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THE

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VOLUME V.

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"THE GREATEST POSSIBLE GOOD TO THE GREATEST POSSIBLE NUMBER"

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WEEKLY

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BEETON, ONT.

THE D. A. JONES Co., Ltd.

1890.

# INDEX.

## A

A broodnest contains brood	1011
A case of robbing	473
A colony doing wonders	886
A discouraging report from the N.W.	1016
A few thoughts	27
A few thoughts and trials	50
A home market	591
A hint to bee-keepers	1087
A lie on its travels	415
A lecture at McMaster hall	519
A lot of advice	1142
A model premium list	831, 1052
A new departure	65, 1036
A patented feeder	1025
A visit to Mr. Emigh	543
A word to amateurs	1087
Adaptability of bee-keep- ing to farmers	73
Addison County, Vermont	447
Affiliated societies	45
Affiliate with International	1064
Albinoism, applied to bees	113
Alimentary apparatus of the bee	957
Alsike, no yield from	476
Amateur Expert	618
An average crop	1002
An apianian battle	613
An explanation wanted	229
Annual report Bee-keepers Union	982
Another lecture by G. B. Jones	355
Apiary, a new house	493
Arrangement of bees	7
Experience in the	400
Fencing a rented	33
Our own, . 6, 46, 181, 301, 349, 373, 469, 494	541, 565
Apicultural items	306
Apiculture, experimental	281
Apiculturist and the ex- tractor	256
As to stores	89
Atmospheric electricity and nectar secretion	134
Australia	691

## B

Basswood attacked	421
Insect on the	474
Bee battles	885
Culture in California	642
Notes	568

Bee Stings	690, 883
Talk	185
Bee-houses & ve. clamps	1-7
Bee-Keepers, Brant	110, 1135
Hildmand	258
Lambton	809
Letters	934
Oxford	231
Perth	496
Royalty among	39.
Union	422
Vermont	1010
Wellan	257
Bee-Keeping, how to com- mence	583
for boys	862
in S. Africa	1065
Migratory	512
Practical	29, 89, 139
Practical, Review	11
Bees all living	31
and the law	739
and the season	498
at Buffalo	589
at London	613
Best	11
Best way to winter	838
Boraco	71
by the lb. by mail	881
closed in winter	1144
cost of moving	545
Cross	837
die, when do most	136, 282
Dysentery	16
fighting a windmill	209
hear, Do	839
Honey	72, 232, 426
in Manitoba	152
in winter	615
Killing—for profit	1061
Moving by box	74
Plenty of Packing	593, 617
Shutting in in winter	1064
speed on wing	616
stings for rheumatism	1065
Time to transfer	31
Transferring	29
Transferring, modern	30
Weighing	567
Weight of	712
When to set out	163
Who ought to keep	9
Beeswax, how made	1142
use of	716
Benefits of bee culture	663
Botanical	545
Brantford Program	759
Brantford vs. Buffalo	717, 760
Bray clamp, a word for	136

Breeding for business	511
Brood chamber, contract- ing	470
spreading	89
Buckwheat for bee keepers	329
Buffalo International	186
Building up weak colonies	90

## C

Canada thistle	470
Can women keep bees	1005
Cappings	1017, 1061
Catch the children	1087
Chaff vs. S.W. hive for honey	1017
Cheap package for extrac- ted honey	882
Cheesecloth a. fld. base	1017
Clamp wintering	518
Cleaning hives	91
Clippings	521
Close of honey season	522
Clover peavine	712
Comb honey	495, 568
Packing	445
Com's, preserving empty	667
Compelling bees to work	811
Composition paint	1087
Convention elevating	714
Our next	760
Value of	759
Crop the	447
Curing bee-stings by heat	1018
Cutting prices at Indust'l	475

## D

Dampness, losses through	88
Demaree's letter valuable	447
Destroying surplus bees	1018, 1082
Detection of adulteration	1085
Detroit exhibition	733
Diocese, the nameless	452
Don't fence your apiary	88
raise surplus drones	1004
sell too cheap	402
Doolittle, G. M.	208
on queen rearing	206
report of	809
Doubled his colonies	116
Doubling up	91
Drone comb, how much per hive	1066, 1088
laying queen	89
Drones, early	48
require richer food	1088
Dr. Mason takes the floor	735

INDEX.

Dr. Mason again..... 183  
 Dufferin county report... 134  
 Duties of members toward societies..... 1141

**E**

Eafly setting out best . . . 256  
 Endorses G. B. Jones... 566  
 Excessive swarming... 1039  
 Excluder zinc..... 183  
 Extracted or comb honey 402  
 vs. strain 1 honey... 1145  
 Extracting from cappings 1064  
 heather honey..... 1065  
 honey late in fall... 1016  
 thick honey..... 833  
 Extractor, doing away with..... 307  
 must go..... 181

**F**

Fall preparations..... 541  
 Favors the change..... 160  
 Feeding..... 112  
 for stores..... 90  
 in spring..... 380  
 Stimulative..... 90  
 Fertile workers..... 1087  
 Fdn. fastener, Whealey's, 375  
 Forestry and bee-keeping 884  
 Formic acid for foul brood 374  
 Forty miles for honey... 210  
 Foul brood..... 473  
 A new cure for..... 254  
 at Clarksburg..... 424  
 and its cure..... 521  
 A preventi e of..... 566  
 a scheme to prevent its spread..... 1133  
 cured in 21 days..... 499  
 in England..... 1087  
 legislation 1038, 1084, 1133-  
 too many remedies for 737  
 Free trade..... 375  
 Friend Whealey rises to remark..... 207  
 French bee-keepers in trouble..... 1088  
 Fuel for smokers..... 378

**G**

Gates opinions..... 27  
 G. B. Jones at Chatauqua 496  
 at Lorne park..... 553  
 German laws re bees... 737  
 Glass hive in store window 423  
 Golden rod..... 615, 713  
 Government returns..... 935  
 Granulation, its preven- tion..... 662

**H**

Heavy losses in Lambton 270  
 Heddon's contraction sys- tem..... 52  
 Hen forever, The old..... 135  
 Hibernation..... 616  
 and Mr. Heddon..... 859  
 in England..... 853

Heredity in bees..... 813  
 Hive, Color of..... 157  
 Combination..... 8, 34, 46  
 Langstroth for honey 1144  
 Hives..... 26  
 Divisible..... 327  
 Suggestions for now... 159  
 The coming..... 306  
 Hon o-made foundation.. 446  
 Honey at fall fairs..... 451  
 board, difficulty get- ting bees below... 331  
 B-st place to keep... 116  
 California..... 716  
 Care of..... 619  
 crop and market price 425  
 crop selling..... 740  
 Does light injure... 663  
 50 lbs per colony... 446  
 for la grippe..... 1018  
 in autumn..... 812  
 Linden..... 69  
 Misnaming..... 762  
 Planting for..... 1065  
 Points in judging... 690  
 producer's exchange.. 48  
 Reliquefying..... 758  
 season in Scotland... 716  
 Speak well of all... 278  
 to increase consump- tion..... 1064  
 Trash designated... 229  
 Hope springs eternal... 54  
 How to find queens quickly 1018  
 How to keep Clark smoker going..... 517

**I**

Improved methods of honey production 209, 234  
 Industrial exhibition... 637  
 International Bee-keepers convention..... 923  
 Bee-keeping as an oc- cupation for women 929  
 Cellar vs. outdoor wintering..... 930  
 Report of committee on resolutions... 933  
 Heat retaining hive, how best attained.. 933  
 Disposing of honey crop..... 996  
 Discussion on same... 906  
 Question drawer... 906  
 President's address... 907  
 Notes..... 835, 858  
 Resolutions..... 986  
 Secretary's report... 980  
 Intends keeping bees in- stead of cows..... 1019  
 In the Great North West. 55  
 Introducing..... 811  
 virgin queens..... 837  
 Items of interest..... 135  
 Ivar S. Young..... 977

**J**

John, Next epistle of... 68  
 Jottings..... 1063

Judging..... 713  
 apiarian exhibits... 857  
 honey..... 859

**K**

Knechtel's feeder..... 472

**L**

Langstroth revised..... 182  
 Lectures by experts... 1037  
 Liquid honey..... 1042  
 Lives in hope..... 31  
 Lost 2 in 25..... 55  
 Lots of clover..... 417

**M**

Maine, the season in... 427  
 Marketing honey..... 1090  
 Mason to McKnight... 161  
 McEvoy to Whealey... 281  
 Mead how to Make... 1141  
 Medley from McKnight... 86 183  
 Mel Sanit Omnia..... 50  
 Mel Sapit Omnia..... 182  
 Members I. A. B. K. A... 1000  
 Middlesex Beekeepers... 13  
 Moisture at Entrance... 55  
 Moving Colonies... 258  
 and putting right into winter quarters... 1141

**N**

Nectar..... 113  
 New patents..... 688  
 Next Epistle of John... 184  
 Non Swarmers..... 639  
 Non Swarming race of Bees..... 377  
 North Riding Oxford Ex- hibition..... 691  
 Northumberland report... 16  
 Note and Comment... 205  
 Notes for October... 710  
 from the N. W..... 737  
 Number of frames for summer..... 115

**O**

O. B. K. A. . . 934, 1025, 1049  
 1014.  
 Treasurers statement 1026  
 Affiliated soc report... 1050  
 Directors report..... 1049  
 Observations .. 1019, 1064  
 1086.  
 Olla podrida..... 759  
 Only a scare..... 495  
 Outlook a bright..... 109  
 in Muskoka..... 271

**P**

Packing comb honey for rail..... 546  
 Painted vs. unpainted hives..... 10  
 Painting hive roofs black 183  
 hives different colors 1147



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TABLE OF CONTENTS.

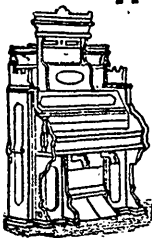
	PAGE
Aplary. Arrangement of bees in .....	7
"    Our own .....	6
Bee-keeping. Practical. Review .....	11
Bees bothered with dysentery .....	16
the best .....	11
who ought to keep .....	9
Hive. Combination .....	8
Middlesex bee-keepers .....	13
Northumbriaud. Report from .....	16
Painted vs. unpainted hives .....	10
Queens, two in one hive .....	16
Queen excluder zinc .....	5

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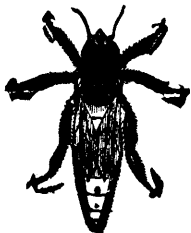
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Advertisements for this Department will be inserted at the uniform rate of **25 CENTS** each insertion—not to exceed five lines—and 5 cents each additional line each insertion. If you desire your advt. in this column, be particular to mention the fact, else they will be inserted in our regular advertising columns. This column is **specially** intended for those who have bees or other goods for exchange for something else, and for the purpose of advertising bees, honey, etc. for sale. Cash must accompany advt.

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## BEES FOR SALE

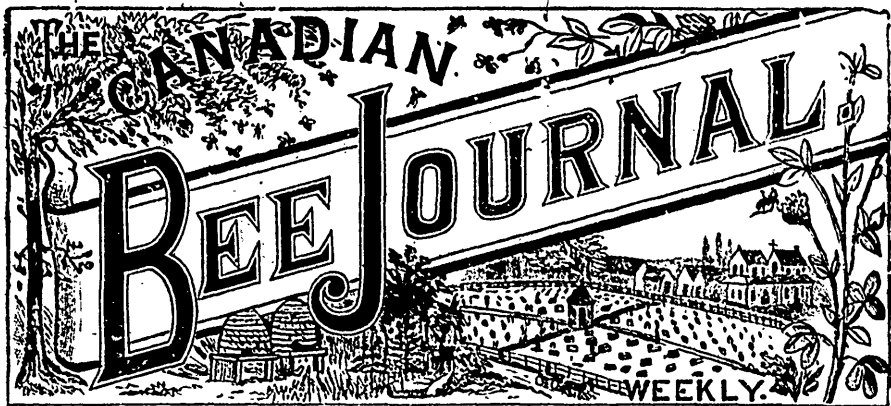
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"THE GREATEST POSSIBLE GOOD TO THE GREATEST POSSIBLE NUMBER."

Vol. 7. No. 1 BEETON, ONT., MARCH 27, 1889. WHOLE No. 209

## EDITORIAL.

THE last issue of the *Record* contains a sketch of the life of the late Wm. Raitt, one of the editors of that journal, with a portrait of that gentleman. Of his character, Mr. Carr, the remaining editor, says: "To give even the smallest insight into the many estimable traits of his character would occupy more space than the whole of one issue of the *Record*."

To whom belongs the honor of the invention of metal and wood honey-boards? This vexed question, is settled in the last issue of the *Review* by the editor, thuswise:

A while ago something was said in the *A. B. J.*, as to whom belonged the honor of having invented the slatted, wood-zinc, honey-board. A little later, the *C. B. J.*, very cautiously, gingerly broached the subject, but lacked either the knowledge or courage to be outspoken. No this whole matter can be put into a nutshell, and done in such a manner as to give everyone due credit and satisfaction. Mr. Heddon invented the slatted, break-joint, bee-space honey board. The grand feature of this honey-board, the one before which all the other features pale into insignificance, is its *bee-space*. As every hive with hanging frames is, is to that, extent a Langstroth hive; so every honey-board with a bee-space is, to that extent, a Heddon honey-board. Just who first used perforated zinc in connection with bee hives, is not *positively* known;

but to Mr. D. A. Jones belongs the honor of *introducing* it into this country. Dr. Tinker took strips of this perforated metal and slipped them into saw-kerfs made in the edges of the slats of the Heddon honey-board. The honey-board is Mr. Heddon's; the perforated zinc was invented by *somebody* else; and to Dr. Tinker belongs the honor of combining the two in the peculiar manner shown in the wood-zinc honey-board.

And we guess he is not far from right.

In July the *British Bee Journal* will be reduced to a dollar a year.

### QUEEN-EXCLUDER ZINC.

OUR friends in England and Scotland were amongst the first to use queen-excluder zinc, and they threw it away years ago as useless. When Mr. James Abbott was in Canada in January, 1887, he told us this at the Toronto convention. In the *March Record* the editor, in answering a question as to whether the zinc was an impediment to the bees or not, replied as follows:

"It is but reasonable to suppose that there is some slight disadvantage in using excluder zinc, so far as free passage goes, but when the advantages are so patent to anyone who used ready-built combs each year for surplus storing, it seems hardly worth discussing."

They seem to be coming around to the acknowledgement of the fact that the zinc is some use after all.

## OUR OWN APIARY.

## SPRING EXAMINATION.

OUR bees are yet in the bee-house. We have not followed the plan of many thus far in setting the colonies out for a cleansing flight, though we may do so before this issue of the JOURNAL reaches its destination. The thermometer in the bee-house stands at 43°, and everything is quiet and orderly inside the repository. The only colony which seems to be in any trouble is the one of which mention was made a week or two ago as being bad with dysentery.

We have just given instructions to the foreman of our yard to examine our bees in winter quarters by simply lifting the hives, as a little experience will tell the light ones on the shelves where they sit. Now we are going to carry out these hives and examine them, and, if they require food, give it to them. We are convinced that some colonies consume more stores than others and thus we take the first favorable opportunity to look over doubtful colonies, and if they are out of stores to supply the deficiency. We are anticipating too good a season this year to allow any bees to die of starvation if possible. We do not care to let our bees out until pollen comes on the willows and the weather is favorable, as setting bees out early in the spring before there is anything for them to gather simply assists spring dwindling. Even though the weather is warm, we have usually found the disadvantages of setting the bees out early to outweigh the advantages, because if the weather is warm the bees will commence flying around hunting for something, and they are constantly wearing themselves out and dying off when there are no corresponding good results. In fact we have known whole apiaries to have been almost ruined by placing them on the summer stands too early. Some used to imagine that the first warm day when bees could fly they should be placed on the summer stands for fear they would suffer from long confinement. This form of practice is a mistaken idea, as we have set out bees at the commencement of the season, on the first appearance of fine weather. We have left others in for

two weeks longer and yet the last ones set out thrived much better than those put out early, and came ahead more rapidly than those which had been out a longer period. If they have plenty of food in their hives, until the weather becomes settled and spring-like, we deem it best to leave them in their winter quarters. While they are quiet in their repository the age of the bee does not seem to go on as it would, in fact we think that months in their quiet state in their winter quarters does not shorten their lives as much as weeks of active work in spring and all that come out in good shape with a queen in good condition will remain in winter quarters from five to seven months without a purifying flight and not be injured. I was asked a question a few days ago by a brother bee-keeper as to what he had better do. He had put his small apiary away in winter quarters the latter part of September last year, and he said "I think they all have plenty of stores but three, they seemed light when placed in. Now, I would hate to lose those three colonies and I think I will set my bees out because I am not sure where these three are. They are all mixed up together. I advised him, if he was forced to set them out in order to find them, that as soon as they had a fly to place them back in the bee house. Leaving the lids on their summer stands, numbering the lids and hives in order when he did let them out permanently each hive would be set on the same stand that it was before. I suggested that he should not leave them out over night, especially if the night was frosty, but to give these three the necessary food to keep them until they were set out permanently or could gather. This might be done by giving them combs of honey or taking some of the combs in some hive and filling them with good thick sugar syrup, which may easily be done when the syrup is warm, say not above 100, pouring it into the combs. The combs when pouring it into the cells should be held on a slant and enough could be put in two or three combs to support the colony a month. If the combs are dripping they should be sponged off so as not to wet the bees. We sometimes have done this when we wished to feed them in winter quarters or set them back for some time, but they

should always have dry combs to cluster on we have sometimes taken a comb with considerable honey from a strong colony and give them, especially if they were weak, one of these combs filled with syrup in place of it. In a strong colony this seems to stimulate them to breeding, and leaves the weaker colony with less useless stores in their hive and if they were kept in confinement a long time it prevents very much the chances of dysentery. Now, right here let me advise that dark brown sugar be not used for this purpose. Small cakes of sugar may be placed on top of the frames which will prevent them from stirring until they are set out. We think all bee-keepers should look carefully to their bees and see that everything is being done for them that can be done, because it is an old saying that it is "always a feast after a famine." Well we have had the famine and we will all look forward with pleasure and welcome to the feast.

For the CANADIAN BEE JOURNAL.  
**The Arrangement of Hives in the Apiary.**

PLACING THEM IN PAIRS IN THE APIARY.

**Q**UOTE of the first questions which a beginner in bee-keeping will, or should, ask himself is, how shall I arrange my hives so that I can accomplish the best results with the least labor? It may be well also for many who have been in the business for some time, to reconsider the arrangement of their own apiaries. There are several sides to this question, but at the outset I will say that I am opposed to all those who say "let us have each hive and its location as unlike as possible." We are told that "a thing of beauty is a joy for ever." I am quite sure there is no beauty in seeing an apiary arranged without order, with nothing to indicate taste and love for the beautiful on the part of the owner. I would advise however whatever plan you adopt, whether the hexagonal, octagonal, squares, straight rows, or other forms, be sure and have your hives in pairs, or two hives on two stands about a foot apart or one stand long enough to accommodate two hives. Then the distance between each pair to be four feet or more, and if in rows then about six feet between them, and have each pair in the row behind, to come between or rather behind the wide space in the row in front. By this plan the flight of the bees is not interrupted, either by the hives in front, or the apiarist when at work. It presents a nice appearance, forming

straight rows in eight different directions. As a matter of convenience in reaching any hive in the apiary it is especially valuable, as all you have to do is to walk down a row, until you come to the space leading angle wise direct to the hive required. But what I would impress particularly is, having your hives in pairs without sufficient space between the two hives forming the pair, as to admit of standing between or of sitting on one while at work on the other. Where the entrances are at the end of the hive, and where the person engaged in the apiary is unable or unwilling to lift heavy hives, there is an advantage in having each stand long enough to accommodate two hives with a foot space between. When a swarm issues with a queen whose wing is clipped, all that is necessary is to push the hive along and place an empty one in its place, and allow the bees to return. If you prefer having each pair on a separate stand then place them close enough together to permit one hive to rest on the four inside ends of the blocks on which the hives rest, you thus place your hive should you desire to unite the two colonies constituting the pair, and so the bees from either hive readily go to the one. The plan I adopt is when removing the bees from the



DIAGRAM SHOWING ARRANGEMENT OF HIVES.

cellar in the spring to place one hive on the left hand stand of each pair, leaving the right hand stand unoccupied until nearly swarming time. I then about June 1st place an empty hive on the right hand stand of each pair, to accommodate the swarm from the one on the left, should one issue. If it does not I simply return the empty hive after swarming time to the building where I keep them during the winter. When swarms are issuing at the rate of eight or ten an hour, I do not want to have to run for an empty hive, or be in doubt as to where it is to go—all I do is to simply place the empty hive in the place of the one occupied, *in vacuo*. The bees return or if they do not of their own accord I compel them to and the work is done. If I am absent there is no doubt where or in what hive the swarm must be put. It is always placed in the empty hive by the side of the one from which the swarm issues. Of course any second swarms are returned to the hive from which they came. If you are not blessed with as many empty hives as you have colonies, you could leave a few

stands vacant and should a swarm issue from one of these pairs you could take an empty hive from the next nearest pair. It is much better to have one for each causing less work and confusion. Those bee-keepers who have no swarms have no need of any provision for them, as for myself I prefer never extracting from the center of the brood nest, and in fact doing little or no extracting until after the swarming is over, and so have honey well ripened, and not be hurried, and at the same time produce part comb honey, so that with strong colonies I generally have one swarm from each. To tell you the truth I am in love with this having the hives in pairs. I keep a record in a book of each queen, her age and pedigree, but it is greatly facilitated by this plan and in walking through your apiary you can tell at a glance every colony that has swarmed and those that have not. A hive on the right hand stand occupied shows a swarm from the hive in the left, an empty hive means no swarm. Then the queen in the hive on the left is always the old queen, and the other the younger, unless you have introduced an old one there. When you unite, all things being equal, always remove the old queen so you need never have a queen more than two years old, unless in those colonies which do not swarm, or any you may desire to keep for a longer time. With an apiary thus arranged you can laugh at those troubled about "how to prevent increase." You simply decide as to the number of colonies you purpose keeping spring count. Arrange your apiary accordingly with one vacant stand corresponding with your number of colonies in the spring. Either sell the increase or double them up in the fall or at some other time and bring your apiary back to the same number each year. When you take your bees from their winter quarters, if you have more colonies than one for each pair then place them on the stands reserved for the swarms, and before swarming time sell or use them to strengthen all weak colonies, so that every hive will be ready for the honey flow immediately it appears. I would just say in conclusion that the very best blocks or stands I believe to be, are round cedar posts, say six inches in diameter, cut to the length desired. The spile to remain up is then levelled off slightly, and the other set an inch or two in the ground or just enough to make it solid. Each pair wants to be on a level with each other, with an incline to the front. By placing a little earth in front and sprinkling some salt thereon, you will have what neither insects nor weeds care about. I would say that since I had my own apiary arranged in this way I have

noticed Dr. Miller advocates having the hives in pairs, also one or more writers, but I do not think sufficient prominence has been given to it. I might just say that by arranging an apiary as described here there will be one hive on each alternate end of each row, which will necessarily be single. In another issue I will describe my plan of numbering and recording, and also how I enable the young queens to find their own hives at mating time.

G. A. DEADMAN.

Brussels, Ont.

For the Canadian Bee Journal.

### THE COMBINATION HIVE.

SUGGESTED IMPROVEMENTS, EXTRACTING FROM BROOD CHAMBER, SAVING SURPLUS COMBS.

I HAVE just been perusing your article on the Combination hive and fully endorse most of what you say respecting it. Though perhaps, one of the best all-purpose hives in use, yet it is capable of improvement in several respects. I think, as you yourself admit, that it is a little too small. During the honey season the frames become so completely filled with brood that there is very little room for winter stores. I have found brood in every frame and the only place where any quantity of honey was deposited was in the outside of the two end frames. This is entirely inadequate for winter supplies, and so unless feeding is resorted to after brood rearing ceases starvation will follow. Now, of course, one could save some combs well filled and sealed from the second storey, used for extracting, and put sufficient of these in, taking out some of the combs from the brood chamber which contained the smallest quantity of stores; but this leads to considerable disturbance of the bees at a season when they are likely to be very cross and when there is danger not only of them stinging the manipulator but also of destroying the queen. I would much prefer to have the brood chamber in such a shape at the close of the honey harvest that there would be no need of distributing it afterwards and hence I think that one or perhaps two frames should be added to the Combination hive and then it would be amply large to contain a good strong colony of bees, and afford all the room required for the storage of winter supplies. Then I think you would have a hive about as near perfection as it is possible to get according to the light we at present possess. I have used the Jones hive from the commencement of my bee-keeping and used to think it was all that could be desired. I went in for extracted honey, practised artificial swarming, or rather increase by nuclei when in-

increase was desired and so wanted a non-swarming hive and the Jones hive seemed to fill the bill. By extracting every week and destroying all the queen cells formed I very effectually prevented swarming and got a very large yield of honey. But while extracting from the brood chamber of the Jones hive gave these satisfactory results, it had some serious objections. It thoroughly roused up the inmates and led them to offer a determined resistance. They might not feel so bad about being shaken off the first comb but as the operation was repeated and they were again and again suddenly dislodged and thrown with some force back into the hive it was too much for weak bee nature to endure and they resented such treatment in the most decided manner. Then I found that many queens disappeared. The next time I opened the hive to ascertain if it was ready for extracting I would find quite a number of queen cells formed and the size of these cells indicated that the colony must have become queenless immediately after the previous extracting process had been performed. Besides I found that turn the extractor as carefully as I might some larvæ were disturbed and either driven wholly or partly out of the cell. This was a loss in increase and did not add to the excellency of the flavor of the honey. All this has convinced me that extracting from the brood chamber is a mistake, and that whatever hive we adopt it should have a second storey from which alone extracting should be done. The Jones hive is a little too large for this although I see that very excellent results have been obtained by practising the tiering up system with the Jones hive. If the Combination hive was a little larger, some way devised of keeping the surplus arrangements in their place and a more substantial cover and one that would keep out the cold, better at the two sides where there is no cleat, it would be all that could be desired. It is very good as it is but in my humble opinion and that of others with whom I have conversed, the changes I have suggested would improve it very considerably. Before I close I would like to warn your numerous readers as to following your advice as to how to preserve surplus combs from the ravages of the moth. You maintain that if they are hung up at a distance of about two inches apart they will be all right. Now, having a large number unused last season I nailed strips across the ceiling of the driving shed and hung the combs on these, carefully keeping them two inches apart and when I examined them in the fall I found a large number of millers in them. Please wise and explain this. My bees have wintered well so far. I have about half packed in chaff and

the other half in the cellar. I took out the latter and gave them a flight on the 4th inst. All were alive and strong but one which was very weak when set away. Those outside seem all in good shape. It is too soon, however, to shout. We are not by any means out of the woods yet.

J. CAVSWELL.

Bond Head March 15th.

Comments are omitted this week; will appear next issue.

For the CANADIAN BEE JOURNAL.

### WHO OUGHT TO KEEP BEES?

WELL, now, Mr. Editor, this has been such a hackneyed subject that I ought to leave it quietly alone, but the subject will stand a little further consideration. So here goes. When I moved up here it was with the intention of establishing a permanent home for myself and family. You see I was hauled up at home alongside of a neighbor who kept bees, and the annual brimstone pit with the dripping fingers and occasional stings lending zest to the fleeting hours, while squeezing out the honey, though the cruel slaughter of the poor bees was a thorn in the flesh that I oft grieved over. However, I was fully resolved to have some just as soon as I settled down permanently—this independent of the actual dollars and cents view of the case—so I bought 18 stocks to commence with, thinking those would give a good start, and if found profitable, why, so much the better. But who ought to keep bees? Well, you see, having bought a hundred acres of land, I think I bought the right to the proportion of honey, then there are hundreds of acres of land belonging to other people who did not keep bees nor care to either, and whose proportion of honey it is a sin to allow to go to waste, so the report for the first season stands thus: Increased to 46, extracted 750 lbs. and enough to winter on. The following, April 19th, when taken out of cellar nine were dead, diarrhoea and suffocation by entrance being left too small or closed wholly by neglect when placed in the cellar the cause—a friend having undertaken to put them in and take them out again, thus leaving me at liberty to forage distant fields for stray shekels. I was thus away from October 9th to May 12th. This was what I found upon arrival. In a temporary shed put up according to order were stacked 34 hives, outside stood three more by themselves. Those three gave for the season up to July 20th thirty-five dollars worth and six swarms, while the other dropped to 10 and gave \$10.50 and 7

swarms; all gathering stopped on July 20th. But why the difference? Well, the shed mentioned was arranged for to have boards on the front at nights and cold days with special orders not to jar or shake the bees. The friend failed to see the point so nailed them up and ripped them off again until my arrival, though they rushed out by the thousands to protest and die unheeded. Can the likes of him keep bees? Not much. I purchased one more from you and what I had made 27 for winter, but storage stopping on July 20th nearly all wanted some to give enough for winter but sour feed and diarrhoea invaded the ranks and I faced the music. On June 1st following 5 more was added to the number for the ware. By the following spring though \$55 graced the pile just 11 took the mark. On June the 1st and 51 dollars the pile with six added made 17 for winter following. Last spring elapsed the climax, and they tripped the light fantastic to the tune of 5 until August while the stock I got from you in June politely and quietly added 8 unto the number making 8 for the winter and 51 for the boy. How our backs did ache in carrying them in. All having a full head of stores, ever so past the nineties. One stock, on June 1st, had not more than a teacupful of bees from which I took 26 lbs. and had not an ounce less than 75 lbs. when put in on Oct. 25th and 26th. I did not remove the surplus cases just to know, you know. But who ought to keep bees? Well I should think it madness to give up with the experience, and expense wistfully inviting renewal. I therefore cheerfully renew as I hope to do many more times. More especially as it includes your very liberal premium. (P. S.) And don't forget that ever welcome foot note, the spice to the pie. Yours Truly,

WM. TIPLING.

### PAINTED VS. UNPAINTED HIVES.

FRIEND DOOLITTLE GIVES US SOME VALUABLE FACTS IN REGARD TO THE MATTER.

**A**S THE season of the year for painting hives is drawing near with us here at the North, and has probably already come to our brethren of the South, I thought a few words on the desirability of our doing so might not be amiss at this time. It will, I think, be admitted by all that hives look better and will last longer, if painted, than if left unpainted; but I mistrust that \$15.00 a year will sustain more hives if spent for lumber alone than if spent for paint and lumber. Yet when we take the looks into consideration, probably there is little difference in favor of either, providing that the bees would do as well in one as in the other. In this respect, I consider the

unpainted hive much better suited to the wants of the bees, and contend that bees will not do nearly as well in painted hives as they will in an unpainted one. Wherein is an unpainted hive better than a painted one? Principally in this, that, if properly covered, it will keep the bees dryer at all seasons of the year, and, owing to this dryness, they are consequently much warmer. As unpainted wood is porous, the moisture evaporates through all parts of the hive, keeping the bees warm, dry and quiet, thus avoiding an undue consumption of honey, as well as bee-diarrhoea. Several years ago I had a number of box hives, some of which were painted, while others were not. I set them out of the cellar about the first of April in as near an equal condition as could be. In the morning after every cold frosty night, there would be water running out of the entrance of those that were painted, and on tipping them up the combs were found to be quite wet near the outside of them, or next the walls of the hive, while those in unpainted hives were dry and nice, no water ever showing even at the entrance. Those in the unpainted hives increased in numbers faster, and swarmed from one to two weeks earlier, than did those in the painted hives.

"But," says one, "I use corncobs, cut straw, forest-leaves and other absorbents in the top of the hive, to let the moisture out, by letting any excess that may arise pass through them and out at the top of the cover." This will help some as far as moisture is concerned, but if not done on a scientific plan it will let out much of the heat by such a direct-draft process, which should be retained in the hive. Even if done properly, I cannot help thinking that hives will keep bees better if unpainted, because in this case the moisture passes out of the hive in all directions. Paint is useful only so far as looks and durability are concerned, and is positively injurious as retarding the evaporation of moisture. This is the result which I have arrived at after years of experience and close observation with single walled hives, and I believe the damage is greater by far than the cost of a new hive occasionally, where ordinary hives are used.

So far I wish it understood that I have been speaking only of such hives as we used a quarter of a century ago, and not of the chaff hives of the present day. With the advent of the chaff hives came a new era, in bee-keeping, and the case with these is entirely different along this line of painting, than with the single walled hive. With the chaff hive the moisture is driven through the first wall, which is always of unpainted lumber, just the same as it would be in case of an unpainted single-walled hive after which it lodges in the chaff or other packing, from which it passes out slowly through any crack or crevice that may exist in the outer shell, and more largely about the joint in the top of the cover and between the cover and the hive. I use a cap or hood six inches deep on all of my chaff hives, while directly over the bees is a sawdust cushion, which is only four inches thick. This cushion extends out over the chaff packing only an inch or so on all sides, or only sufficient to make sure that all the upward ventilation that can possibly exist must pass through this cush-

tion, and also so as to make sure that no bees can get into the cap. This leaves the larger share of the chaff walls uncovered except by the cap so that whatever moisture escapes through the walls of the inner hive into the chaff can at once pass up into the cap, and out through the cracks of the same, in all mild weather, which it also does to a certain extent on very cold days; yet in zero weather where the same lasts for several days, I will find the inside of the cap all frosted over, which shows what an amount of moisture is continually passing from the bees. I think that, from this passing off of the moisture as given above, comes the reason, largely, why bees winter so much better in chaff packed hives, rather than that the extra protection has anything to do with it, as some claim. Bees can endure any amount of cold which we ever experience in the U. S., provided they are kept dry; but dampness and wet they are not able to stand, where cold is added to it. From this comes the reason that bees winter tolerably well in a warm damp cellar, while with the same degree of dampness outdoors they generally perish; or if in such surroundings in any place where the mercury stays below the freezing point for any length of time as it necessarily must in our Northern climate. In this we get a little clew to add to the others, which, as a whole, causes our wintering troubles, for I believe these troubles do not rest on any one thing entirely. In accordance with my belief as expressed in this article, I paint all of my double-walled or chaff hives, and leave all the rest unpainted, considering that in doing so I am as nearly right as possible, taking all things into consideration. If any of the readers of the *Gleanings* think that I am wrong, a trial of a few hives in each way will convince them which is right.

G. M. DOOLITTLE, in *Gleanings*.

Borodino, N. Y., March 18th.

From the Bee-Keepers Review.

### THE BEST BEES.

JUDGING from the reports in this number, we were entirely correct when intimating that we Northern bee-keepers had no use for Syrian or Cyprian bees. Italians, Germans and Carniolans are the three varieties from which to choose. Before attempting to make a decision, let the bee-keeper well consider his honey resources together with all the accompanying conditions. Let him also decide whether he is to produce comb or extracted honey. Let no bee-keeper be caught by that phrase, "general purpose" bee. The bee-keeper who thoroughly understands his resources, knows *exactly* what he wishes to accomplish, and chooses the best hive, the best bee and the best methods, to secure the desired ends will far outstrip the "general purpose" bee-keeper, with his "general purpose" hive, "general purpose bees" and "general purpose" methods. For the production of extracted honey, the Italian bee stands without a superior. Were it not for the difficulty of dislodging them from the

combs, they would, for this purpose be well nigh perfect. In search of honey, they will fly far and wide. Though the recompense be slight, they toil on. If the yield of honey is abundant, and the source of supply near by, the Blacks will bring in as much honey as any bees—some say more—and, once the nectar is in the hive, they handle it in a manner that is truly artistic. The Italians are the better *field workers*; the Blacks the better *house-keepers*. In this respect the Italians are like man; while the Germans resemble woman to carry the similitude still farther, they *ought to marry*. In plain English the best results will be secured, especially in raising comb honey, by uniting these two varieties. Don't let the union be brought about in a haphazard way, but understandingly, according to the plan given by us last month, and mentioned again by a correspondent this month. For raising extracted honey, we would use Italians or hybrids; in the production of comb honey, we would employ Blacks or hybrids. Now then, after we have thus conclusively shown, that a judicious cross between the Italians and Germans is the best "bee for business," up step the Carniolans, claiming to possess all the good qualities of both the Blacks and Italians, with one or two additional virtues thrown in. It is asserted that they are the most gentle bees known; that they remain quietly on the combs when handled, but *are easily shaken off*; that they are industrious; good comb builders, capping the honey very white, and using but little propolis; that they are industrious; prolific; and just perfection itself. But we must not forget the disposition to praise new things. The Carniolans have been here only a few years; still it is a significant fact, that *all* who have tried them are pleased with them. So far, no word or fault has been uttered against them. But we are by no means ready to advise every bee-keeper to discard his Italians or Germans, or their crosses, for Carniolans. We have done our level best in securing testimony upon this subject, and we take pleasure in laying it before our readers, but, at the same time, we advise caution, investigation, and the laying aside of all prejudice.

From the Bee-Keeper's Review.

### "PRACTICAL BEE-KEEPING."

M R. JONES favors the traffic in virgin queens. That they can be furnished very cheaply there is no question, but that they are difficult to introduce we know from experience. A newly hatched queen is easily introduced. As the hours go by the probabilities of acceptance are lessened. With us, the percentage



of loss has been great when the queens were three or four days old. Then there is the risk of loss in mating, and, unless the locality of the purchaser can furnish excellent drones, the queens will find undesirable mates; and, as prepotency is on the side of the male, there will be little "value received."—After much experimenting, Mr. Jones concludes that old bees build more perfect cells than do the young bees.—Of the various methods of cleansing wax, he knows of no better plan than melting it over water, and then keeping it in a place sufficiently warm to prevent it solidifying for at least twelve hours. This allows all propolis, pollen and dirt to settle to the bottom. For rendering wax he prefers steam; but the steam must not be allowed to play directly upon the wax or it will be injured.—To detect adulteration in wax, draw the thumb nail over the surface. If genuine, the nail sticks slightly. If adulterated, the wax becomes slippery and gives out the smell of tallow or other adulterant.—The directions for making foundation are very full. Preference is given to the Vandervort mill. Soap suds made from good white soap has proved the best lubricant. Old foundation should be dipped in warm water (about 120°) before using. This restores it to its original softness. There is no necessity for drone foundation.—Considerable space is given to the description of sections with grooves upon the inside for holding the foundation. We do not believe such sections will ever come into favor in this country. As Mr. Pringle says, we desire something better.—We are astonished to see that Mr. Jones objects to apicultural patents. We supposed he legally accorded to mental labor a legal right to its own.—On one other point we are compelled to differ. He says that in reality there is not much difference in hives except in the variation of the size of brood chambers. This is only one way in which hives differ, while there are several important variations that may be mentioned. For instance, there is the difference in shape as well as in size, hives may be single-walled or double-walled, with fast bottom boards or loose ones, the brood chamber may be all in one body or it may be divisible, the hive may be invertible or it may not; may be arranged for side storing or adapted to tiering up; the frames may be of the hanging style or they may be of the standing variety; then there are the so-called minor points, that are often of importance, such as square or bevel corners; telescopic or square joints; hives arranged for a simple, flat, board cover, or those having a quilt over the frames, and over this a costly, raised cover. Why, Bro. Jones, we don't see how you ever come to make such an assertion.

There does seem to be a little ambiguity in the particular remark regarding hives to which Bro. Hutchinson calls attention. The reference was intended to refer to the great bulk of the hives in use and not so much to the make of the few. Our description of the different hives we use would carry out this idea. True, it is the better of some further explanation. We are glad our attention has been called to it.

#### HEIR TO A VAST ESTATE.

READERS of the C.B.J., one and all, will be pleased to learn that Mr. Allen Pringle is heir to a vast estate in Scotland. The following particulars we glean from the *Napanee Beaver*:

But few people are aware that for some time past Allen Pringle, Esq., of Richmond, has been taking preliminary steps to recover an immense estate in Scotland, to which he is the natural and rightful heir. The well-known diffidence of the gentleman would rather avoid anything like public notoriety regarding his private affairs were they never so strange or sensational; yet when questioned in regard to the matter he has yielded some information which we believe will be unusually interesting. The facts confirm the old adage that

"TRUTH IS SOMETIMES STRANGER THAN FICTION."

Mr. Allen Pringle has become widely known in literary circles for deep research into many questions which engage the attention of thoughtful men of the age and the incisive, we may rather say aggressive, manner in which he is wont to discuss these subjects in the leading periodicals of the times. Few men are better read in either standard or current literature, and few wield a more facile pen backed by a stronger or more logical mind, than he. This is one of the distinguishing characteristics of his Scottish descent, but this is not the only legacy inherited from his ancestry.

#### THE ESTATE

in question is among the most important in Scotland and yields an immense revenue. It was

#### A ROYAL GIFT

in recognition of faithful and loyal service. It appears that in the 14th century (about 1312) King Bruce, of Scotland, made a grant of the land in question to one of Mr. Pringle's ancestors on his mother's side, one Capt. McNeill, who

had rendered the King valuable service in his struggle for the independence of his country. Bruce had taken refuge one night in the Captain's house, and before leaving in the morning he took his host to an eminence near his domicile and declared that should he succeed and become King of Scotland he would reward him with an estate of land as far as he could see in every direction. When

#### BRUCE, OF SCOTLAND,

triumphed and was firmly established on the throne he faithfully discharged the pledge given in adversity. He granted Capt. McNeil a large tract of land several miles in extent, fourteen long and eight broad, entailing it upon him and his descendants.

This estate is in Argyllshire, Scotland, alongside that of the Duke of Argyll, and is called the

#### "ESTATE OF NGADALE."

It has come down since Bruce's time in the McNeil family from father to son. Some three generations ago, however there was a break in the direct succession, Capt. Hector McNeil possessor and owner, dying without legal issue Captain Hector's brother, (the grandfather of Mr. Allen Pringle's mother) and his descendants then became the legal heirs, but his brother was dead. His only son and heir, Francis McNeil, Mr. Pringle's grandfather, had been in America for many years and was not known to be alive. It is understood the formality of advertising was gone through, but no tidings received of the missing heir, and it is safe to say that those who had in prospective the usurpation of the estate were not particularly anxious that Francis McNeil or any of his kin should be found.

#### OLD CAPTAIN HECTOR MCNEIL,

who died without legal issue, had an illegitimate son, and it was he who got possession in the absence of legal heirs. Francis McNeil, who was struggling amidst the hardships and adversities of colonial life, was unaware of the fortune that was rightfully his until a short time before his death, and did nothing further than to make some enquiries as to the truth of the report. Before the old gentleman died, however, he assigned all his interest and claims in the premises to

#### MR. ALLEN PRINGLE.

The latter immediately set about looking the matter up. He wrote to two parties at Campbelltown, Argyllshire, for full information. Both parties addressed were strangers, but the names had been given him as men whom he could rely upon to give correctly the information sought,

one being a clergyman and the other a lawyer. Both responded, but were so utterly discouraging that, relying upon their statement, Mr. Pringle abandoned all investigation, unwilling to "throw away good money after bad." Of late, however, he received information which led to the conviction that he had been

#### DECEIVED AND MISLED

by the two parties to whom he had written for information, and that they were evidently in collusion with or under the influence of the usurpers in possession of the estate, and hence had withheld or misstated the facts.

Mr Pringle is now in communication with an eminent Scotch lawyer, who cannot be bought over, and with others equally true and reliable, and he expects in the near future to receive advice and information on which he can rely. That he could have recovered the rich estate of Ngadale 20 years ago, immediately after the assignment from his grandfather, when he first made the inquiry, he is very certain, and the chief obstacle he has to fear is that the usurpers may hold the property by right of undisturbed possession

Mr. Pringle will probably go to Scotland in the fall to look after his interests in the matter.

From the Parkhill Review.

#### MIDDLESEX BEE-KEEPERS:

Strathroy, March 13th, 1889.

**S**IXTH annual meeting of the Middlesex Bee-keepers' Association.

Meeting called to order by the President. F. Atkinson, at 1.30 p.m. in the Firemen's Hall. Fifty present.

Secretary-Treasurer Humphries was called upon to read the minutes of last meeting and submit report.

Minutes read and approved.

The Treasurer reports that he has received \$10 for membership fees and \$35 from the O. B. K. A., \$17 of which has been paid out for prizes at Ailsa Craig and Parkhill fairs, and that Strathroy was offered but refused to accept any money from us as an association to be given in prizes for honey. Printing, etc., \$13, leaving a balance in the Treasurer's hands of \$15.

Moved and seconded that the reports be accepted.—Carried.

Nomination and election being now in order, the President asked for nominations for President.

Messrs. W. J. Wilson, of Greenway, and J. B. Aches, of Poplar Hill, were the candidates. W. J. Wilson was elected.

Mr. James Hearley, of Strathroy, and J. B. Aches, were the nominees for vice-president. Mr. Aches was elected.

Mr. A. W. Humphries was elected Secretary-Treasurer at a salary of \$5 per year.

Representatives to Western Fair Board in London were James Hearley, Strathroy, and W. J. Wilson, Greenway.

Representatives to Ontario Bee-Keepers' Association, A. W. Humphries, Parkhill, and F. Atkinson, Ailsa Craig.

Representatives from the Association to attend the International B. K. A. meeting to be held in Brantford Nov. 15th. James Husband, Cairngorm, J. B. Aches, Poplar Hill; James Hearley, Strathroy; John Morgan, Kerwood; W. J. Wilson, Greenway, F. Atkinson, Ailsa Craig, J. W. Gibson, Strathroy, A. W. Humphries, Parkhill; Thomas Wakem, Glen Oak, J. W. Parker, Strathroy; Edgar Husband, Cairngorm; L. J. Hixon, Glen Oak; Truman Crealey, Strathroy; M. J. Sifton, Strathroy; Thomas Winters, Strathroy; Wm. Buttery, Strathroy; Wm. Ireland, Strathroy.

Moved and seconded that the following accounts be paid, viz.—J. Darrach, \$2.50, Evans Bros., 50c., F. Atkinson, \$1.25, Age, 50 cents. Carried.

Moved by J. Hearley, seconded by J. Henderson, that the next meeting of this Association be held in Parkhill.—Carried.

The Secretary here read excuses from members of the Association who were unavoidably absent, D. Smith, Thedford, Wm. L. O'Neil, West McGillivray, D. A. Jones, Beeton, R. F. Holterman, Brantford, and others among whom was S. T. Pettit, who had given his promise to be present, but as he had heard that there had been a case of smallpox in London some time ago he wrote a note to the Secretary at the last moment saying he was afraid to pass through the city to come here from his home in Belmont. (Laughter.)

The President here vacates the chair. The new President takes his place with Vice-President Aches by his side. After a short address by President Wilson, who thanked the meeting for the honor conferred upon him and promised to fulfil the duties devolving upon him to the best of his ability, the question drawer was opened and a very interesting time it was to every bee-keeper present.

1st. Best method of feeding bees in March and April? Mr. Aches answers by saying: "Lest the public should think that by our answers we feed bees sugar or anything else to make honey which they offer to them, he would say that bees were only fed when they are short

of honey in the fall or spring, and it was to sustain life, and for that only, were they fed. He agreed with the Secretary that it was best to feed them honey if you had it, but rather feed them sugar than let them die. You may feed them granulated sugar syrup by means of feeders in the cellar, candy rouses them up. It is no trouble to feed them on a fine day outdoors, but the right time to feed them is in October. If they are short of stores, then give them enough to live on over winter, if they are in the cellar keep them dark and quiet, at an even temperature, and they will consume less stores."

J. W. Gibson says to feed them in the cellar with candy is the best.

Mr. Ireland says he kept his bees in the cellar and fed them every week one winter and got along well and had extra good swarms and early—but this year though he followed the same plan he had lost half his stock. This bothers the most expert bee-keepers. My bees do lots of swarming and are the earliest in the district to swarm. I feed granulated sugar.

What is the best kind of a cellar to winter in? Answer—Frost proof, well ventilated, even temperature and dry. Wm. Buttery says he has kept bees for forty years in clamps and has had good luck and bad, has wintered in a dry cellar when there was a furnace in one side and was the most successful. Mr. Stuart asks if they can be buried to advantage. A Voice—Do you mean hibernating? (Laughter.) Mr. Stewart says he is not joking. Mr. Buttery and Mr. Aches both say they have buried bees and kept them well and they did not use so much stores.

Which is the most profitable, to hive swarms on comb, full sheets of foundation or starters? Answer—1st, comb, 2nd, full sheets, 3rd, starters, unless it be mouldy or drone comb, which should not be used at all.

How do you manage a swarm when running for comb honey? W. J. Gibson says, fill the section with foundation, give them a start, put between the sections and have a zinc queen-excluder and give them plenty of room above.

Is it an advantage to divide colonies instead of natural swarming? Answer—Yes, if you want to run for increase or for stock. J. W. Gibson has successfully divided up one colony into six.

What is the best way to manipulate bees to prevent spring dwindling? Answer—The weather has most to do with it. Put thick cushions on and keep them warm as possible. Mr. Buttery took 14 hives out too soon, covered them over with blankets, had a hard time, but saved them. Mr. Aches says, keep them well supplied

with stores, let them have a fly, then tuck them up well.

Why does honey granulate? Answer—Cold weather, none but pure honey will granulate.

If you don't want to increase your stocks, how do you manage them? J. W. Gibson says, pile one hive on top of another, take out the queen-cells, and watch them closely. It was then moved by A. W. Humphries, seconded by F. Atkinson, that market reports in quoting honey be requested to make a distinction between extracted honey and strained honey, extracted honey being free from the taste of the comb, bee bread, dead bees, etc., ranking higher than the strained honey.

Is it positively necessary that a young queen should be put in a hive when dividing? Answer—Yes, if you want to gain twenty days time.

Why not have the next meeting at London?

Because nobody asked us to go there and the bee-keepers in and around that city have not come near us, many not knowing however that ours is the largest Bee-Keepers Association in Canada and that we number nearly 100 members and seldom have less than 75 present at our meetings, and that we include in our membership some of the most prominent and successful bee-keepers in Canada.

Moved by Mr. J. Husband, seconded by Mr. A. Hunt, that the motion *re* next meeting be in Parkhill be amended by striking out Parkhill, and that London be substituted. Motion lost.

Master Byron Aches stepped forward and read a paper for his father, Mr. J. B. Aches, entitled Bee-Keeping and Horticulture as follows.

Bee-keeping and Horticulture. Mr. Chairman, Ladies and Gentlemen, We have assembled here together at our annual meeting of the Middlesex Bee-Keeper's Association to consider that which pertains to the best interests of our pursuit, and our time is short to consider the important subjects that will be presented. I am here to-day as a member of the Ontario Bee-Keeper's Association to assist as best I can in throwing light upon the subjects brought before us, especially pertaining to bee culture. It is with pleasure I come before you and while the last year of our decade has been discouraging from one point of view, from another we start with most encouraging prospects. The dearth of honey has not only established paying prices, but has been the means of clearing out honey that has been held by dealers for years and to me the prospects were never brighter. Yes, we have reached a crisis in the history of bee-keeping which must be acknowledged to be of national importance. The question no longer remains,

shall we commence at all? or shall those of us, who are already engaged in it continue? I now say without fear of successful contradiction that the possibilities of bee-keeping have never been reached. Need I say less of the agriculturist or horticulturist, like the successful bee-keeper, is an enthusiast. I need not mind any one who plants trees and grows fruit of the pleasure that thrills the soul when nature responds to his intelligence, thought and careful direction. He lives in a world of his own, a land where milk and honey flows—in Middlesex, right here in our own vicinity. He needs no other intoxicant to complete his happiness.

Bee culture like horticulture is one of the fine arts. It requires the skill of a master. It is just as impossible for the thoughtless, brainless clod-hopper to reach the highest round in the ladder propagating fruit as it is for him to enjoy it after it is grown. But after all man's skill in planting after ransacking the earth for improved varieties, after propagating, grafting and hybridizing he must rely mainly on nature's methods of fructification. The favoring winds and industrious bees are needed to fertilize the blooms to insure a harvest of fruit.

As a means of accomplishing this end there is no question but that the bee is of great service to the growers of fruit. No other insect is multiplied in such vast numbers so early in the spring when their agency is so much needed to fertilize the orchards and small fruits. If the wind were the only means of carrying the pollen from flower to flower how often would fertilization fail from too much or too little wind during the brief opportunity when the bursting buds are sighing for the life giving dust from the neighboring flowers, so the bee introduces itself to the horticulturist at once as his friend. The latter should meet it half way and acknowledge its twofold service. It does him a service while on its daily rounds in search of food for itself and young and again by storing up for his benefit the liquid sweets which it does not need itself and which ungathered vanish like the morning dew.

Like the manna which the Israelites ate of, the ungathered portions melted when the sun waxed hot. What then is to hinder these two vocations going hand in hand since each is helpful to the other, they ought at least to be on friendly terms, each furnish inducements for the other to exist. A great deal has been said about bees injuring fruit; some fruit growers have charged that they puncture the ripe grapes, suck the juice and destroy the crop. But from the physical structure of the bee this is shown to be impossible by scientific entomologists. It has

no joints like the hornet. It is made to suck and not to bite and after close observation and repeated experiments it has been found that when bees are discovered helping themselves to ripe fruit that the skins had been ruptured by the weather or from over ripeness, or that a hornet or wasp or bird had first been the depredators. After the skins have been broken from any cause, if there is a scarcity of honey, the bees always anxious to be doing something endeavor to share the plunder. Therefore, as to the bees injuring fruit, I as their attorney shall claim to the jury that the charges are not proven.

Moved by Mr. John Morgan, seconded by Mr. J. Husband that a vote of thanks be tendered the retiring officers. Pres., Vice-Pres. and Sec., also to Master Byron Aches for reading so nicely the essay of his father—Carried.

Moved by Mr Atkinson, seconded by Mr. Aches, that a vote of thanks be tendered, the Town Council for the free use of the hall this day to hold our meeting in.—Carried.

Moved and seconded that next year the business be done in the morning, roll called at ten o'clock then the afternoon will be taken up in discussion on various subjects and reading of papers, etc.

Meeting then adjourned to meet in Parkhill at the call of Secy.-Treas.

## SUNDRY SELECTIONS:

S. BRAMMELL—I like the C.B.J. very much and it is a great disappointment to go to the post office and not get it. In the fall of 1888 I put 22 hives into winter quarters and brought out 21. One left the hive during winter, one was robbed in the spring so I commenced with twenty.—14 in good shape, 6 not so good. I took 980 lbs. extracted and comb but had only two swarms. All in capital condition and doing well.

### REPORT FROM NORTHUMBERLAND.

GEO A GUNNER. I placed 32 colonies in the cellar in fall of '87, the spring of '88 found all alive and having lost but few bees during the winter; lost two colonies before the season began increased to 42 all with the exception of two with plenty of stores when put in the cellar. I took 600 lbs. of comb honey and 300 lbs. of extracted. This, I think, is good considering the very poor season.

Colborne P. O., Northumberland Co., Ont.

### BEEES BOTHERED WITH DYSENTERY.

J. T. SWITZER—I have nothing of much interest to offer there being neither increase or surplus the last season. I am wintering in the cellar. My bees seem to be restless for a few weeks back. The fronts of some of the hives are becoming spotted and dirty. I put ten hives out on Saturday 16th inst. and gave them

a flight. Those ten have settled down very quietly since. Would it not be advisable to put them all out some fine day and let them have a cleansing flight. I think it would. I am only a beginner in the business and have everything to learn in bee-keeping on scientific principles. But I have always been used to bees in the old fashioned gums. I read the C. B. J. with a great deal of interest and through it I have become interested in the art of bee-keeping. Wishing the JOURNAL a successful career.

Lisgar, March 18th, 1889.

It would be advisable to give the rest of your colonies a cleansing flight—they are troubled with dysentery. The first fine day, when the wind is in the south, set them out for a short time. Return them before the temperature changes and becomes colder.

### TWO-QUEENS IN ONE HIVE.

At a recent meeting of the Kent (Eng.) Bee-Keepers Association a member made this report:—At Faversham I met with a singular case of two queens living amicably in one hive. A Ligurian queen was given to the stock in 1886, which laid remarkably well that season. But the next spring was not satisfactory, and Mr. Ivory (the owner) noticed royal cells were being raised, with the result that about June 1887 a young queen was hatched; during the season several times after he saw both queens. When I examined the stock on the 20th April this year, I found a queen, and made the remark to him she appeared to be an old one, he at once exclaimed, "She is an old one, and you will find the other some where there." And sure enough, presently I saw the daughter, the very picture of what a queen should be,—active, vigorous, and depositing eggs as rapidly as one could wish. Mr. Ivory was sure they had been in that hive for eight or nine months, and I have no doubt they had.—*The British Bee Journal*.

## BUSINESS DEPARTMENT.

### BUYING DARK HONEY.

We are in receipt of quite a large number of letters offering to exchange Basswood and other dark honeys for supplies, but the honey is generally held at such a price as to make it impossible for us to effect the change and save ourselves. We have been paying 12 cents per pound for bright clear honey delivered at Beeton, in exchange for goods, and this is the utmost we can expect to get for it ourselves besides the trouble of re-packing and liquifying (for we have many customers who don't want to go to the trouble of liquifying the honey on arrival, preferring that we should do it for them) and then we very often have to wait months to get our pay. So the only profit we make out of the transaction is what we get from the supplies. If we got the honey at a price that would enable us to make a little profit both ways we wouldn't

mind at times taking all the dark honey offered us—and we would then be willing to hold it until an opportunity offered for its disposal.

We are now prepared to take any quantity of wax in exchange for supplies. When shipping place your name on the package and advise us when sent.

#### NOTICE—TO EASTERN CUSTOMERS.

We have, for disposal at Quebec, some 25 S. W. Hives, well seasoned and good. They have the old-style top-story. The cost of delivery at Quebec is perhaps 35c. per hive, and these hives, therefore, cost delivered about \$1.40. We will, however, sell them F. O. B. cars at Quebec, at \$1.40 each. This is a decided bargain. Write us, any of you who want them.

**TO THE DEAF**—A person cured of Deafness and noises in the head of 23 years standing by a simple remedy, will send a description of it FREE to any Person who applies to NICHOLSON, 177 McDougal Street, New York.

## GOOD BOOKS

—FOR THE—

### Farm, Garden AND Household.

THE FOLLOWING VALUABLE BOOKS WILL BE SUPPLIED FROM THE OFFICE OF THE CANADIAN BEE JOURNAL. ANY ONE OR MORE OF THESE BOOKS WILL BE SENT POST-PAID DIRECT TO ANY OF OUR READERS ON RECEIPT OF THE REGULAR PRICE, WHICH IS NAMED AGAINST EACH BOOK.

#### FARM AND GARDEN.

Allen's (R. L. & L. F.) New Am. Farm Book	\$2 50
Beal's Grasses of North America	2 50
Brackett's Farm Talk, Paper, 50c. Cloth	75
Brill's Farm Gardening and Seed-Growing	1 00
Barry's Fruit Garden. New and revised	2 00
Farm Appliances	1 00
Farm Conveniences	1 50
Farming for Profit	3 75
Fences, Gates and Bridges	1 00
Fuller's Practical Forestry	1 50
Gregory on Cabbages	30
Gregory on Onion Raising	30
Harris' Gardening for Young and Old	1 25
Henderson's Gardening for Pleasure	2 00
Henderson's Gardening for Profit	2 00
Johnson's How Crops Feed	2 00
Johnson's How Crops Grow	2 00
Johnson's How to Plant	50
Long's Ornamental Gardening	2 00
Onions—How to raise them Profitably	20
Our Farm of Four Acres	80
Quinn's Money in the Garden	1 50

Silos and Ensilage	50
Starr's Farm Echoes	1 00
Stewart's irrigation for the Farm, Garden and Orchard	1 50
Ten Acres Enough	1 00
The Soil of the Farm	1 00
Thomas's Farm Implements and Machinery	1 50
Treat's Injurious Insects of the Farm and Garden	2 00
Waring's draining for Profit and Health	1 50
Waring's Elements of Agriculture	1 00
Weld's and Others' A. B. C. of Agriculture	50

#### FRUITS AND FLOWERS.

Bailey's Field notes on Apple culture	75
Elliott's Hand Book for Fruit Growers Paper, 60c	1 00
Fuller's Grape Culturist	1 50
Fuller's Illus. Strawberry Culturist	25
Fuller's The Propagation of Plants	1 50
Fuller's Small Fruit Culturist, new ed.	1 50
Fulton's Peach Culture New ed.	1 5
Henderson's Practical Floriculture	1 50
Husmann's American Grape Growing & Wine Making	1 50
Parsons on the Rose	1 00
Saunders' Insects Injurious to Fruits	3 00
Vick's Flower and Vegetable Garden	1 25

#### HORSES, RIDING, ETC.

Anderson's The Galep	1 00
Armatage's Horse Owner and Stableman's Companion	1 50
Battersby's The Bridle Bits. Valuable	1 00
Chawnet's Diseases of the Horse	1 25
Dadd's American Reformed Horse Book. 6vo	2 50
Dadd's Modern Horse Doctor. 12mo.	1 50
Day's The Race Horse in Training	6 25
Du Hays' Percheron Horse. Revised and Enlarged	1 00
Heatley's Every man his own Veterinarian	2 50
Herbert's Hints to Horse Keepers	1 75
Howden's How to buy and sell a Horse	1 00
Jenning's Horse Training Made Easy	1 00
Jennings on the horse and his diseases	1 25
Law's Farmers' Veterinary Adviser	3 00
Manning's The Illus. Stock Doctor	5 00
Rarey and Knowlson's Complete Horse Tamer	50
Riding and Driving	20
Saddle Horse, The; Complete Guide to Riding and Training	1 00

#### CATTLE, SHEEP AND SWINE.

Armsby's Manual of Cattle Feeding	2 50
Cattle, The Varieties, Breeding and Management	75
Clok's Diseases of Sheep. Paper	75
Coburn's Swine Husbandry. New ed.	1 75
Dadd's American Cattle Doctor. 12mo	1 50
Dadd's American Cattle Doctor. 8 vo.	2 50
Guenon on Milch Cows. New ed	1 00
Jennings on Sheep, Swine & Poultry	1 25

Jersey, Alderney and Guernsey Cow. Keeping One Cow. New edition.....	1 50
Martin's Hog Raising and Pork Making .....	40
Miles' Stock Breeding.....	1 50
Powers' The American Merino for Wool and Mutton. A practical and valuable work.....	1 50
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