ANNUAL REPORT

OF THE

BEE-KEEPERS' ASSOCIATION

OF THE

PROVINCE OF ONTARIO

1898.

(*PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE, TORONTO.*)

PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO.

TORONTO
WARWICK BRO'S & RUTTER, PRINTERS, ETC., 68 AND 70 FRONT STREET WEST.
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To the Honorable, the Minister of Agriculture:

DEAR SIR,—I have the honor to submit herewith the nineteenth 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 Guelph, 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 submitted.

Yours truly,

W. COUSE,
Secretary.

OFFICERS FOR 1899.

President,	W. J. BROWN, Chard.
Vice-President,	C. W. POST, Trenton.
2nd Vice-President,	JOHN NEWTON, Thamesford.
Secretary,	W. 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,	D. W. HEISE, Bethesda.
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,	H. N. HUGHES, Barrie.
Ontario Agricultural College,	DR. JAS. MILLS, Guelph.
Auditors,	H. G. SIBBALD, Cooksville. GEO. E. SAUNDERS, Agerton.
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,	R. H. SMITH, St. Thomas.
Representative to Canada Central Exhibition, Ottawa,	J. K. DARLING, Almonte.

Next place of meeting, Toronto.

LIST OF MEMBERS FOR 1899.

Name.	Address.
Armstrong, James ..	Cheapside.
Alpaugh, J	Galt.
Atkinson, W.....	Cheapside.
Brenton, F	Corbyville.
Boomer, A.....	Linwood.
Blais, Adolphe	Glen Sandfield.
Bainard, E	St. Thomas.
Brown, W. J	Chard.
Beaupree, M. C	Forestville.
Calder, J.,W.....	Lancaster.
Comire, A. O., M.D..	St. Francois du Lac, Yam-
Cummer, D. N.....	Florence. [aska, Que.
Chrysler, W. A	Chatham.
Craig, Will. J.....	Brantford.
Couse, W	Streetsville.
Davison, J. F	Unionville.
Dickson, Alex.....	Lancaster.
Darling, J. K.....	Almonte.
Dickenson, Edw. E..	North Glanford.
Davis, F. J	Brantford.
Davidson, B	Uxbridge.
Evans, J. D.....	Islington.
Emerson, Wm	Tansley.
Edmonson, C	Brantford.
Emigh, Martin.....	Holbrook.
Farmer, Thos. W....	Ancaster.
French, Augustine ..	North Glanford.
Fixter, J	Ottawa.
Frith, J. E	Princeton.
Gale, H. E	Ormstown, Que.
Gemmell, F. A.....	Stratford.
Gemmell, John.....	Lanark.
Holmes, M. B	Athens.
Heise, D. W	Bethesda.
Holtermann, R. F...	Brantford.
Hall, J. B	Woodstock.
Hoshal, A. E.....	Beamsville.
Hughes, H. N	Barrie.
Hurley, Jas. J	Brantford.
Johnston, Geo. E....	Bracebridge.
Jeater, Wm. H.....	Kincardine.
Jackman, Sidney....	Bowmanville.
Jackson, Ziba	Lyndhurst.
Kendrick, J	New Dublin.
Kinder, Dr. Jos	Rockingham.
Lowey, R	Cherry Valley.
Longfield, David	Crampton.
Livingston, W. D....	Frankville.
Lee, W. J	Addison.
McKnight, R	Owen Sound.
Munro, J	Munro Mills.
Miller, F. J	223 Dundas St., London.
McEvoy, Wm	Woodburn.
Mansell, M	Athens.
McCarthur, —	Toronto.
Newton, Jno	Thamesford.
Overholt, Israel	South Cayuga.
Pierce, Moses	Brinsley.
Pickett, A.....	Nassagaweya.
Pierie, John	Drumquin.
Post, C. W	Trenton.
Parish, D.....	Athens.
Potter, D. M	Elora.
Patterson, R. L.....	Lynden.
Ross, D. D	Martintown.
Ross, Alex.....	Williamstown.
Robinston, Geo. E...	Hatchley.
Ramage, Thos.....	Richview.
Reaman, Josiah	Carrville.
Shaw, James	Kemble.
Switzer, J. F	Streetsville.
Strangways, Geo. W .	Elora.
Salter, Jno. R	Wingham.
Sloan, W. H	Milford.
Shultz, H. A.....	Clontarf.
Smart, N. J	Collingwood.
Shaver, J. H.....	Cainsville.
Shantz, Aaron	Haysville.
Sibbald, H.....	Cooksville.
Saunders, Geo. E....	Hornby.
Smith, R. H	St. Thomas.
Sparling, J. W.....	Bowmanville.
Smith, H. C	Athens.
Thomas, Joshua	Dracon.
Taylor, Alex.....	Paris.
Vansickle, Lafayette.	Trinity.
Wisner, Isaac G	South Cayuga.
Wood, Geo	Erasmus.
Wood, Samuel	Nottawa.
Washburn, H.....	Soperton.
Whetstone, Josiah ...	St. Marys.
Young, Aaron	Murray.

FINANCIAL STATEMENT.

Abstract statement of receipts and expenditures of Ontario Bee-keepers' Association to December 7th, 1898 :—

RECEIPTS.

Balance from last year	$29 43
Membership fees	118 00
Affiliated Societies' fees	40 00
Legislative grant	500 00
Rebate on stenographic roport	15 00
From sale on books	3 00
	$705 43

EXPENDITURE.

Grant to affiliated societies	$160 00
" Industrial Exhibition	25 50
" Western Fair	10 00
" Central Canada Fair	10 00
Periodicals to members	76 70
Secretary's Salary	50 00
Treasurer's "	25 00
Stenographic report of last annual meeting	64 00
Directors' and officers' travelling expenses and allowance for board attending annual meeting	151 80
Executive, revising and other committee travelling expenses	37 75
Printing, postage and stationery	42 58
Auditors' expenses	4 00
Miscellaneous	2 00
	658 85
Balance on hand	46 60
	$705 43

We, the undersigned auditors, have examined the accounts and vouchers as per above account, and report all correct.

R. H. SMITH,
J. ALPAUGH.

Guelph, December 7th, 1898.

ONTARIO BEE-KEEPERS' ASSOCIATION.

ANNUAL MEETING.

The nineteenth annual meeting of the Ontario Bee-keepers' Association was held in the Council Chamber in the city of Guelph, on Tuesday, Wednesday and Thursday, December 6th, 7th and 8th, 1898.

The President, Mr. M. B. HOLMES, called the meeting to order at 2 p.m.

The Secretary, Mr. WILLIAM COUSE, read the minutes of the last annual meeting, which, on motion of Mr. W. J. Brown, seconded by Mr. A. Pickett, were adopted.

THE PRESIDENT'S ADDRESS.

BY M. B. HOLMES, ATHENS.

It gives me a very great amount of pleasure to meet the bee-keepers of this the banner province of the Dominion of Canada on this occasion. There is a pleasure in meeting because of the very favorable season through which we have just passed, the honey harvest generally throughout the Province having been a good one. Some localities, however, report only a very low average yield of honey. Again there is pleasure in meeting because of the very excellent programme which we are able to place before you. Masters in apiculture from the north and south, from the east and west, and from the republic to the south of us, are to give us the full benefit of the advantage gained by years of study and research. Honorable gentlemen in high positions of trust in the government of this fair country are expected to speak to us. Truly this is a bill of fare which cannot fail to satisfy and please the most fastidious, and I presume the question arises: How can we do justice to this "feast of reason and flow of soul" in the short space of three days, the time allotted for our convention in this city?

The location contributes largely towards making the present meeting a pleasurable one. Guelph, the "Royal City," with its beautiful surroundings and its agricultural college with its most competent staff of professors and teachers, where every branch of agriculture and domestic science and economy is so thoroughly conducted and the principles so well inculcated (each under its own separate and distinct head) that even those who might be disposed to criticise are unable to do so. These, and other considerations to which reference might be made, certainly go a long way toward making our visit to this city a pleasure.

Our Association is moving along nicely, and it is certainly most gratifying to know that the work of disseminating useful knowledge among our members, while at the same time their personal interests are being served, is being so well accomplished. However, as there is an ever widening field before us, the methods at present employed will doubtless be changed and improved as time and circumstances may require, and as "England expects every man to do his duty," so in like manner let every member of this Association stand by the colors, and speak well and only well of the organization which has done so much for the bee-keepers of this country, and in this way help to swell our present membership by the addition of the names of hundreds of bee-keepers who have not as yet

realized the true import of a membership with us. In this connection the recommendation of a lecturer at Farmers' Institutes (the appointee of the Provincial Government) might be worthy of your consideration. In any event, first and last and all the time, let us be loyal to the organization which has for its object the promotion of the best interests of bee-keepers in general. The truest badge of membership, and the best show of sincerity, is a loyalty that manifests itself when there are no selfish interests to serve.

The Inspector of Apiaries has, so far as I have been able to learn, attended to the work in connection with his department in a manner which has been quite satisfactory to all concerned. His report will, however, be submitted for your consideration and approval.

The present prices of honey, with the slightly downward tendency incident to the harvesting of a good crop, will probably have a discouraging effect upon bee-keepers of this Province. The history of the butter and cheese industry of this country would certainly be an interesting and profitable study for all such. When the price of cheese commenced to decline, the dairymen did not for a moment entertain the thought of giving up the business. On the contrary, they decided to keep a larger number cows and to introduce new systems of feeding with a view to increasing the yield of milk per cow, and the result with the "up to date" dairyman is that the average yield of milk per cow has been doubled, and in many instances more than doubled. They did not give up because of low prices, and may we not profit by a study of their movements? Following their example we will keep a greater number of colonies of the very best bees that money can buy, sparing no pains or expense to improve and make the most of the bee pasturage in our various localities; and thus, keeping pace and co-operating with the dairymen, we will do our part in making this fair Canada what it was originally intended to be—"A land flowing with milk and honey."

SPRING MANAGEMENT.

By H. B. Sibbald, Cooksville.

The subject assigned to me is spring management. Perhaps the first consideration for those of us who winter our bees in the cellar is, when to set them out. I would say as early as possible after the middle of March. A few years ago, a month later was considered right. But, from experience, I believe better results follow earlier setting out. We save a few colonies that might not have stores to last until the middle of April—some that are affected with dysentery, and any that are restless—by giving them an earlier fly and earlier attention.

Next comes how to set them out. Each hive ought to be placed on the stand it occupied the previous summer, for the following reasons: They remember their old location, and will return to it if placed on any other stand, thus mixing up with other colonies, causing discontent, swarming out, queen-balling and general disorder and loss. For four seasons I have practiced placing them on their own stands, and have not had any of the above mentioned troubles. Nor have I lost a single queen in the spring. Four years ago I felt a curiosity to know how my bees had wintered, and also wished to have their company in the yard. It was a fine sunny day in March. So I accordingly entered the cellar and carried the first hive out, placing it on a nice dry stand in the centre of the yard. They soon commenced to fly out, and I watched them with interest and pleasure, as they flew so strong and healthy. But I soon noticed quite a cluster on the front of a corner stand, and I began to wonder what caused them to gather there. Then I remembered that this was the last hive carried in, and so belonged to this very stand. To further experiment I brought out the next hive and set it on the corner stand. When the bees had gathered they at once entered, but did not seem satisfied, but

the bees that flew out surrounded the stand next to it where they belonged. I took the lesson, placed each on its original stand, and as I carried the remainder out followed down that row up the next, and so on until I had every hive where it was before, without the trouble of numbering hive and stand, as some advocate and practice.

The next important work in connection with setting the bees out is examining them. This I have reduced to a minimum, by having each hive contracted on five or six combs the previous fall by taking out four or five of the undesirable combs and placing a division board beside those remaining. Thus I have the bees snug and tight, clustering while in the cellar right down to the bottom board, and where they can be seen plainly by holding a candle close to the opening at the back, where the hive is blocked up $\frac{3}{8}$ or $\frac{1}{2}$ inch off the bottom board.

A few days before setting out time I go through the cellar with a candle and take a peep in at each hive. If they are clustering quietly, the bottom board clean and dry, I place a mark on the hive indicating that they are all right and need no examination. Thus I have to examine only the few that are uneasy, or those in which the dead bees have not been cleaned off the bottom board—perhaps only ten or fifteen out of say ninety or one hundred hives. This is a decided knock in the head to the robbers. They do not get any snap that day, and attend to legitimate business. I might just say that when carrying them out if I notice one unusually light I mark it to be examined also. Thus we have eighty to ninety per cent. with the propolised quilts undisturbed, air tight at the top, contracted, and, as I consider, in the best possible condition for future prosperity. After placing entrance blocks and sun-caps on each hive, I leave them alone for nearly a month until the young bees are hatching nicely and pollen is coming in freely, then I have a general examination, looking into each hive carefully, but quickly, noticing the brood, honey supply, and in fact the exact condition of each colony.

If the bees do not cover the combs, take one or two away, only leaving those that will be well covered by the bees. Crowd the combs very closely together, brood in the centre and put a well filled comb of honey on each side. Place a comb or two containing honey and pollen outside of the division board. (There ought to be a bee space underneath the division board so that the bees can come around and carry this food into the living apartment.) This stimulates brood rearing, keeps them at home contented on windy, rough days, and is a perfect assurance against starvation. It also aids in the more generous feeding of the larvæ, and keeps the bees healthy and strong. I believe they look upon these combs as not belonging especially to them, and the more eagerly and joyfully carry it around, placing it in cells just above the brood uncapped and ready for present needs. A constant supply is kept in this way until they occupy the entire hive, and there is no further room for it.

During the willow-bloom they may need more room. The brood should not be spread. The additional combs ought to be placed just outside of the comb containing the honey, and outside the brood nest, never adding more than one or two at the same time, and repeating the operation from time to time until the whole hive is full. I generally use combs that the honey has been taken from, and that has been cleaned up by the bees outside of the division board. They are more likely to be filled right up to the top bar with brood. Always keep them crowded, and if anything short of room, so that the brood is well covered and cared for, and the queen looking for more cells is compelled to lay in the very corner ones, thus giving solid combs of brood as we go along.

During the early part of fruit bloom hives ought to be cleaned, all burr-combs, barr-combs and propolis scraped off the frames and hive. All queens ought to be clipped; this is the most convenient time to find them. Choose a fine warm day when most of the bees are engaged in the trees and the hive is sparsely occupied. She can be detected readily, and the work of searching for her is greatly reduced.

At the close of fruit bloom I aim to have each hive contain eight solid combs of brood and two of honey during the week or ten days of dearth between fruit bloom and clover. Place the combs containing the honey in the centre of the brood nest, one first, followed four or five days later by the other, the cappings having been

scratched, so that they at once move the honey, feeding their brood more generously. This will stimulate and encourage the queen so that she at once deposits eggs in the cells as they are thus emptied, making ten combs of solid brood and the hives ready for supers. By this plan the old honey and dark fruit-bloom honey is actually traded off for brood, and the first extracting is all new, white, marketable honey.

Of the work in the honey-house and work-shop I need not take your time any more than to say if one has a large number of colonies to manage, or other work to attend to through the busy season, have all the preparatory work done you can, such as new hives ready, supers cleaned up, barrels and tins washed, extractor, bee-smoker and all other appliances in readiness for the rush of the busy season.

Mr. R. F. HOLTERMANN, Brantford: I happen to have seen a good deal of the comb honey which Mr. Sibbald has produced; I have seen it time and again on the Toronto market, and I must confess that from that standpoint I received an exceedingly good impression of Mr. Sibbald's ability as a beekeeper. I have never seen anything, and I have seen it dozens of times on the Toronto market, which would not be a credit to any beekeeper. And I wish to say that particularly because I think, coming from this standpoint, that it always adds to the value of the paper. I know that Mr. Sibbald is modest, but I would like to emphasize that point. In his management there are many points which are valuable—but one in particular which I believe would bear discussion, and that is the converting the honey which comes in early in the spring, and is dark and inferior, into bees. That is a point in successful management. There are so many who will not do that, and the result is not alone that they do not get the bees for that honey, but that honey is taken up in the upper stories of the hive where, for comb or extracted honey, it deteriorates the value. I would like to ask Mr. Sibbald a question, whether under all circumstances, he advocates the clipping of queens' wings?

Mr. SIBBALD: I do; before the swarming season.

Mr. F. A. GEMMELL, Stratford: Did I understand Mr. Sibbald to say that it was necessary to put them on five frames wintering in the cellar?

Mr. SIBBALD: That is what I try to do.

Mr. GEMMELL: Do you not think that for wintering in the cellar they would be just as good on eight or ten frames?

Mr. SIBBALD: No, I do not think so.

Mr. HOLTERMANN: For all men keeping bees, under different conditions, would you advocate the clipping of wings?

Mr. SIBBALD: I have not considered it from any other standpoint than my own.

Mr. HEISE: What injury would come from clipping under any conditions?

Mr. HOLTERMANN: Of course the clipping of queens' wings certainly comes under spring management. You know there is a diversity of opinion about the matter. I will tell you the conditions under which I do not like to see queens' wings clipped. If the beekeeper is not at hand always to catch the queen when she issues from the hive, then she is very likely to be lost, when many a swarm would not lose the queen if her wings were clipped and the beekeeper were there within a few minutes to get the swarm.

Mr. GEMMELL: I think in the matter of clipping queens' wings everybody has to use his own judgment. Mr. Sibbald advocates the clipping of queens' wings, so do I, and I guess if a majority of hands were shown here they would favor it. You have to use your own judgment. I would like to hear what Mr. Hall has to say about bees going into the cellar on five frames instead of ten.

Mr. J. B. HALL, Woodstock: If they are on five frames in the apiary I prefer to put them in the cellar on five frames; if they are on sixteen frames in the apiary I prefer putting them there on sixteen frames. I prefer doing things with the least labor. As I told you before, I was born tired.

Mr. C. W. Post, Trenton: I like a temperature of about from 42 to 45°, but if there is a draft and much cool air coming into the cellar to keep the temperature down, I would rather have the temperature in the cellar a little higher rather than to go lower.

Mr. Hall: I would like to ask our friend who wrote the paper on spring management why he prefers all his queens clipped. Under all conditions I favor clipping queens.

Mr. William McEvoy, Woodburn: I am in favor of clipping queens under all circumstances.

Mr. A. Boomer, Linwood: I have read a good deal about setting bees out just exactly where they were before; I have read of those who believed in it and those who did not believe in it. Last year I wintered very largely in the cellar. Previous to that I wintered largely outside; and I put the bees in, not having any help. I put them in somewhat hurriedly, and then it was a consideration to me in the spring in putting them out whether I was going to have difficulty in mixing up. I took out about half of them one day to see what the effect would be, and spread them somewhat over the yard, and I have to say here now that I found no such difficulty as my fried has intimated in his paper. The bees kept very well to their own hives, and there was no scattering around that I could discover. On looking them over afterwards I found that they were in very much the same condition as they came out of the cellar. If some of them had strayed to other hives there were some had come the other way perhaps. At any rate I could not see that there was any difficulty in that respect whatever. On setting out the rest I found they kept very well to their own hives, and upon the whole I could not see that there was anything worth the trouble and bother of marking the locations and the hives. Not a single colony that I wintered in the cellar had died, and not a single one of those colonies was queenless in the spring, and every one of them came safely through the spring, whilst one or two that were wintered outside lost their queens. Now, as to the clipping of queens, I have had no experience further than in the purchase of queens, and so far as my experience with clipped queens goes it is not favorable. I have found that the bees superseded the clipped queens before they were two years old, almost as a rule. In those colonies into which I introduced clipped queens, and knew they had been safely introduced, they would swarm the second or third year at least, and the queen would be an unclipped one. I know that a queen I bought a year ago this spring, and was guaranteed to be one year old then, was superseded this summer, and it disturbs the hive considerably to have them supersede the queen. Then again, I have had no trouble whatever with absconding swarms. Having a considerable number of small trees around the yard I have not found any colony to swarm without first lighting, and it seemed to me to be less trouble to take care of these swarms than to watch the clipped queens. So that so far, from the experience I have had, I am not in favor of the clipping of queens. Otherwise the paper my friend here has read is certainly very interesting to me. There are many points that I think worthy of note, and I shall think of them, and read his paper again when it comes into print. There is just one thing he had no remarks about that I will touch upon, and that is the removal of drone comb from the hive in the spring. I presume he is careful to see that there is little drone comb left, but he made no remark as to that. On looking over the colonies I try to replace any drone comb there is with good comb, and in this way to keep down the drones as much as possible, because I fully believe that the raising of a lot of drones stimulates swarming. One season when I carefully removed drone comb I was not troubled with swarms at all, and yet my young friend here, I suppose, has had more experience and more instruction on bee-keeping than I have had myself, so I would not like to criticise his paper too closely. I appreciate it very much.

Mr. Hall: I can say in Mr. Sibbald's favor that I have kept bees for twenty-three years past, and I have been a clipper. I have never had but one imported queen live the second year. I attribute it to putting them in a shipping cage, and checking their laying qualities. Last year we had a queen in its fourth year, and it died. If you had offered in the spring ten dollars for that bee you could not have her. She was clipped at six weeks old. That is the only thing I differ in from that gentleman. Never open a

lve of bees from the top until the fruit blossoms. You may do some good, but you will a great deal of harm. You will come into clipping. I was laughed at twenty years ago for clipping; I stood that laughing. Clipping their wings keeps them at home, and they cannot get off whenever they choose. My advice is keep on clipping.

Mr. GEMMELL: I do not think it is fair to say that clipped queens are superseded any sooner than any other. Take your young queens, and clip them and put them right back in the hive again, and then see. We all know that if you buy a queen from any part of the country, and introduce her into the hive, she does not live as one who is born in the hive. Queens should be caged in the hive a day or two before they are sent away.

Mr. HOLTERMANN: I would not like to be understood that I think the clipping of the queen would result in superseding. I believe a great many think that queens are not superseded when they are; when they clip them they know it, and when they do not clip them they do not know it. I would not like to lay down a universal rule for clipping. Where a person has four or five swarms they can keep their eye on those swarms to a certain extent, and nearly always will catch a swarm, when, if they are clipped, and the queen comes out and she is lost or goes back, they will destroy the queen; and then that bee-keeper rests under what is false security, for he thinks he will be able to get his swarm, when as a matter of fact the young queen is going to go out. I would like to ask Mr. Boomer, do you set out your swarms a few at a time or all at one time?

Mr. BOOMER: I set out some 30 one day and the same number the next day. I set them all out at one time, in the morning.

Mr. HOLTERMANN: I set out my bees not all at one time, and I try to set them out when they are not going to fly immediately, and I think that makes a great difference. If you set out your bees all at one time, the result is they do not locate themselves, and in this question of bee-keeping we want to get at the bottom of the business, and we will find our differences are not as great as we imagine.

Mr. J. D. EVANS, Islington: When bees swarm, and the bee-keeper is not there and the queen gets lost or destroyed, how does the keeper prevent the first hatched queen from going away with the swarm before she is old enough to be clipped?

Mr. A. PICKETT, Nassagaweya: I am listening to this matter of handling bees in the spring with some interest, and with profit. My method of setting out bees of late years has been to set them out towards evening, so that they are calmed down and quiet, and when they fly out the following day they go out as calmly as they would any other day, and there is no excitement, or not that excitement which prevails when they are set out in the early part of the day. Like many others we are anxious to see what they look like in the spring, and when a fine day comes are eager to set them out. Around one hive you will find there was quite a large number flying, and perhaps another one with quite an amount of disturbance was not flying scarcely at all. To my mind the bees were changing position in many cases and were flocking to the front of other hives, or in other words to the old stand whence they were carried. And I think if we note the matter carefully we will see at once that it is wise to put them on the stands from which they were removed in the fall, and all that mingling will be done away with, and we will have less bees lost, and the result will be that they will go forward with their work in harmony and with a will. I approve of the method of setting them out in the evening, as I said, because of the fact that this mingling is done away with. The question that Mr. Evans asked I am not prepared to answer just now.

Mr. JOHN NEWTON, Thamesford: I was very much pleased with the paper read, and I thought at the moment that I could not say a word on the clipping of queens. Of course I have been in favor always of clipping queens, and there was just this drew my attention to it last spring; I was not able, on going over my hives to find all my queens, and for that reason I think I have lost three swarms this season, the only time I have lost a swarm since I kept bees, and I know, had those queens been clipped, and I not been there, I would have had the bees. It is the bees we are after; we do not miss a queen at that season. It is the time we are looking forward to our honey crop, and we must try to save the bees.

Mr. EVANS: When a queen is gone the other queen is hatched, and that queen, I understand, will possibly swarm before it is mated. How would you guage the proper time to clip that queen's wings—before it goes away with the swarm and after it is mated? I am speaking, in this case, where you have an out apiary. I want a young queen that will stay in the hive in place of the old queen, and I want to know how you are to keep her there.

A MEMBER: Ten days from the time the queen emerges she will begin to lay; that is the rule.

Mr. EVANS: What are you going to do with that ten days if she wants to swarm before she lays?

Mr. HALL: We will suppose colony No. 1 swarms to-day, and it goes back; it will swarm again to-morrow. If the queen is lost they will go back and will not swarm again until the first queen hatches; that you are aware of. I go out once a week, and 99 times out of 100 there is not one queen hatched out in seven days and flying away. When I open that hive I know whether there is a queen hatched or not. If the old queen is there, there are eggs, and if she is not there are no eggs. Therefore, I know the queen is lost; and if she is lost I prevent any further increase from that stock of bees.

Mr. HOLTERMANN: That queen when she deposits eggs in the cell, and that colony has had the swarming impulse, she may fly out just as quickly as she had lodged one egg in the queen cell.

Mr. HALL: It has never been my experience to have a young queen swarm the year she is born. A young queen will not lay her egg and swarm. Some one has said they will swarm, and if they do not return you will then, of course, lose your queen. That is immaterial; as long as they have wherewithal to raise a queen they are quite at home. By having your queen clipped they come back. They may swarm in two days; again they come back; they will not swarm out again—mother won't go.

Mr. EVANS: Am I to understand that after the old queen is lost, and all the queens destroyed but one, and there is only one queen in the hive, there is no danger in their swarming?

Mr. HOLTERMANN: If she begins laying.

Mr. HALL: They have no swarming impulse then.

Mr. HOLTERMANN: You have practically nothing after clover, but where you have buckwheat that makes a difference.

At this point in the discussion Mayor Hewer and Alds. Howard, Nelson, Kennedy and Peterson came in and addressed the Association in warm words of welcome.

Mr. MCEVOY: There is another point I had forgotten. Where the garden is close at hand they do not want their queen in their neighbor's garden, and if they clip them they will not have to go after them. If they have wings you have to hive them within a reasonable time.

Mr. JAMES ARMSTRONG, Cheapside: If I understand the thing, if you clip the queens they will come back without any confusion at all.

Mr. HOLTERMANN: I think it is much better not to have any swarms in the yard at all. We have had seven and eight at one time this year, and I will tell you how you can prevent it. You have all seen a description of Taylor's Swarming Device. The moment you see your bees coming out, or before the queen issues, you put this at the front of the hive. It is practically a cage. The swarm issues into this, and perhaps in the next minute you have that adjusted, and another comes out. You put another at that, and you can have eight at one time. You can separate all your bees; you have not to look after your clipped queen at all. After a swarm issues you go to work and take off Taylor's Swarming Device (there is a cloth at the mouth of it) and close it up tightly.

Mr. MCEVOY: What would you do where a hive is raised from the floor an inch or an inch and a half?

Mr. HOLTERMANN: I would have some better system. A child who cannot catch a queen, who cannot see it, can adjust the catcher, and they can be left there all day if you like. Some have not made a success of Taylor's Swarming Device. If you attempt to hive your bees in the new hive, as soon as they are out of their hive they are going to take wing and leave it instead of going into the new hive; but if you allow them to stand there and cluster, and then put them in the new hive, you have not any of those difficulties.

Mr. GEMMELL: I have seven or eight of them in the yard, and I never mind the first swarm, but just as soon as I see the second coming, up goes the cage. I carry them into little shop where it is shady, and after half an hour if I want to use a catcher I use it. I remember hiving eleven swarms from half-past ten to twelve o'clock, and not two of them were in the air at the same time. It saves trouble and saves mixing up. I have used those catchers for some time. I have them standing at different places through the apiary, and when I see a swarm coming I look for the first catcher, and it is clapped on.

Mr. J. K. DARLING, Almonte: The discussion started on clipping queens, and has wandered off to something else I think. As Mr. Hall says here, I am a clipper. I was not at first, but I have clipped the queens for a number of years. I was forced into it by a very disagreeable neighbor, and I do not know that he ever did me a greater favor in his life. He has saved swarms for me that I would have lost if I had not clipped. I lost those that issued with unclipped queens in several instances Friend Hall here says that if they come out the second time they will stop at home.

Mr. HALL: No, sir, after the third time. Three times and out.

Mr. DARLING: Well, I had them seven times, and out.

Mr. HALL: Did you put them back in the brood chamber?

Mr. DARLING: It was a new swarm, and they had been in for a time. It was a Jones' hive, and I had, I think, four supers on top, working on the principle that if we give them room enough they would not swarm. I have had them leave the hive after the young queen hatched out. I have had them leave the hive without a queen. I found the hives queenless, because the queen did not go back; but the bees came out all the same, and left the hive without a queen. I believe in clipping every time as soon as they begin to lay. I do not think they are superseded any sooner on that account, because one year I had one hive hatch out one queen after another; they were young queens and could not keep the colony up to its normal strength. With regard to their becoming dissatisfied with the queen coming out, I have had them where I captured the queen and put them back again, and the old bees drove them out. They will do the same thing with queens whether they have wings or not.

Mr. HALL: Our friend is talking about clipped queens in hivers or swarm catchers. In an apiary of 225 colonies of bees we had in three days eighteen swarms each day, and on fourth day twelve swarms, sixty-six in all. We had no swarm catchers, we had all clipped queens, and we had not hard work. We let the queens into the cage, the bees returned, and we let them stay there till we could attend to them. We had no means of catching them, only in clipping them. I have had as many as eight of these swarms hanging together. The queens were caged, they didn't all want to get into one hive, neither did they want to go into any hive, but they came back to their own stand. The chief object of clipping queens is to keep a record of their age, and to keep them from going to the woods. If you contract your brood nest they are very apt to be dissatisfied with it. If they try several times and cannot get off they will then go to work, and with clipped queens you can do that with them, but with other queens you cannot.

Mr. NEWTON: The question of clipping queens ought to be just about threshed out now. I heard a question asked Mr. Sibbald, if he cut the drone comb out in the spring. and the thought struck me how does that brother hive his bees. I think it is a point we ought to have some discussion upon. As far as mine is concerned I do not have any drone comb to come out in the spring. I very rarely look for it because in hiving a swarm I contract my hives to either five or six frames, and therefore have very little, if any, drone comb at all.

Mr. ATKINSON: There is one question I would like to ask concerning the clipping of queens' wings. Do the gentlemen who practice that put back the queen into the old hive? Say, for instance, there is an old swarm of bees with a clipped queen—do you take that swarm and return it back to the same hive without taking out the cells?

Mr. HALL: Never.

SUMMER MANAGEMENT.

By W. J. BROWN, CHARD.

Away down east, in the county of Prescott, my little apairy is situated, composed of about 100 colonies, sometimes more and sometimes less. It covers an area of about 120 feet square. I have a few of the Langstroth hives (eight-frame), but the majority of my hives are the "ten-frame gallop." I prefer the ten-frame hives, as they give me better results from year to year. They usually come out best in the spring from their winter quarters, and give a larger "first swarm," which is about all the swarms I have any use for, from each colony.

To make a successful summer's work requires that everything must be right the three preceding seasons, viz.: for autumn, plenty of stores of honey (as I have no use for the sugar barrel in my bee yard at any season of the year), and a good prolific queen; and for winter a proper repository, perfectly dark and quiet, with a temperature ranging from 40 to 45 degrees. In the spring see that each colony has its queen and enough stores to carry them through until the honey flow begins.

My hives are placed in rows of about 20 in each row, all facing the south. In the orchard the grass is kept down by the regular running of the lawn mower between the hives in every direction. At the commencement of the clover honey flow, when the combs begin to whiten along the top bar, and the bees begin to show signs of wanting more room, I then put on the extracting supers, as I work chiefly for extracted honey.

The supers are duplicates of the brood-chamber. When the supers are put on at this time I do not experience any difficulty in getting the bees to go up to work in them.

When the combs are about two-thirds sealed I commence to extract, and by the time I get over the whole yard the last combs are pretty nearly all sealed.

I start with a set of empty combs in the comb-basket, and open up the entrance (if not already done), contrary to the methods of some eminent beekeepers, puff in a little smoke, remove the cover and propolis quilt, puff in some more smoke, remove the frames that are sealed sufficiently for extracting, leave the rest and fill up the super with empty combs from the comb-basket. All this work is to be done as quickly and as quietly as possible, so as not to jar or annoy the bees. Then cover up the hive, and carry the combs to the extracting room, there uncap, extract, and then go to the next hive to be operated on, and repeat as with the first—this to continue all day long.

A stove is usually kept in the extracting room, and a temperature is kept up to 90 or 100 degrees. The honey is drawn from the extractor in sap cans, and emptied into the straining can, which is set on a bee-hive or other suitable box. It holds about 350 pounds, with a top to draw off the honey.

The honey is strained through common straining cloth, and when it is necessary to remove the honey from this can, it is either emptied into a large tank that holds 600 pounds or else filled into suitable packages for market, which, with me, are tins of the following sizes, viz.: 3 lbs., 5 lbs., 10 lbs. and 50 lbs.

I like the 3 lb. flint-glass sealers, but some customers find them a little high in price.

I endeavor to grade my honey. (The speaker then produced a sample.) At the close of the honey flow I remove the supers and stack them up about 50 yards from the apairy, after extracting (removing one frame from each super), so as to give the bees free access to the empty combs, to clean them up for the next season.

I might here say that for the last ten years, I put my bees into the cellar on the following dates: 1889, Nov. 4th; 1890, Nov. 6th; 1891, Oct. 28th; 1892, Oct. 11th; 1893, Nov. 8th; 1894, Nov. 8th: 1895, Nov. 4th; 1896, Nov. 13th; 1897, Nov. 11th, and 1898, Nov. 2nd.

In conclusion I would add that there is nothing that the old saying "cleanliness is next to godliness" applies more forcibly to than to beekeeping the whole year round.

Mr. ARMSTRONG: I think Mr. Brown has given us a very fine paper, but there are a few things I do not agree with him on. The first thing I notice is having his hives all in rows. That is something I used to do, but I have dropped that. Instead of putting them in rows, I put them in clusters, or I put them in pairs. I do not quite agree with him about the extracting. I do not generally extract till the season is all over. I generally have supers enough so that when one is full I take and raise the super up bodily and put another empty one in under it with full sheets of foundation; or, if not, I put full combs if not full sheets of foundation. If they need another one I do the same. I leave my whole crop of honey there until I am ready to extract it. I have my honey all there, and I think I get a good deal better honey, and I have no trouble in ripening my honey afterwards. Then I extract the whole crop. I very often use the Porter Bee Escape. I can take off maybe 20 or 30 supers to-morrow. I just take my wheelbarrow up alongside of my hives, and I have two hive boxes that hold eight frames each, and I just put my combs right in there, and I wheel them right alongside the extractor into the honey house without lifting them at all. That does away with all this lifting. I just take it right up alongside the uncapping can, and slide them off. If the season is over certainly, I leave them in the honey house until towards evening, and then I return the empty combs and have them clean them out, and leave them there until such time as I go to examine the bees to get them ready for winter, and my combs are all clean and dry. That is all I do with them. That is one thing in this paper I don't agree with.

Mr. MCEVOY: You just take the top story right off?

Mr. ARMSTRONG: Yes. What I had reference to was not when I take them out comb by comb, but when I take them off as a whole with the Porter Bee Escapes. I take the full supers off—as many as I can get on the wheelbarrow.

Mr. NEWTON: I would just like to ask Mr. Armstrong if he uses a stove like Mr. Brown. In our locality if we were to leave our combs over night with the Porter Bee Escape on we would be unable to extract the honey. Mr. Brown says he uses his for a variety of purposes, because he says when he takes the honey to the house he keeps the temperature at 90°. Mr. Armstrong would have to use it for warming the honey up for the purpose of extracting it, because we could not do it if they stood over night with capped combs.

Mr. ARMSTRONG: I had no difficulty with leaving them over night. In some cases the honey would be toughish, and in that case I have a stove in my honey house.

Mr. GEMMELL: If you take your honey out in July or August have you to heat it before extracting it?

Mr. NEWTON: Certainly. I do not think any one can extract it without the honey stringing out, and I do not want it all over me.

Mr. BROWN: I think there would be no daubing if it was left until cold with me, particularly if it was clover or basswood honey. I find if that is left over night it will stick and become as sticky as mud; but at the last extracting, when the buckwheat honey is coming in, it is usually thin, and suppose it does stand over night or over a week, it makes very little difference—you can uncap it supposing it is cold—but with the clover honey it becomes too thick.

Mr. HOLTERMANN: Do I understand Mr. Brown to say the buckwheat honey is thin?

Mr. BROWN: Yes.

Mr. POST: I have had buckwheat honey as thick as any honey I ever saw.

Mr. BROWN: I am living in a buckwheat district, and I have harvested buckwheat honey for sixteen years, and I never could get it as thick.

Mr. DARLING: I have had buckwheat honey average fourteen pounds to the gallon.

Mr. MCEVOY: These men are all right.

The PRESIDENT: Do I understand you to say they are all right, and all wrong?

Mr. MCEVOY: As a rule, I say, it is not as thick as clover.

Mr. HOLTERMANN: I do not think anyone has handled as many samples of buckwheat honey as we have from different dealers, and I was a little bit surprised at the statement of Mr. Brown. I believe if you get a sprinkling of buckwheat honey in with other honey then that holds good, but I believe the buckwheat honey is more difficult to remove from the comb.

A MEMBER: Mr. Brown and Mr. Holtermann live in two different districts of the country.

Mr. SPARLING: My experience is the same as Mr. Holtermann's.

Mr. DARLING: I have had buckwheat honey so thick that I could lift a pound and a half on a spoon.

Mr. NEWTON: I do not believe in that way of extracting, leaving it till it gets cold. The way the price of honey is to-day I do not think it pays Mr. Brown or anybody else to burn wood to warm it up. I just rose to say that I agreed with the discussion as to thick and thin buckwheat honey. I believe the season has a great deal to do with it. I know if the season is dry we always have a much thicker and much better quality of honey than we have in wet seasons, and it is the same with buckwheat honey as with other honey.

Mr. HOLTERMANN: What is the object in not extracting it after you take it off the hive?

Mr. MCEVOY: We cannot always get the time.

Mr. JACOB ALPAUGH (Galt): There is another point in Mr. Brown's paper. If we could all have plenty of top stories so as to keep adding as the bees want room, and never take in until the season is over, and then take the honey and set it in a warm room for a certain length of time, we would have a better class of honey.

Mr. ARMSTRONG: I may say here that the season with me is over by the 1st of August. When the thermometer is at 80° or about there you have no trouble in extracting.

Mr. HOLTERMANN: Even if we do make bee escapes, and do not mind how many we can sell of them, I want to say that I am a little surprised at the use that many find for them in extracting honey. You smoke your bees, and you know they rush down. If you will hurry and take out your comb and give them a little shake before they get back, and put back your combs, I do not understand how any man wants to be troubled with a bee escape after that. Then, if I could not take the honey all off at one time I would just take off part of it and extract it as we go along. It is true if you keep your combs in a warm room the honey will ripen. If you have a place where you can keep the temperature up, then it is all right, but if you have not, the quicker they are extracted the better.

Mr. FRITH: If the discussion on this part of the paper is over I would like to ask Mr. Brown a question. He hinted at the quantity of stores sufficient to carry the bees over until white clover. Why does he require that in his locality?

Mr. BROWN: I think that is a little oversight. I said "until clover bloom," but I said later until the "honey flow." I did not mean that they should have sufficient stores when set out in the spring to carry them through until the clover honey flow, but until there would be sufficient honey coming in to carry them through.

Mr. FRITH: The reason of asking the question is this: We find there is quite a difference in the spring flow south of this district and the latitude north. Mr. Brown being north of this we would suppose the spring flow would be somewhat different to the flow south of this. We sometimes get large quantities from fruit bloom in my locality before the white clover comes in. It was brought out at our Oxford convention that those north of us do not get the quantity of honey in the spring that we do, and it has quite a good deal to do with the efficiency of the bees at the time of the big honey flow, and I thought Mr. Brown had something of that in his mind when he made that statement.

Mr. BROWN: I would simply say that we have very little flow until the clover comes in. We generally have more or less, but nothing of a good flow.

Mr. HOLTERMANN: How about raspberries?

Mr. BROWN: We have a small quantity of wild raspberries. I live in rather a sandy district, and we find some of our old farms growing sorrel in place of clover. I find that in a field of sorrel the bees work on that as strong as they would at a field of clover during the time it is in full bloom, and that carries them right up pretty well to clover bloom. We have some wild bloom and some fruit bloom, but the main-stay before fruit bloom is sorrel.

Mr. DARLING: In Mr. Brown's locality and mine we have very little fruit bloom. True, we have some wild blooms; apples are not a success with us; we cannot get peach trees to live, as is well known. Small fruits bloom well; they are not much cultivated. Wild fruits in the rougher regions are somewhat plentiful—raspberries and the like of that. But I am not aware of the bees doing as well on any one thing as they do on the dandelion. I had honey stored from dandelion one year, so much so that I took some from the bees. It was not very bad honey, but it was not a white honey by any means. This year I discovered a lot of bees working on the white oak, but I do not know whether they got any honey.

Mr. HOLTERMANN: Have you not got a lot of wild cherries in your vicinity?

Mr. DARLING: Not a large quantity.

Mr. HOLTERMANN: Do you find the bees work well on what there is?

Mr. DARLING: I could not say. But about the time the hawthorn is in bloom there is a very disagreeable perfume arises from the hive, and I fancy it is from the honey gathered from the hawthorn. The honey is not offensive to the taste, but you would think there was something foul in the hive. A year ago last spring I set out my bees earlier than ever before. They were late getting into quarters last fall, and I thought about that when Mr. Brown read dates of putting his in during the last ten years. My bees were not put in last year until after our convention, and I never had my bees come out better. I do not think I ever had them in stronger condition, or better prepared for gathering white clover honey, but for some reason I did not get it though we had abundance of bloom. The two colonies I put out on the 11th of March seemed to do so nicely that I thought it was just the thing, but for some unaccountable reason they went back until almost without exception they were a failure as honey gatherers this summer. Those put out later on did far better. I had less difficulty with bees set out on the summer stands than in other years. I did not put them on their own stands either. They say one experiment does not confirm a fact. I tried experiments one way and another with the bees, and I could not find out that my bees remembered where they had been the year before; and what mixing I had took place a week or ten days after I took them out of the cellar.

Mr. FRITH: Was there a strong wind blowing when this occurred?

Mr. DARLING: No.

Mr. FRITH: I find when there is one going that they seem to go with it.

Mr. DARLING: They work against one and not with it. I do not know whetherit was this year or a year ago I noticed in one corner of the yard the bees were getting too strong altogether. I dispersed them with smoke, and they went right over to the opposite corner and gave me difficulty there. So it was not against the wind altogether. I think the first corner was the east corner and the other the west, but they seemed to have a desire to congregate and go into hives they did not belong to.

Mr. FRITH: Mr. Darling said that his bees worked on white oak this spring. There is a good deal of spring honey dew, something new to this country, and it just struck me that perhaps instead of working on the bloom of the oak they were working on the deposits of the aphis. I have been given to understand that some people are anxious with regard to the wintering of bees on account of the honey dew. I could not find any spring honey dew in my section of the country, and very little fall honey dew this year.

Mr. ALPAUGH: Living right alongside of an open woods I might say something about oak and honey. My bees work well on oak bloom, but I do not like the honey as well as the hawthorn. I have failed to notice any odor as mentioned by Mr. Darling, but from the oak it is not as nice; we get an odor there.

Mr. DARLING: The oak is like the walnut and some others—the flowers are not perfect in themselves. The pistil flower is small and obscure. I think it is just a little green rosette. The flowers having pollen have a big stem similar to that on the butternut, but not as large. It was on the flowers containing the pollen the bees were working, and the reason I said I did not know whether they found any honey or not was that I did not watch close enough to find out, but I knew they nearly all had pollen.

Mr. BROWN: A while ago the question came up about the buckwheat honey being heavier than clover. Here is a proof of it. Here is the clover honey in the bottom and buckwheat on the top, both in liquid form. So if the clover was lighter than the buckwheat it should rise to the top and bring the buckwheat down.

Mr HOLTERMANN: I said that could very readily be explained. The clover was gathered first; it was well ripened; the buckwheat later, and not so well ripened, and it came to the top.

Mr. FRITH: Specific gravity and consistency are two different things.

Mr. C. EDMONDSON, Brantford: I think if Mr. BROWN left the buckwheat honey in the hive as long as the clover they would be the same weight.

Mr. HOLTERMANN: I was at Ottawa Exhibition, and noticed samples of honey separated in that way. Some of the local men had it there, and you could see, standing there a few days, clover in the bottom spreading and colorless. My explanation may not be correct, but that is the one that would suggest itself to me.

Mr. ALPAUGH: It is quite natural for honey to form itself into strata or layers. One kind of honey's specific gravity is much greater than another's.

Mr. HOLTERMANN: I may say that the Experimental Union have taken the specific gravity of some fifty samples of honey. They are being taken in hand at the O.A.C. and forwarded to Ottawa, so I expect you will know more a year from now than we do now. They have been collected from all over the Dominion with that object.

QUESTION DRAWER.

QUESTION: Which is the best—a frame running across the hive or one running lengthwise? Explain the difference.

Mr. POST: I give the preference to the hive with frames running parallel. There is one reason in particular why I favor it. Late in the fall, say in my case, in buckwheat honey, I want the back end of my hive raised quite high, and the bees naturally place their stores in the back end of the frame, and when they go into winter quarters the frames are practically empty in the front end, and they will cluster in winter in the front

end, and as they take the stores out they move slightly back. I find if they set perfectly level they do not do it so; they seem all to cluster promiscuously any wherein the hive. That is one reason. I give them just as much pitch forward as they will bear.

Mr. FRITH: This question was asked in the December number of *Gleanings*. This idea of our friend who has just spoken is new to me, at least I have never thought of it in that way. I had the idea that it was because we wanted the combs of honey parallel or plum, rather perpendicular; that as a general thing we want the hives to incline towards the front. Cross frames would not be parallel, and there would be brace combs at the top in the front end, and brace combs at the botcom at the back end of the hive. I found that difficulty. I have some hives with the cross frames and some with the frames tangent to the entrance. Those tangent to the entrance are preferable in my case.

Mr. HALL: I can confirm what Mr. Post says in reference to the frames running towards the entrance for various reasons. He gave you one in reference to the deposit of the honey for winter stores; that is very good. Another reason is this: I want the hive tipped slightly forward so that water will not go in it, and in spring so that the condensation will run out. We tilt up our hives at least four inches higher at the back than the front for various reasons. First, to assist the bees in taking out their defunct ones; secondly, to run the water out of the hive, and lastly, but most of all important, when you have the hive tipped up there is but little space in the hive at a level with the entrance of the hive, and therefore the cold air cannot enter the hive so readily as if it was flat. During the winter when packed on summer stands, it is a very important fact that they should run from front to rear so that you can tip it up three or four inches.

Mr. GEMMELL: You cannot raise a hive at the back very well if combs run cross-ways of the hive, whereas if they run from front to rear you can raise it as much as you like.

Mr. HEISE: For three or four years I made quite a hobby of cutting bee trees, and I paid particular attention to it, and out of ten trees cut, not in one case were the combs built cross-ways with the entrance, but always parallel, which goes to show it is natural or them to do so.

Mr. FRITH: My experience is just this: the starting point of the comb decides the direction of the comb. You take a very thin piece of wood and put it into your frame, and the bees will build the comb right along on that as if it were a piece of foundation, and I find in bee trees the same thing. If you look at the top you will find a projection with a thin edge to it.

Mr. MCEVOY: I winter my bees altogether out of doors, and I would not think of putting the frames cross-ways. It is much better to winter slightly slanted to the front.

Mr. ALPAUGH: This gentleman said it was natural for the combs to run to the entrance, and it seems to me that in almost every case the comb is started to the entrance in some way—maybe not exactly parallel. They have a direct road almost to the entrance. But I think one of the best things, where the frames run to the entrance, is that they get right on to the end of the frame and go just where they want to go without crawling over a lot of comb. I must say I did not have success with hives running cross-ways. I would say by all means have hives with frames running to the entrance.

Mr. BROWN: My experience has been a little different to Mr. Alpaugh's in that line. As I said in my paper a little while ago, I find that they give the best results, usually come out better in the spring, with the ten frame hive running cross-ways. I find them more convenient for manipulation. I like to be behind my work, not beside it.

Mr. ALPAUGH: When you get the latest system of keeping bees you can not work from the back, you must work from the side.

Mr. BOOMER: In producing comb-honey I find it necessary to have the hives level; and the objection Mr. Hall has raised to the wet running in does not apply with the hive I use—the Richardson hive. Set it as level as you can, and no rain will run in. There

is space right at the entrance of the hive for any water that runs down the face of the hive to get through, and it does not get into the hive at all; and with these hives the frames run to the entrance.

The PRESIDENT: Those who favor the course of frame running lengthwise please stand up. A majority arose.

QUESTION: How shall we deal with compound honey like this? (Sample produced).

Mr. BROWN: This is a sample of what I would say is adulterated honey, probably no honey whatever in it. I brought it as I got it from the store. It is labelled "compound" very small letters, and "honey" very large letters. The name of the parties are on it, and their address.

Mr. HALL: The thing we have to decide in this case is, what is "compound."

Mr. HOLTERMANN: That is very simple. Write the Department of Inland Revenue and give them the man's address, and they will deal with it.

Mr. HALL: I may say, gentlemen, that one sample has been sent to the Inland Revenue Department, but I thought the Association would have more weight than one individual. My sample has the name of the seller on it; this has the name of the mixer. He says this vessel contains Clover Compound Honey, surrounded by the choicest honey syrup. It gives the name of the manufacturer. What is honey syrup? Glucose is not honey syrup; a mixture of cane sugar and water is not honey syrup.

Mr. FRITH: This Association went to a great deal of trouble and expense to get an Act passed by the Dominion Government a few years ago to cover this. There is a Dominion Act which covers this class of compounds, and I think it rests with the Inland Revenue Department to take this and find out whether it is a violation of that Act. I think if a sample of this is sent to the proper authorities they will take it in hand. Of course it will become a legal point, and they may have to resort to the courts to prove whether this Act covers this ground or not. That was one of the things we had to fight with at Ottawa on the start. The very first question asked was why not tack it on the Food Adulteration Act. We kicked against that from the beginning to the very end, so as to secure an Act similar to the Oleomargarine Act.

Mr. COUSE read a letter from the Inland Revenue Department, as follows:—

J. B. Hall, Woodstock,—

"I duly received yours of yesterday, informing me that you have seen exposed for sale in Woodstock, certain packages supposed to contain pure honey which are evidently adulterations, and I have given instructions to our officers to look into the matter at once."

Mr. HALL: I supposed that this Association would instruct its Secretary to write to the Minister of Inland Revenue in reference to this case. I think we as an Association have more power than one man. As an Association they gave us the law, and they also gave us their servants to punish these people. I propose: "That our secretary be instructed to write to the Minister of Inland Revenue asking him to look into this matter."

Mr. DARLING. I believe with Mr. Frith here that the law covers the ground now and the parties are liable to punishment. I have great pleasure in seconding Mr. Hall's motion.

Mr. HOLTERMANN: You had Mr. Macfarlane here, and if you had listened to what he said you would not have this difficulty at all. You all remember what Mr. Macfarlane told you. All you have to do is simply to do as Mr. Hall has done—notify him of these adulterations, and they attend to them at once. Last year after I left this Convention I went through to Muskoka, and I found in stores there 60 lb. cans, which had a look not at all as those bee-keepers use. I found out where these were sold there, and I sent the address of the people to the Department of Inland Revenue, and they dealt with it. It is not necessary at all for the Association to act. All you have to do is to do as Mr. Hall has done—send it in to them, and they will attend to it.

Mr. R. H. SMITH, St. Thomas: That package I found in St. Thomas, and most of the grocers I have seen simply bought it because they thought it was pure honey; but the question arises, do they avoid the law by calling that the "finest honey syrup"? The question is, what is honey syrup? They simply trade on the good name of honey to sell their mixture, and I thought in bringing that here I was doing a little missionary work. There is nothing I know of that will injure the sale of pure honey more than such mixtures as that. They will not want a second dose of honey if they think that is honey.

Mr. DARLING: I quite agree with Mr. Holtermann that Mr. Macfarlane told us distinctly last year that it was not necessary for the Society to move in the matter. He said the Department would act as readily for an individual as for the Association—in fact he seemed to think it better for the Society not to move in that way.

Mr. HOLTERMANN: I think you will find that when the time comes that the Department will not act for the individual, that then it is time for the Association to take it up.

After considerable discussion, Mr. Holtermann moved that the Association suspend action in communicating with the Department of Inland Revenue in case of adulterated honey, until we find the individual is not heard, and then that the Association act. Mr. Darling accepted the amendment.

Mr. HOLTERMANN'S amendment was lost, and the motion was carried.

Mr. ALPAUGH: I do not believe the public will take the right view of it. We have now got a law, and it has gone through the country at large that we have stopped adulteration. Now if we go there as a body and say we have found adulterated honey, like that on the table, it will just crush the law.

SUMMER MANAGEMENT.

By W. Z. HUTCHINSON, FLINT, MICH.

My experience in the apiary for the production of honey, has been mostly in the line of comb honey production, and it is from that standpoint that I shall write. I prefer to have the bees make a start in the supers before swarming. If swarming is then delayed larger swarms are the result, and as I get nearly all of my surplus from the swarm, instead of from the old colonies that have swarmed, I get better results if the great mass of workers can thus be kept together where the sections are. For this reason I use every possible means to induce the bees to early turn their energies towards the supers. For this purpose I know of nothing better than the use of drawn comb in some of these sections—the more of these the better. I should be glad to give each colony a super of drawn comb in the spring. When the harvest opens with a rush, and the bees are at once forced into the sections before there is time made for preparation for swarming, the drawn combs may not be of much importance; but where the flow comes in gradually, and the bees are Italian, with their reluctance to store honey at a distance from the brood nest, drawn combs are nearly as valuable as combs of honey. When the flow is light, the bees will begin storing honey in drawn combs long before they draw out foundation for this purpose. Where the bees begin storing their surplus, there they are inclined to continue storing it. This early storing of honey in the super relieves the pressure upon the brood nest, and thus allows of the rearing of more brood, and at the same time retards swarming.

As soon as the sections in the first super are one-half or two-thirds completed, and the flow of honey remain good, I raise the super, and put under another super having sections furnished with full sheet of light foundation. Getting the bees started in the sections early in the season, giving them plenty of surplus room, and shading them so

that the heat will not drive them out, will usually keep bees from swarming until they can swarm to advantage. Under this management I have known one-half of the colonies not to swarm at all; but in the majority of cases it eventually comes.

The management of swarms in a large apiary is really an important matter. I have tried leaving queens unclipped and allowing them to go with the swarm, until I am heartily sick of it. The climbing of trees, the chasing of runaway swarms, the straightening out of "mix-up" that result from the simultaneous issuing of several swarms, would, it seems to me, drive any man to control his bees by controlling their queens. I will admit that "mix-up" will often result when we have control of the queens, but, so long as we have our thumb on the queens, we are master of the situation. I have tried both the clipping of queens and the using of queen-traps, and my preference is for the latter. It saves the time and trouble of hunting up and clipping the queen, the time and trouble of hunting for and caging her when the swarm issues, and there is no danger of her being lost by the swarm coming out when no one is present to care for it Many of "mix ups" that occur in a large apiary may be avoided by the use of swarm catchers. A swarm catcher is simply a light frame work covered with cloth. The frame is about three feet in length, eighteen inches square at the outer end, and tapering to 3 x 10 inches at the other end. The outer, or larger end is covered with a removable door of wire cloth The smaller end nicely fits over the entrance of a hive. As soon as a swarm is seen issuing, the small end of the catcher is clapped over the entrance, and when the swarm has been caught the catcher is removed, a flap of cloth buttoned over the entrance, when the catcher and its contents may be set aside in the shade, and the bees hived at leisure. By having three or four catchers scattered about in different parts of the yard, nearly all of the swarms can be caught if desired.

My practice is to hive the swarm upon the old stand, in a contracted brood nest, with starters only in the brood frames, and to transfer the supers from the old hive to the swarm. By this plan the bees are back in the supers at work again within twenty minutes after they left them. As there are no combs in the brood nest in which to store honey, and the brood nest is of the capacity of only eight frames, the honey must of necessity go with the sections; I use a queen excluder, otherwise the queen too would go into the supers. The bees at once begin to build comb in the brood nest, and as fast as it is built the queen lays in it. The result is that the honey goes into the sections and the brood nest becomes a brood nest indeed. I prefer starters in the brood nest to foundation, and drawn comb I have found to be of no advantage—in fact a disadvantage. Drawn combs the bees quickly fill with honey, and are then very loth to begin work in the sections. When they begin storing their honey there they are inclined to keep on storing it. With foundation in the brood frames the foundation must first be drawn before it can be used, and this gives the bees time to begin storing in the sections. The greatest objection to the plan of having the bees build their own comb in the brood nest, is that, if the queen is old too much drone comb may be the result; but as this plan usually results in rather light colonies, unless there is a fall flow in which they can build up, and it is desirable to unite them at the close of the harvest, there is an opportunity of discarding the drone comb.

To go back just a little, at the time of hiving the old colony is set to one side of the newly-hived swarm. The entrance of the old hive is turned to one side. In a day or two the entrance of the old hive is turned towards the new hive. In a day or two more it is again turned still more. By the eighth day the two hives will be standing side by side. Take away one and all the field bees of both hives would return and enter the hive left upon the old stand; so in the early part of the eighth day, or the afternoon of the seventh day, the old hive is carried to a new stand. The result is that the hive having the sections receives a nice little addition to its working force, while the old colony loses this power just at the time when the young queens are ready to hatch, and is so weakened in numbers that further swarming is abandoned. The only condition under which this plan fails in preventing after-swarming is when the heat, or the swarming mania, drives out a swarm before queen cells are completed In this case it is so long after the old colony is given a new location, before the queens are ready to hatch, that sufficient bees hatch out to make a swarm. Unless a

colony swarms early, or the flow continues late, I expect no surplus from a colony after it has swarmed, but it is always found in fine condition for winter. It will have a young queen, an abundance of excellent stores, and plenty of bees that have not worn themselves out with hard work

Some of my methods may not be desirable in all localities, but in my locality, they are the best I have tried.

Mr. ALPAUGH: Putting in the starters, for instance, in place of full combs, I have had some experience in both of these lines, and I found full combs containing no brood works very well provided you do not give them too many. If you give them just what starters they can cover nicely there will be but very little drone comb built. He says, if you do not want all your increase you can take the best combs from a certain number of hives and make a certain number of good hives.

Mr. SMITH: I endorse nearly everything Mr. Hutchison has said as to the management of swarms. It is practically our method. One thing I do not just agree with, is putting on a super too *early*. We found this season especially they were filled up with a very inferior grade of honey. In fact I know of one man who put on several thousand sections, and he found them half filled with this honey dew. Of course that may not occur again, but in this case he had to get that all out of the sections again, and get them filled up with good honey.

Mr. GEMMELL: I have very little to say; I agree so fully with Mr. Hutchison's paper. I would just like to ask him, in regard to the drone trap, if he really prefers the drone trap to cutting the queen's wings?

Mr. HUTCHISON: The drones will, of course, go up and die in that trap unless you take them off.

Mr. GEMMELL: With a large quantity of drones I found it was necessary.

Mr. HUTCHISON: There is a division about half way up, and the drones come up in this upper apartment and the lower apartment is left free, I could not say that it interfered with the passage of the workers or the ventilation.

Mr. GEMMELL: There is the question of cost.

Mr. HUTCHISON: I was thinking of the time it took to look over the bees, and find the queen and clip her and cage her. This queen trap would practically last a man's lifetime, and they cost about twenty-five cents apiece.

Mr. HALL: I did not hear all the paper read, but I think it was favoring drone traps. If we should have one young queen with her wings not clipped we simply put it on and catch the queen on that occasion. But in putting them on to catch the queen we find it a very filthy practice. The drones, unless you empty them every day, will fill them half full. I do not think the bees like it. I simply lay them around in prominent places in the apiary, and as the queen never leads off a swarm there is generally half the bees out before the queen comes, and we, in nine cases out of ten, have the trap on and catch the queen in that way. We have them, but they are lying outside for that very reason. It is a filthy, nasty mass.

Mr. NEWTON: I have tried the drone traps in different ways, but I have discarded them only in the case Mr. Hall mentions. I have them lying around, but only use them in the case of a queen that has wings. In leaving them on, of course, it does not matter whether you are there or not; the drone trap would catch the queen. I notice that the bees do not seem to work with the same vigor when they have to go through that method; it seems to stop their work. I would not like to advise any one to use drone traps and leave them on the hives continually.

Mr. GEMMELL: I have tried them, and couldn't make them a success for the same reason Mr. Hall gives.

Mr. EVANS: I was told that if the queen was killed and all the queens cells destroyed but one, and after five or six days the young queen was hatched that would stop the swarming impulse.

Mr. GEMMELL: I have lost old queens that were clipped; by swarming when I was not present they were lost; and in every case where a young queen took her place I never had a young queen lay a few eggs and swarm out. In every case I found she stayed there. She does not want to swarm.

Mr. HOLTERMANN: Doesn't that depend on your honey flow.

Mr. GEMMELL: It does; but when the swarming comes you generally have a pretty good flow.

A MEMBER: Would you not have to cut out the queen cells in order to get that young queen to stay?

A MEMBER: Yes; but you would have to destroy them, the bees would not.

Mr. GEMMELL: If you go to the hive before the young queen is hatched, your plan is to get out all the cells but one. When she hatches she may swarm, that is, if there is larvæ to raise other queens from.

Mr. HOLTERMANN: Are there not any amount of people whom you cannot depend depend upon doing that work properly?

Mr. HALL: That is not the fault of the system.

Mr. HOLTERMANN: I say universal clipping will not do for that reason.

Mr. ALPAUGH: This cutting out of queen cells and depending on one, I do not like. I find a much better plan is to cut out all the cells, but take a few of the best and stick them at the end of the hive. Some of them will hatch. The first queen that hatches will run into the hive, find no cells there, and that settles it. They stop swarming and you can have lots of cells.

Mr. GEMMELL: I do not object to that at all, but in my case I give them a cell I know is about ready to hatch. If you put a cell of that kind in you will not find any difficulty. Of course, if you put a cell in that you cannot tell whether there is going to be a live queen or not, you cannot be sure.

Mr. ALPAUGH: There is another instance come to my mind. If I can find the young queen I will kill her every time, and another cell will hatch. I would sooner have a later hatched cell than an earlier hatched.

Mr. GEMMELL: Is that where the old queen is lost when she goes out to swarm?

Mr. ALPAUGH: Yes.

Mr. GEMMELL: But there are a lot of good cells in that hive.

Mr. ALPAUGH: If you kill her and allow another cell to hatch that will never happen.

Mr. GEMMELL: There is another point. A gentleman here spoke of giving drone sections and getting them filled with inferior honey. I know in our own locality sometimes if we put on drone sections we invariably get a poor quality of honey. I never like putting sections on my hive. I prefer giving them a half story of extracting combs —that is, if it is very early in the season—to giving them sections. Then by the time they have this pretty well filled up we have them out of the packing, and when they require more room I raise it up and put the sections underneath the half sections of comb.

Mr. HOLTERMANN: That is quite an important point. You will see so much comb honey on the market that has the centre of the section a little dark, and we can do a great deal of good by emphasizing the necessity of different management.

Mr. SMITH: I would ask Mr. Gemmell, does he ever allow the queen in these half storeys?

Mr. GEMMELL: No, I do not want her there. I understood Mr. Alpaugh to say he gave a few drone combs; I did not understand he said anything about foundation whatever. Why would you prefer the drone combs to foundation, or do you? I do not think you do.

Mr. ALPAUGH: I would under certain circumstances. I am not prepared to say anything about that yet.

Mr. GEMMELL: Before Mr. Alpaugh went to California he was at my place. I had been using full sheets of foundation, and he recommended the starters. I had never practised much with starters. However, he recommended a wide starter instead of a shallow starter. He said that if you used a wide starter, and only five of them, that the bees had a better chance of clustering on the wide starter from one end to the other, and the comb would be more likely to be of worker comb, whereas on the narrow starter they had not so much scope, and you would probably have drone comb at the ends of two or three frames. I have practised that too, and some seasons you will get the thing pretty much without drone comb. Now he has another hive, and he is going to use sheets of foundation for hiving instead of starters.

Mr. ALPAUGH: I might say that I will simply use the wide starter yet.

Mr. HOLTERMANN: And that goes to the bottom of the frame.

Mr. GEMMELL: He has a shallow frame, and he uses the starter a little wider.

Mr. HOLTERMANN: Do you put that wide starter on all the frames?

Mr. ALPAUGH: No.

Mr. HOLTERMANN: I may say, I was not advocating drone traps, because we do not use them in the same way Mr. Hutchison does, and in this country I think they are very rarely used.

Mr. HOLTERMANN: May I make a suggestion? It appears there was a subject down for to-night which cannot be taken up, and there is one which many of us would like to have light on, not in any personal way, but to make a general application of it, and that is, judging honey at fairs. If we could have a little discussion on that, I think it would be of educational value to all of us. I think there are others who would like to have that discussed in a general way, without any personalities whatever, so that when we leave this Convention we may know how to act as judges, and how to prepare ourselves to meet the judges. In speaking of men who judge in other classes, I know a good many of the men who are intimately connected with Live Stock Associations, and so on; everywhere there is the difficulty of getting men who are thoroughly competent to do their work. It is, perhaps, less a matter of getting men who are willing to do what is right. Occasionally there is a complaint that men have not done according to their own judgment, and have not done justice, but that is not very often the case in our own country. It is more a matter of men not really being able to do the work in all its phases. For instance, we have a man who is a good judge of clover honey, we have another man who is a good judge of basswood honey, or another man who is a good judge of buckwheat honey, but rarely you come across a man who understands the three classes. Then, again, they may be good judges of honey and not of beeswax. Then, in our own classes at Ottawa, London, and perhaps some other exhibitions, we have a line to judge which a bee-keeper may not be competent to judge at all. What I am referring to is the award for the neatest and most attractive exhibit. Very often, I think, the majority of us may be good bee-keepers, and yet have not developed in us the artistic line, and we are really not competent to judge that particular line. I believe what we should try and do is to educate ourselves, the exhibitor as well as the judge, to do better in this line. I refer to basswood honey in particular. I can point to men in this room who are the best of bee-keepers, and yet the honey one man will pronounce as basswood the other will declare has not a drop of basswood in it. The same way with the exhibitor; one man supposes he has basswood honey and another man, who has an entirely different honey, thinks he has basswood. We should try in some way to overcome that difficulty. There are many other things to consider in judges. For instance in Toronto we have 500 lb. comb honey lot. I think no man should judge that comb honey without sampling it; not alone should he open the crates and examine the sections, but he should break at least one section. There is quite a diversity of opinion about that, and it appears to me there should be no diversity of opinion. There should be that feeling that whenever a man or

woman puts up a lot of comb honey that he may have any crate inspected. It should not be only one crate, because that might be an injustice. One man may have a fair average, and just by accident a crate which is inferior to the average is taken out. I would like to see a resolution passed here, that wherever a prize is given on display an outside man, who has studied art, come in, as he is better able to tell than any bee-keeper which is the neatest exhibit.

Mr. FRITH: Do you not think it would be a good plan to get an expert judge?

Mr. HOLTERMANN: We want to be all experts.

Mr. DAVISON: I would differ from what Mr. Holtermann says for this reason: A man having artistic knowledge only would not know the good qualities of the exhibits before him if he did not know the qualities of honey. The exhibit of honey should embrace all the different qualities.

Mr. HOLTERMANN: You know there are in the Toronto, and other lists, quite a few where quality counts most and display slightly, but there is another one where quality is not considered at all, simply the neatest exhibit.

Mr. MCEVOY: Why not make that 100 pounds instead of 500 pounds, and then the man who handles it does not have to pull down the whole crate.

Mr. HOLTERMANN: What the Toronto Industrial people pay for is one that will attract attention, and when you reduce that to 100 pounds your prize list is reduced in proportion. The trouble is if you reduce the quantity you reduce the effect of the exhibit, and the Directors would very soon knock out your prize list.

Mr. SMITH: I fully endorse what Mr. Holtermann says with regard to getting a judge for display in particular. Of course we want experts with regard to quality. It is not a very easy thing to do; and as to reducing the quantity, the Toronto Exhibition is a feature apart from a local country fair. If you reduce the exhibit to small quantities, of course it would reduce the prize list too. The Toronto Exhibition is one by itself, and it is an example for the continent.

Mr. MARTIN EMIGH (Holbrook): Fortunately or unfortunately I have been a judge for six years at London, and three years at Toronto. At Toronto I suppose a fellow could get along very well if he liked, for there are three judges there, but in London there is only one, and he has to take the bluff. I am very glad this thing has come up to-night, for there is no doubt we can learn something. It is rather a delicate thing to judge honey some seasons when it is all so nearly alike. This year at London it was a particular thing, and I am not just sure whether I did justice or not; but there is one thing certain if I did not it was my ignorance, for I never gave a *man* a prize; it is always what I consider the best honey that gets the prize. The same with wax; what would suit one man would not suit another. I suppose a man who works a good deal of wax would be a better judge than one who did not work much of it. I make a little foundation, and have for years. I know what suits me possibly might not suit others. As regards the neatest and most tasty display, I do not know about getting a town or city expert. I doubt if they could do much better than the judges we have. I know I have seen a good many very nice displays, and I am a little conceited on that. I do think I know a nice display about as well as any of them. There is a good deal of difference in putting up a nice display; and a man must have considerable taste about it to put it up. Some men who study putting up a display can put it up a great deal better than others. I should like to hear as much on this subject as possible, and learn as much as we can.

Mr. BOOMER: While listening to the remarks that have been made I have just been wondering whether it was right at all to give prizes for honey. It may be right to give a prize for a fine display, but honey is not like a production of stock. If a man produces fine stock worthy of a prize he works for it, and it takes him some time to bring that about, but perhaps some bee-keeper who has no experience at all, and who has only kept bees a year or two, may produce the very finest article of honey. The locality has a great deal to do with fine honey. I think there are some localities in Ontario which will produce a great deal better honey than some other localities, and, therefore, is it fair

to give to the man who has the best locality a prize for honey and favor in the market; and the other man who has not such a locality, no matter how much trouble he may go to to produce a good article of honey, cannot do it? One man may put up a very fine display of honey, and not have the best honey. Therefore to give a prize for the best honey I think is not just. While I think it is a very just thing to give a man a prize for producing a very fine animal because he must labor for that, he may produce a fine article of honey without any labor at all; he may get it by accident. I know a bee-keeper in the township where I reside who only kept two or three hives of bees, and he could take the first prize always. He would get some honey from the hive at a particular season of the year, and preserve it carefully, and get the prize, but he did not produce any better honey than anybody else in reality, taking it all the way through. And it seems to me this giving of prizes will help some bee-keepers, give them a name on the market, when they are really not entitled to it, and therefore I question the judiciousness of giving prizes for honey.

Mr. HOLTERMANN: Do not some localities produce better potatoes than others?

Mr. SMITH: I would like to ask Mr. Boomer if he could produce 1,000 pounds of honey without much trouble?

Mr. FRITH: I think that giving no prize at the agricultural shows for honey would thwart the work of the Agricultural Department just along that line. Supposing we have no honey at any of the shows. Go away back to twenty years ago when we were first commencing bee-keeping on the present lines; it was by going to the local shows that we increased the interest in the present system of bee-keeping, and there were small prizes in some of the local shows. Take the district south and west, I showed bees there then, showed a few pounds of honey, and what was the result? It interested people in the show. There was a prize given for it, and they got interested for the first time in their life in some of the principles of keeping bees; and it also excited the appetites of those who have since become consumers. And I think it would be very unwise indeed to shut off the prizes for honey. I think the question of locality holds good in regard to stock, and in every department of agriculture. I know one neighbor of mine who can grow better potatoes than I can. I can produce better butter than the neighbor a few miles away, because I have better pasturage; I have better foundation on which to work. Another man can do better with his stock all round. It is really an exceedingly difficult matter to make nice fine distinctions between the different qualities of honey, and you find that perhaps a number of qualities are so near alike that it will take very acute senses to distinguish any, and it becomes very hard to judge impartially. The Toronto show is not in the public producers' interest. I have come to the conclusion that the Toronto show is just a little out of its legitimate place. It is booming Toronto. It is discouraging a large number of producers in a great many departments, especially in regard to displays.

Mr. BOOMER: I just want to ask the question, how it is possible for one bee-keeper over another to produce a finer quality of honey? I can understand how one man or woman can make a better article of butter than another. I can understand that, or how better potatoes may be grown in one locality than in another; but what can be done to produce finer honey by one man than another with the same facilities I do not see.

Mr. HOLTERMANN: I feel very strongly on this question that the sooner the general public know there is just as great a difference in the successful production of honey, as to quantity and quality, as there is of butter, the better it will be for the men who produce a good article of comb honey. We know that it requires the very closest application to produce good comb honey. In extracted honey there is a good deal that can be done. For instance, if you put your supers on a little too early, or put them on not too early but at some uncertain date, there is dark honey taken up. There are two men in a locality, side by side; the one man watches that super closely, and when the bees have taken up what appears to be a lot of dark honey, or brought it from mustard or some other source, he extracts that honey. The other man does not. They have both worked on the same field, but they put a different quality on the market. One allows his honey

to ripen while the other does not, and that affects the quality. In the matter of judging honey, a man is judging perhaps a dozen samples of honey, and by the time he is through with a dozen samples he does not know what he is tasting. That difficulty can be overcome by not tasting the honey at all to begin with. You take the jar and unscrew the top, and the aroma will tell you whether that is clover or basswood honey.

Mr. FRITH: Do you not think you would meet the same difficulty you will in tasting?

Mr. HOLTERMANN: I do not think you will.

Mr. NEWTON: I would like to say to Mr. Boomer that some three or four years ago when my crop of honey was gone, I went some miles north to buy some more, and after getting some comb honey, the gentleman said, "Don't you want to get some extracted honey?" I told him I could handle a thousand pounds if it was good. It was so thin and watery, because it was not ripened, that I said: "I can't put that on the market; it would kill my business." He said he could get rid of all he had at eight cents a pound. He was making more out of it than I could. We ought to see that our honey is fully ripened before we bring it to the market. I would be sorry to see the prizes taken away from the bee-keepers.

Mr. DARLING: With regard to the different qualities of honey produced by bee-keepers in the same section, I know that for a fact. I produce honey myself, and while the quality is generally pretty good the color is somewhat against it most of the time. I have never been able to tell exactly why. But even until this present season I take combs built by the bees and extract the honey from that in order to get a fine quality for exhibition purposes. I found it was a darker color than some other parties produced; just why, I am not able to say. That honey will sell ahead of whiter colored honey. Some years ago I had a chance of buying 200 pounds of very nice white honey. I supplied one or two parties with it, and I think one brought it back, and the other said they did not want any more; they preferred my dark honey. After I had it a little while it began to sour. I see no harm whatever in giving a prize for honey as well as for anything else, because it matters not how good our prospects are if we make a mistake in handling it we spoil the product.

Mr. FRITH: There is one thought that has presented itself to me that I think of importance to the bee-keeper, that is in regard to the marketing part. I was passing through one of the towns in Manitoba, and I heard my name called by a stranger to me. After getting introduced he said "I have just opened a barrel of honey, and have been told since you have been in town that you dabble in the honey business. Just come in and look at it; it is one of the finest barrels of honey we ever received." That honey was fine clover honey, and so dense in its consistency that you could stick a spoon into it and lift up quite a bunch of it. It was fine in every respect, but the moment you tasted it. It was put up by a man who knew nothing about putting up and extracting honey. It was just as full of bee-bread as it could stick. Of course these people out there do not get much honey, and they could not detect it. The producers here this evening should have some encouragement to keep educating the people to produce honey free from that one single thing. We have got to compete with that very honey in Manitoba; it goes out there by the barrel; and if these men had been learning and getting prizes it would do away with that quality alone. We find it in every quality with regard to honey. I think Mr. Holtermann is trying to get at this, that we judge of honey along a line as a type. I stood by at the judging of some stock at the Brantford fair this year. The Holsteins and Ayrshires were being judged, and the judge came on the scene and a certain number of cattle. I said: "They will judge those according to type. Now, I am a practical producer of butter; there is the practical cow for my purpose." But they had to be judged by type; the practical cow got nothing; the type cow I would not have in my possession as a practical cow. Now, of course I would like to see a better type, or grade, or whatever you may call it, of judging at the shows, but there might be difficulty.

Mr. HEISE: With regard to appointing experts, I admit it would a fine thing if they could be secured, but is it not practically out of the question? It is possible to get

an expert on clover honey, but when you mingle buckwheat, basswood, and clover honey how is he to be an expert on the whole? His fancy of taste may be in one direction. He may be a good judge of basswood honey, but he is no judge of clover.

Mr. HOLTERMANN: We want to get a man who is not so narrow.

Mr. SPARLING: I think it is very hard to get a man who is competent in all the departments. You can get a great many good men, but I think that when it comes to getting an expert for just one special prize it would hardly pay them.

Mr. HOLTERMANN: That is the sweepstake prize. I might say, I do not think there is a particle of trouble about that in Toronto. Just let us ask Mr. Hill to have a specialist put on to judge that class, and there will not be a bit of trouble about it.

Mr. BROWN: What do you mean by specialist?

Mr. HOLTERMANN: The very best man I can think of is the man who makes a business of window dressing in some prominent store in Toronto. He simply comes in and knows no man.

Mr. SPARLING: I presume there is not one present who has had more experience in showing than Mr. Hutchison.

Mr. HUTCHISON: I have had some experience in showing, but I have not had much experience in judging. At all the fairs I have exhibited I do not know that any has been more satisfactory than the Illinois fair. They have there a score card, the same as judging butter. We find the score card is away ahead of simply allowing a man to come in and say "This is the best." These score cards are preserved, and if there is any trouble we can see whether this man had the first price, and whether this the second. It is a guide to the exhibitor, he knows upon what points he must compete, and what will not count. I think it might be well, perhaps, to limit the quantity. They limited it this year in Illinois to 500 pounds. He could exhibit more if he saw fit, but the man who had 500 would receive the score.

Mr. NEWTON: I think we should have more judges than one on any article; I think we ought to have three, and then it would be more satisfactory than one.

Mr. GEMMELL: I am not a honey exhibitor; I produce and sell, but I do not exhibit. I think myself it would be a good idea to have more than one judge. I think it is hardly fair to ask one man to do the business. Another point, and that is in regard to exhibiting honey. Should any honey be exhibted by a man who does not produce it, that is, to get a prize for it?

Mr. HOLTERMANN: That is a question that comes up very often, and I claim that to be fair to every man the right way is to strike out that clause which says you are not to exhibit any but your own production. I went to the Toronto Industrial some eighteen years ago. I bought some comb honey from Mr. Emigh. I took it down to sell, but did not enter it. I thought it not being my honey I should not enter it. And those of us who have shown there year after year think that the man who is scrupulous, who does not want to show at any time any person else's product is apt to get left, because the majority of people if they cannot get their own will get someone else's. I am speaking advisedly when I say this. I have known a case where it was said the man was not showing his own product year after year, and another man came down from the same locality, and they said it was not his product but the product of the other man. To be fair to every one let them show the best that can be put there; put them all on an equal footing. The idea is really educational, and to that extent no injury can be done to any one.

Mr. DAVISON: I would like to take exception to what Mr. Holtermann says. I am a member of an agricultural society, and that matter comes frequently before the board, and our society have made a particular rule that an exhibit of all articles shall be the production of the exhibitor. Any exhibitor showing anything not his own production is barred from receiving a prize that may be awarded to him at that exhibiton. For my own part I would decidedly approve of that rule being carried out in all agri-

cultural societies, because if a man can go all over the country and buy a better quality, and by spending considerable money can go to Toronto, or any other exhibition, and show a fine article it is very discouraging to those who produce honey. I think it should be laid down in all societies that only the production of the producer should receive a prize.

Mr. HOLTERMANN: Is it not the case that that rule is frequently broken? We know men trotting all over the country to get a collection of apples. Are you not handicapping the honest exhibitor?

Mr. DAVISON: That is done, but that is not to say it should be allowed. It has come up in our Society, and those who do it are deprived of receiving any prize. I believe if a man can produce a fine article of any kind, let him be the winner and entitled to all he can make thereby, and not, as I said before, the man who can buy an article from half a dozen producers.

Mr. HOLTERMANN: The principle is undoubtedly right, there is no doubt about that. At the Toronto Exhibition, for instance, we know men who come around and ask you for your nicest case of honey, and you stick the price up to $2.50, and they take it, and we think they have a pretty keen appetite for comb honey. I say the principle is right, at the same time we are handicapping the honest exhibitor. One of the objects in bringing this discussion up was to see what the feeling was in regard to appointing an outsider—an artist. I have heard it said that it is simply a matter of opinion which is the neatest and most tasty exhibit. That is not right. It is not a matter of opinion. For instance, here is a person dressed in five or six different colors, and one man says it is a matter of opinion. It is not a matter of opinion. We know there are certain lines laid down which is good taste, and which is not. I would like a show of hands to see how many would like to have, say, a window dresser, to judge that particular line.

Mr. FRITH: What particular advantage will it be to a honey producer?

Mr. HOLTERMANN: The advantage is this, a prize is given for a certain thing, and we want the prize given in accordance with the section. I will move "That we, the Ontario Bee-Keepers' Association, give a portion of our funds towards the prize list; that the management be asked to appoint a specialist to give the award on display of honey to the neatest and tastiest exhibit where such award is given."

Mr. PICKETT: In regard to this display, it seems to me that in it as in all other business the practical man is the man who is able to give the results, if any one. To bring in an artist who is fit to dress up a window as a milliner, or as a dry goods merchant, and set him in a honey room to judge bottles of honey and flowers, it strikes me he would be nearly as much out of his place as if I were placed in the show window of the dry goods man. His taste may be good in his line; in the business he follows he may excel to the highest point, but when he comes to touch that which he has no knowledge of, no experience, what may you expect? For my part I understand the source from which the discussion has arisen to-night, and I have not the slightest objection to it, or I would have been on my feet long before this. There has been an idea thrown out with regard to the number of judges. I have been fortunate or otherwise in being your representative, and I am not at all sorry this matter is up. I tried before the committee appointed to regulate these matters to get three judges; I couldn't get them, the dollars and cents were not there to pay them. The Fruit Growers' Association, the committee that was representing them, sat there on one side, and the butter and cheese men a little to their right again, waiting until we got through. The matter of judges came up. I have been on as most of you know for some years. If there were two of us you only get the judgment of one man after all. When we agreed it was only the judgment of one man as a rule, it could not be otherwise; when we disagreed in judgement one had to yield to the other, and hence you only had the judgment of one man when done with. If you can get three you have the judgment of two in the testing time. Perhaps they do not fully agree either, but it is the next best thing you can get.

Mr. HOLTERMANN: When you have three a man is open to conviction.

Mr. PICKETT: I found that means were scarce, and these gentlemen sitting on my right and left—the Fruit Growers and the Cheese and Butter men—they had each one judge. The discussion was taken up by them as well as us as to the number of judges, and they said right before us very plainly that from the time they adopted one judge they had better satisfaction than heretofore. Knowing whom I was likely to recommend as a judge, that he was a man who feared no man, I said to Mr. Hill, "Give us the $5 and we will take one judge for the year." I think there was an impression previously in some quarters that it would have been better if we had more on the committee. Mr. Hill told me plainly that even now when we have done the prize list will be taxed. The result was Mr. Hoshal had sickness in his home and he could not come; and the next on the list was asked and he came. The best was done, I presume, that could be done under the circumstances. I think the exhibitors under existing circumstances were very patient with what was done. I am sure if I were a judge I would prefer three rather than one. As to the matter of an artist, I think I have explained to you why I think these outside men would be a failure.

Mr. HOLTERMANN: I simply put that resolution because I wanted a show of hands, and the President asked me to put it in the form of a motion. I am not at all anxious to press it, but I want to say this, that the very argument Mr. Pickets uses condemns him in that. He says it wants a practical man. Now, that clause read "the neatest and most attractive exhibit," and does not refer to the quality at all. That prize is given so as to make that exhibit attractive to visitors, and for that very reason a man who goes in just as a visitor would, and judges it, he is the man who can do it better than the bee-keeper.

Mr. GEMMELL: I second the motion for the sake of a show of hands.

Mr. DARLING: Before you put that I would like to ask Mr. Holtermann a question. Are we to understand that he infers that bee-keepers are as a rule void of any appreciation of art?

Mr. HOLTERMANN: Not at all. A man may be a good judge, but there are many men who think they are good judges of art and are not. That is what I mean to say.

The motion was lost.

Mr. GEMMELL: As I brought up the other matter I would like it understood I may some day be an exhibitor. Of course if I can get the best honey I can afford to buy I want to know, but I want it understood that it is an honest transaction. There is a great deal of talk about it. If it is understood it is right to do it, it is right enough, and if it is wrong let it be decided.

Mr. EVANS: I think that it is a question we should not waste time over here. A man exhibiting must exhibit under the rule of the Society offering the prize. If the Society lays down the rule that the party must produce the article exhibited there can be no question as to the right or wrong of following the regulation. I do not think we can make it right or wrong by any resolution we may come to here.

Mr. FRITH: If the Toronto Exhibition is soliciting our aid in making the displays, have we not a right to advise, or have something to say, in regard to the nature in which it is made?

Mr. EVANS: If you wish to pass a resolution advising any particular Society or all Societies to do away with that rule it is all right.

Mr. DAVISON: I think no Agricultural Society would take that out of their rules.

Mr. COUSE: If they did this with honey why would they not do it with anything else? You cannot borrow your neighbor's cow as a rule.

Mr. HOLTERMANN: But you can buy it.

Mr. COUSE: That is a different thing. I really believe there is no Agricultural Society that would knock that rule out.

Mr. HOLTERMANN: What I said was that it was hard on the perfectly scrupulous conscientious exhibitor, and I mean to stick to that statement. If any man knows a man is exhibiting what is not his, let him enter a protest, and if he does not let him shut up.

Mr. FRITH: If the originator of Agricultural Shows were to go to Toronto Show he would denounce it as a fraud, because the very object for which the Shows were instituted by the late Prince Consort was to encourage the producer along every line of agriculture. I think it is about time this Association shut down on it.

Mr. HEISE: I think Mr. Holtermann has admitted to-night that the principle is wrong. If the principle is wrong, then it is an evil; why open the door wide and encourage that evil?

Mr. HOLTERMANN: Who wants to do it? I do not think any man here can say that I said that. I simply said it was hard on the strictly conscientious man.

QUESTION: Which is the best for extracting, thick or thin combs—say $1\frac{7}{8}$ or $1\frac{3}{8}$ inch?

Mr. NEWTON: In my extracting supers I use one comb less than in my brood nest, and in that way they are spaced so as to have the combs project out at the side that they are handy for uncapping, but otherwise I do not know that I can answer the question.

Mr. W. A. CHRYSLER, Chatham: I find a thicker comb extracts much easier than a thin one.

Mr. POST: I prefer comb $1\frac{3}{8}$ inch for extracting to $1\frac{7}{8}$. In my frames the top bar is an inch square, and I like the honey built out slightly past the surface of the frame. There is a great advantage in uncapping; the frame is not in the way. You get more honey in the same number of combs, and it facilitates the work in extracting.

Mr. MCEVOY: We can go sometimes a little too far in the thickness. I went so far as to make some of them $1\frac{3}{4}$ inch. I am turning them all into wax. I do better with the inch or $1\frac{3}{8}$ inch. As to projecting out past, that is right; it is handy to uncap. I would not use the Hoffman frame for extracting; it sticks out; it is in the road.

Mr. EVANS: I am with you there.

Mr. DARLING: There is just one other point in connection with the difference between thick and thin combs. It has been my experience that the thin combs do not uncap as easily as the thick combs. Outside of the fact that the frame is in the road, it is harder work to take the cappings off the thin combs. Some say they get more honey out of the comb; I do not care whether I get it out of one comb or two. There is another difficulty you have to guard against, and that is, a thick comb will bulge the screen in the extracting basket, and so it might get out of place.

The PRESIDENT: The answer to the question would then be in favor of thick comb.

Mr. ARMSTRONG: There are a few here who condemn the Hoffman frame. If you leave them far enough apart it will do away with the projection. The comb will stand out past the projection, will it not?

A MEMBER: Yes.

Mr. MCEVOY: That is all right, but sometimes it stands out a little past it, and you come to it in a hurry with a knife and that shoulder sticks out there. I would a little sooner that was out of the road.

Mr. E. DICKENSON, North Glanford: Do you not get the frames more of the same thickness when you use the Hoffman?

Mr. MCEVOY: I use a better hive than the Hoffman altogether; that is a self-spacer without that shoulder. As far as the uniform thickness goes you are correct.

Mr. HALL: The idea is you can uncap seven thick combs in less time than you can uncap seven thin ones, and you can extract them just as quick, and you will get an eighth part more honey from them.

REPORT OF INSPECTOR OF APIARIES.

By Wm. McEvoy, Woodburn.

During 1898 I visited bee yards in the counties of Essex, Middlesex, Huron, Grey, Wellington, Simcoe, Dufferin, Norfolk, Wentworth, Lincoln, Peel, York, Ontario and Victoria. I examined one hundred apiaries and found foul brood in thirty-two of them. Nearly every bee-keeper that had foul brood in his apiary wrote me private letters about it, and working on the rule of doing to others as I would like to be done by, I treated all such letters as if they were marked strictly private, and always will. By working along this line in a quiet way, and helping the owners of the diseased apiaries to cure their colonies, I have been able to find out more about who had foul brood in their bee yards than could or will ever be found out in any other way.

I am very much pleased with the way the owners took hold, and cured their apiaries, and particularly so with two that were cured by two ladies in the county of Simcoe. These two ladies did the best work in the shortest time that I ever had done, and with two of the worst foul broody apiaries that I ever handled.

Scarcely one week ever passes that I do not receive more or less letters asking questions about foul brood and dead brood of other kinds. I have also received very many samples of combs with dead brood in, and about seven out of every ten of these were genuine foul brood. The most of the letters and samples of comb with decayed brood in came from many parts of the United States and the others from bee-keepers in the Province of Ontario, Quebec and Nova Scotia.

About how long would foul brood be in a colony before it will become very bad with the disease? was one of the questions asked by several of the writers. I answered saying in some cases not more than one week, and in others over one year, but in the most of cases less than three months. Just how soon or how long it would be before any diseased colony would become very bad with foul brood, would depend entirely on how much or how little of the honey was diseased. The honey to become diseased must be stored first in cells where foul brood matter had dried down, and when any honey is removed from such diseased cells to cells partly filled with sound honey it will disease it also.

Foul brood is spread through a colony just in proportion to the amount of diseased honey that is fed to the larva.

I sent Mr. Gemmill out a part of the time, and he inspected fifteen apiaries and found the disease in three of them. I am very much pleased to say that neither Mr. Gemmill nor I had to burn one diseased colony. We found all parties very willing to cure, and gave them a chance to do so.

I believe that the Province of Ontario has less diseased apiaries for the numbers kept than any country in the world, judging by the number of letters I have received.

Mr. Atkinson: You visit a yard where they have foul brood, and the man says he will look after it. Do you take his word for it?

Mr. McEvoy: I do not wish to dispute any man's word, but I do not take any man's word. If I do not visit them in a reasonable time I come back another day.

Mr. Frith: You are satisfied that the foul brood is decreasing?

Mr. McEvoy: Yes, and I believe if we had not an Inspector people would come to the conclusion there was none. What I did get I got in a private way. In 1890 there were only three days from May to November I had not foul brood.

Mr. Hutchison: You examined how many?

Mr. McEvoy: About 160. It was like this, the whole Province was going to the dogs; it was the first break-in.

Mr. Davison: I very much approve of this gentleman receiving the letters in confidence of those who have the disease, and it would be a much better plan if it was known that that was the method adopted.

Mr. DARLING? Is there not a tendency wherever the inspector has gone and shown the proprietors of apiaries how to treat this decease, for those proprietors to help themselves out of the difficulty another time? He is an educator as well as inspector; the time may come that we will not need an inspector. The beekeeper will know how to get rid of the disease himself and help his neighbors do the same.

Mr. ARMSTRONG: I would like to ask Mr. McEvoy how he treats the hives with foul brood?

Mr. McEVOY: I do not do anything with them. If it is right to burn the hives, it is right to burn the bees; and if it is right to burn the bees I do not know but what it is right to burn the inspector.

Mr. HOLTERMANN: The bees can clean themselves, but the hives cannot clean themselves?

Mr. McEVOY: That is not the important question. This gentleman asked me what I did with the hive. I do not do anything with the hive; I go further than that. I have saved over $200 worth of combs in one case in the State of Vermont, and I will tell you how it can be done. If you have nice, bright, clean, new combs, that *never had any brood reared in them*, extract the honey out of them and then give them back to the *same diseased colony* until the bees lick them perfectly dry. Such combs can be used in safety on any colony of bees in the world, no matter how bad the colonies may have been with foul brood that they were taken off of. Combs that have had foul brood matter dried down in them will show the stain mark of the disease, and just as long as the comb lasts it will stay there. And such combs can never be made right or fit to use.

Mr. ATKINSON: What will be the mark?

Mr. McEVOY: The foul matter. A good many are careless, maybe have not queen excluders enough, and the queen has got above. If we go in for boiling hives you see to what an extent it would have to go.

Mr. FRITH: How are you going to detect whether the honey is diseased or not?

Mr. McEVOY: What is stored in the stain-marked cells.

Mr. HOLTERMANN: We know that during the spring of the year the honey is stored in the brood chamber, and it may be stain-marked. Now then, we put on the extracting super, and we know the bees will then carry honey into the upper stories. Suppose they carry it from a stain-marked cell into an upper colony, and you give that to another colony?

Mr. McEVOY: I said that stores that are moved from other cells would disease that also. It is the same thing. The hives do not need it. You can boil them and scald them all you like, but I look on it as folly. But all bright, clean, new combs, that are dry—I do not care how foul the hives are—if I can save you $50 or $100 worth of them I will do it. But if you have not been using queen excluders, and you have only two stain-marked cells, those have got to go. Those who have dead brood in their hive, I would ask, "What are you doing with dead brood anyway?" Make wax of them; take no chances.

Mr. DICKENSON: How do you clean it up?

Mr. McEVOY: I wash that out. I asked Mr. Gemmell here once to take some foul comb and crush it against the side of the hive, and let it stand for a few weeks. I think he was busy. He did not do it, and I tried it this summer on four in my own yard, and nobody gets any more of it. I have piles of it like that. I took some of this fancy mess, but it did not show up, and if it did I could treat it.

Mr. FRITH: Is there not a possibility of this bacteria getting into its proper medium in the future?

Mr. McEVOY: We both have had bitter experience. I had twenty-three years ago. I had it in fifty out of sixty.

Mr. SPARLING: Did you leave those hives out in the air and sun?

Mr. McEVOY: Yes, they were out for a week. I did not believe that hive could give it, and I thought I would give it a pretty severe test.

Mr. FRITH: I would not like to take chances in trying it in my yard.

Mr. McEVOY: I did, in the honey flow.

Mr. FRITH. Is there not a time coming when this bacteria will get into the medium or the honey and distribute itself and come to life, and reproduce itself?

Mr. BOOMER: I would like to ask if there is not a difference in foul brood?

Mr. McEVOY: I suppose there is, and a great deal of difference too this far. Where larvæ have been reared in the same cell, and it gets down so fine that it is like a silk thread, I think that would be worse than the first one.

Mr. BOOMER: I want to give a case. What McEvoy said in his report just brought it to my mind. Early in the spring I was called to see some hives a man had in which he thought he had foul brood. I found one hive had died in the yard, and he had left it sitting there for the other bees to clean up. I fancied then that all the bees he had would be corrupted with it, but on examination I just found two that were affected, and there were only a few cells in each of them that appeared to have foul brood in. One of the colonies was weak, and I recommended him to double them up; and we there and then doubled those two colonies up, and he wanted to have the experience of curing the colony on Mr. McEvoy's plan. I said I would come back about the time of the honey flow, and we would put them through the process. I went back, and on shaking the bees off the comb then I could find no increase in the foul brood, although the hive had brought up well and become a strong colony. I could not then detect as much foul brood as I had detected nearly two months before. On shaking the bees off the combs, as I said, I could not detect any, and I feared I had been mistaken; but when we set that brood aside to hatch out, and I went back again in the course of a little over three weeks, then I found I had been correct in the spring, for there were just a few cells, and a few only, and I got the idea perhaps it might not be a very virulent type.

Mr. McEVOY: You are correct; that is the way very often. If the new honey coming in had been fed to the larvæ then it would spread. I get many letters wanting to know how long it will be before it will break out. As I said before that will all depend. Take where there are only two or three or half a dozen cells, that might linger for a year, it had such a small start. It comes in through the feeding of this honey to the larvæ.

Mr. HOLTERMANN: I would just like to say that it does appear so to me; as far as disinfecting the hive is concerned it can be done with so little trouble that we should use that precaution and disinfect it. At the present time science and practical experience do not agree. Mr. Harrison, the bacteriologist at the O.A.C., has been studying this question of foul brood for some years from a bacteriological standpoint. I know he has found the germ of the disease in the egg. I will candidly confess there are things about foul brood I do not understand. I speak rather from the practical standpoint than the scientific, but I believe this Association should not rest satified until we can reconcile science with practical experience. Is it not possible that when we attribute a disease to carelessness, it may not be transmitted in some of the channels we do not understand at the present moment?

Mr. McEVOY: When the scientists stand as far apart as the poles, what then?

Mr. HOLTERMANN: That doesn't make both wrong or both right.

Mr. BOOMER: How long should honey taken from a foul brood hive be boiled before it is fit to feed to bees?

Mr. McEVOY: I never recommend it from the first summer, because I could not trust the people. I have never had any trouble when they put half water with it and bring it to a sharp bubbling boil.

Mr. FRITH: I would like to refer to some experiments made recently by a chemist in regard to this bacteria. I cannot give the exact data, but it runs something like this.

If you bring your honey to a pasteurizing heat, from 145° to 180° or 185°, it destroys a large percentage of the bacteria and kills it, but traces of vital bacteria have been found in a medium in which it was heated up to 112°, and it has been super-heated up to 135°, I think it is, before they could absolutely say there was no vital bacteria in it, and to keep it at 112° for some hours lessened the vitality of the bacteria, It seems to me it had to be under the pressure of 112° for nearly twenty-four hours. Heating it to 112° would practically make it safe to feed.

Mr. HOLTERMANN: Would it not altogether depend on what kind of bacteria it was?

Mr. FRITH: I cannot give the exact data, and I cannot vouch for the exactness. I am interested in foul brood. Ten years ago I lost more colonies in my own apiaries than have been destroyed this year. I am really afraid of the contagious part of the disease. This gentleman referred to "a few cells." Some seasons the bacteria propagates with greater rapidity than others. Formic acid is death to the bacteria, and formic acid is the poison in the sting of the bee. Some years that acid is much greater in the bee than other years, and it is possible where you have destroyed hives they will almost cure themselves through the formic acid in the honey.

Dr. JAMES MILLS, President of the Ontario Agricultural College, was introduced, and after welcoming the Association to the city, invited the members to attend any of the meetings of the Experimental Union now going on at the College, and particularly the open meeting to be held in the evening.

REPORT OF SAN JOSE SCALE COMMITTEE.

Mr. EVANS: At the last session of the Association Mr. Hall and myself were appointed a Committee with regard to the San Jose Scale. I communicated with Mr. Orr, and told him that if necessary we would attend at any time or place to help with the passage of the Bill; but I found it was unnecessary, that the Bill was going through without any opposition practically, and Mr. Orr did not think it necessary for us to attend, so we did not meet or attend the House, and consequently did not incur any expense whatever.

DIRECTORS' REPORT.

Your Directors are again pleased to be able to report that the Bee-keepers of Ontario have had a fairly prosperous season, there being a fair increase in bees and a good crop of honey.

The business of the Association has been transacted as faithfully as possible, and we are pleased to be able to report a fair share of success.

The finances of the Association are in a satisfactory condition, there being a balance in the hands of the treasurer.

As in the past each member of the Association has received a copy of the *Canadian Bee Journal* monthly during the year, and also a copy of the Annual Report.

The usual grants 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 compliance with the Agriculture and Arts Act of Ontario.

There was an appropriation of $200 to the affiliated societies to be be expended in accordance with the By-laws of this Association.

W. COUSE, Secretary.

AFFILIATED SOCIETIES' REPORT.

There have been eight societies in affiliation during the present year as follows: Russell, Haldimand, Brant, Glengarry, York, Halton District, Norfolk and Oxford.

Each society received a grant of twenty dollars and these grants have been expended as directed by the by-laws governing such expenditures.

The reports of the increase of bees and the production of honey are about as full as usually received.

The colonies reported in spring were 3,101, in fall, 3,362, or eight per cent. increase. Comb honey produced 26,672 lbs, on an average of 8½ lbs. per colony, and the extracted 148,865 lbs., or an average of 48 lbs. per colony.

These averages of honey show a very good yield per colony—a total of 56½ lbs., which is above the usual yield—and the quality of the honey has been excellent.

W. COUSE, Secretary.

HONEY EXHIBIT IN ENGLAND AND FRANCE.

A discussion arose regarding the advisability of making exhibits of honey at Earl's Court and at the Paris Exhibition.

Mr. HOLTERMANN moved, seconded by Mr. POST, that it is the desire of this convention that an exhibit of honey be made at the Paris Exhibition in 1900, and that if, upon investigation by the committee, we find Earl's Court is a suitable place, and one likely to benefit beekeepers, an individual effort be made to send honey there, and that a copy of this resolution be forwarded to the Provincial and Dominion Governments. Carried.

SPECIFIC GRAVITY OF HONEY.

A communication was received from Prof. Shutt, of the Central Experimental Farm, Ottawa, regarding the sending of samples of honey for examination as to percentage of water, etc.

Considerable discussion ensued as to whether samples should be sent to the Inland Revenue Department or the Central Experimental Farm, or to both. No definite action was taken by the meeting in connection with the matter.

HONEY FOR MARKET.

BY R. F. HOLTERMANN, BRANTFORD.

In selecting the above subject as a topic for the annual meeting of the Ontario Bee-Keepers' Association Convention, I chose it because it gave abundant ground to cover. It might almost embrace the entire subject of bee-keeping, but my intention is to confine myself to a very small portion of the field. I need not enlarge upon the importance of decreasing the cost of producing honey by having strong colonies for the honey flow, not only by bringing them well through the winter, but by giving them judicious care from that time until the honey flow begins. To many this alone is the battle ground for profit or loss in bee keeping. Beginning with the supers, a beginner should ask himself, if he shall produce comb or extracted honey, and what are the advantages and disadvantages of the two systems. Not counting the cost of the supers which can be used from year to year, and remain with the bee-keeper, a hundred pounds of extracted honey can be sold without disposing of any of the apiarian supplies. In one hundred pounds of good

comb honey however, he has to give with the honey 120 sections at a cost of about 50 cents; enough thin super foundation to fill 120 sections, 73 cents; ten comb honey crates, $1.00, a total of $2.23. In large quantities this may be diminished somewhat, but with a beginner this is not far astray. The cost of material which has to go with the sections is then just about 2¼ cents per section. The moment a man places a value on comb and extracted honey, he runs the risk of having someone trample on him, but I believe that the interests of many demand that this subject should be taken in hand, and if any of the figures given are not satisfactory, you can do your figuring on a basis satisfactory to yourselves. First-class comb honey in this Dominion of our is selling all the way from $1.00 per dozen sections to $2.50, the price varying according to season, locality, honey-crop, etc., or running from 8½ to 21 cents per section; when you deduct 2½ cents from that it leaves from 6¼ to 18¾ cents per section. In the tens of thousands of pounds of comb honey our company has handled, and many more transactions I know of, I have yet to hear of a case where the seller was paid for his comb honey crates. First-class extracted honey sells in Canada at 6 to 15 cents per pound, more frequently at 6 cents when purchased in large quantities, such as 1,000 to 5,000 pounds, and a comb honey at 11 cents. The difference thus far on first-class honey is ¼ to 2¾ cents per pound; but have we considered the entire difference of cost? I think not. Those who consider that in production 70 pounds of comb honey is equal to 100 pounds of extracted honey, are considered by the majority of bee-keepers as over-estimating the ratio of comb honey; many more say that it is 50 to 100 pounds. I am inclined to believe that with the best management the first is right, but with a bee-keeper not thoroughly experienced, or not having time to apply his knowledge, it may be even less than the latter; but taking the ratio of 70 to 100 pounds, 100 pounds of extracted would bring generally $6, while the 70 pounds of comb honey would generally bring $8.40. With 2¼ cents deducted, which is the cost of foundation, sections, and crates, this leaves $7.30, a difference of 30 cents. For the sections must be folded, the foundation put in supers, wedged up and put on. These supers must not be put on too soon, lest the bees spoil the foundation and soil the sections. Increased care must be taken, and with every caution there will be a greater tendency to swarm, a snag against which beginners and other bee-keepers are so likely to run.

In extracting, we have the honey to take out and the empty combs to replace. To offset this in comb we have the bees to drive out of the sections, the comb to scrape, the grading, the nailing of the comb honey crates and the packing.

If the above figures are correct, it does not pay to produce comb honey with the present market difference. If the figures are not correct I trust the above will give some food for thought, and everyone can adjust prices to his own condition.

Thus far we have referred to first-class comb honey, but we know that the beginner and the man busy with other departments in life, cannot give his bees the close attention necessary to produce first-class honey. Consequently he produces comb, poorly filled, travel stained, light and dark mixed, with the result that it increases the cost per pound of sections and foundation with anything but a corresponding increase in the price of the product, and the producer becomes the loser. We might leave such a man to his fate, but our Association receives a Government grant, and we receive it to benefit bee-keepers generally. But this cull comb honey receives much greater attention than it merits. Market quotations appear to glory in giving the lowest prices, and if in Toronto, Montreal, or some other cities a few culls have been sold at 6½ cents per pound, the public without explanations, see in the press that comb honey is selling at from 6½ cents to —. The tendency of this is to depress prices; few men can resist a low offer when told that some one is selling at that price. I know individuals may be in a position to say they keep up prices, but the question is, are my statements in the main correct? And if they are is it not in everyone's interest to discourage the production of inferior comb honey?

Having made an effort to throw some light on the relative profit in the production of comb and extracted honey, let me say, in producing comb honey for the market it is desirable to keep colonies strong, to know when the supers should go on and when they

should come off. In going through the country I have time and again seen sections on the hives, even freshly put on, when there was not the slightest hope that the bees would do anything with them. I have seen them on colonies so weak that they could not take care of a full brood chamber, to say nothing of these supers, and producing surplus honey suitable for market. While we find such frequently the case, these errors can be comparatively easily avoided. To prevent inferior honey from being stored in the sections is, however, more difficult. The bringing from the brood chamber into the super inferior honey, and the storing of early honey, can be avoided, first by shifting and uncapping honey, compelling the bees in strong colonies to convert dark honey into brood. If the bees require more room than the brood chamber affords, the extracting supers should be put on, and if there is any spare energy let the bees pull out sheets of foundation. Combs thus newly built offer an excellent opportunity for watching the color of the honey coming in from day to day, and at the opening of clover just as soon as the bees cease bringing in (or up) dark honey, the sections are put on. To avoid cull sections towards the close of the season, we then change to extracted honey. This system has been the most satisfactory to us. Although we depend upon buckwheat as a crop, we do not consider, if it can be avoided, that it pays to finish with dark honey sections having a considerable quantity of light honey.

In extracting honey a little too much does less harm than not enough. Two or even three supers on one hive can be used to great advantage, and this additional investment will do much to help the bee-keeper to decrease the cost of production. In running for extracted honey the danger of having dark honey carried up from the brood chamber is greater than with comb honey. To watch the extracting supers at the opening of the season would result in much less inferior honey being put upon the market. Better extract a little early honey then, than have a lot of well ripened dark honey. Even during mixed and unfavorable seasons a fairly good article can be secured by holding each extracting comb up to the light as it is taken in hand, and at the first extracting uncapping only such combs as show the light color through the capping. The practice of exposing a large surface of honey in so-called ripening cans placed in an ordinary temperature, is in ninety-nine cases out of a hundred altogether wrong. The honey becomes thinner rather than thicker. A simple test can be made of this by taking a plate, putting upon it a layer of honey one-sixteenth inch thick. The honey set out in the atmosphere generally becomes thinner. If it takes up moisture on the plate, it will be almost sure to do so in the open can. This is contrary to the opinions of those I have met thus far, but it can easily be tested. Seasons vary it is true, but after the close of the honey season there is generally a considerable quantity of moisture in the atmosphere.

Too much time has already been taken, but we must study our markets, and put our produce in the most acceptable and reliable shape. While catering to the demand for very small packages, we should do everything in our power to discourage them. There may be several reasons accounting for the fact, but when honey was at least not less in price, 5, 10, 20, pounds and even greater sized packages were generally used, and the very small packages were unknown. Neither the consumer nor the producer has gained anything by this. Comb honey not well attached to the wood should be sold at home, otherwise it may disappoint everyone connected with it.

There is at the present time talk of a European market for honey; should this develop, then, more than ever, will it be necessary to aim at a higher standard of perfection in the article. Such a course would result in a wonderful expansion in our home market.

I have of necessity had to leave much unsaid, but the sooner the idea is exploded that honey is simply honey and all of the same quality, the sooner the public know that it varies in quality just as much as butter, the better for everyone.

In closing let me say, a larger return for capital and labor expended means greater profit; to secure the larger returns we want a greater quantity of produce, or a better article, or both; and upon this the question of producing at a profit, or loss, hinges to a greater extent.

Mr. GEMMELL: There is only one point I would like to touch on now, and that is with regard to the quantity of comb and quantity of extracted honey. I think Mr. Holtermann says there is 70 per cent. of comb to 100 per cent. of extracted honey. Some years that may be right, and some years wrong. I would like to hear the experience of some of those who have been a little more in that line.

Mr. HOLTERMANN: In the paper I say that no one says that you can produce more than 70 pounds to 100 of extracted, and of course giving the benefit of the argument in that direction. Granting that you can get 70 pounds of comb, that puts it in the most favorable light for comparing comb and extracted. But even if you can get 70 pounds of comb to 100 of extracted, it shows that there is not the profit in comb honey there is in extracted.

Mr. DARLING: I do not think he places the price low enough. In a town a little north of where I come from first-class comb honey is sold for 5 cents.

Mr. DAVISON: I think there is even more difference than he says in the amount of comb honey to extracted.

Mr. HOLTERMANN: Your idea is that there is less profit in the production of comb honey than I have stated?

Mr. DAVISON: Yes.

Mr. A. E. HOSHAL (Beamsville): Do I understand that is by weight or by section?

Mr. HOLTERMANN: I am figuring by weight. My idea is to discourage every beginner who thinks he wants to go into comb honey.

Mr. CHRYSLER: The young bee-keeper will find more difficulty in disposing of his extracted honey on the start, at least, than he would of comb honey. It would probably discourage him in that way.

Mr. FRITH: Mr. Holtermann's comparisons and ratios are pretty nearly correct according to past experience of producers of honey. There was another point with regard to the local markets for honey. Mostly every bee-keeper will find he can sell in his locality more comb honey than extracted, and this would have something to do with the profits of the honey in his locality.

EXTRACTING WAX.

By F. A. GEMMELL, STRATFORD.

In regard to the rendering of wax, I have nothing new to offer. Anything I have is a combination of what others have been carrying out for some years past. Several years ago I had quite a number of combs to melt, and I had made up my mind that all the wax had not been secured out of the rendering of combs by any process I then knew. I had been practising the plan generally followed by most people; that is, crushing the old combs in cold water, and allowing them to remain for 24 or 48 hours in order that the cocoons and pollen contained in them would be saturated with cold water and not so apt to take up any of the wax when the combs were put into hot water. Bruising the combs as I have told you, they were placed in an ordinary gunny sack, and put in a boiler of hot water and sunk to the bottom of it by placing a frame work on top; underneath there was a framework also. After boiling for a certain time the wax would rise to the top, and it was skimmed off; and I have thought that I did not get all the wax by that process I should get, because I always found some refuse in the comb remains. Having a few more combs to melt a year or two ago, I thought I would try some other process. I found that the solar wax extractor was no use for old combs, for the simple reason that as soon as the wax melted the cocoons would absorb a certain amount of the wax as well as the pollen. That refuse was put to one side and kept for experiment later on. Then I tried the experiment of using a steam wax extractor. I had spoken to Mr. Hall about it, and he had used the same extractor, that is, one such as you will find illustrated in the

A.B.C. Book, and in fact it was once called the Jones Steam Extractor. Mr. Hall thought he could get all of the wax out of the combs he considered worth taking out. I was not quite sure of that, and I got one of the steam extractors made and tried it. I was not satisfied with it, so I resolved I would bring some pressure to bear. I tried the three different ways. I first got the press made. It is a simple thing. First of all there is just a wooden frame, and two iron uprights; and across the top of the apparatus there is a wooden bar, and an ordinary jackscrew put in at the top, so that by turning this screw it would go down and bring pressure to bear on whatever was under it. We had to have an ordinary scouring tin pan about 14 inches square and 4 inches deep, and there was a lid to it; that was set down on the wooden platform. On top of that was set a wooden mat. This mat was made of slats, such as you have seen in these ordinary window blinds. The slats were $\frac{7}{8}$-inch high and about $\frac{1}{2}$-inch wide, and a quarter of an inch apart. This mat sat right down on the bottom of this tin pan. On top of the mat we used a frame that was made of $\frac{7}{8}$-inch stuff, and just set inside of this tin tray. After that was put on top of the wooden mat a piece of gunny sacking was spread over all, and a quantity of combs that had been melted on the stove was poured in on the gunny sacking, not in a bag but just a plain piece of sacking. Then the gunny sacking was folded on top again and tucked along the edges of the wooden frame. There was a follower of 2-inch plank having a piece of iron on top. There was another small mat laid on top of the gunny sacking similar to the one underneath, and then this wooden follower, this 2-inch plank, was laid on top of that again. Then pressure was brought to bear, and as we pressed we found we could force both wax and water out into the tin pan underneath. But of course we did not get all the wax out that way. We still pressed and found we could get nearly every particle forced down in between these spaces in the wooden mat and the mat up above. After it was kept there 15 or 20 minutes we would sometimes pour in cold water, in order to get it cool quicker. After that we would take the screw out and lift off the follower and take out our top mat, and we would find this wax seemed to be forced through into this place. Sometimes the wax was a little colored with pollen, and underneath we would find the same thing, and we would roll the mat up and scrape long strips of wax out from the mats. We found by trying that process we could get a great deal more wax. We would get about an average of one-third more wax from the combs melted in the solar extractor or from the combs melted by the steam extractor, but we would not get as much from the combs that were boiled in the water. It seems to me that in using the steam extractor for a time the wax would come out very freely, but as it got near the bottom the cocoons and the pollen seemed to prevent all the wax coming out. There would be more wax come out than if you boiled it. It seemed when the wax was boiled, that the wax being so much lighter than the water would come to the top more freely, and there seemed to be less contained in it, so that I did not really lose as much by the old process as I thought. We found that we could by the boiling and using the press afterwards get about three pounds of wax out of eight combs, that is old combs that were may be five or six years of age. That is a great deal more, I think, from what I can learn, than usual.

Mr. CHRYSLER: Have these tests you have been making been on old refuse or have they been from old combs?

Mr. GEMMELL: Old combs. I took no refuse that had been boiled, but one or two parties that had refuse that had been through the steam extractor seemed quite satisfied they had gotten all the wax out. Mr. Hall was one. He said he got very fine wax, and believed he got mostly all the wax out of the combs. He asked me how I had gone about it, and he said I differed very little from him in that he melted the combs in a pan of water on the stove before he put them in the steam wax extractor at all. Mr. Newton followed the same process. After I had concluded my experiments I asked Mr. Newton if he would give me a little of his refuse to see what I could do with it. I got 20 pounds, and we put it on the stove and heated it, and poured it into the press, and got out of it 7 pounds 2 ounces of wax. My boy went down there to learn to make comb foundation, and he took this press of mine down there to convince Mr. Hall that there was something in it, and Mr. Hall said he was more eager to find out about that press than to make the foundation.

Mr. ATKINSON: Did I understand you to say you could get 3 pounds of beeswax out of 8 frames?

Mr. GEMMELL: Eight combs.

Mr. ATKINSON: Would these combs be made from starters?

Mr. GEMMELL: Full sheets of foundation. You might not get that from all, but out of 96 combs there was an average of three pounds per hive of wax.

Mr. HUTCHISON: Before you put this refuse in the press is it run through the steam extractor or boiled?

Mr. GEMMELL: Steam extractor. I tried the ordinary way of boiling it, and I got less wax than out of the other.

Mr. EDMUNDSON: Do you think it is necessary in your process to break your combs and soak them in cold water for 24 hours?

Mr. GEMMELL: It is not necessary if you use the press. I wanted to find out how much wax I had been losing by the old plan. If you melt the combs and put them through the press what you do not get by the steam extractor you get by the press.

Mr. HALL: I simply get up to state a fact. I told Mr. Gemmell that I thought he could not get any wax out of my refuse. We put it in a Jones extractor and stirred it until we thought we got the wax out. We tipped it out, and he was so sanguine I had not got it out, and I was pretty positive I had, that he wanted me to send up some refuse to see how much he could get out. I thought he was too sanguine to be trusted in the transaction, and I said, "No; you send the press down to me, and if I like it I will get one, too" As he says, his boy came down with the machine, and we tested it, and we got a lot of very nice wax out of that stuff that had been lying around for four or five months on the ground. We then tested some from the combs, and we got very nearly a third more after we took out all we could by the boiling process. We got one-third more wax than what we got out in the common way. I sent that wax extractor home, and we sent down to the wagon shop and got the iron made and the cross-pieces and the follower, and it laid aside until last week, when I commenced to build it up. It will be done when I go home ready for operation. In the past I did not like to melt our old combs because we got so little wax for so much trouble that I let them be. I have only one improvement to Mr. Gemmell's. His sits on the floor or box, and if you pull it to one side it slips. I put four iron pieces on to that to screw it to the floor; that is the only improvement I have made, and all I think is necessary. It will cost you $1 60, besides your labor to make it.

Mr. GEMMELL: Mine cost about $2.

Mr. SMITH: I would just like to ask Mr. Gemmell, I understood he got three pounds of wax from eight frames?

Mr. GEMMELL: Yes.

Mr. SMITH: How much wax would be in the foundation?

Mr. GEMMELL: About a pound and a half.

Mr. HOLTERMANN: Wouldn't you be inclined to think it was fairly heavy foundation to begin with?

Mr. GEMMELL: It might; I wouldn't like to say. That is what we got. We did not take one hive. We took 96 combs, and that was the result. We kept count of the wax we boiled out and the amount we pressed out.

Mr. HALL: It is very soft wax.

Mr. SMITH: I did not think there would be so much added. There must be more or less absorbed in the cocoons.

Mr. GEMMELL: This pressure seems to press everything out through the gunny sacking.

Mr. NEWTON: I am glad Mr. Gemmell has brought out the point he has. I think it was two years ago we had a long discussion on the same line, and it did not seem as

though we could get much light on the subject. I have done a good bit of melting of old combs, and I thought I could get a pretty good percentage, though I never was certain I I got it all. After Mr. Gemmell was up to see me the refuse was out in the garden, and he asked if I would give it to him. He sent for it, and the return he told me was seven pounds two ounces out of the 21 pounds of refuse. In making up some of Mr. Gemmell's wax this year into foundation, I might say, it was nice wax that was taken out by that process, and although a little bit soft it worked very nice. I am sure as bee-keepers we have to thank Mr. Gemmell for what he has brought before us. Although probably not new in a way, yet it is new to the bee-keepers of the Ontario Bee-keepers' Association.

Mr. HOSHAL: I have been satisfied this long while that there was a very large proportion of wax in the best cleaned refuse we could get. Take ordinary refuse and look at it with the naked eye, and it has every appearance of being rubbish. If you will take that rubbish and put it under a glass and magnify it, you will see that it takes on an altogether different appearance—that instead of being a lot of refuse with a little wax in it, it is a great big lot of wax with just a little refuse in it to color it and deceive the naked eye.

Mr. DICKENSON: My experience along that line is something like Mr. Hoshal's. I have always had considerable doubt that after extracting combs I got all the wax out. I was quite positive I had not, and to prove that I was quite positive I have got now a stock of this refuse stored away. I did not know whether I have been waiting for some man like Mr. Gemmell to discover something new, but I must say that, according to the explanation he has given us with regard to the pressure he brings to bear on that hot refuse, I have no doubt I can get considerable wax out of this stock of refuse. So I shall be very glad to try that process.

Mr. DARLING: I have tried two or three ways of taking out wax. I used the Jones extractor for a while, and was dissatisfied with it. Through Mr. McEvoy's influence I was furnished with the pattern of Mr. Alpaugh's invention of the solar extractor. I made one, and was very pleased with that. In starting the fire one day with refuse it burned so freely that I made up my mind there was too much wax there to waste. So I gathered the refuse up in a box. I had no press to press it out, but I put it in some of this coarse sacking, and took two sticks and pressed it as well as I could with the sticks, and got about ten pounds of wax out of what had been thrown away. Still I was not satisfied. My friend Gemmell told me about his process, and I made up my mind my refuse could lay there until I got a press.

Mr. BROWN: It appears very plain to me that the paper before us is one of the most interesting we have had for some time. It goes to show that we are as a rule losing quite a quantity of what should be turned into hard cash; that is, a large quantity of wax. I am using solar extractor, and from the discussion going on I must be losing at least one-third of the wax. I think this paper is worth a good deal to the convention, and for my own part I mean to profit by it if possible and have a press.

Mr. ALPAUGH: I have never used the solar wax extractor for melting old combs except where the combs were in a whole state, and getting them just to fit the basket, and setting them on edge so that as they melted it ran down through the base, and was not caught in any of the seams. I know I could get about all the wax out of the combs that way, but whether it came out from between the cocoons and the wall of the cell or not, I do not know. I would never recommend it for old comb, because the wax will collect in those cocoons and stay there unless it is got out by force. Even by the boiling process, Mr. Smith was telling me he got about all out; he was sure the wax would rise to the top I told him it would not. You put so much wax in, and so much will come to the top, and so much will stay there.

Mr. SMITH: What weight did you get from eight combs?

Mr. ALPAUGH: I only got a pound and a half from the combs—old black combs.

Mr. GEMMELL: You would get more wax by using the press out of those. The thicker the cocoons, the more power required.

Mr. ALPAUGH: After going through the combs I could see that the wax had gone out through the base, but I could not see why there could be as much wax retained in the wall as what went out, unless it was taken up by the cocoons in some way, soaked into it, instead of running where it ought to go. I cannot see yet how you can get three pounds.

Mr. EVANS: In case of this process of squeezing out the wax becoming general, and bee-keepers were to extract wax from foul broody hives, would there be any danger that parties would not boil it sufficiently?

Mr. GEMMELL: You boil it first and squeeze it afterwards. If you use a steam extractor the steam would destroy it, but in using a solar extractor I do not think it is a very safe thing to do. After you get all the wax out you would have to boil the refuse.

HOW CAN WE MAKE OUR ASSOCIATION MORE USEFUL?

BY J. K. DARLING, ALMONTE.

The above question is one that should interest us very deeply. Receiving as we do a grant from the public funds, and being assisted in other ways as we have been by the Government of Ontario, it is but fair that we should endeavor to render as great returns as possible for that which has been given us. It would not be possible in one brief paper to mention half of what might be done, and I propose to just glance at a few of the many ways in which we might hope to attain to greater usefulness. I shall divide these ways into two classes, the positive and the negative, the doing and the refraining from doing, and I shall treat of the latter or negative side first.

We are not to consider our work done because we have succeeded fairly well in the past. It is true that some of the tasks have been fairly completed and some others well under way, but what we have accomplished only opens the way for other and in some cases better work. If we are to conduct the business of this Association for the benefit of the beekeeping industry at large, we must not come to these conventions as isolated individuals, and endeavor to make all things work together for our personal benefit; neither should we try to place personal friends in official positions unless they possess some other qualifications besides a desire to please. We must not allow ourselves to monopolize the precious time of these conventions in discussing abstract theories which are of no practical value to any person except those of a scientific turn of mind, and of little use to them only as side lights on some other subject. Above all we must not permit personal matters and private bickerings to be discussed during business hours, neither must we permit personal spleen—if you will allow the term—to influence our work for the public. A true soldier knows no enemies on the battlefield except the enemies of his country. We should all remember when we get here that individually we are only a part of this Association, one piece in a machine, and we are expected to do our part to the best of our ability and with the least possible friction.

Do you ask what shall we do? As individuals we should come here prepared to take part in all matters relating to advancement which may come before the Association, if we have any facts in our possession that would aid in the work, doing so as briefly as possible, and then giving others an opportunity to do as we have done.

When we disperse let each of us carry home with us a feeling of responsibility which will prompt us to do the best we can for the industry and for the Association as opportunity may offer. Let us remember that in our own locality the work of the Association in that particular locality rests entirely upon us as individual members, and call to mind the watchword, "England expects every man to do his duty."

As an Association we have work enough to tax all our energies. If we would rise to the greatest heights attainable there are some things in our management that will have to be conducted on different lines. In fact one or two should be almost revolutionized, notably the *manner of selecting* our officers—not the mode of electing them, with that I

find no fault. To quote phrases that have been repeated at these meetings, there appears to be a desire to "get new blood," to "pass the honors around," and if one may judge by some of the selections it matters little where the "blood" comes from or who may get the "honors," provided there is a change. This is utterly wrong, and will keep us down if it does not lead to ruin. Railway companies, banking institutions, agricultural societies, insurance companies, and all successful business corporations do just the reverse. When they succeed in securing a competent man for a responsible position they keep him there as long as possible, no matter how many others would be willing to show what they could do if given a chance. We should do likewise. If we have men who have made our meetings a greater success, and have given the country more for their money than others have done, put them back for as many terms as possible unless we are sure we have a better. To the winds with sentiment; business is business; the greatest good to the greatest number. One other thing just here. There have been members of this Association who have admitted that they have opposed a good man and set up an inferior individual simply to gratify a bit of personal spite. How can we expect to prosper if such principles influence us in the selection of our officers? If we wish to make our Association more useful we must have no more of this.

But what is the Association to do? That is the question. I answer, much in different ways. The Government has done much, and has spent money freely in the past, and I think it might be induced to do a little more, especially as it would add little or nothing to the expenses. We are trying to gauge the honey crop from year to year. Efforts have been made to obtain an estimate of the number of colonies of bees in the country and the results have been very unsatisfactory. Could we not induce the Government to have a column in the assessment roll for "colonies of bees," and have every individual on the roll give the number of colonies of bees in his possession? In that way I believe we could succeed far better than at present. One other duty we have to face and that is the dissemination of knowledge—educating the public, if you like the term any better. There should be five or ten times as much honey consumed in the country as at present, and there is only one way to bring that about: Educate the public. When honey producers put a better article on the market, and consumers learn that honey is a food and not a luxury—that it is cheaper than good butter for a poor man's table—there will not be quite so much trouble in disposing of our crops. This can be accomplished only by education. How shall we do this? That is a question for this Association to decide; also each individual member has his duty in this matter. I shall mention only one of the various ways which have presented themselves to me. Let us use the Farmers' Institutes We have been asked to recommend men as lecturers. Here is a grand chance to reach both producers and consumers, as many farmers and laborers are consumers now, and it is hard to say how great an increase there might be in the home demand. In the list of speakers for institute work for the present season there are about eight prepared to speak on poultry, some three or four having no other theme prepared. There is just one prepared to speak on beekeeping, and I believe he has other subjects as well; and, more, he is available for only about two weeks, while the Institute work covers a period of about three months.

As this paper is too long already I will drop a word of caution and have done. Do not send men out who have "axes to grind" if you can avoid it. There has been trouble already in Institute work mainly caused by such persons. Any suspicion on the part of an audience that a man is trying to talk money out of their pockets into his destroys that man's influence for good, and directors of Institutes will not have him on the delegation if they can avoid it.

Mr. FRITH: This excellent paper touched the very vitals of the beekeepers' institution. We are here as an Association. Perhaps a great number of us come with the expectation of getting a good deal of individual knowledge. There is another feature of it which becomes somewhat important. We are representatives of a vast number of beekeepers, according to the statistics which have been given here to-day. Each member sitting here to day is the representative of about 2,000 beekeepers in the Province of Ontario. We are here to guard the interests as far as we possibly can of beekeeping in

general, and when we become members of this Association we assume this responsibility; and in proportion to the ideas which we fix and the methods and modes that we propose to beekeepers to follow, in that proportion the industry will rise and become useful, and we will be able to help our fellow men in securing or gathering from nature her stores. It is a well known and acknowledged fact that every man who can recover a dollar from nature adds not only to his own personal prosperity but adds to the common wealth of the people. The paper to my mind divides itself into three divisions, the past, the present and the future. When we look over the work this Association has done in the past, we miss, one after another, those who have brought this institution into existence, and who have left legacies in the way of methods and plans, and legislation, and who have initiated a great many useful things for the advancement of beekeeping in general. They are passing away, and it is becoming a fact very noticeable. In regard to the present, we must ask ourselves what we can do, and the very best things we possibly can do to advance the industry of beekeeping in general. Take up the experience of the past, benefit by our failures in the past, and lay a good foundation for our institution. Young men are coming upon the scene; there are quite a number here who have never been here before, and they come here with very little knowledge of what has been done. We can see that manifest in many propositions that are made, and it becomes us as an Association to look well to the present. In regard to the future, we should lay foundations that those who are coming up after us can build upon; foundations that will be sure, that will help to raise this industry up to its place with other industries. There are many points brought out which it would be out of place for me to touch upon. I have very much pleasure indeed in introducing the discussion to the Association.

Mr. EVANS: I agree with nearly all that Mr. Darling has said, especially as to the government of this Association, and the advisability of keeping the officers in who are good officers I have always preached that doctrine at home in municipal elections. I was rather out of harmony with him when he spoke of putting better honey in the market. I think we do satisfactory work there. I am altogether at issue with Mr. Darling as to the advisability of having lecturers on the honey business, of having speakers go out to the Farmers' Institutes. I do not think you will get many customers by it. The fact of having lectures delivered, or having beekeeping alluded to, at Farmers' Institutes in particular, where you meet a particular class of people who are going into it, is inviting competition. It is not selling at such enormous prices that we should encourage people to go into the business, and I think it would be injurious to have men speak at Farmers' Institutes. If people will go into it all right, let them go, but we should not induce competition. I pay my dollar and am here. I do not know that I am bound in any way to help those fellows who won't give a dollar in the interest of beekeepers. I think we who are engaged in the business, and making a profession of it, should keep strictly in view our own interest. It is the most patriotic thing we can do, to look after ourselves

Mr. DARLING: I think Mr. Evans misunderstood the sentence in the paper. It is my firm conviction that if we had intelligent men go out as lecturers there would be fewer men lose money in beekeeping; there would be less competition among those who are already engaged in the industry. There are too many in it who do not put a good article on the market.

THE PREMIUM.

After discussion it was decided that the Association take the *Canadian Bee Journal* again as a premium to members.

ADDRESS.

BY HON. JOHN DRYDEN, MINISTER OF AGRICULTURE FOR ONTARIO.

We have proven in this country that this is a land flowing with milk, and I think I read in somebody's address that you proposed to make it also a land flowing with honey; so that we will be able to say that this is a land flowing with milk and honey. Our

dairymen have not only given us good products, but they have advanced now to such a stage as to the quantity of the product as well as the quality, that our country is known for this product all the world over. Now, I shall be very glad if the bee-keepers are able to add to the other in a similar way. I would like to say that in my judgment this country is admirably suited for the very best quality of honey; and what I have felt all along, and perhaps you understand better than I do, that all we needed as a sort of stimulus to advance production in this country was a better market. I think now you will probably soon see an open door for better markets for this product, as we have for all our products. I understand that some Canadian honey has gone into Great Britain; I understand also it is very much appreciated there, and I would expect in the near future that you would have this market increasing very rapidly. I think now is the chance, because more than ever in the history of our country do we find Canada appreciated in every respect in the Old Land. I remember years ago being in that country, and I used to be, to put it mildly, disgusted to find that the people there new so little of Canada. They knew of America, but they did not seem to have heard distinctly of Canada; and when you talked to them about coming to this country, they would say to their neighbor "This is an American," and when we went to purchase sheep or cattle they would say "The Americans are here," and when we spoke of the ports in this country they would tell you of New York and Boston. I remember on one occasion being seated at a dinner table where a number of prominent gentlemen were present, and we had been talking of Canada, one of the gentlemen turned to me and said, "By the by, I did not hear you say which of these gentlemen you voted for as president at last election." You see after all our talk the man reverted in his mind to American institutions; he referred not once to Canada, but to the Republic. I did not like to rebuke him and tell him how little he had studied the history of the world, I merely said, "But you forget that I am from Canada, and that our institutions are similar to what yours are here." I venture to say that in the near future you could not have such ignorance as that. All the people are studying our country—are studying how trade can be increased between the motherland and this land—and to-day, I am told, what you need to do to have your products receive attention is to mark them "Canada," and Canada will be preferred rather than America to-day. We understand that they are friendly to America because of what has been done by some of our politicians; it has had that effect all over the country. Now, in order to catch this market, of course I need not tell you that there are two or three things absolutely essential. You must have superior products. You meet there the whole world in competition, and you cannot expect to gain the front rank in the market with that which is inferior, but that which is superior. You must put it up in some attractive form, so that it will present to the eye some attraction as well as to the taste when they open into the parcel. I think our people in the past have made a mistake in this regard, and have not paid enough attention to British peculiarities. So that they will know at once "That is Canadian; I have had some of that before; that is what I want you to give me." The Englishman does not like to be deceived; you cannot try any wooden-nutmeg business on him. It must be honest dealing. Those who handle this product must be careful that they do not impose upon the Englishman; he won't stand much of that. If he makes up his mind that American cheese is filled, and therefore inferior, he says, "I do not want any more," and you will have to work a long time to get it out of his head. Everybody ought to unite their efforts to this end. So far as I am personally concerned you all know I am your friend, and am prepared to render any assistance to any of these Associations we have in this country, provided we work along the line of progress and development and improvement to our country. I have often difficulty because some organizations say, "The country—let the country take care of itself; I am looking after this gentleman." Do not let us have too much of that. We must understand we do the best for this gentleman and for ourselves when we are doing that which is best for the country. I would like to suggest that the bee-keepers of Ontario have a part to play in working out our national interests in this country, just as certainly as any other branch of agriculture. The little bee may be considered a very small thing, and to some persons it is a very inferior thing, and does not deserve as much notice and attention as we give it. They say, "You give this and that. Look at what you give to the bee-keepers; it amounts to nothing. Look how you are

encouraging the poultry men; what does that amount to?" But when you come to add up the product you find that there are millions of dollars in it, and every time the little bee goes out and settles on some flower, and brings the honey out of the flower and stores it for you, every bee that does that is adding to the wealth of this country. There is no doubt of it. A little drop of water is not much; but the ocean is a great deal, and yet it is made up of drops. So it is. The wealth of our country is made up of these little industries, some of them greater and some of them smaller. But as a Canadian I desire that all our industries should be encouraged, and that every man in this country should understand that he has a part to play in the working out of the great nationality we expect to see here in the future. And as you work with your bees at home, the thought I have to give you as you properly take care of them, as you look after what you call your own, is that you are but adding to the wealth and prosperity of our country.

MANAGEMENT OF COMB HONEY.

By R. H. Smith, St. Thomas.

If I understand aright what is meant by the management of comb honey, it includes the management of bees to produce a crop of comb honey in sections that will command the highest market price, and the care of the same until it is sold.

I would not advise the novice in bee culture to go very deeply into comb honey production until he has had some experience with bees, especially if he has a market for extracted honey. He will find it a comparatively simple matter to give surplus room and to extract the honey at the close of the season. For the production of section honey it is necessary to know the nature of the pasturage within reach of the bees, and the probable length of the honey flow, so that no more sections will be given than are likely to be finished, or the result will be a lot of partly filled, almost unsaleable sections.

My plan of procedure is: First, to prepare during the winter all supplies that are likely to be needed for the coming season, such as hives, supers and sections, the latter to be filled with thin comb foundation made from the finest wax procurable. Next, in the spring, to set out the colonies wintered in the cellar and see that each has plenty of stores and a good laying queen with plenty of room to deposit egg. Then, during fruit bloom, those wintered outside are unpacked and all queens reared during the previous season are clipped. More room is also given to those that are crowded; some may require another story to keep down the swarming fever till we want them to swarm, or just before the clover honey harvest. When swarming commences, we usually hive the swarms on the returning plan, by removing the old colony to one side and placing the new hive on the old stand. This hive contains five frames with foundation starters two inches deep; the rest of the hive is filled with dummies. If the swarm is only an average one, we give a super filled with sections next day; or, in the case of two or more swarms going together, we give one or two supers at the time of hiving. If the honey flow should be good they will require close attention to see that they do not get crowded, or the result will be re-swarming and loss of time from the bees loafing.

As soon as the supers of sections are finished we remove them from the hive, first driving the bees out with the smoker, or by using the bee escape. The finished honey should be stored in a very warm room and it will improve in quality. The sections are then cleaned by scraping off all propolis, graded and put up in neat, white basswood shipping crates holding twelve or twenty-four sections, with a paper tray in the bottom to catch any honey that may leak, the sections resting on strips one-eighth inch thick. These crates are all marked with the grade, and gross and nett weight, then they are ready for market.

There are many phases of the subject that I might go into, such as size and width of sections, plain or no bee way sections, separators or no separators, style and size of hives and supers, etc., etc., but I think this paper is long enough. We use a $4\frac{1}{4}$x$4\frac{1}{4}$x$1\frac{5}{8}$ section with a perforated cleated separator that gives a plump section weighing fourteen to sixteen ounces that finds ready sale at good prices.

Mr. SPARLING: I think Mr. Smith's plan, so far as he has outlined it, is much in accord with that of most comb honey producers He would recommend the novices to take extracted honey. Well, that is a question, whether it is advisable to tell the novices to take extracted honey. If he does there is great danger of his putting poor honey on the market. If he takes sections, the sections may not be perfection, but the honey stored in them will be as good as that produced by an expert. He advocates light foundation. I presume he means what is known as extra thin. Well, I am not sure about that. To produce the best results, as far as a large profit is concerned, I think that medium weight foundation serves the bee-keeper's interest best. He talked about the bees swarming out. It is only, I find, at certain seasons that bees are inclined to swarm out—during very hot weather. I have obviated that in a great measure by, in very hot weather or very heavy swarming, where I have a couple of swarms together, putting an empty chamber below the brood chamber.

Mr. SMITH: I might say that I would not advocate extra thin foundation—I guess about twelve foot to the pound.

Mr. NEWTON: There is one point that came out in Mr. Darling's paper that I thought was brought out yesterday and I think it well that we stand to the point we arrived at yesterday. Mr. Sparling said he thought the novices could produce the quality as well as the expert bee-keeper. That is just why I want to mention it. We said yesterday that so much of the honey this year when held to the light had a reddish cast in it, that it was carried from the brood nest, and if the novice does not guard against such he will have that honey in his sections; and that, I say, is not in it with the best of honey.

Mr. POST: In reference to that thought of Mr. Sparling's, I would say that novices in producing extracted honey are almost sure to starve their bees to death the first winter. It is very discouraging for them; they have to buy over again.

Mr. GEMMELL: Would they not be just as apt to starve if they were held in a contracted brood chamber for extracted honey?

Mr. HOLTERMANN: The novice never does that.

Mr. EMIGH: I would like to hear from the gentleman who had the comb honey at London.

Mr. J. H. SHAVER, Cainsville: I take it on Mr. Pettit's plan; I do not want drones running over my honey, and I do not allow an old colony to do any capping if I can help it.

Mr. GEMMELL: Do you put sections in your old colonies at all?

Mr. SHAVER: I do.

Mr. GEMMELL: Because they are apt to use the old cappings?

Mr. SHAVER: I do not know what they do, but they dirty it anyway.

Mr. GEMMELL: I think it is pretty generally conceded that if the sections are capped over an old brood chamber and allowed to remain any time at all they will become dark.

Mr. SHAVER: I use the Pettit way on all my hives. There is one question I would like to ask you: When is the proper time to put the wedges under the hive? I have had a little argument with a few this summer and we do not agree.

Mr. SMITH: Do the wedges make any difference in the way the sections are filled?

Mr. SHAVER: I claim it helps to fill them. I have done far better with the wedges than without them.

Mr. SMITH: If you had a small colony of bees in that hive would you get the outside sections filled just the same as if you had a large swarm?

Mr. SHAVER: I do not use small swarms.

Mr. SMITH: If the super was not full of bees would they fill the outside?

Mr SHAVER; I have had them fill the super before they touched the outside. I have had them start in the middle, but I have had them start on the outside too. What I want to know is the proper time to put the wedges in.

Mr. POST: What race of bees do you produce that honey with?

Mr. SHAVER: As near as I can tell they are hybrids.

Mr. POST: Is the foundation stock Italian?

Mr SHAVER: I do not think so. There were some neighbors of mine had better bees than mine, and mine have improved.

Mr. HOLTERMANN: I might say, as far as those wedges are concerned, we tried in the same yard wedges and no wedges, and we certainly think we got better comb honey and more evenly filled with the wedges. It seems to me it would be reasonable. Of course, anything that will produce the same effect will answer, but by doing that the bees are compelled to go along the outer sides and fill the outer sections.

Mr. GEMMELL: Last year I used the wedges, and this year I did not. Of course it depends a good deal on the honey flow. I think a perforated separator has more to do with getting the outsides filled than the wedges. There was one other point asked: when it was best to put the wedges under—that is before swarming or after swarming?

Mr. SHAVER: Any time. After swarming I put them under.

Mr. HOLTERMANN: Mr. Pettit puts them in before.

Mr. SHAVER: But does he put them in when he puts the super on?

Mr. HOLTERMANN: He puts them in a little after the super is put on so as to force the bees into the super.

Mr. ALPAUGH: I would like to ask any others who use the wedges if they examined under the hive to see whether the bees are not clustered on the bottom board?

Mr. SHAVER: I have. If the wedges are put in at the right time they will not cluster around the bottom board.

Mr. Spar'ing: I have tried the wedges to a small extent, but I could see no difference.

Mr. ARMSTRONG: I would like to ask Mr. Shaver if he uses perforated separators.

Mr. SHAVER: I used a few, but mine were not spaced right. I made them myself, and I got the spaces too big.

Mr. GEMMELL: I thought Mr. Post's were a little large. He made his, and I thought if his were a trifle less they would be better, just barely wide enough for the bees only to go through. With the use of wedges you get the outside sections better filled than without them?

Mr. SHAVER: By all means.

Mr. GEMMELL: That is opposed to my experience. I would sooner do away with the wedges than the follower, that is for getting the outside sections filled.

Mr. POST: That is my experience. In fact I never use wedges.

Mr. SIBBALD: I never tried the wedges, but I block the hive up in front, and there is a space left then from the front to the back. The bees can get out near the front; by the back they cannot. They store their honey up from the outside comb; they do not leave their honey down so near the light. Before that I had the outside combs pretty well filled with honey. Then, as to the followers, or the wedges, I have used them for a good many years. I had to use them to fill up my super in the first place, and after just followed the separator with the wedge, and it gave a space at that side; on the other side I had not one. The one near the space was the best filled. Now I have one of those at each side.

Mr. GEMMELL: Mr. Alpaugh, as I understand him, does not want any space at the side of the super at all. Mr. Post prefers the space, and so do I, and you prefer the wedges to the space at the side?

Mr. SHAVER: I have not tried it enough to know. I have had good results from the wedges.

Mr. SMITH: Have you found that the slatted separator has any advantage over the plain separator?

Mr. HOLTERMANN: You know as soon as you begin to make perforated dividers; the expense is so great in boring those holes that it makes it an expensive contrivance.

Mr. SHAVER: Why not punch the holes the same as in the chairs?

Mr. HOLTERMANN: Yes, but you would sell more seats for chairs than of the other. I have great doubt that either the slatted separator or the perforated separator has any advantage in the interior of the hive.

QUESTION: When is the right time to remove outer cases from hives wintered outdoors?

Mr. MCEVOY: When the warm weather has come to stay.

Mr. ATKINSON: When do you calculate that is?

Mr. MCEVOY: Well, with me, about the 20th of May; I am in South Wentworth.

Mr. ATKINSON: Do you think it would hurt to leave them there till the 1st of June?

Mr. MCEVOY: I do not think it would. I do not remove the cases, I just simply remove the packing and raise the case, because I want to shade them from the great heat of summer.

Mr. I. OVERHOLT, S. Cayuga: I like to have my bees out of the packing by the 24th or 25th of May.

Mr. SHAVER: Does not that depend a good deal on the season?

Mr. MCEVOY: Certainly, I said as a rule about that time.

Mr. GEMMELL: Between the 20th of May and 1st of June. I have left them in till the 1st of June some seasons and some seasons taken them out earlier.

Mr. ARMSTRONG: My experience is about the same as these other gentlemen have been saying. It depends a great deal on the weather; I go a good deal by that. If it is a cold backward spring I do not take them out so early; if it is a warm spring I get them out a little earlier. I do not take them out till the colony is good and strong, and there is no danger of them getting the brood chamber cool—cooler than what it has been for weeks before that—but I am never in any great hurry. I used to be. When I first got my hives I wanted them out pretty early, but now I have gone the other way and want to be a little late instead of too early.

Mr. MCEVOY: I agree with Mr. Armstrong. Of the two I would rather be a little late than a little early. Mr. Hoshal, what time do you take the packing out in the spring?

Mr. HOSHAL: When the bees get so strong they won't stand it any more. It is along, usually, about 20th or 24th of May. Of course, the colonies vary.

Mr. MCEVOY: How many take the cases away altogether? If you unpack you can either leave the case on or take it away altogether.

Mr. ARMSTRONG: I take it away altogether.

Mr. GEMMELL: I take them away altogether. I remember one season taking the packing out and leaving the cases there, and I found it very unhandy to put on and take off supers.

Mr MCEVOY: I do not know as my experience would suit all cases. I am in a pretty favored locality, in a way. I am in a hollow, in an orchard, and in the summer where it is surrounded by woods it is very hot, and in the hot days the bees sometimes cluster outside. They do better with the cases as a sort of shade. I dare say in many cases it would be better with the case out of the road.

Mr. HOLTERMANN: With us it is rather a matter of when the hive needs an upper story. When they need upper stories we find them inconvenient to have them in packing, but until that time I never see any harm in leaving them in.

Mr. MCEVOY: How soon do most of you find that the colonies are ready for the top storey?

Mr. NEWTON: As regards Woodstock, Mr. Hall was taking off comb honey in the apple bloom. My bees were not doing that. I suppose his should have been off, according to what Mr. Holtermann has said. As far as I am concerned I am glad this has come out. We had a short discussion on it at our Oxford convention. In late years they are trying to get their bees out early in March, they will, probably, get them out in February soon and then, probably, they will not put them in at all. I used to take the packing off much earlier than I do now. We are leaving them on until nearer the 1st of June than the 1st of May as we used to do at one time. I think they do no harm there until they are so crowded that we have to give them room, as Mr. Holtermann said, but we want them out of the way then altogether; we do not want to see them again until the next fall.

Mr. POST: We sometimes have a failure of honey entirely in Ontario in sections. If the packing protects them from the cold why will it not protect them from the heat? And if we do not get a honey flow let them remain in packing all summer. My hives are permanent, that is the reason I state it in that way. I do not unpack at all.

Mr. ALPAUGH: We generally get a little flow of some kind whether it be late or early in the section I am living in. We generally get an early flow. I want to give them room, anyway, so as to keep them together.

Mr. MCEVOY: It makes quite a difference to some of us in different locations. Mr. Post is down on the north-east part of Lake Ontario and it is colder, and it is just right in his case. With Mr. Alpaugh and me and others it is just the reverse; we are a little better with the packing off.

QUESTION: Which kind of packing is the best?

Mr. GEMMELL: There is a diversity of opinion as to packing. It would depend on what kind of packing case you have. If you have a packing case that won't leak there is nothing better than sawdust. If you have a packing case that will leak I find nothing better than forest leaves or chaff. I might say I got the idea from Mr. McEvoy of using the leaves.

Mr. MCEVOY: I have tried sawdust and chaff, but I like the leaves the best of anything.

Mr. SHAVER: Are not soft maple leaves bad for smashing up fine if you get them perfectly dry?

Mr. MCEVOY: I packed with some of them, but mostly the hard maple. In our village you can rake them up in great heaps.

Mr. ATKINSON: I would like to ask Mr. Shaver what difference it makes if they do break?

Mr. SHAVER: The gentlemen here always recommend leaves, and I followed their example. They break up so fine and are so dirty and nasty. I took clean wheat chaff and ran it through the cutting box, and it is not so dirty with me.

Mr. GEMMELL: I have never found any objection to their breaking up, and I never found them break as fine as you speak of in one season.

Mr. SHAVER: I had a lumber wagon, and, not knowing any difference, we trod them in, and I thought maybe we spoiled them.

Mr NEWTON: I have had considerable experience along the line of different packings, and would recommend by all means the leaves. I have tried sawdust and shavings, and also the waste from the flax mill, but I think leaves are ahead of them all. I remember the flax mill man asked me why I did not go to the mill and get flax seed and I said I did not want them, I would rather have leaves.

Mr. ATKINSON: I do not agree with those other fellows. With regard to leaves, I have had experience with them, and I have had experience with chaff, and I have had some experience with old rags, and several other things, and I tell you the worst luck I ever had was with leaves. I packed my bees the first year with leaves, and just had a cloth on top, and I packed them with chaff and had a cloth on top. They wintered far better with the chaff than with the leaves. The next winter I tried it a little different with leaves; I left the top on the hive instead of the cloth, and they came through all right. I would just as soon have the leaves fine as coarse as long as they are perfectly dry. If the packing is thoroughly dry I don't think it makes such a great difference, providing the tops are on.

Mr. MCEVOY: When I put the packing on of leaves I press it down pretty firmly, and leaves, four or five inches between, and then put more leaves on, and then the top.

Mr. ALPAUGH: I would like to ask Mr. Atkinson if he renewed his top quilt with a fresh one?

Mr. ATKINSON: Yes.

Mr. ALPAUGH: That is where you made your mistake.

PRESIDENT: Do you put on your packing loose or do you put it into a sack?

Mr. ATKINSON: I put it on loose, under and above and on the sides.

PRESIDENT: I think it was in the yard of the late Mr. Gardiner, the packing he had was sacking, similar to common salt bags, filled with forest leaves, and he claimed these to be good for years without getting broken up. Then he set his hive cover on top of these and held them down in place. I think it would be a much cleaner way than to have them put on loose.

Mr. ALPAUGH: I would like to ask Mr. Atkinson another question. You say you just renewed the propolis quilt with a fresh clean cover, and you just put the leaves on top of that loosely. You didn't pack them down?

Mr. ATKINSON: I put the covers on top of the leaves again.

Mr. GEMMELL: How many inches had you on top?

Mr. ATKINSON: Four or five inches.

Mr. GEMMELL: That wasn't half enough.

Mr. ARMSTRONG: How much packing do you use?

Mr. ALPAUGH: You really do not need much more on the top than on the sides. Anywhere from three to four inches; you must weight it down to that many inches until it is fairly solid, with some kind of boards. Of course you can put in a foot of loose leaves; if you leave it in that state I do not consider it would be good packing.

Mr. ARMSTRONG: Has any one used packing right over the covers without removing the covers at all?

Mr. ALPAUGH: Do you use a cloth underneath your cover?

Mr. ARMSTRONG: No; I do not put on any cover at all.

Mr. ALPAUGH: It is all right to leave the cover there if you put a little of something underneath.

Mr. ARMSTRONG: I have tried it both ways. I have tried removing it the same as that photograph, and used the same case, and am using the same case now. I also tried leaving the cover on just as it was through the season after the honey flow was over, and I found that they wintered just as successfully with that wooden cover with the packing over the top.

Mr. GEMMELL: How big is the entrance?

Mr. ARMSTRONG: My entrance is about five inches by $\frac{3}{8}$ inch.

Mr. GEMMELL: Some three or four years ago when I went to California I had no time to loosen the covers, I simply lifted the hive into the outside packing case. My intention was to go around and loosen the covers. With some I did it, and with others

I did not do it at all, and I must say I could see no difference in the hives as far as that was concerned. Those with the solid covers were no worse than those that had the covers pried loose. The entrance would be four or five inches, some of them a little more. This winter two-thirds of my bees have no quilts on them at all, just the ordinary wooden cover. Whether I shall loosen some of them or leave all that way or not I have not made up my mind.

Mr. ATKINSON: How much packing do you use on the top?

Mr. GEMMELL: A good foot, that is on top of the hive proper. I press it down pretty well with my hands.

Mr. ATKINSON: You think they winter better with a foot than five or six inches?

Mr. GEMMELL: I think so.

Mr. DARLING: I winter inside, and I have been in the habit of taking my propolis sheets off and putting in sawdust. Last year my bees were late getting in, and a great many went in with the propolis sheets on and the cushion over that. It has been many years since I had the bees come out better than they did last spring.

Mr. SMITH: I would just like to ask you if you winter in the cellar, and what was the thermometer?

Mr. DARLING: I try to keep it at forty-five degrees. It is just in a solid clay bank about six feet deep, and so warm that it is only necessary to put on a little sawdust.

Mr. SMITH: Under those conditions they would winter all right, but if you had a lower temperature you would find it just the opposite.

QUESTION: Which bees are the most subject to spring dwindling; the bees wintered in the cellar or those wintered outdoors?

Mr. EMIGH: I do not winter outdoors, so I do not know anything about how much they dwindle when they are wintered outdoors, but if they are wintered properly in the cellar, and taken out at the proper time, I have never had great trouble in spring dwindling. I do not think any person can winter outdoors with very much less spring dwindling than I have had by wintering inside.

Mr. PICKETT: I have wintered two seasons out of doors, but it is practically indoor wintering. I have been packing them with sawdust. For my own part I would hold up my hand for indoor wintering. As for dwindling, I see but little difference if necessary care is taken.

Mr. ATKINSON: How soon do you take them out?

Mr. PICKETT: As soon as we feel confident we are going to have warm weather. If I get them all out in April I do very well.

Mr. SMITH: I think in the future we will put more out in March. The last two seasons I have put them out on the 8th of March. As far as I can see I think I shall winter more in the cellar. We have a good deep cellar, with high temperature. Some say 45°, but I would say from 45° to 50°, because I notice those on the top always come out in the best condition. I always raise them about eighteen inches from the floor, and the cellar is perfectly dry.

Mr. PICKETT: My experience has been much the same as his. The top rows always winter best.

Mr. SIBBALD: I recommended putting them out in March in my paper. If they are contracted, if they fill the hive, it does not matter whether they are put out in March or not; if they occupy ten frames, half of it empty space where cold and frost can get in, they will spring dwindle.

Mr. HOLTERMANN: There is much diversity of opinion through the country as to spring dwindling. In five cases out of a hundred there is spring dwindling as a result of the season. Where you have these catchy springs, the sun comes out warm, and the bees get out, and then cold weather comes and spring dwindling is the result. But gen-

erally it is the result of poor wintering. If you have a good cellar, that you can keep an even temperature, and I must confess I do not like one between 45° and 50°, I would sooner have it between 42° and 45°. If you can do that I believe you will not have much trouble with dwindling; but if you are wintering so that the bees are getting restless put your bees out early, because the longer you leave them there the more restless they will become. I wintered my bees last year—a good many of them—according to the Alpaugh plan. I like it, and I believe you can get every condition inside or out, and you want to select what is best for yourself. Unless you have a good cellar, and any temperature you like, I would say winter outside and you will have less danger of spring dwindling.

UNFINISHED BUSINESS.

Moved by Mr. McEvoy, seconded by Mr. Sibbald, that Mr. Evans and Mr. Heise be the revising committee. Carried.

Moved by Mr. Holtermann, seconded by Mr. Armstrong, "That the executive of the Ontario Bee-Keepers' Association make out a list of men they think suitable to lecture at Farmers' Institutes, and forward it to the Superintendent of Farmers' Institutes, the Association feeling that it is desirable to have a number of speakers." Carried.

Moved by Mr. Darling, seconded by Mr. Overholt, "That in case the executive committee deem it advisable to make an exhibit in England and Paris, that the matter be arranged by correspondence with the board of directors." Carried.

After the usual votes of thanks the meeting adjourned.