can produce it at all, and those who are not acquainted with honey-producing give no thought to this fact at all. While we may be able at a certain time of the year to supply the necessary demand, the lull comes, and the market has to be worked up each year. That will be the case until someone takes hold of the honey and supplies the market regularly and continuously.

A vote of thanks was tendered to Prof. Robertson for his suggestive and profitable address.

MANAGEMENT IN EXTRACTING SEASON.

M. B. HOLMES, ATHENS.

The management of an apiary during the extracting season is perhaps the most interesting feature in connection with the care of bees during the whole round year—interesting in the various ways and from the different standpoints.

The amateur is enthused at what seems to be the discovery of a connecting link between nature and art. The strict regard shown by the bees for perpendiculars, horizontals and regular angles in the construction of the honeycomb, as well as accuracy in spacing, and all without the aid of a square, plumb-rule, or trowel, arouses within the breast of the apprentice who has "entered upon" this ground with indifference, the desire for light and advancement until he shall become "a master" of the work. The novice receives fresh stimulus as he sees for the first time the perfect order and discipline under which all operations in the line are conducted, and the neatness, cleanliness, economy and industry so studiously observed by the little workers themselves.

The master in apiculture at the opening of the season under consideration notes with great satisfaction that each colony of bees has its thousands and tens of thousands already mobilized and fully equipped for service under their queen, ready to move when the order "forward" is given, and possess themselves of the rich treasures in the adjoining territory, and that without any blare of trumpets or display of bunting.

At the opening of the clover season, the appearance of bits of newly-made comb in the upper portions of the hive tells us that more room is required; the new comb referred to is easily recognized by its pure whiteness and freshness of appearance. We now proceed with the least possible delay to furnish all colonies which thus indicate that they are overcrowded with supers of drawn comb. This is of no inconsiderable importance, as a delay may mean the issuing of a swarm from the colony so neglected. Having placed supers on all crowded colonies, we now give attention to the less congested colonies, until all are supplied with good combs in which to store the rich and delicious nectar just now being distilled in nature's gorgeous laboratory, the clover blossoms.

In our work we find that the use of perforated metal queen excluders is necessary in the case of new swarms, that is, colonies that have occupied the hive but a short time; older colonies will generally occupy the combs with honey before the queen finds her way into the super. We now await developments, and if the conditions are favorable the extractor will very shortly be called into use.

A passing notice of our "honey hall" may not be out of place just here: An ordinary clapboarded building, 12 feet wide by 30 feet long, sealed inside with narrow ash boards, dressed and nicely matched, well lighted and well ventilated and furnished with as good an outfit for our work as can be purchased on the market. This gives you a sweeping glance at our extracting and store-room, and I would only add by way of suggestion that every extracting room, or place where honey is handled, should be kept scrupulously clean and have a cool and airy place where callers or prospective customers may sit and read the *Bee Journal* or the daily papers while they sample your delicious honey, and every manager should always be presentable and courteous to a degree.

When the supers are filled and combs pretty well sealed, we proceed to extract the honey. The uncapping arrangements, reversible extractor, honey tanks, etc., are placed in position, comb box with full set of combs got in, smoker lighted, and we are ready for operations. Carefully removing the cover and quilt from the hive where we wish to commence, we blow a little smoke over the combs, just enough to frighten the bees and start them down toward the body of the hive. The full combs from the super are now removed, the bees brushed from them in front of the hive, and empty combs from the comb box inserted, and all done so quickly and quietly that no disturbance is created and work goes on in the colony as if nothing had happened. We now proceed to the honey hall, uncap and extract the case of honey, return to the yard, and treat the next colony in the same manner, and so on until all have been relieved of their honey. This operation is repeated as often throughout the season as occasion demands, the favorable climatic conditions prevailing in some seasons rendering it necessary to extract a number of times, while in seasons like the one just closed the work in that particular is remarkably light, and the crop of honey correspondingly so.

As the honey-flow from the buckwheat and golden-rod bloom draws to a close we remove all supers and extract the honey, and at a later date the supers are placed outside for a day to allow the bees to remove the little remaining honey, which leaves the combs dry and in good condition to be stored away for next season's use.

Returning by way of review to the first days of extracting, I would say that the close of each day's work should find all honey drawn from extractor and put in the storage tanks, over the tops of which there should be stretched a couple of thicknesses of cheese-bandage to catch any small chippings of comb which may chance to be in the honey. Each succeeding morning should find the cappings made on the previous day (and not already rendered) snugly tucked away in the solar wax extractor, so as to get the full benefit of the sun's rays.

The honey knife should always carry a "razor-edge," as anything short of this does very unsatisfactory work. The knowledge of the honey-extractor's use can be gained only by experience, and the only suggestion I would offer to the beginner is, "start slowly and study well as you advance."

Mr. ARMSTRONG: Mr. Holmes says he furnished all colonies which indicate they are overcrowded with supers of drawn comb. I would say use drawn combs if you have them, but if you have not, then full sheets of foundation. In another place he says the use of queen excluders is necessary with colonies that have occupied the hive but a short time. I want the excluder on at the same time as the surplus arrangements go on

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Then he goes on to say that the extractor "will shortly be brought into use." I would not bring the extractor into use until the end of the white honey harvest, or eight or ten days after. As to the honey hall I think he has erred a little on the size, but on the right side. A building, half the size will do for 150 colonies. He also says to get a good outfit. I would agree with him there: get the very best in the market. Do not buy cheap clap-traps, because you get them for little money. He says to carefully remove the cover and blow in a little smoke. I say, give it to them full blast. He did not tell us how he got his honey from the yard to the honey house. He says then to place the supers out in the yard for a day. I would say, do not leave them out over night for the moths to deposit their eggs in. With reference to that I was going to ask Mr. Hall if he ever had any difficulty in leaving them exposed to moth over night?

Mr. HALL: They are never put in. They are on the hive three months, and off the hive, exposed to the flies, the spiders,—not to the mice—and covered from rain and snow for nine months of the year.

Mr. POST: Mr. Holmes has been accused of making a slight mistake in extracting his honey. If I understand the paper rightly he extracts his honey when the bees are all on it, just the time it is finished and capped.

Mr. HOLMES: Yes.

Mr. POST: Then, I infer, Mr. Armstrong, you raise your supers and keep raising them until honey season is over?

Mr. ARMSTRONG: Yes.

Mr. POST: Ten days after the honey season ceases the bees will shrink back from the top supers, and as honey has an affinity to absorb water, and if the weather turns a little cool, the top supers will not have nearly as good honey as if extracted when it was covered with bees and warm. I claim Mr. Holmes' system will give the best honey. Extract it, place it in a barrel or some tight receptacle.

Mr. ARMSTRONG: Perhaps it is the locality. My honey season closed about the 12th or 15th of July, and it is left until the 20th. I may say my honey gives 12 lbs. wine measure, and I have had no difficulty in getting that weight.

Mr. NEWTON: I think our friend, after the information we have had to-day, will never be able to send his honey across the ocean unless he changes his method of working, because he says he never takes any honey off till the white honey is in, and, of course, he has his basswood and clover honey together, and they do not want that kind of honey on the other side of the ocean. I have not any reception room in my honey house.

Mr. ARMSTRONG: I do not get my honey mixed up; I get my clover separate. If I find I am going to have a flow of bass-wood my white flow of honey comes off.

Mr. McEVoy: Mr. Holmes lives in one part away down in the north-east of Ontario, and Mr. Armstrong lives away in the south, and it is a great deal warmer there, and the time he takes it there is all right, and the time he leaves it on would not do in the other place.

Mr. DICKINSON: I agree with Mr. Holmes with regard to taking off the extracted honey at the time it has ripened. There is a great deal to be gained by taking it off then, and nothing to be gained by leaving it on. You can get bees to accept combs that are slightly extracted much quicker if you take off the honey that is nicely capped, and give those combs back and they will go right to work lively. Another feature is to be sure there is not a particle of bass-wood honey with your clover honey. Therefore, it would be very necessary for me to have all the clover honey off I was going to take, not to say that I would take off all the clover honey that is there, but all the clover honey that is capped would certainly come off as soon as it was capped if I could find it out.

Mr. HOLMES: That is the plan I follow, and I follow it just as closely as possible, removing the clover honey closely as possible before the basswood honey comes in. In Mr. Armstrong's criticism I think he did not catch my meaning in my reference to the queen excluders. I intended to say that young swarms—those that had been occupying the hive only for a few days—got the excluder; and, of course, they get it immediately before the super goes on.

Mr. EVANS: I understood from Mr. Holmes that they take the supers of one hive and extract them and put them back before they touch another hive. It seems to me

that would be very slow work. I take eight or ten of them into the honey house, and if there are any robber bees they get quited down before I come back. I suppose Mr. Holmes' object is that each hive should have its own frames back again to prevent the spread of disease; but it seems to me that is a tedious way of doing business. As to the size of the honey house, I think Mr. Holmes' is not too large. I have a two-story house, 20x30, and I find it none to big; and I find that one of the things you should have is plenty of room in the honey house.

Mr. DICKSON: Does Mr. Holmes put on a queen excluder down on the old colony?

Mr. HOLMES: No; I do not find them necessary.

Mr. DICKSON: In my case we do. As regards the honey room I have no doubt it might suit some to have a large one. Mine is not. Possibly mine would be a little too elaborate for its size to some. Mine cost considerable, but there was money in it. As regards putting my honey when into extracted into a barrel I cannot agree with that. My honey room is 15 x 18 feet and it will hold four tanks and everything comfortable and nice. You cannot stay in there on a hot day, because the temperature will run up to 125°; and in connection with this same room I have a steam apparatus for any liquifying we may have to do. The tanks are covered with cheese cloth or cheese binder, two ply, and right above there is another screen to keep the under screen clean. But flies occasionally will get in and fly around, and you know what the flies will do. It is not long until you get your covers soiled. Also in this same room I have above that again what you would call a shelf to store away the honey when it is packed. This room is very elaborate, but I consider it a room that pays me, and I can produce a first-class quality of honey. It is a room that a good many have tried to see, and have failed, for the simple reason that I have a notice on that door, "No admittance here." I had bee-keepers very anxious to come about ten years ago, and who tried a good many ways to see it. I think, however, in our day human nature is inclined to yield a little more, and so the last ten years I have been more inclined to let bee-keepers see what I have there if they come in a proper way to see it. As for a large honey room I will not agree to that, because you must have heat; nature's heat is what will cure honey in first-class shape. In regard to taking in the comb one box at a time I think that would be very tiresome when extracting 1,700 pound in a day. We have gone as high as that; but we just begin and take of as many as 20 and 25 and 30. Of course we have a big supply of combs to do it, otherwise we could not do it.

Mr. CHRYSLER: It might be profitable to some to know how Messrs. Holmes Brothers obtain their extracting combs to get them drawn out; how they get that quantity, and how they get them in the first place; and also how the uncapping is done, and what kind of arrangement they have for catching the cappings.

Mr. HOLMES: That is a point that was passed very lightly over in the paper—how the combs are obtained. They are obtained by the use of full sheets of foundation in the supers in the first place; and I might add, in case of being short of combs we insert odd frames filled with foundation here and there throughout the supers. We get them drawn out in that way.

Mr. CHRYSLER: Supposing you get about 50 to 100 the first year, and the second you wanted to take 400, would you advise putting in two or three of the drawn combs, and the balance foundation or starters? Would not starters answer after you got one to start?

Mr. HOLMES: It may be that starters would answer as well. I have used the full sheets, and, therefore, I am not able to speak as to starters. With reference to the manner of uncapping I do not know whether I can describe the uncapping arrangement. However, it is a frame work that holds the comb, and the cappings drop into a square tin arrangement, that is a little lower on one side; that gives the liquid honey in the capping a chance to drain out.

Mr. CHRYSLER: Some time ago there was a great deal of discussion upon bees wasting the wax, and if they have extracting combs all the time without having to build any they will waste that wax, and I have considered it advisable, where chances are good, always to keep fresh frames with starters, probably one or two.

Mr. HOLMES: I might say in that connection I wish to give my bees the very best possible chance to take every advantage while the light honey is being stored; when the fall flow comes on golden rod and buckwheat I then give them more of a chance to work. I get a good many of my combs drawn out on the fall flow.

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QUESTION BOX.

Q. Does the mating of the queen affect her drone progeny?

Mr. HALL: I suppose by that is meant is there any possibility of the young drone having any of the characteristics of the queen?

Mr. POST: We are told it does not, and I don't believe there is a man in the room that actually does know.

Mr. HALL: I do not know. My conviction is that they take after their grandfather. The only way I have of judging of that is from the marking of the progeny of that queen. If the grandfather has any Carniolan blood in it the queen will produce some pretty Carniolans, if she is an Italian queen she will produce some like herself, and all grades between mullatoes, darkies and whites.

Mr. HEISE: Carniolan bees—is that the worker or the drone?

Mr. HALL: I mean both; but the drones do not take after their father in their characteristics or in their color; that is my observation. My observation may not be true. It should be answered by other people, because one man's opinion is not sufficient. For example, in one case in Detroit I was very anxious to know if the bees would winter in a cellar, and I asked the question, "Does the furnace affect bees in the cellar in an adjoining room?" The answer was simply, "Yes, and not beneficially." My experience since then is that it effects them beneficially. If a man gives his opinion without any other discussion you may get the wrong opinion.

Mr. STEWART: You have partitioned off your cellar with a furnace in it. I have a cellar I cannot use for bees on account of it being too warm; the thought came to me, if I put a brick wall through the centre could I use it for bees?

Mr. HALL: It would affect them beneficially; that is the way mine has done.

Mr. WALTON: Surely we as bee keepers are endeavoring to promote apiculture, and I think nearly all the interest centres around the queen, and is it not necessary that we know something about the mating of that queen, considering her progeny?

Mr. HALL: I have given you all I know about it.

Mr. HEISE: According to what we have accepted as an established fact that the drone egg never comes in contact with the male influence, consequently how can it be that the drone progeny can possibly be effected by the mating of the queen? If that is not true it alters the circumstances. Some are now questioning whether that is a fact or not.

Mr. HALL: Are you not one of that class who doubt it?

Mr. HEISE: Not in the least.

Mr. HALL: I doubt it, and I have doubted it all along. It was said that the drone egg was unfertilized, and the mating of the queen does not apparently affect that, because we take it for granted the father of the drone is the grandfather.

Mr. WALTON: I would like to know whether bee-keepers would like to breed from unfertilized drones? For my part, I certainly would not. It seems to me it is something we ought to understand if we are raising queens for our own use. How do the other breeders look at the matter?

Mr. HALL: They look at it that the drone has no effect on the drone progeny of the queen, but we must look a little farther on for the next crop of queens we get; they affect the second crop of queens. If the drone bee is the grandfather as well as the father of the drone, is he not the grandfather of the female or of the worker bee? He is the father only of that. Then, when we go to raise queens or bees from the father in that progeny, we shall get the blood. I have a record slate on every hive. I have the age of the queen when she was clipped, and when I saw her last. I use the letters A., B., C. C. is killed at once, B. is killed when I can do so profitably, A. we do not breed from. With A. 1 we do sometimes; A. 1 X. we breed from; A. 1 X. X. we mark to raise queens from the next year. I could not raise them to sell that way unless I got two or three dollars each for them.

Mr. WALTON: I have been selling at a dollar each, but there is not anything in it.

Mr. HALL: Not if you raise them that way.

Mr. WALTON: If the second generation of queens is affected possibly the first is, but not so perceptibly.

Mr. HALL: Yes, we cannot notice it.

Mr. WALTON: It must be there.

Mr. HALL: Yes.

Mr. WALTON: I think it would be well for all bee-keepers to have their queens mate with good first-class drones.

Mr. HALL: That is another question. I cannot tell you how to do it.

Q. What is the best method of handling swarms so as not to increase the number of colonies?

Mr. HALL: In 1883 we took 25,000 lbs. of honey on that principle; we had more swarms that season than ever we had. In one apiary we had 80 colonies, and we increased to 84; in another 120 colonies and increased to 128 colonies. We had an abundance of swarms; the first part of the season we hived every swarm on 4 combs and 4 foundations (4 sheets to the pound), placing the stock alongside of the swarms. Six or seven days after we shook all the young bees that had hatched in that time into or in front of the swarm, making it very strong, and took this brood away and hived a swarm of bees on it. There were no eggs and little or no uncapped larva. In that case every swarm of bees we put into those combs stayed and went right to work; we carried that out through the season. We started with 200 stocks of bees and we finished with 212, and we took 25,000 pounds of honey. 10,000 pounds was comb honey.

Mr. WALTON: You did very well.

Mr. HALL: It was that method, and it meant a lot of work; but we sacrificed our young queens.

Mr. HEISE: I think I remember of hearing someone relate how he handled swarms so as not to increase the number. When the season closed he hived swarms that issued in the hive that had previously cast a swarm throughout the season.

Mr. HALL: We have practised that to our detriment.

Q. What is the easiest method of managing out-yards in regard to controlling swarming?

Mr. HALL: You will have to get a better man to answer that than me. I have had out-yards for years; I am not satisfied with any method I have tried.

Mr. McEVoy: Give us your best method.

Mr. HALL: Is it extracted or comb honey?

Mr. HEISE: Extracted.

Mr. HALL: The best way I have found, when taking extracted honey, is to visit out apiaries once a week and look through the brood nest, and if queen cells are started take away all brood, (making a new colony of the brood), giving room in the supers and they are about safe for another week, but I find it a big job lifting the heavy supers and would like to learn of a better and easier way to accomplish the end sought.

Mr. SIBBALD: I have had some experience, but my experience is, perhaps, exceptional. My bees were all at home for the winter, and in the spring in moving them I moved them just before the season, and I picked out an average lot to take to the out-yard and put on the supers the day after they were taken there. They went into the supers immediately, and the queens were clipped. Friends were there that if one would swarm they would mark the hive, so that when I came out they would say such and such a hive came out yesterday and went back again, and, of course, I would make an examination of that one, and cut out the cells or take away a frame or two, whatever I saw fit, and in that way I managed first-rate, and I was not in the yard very much.

Mr. HALL: But you had a watcher. I had no watcher.

Mr. WALTON: Is it advantageous or desirable to put a queen excluder over the entrance?

Mr. HALL: I have not tried it, and I don't like anything over the entrance of a heavy stock of bees. It makes them warm, and keeps the drones in.

Mr. MILLER: I do not know that I have anything to add to this; it is something I would like to know. But last year I practised a system that worked very well for a time, and I was prepared to follow it, but found later on it would not work; I should like some information. I made an increase from two colonies by shaking the first colony out and placing that brood on the stand of another colony that was about to swarm, and in removing the second colony from the location.

Mr. HALL: How long did that stay without getting the swarming fever again?

Mr. MILLER: Last season they did not trouble me much.

Mr. HALL: My experience is they just last eight days and they swarm again.

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Mr. Post : Necessity is the mother of inventions. I used to screen my bees top and bottom as I handled them in carload lots, and I experimented on leaving the bottom board off entirely from, say, June to September, and I have never been troubled with swarms. From 300 colonies I may get four and five, sometimes ten swarms through a season ; but a plan that I would say would be almost sure to keep them from swarming would be as follows : When you put the super on the hive in the spring I would leave the bottom, of course, screened, although there is no bottom board on it ; put the first top story on without a queen excluder, and as they store some honey and put in a little brood I would raise it and put an empty one under, and then put a queen excluder between the brood chamber and first top storey.

Mr. McEvoy : I do not think you will be understood. You say about screening the bottom—how high up ?

Mr. Post : A wire cloth is close on an inch square frame attached by Vandusen clamps to the bottom.

Mr. Darling : That simply takes the place of the surface of the board work ?

Mr. Post : Yes ?

Mr. Hall : That is just what I have done the last two years ; it is location. Mr. Gemmell and myself expected to have the results Mr. Post got by acting that way. It has retarded swarming and kept the bees at work, but it has not prevented swarming.

Mr. Post : This last season was a very good season for swarming. I put out 110 colonies out at Springbrook. There was a man a quarter of a mile from my place who began the season with nine colonies and his increased up to about thirty-three or thirty-four ; I did not have one that offered to swarm.

Mr. Walton : What was the percentage of honey coming in every ten days ?

Mr. Post : I did not have scales with me ; I have scales at a place four miles over, and there it would be from eight to eleven pounds a day—not every day. There is something very strange about that. Some days we would get eight and ten pounds, and some days we would get two pounds, and to all appearance both days the same kind ; there is something about the climatic conditions of the atmosphere that we do not know exactly about. Some days the blossoms will secrete honey more abundantly than others.

Mr. Saunders : I have no regular rule in out-yards.

Mr. McEvoy : How have you checked them ?

Mr. Saunders : As far as I have done it I let them swarm ; I try to be there every day, in the forenoon especially.

Mr. Hall : If you had three apiaries you could not be there as regularly.

A PLEASING EVENT.

The new president, Mr. C. W. Post, took the chair after the retiring president, Mr. Brown, had returned thanks to the Association for the cordial support given him while in office.

Mr. McKnight : This Association has been a success right from the first till now, and that is something creditable to it. There have been men that have done more than Mr. J. B. Hall has done for the Association in purely business work, but I want to tell you that there is not a man belonging to this Association now or who ever did belong to it that had made this Association's meetings so interesting and practical as our friend Hall. (Applause). He has been the life and soul of our gatherings for the last nineteen years. I think it would be a graceful thing to do anything within our power to show our appreciation of the value of his services to this Association. Although he does not say very much outside of this Association he is known all over the continent of America. I would like to move that this Association make J. B. Hall a life member. (Loud Applause). It is our duty to show Mr. Hall some mark of appreciation of the valuable services he has rendered to the bee-keeping interests of this Province. I hope this will not be made a precedent. It would be very little honor if all the old men were to be associated with him. I would like to see Mr. J. B. Hall the one and only life member of this Association during my lifetime.

Mr. Brown : I have very much pleasure in seconding Mr. McKnight's motion ; I can endorse every word he has said with reference to Mr. Hall.

The motion was carried by a rising vote, and the singing of "He's a Jolly Good Fellow," after which Mr. Hall briefly and suitably replied.

Q. Does the meeting think it advisable to encourage the public to keep bees?

Mr. HALL: Yes—No. I would like to encourage all those that have natural tact to keep bees, and are in a locality where it would pay them to keep them, but to indiscriminately advise every one to keep bees for a living will do a great injury to them. We should be very cautious how we encourage people to keep bees. I may be a rather peculiar temperament; I think a bee-keeper, like a fiddler, is born. If a man can look after ten thousand little things and do everything right, and do them at the proper time and in the proper way, and is desirous of keeping bees, and is willing to live in a new country, encourage him.

Q. Is it advisable to give excluders between all supers when working for extracted honey?

Mr. HALL: One word will answer that: Yes. Why? First, by having the queen excluder below you can work as fast as you choose during the extracting season or manipulating your supers, no fear of killing queens, and it makes no difference if you kill a few hundred workers, because there a few thousand coming on every day to take their place. You save fifty per cent of the time during extracting knowing your queen is not there, and there is no danger of killing her. The nature of the queen is to keep to the top of the hive, and it is only the bees filling in to the top above her that drive her down. Finally she comes down to the bottom board; they cramp her so that she cannot lay enough eggs, and consequently they get the swarming fever; and therefore I find it advisable for extracted honey on all occasions to have a queen excluder.

Mr. NEWTON: I asked the question, and it was for friend Holmes' benefit, but he is not here. He said, in his paper, he only used them where he was hiving swarms.

Mr. HALL: Mr. Alpaugh worked for me three years. The second year he worked for me I wanted him to work on shares. One of the three seasons there came two or three cold days, and he picked out twenty hives of bees that had nicely capped honey on the tops; he went to work at one o'clock and quit at six; he had to carry some honey about fifty yards to get it to the extractor. His sister was visiting him at that time, and she had her knitting down with her brother, and she assisted him by shutting down the gate of the extractor when the pail was full. Make a guess how much honey he had. He did big work because the queen was shut off.

Mr. SHAVER: Eight hundred pounds.

Mr. HALL: He took over one thousand lbs. He could not have done it if his queen had been there. He got over fifty pounds per super from them. That is one advantage of having your queen down—you can work with confidence.

Q. Has any one had any experience with Carniolan bees? If so, how do they compare with other races of bees?

Mr. HALL: I am the first man that had a Carniolan bee in Canada. She was eighteen days in the mail bag, and when I received her there were three live bees with her. We looked at her and came to the conclusion that she was not worth much; we got her safely introduced; she lived about six weeks, but during this time we raised some queens from her. I have never had a better lot of bees than the daughters of those queens—never for quantity and quality of honey. Of course we kept them for a couple of years, and we thought we would like to have a change, and we received three importations after that, and they were not worth the powder to blow them away. But I like Carniolan bees mixed with Italians. My bees are that mixture. Of course you cannot control these young ladies. They go out visiting the men, and therefore if I have any other blood it is from accident, not from design.

Mr. CRAIG: What about their swarming propensities?

Mr. HALL: Just as good as others, and no worse.

Mr. SHAVER: Mr. Hall clips the queens; I know of two different apiaries where they have them and they complain terribly.

Mr. POST: My experience has been almost identical with Mr. Hall's, with the exception that I have never had any poor ones. They are the best race of bees I ever handled. This was one of the poorest years we ever had; we secured between three and four tons of buckwheat honey. The whole amount was secured by the Carniolan bees placed promiscuously in the yard along with Italian hybrids. Many of the Italians required

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feeding and they were fed with combs taken from the Carniolans. They will beat any bee I ever had in wintering and building up in the spring, and they are no more likely to swarm than any other bee, in my experience, but you will make a mistake if you put them in a small hive, I believe. Give them plenty of room. I believe in a large hive. My hive is equal to about eleven Langstroth frames. Through the fore part of the season till about 15th June, I allow the queen one top storey and the bottom storey—that makes 16 plus 8, equals a capacity of over 19 Langstroth frames. As soon as the queen begins to lay a little above I raise the top storey and place another one under and place the queen excluder below.

Q. Bees intended to be wintered in the cellar this following winter, and are on their summer stands at present with a rim of three inches filled with sawdust on top—would it be better to put them into the cellar right away or leave them until they get another fly?

Mr. HALL: My answer to that is to put them in to-morrow if it is not freezing, and if it is freezing let them be until they are thawed out, or just get some hot water from the teakettle and pour it around the stands, so that the moving may be done without cracking. Never mind a fly; they have eaten nothing in the last few weeks to want to make them fly. If they are frozen down loosen them somehow without having any cracks. I like to put bees in when they are flying; the clusters are all loose; you will get a few stings, it is true, but very few. We do not break a cluster by putting them in; the cluster is already broken. They form a cluster when they go into the cellar.

Mr. DICKSON: I believe in putting them in early. Mine have been in just about a month now, and, just as Mr. Hall says, there were lots to fly out, as they had not settled down to clustering.

Mr. POST: If bees have a rim of sawdust, as represented in the question, even zero weather will not do them any harm. I have about 200 colonies myself now in the same condition; I do not feel at all uneasy about them, although as soon as the weather changes a little warmer I will take them in. The way my stands are built they will never stick.

Mr. DARLING: My bees are not in the cellar yet, and are not packed with sawdust, but I can take them up after settling down by putting them on a pair of slops or bobs, and I can draw them on a little snow or on the bare ground, and perhaps before I get them to the house they do not know they have been moved, and sometimes they are all quiet when we get them into the cellar, and sometimes they stir about. Mr. Hall advocates loose bottom boards. I raised up those that were loose, and took off a great many that were not loose, and I propped the front of the hive off the bottom board about an inch; I am not bothered with moisture. My bees last year were not put in until somewhere about Christmas. The reason for being behind was on account of sickness. I found my bees last spring came out drier and better on the average than they did for some years.

Mr. SIBBALD: I have not very much experience in wintering outside. I have wintered some for two or three seasons; and I packed them up a couple of weeks ago. I believe they would be better packed earlier, but I had not time to do it.

Mr. SAUNDERS: As far as wintering outside, my hives are packed all summer; the only trouble I have in the fall is putting on the cushions, which I do about the last of September or first of October. I asked this question. In the home yard I am used to wintering in the cellar. After I had left for the west about 1st September they got some honey dew for about a week or so, and I have been too busy to put them in since I came home, and I wanted to know whether it would be advisable to give them a fly on account of the honey dew, or to put them in right away.

Mr. McEVROY: That is a serious thing. If he puts them in the cellar he will have to bring them out pretty early. Leave them out a little longer, and bring them out earlier, too.

Mr. EVANS: I winter both in the cellar and out of the cellar. I packed outside a couple of weeks ago in sawdust and clamped eight or nine of them in a twelve foot clamp. The sawdust I usually take in in the spring and put in the honey-house, and it is never damp. I can winter in the cellar without any loss whatever, unless from starvation, but I do not think the bees come on as well when they are taken out. I do not usually put them in until the middle of January; I think it is wise to have them out as

long as possible. I take them out as early as possible. My cellar is particularly dry; the room is just opposite the furnace, and I can open the door and heat it, or close the door and cool it off. Instead of propping up the hives I simply have the hives back so that they are a couple of inches behind the bottom board. I do not put any cushions on top—just leave the ordinary quilt without losing it. I set them round in rows, and they seem to winter all right. The only objection I have to that system is they do not come along in the spring as well as those that winter out-doors. At the same time that is not a fair comparison, because I always put the light bees in the cellar.

Mr. HALL: What time do you set them out in the spring?

Mr. EVANS: Last spring I did not set them out until about 1st of April; the year before about the middle of March.

Mr. HALL: If you have time, put them out on the 1st March.

Mr. NEWTON: I am an out-door winterer, and I fixed mine up about one month ago. Bees that are wintered out-doors should be fixed up just as early as those that go into the cellar, and I think the sooner we get done with them and leave them to their own glory the better. If we keep disturbing them in the fall I think we will not have such good success in wintering. Then, too, I winter in separate cases. I used to winter four in a case, and I think it is a very good idea, and cheaper than the single. I do not like a clamp; but I like either singles or in fours.

Mr. ARMSTRONG: How much packing does Mr. Newton use?

Mr. NEWTON: Four inches on the side and about ten on top.

Mr. ARMSTRONG: Is it necessary for ten inches on top?

Mr. NEWTON: I will not say it is necessary to have ten on top, but I like it?

Mr. McEVoy: What is that on top composed of?

Mr. NEWTON: Composed of forest leaves; I do not think there is anything to equal forest leaves unless it is cork saw-dust.

Mr. POST: Do you pack them solid?

Mr. NEWTON: I don't make any solid work of it; I just throw them in. I do not think the solid packing is as good as loose packing; the frost goes through solid packing sooner. My packing is composed of wheat straw; sometimes I use a little oat.

Mr. McEVoy: Have you any other packing than forest leaves, Mr. Newton?

Mr. NEWTON: Yes; I have planer shavings, saw-dust, flax sheaves and cut straw, and I saw one place where they used rough papers torn up and thrown in.

Mr. MILLER: Some think there is nothing like the flax sheaf. We have a flax mill in our village, and if I could not get anything else I would use flax sheaf; but I would sooner go five miles for leaves than twenty five yards for flax sheaves, because flax itself is of a very cold nature, and it holds the moisture. One thing I find necessary is the space on top of the frame to allow the passage of bees from one frame to another. Never allow your bees to be shut down on the bars of your frames; they cannot get a passage from one frame to another. You can cut holes in your frames, if you like.

A MEMBER: I pack mine all outside, but I never put them in a case. I pack every one of them singly, each by itself, and, as Mr. Newton does, I leave about four inches of space around the hive, and I fill that in with wheat chaff. I have tried clover chaff, but it seems to lay too heavy, and get mouldy.

Mr. McEVoy: I agree with this gentleman. I like each to stand separate and single.

Mr. SAUNDERS: So far as the top packing is concerned I have had a little experience with different kinds; I have tried planer shavings and leaves, and have had the best results from saw-dust cushions. At first I made the cushions too large. I make my cushions now so that there is an inch space between the inside of the hive and the cushion.

PRODUCTION OF COMB HONEY.

BY JOHN NEWTON, THAMESFORD, Ont.

My apiary is run for comb and extracted honey. I usually select the strongest and best colonies for running for comb. As regards the best, if the records of the hive should say that they built braces or burr combs I do not want that colony for comb, as I believe breeding has a great deal to do with that, and comb honey supers with braces across

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them are not nice to handle. I would say pinch such a queen. When spring work has been done—clipping queens, giving room to the crowded queens, by scraping honey at the top of frames so that those cells will be replaced with eggs by the queen, levelling up hives, etc.,—and before the honey season opens I see that my comb supers are scraped and filled with sections $4\frac{1}{2} \times 4\frac{1}{2} \times 1\frac{1}{8}$, which are filled full of foundation, running about 12 square feet to the pound, made from the finest wax that can be procured. Separators are used between sections, and a perforated follower or divider at the sides, which gives an extra bee space, which is of great importance for keeping up the necessary heat day and night at the outside of the outside sections. The divider is just made as one of the separators with a cleat nailed on to allow the extra bee space, and filled with 5-16th inch holes. I use a two part super, thus giving the bees room to store their surplus, and at the same time not giving them so much room that they would loath entering them, as they are at times if super is given them to cover the whole of the top of the hive.

Now, having everything ready when the honey season opens, with hives selected which we desire to run for honey comb, and which should be crowded with bees from side to side, and which on drawing back the quilt we see to be filling up with new honey, we place on one of those half supers close down on the rim of the hive to keep it snug and warm. When swarming commences hive swarms on old stand in hives in which have been placed five starters about two inches deep, the rest of the hive being filled with dummies. After swarms have returned, place parent hive alongside of swarm for five days, after removing to new stand, the flying bees of which will go into the swarm and will thus strengthen it up and give us the best hives for comb-honey production. If the swarm is very large, where one or two should go together, supers are at once taken from parent hive and placed on swarm with a perforated metal board between, so that the queen will stay below and make her home there. An average swarm I leave a day or two before putting on supers, and this catches the pollen below and does away with it in sections. If I have placed on perforated metal boards, I remove them as soon as the queen has made her home below, as I find bees do not work so readily in sections if they have to pass through them. During the honey flow the hives need close attention to see if they require more room, or supers reversed from end to centre so as to get the end sections as well filled as the centre ones. We work the tiering-up system, always putting the empty super next to the hive. When supers are finished they are taken from the hive by means of the smoker or bee-escape, and carried to the store-room. When all honey is taken off, the sections are scraped and graded, then packed in no-drip cases holding one dozen sections; then they are ready for the market.

Mr. W. A. CHRYSLER: No doubt Mr. Newton knows more about comb honey production than I do, but I will endeavor to insert a wedge. I would take your follower out, and in regard to your perforated followers to retain more heat, I think we understood yesterday that a follower has no heat-producing qualities.

Mr. NEWTON: I did not say to cause more heat; it would keep an even temperature.

Mr. CHRYSLER: It has something to do with keeping it warm, no doubt, but probably many of us have not sought the real reason for that being done. The outside combs of a brood chamber, between the outside combs and the hive, contain the coldest air of the hive, and they get the draught from the entrance: and there is a current of air that passes up on the two outsides of the hive, and will pass to the sections if those two spaces are not closed; and this perforated divider will, no doubt, if placed properly, conduct that cool air and draught up past, so that it will enable those combs to be built out better than they would be, and probably built out as well as if in the centre. But I think we can discard those perforated followers and close up those spaces on the two outside frames of the brood chamber, the top of them, and then the necessary air will have to pass through the cluster of the bees, more especially at night, as our comb building is carried on all night long, and in very cold weather the cluster of the bees will somewhat contract and cause those draughts to go up on the outsides of the hive, but I think Mr. Newton recommended dummies and five frames. I do not think it pays. I would rather put the whole of the combs in at one time, because they have plenty of space below, and they will build the brood combs down no faster than the queen wants them: and if you have the full sheets of foundation in the sections they will go up there at once, and they will not build down even so fast as when contracted, especially if you leave

them any time before you put on the super. They have an idea it is pretty warm down there, and they are so close together; and no doubt they will build it down quicker than if the whole were across. With reference to drone comb being built, they build the comb below for the queen as she needs it, and as they have plenty of room there they will not build drone comb, because drone comb is built when they have ideas of swarming, and it is no doubt built more at that time; and if they build ahead of the queen they will have an idea that they are going to be crowded soon, and will build more drone comb. As for supers being placed on the bees, I think there should be good care taken to have them down very tight, so as not to allow any light or air to pass through. Draughts, even though very slight, hinder the building of combs. Try to protect the bees when building comb as much as you can. If you take them out into the air and light they will stop. I would even rather have the supers overlap the body of the hive to thoroughly keep the draughts and light from them.

Mr. DARLING: Mr. Chrysler said that drone comb is built when the bees are affected with the swarming fever. I had a little experience about ten years ago. I think it was seven colonies I thought I would take comb honey from. They were new swarms, and, as some of you know, I used altogether at that time the old Jones hive. I placed the swarm on five to seven frames on starters, put in the perforated metal, gave them the sections behind this perforated metal. Three out of seven, I think, would have been completely ruined for the next season if I had not overhauled them and taken the combs away, and given them some other. There was more drone comb built than worker comb. They were new swarms on starters and not too much room, and they had the sections to work in; they did not build the drone comb very fast. Of course, I know people say old queens will be the cause of more drone comb than young queens; in this case I cannot say as to the age of the queens.

Mr. CHRYSLER: What I meant about the drone comb in contracted hives is that I think you are liable to get as much, if not more.

Mr. NEWTON: I must say, with regard to Mr. Chrysler's remarks, that we do not get anywhere near as much drone comb when contracted as if we left an open space.

Mr. SHAVER: Do you and Mr. Chrysler use the same sized hive? I have an idea that Mr. Newton's five frames are equal to Mr. Chrysler's hive.

Mr. NEWTON: I have worked with a dozen different hives, and my experience has been the same in every instance, that contracted hives do not produce as much drone comb.

Mr. SIBBALD: Comb honey is a part of bee keeping that I am very fond of. I have given it quite a bit of thought and study, and I think from the paper that Mr. Newton has read he would be able to produce first-class comb honey. In some things I agree with him, in other things I have a different opinion. He said he used perforated divider on the outside. I would like to ask him why it should be perforated when he wants to retain heat? Why not use unperforated divider at the outside? Then, he uses a half super. Well, I can understand why he would use a half super when he contracts his bees in that way up to the centre of the hive, because they would not fill the outside sections so well. I rather think Mr. Chrysler's idea is right in the matter of full hive; and I would rather have starters, not two inches, but half an inch or quarter of an inch, just sufficient to let the bees start, and instead of clustering in the centre they will cluster across the top, and they will start every one of those little starters. You can spread them out by coaxing them on to these little starters, and when we have them spread all across there we put our super on; and the bees will take readily to the full sheets of foundation, because they have not much below, and they would rather take that than build new combs, and they will spread right up to the very corner of this super in an hour after, and they will go to work at once, for where their treasure is their heart will be, too. As to the drone comb, I think Mr. Chrysler is right about that in my experience, and I would just like to ask Mr. Newton if he has ever tried to hive in a large hive, and putting in all the frames with small starters.

Mr. NEWTON: Yes; before I made foundation for myself I did not want to spend any more money than I could help, and I used to use the narrow starters, and I never had as good results as with a two-inch starter. I would not advise any larger than two inches.

Mr. SIBBALD: Why draw the line at two inches?

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Mr. NEWTON: Why draw the line at one quarter? Because that suits you best, and two inches suits me best.

Mr. SIBBALD: And if you take it down two inches, why not take it three inches.

Mr. NEWTON: That is where you are going too far: then you are giving the queen too much space. The bees will start to build, and she is going to have a chance to let them build a lot of drone comb, but with two inches she fills that. I wish I had brought a few combs that have been built on the five-frame process, and I think I could take you to hives in my yard where, looking at five frames, I do not think you could find a patch of drone comb with young queens.

Mr. SIBBALD: In our yards we have old and young queens, and we cannot govern that, and we have to do the best we can with them.

Mr. NEWTON: I have tried what Mr. Chrysler and you suggest with regard to using no dummies, and giving them on the full size hive, and to me that has never given as good a results as contracting.

Mr. SIBBALD: I disagree with you on that point.

Mr. NEWTON: I discarded my full super and went to work with half supers, and I think it a great deal better than full supers which cover the top of the hive, and I have done away with all my full supers.

Mr. SIBBALD: I find with the work I have to do in the busy season that one super is small enough, and I believe I would rather have a bigger one still if I was going to change again. As to hiving on the old stand and placing the old hive alongside, as Mr. Newton said, I agree with there. He said he left a swarm two days before putting on the super. I think he is pretty nearly right there, although it might not be out of the way to put the super on next day.

Mr. NEWTON: I agree with Mr. Sibbald, because there is so much difference in some hives; some would make their home there in half an hour, and go right straight to work.

M. McEVoy: Would there not be some danger of pollen if you did this right off. With the two days' system you would not run any risks.

Mr. SIBBALD: If they are hived at noon, and you look in at night, if there has only been a little foundation you will find perhaps three inches of comb, and the next day you will be surprised what a lot they have; and the queen does not start to lay right away as rule, and there is room for the honey and for the pollen, and that is why I object to Mr. Newton's plan of two inches of foundation. They draw that out and they get a whole lot more on to that before he puts on his sections. They would have those five or six nearly drawn down to the bottom in two days without a super.

Mr. NEWTON: That has just put me in mind of one thing why I like that two-inch starter better than Mr. Sibbald's way: I can catch the pollen quicker below than he can catch it in his half inch starters, because there is no place whatever to store his after they start to build.

Mr. SIBBALD: I can readily understand where they put their pollen, because if you look into a hive you will find the pollen on the comb near the outside, and you contract them so that they have not any outside comb; but if you had ten you would find the pollen off to the outside. I have produced a good deal of comb honey on that plan, and very few sections have been spoiled with pollen—I do not think there have been two dozen in all I have. Mr. Newton takes off the supers with a bee-escape.

Mr. NEWTON: Sometimes; I do not think in the last two years I have used one bee-escape.

Mr. SIBBALD: As to packing for market, I believe if every one would take the trouble to pack them up in an attractive shape there would be better prices got for comb honey, and the grocers would not swear so much when they handle them.

Mr. HOLMES: One more point: Mr. Newton tells us in reference to the queen excluder he places it between the hive and the super, and after the queen has got well established below he removes the excluder. We would like to know just what "well established" means as to time.

Mr. NEWTON: I would say just about what I said as regards the putting on of the supers—it might be half a day, it might be two days; and I do not think if it is taken off the second day they would ever attempt to enter the section.

Mr. McEVoy : As a fixed rule ?

Mr. NEWTON : We have no fixed rule.

Mr. HALL : When she commences to lay.

Mr. NEWTON : I was sorry our friend Holmes was not in last night when I brought up the question. I would like to have asked him why he does not use perforated metal in the extracting season between all supers ?

Mr. HOLMES : Answering that question just on the moment I would say for this reason : My experience has proven to me that the percentage of trouble in that regard without the use of the queen excluder is very small indeed ; and, further, I take it that the bees work up and down freer without it, and so long as the queen does not bother us to any great extent we forego the use of them except on the young swarms, and I put in the queen excluder there, and leave it there perhaps a little longer than Mr. Newton does in the production of comb honey.

Mr. HALL : I use queen excluders. The first lot of queen excluders I bought was for eighty stocks of bees. I was so tickled with them that a week after we bought queen excluders for every hive we have, and, let me tell you, I do not want any queen excluder except during the time of swarming, and I do not want it then excepting three days, unless I am too busy to take it off ; and we never want any hive for extracted honey of two or three or four storeys high without the excluder to keep the queen below, because in my case more than fifty per cent. go up. My hive is equal to 11 Langstroth frames, 18 inches long and 10 inches deep, and it is not enough for all queens, even without the honey, and, therefore, I do not want to run any risk. I put the queen excluder on. Then, when you are extracting you have no danger of killing queens, and you can work as quick as you like, and if you do kill a few hundred worker bees you do not do any harm. I always use the queen excluder in the extracting hives between the brood chamber and the supers.

Mr. HOLMES : I said that the percentage of trouble in that regard was very, very small. I think I would be safe in saying not five per cent.

Mr. HALL : Your location must differ from mine, but with fully fifty per cent. of the queens go up.

Mr. NEWTON : Mr. Chrysler criticised this paper with respect to the perforated followers being set up on the side of the super ; he complains of the draught. The only reason of that is to prevent the draught. It need not to be perforated for that. I use perforated and plain, and I find the plain, if set up on the side, is equally as good as the perforated ; but my experience is that if you have a colony that fills up your hive from corner to corner, the bees are going to fill your sections from corner to corner ; and if there is an extra space outside your divider, that is filled with bees as well as next to the combs, so that it can be kept just as warm on the outside of the super as in the centre.

Mr. CHRYSLER : Why not prevent it before it goes there ?

Mr. HALL : We do prevent it.

Mr. SIBBALD : I think the plain would be just as good.

Mr. HALL : My experience is it is just as good as good as the other, but the space behind it is what you want. The chief object of the half super is to coax the bees up. Then they will work on to 12 more than 28, and when we put on the second super we have to have half-honey boards ; then, when they have got nicely to work in one piece we lift this up, and shove this over, and the honey is around where there is no brood, and they will immediately attempt to fill up that cavity in the centre ; then we have then full at the corners any way. We do not want a half super after that, but for convenience sake we use them up to 5, 6, 7, 10, 12, 14, as the case may be.

Mr. DARLING : What are your half supers made of ?

Mr. HALL : $\frac{1}{4}$, $\frac{1}{2}$, or $\frac{1}{16}$ th or 1 inch—it makes no difference. My hive is made of inch stuff. I have to use $4\frac{1}{2}$ sections because that is the standard size, and unless I used that size I could not get more sections if we ran short. If we ran short we should lose, perhaps, a large percentage of our profit, and I had to discard the oblong sections which I used to use.

Mr. DARLING : Do you put your sections lengthwise or crosswise ?

Mr. HALL : Lengthwise ; I prefer to have the back end of my hive to run out rain water.

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Mr. SIBBALD : After you put on the first case you say it does not matter about the half case any more ?

Mr. HALL : It is more convenient and quicker to use full, but towards the end of the season these half ones go on again. With the half super, if you think there is going to be any more come in, put on 12 instead of 28, and those 12 are more liable to be filled than the 28 ; but through the main honey harvest they take a little more handling, but we get so much more finished honey that it pays for this extra handling.

Mr. DARLING : When you put one super, do I understand they begin at this end of it ?

Mr. HALL : Yes, sir.

Mr. DARLING : Why not take this super, if you want it filled up, and shove it that way ?

Mr. HALL : Then I would have to have two honey boards.

Mr. SIBBALD : You say they start over the brood nest to build the sections. That is one of the weak points of Mr. Newton's system ; he contracts to the centre, and there must be sections out over the outside of the brood nest.

Mr. HALL : Yes, and he uses dummies, and they can work into those sections.

Mr. SIBBALD : They will not take to them as quickly.

Mr. HALL : Certainly not. I will give you my experience hiving with full hives. We use five starters. I generally put on half-inch or three-quarter inch, because it is easier for me to handle. We have the five starters for the purpose of getting all worker comb built by our bees. In an out-apiary this year we simply shook them off into full hives. I have been through them since, and I am sorry to say there is forty per cent. of drone comb—drone at one end and worker at the other. With my bees it requires five to hold them, and they will swarm out in about ten days after they have been hived. One reason why I put them on five frames is to get all worker comb. Another reason is it drives the bees up into the supers.

Mr. SHAVER : What age queens do you use ?

Mr. HALL : I like queens of the previous season, but I do not always get them so. Then, as to bee escapes, I have three dozen and three of them, and I have not enough.

Mr. McEVoy : I have not enough, and I have that many.

Mr. HALL : I use none for extracted honey. I want bee escapes for comb honey ; except you are pretty quick about it you have a regular shaking.

Mr. SHAVER : What kind of an escape do you use ?

Mr. HALL : The Porter proper.

Mr. BROWN : How many do you find the best number ?

Mr. HALL : One is better than fifty or than three. I put them on in the afternoon, and I go round in the morning and take off my supers and take them to the house. I have a honey house, one for extracting, for the carpenter work, and one for the honey work. I keep my honey in the house, and it is over the furnace room. I have a register, but I never have the job of using the register.

Mr. SIBBALD : Do you ever find at the latter part of the season they will chew the sections ?

Mr. HALL : They will do that if you smoke them. With my east apiary I have a young lady, and when I went there she had sixty pound tins and 18 supers of honey, but she had smoked them pretty well to get on the escape boards, and some of them had bitten the sections. We use bee-escapes not for extracted honey but for comb honey.

Mr. MILLAR : Mr. Newton in his paper said he left the swarm five days. The colony in that case with my management would swarm in a large percentage of cases, and as regards the escapes, I use them ; I would not think of doing without them. The perforated divisions I have not used sufficiently to say anything about. With regard to half supers, Mr. Hall gave us very good reasons for their use. My hives being odd I use ten frames, equal to five Langstroth frames, but I have my brood under the whole super, and I have no use for these half supers. I use the Headdon. I have brood under my whole super surface.

Mr. NEWTON : I thought I was using a very low estimate in mentioning five days, because I did not expect we would have any swarms at that time.

Mr. HALL : I have fifty hives, the same as this gentleman uses, and I have 150 supers on them, and I have the same objections to those supers. I use them because I

have that hive, and those supers fit it. Then, I very often give a half super to a swarm of bees because I do not like to give them another full super of 28 sections. It is the first part of the season and the end of the season where the small supers have the superiority. I have 150 of those very supers, and they are good. I do not use them as the maker intended them to be used. I never take out one uncapped frame and put it in to the centre so that it will be finished, and I never turn it over because my bees fill to bottom better than the top. I never move broad frame which holds four sections, because I have not the time. I fill the thing full of foundation. I guess that was calculated to be used with little bits, and that reversing is intended for that.

Mr. HEISE : I conducted an experiment some two years ago. I had a board something after that style (shows), and there was an escape at each of those points, 8 or 9 all facing the one way. I had then a Porter back of that three inches, and then a double lightning escape, making in all 13 escapes. I piled up about five supers, and put the escape board on top. The bees started to rush out of the super at the side, and 90 per cent. came out of that one space.

Mr. HALL : They come out where the sun is.

Mr. CRAIG : There has been a great deal said about escapes. I do not want to say anything one way or the other, only in our own experience while we have an abundance of escapes we have used carbolized cloth instead of smoke : a small quantity of carbolized acid added to a quantity of water, and put on cotton cloth. There is no danger of any taint. We spread that carbolized cloth over the super when it is on the hive, before we take it off?

Mr. BROWN : How long should it be on before it is time to take it off?

Mr. CRAIG : Just a few seconds.

Mr. HALL : I put these things on in the afternoon, and I do not like to work in the sun, and so in the morning I get around with the wheel-barrow and wheel load after load into my room and I take off my escapes at my convenience. They may be on a day or two before they come off.

Mr. ARMSTRONG : I wish those who do not use queen excluders would say how they rid their supers of bees without the bee-escapes.

Mr. NEWTON : I give them a good blast of smoke, and grab up the sections and give them a right good shaking, and soon get rid of the bees ; and I never notice any cappings bit in any way. A great many people use different things in their smoker. I think there is nothing to equal planer shavings when we want a right down good smoke for a short while.

Mr. CHRYSLER : There would be a little danger with some bee-keepers in using too much smoke, without a warning, and have the honey tainted. With proper judgment there would not be much danger in that line, unless it might be smoke from certain kinds of fuel.

Mr. NEWTON : Every bee-keeper will have to use his own judgment.

Mr. SHAVER : As soon as the bees go down stop.

Mr. DICKSON : In smoking I have used a great many things, and I must admit the shavings are the best.

Mr. HALL : Have you tried cedar bark, thoroughly dry?

Mr. DICKSON : Yes, and it is too hot.

Mr. SIBBALD : With regard to Mr. Armstrong's question I may say I use very little smoke. As soon as the cover is taken off the bees will face you, and I smoke just to let the smoke touch the bees and they will turn around and run the other way, and then you can take the sections off. My method of shaking them is as follows : I lay a three corner stick on the ground, and take the super in both hands on the outside with the ends of the sections down and just tap gently until they start to run ; and then when you get them running pretty well, a few shakes will shake them all off. In the middle of the season I have taken off 500 sections in about an hour, and had them all loaded on my waggon. There is one thing I ought to mention : when the honey is very warm in the afternoon, if you hit too hard you may break the sections. I had one case where there were three or four in the centre broken. I knew what did it, and I know how to avoid it.

Mr. McEVoy : At the close of the season supposing they were a little bit apt to rob?

Mr. SIBBALD : You do your work so quick, and when you are shaking them they cannot catch on, and when you get them out you take it away.

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Mr. NEWTON : I never turn the point of my smoker down among my sections ; I always turn it straight so that the smoke goes above. If it went down it would be apt to taint the sections.

Mr. McEVoy : Take an ordinary man, and he drives them down with a great smoking, and those bees are going to have revenge, and they set to work and chip the capping.

Mr. NEWTON : As regards escapes, I had one case that sickened me of them ; it might have been my fault ; my escapes got clogged, and I think I had four nice supers which I did not go back to until the next morning and they were not worth much.

Mr. BROWN : That has been my experience with the escape. I have used only one, and my experience has been like that.

Mr. SHAVER : I am like Mr. Newton ; I have one, and that is one too many.

Mr. NEWTON : There has been a great deal of discussion on the American side about bee-escapes, and I find there are a great many who have discarded them on the ground that they spoiled so many sections. One reason is that it is not put on at the right time, and another, it is apt to get clogged. Very often we don't know that our escapes are clogged.

Mr. HALL : I may say I suppose I have taken 22,000 pounds of comb honey, and I have had one super spoiled, and I could afford that because it saves me so much work other ways. I had one super spoiled simply because there were some drones in it.

Mr. POST : I use two dozen Porter bee escapes, and I cannot tell you were they were manufactured, but they are a success with me. In the closing of the season I double up and put two supers on each bee-escape, and carry them from different hives. I put them on one day and go the next morning and take them off.

Mr. McEVoy : The way it is going now we are all at sixs and sevens.

Mr. CHRYSLER : If the bee escape was taken away from me it would not worry me very much ; I could easily find another method of doing it. A person may get into his own way of doing things, and I do not think it should be set down that there has got to be a bee-escape, or a Porter escape, or any other method.

Mr. HALL : I have had imitations of the Porter bee-escape, and the springs were too strong.

Mr. POST : If we cannot agree upon this we had better drop it and leave it to each to do as he chooses.

A MEMBER : Can drone bees pass through the escapes ?

Mr. HALL : The one case of failure was blocked up by drones. They cannot pass through them.

Mr. McEVoy : If they are liable to get clogged it is well to look after that.

Q. Bees going out at entrance at hive hang around on entrance board, as if chilled with cold and wings all in a quiver—what is the cause ?

Mr. PICKETT : I have not had a case of this kind and cannot answer. I presume it must mean paralysis. There is one thing lacking ; it does not say at what season of the year.

Mr. DICKSON : I asked the question, and I would like an answer to it. It was in the month of May. Two good colonies of bees had come out on the entrance, and just acted as if they were put out too early, and were all in a flutter.

Mr. HALL : Were they dark-colored—shiny ?

Mr. DICKSON : No ; there was nothing special in their looks ; they did not seem to live long. Each morning I would sweep away the entrance board and there would be possibly half a dozen or two dozen the next morning ; and when it was warm it seemed to effect them in the same way. I examined the hive and everything seemed all right ; one of them was about holding its own, and the other was gaining, and I was determined to make short work, and we finished the hive. I would like to know what was the cause.

Mr. HEISE : How long did that continue ?

Mr. DICKSON : It must have been three weeks any way from when I first noticed it.

Mr. PICKETT : Did any of them wander away that you know of ?

Mr. DICKSON : I could not say.

Mr. McKNIGHT : The answer to that question may be paralysis. I have read about it. Is there any such disease known as bee paralysis ?

Mr. HALL : I have some in my cellar that will have it in the spring. They call it

bee paralysis, and what it is I do not know, and when they get the good honey it seems to cease ; but keep them till next season and it will appear in those colonies again.

Mr. POST : Would re-queening have any effect ?

Mr. McEVOY : That is certainly the cure.

Mr. ARMSTRONG : Did you ever remove the queen and find that it disappeared ?

Mr. HALL : Yes.

Mr. McEVOY : I have had that experience.

Mr. McKNIGHT : What are the symptoms of bee paralysis ?

Mr. HALL : Those are they—the bees quivering and running around.

Mr. McKNIGHT : Have you any idea of the cause ?

Mr. HALL : No.

Mr. CHRYSLER : I heard one man say that he cured it with salt, but I have not very much faith in his ideas.

A MEMBER : Might not this paralysis you are speaking of be caused by getting poison ?

Mr. HALL : Poisoned bees run away from the hive.

Mr. SIBBALD : I have had a case of poisoning, and a case of what I thought was bee-paralysis, and there is a difference. In poisoning they go out and seem bloated and swollen, and they lie out in numbers in front of the hive in the grass and live there for perhaps a day. With this paralysis they do not seem bloated, and they come out and go back in again, and some would die on the front board.

Mr. HALL : In other words they do not want to leave home.

Mr. SIBBALD : And the cure that has been mentioned, the changing of the queen seems to do away with it at once.

Mr. DICKSON : In this case it certainly was not poison, because they would run in and come out. There was one I was really sorry to destroy.

Mr. McKNIGHT : I think this disease known as bee paralysis is just as somebody suggested, poisoned bees, and I think that arises from spraying of fruit trees when it is illegal and when it is legal. I believe the spraying of fruit trees is a great detriment to bee-keepers, even when it is carried out in accordance with the law. The law simply prevents people from spraying trees during bloom time. A large proportion of the poison goes upon the foliage of the tree, and the bees need water, and they will gather it anywhere, and I have seen them sipping up the dew from the foliage of these trees where the poison has been dropped. I have seen bees curled up dead upon potato vines, and my opinion is that whether spraying is done in fruit bloom or after, it is still an injury to bee-keepers.

Mr. HALL : My observations with poisoned bees is that ninety-five per cent. of them are bees that have never flown from the hive, and I believe they are poisoned by the worker bees that bring it home. But with regard to these bees that have bee paralysis, as it is called, the hives will have it the next season as well as this season. These bees want to get into the hive, and the poisoned bees want to get away.

Mr. DARLING : I think Mr. McKnight is right in his statement with regard to poisoning after the bloom has gone. In my section there is not much trouble with spraying, and I have had it before there is spraying done.

Mr. BROWN : There is very little spraying done in our immediate section, and I have seen bees acting as Mr. Dickson described, and I cannot put it down to spraying ; but I am satisfied that where spraying is done extensively the poison on the foliage will poison the bees.

Mr. EVANS : I think the danger in spraying leaves and trees when not in bloom is very slight. Just across the fence from my place is an orchard which was sprayed, and the matter sprayed remained on the leaves a long time, but I found no evil results. I do not think any statement should go out that bees are injured by spraying except when trees are in bloom, and I think we ought to hold the restriction we have now.

Mr. McKNIGHT : Was bee paralysis ever known or spoken of till tree spraying began ?

Mr. POST : Yes. I have had cases of so-called bee paralysis about fifteen years ago, and I do not know whether there was spraying done before that date or not.

Mr. ARMSTRONG : I have had it and I laid it down to the queen, and I have killed the queen and it disappeared.

Q. Will honey weighing 12 lbs. to the gallon be improved by exposure in tanks or cans ?

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Mr. PICKETT: No, and the reason is you lose the aroma or volatile oil to a large degree when exposed any length of time, and I consider you lose really the essence of the honey.

Mr. SHAVER: You can improve it in body, can you not?

Mr. PICKETT: Not much.

Mr. McKNIGHT: I think that is a ridiculous question. But it altogether depends upon the character of the vessel in which it is put and the conditions of the atmosphere whether it improves or deteriorates. There is one thing certain, that if you put honey into an open vessel and keep it there for a certain length of time it will lose its aroma whether it improves in body or fails. The essential oil which gives the honey the aroma is a volatile oil and will pass off if it gets a chance, and it will get a chance in any open vessel; and therefore it will deteriorate so far as losing its aroma is concerned. As to its body, that depends much upon temperature, the condition of the atmosphere and the season of the year.

Mr. HALL: But the beautiful part of the honey is the aroma, and if you cork it up as soon as you take it, you will retain that.

Q Which is the best, the ordinary make foundation or the Weed maker?

Mr. PICKETT: I have not used the Weed, but if what is claimed for it is true, that it is softer than the ordinary foundation, and strong enough to bear the bees without sagging, I suppose it would be an improvement.

Mr. MILLER: I think it is possible that it may be softer and it may be possible that it will not sag, but I do not consider that is what is wanted. The idea is, will the bee handle it sooner and better, and use it for what he needs it? I have not tested it, but I understand in the Weed the grain of the wax is crushed and it has no longer any granules to be worked by the bee. I think the bee in drawing out comb will pick it out in granules and build comb that way. In building natural comb he uses wax pockets, and it is worked in those granules, and I think the bees prefer to work it that way instead of working something that will pull out like strings. I do not doubt but that the bees will work on the Weed foundation all right, but I think they prefer to work on the foundation and use their own wax.

Q What is the best method of getting rid of pollen?

Mr. PICKETT: The way I get rid of it, if I have too much of it, I destroy the comb. I would be pleased to hear from some others in that line.

Mr. HALL: That question has been pretty well answered in discussion on Mr. Newton's paper—by giving them room in the hive to put in.

Mr. NEWTON: I think there are a couple of gentlemen here who have misunderstood Mr. Hall in one thought, and I think he should have a moment to explain himself. It is about leaving perforated metal between the comb supers and the hive—does he do it or does he not do it?

Mr. HALL: We use the perforated metal only for comb honey at the time of hiving a swarm, and only on contracted hive, and we do not go back to take it off until it is convenient. Any hive in the yard that has not swarmed has no excluder. I want the excluders only for extracting, so that we may work quickly.

Mr. SHAVER: Do you not get a little better honey with the queen excluders than without?

Mr. HALL: No. Some days we get an abundance of pollen in our sections, and some years we take a very large crop of comb honey. Some years, I may say, out of perhaps four or five thousand pounds we may have twenty sections with pollen in. Other years the hives and swarms, treated just the same, we would have 200 or 300 sections with pollen in. What the reason is, I do not know. There are some races of bees that do not know much, and do not know where to put the pollen.

Mr. McKNIGHT: The excluder is used to prevent the queen from going up and depositing eggs above and destroying comb honey; is that likely to occur if contraction is not practised?

Mr. HALL: Yes, sir.

Mr. McKNIGHT: Not often in my experience.

Mr. HALL: I did not say how often; there are some very stupid bees that do not know where to put the pollen. I got some bees a few years ago; they were grand bees to handle and build comb as long as they could do it at home, and they were very pro

lific. But they did not know their own home, and you can find them in every hive in the yard. They do not know enough to sting or to put the pollen in the right place. They were the stupidest bees I ever had, and the prettiest I had.

APPOINTMENT OF INSPECTOR OF HONEY FOR PARIS EXPOSITION.

The meeting felt it would be desirable to recommend to the Government a fit and proper person to inspect the samples in the Canadian honey exhibit before shipment to Paris, and it was moved by Mr. COUSE seconded by Mr. McEVOY,

"That this Association recommend to the Government Mr. C. W. POST for the position of Inspector of the honey exhibit going to Paris."

The motion was carried.

The Association decided to make no recommendation with regard to the appointment of a person to accompany the exhibit to Paris.

THE BEE JOURNAL.

The question of the Bee-keepers' Association taking over the Canadian Bee Journal was discussed, but the opinion of the meeting was that the Association was not in a position to undertake the management of the Journal.

Mr. DARLING moved and Mr. EVANS seconded, "That this Association recommends to the Board of Directors that for another year we give the Canadian Bee Journal to the members on the same terms as in the past." Carried.

On motion of Mr. McEVOY, seconded by Mr. SHAVER, the meeting adjourned.

DIRECTORS' MEETING.

At the Directors' meeting following the annual meeting, the following business was transacted:

Mr. W. COUSE was re-appointed secretary and Mr. EMIGH, treasurer. The sum of \$200 was appropriated to affiliated societies, but no society was to receive more than \$20. There was a grant of \$25.00, \$10.00, and \$10.00 made to the Toronto Industrial Exhibition Association, the Western Fair Association of London, and the Canada Central Exhibition Association of Ottawa, respectively.

The President, Vice-President and the second Vice-President were appointed an Executive Committee.

It was decided that the Canadian Bee journal would be given as a premium to the members of the current year.

Mr. DARLING and Mr. POST were appointed a committee to send samples of honey to Professor Shutt of the Experimental Farm at Ottawa, to ascertain the percentage of water in the different samples.

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BY-LAWS.

1. This Association shall be known as the Ontario Bee-keepers' Association, and shall be composed of those interested in bee-keeping who become enrolled as members by paying the annual membership fee of one dollar.

2. A general meeting of the members of this Association shall be held once a year, and shall be known as the Annual Meeting, the year to begin with the election of officers at such Annual Meeting and terminate on the election of their successors at the next Annual Meeting. At this Annual Meeting, or at any other general meeting of the members of this Association, ten members in good standing shall constitute a quorum.

3. The time and place of holding the next Annual Meeting shall be fixed by the members present at the Annual Meeting,

4. The Board of Management shall consist of a President, two Vice-Presidents and nine Directors elected one from each of the following twelve divisions:—

Division No. 1.—Stormont, Dundas, Glengarry, Prescott and Cornwall.

Division No. 2.—Lanark, Renfrew, Carleton, Russell and Ottawa.

Division No. 3.—Frontenac, Kingston, Leeds, Grenville and Brockville.

Division No. 4.—Hastings, Addington, Lennox and Prince Edward.

Division No. 5.—Durham, Northumberland, Peterborough, Victoria and Haliburton.

Division No. 6.—York, Ontario, Peel, Cardwell and Toronto.

Division No. 7.—Wellington, Waterloo, Wentworth, Dufferin, Halton and Hamilton.

Division No. 8.—Lincoln, Niagara, Welland, Haldimand and Monck.

Division No. 9.—Elgin, Brant, Oxford and Norfolk.

Division No. 10.—Huron, Bruce, Grey and Perth.

Division No. 11.—Essex, Kent, Lambton, Middlesex and London.

Division No. 12.—Algoma, Simcoe, Muskoka, Parry Sound, Nipissing and Manitoulin.

Also one Director from the Ontario Agricultural College and Experimental Farm. The Board of Management so elected shall appoint from among themselves, or otherwise, a Secretary and a Treasurer, and shall also appoint at least three of their number as an Executive Committee.

5. Five members of the Board shall constitute a quorum.

6. Vacancies on the Board by death or resignation may be filled by the President, subject to the approval of the Executive Committee.

7. The officers of this Association shall be elected by ballot, with the exception of the Auditor, who may be elected by an open vote of the Association.

8. It shall be the duty of the President to preside at all meetings of this Association; to call for reports; to put motions when seconded; to decide upon questions of order and to declare the result of ballots and elections. The President in connection with the Secretary, shall have power to call special meetings when necessary. The President shall be *ex officio* chairman of the Board of Directors, and shall call it together when necessary.

9. In the event of the death or absence of the President, the Vice-President shall discharge his duties

10. It shall be the duty of the Secretary to keep and preserve the books of the Association; to call the roll and read the minutes at every meeting of the Association; to conduct all correspondence of the Association; to receive and transfer all moneys received for fees and otherwise to the Treasurer, having taken a receipt for the same; to make out a statistical report for the Association and for the Government; to furnish the officers of the County and District Associations with forms for organization and annual reports, and to give notice of Association and Board meetings through the press or otherwise.

11. It shall be the duty of the Treasurer to furnish such securities for the moneys of the Association as the Board may determine; to receive from the Secretary all moneys belonging to the Association and to give receipts for the same; to pay them out on order endorsed by the President and Secretary, and to render a written report of all receipts and disbursements at each Annual Meeting.

12. Any County or District Bee-keepers' Association in the Province of Ontario may become affiliated to this Association on payment of five dollars, which shall be paid to the Secretary on or before the first day of June in each year; but every local Association so affiliated must have on its membership roll at least five members who are also members of the Ontario Bee-keepers' Association at the time of its affiliation, and must continue to have a like number of its members on the roll of this Association while it remains in affiliation.

13. Every affiliated Association shall receive an annual grant out of the funds of this Association. The amount of such grant shall be fixed by the Board from year to year.

14. All grants to affiliated Associations shall be expended in prizes for honey shows, or for shows of apiarian appliances, or for lectures on subjects pertaining to bee culture, or for advertising district or county meetings, or for any or all of these, and for no other purpose.

15. Every affiliated Association shall report to the Secretary of this Association (on a form to be supplied by the Secretary) before the first day of December in each year, which report shall be signed by the President and Secretary of the affiliated Association.

16. County or District Associations seeking affiliation should forward to the Secretary an application according to the following form:—"We, whose names are written in the accompanying form, having organized ourselves into a County (or District) Association to be known as County (or District) Association No. —, desire to become affiliated to the Ontario Bee-Keepers' Association, and we agree to conform to the Constitution and By-Laws of said Association."

Form of application as follows:—

Names of those already Members of O. B. K. A.	P.O. Address	Fees.	Names of those not already Members of O. B. K. A.	P.O. Address	Fees.	Remarks.

17. Every affiliated Association that neglects or refuses to pay the annual affiliation fee, or neglects or refuses to forward to the Secretary the annual report on or before the date fixed, may be deprived of their affiliation privileges by the Board.

18. Should an affiliated Association become defunct after the payment to it of the grant from this Association, any unexpended balance of said grant shall be forfeited and paid over to the Treasurer of this Association.

19. Each affiliated Association shall be entitled to the privilege of two representatives at the meetings of this Association in addition to those who are already members of this Association, and such representatives shall be entitled to all the rights and privileges of members of this Association.

20. Every delegate from an affiliated Association shall furnish to this Association a certificate, signed by the President and Secretary of the body which he represents, showing that he has been duly appointed a delegate of such Society.

21. Each affiliated Association shall be entitled to the services of an Association lecturer (when such exists) once in each year, half the expenses connected with such lecture to be borne by the District or County Association and half by this Association.

22. The order of business by which the meetings of this Association shall be governed shall be in the discretion of the President, but subject to appeal to the meeting when objection is taken, when a majority vote of the members present shall decide on the objection, and in such cases the vote of the majority shall be final.

23. These By-Laws may be amended by a majority vote of the members present at any Annual Meeting, or at a special meeting of the members called for the purpose of considering the same, and of which at least two weeks' notice shall be given by public advertisement.

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APPENDIX A.

EXPERIMENTS IN APICULTURE.

I regret to say that the past season has been one of the poorest the bee-keepers of Ontario have had for many years. All over the Province of Ontario the winter of 1898-99 was unusually severe. Not only was the temperature low at different times, but in several instances the low temperature prevailed for a considerable period of time. I looked for great mortality among bees, especially those wintered outside, and when spring reports came in these expectations were only too fully realized. Judging from general reports, I believe that during the winter mentioned there has been the heaviest loss in bees experienced for at least eighteen years.

In addition to the above, the summer of 1899 will long be remembered by bee-keepers as opening up with fairest promises for those bees which wintered. All the conditions appeared to be very favorable to the secretion of nectar, and the careful bee-keeper made every preparation for a large honey crop.

Clover came in blossom and day after day passed without the bees doing much on it. Dry weather followed a prolonged season of favorable weather without either giving a honey harvest. The thistle and linden bloom passed, and nearly all bee-keepers in Ontario had disappointment instead of a honey crop.

In connection with the shortage of honey, it may be well to mention that the above report in connection with the mortality in bees and the shortage of the honey crop holds good for the districts throughout Canada where bee keeping is carried on extensively, and the shortage in the honey crop was equally marked in the United States.

Summing up the above report, we find the following :

1st. The winter of 1898-99 resulted in a largely decreased number of colonies of bees in Ontario to begin the summer of 1899.

2nd. An unfavorable honey season during the summer of 1899, with little swarming and increase of colonies. Other colonies did not gather enough honey to provide the bees with sufficient stores to carry them through the present winter. In many cases careless and discouraged bee-keepers did not go to the expense necessary to provide food for these bees, which will mean the loss of such.

3rd. The shortage in the honey crop of 1899 will leave the market very bare of honey, and it has increased the wholesale and retail price of honey.

This being the case, those bringing their bees safely through the winter should give them every care and attention tending to put them in the most favorable condition for gathering a large honey crop, and whatever honey may be secured should be marketed at good prices.

While entailing a heavy loss in outside wintering the exceptional winter has made our experiments of greater value. Just as the chain is strong only as it is so at the weakest link so it is in the wintering of bees.

The aim and object of the bee-keeper should be to so prepare his bees that he can look forward to their successful wintering with a reasonable degree of certainty. It should not be satisfactory to have the assurance that they will winter through an average season, but we must and can prepare them that they will winter with just as great a certainty as any other stock upon the farm.

In the experiments in wintering bees which we have conducted we have divided them into two leading heads.

CELLAR WINTERING AND WINTERING ON SUMMER STANDS.

We have had distinct and new features introduced in our experiments in connection with cellar wintering, and these cannot be brought too prominently before the bee keepers of the Province, and in fact any country in which similar winters prevail and in which bee-keeping is a department of agriculture.

The system adopted by us in our experiments is artificial heat ; and, in connection therewith, the drawing out of the cellar impure air and replacing it with air from outside, warmed before reaching the bees.

The first cellar in which this experiment was carried on is constructed as seen in Fig. I.

It is a combination of five cellars, or rather a large stone cellar divided into five parts, four of which were used for the bees, and these repositories communicated with one another by means of doors and also by means of openings in the dividing walls, fourteen inches square near the top of the wall, and through the same openings a six inch stovepipe ran. These openings allowed a circulation of air from one room to another, as seen in Fig. I. A stove was placed near the cellar door, which communicated with the

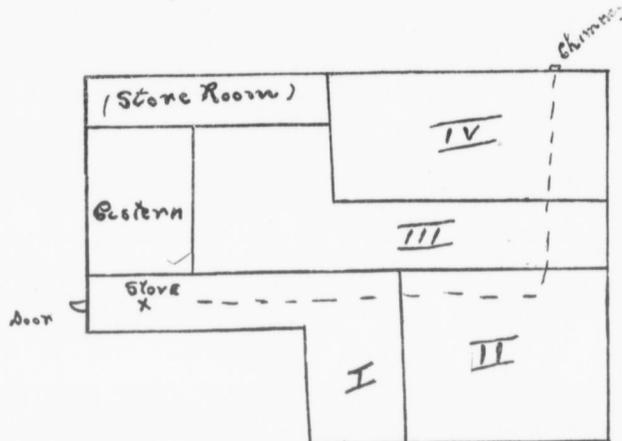


FIG. I.

outside; and through this door the fresh air from the outside had access. The air in its natural course, by means of the openings around the stovepipe, passed from room to room; and finally in the fourth room passed out by means of a similar opening in the chimney—the same chimney into which the stovepipe entered. This chimney has in addition a pipe entering it from the stove used in the living room above. Coal was used after finding wood unsatisfactory. During $3\frac{1}{2}$ months, using 2,550 lbs. of stove coal, the temperature kept in No. 1 and 4 was 46° ; in No. 2 and 3, 45° . The objection to having the air pass from one repository to another was found to be that as it passed from one to another it became more and more impure; however, the results were very satisfactory and much superior to the best known previous methods.

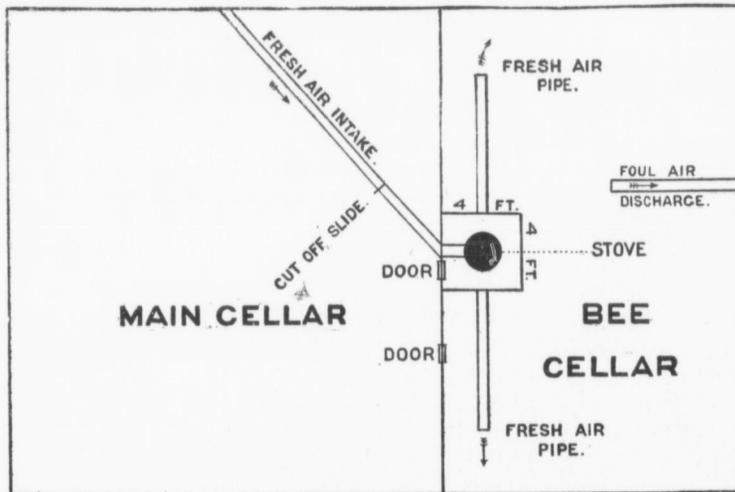


FIG. II.

A more perfect system was then adopted as in Fig. II.

This is a sized cellar; convenience and a less number. The stove and giving a For 100 as a regulator into the opening from a fire mend to bee-ke-

Of the v satisfactory. Outer colonies, two



for two inches of the hive sides a

This is a plan which can be adopted by almost any person having an ordinary good sized cellar ; and after carefully testing this system I know of no better, economy, convenience and results taken into consideration. It would pay any one with forty or even a less number of colonies to winter.

The stove here used was not a self-feeder—a decided advantage—requiring less care and giving a more even temperature.

For 100 colonies the fresh air pipe should be 14 in. in diameter with a cut-off slide as a regulator. The foul air pipe may be allowed to discharge through the cellar window into the open air, but a better plan is to connect it with a chimney ; one having a pipe coming from a fire would be preferable. The plan just given is the one I would strongly recommend to bee-keepers.

OUTSIDE WINTERING WITH PROTECTION.

Of the various experiments in outside wintering the following has proved the most satisfactory.

Outer cases were constructed of $\frac{3}{8}$ inch stuff and painted a dark color, to contain four colonies, two to stand side by side and the pairs back to back, as in Fig. III., with room

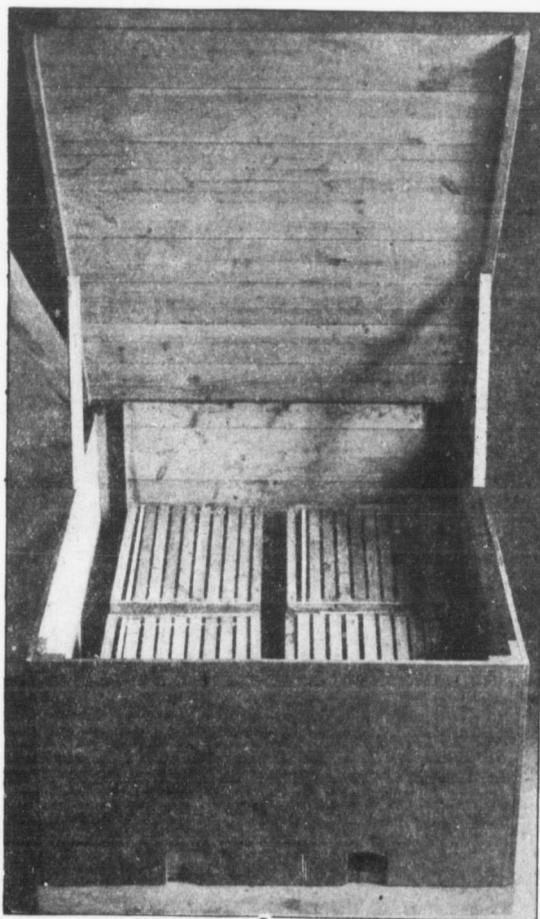


FIG. III.

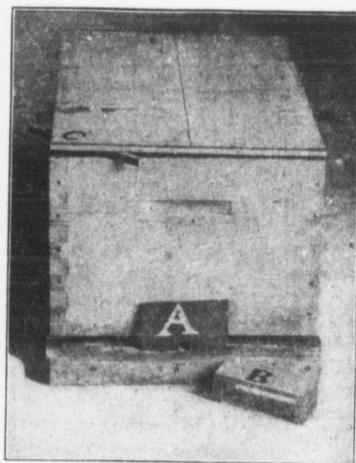


FIG. IV.

for two inches of packing between the hives and the outer case sides, and one inch between the hive sides and backs. At the bottom, sufficient room was made for half an inch of

packing at the front, and a little over an inch at the back, thus giving the hive, when packed, a slightly forward pitch.

The entrances run the full width of the hive, 12½ inches. To prevent the front from completely closing the entrance, the plan indicated in Fig. IV. was adopted.

On the alighting board was placed a bridge six inches long (Fig. IV) the width of the alighting board; under the board and at the end underneath was nailed a piece 7/8 inches square and the length of the board width. When this bridge is placed on the alighting board and the hive packed, it offers underneath a passage for the bees to go in and out on the alighting board and underneath the packing alone. Another important point is a piece of cardboard (a. Fig. IV) six inches wide, an inch and a little more in depth in the centre of the lower edge; a passage one-half inch square is cut in the cardboard. The cardboard is put between the front of the hive and the bridge. When packing, the pasteboard is kept just above the entrance to the hive; this leaves the board projecting 3/8 inch below the bridge. The 3/8 inch projection is a matter of great importance. The bees should be packed before cold nights become frequent, say October 1st, and yet it is not advisable at that time to contract the entrance to 1/2 inch wide; for this reason the cardboard is kept above the entrance. It is allowed to project 3/8 inch below the bottom of the bridge board to allow the bee-keeper, when settled cold weather comes, to pass a long-bladed knife or sharp tool in at the entrance of the outer case and with this draw the cardboard down to the bottom board, thus leaving the entrance to the hive only 1/2 inch wide and deep. This should be done about December 1st or when winter appears to be setting in. The outer covers were removed from the hives; where quilts were used they were loosened, and a block put under the rear corner; for the purpose of illustration the block is put under the front corner in Fig. IV. c., leaving an opening for the air to pass upward from the hive. In about half the number of colonies honey boards 3/8 inch thick were used instead of quilts; they were loosened and a similar block put under one corner. This, too, allows the air to pass upward through the hive. Dry leaves are now packed loosely about the hives, and ten to twelve inches on top, the last five or six inches of top packing being put in about the time that the entrance was contracted. Planer shavings and dry forest leaves were used. I prefer dry forest leaves, especially maple and oak leaves. When the cardboard had been drawn into place at the entrance, a board ten or twelve inches wide was placed in a slanting position against the outer case, protecting from wind, sunlight and snow the entrance in the wintering case.

The loss during the severe winter of 1898-99 was heavy, compared with cellar wintering.

In No. II. apiary the winter and spring loss, May 24th, 1899, stood as follows:

		Alive.	Dead.			Alive.	Dead.
Clamp No. 1.....		3	1	Clamp No. 11.....		4	0
" " 2.....		1	3	" " 12.....		2	2
" " 3.....		3	1	" " 13.....		4	0
" " 4.....		2	2	" " 14.....		3	1
" " 5.....		3	1	" " 15.....		4	0
" " 6.....		3	1	" " 16.....		4	0
" " 7.....		2	1	" " 17.....		4	0
" " 8.....		1	3	" " 18.....		4	0
" " 9.....		1	0			—	—
" " 10.....		3	1			51	17

In No. III. apiary:—

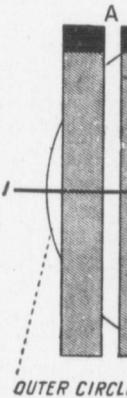
		Alive.	Dead.			Alive.	Dead.
No. 1.....		3	1	No. 7.....		3	1
" 2.....		2	2	" 8.....		4	0
" 3.....		3	1	" 9.....		3	1
" 4.....		4	0	" 10.....		0	4*
" 5.....		4	0	" 11.....		4	0
" 6.....		3	1	" 12.....		4	0

*In clamps Nos. 10 and 14 the top packing had been left out, and, in all probability, during the prolonged seasons of low temperatures, the bees literally starved to death in the midst of plenty, after having consumed the stores upon which they clustered.

- No. 13...
- " 14...
- " 15.....
- " 16.....
- " 17.....
- " 18.....

*In clamps during the period in the midst of

We have had a large number of bees having been wintered measuring 14 inches in protection offered. Some have perished. See Fig. 1. The bees cluster in Fig. 1. a locality where the temperature below zero.



With mild weather for shipment in the entrance was closed. In the season, moved to other hives, and with the aid of the Dominion colonies were packed for their destination.

On account of the weather in connection with

No.	Alive.	Dead.	No.	Alive.	Dead.
No. 13.....	3	1	No. 19.....	3	1
" 14.....	1	3*	" 20.....	4	0
" 15.....	3	1	" 21.....	1	3
" 16.....	3	1	" 22.....	3	1
" 17.....	4	0		—	—
" 18.....	4	0		66	22

*In clamps Nos. 10 and 14 the top packing had been left out, and, in all probability, during the prolonged seasons of low temperatures, the bees literally starved to death in the midst of plenty, after having consumed the stores upon which they clustered.

OUTSIDE WINTERING WITHOUT SIDE AND BOTTOM PACKING.

We have had, until last winter, four years of unbroken success in wintering a hive of bees having the brood chamber in two parts, the first set of frames, ten in number, measuring $14\frac{3}{4} \times 8\frac{1}{2}$ inches, and the upper ten $14\frac{3}{4} \times 4\frac{1}{2}$ inches. As before, the only protection offered was about five inches of packing in a super above the frames. The bees perished. See Fig. V. and Fig. VI. for difference between this hive and the ordinary hive. The great difference is that the bees can communicate through the centre of the cluster in Fig VI., and Fig. V. only through the outside, but even this will not answer in a locality where the temperature remains for a considerable length of time as low as 20° below zero.

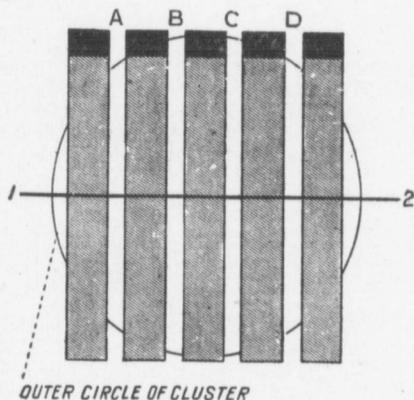


FIG. V.

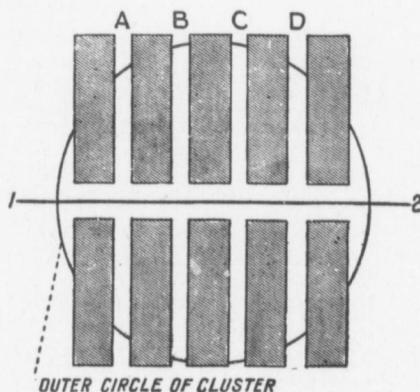


FIG. VI.

With migratory bee-keeping on the increase, a rapid method of preparing the bees for shipment is desirable. Last year's experiments in moving bees with a portico at the entrance was repeated with entire success. The bees were, as during the previous season, moved to fall pasture with the portico entrances attached to the fronts of the hives, and with the same success. In addition, having orders for bees in various parts of the Dominion, including British Columbia and Prince Edward Island, sixty-five colonies were prepared and shipped in the above way, and in every case the bees reached their destination in safety—a very severe test.

COMB AND EXTRACTED HONEY.

On account of the failure in the honey crop no results of any value could be obtained in connection with the production of comb and extracted honey.

STORES CONSUMED BY BEES IN AUTUMN.

Twenty colonies were weighed on Oct. 9th, and again Nov. 5th, to ascertain the loss in weight before putting in the cellar. The weights on No. 69 and No. 30 were lost—they are therefore not taken into account. The results were as follows:

	Oct. 9th.	Nov. 5th.	Loss.
No. 36.....	47	44½	2½
" 71.....	41	40	1
" 34.....	41	40	1
" 32.....	43	42½	½
" 69.....weight lost		47	
" 67.....	45½	42½	3
" 30.....	45	43	2
" 28.....	50	46½	3½
" 65.....	50	48½	1½
" 63.....	46	43	3
" 15.....	51½	50½	1
" 17.....	50	47	3
" 19.....	44	40½	3½
" 21.....	47½	45	2½
" 25.....	39	36	3
" 27.....	42½	41	1½
" 27½.....	41	38	3
" 29.....	42½	38½	4
" 30.....*.....weight lost		40	
" 31.....	41½	39	2½

Eighteen colonies lost 42 pounds. [Greatest loss of any colony, 4 pounds; the least loss, ½ pound; the average loss per colony, 2 pound 5½ ounces.

FOUL BROOD.

No sign of foul brood was detected in the combs built upon foundation made from beeswax injected with the germs of foul brood.

BETTER METHODS OF KEEPING BEES.

In conclusion permit me to impress upon bee-keepers the fact that we have found that large honey yields can only be secured by careful attention to the business. The points in management which require especial care are good wintering, providing plenty of stores during spring and keeping the bees together during the season; increase of colonies should be avoided rather than encouraged.

Too many bee-keepers are content with smaller yields than can be obtained.

R. F. HOLTERMANN,
Apiarist.

NOTE.—This report of Experiments in Apiculture was received after the report of the Ontario Agricultural College had been sent to the printer, and, as it was not convenient to include it in that report, it was thought advisable to publish it in this report.