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CANADIAN BEE JOURNAL

PUBLISHED MONTHLY.

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The Retiring Editor.

The decision of Mr. R. F. Holtermann to permanently retire from the editorship of The Canadian Bee Journal, from the ranks of bee-keepers and from his business connections, will doubtless have caused much surprise and regret among many readers of this Journal. While some may not have always agreed with Mr. Holtermann, and possibly have opposed him in many ways, still a large number of Canadian bee-keepers have profited by his practical knowledge and by his untiring efforts to advance the interests of this important industry. Many doubt the wisdom of Mr. Holtermann's recent action, but it is a matter which he has necessarily decided for himself, and we can only hope that he has been guided aright and wish him success in his new undertaking.

* * *

The Future.

While we regret Mr. Holtermann's resignation, it is our determination with the co-operation of our readers to turn out even a better publication than heretofore, and we will spare no pains to effect this end. There is little money and very little glory to the publishers in conducting this Journal, but we have an interest in the bee-keeping industry and feel that its importance demands a publication devoted to its special interests. We are arranging for articles by competent men, which will appear from time to time, and will continue to give full reports of important conventions, so that our readers may profit by the papers read and the discussions engaged in at these meetings. The Journal has been of a practical character since we assumed its publication over six years ago, and it is our intention to make it increasingly helpful and valuable.

* * *

Canadian.

We desire to emphasize the word "Canadian" in the title of this Journal, for the benefit of Canadian readers, in order to try and awake greater interest in it and co-operation in making it increasingly interesting and valuable. The U. S. publications are in several instances well conducted and have one hundred bee-keepers for a constituency, where there is one in Canada, giving a decided advantage in many ways, but despite that we doubt if any of them give better matter on the average than that contained in The Canadian Bee Journal. We thank the many in Canada who have stood loyally by the Journal by subscribing for it, by interesting their friends in it and by contributing articles for publication. But "one good turn deserves another" and we ask for your continued and increased co-operation, and feel that the Journal is entitled to and worthy of your hearty backing. We make special terms to new subscribers and will be pleased to mail sample copies to any address given us. Are you, Canadian reader, sufficiently interested to get us a subscriber or send us an item of interest or a short article for publication? Please don't all speak at once.

* * *

Suggestions.

It is sometime said that any reader of a publication could run it better than the

men who have it in charge. Now we think there is some truth in that sarcastic remark to the extent that many readers could give the publishers and editors suggestions which would be valuable. We therefore ask our readers for criticisms and for suggestions tending to improve the make-up of The Canadian Bee Journal, or as to the topics which might be timely and practical. We will appreciate and so far as possible act on such hints. Who will be the first to respond?

* * *

The Poor Season.

The reports of the past season show clearly that the honey crop in almost every part of Canada and the United States, has been much under the average. This may have a tendency to discourage some, and lead to neglect of the faithful occupants of many hives who were ready to gather the coveted sweetness, if it could have been found. The old story is likely to be repeated in that the wise bee-keeper will take extra care to have every colony begin the winter as strong as possible, and not only well provided with stores but protected from damp and cold, and foul air, and in his finding the new year a good one and his profits making up for the former shortage and giving a fair average for both years. On the other hand, the careless or discouraged bee-keeper will neglect his bees and find himself with few and enfeebled colonies and unable to gather and profit by the harvest likely to be provided by nature another year.

* * *

The Philadelphia Convention.

The 30th annual convention of the United States Bee-Keepers' Association held at Philadelphia, September 6th to 9th, seems to have been successful in point of numbers, in attendance, and the character of the papers, and the discussions on them were practical and helpful. We have arranged for the publication of the papers of most interest to our readers. The Philadelphia Association was, to quote Editor York in The American Bee Journal, "untiring in their efforts and lavish in their expenditure of time and money." The record of the social side of the convention in addition to the intellectual bill of fare provided, makes us regret more than ever our inability to attend.

The next meeting will be held in Chicago, at the same time as the gathering of the Grand Army Encampment.

AMERICAN BEE-KEEPERS' CONVENTION HELD AT PHILADELPHIA, SEPTEMBER, 1899.

Possibilities and Difficulties of Bee-Keeping in Cuba, and the effect of our new relation with this island, on our Honey Market.
—Fred. L. Craycraft

The recent struggle of the Cubans to throw off the Spanish yoke, and which finally culminated through the intervention of the United States, is still fresh in the memories of all, and on account of the close commercial relations which exist between these countries, and the possible annexation of this Island (thus adding another star to our National Ensign), has caused people to observe with interest signs of renewing commercial, agricultural and industrial activity, which will in time cause a profound impression on the American people, benefiting many by opening up new markets for American products, while at the same time others will seriously feel the competition caused by the introduction of products from these countries into our own markets.

This question is one of particular interest to the American honey producer, since heretofore the production of honey in this country has been largely in excess of home consumption, and we know that exportations of honey and wax from the island have been very large, although the almost absolute lack of reliable statistics upon which to base any calculations as to the future exportations of this article, make it a very difficult matter to form any approximate estimate of the import-

ance it will bear on our honey markets in the future.

The honey and wax production of Cuba before the war, which commenced in 1895 was very important in all districts of the island, especially in the Provinces of Puerto Principe and Santiago de Cuba.

According to the Statistics of Exportation of Cuba, published by the Minister of Insular Affairs of Spain; during 1894, 2,433,969 Kilograms or (5,354,000 lbs.) were exported from Cuba. Of this amount 4,300,000 lbs. was shipped to the United States, but almost all was shipped in transit to European markets only a very small percentage entering the American markets.

According to the same authority only 1,194,845 Kilograms or (3,090,000 lbs.) were exported in 1895. This large falling off in exports is easily explained by the fact that in February of 1895 the revolution commenced in the eastern provinces, and the writers own practical experience with an apiary of 300 colonies, demonstrated that the honey yield was considerably under the average; caused by the cool northeast winds which prevailed during the height of the "campanilla" blossom.

With a very few exceptions, this must be considered a natural and spontaneous production, as the bees receive very little care, the only physical exercise being required was to put the swarms into empty boxes, and place a palmetto leaf on top weighted down with a stone. The mental exertion required in studying up better methods for their management was considered entirely superfluous.

The native Creole or box hive consists of a box about 4 ft. long and from 8 to 12 inches square inside, and open at one end. Where lumber is scarce, hollow logs are sawed off and used in the same way The hives are placed in an almost horizontal position, only being inclined enough to keep the water from running in at the entrance or open end.

The old adage that "There's nothing new under the sun" is strikingly proven in this case. for here it is that reversing is carried to perfection? When a swarm is placed in one of these long boxes the bees take up their abode in the spot most suited to their fancy, generally near the middle, leaving a vacant space at each end. As the honey flow commences, the bees naturally build comb and store the honey in the closed end where it is better protected from outsiders. The first extraction takes places during the latter part of December, when the board is knocked off the rear end, and the honey cut and pulled out with long hooks; after this operation the hives can be turned around and the other end closed up, the extraction of this end taking place during the latter part of January. Two and sometimes three extractions are made during the season, besides a "impieza" or cleaning up given the bees in August or September when some honey and considerable wax is taken from them, thus reducing the opportunity for the moth worm to get a hold on them.

It can be seen that although the honey flow is very bountiful, only a limited amount of honey is obtained on account of the bees not having any place to store it.

Taking into consideration the waste, consequent of such a crude system of manipulation, I think an average of three gallons per hive to be a conservative estimate, and if we can place any reliance in the statistics of honey exported during the economical year of 1894, it will be seen that it took nearly 160,000 hives to produce this amount.

It is difficult to form anything but conjectures regarding the importance and value of apiculture in Cuba, as the wave of fire and death which swept across this beautiful island, has almost totally exterminated not only the bees, but also their owners. The following instances are given as examples: From the mayor of the town of Jaruco twenty-five miles east of Havana; "I calculate that 98% of the bees in this district have been destroyed since the beginning of the war. There are now only four apiaries consisting of 250 colonies. The Creole or box hives yield about four gallons per hive, and the American sixteen gallons per hive." It will be remembered that this is the place where the Casanova apiary was located, and which was so ably managed by our late friend Mr. Osburn, and from which Mr. Somerford got the banner honey crop of Cuba. Thanks to the purifying effects of fire, the foul brood which wrought such havoc in that apiary has been eradicated.

From the town of Candelaria, in the Province of Pinar del Rio; "Before the war there were five apairies of over 700 hives each in this district, besides many other of less number. There are now

only a few scattering hives which were saved within the town."

From Amarillas, a town on the south coast of Matanzas Province; "Before the war there were 10,000 hives in this district, now only ninety."

From the foregoing it can be seen that at least 90% of all the bees on the island have disappeared.

Since the first of January, 1899 to July 1st, over 600,000 lbs. have been exported from Havana. Of this amount over 500,000 lbs. have been shipped direct to France by the firm of Bridat Mont 'Ros & Co., who on account of their straight dealings and liberal prices, have succeeded in handling almost the entire crop of honey, thus breaking up a clique of dealers who formerly put their own prices on the article and crowded out legitimate competition. During the two preceeding years the same firm exported over 1,500,000 lbs. of honey and large quantities of wax.

There are now in the Province of Havana nine modern apiaries containing about 1700 hives, and others are being started in different parts of the island. The country around Nuevitas, in the Province of Puerto Principe, has the name of being the finest part of the island for bees, as large quantities of honey and wax are brought from there in coasting vessels. From what the writer has seen of the island there is very little territory where bees do not do well unless it is where there are a great many sugar mills, and the surrounding country is all taken up with sugar cane, and unless the place is overstocked with bees, the writer thinks there are few places where ten gallons per hive cannot be obtained.

The price in Havana markets range from forty to fifty cents per gallon net, the buyer paying the cost of package. The crop is all handled in hogsheads of from 100 to 105 gallons each. In any good location 300 hives can be kept without overstocking, and with the exception of during the extracting season, from December 1st to March, one man can care for two such apiaries, provided they are of easy access.

There are also difficulties to be taken into consideration, but as all bee keepers know, many of them can be overcome by the judicious use of that one quality; vigilance. One of the main things necessary is to keep the colonies all supplied with young and vigorous queens, thereby freeing them from the ravages of the moth, so much feared in tropical countries.

As there is no time during the 365 days of the year (except when it rains) when the bees cannot get out and find something to carry in, they can be increased very rapidly.

During the rainy season, especially the latter part of September and October, when we are sometimes visited by storms and rains which last several days, it is necessary to watch the bees closely and sometimes feed the weaker ones, for the high winds bruise and toss about the nectar yielding plants so much, that there is a scarcity of flowers, and those which are short of provisions are liable to succumb before Nature gets back to her usual condition. When the rainy season closes in November the flowers begin to give a variety of color to the luxuriant vegetation, and from then until March there is nothing to do but take out honey, as the bees store it so fast that the queens are kept restricted to the lower story. In March and April some honey is also extracted, but the queens begin extending their domains, and swarming commences, although the swarming fever does not get so bad here as it does in the northern climes.

Last but not least (although they are very small) is the ant problem, which is one of the most important to the Cuban bee keeper, especially during the rainy season, for they take refuge by thousands under and in the hives, and often cause weak swarms to abscond.

Another important matter to take into consideration here, is the cost of living, which is at least fifty per cent. more than in the United States.

With the exception of sugar and tobacco, which are the staple export products almost everything is imported, not that the country cannot produce everything needed, but on account of the total destruction of rural wealth and the depopulation of the country, there is nothing planted, and what were once productive farms are now abandoned to weeds and grass. This of course, is only a temporary condition which will disappear when the tide of immigration turns this way.

On August 10th bee hives were placed on the free list of importations and although the duty on them was not excessive, it will doubtless give stimulation to the industry, but even if Cuba does take the lead as a honey producer, as long as the duty of twenty cents per gallon remains on extracted honey, it will not

enter American markets, for while Europe can pay even forty cents per gallon net in Havana. Cuban dealers cannot pay twenty cents per gallon duty, freight and cost of package and compete with American honey at sixty and sixty-five cents per gallon.

So far there has been very little comb honey produced here except for the home market in Havana, which is very insignificant, as Cubans are not great honey eaters.

Campanilla honey is as white and equal in flavor to any in the world, and when comb honey is put in nice shape by specialists it will undoubtedly win for itself a name and place in the American markets equal to the finest of white clover or basswood honey.

EXHIBITION NOTES.

TORONTO.

It is many years since the "Industrial" has had as small a representation of the Beekeeping fraternity—only three honey exhibitors—Jas. H. Shaver, Brantford; R. H. Smith, St. Thomas, and Geo. Laing, Milton. Two in Beekeepers' supplies—The Goold, Shapley & Muir Co., Brantford, and R. H. Smith, St. Thomas. The "Honey Building" presented a rather slim appearance, the absence of so many of its former occupants spoke of scant honey flows generally.

The displays were very neat and creditable. The quality in "Extracted" was up to the average, but in the lots of "comb" presented the finish was scarcely up to the usual standard.

The judging was carefully conducted by Mr. A. Pickett of Nassagaweya and Mr. Hoshal of Beamsville, resulting as follows:

1. "Display of Extracted Granulated Clover Honey."—1st J. H. Shaver, Cainsville; 2nd Geo. Laing, Milton; 3rd R. H. Smith, St. Thomas.

2. "Display of Extracted Granulated Linden." Exhibits ruled out—flavor not distinct

3. "Display of 500 lbs. Liquid Extracted Honey."—1st J. H. Shaver, Cainsville; 2nd Geo. Laing, Milton; 3rd R. H. Smith, St. Thomas.

4. "Display of 500 lbs. Comb.,"—1st J. H. Shaver, Cainsville; 2nd R. H. Smith, St. Thomas; 3rd Geo. Laing, Milton.

5. "Best 12 sections Comb Honey."—1st J. H. Shaver, 2nd R. H. Smith, 3rd G. Laing.

6. "Best 100 lbs. Extracted Linden in glass."—1st R. H. Smith, 2nd J. H. Shaver, 3rd Geo Laing.

7. "Best 100 lbs. Extracted Clover Honey."—1st J. H. Shaver, 2nd R. H. Smith, 3rd Geo. Laing.

8. "Best 10 lbs. Clover Honey in glass."—1st J. H. Shaver, 2nd Geo. Laing, 3rd R. H. Smith.

9. "Best 10 lbs. Extracted Liquid Linden Honey in glass."—1st J. H. Shaver, 2nd R. H. Smith, 3rd Geo. Laing.

10. "Best 10 lbs. Buckwheat Honey."—J. H. Shaver, only exhibit.

11. "Best 10 lbs. Beeswax."—1st R. H. Smith, 2nd J. H. Shaver, 3rd Geo. Laing.

12 "Best Foundation for Brood Chamber."—1st Goold, Shapley & Muir Co., Brantford; 2nd R. H. Smith, St. Thomas.

13. "Best Foundation for Sections."—1st Goold, Shapley & Muir Co.; 2nd R. H. Smith, St. Thomas.

14. "Best Apiarian Supplies."—1st Goold, Shapley & Muir Co.; 2nd R. H. Smith, St. Thomas.

15. "Most Practical New Invention."—1st R. H. Smith, 2nd Goold, Shapley & Muir Co., 3rd Goold, Shapley & Muir Co., 4th R. H. Smith.

16. "Best variety of Domestic uses for Honey."—1st G. Laing, 2nd R. H. Smith.

17. "The most tasty and neatly arranged Exhibit of Honey."—1st Jas. H. Shaver, 2nd Geo. Laing, 3rd R. H. Smith.

18. "Exhibitor taking most first-class prizes."—1st J. H. Shaver, silver medal; 2nd R. H. Smith, bronze medal.

VISITING BRETHREN.

Among the friends visiting the department we noticed: Mr. J. W. Sparling, of Bowmanville; Mr. Pirie and Mr. Brown, Drumquin; Mr. Wm. Goodger, Woodstock—former exhibitors—regret not finding them among the exhibitors this season. Mr. Wm. McEvoy, Woodburn (Foul Brood Inspector) and Mrs. McEvoy, called to give an annual greeting; also W. A. Chrysler, Chatham, G. A. Deadman, Brussels, J. D. Evans, Islington, Jacob Alpaugh, Galt, James Armstrong, Cheapside, W. C. Rightmyre, Peterborough, Alex. Goodfellow, Macville, Jas. McGregor, Whitby, Thos. Grant and Wm. Menzie, Galt, W. J. Hammond, Guelph, J. A. Gilchrist,

Welland, E. G. Laver, Weston, C. French, Oshawa, Robt. Smith, Que. la, E. G. Hand, Fenelon Falls, A. McPherson, Markdale, J. T. Colson, Bracebridge, Sam. Martin, Toronto, and others.

"THE CENTRAL," OTTAWA.

The honey exhibitors at Ottawa were Mr. Alex. McLaughlin, Cumberland; Mr. Wm. Alford, Ottawa; Mr. W. J. Brown, Chard; Rev. T. J. Spratt, Wolfe Island; and in Beekeepers' Supplies, The Goold, Shapley & Muir Co., Brantford. The exhibits, while on a much smaller scale than at Toronto, were neat and showed a good deal of taste.

Mr. J. K. Darling, Almonte, judged and awarded as follows:

Best 20 lbs. Granulated Honey—1st A. McLaughlin, 2nd W. J. Brown, 3rd Wm. Alford.

Best 100 lbs. Extracted Honey—1st Wm. Alford, 2nd Alex. McLaughlin, 3rd W. J. Brown.

Best 100 lbs. Comb Honey—1st Alex. McLaughlin, 2nd Rev. T. J. Spratt, 3rd Wm. Alford.

Best 10 lbs. Comb Honey—1st Alex. McLaughlin, 2nd Wm. Alford.

Best 10 lbs. Extracted Clover Honey—1st W. J. Brown, 2nd Alex. McLaughlin.

Best 10 lbs. Linden Honey—1st Alex. McLaughlin.

Best Beeswax—1st Alex. McLaughlin, 2nd W. J. Brown.

Best Educational Exhibit—1st Wm. Alford, 2nd Goold. Shapley & Muir Co., 3rd Alex. McLaughlin.

Best Exhibit of Beekeepers' Supplies—1st Goold, Shapley & Muir Co., 2nd Wm. Alford.

Best Foundation for Brood Chamber—1st Goold, Shapley & Muir Co., 2nd W. J. Brown.

Best Comb Foundation for Sections—1st Goold, Shapley & Muir Co., 2nd Alex. McLaughlin.

Best Hive for Comb Honey—1st Goold, Shapley & Muir Co., 2nd Alex. McLaughlin.

Best Hive for Extracted Honey—1st Goold, Shapley & Muir Co., 2nd W. J. Brown.

Best and most tastily arranged Exhibit of Honey—1st Alex. McLaughlin, 2nd W. Alford, 3rd W. J. Brown.

OLD FRIENDS.

The C. B. J. met quite a number of old friends here also and formed many new acquaintances. Among the visitors to the Honey and Supply department we remember seeing: Our energetic agent at Ottawa, Mr. Percy H. Selwyn; Mr. Wm. Alford, Ottawa; Mr. W. J. Brown, Chard (President of the Ontario Beekeepers' Association); Mr. Alex. McLaughlin, Cumberland; Mr. August Demers, Pembroke; Mr. L. A. Smith, Ottawa; Mr. H D. McLaughlin, Vanleek Hill; Mr. Wm Graham, Monckland; Mr. John H. Cumming, Monckland Station; Mr. Shaw. Alexandria; Mr. Robt. McJanet, Ottawa Mr. Robt. McEwen, Renfrew; Mr. G. G. Shirreiffe, Clarence; Mr. Nathan Joosey, Aylmer; Mr. D. J. McLatchie, North Wakefield; Mr. Wm. Garvin, Appleton. Mr. A. A. Ferrier, Osceola; Mr. R. S. Arlinthuat, Lunenburg; Mr. A. Gamble, Limebanks; Mr. James Braman, Manotick; Mr. Geo. Story, Panmore; Mr. Wm. M. Osborne, Brockville; Mr. E. C. Whinfield, Calumet, Que.; Mr. P. Foisy, Ottawa; Mr. John Newton, Thamesford; Mr. Frank Myers, Renfrew; Mr. J. L. McLaren, Dalkeith, and others.

A poor season and great shortages in the honey crop generally reported—both east and west.

"THE WESTERN," LONDON.

The following are the prize winners in the honey department at the London Exhibition:

Section 1—1st William Coleman, Birr, 2nd Byron Aches, Poplar Hill; 3rd Sarah E. Rudd, S. London.

Section 2—1st Wm. Coleman; 2nd B. Aches.

Section 3—1st B. Aches; 2nd Wm. Coleman; 3rd Sarah E. Rudd.

Section 4—1st Wm. Coleman; 2nd B. Aches; 3rd Sarah E. Rudd.

Section 5—1st Sarah E. Rudd; 2nd B. Aches; 3rd Wm. Coleman.

Section 6—1st Sarah E. Rudd; 2nd B. Aches; 3rd Wm. Coleman.

Section 7—1st B. Aches; 2nd Wm. Coleman; 3rd Sarah E. Rudd.

Section 8—1st B. Aches; 2nd Wm. Coleman; 3rd Sarah E. Rudd

Section 9—1st B. Aches; 2nd Wm. Coleman; 3rd Sarah E. Rudd.

Section 10—1st H. B Kennedy, Birr; 2nd W. J Kennedy, Ilderton; 3rd Mrs. R. Morgan, Kerwood.

Section 11—1st Sarah E. Rudd; 2nd B Aches.

Section 12—Wm. Coleman.

Section 13—Wm. Coleman.

Section 14—B. Aches.

Section 17—William Martin, Belmont.

HALDIMAND BEE-KEEPERS.

—Haldimand Advocate.

The regular meeting of the Haldimand Bee-Keepers' Association was held at Nelles' Corners, on Friday, Sept. 8th, 1899, when the following members were present:

Wm. Atkinson, President, in the chair; Messrs. Israel Overholt, D. H. High, Robt. Coverdale, Alex. Stewart, James Otterman, Mrs. Rose, Mrs. Rutherford, Wm. Kindree, Mrs. Kindree, John H. Best, and the Secretary.

The minutes of the last meeting were read and adopted.

REPORT OF SEASON.

	Colonies	Extracted	Comb
Wm. Atkinson....	61	700	—
Israel Overholt...	30	1050	—
Isaac Overholt....	34	850	—
Robt. Coverdale..	31	500	—
Alex. Stewart.....	5	200	—
D. H. High.....	13	250	—
Mrs. Rose.....	46	500	20
Mrs. Rutherford..	15	100	—
Isaac G. Wismer..	85	2150	—
Wm. Mitchell.....	8	70	—
Wm. Kindree.....	55	400	—
John H. Best....	31	300	—

The President thought the cause of the failure of the honey crop was caused by the long drouth, not only of this year but last year as well, causing a very small crop of clover, and he was afraid next year would be as bad.

Mr. Stewart said his surplus was secured from basswood and fruit bloom, as the bees got nothing from clover.

Mr. Israel Overholt thought the long drouth of this year would materially affect the honey crop of next year, as the clover crop is almost a failure.

Mr. Overholt asked the question how should bees be prepared for winter, with sealed covers or chaff cushions? Messrs. Stewart, Atkinson and Kindree favored sealed covers, and about two inches of packing on top with oat chaff or sawdust or other dry packing.

Mrs. Kindree preferred new combs to winter bees on, but Messrs. Overholt and Atkinson preferred old combs and gave their experience as a proof.

Mr. Kindree asked the question what was the best method of uniting? Mr. Overholt practiced shaking all the bees in front of one colony and by thus mixing them it prevented the one colony being killed; he also smoked them quite freely.

How to prevent the moth from destroying surplus combs. Mr. Overholt prefers sulphuring the combs, and keeping them a distance apart.

HOW TO FEED AND WHEN.

Feed granulated sugar syrup. Two pounds of sugar to one pound of water; dissolve the sugar by bringing to a boil; feed the syrup to the bees in the evening during September; thirty pounds of syrup per colony.

Moved by Mr. Best, seconded by Mr. High, that we have the annual meeting at Cayuga, on Friday, November 17th. Carried. E. C. CAMPBELL, Secretary.

Winter Stores.

[For the C. B. J.]—O. W. POST.

The first requirement for winter stores is well ripened sealed honey. I am well aware that some apiarists have a preference for clover or basswood honey, in fact they have a terror to buckwheat or any other dark honey for wintering their bees. I have wintered my bees for the last 22 years principally on buckwheat and other dark honey, and if it is not equal to white honey I have failed in all those years to find it out.

There is one thing that might be argued in favor of white honey; from the fact of its being gathered early in the season it is always well cured and sealed, while with buckwheat and other dark honey just the opposite condition very often exists. When bees are intended to be wintered on dark honey some care is required when the bees are starting it to see that the entrances of the hives are very small, even if the weather is very warm it is much better to keep the temperature in the hives very high to thoroughly ripen the honey, no matter if the bees are uncomfortable from heat in the latter part of the day.

Fall honey is usually stored in the forenoon, generally falls off entirely after 3 p. m., then it makes little difference if the bees are crowded out of the hives. With shallow frame hives, like the Lang

stroth, I much prefer the honey stored in the back ends of the frames, leaving the front end of frames empty for the bees to cluster on when placed in winter quarters. This can be secured by raising the back ends of the hives, when the bees are storing, to an angle of from 20 to 30 degrees. The honey being thus stored in back end of frames allows the bees to begin their winter confinement at the front of the hives close to the entrance. It also brings the cluster up close to the cushion or packing, which retains the heat in the cluster, and as the winter advances the bees slowly move back and follow up the honey without breaking cluster.

There has much been said against the presence of pollen in the combs, some claiming that it is the main source of our winter troubles. Last year I run 335 colonies in North Hastings, and after basswood bloom the weather for ten weeks was too hot to handle them in car lots. So they were not moved till the first week in August. During that time practically no honey was gathered but there was hundreds of acres of waste land thickly covered with mullins and I never saw bees store such quantities of pollen, there was some combs in all of them filled solid with pollen. They were then moved to buckwheat and all well filled with honey for winter and I never had a lot of bees winter as well. They came out clean and dry and not a spot on a single hive.

August 5th, 1899.

Notes and Pickings.

[For the C. B. J.]—D. W. HEISE.

"Please watch what bees do when the queen is taken away, and see if they make the mistake of choosing larvæ more than three days old, for queen rearing. I'm watching, and so far they have chosen only young larvæ. Here's what I *think*: That bees will never select larvæ too old if those of proper age are present, but queenless bees are not satisfied to stop with what they first start and afterward, for want of better, use larvæ that are too old for good queens." Stray Straw Gleanings.

The harvest is past, the summer is ended, our tanks and crates are empty; and so are a large number of our hives, that is, "of honey." I reported some time ago that the prospects were good for the bees filling up for winter, but at this date I am forced to report another disappointment. After weighing all the hives I find the winter supply ranging all the way from five to sixty pounds, and after equalizing by taking from those that have more than they require, and giving to the lighter ones, I will still have considerable feeding to do, that all may be well provided for the winter. The condition that prevails in my own yard is no exception to the generality of Apiaries throughout this whole section; and unless bee-keepers attend well to equalizing and supplying deficiency, few bees will be left to hear the sound of the whip poor will in the spring of 1900.

Gleanings 535. Mr. E. W. Brown gives S. T. Pettit great credit for giving to the bee-keepers the use and benefits of his "divider." But he wants to know why Mr. Pettit should stop there? Why not put "dividers" in the brood chamber and encourage the maintenance of brood in the outside combs, to the exclusion of honey, at a time when we want all the honey above? Would not this also form a sort of ante-room for the comfort of the bees on rainy days and at night? And would it not have a tendency to keep the bees from getting that silly notion into their heads that they are too numerous to live in one hive? Let's not give up this swarming business as long as Doolittle doesn't know any better than to waste time on it. Doolittle admits that the Pettit divider is probably a good thing for the purpose for which it was intended. This is encouraging. Now Mr. Pettit see what you can accomplish with your dividers in the brood-chamber. May be you can get Mr. Doolittle thoroughly interested in these things. You have put dollars in my pockets, may be you will in his? The foregoing is indeed flattering Mr. Pettit, and he is offered another field for experiment. But I think the experiment which Mr. Brown suggests

has already received considerable attention without very satisfactory results, but the Pettit divider might bring better results.

Having noticed Editor Root's announcement, that he is prepared to pay one hundred dollars for an ideal "Breeder." I wish to shout to him, that I have one in my yard that might possibly come up to his standard. She was reared during the honey season just passed, and her progeny are very large, about halfway between an ordinary worker and a drone; they are uniformally marked; have large broad wings, denoting extraordinary wing power. In fact the brood is so large that it extends out past the surface of ordinary worker comb a full ¼ inch. While I have not tested this queen as regards her prolificness or other qualities, yet I think she promises to be something superior, and a post card from Mr. Root saying "send her" will be sufficient. I am not going to put a price on her just yet, but can assure Mr. Root that even should she suit him (after he has tested her) I would be willing to take something less than $100 for the "beauty."

J. Cannuck tells in Gleanings, p. 539, what his experience has been with large hives. Thinks queens reared in little bits of hives for generations are incapable of supplying a large hive (such as are lately known as "barns") with brood to their full capacity. Thinks also that some may laugh at the idea, but he knows from experience that there is a good deal in it. Had lots of colonies on May 9th, with nine and ten frames filled with brood from one end to the other (frames considerably larger than the Dadant-Quinby) and the hives boiling over with bees, and that in a backward spring. If Mr. Cannuck can get such results in the latitude where he is resident, with barns, then I am of the opinion that Southern Beekeepers, who talk of queens not being able to fill more than eight L. frames, should take a lesson from the large hive advocates.

What has long been accepted as an established fact, that the bee that stings and leaves its sting will surely forthwith die, now turns out to be nothing more or less than theory. G. M. Doolittle gives the "fact" part of it its death-blow; has made experiments which have fully demonstrated that a bee that has lost its sting is capable of living as long as it would otherwise have done. He does not tell us whether it is capable of producing a second weapon of defence, but I presume not.

"I don't know of any way in which a bee-keeper can get more comfort out of 10 cents than to spend it for a pound of saltpetre, put that in two or three quarts of water, wring rags out of it, dry them, and cut them up into pieces of 20 to 50 square inches to be tied up into little rolls to start his smoker."—Stray Straw. I don't know either, doctor, but if the bee-keeper is "miserly" he could save his 10 cents by taking a walk into a forest where hard maple is being manufactured into wood, and search for genuine sugar maple "punk," a few pounds of which will last a bee-keeper a long time, as only a very small piece is needed for one operation—it is a sure fire1 and a great comfort. But of course, I presume, hard maple forests are accessible to but a limited number of bee-keepers.

What does the Ontario Bee-Keepers' Association say in reference to taking over the CANADIAN BEE JOURNAL from the present publishers? In an interview recently with a member of the firm, I was led to understand that the publishers were willing that the Association should purchase and conduct it in the future according to its own desires. What do you say brethren? Don't all speak at once.

"The purchasing of supplies and the selling of products are weighty bee-keeping problems, the solution of which seem far distant. I am neither long-eared nor yet a high-kicker, but I do want the privilege of protesting against the wholesale inflation of honey crop reports. One fortunate individual secures a remarkable yield, whereupon he must herald the same to the east and to the west to the north and south, upwards as far as sound can reach and downwards to China. Others, not to be outdone, "take up the burden" and proclaim their triumphs. Then it would appear that the bee-keeping papers possibly had fallen short of copy, if you might judge by the energetic and zealous manner in which they print and reprint these wonderful accounts. And whose business is it? Do you have honey to sell? Then it is your business, for the very first thing the commission will confront you with will be those self-same Journals with their Aladdin like tales. Somnambulist, in Progressive Bee-Keeper. Amen to every word "Sommy" has said. The abominable craze on the part of

honey producers in running across lots to tell their neighbors and friends of their remarkable yields and rushing to the public press to report their remarkable success in honey production, is becoming unendurable. Let all who have sinned in that direction do so no more, and the results in honey quotations will be manifest.

A VISIT TO MR. J. WINGER.

[For the C. B. J.]—Jas. Armstrong.

It was my privilege recently to visit the Apiary of Mr. J. Winger of Mulgrave, and I hope that a report of his methods may prove of interest.

Mr. Winger has eighty colonies of bees and keeps them in the orchard in front of his house. He has his hives placed in long rows—the rows being about sixteen feet apart and the hives about six inches apart in the rows. Generally speaking Mr. Winger has been very successful in the bee business, never having lost a colony during the winter with the exception of its being queenless. He uses the Richardson single-walled hive and winters his bees in the cellar. He prepares his bees first by taking out all the frames in the upper story or super, then looks them over to see if they have queens and plenty of bees. If he finds any short of bees or with no queen that one is marked for to be taken up. Thus his number is reduced to from sixty-five to seventy colonies. Each colony is then weighed and he calculates that each should have not less than twenty-five pounds of stores. If short of stores he feeds them by giving full combs of honey, having plenty of full combs by taking up from twenty-five to forty colonies He does not move the upper stories or supers at all they being always sealed down tightly. A cushion is then put in the super, over the brood nest, and they are now left until it is time to put them in the cellar which, if the weather is settled, is done at once, but not generally before Nov. or Dec. 1st. He has what I call a first class cellar under the whole house. There is a partition of matched boards seven eighths of an inch thick, through the whole centre of the cellar, the one division being for the bees the other for storing fruit, vegetables, etc., in. There are two families in the house and this necessitates the use of two cooking stoves, which are kept going all winter and are right above the cellar in which the bees are kept. The temperature is kept at 45°. The walls of the cellar are made of limestone and common mortar, the floor of cement. The outside door of the bee cellar opens into the woodshed so that in going out of and into the bee cellar you must necessarily pass through the woodshed, and by this arrangement a direct draft is prevented. A stand is made on which to set the hive by first taking blocks about eighteen inches long and setting them on end; a large plank or scantling is laid on top of these blocks, thus making a platform twenty inches high from the cellar floor. The hives are then carried in and set on the platform in just the same order as he had had them placed outside, the back end of the hives being raised about one eighth of an inch from the bottom board. The hives are numbered and each is set upon the same stand as it had been the year previous, He keeps the cellar perfectly dark, and the only ventilation is through the door and one window. In the window there is a three inch tin pipe with an elbow so that he can turn it up and down, and thus regulate the draft. The surplus combs are kept from one season to another by hanging them up in his extracting room, and as the joists are the right distance apart the combs hang the same as they do when in the hives, only a little further apart. Mr. Winger is seventy six years old, but does most of the work by himself.

BEES IN WAR

[For the C. B. J.]—W. C. Wells.

We have heard so much about bees being used in war for the transmission of letters, etc., that your readers may be interested in hearing a true story as to the use of bees in war.

A Dutch pedlar and I had quite a time. He was buying old brass and rubber shoes. I wanted to sell him some brass, and when it was weighed out it came to 75 cents. Then he wanted to pay me in truck out of his pack. I told him I wanted cash. He said he did not pay cash, but I told him he could not have it unless he paid cash. Then he offered me 40c., then 50c., and I finally said I would not let it go at any price. Then he wanted 50c pay for his time, to which I objected. He said he would not leave until he got his pay, and he would charge $3 per day for what time he stayed. I ordered him out of the house but he said he would not go until I paid him, and he said he would thrash me

and he used very abusive language for half an hour. Well I did not know how to get him out, he was a big stout man and I nearly 73 years old, I was no match for him. All at once I thought of trying if the bees could persuade him to leave, quick as thought I stepped out of the back door and snatched up a hive of bees and brought them in. I opened the hive and took out a frame of bees and in less than no time the pedlar was tearing down the road and I after him with the bees, but he was too quick for me. Well, I have laughed every time I think of that scene, it was my first fight and I came off victorious,

-Phillipston, July 7th, 1899.

TO INVESTIGATE BACTERIA.

Goverment Expert Will Study Tuberculosis in Europe.

Prof. F. C. Harrison, bacteriologist of the Ontario Argicultural College, Guelph, has been granted a year's leave of absence, and is on his way to Europe, where he will make a study in London and Cambridge of the manufacture of bacteria products, such as anthrax qaccine, antitoxic sera, etc. He will go to the laboratory of Dr. Ed. de Freudenreich at Berne, Switzerland, and watch the work of the great investigator, and hopes to do some work in the laboratory of Berne University, which is in charge of the well-known Dr. Tavel.

He will visit the Halle Experiment Station, Berlin, and other points, making a special enquiry into dairy problems and tuberculosis in cattle. He also intends to go to Copenhagen for the study of yeast, and also to look up what has been done in Denmark regarding the battle with tuberculosis, visiting Kiel on the way and confering with Dr. Weigmann, a high authority on dairy bacteriological work.

[The above will be of interest to the bee-keepers as Prof. Harrison has been investigating foul brood germs. We wish him a profitable time and we have no doubt that his usefulness as a bacteriologist will be much increased as a result of studies in Europe.—Ed.]

OBITUARY.

We were sorry to learn, while in Toronto, of the death of Mr. Herbert Hughes of Barrie, one of the Directors of the Ontario Beekeepers' Association. We understand that the sad occurrence took place over two months ago, although we had not been informed of the fact.

"Herb" as he was familiarly known to us as, was a young man of great promise, of good business capabilities yet generous and kind and, what is still better, we believe was a sincere Christian. We sympathize with the bereaved family in the loss of a good son and brother. The Ontario Beekeepers have lost a faithful officer and member. We feel that we have lost a friend. We are sure that we have the mind of the Ontario Beekeepers' Association in this expression.

PERSONAL.

While on a brief visit to Chicago—that busy up-to-date and even ahead of-time Western Bee-Hive—recently, it was the privilege of our Secretary-Treasurer, Mr. H. Yeigh, to shake hands and exchange greetings with Mr. G. W York, editor and publisher of The American Bee Journal. Mr. York deserves the success he has gained by hard and intelligent work.

Mr. S. T. Pettit will soon move from Belmont to reside in the neighboring town of Aylmer, Ont. His son, Morley, will remain on the farm and manage the apiary. We cannot think Mr. Pettit will be altogether content without a few colonies of bees to look after or without making frequent visits to the old home and the bees.

We are sorry to learn of the illness of Mr. Couse. He is in the hospital and suffering from typhoid fever, we understand. He and family have our sympathy.

THE ONTARIO BEEKEEPERS' CONVENTION 1899.

The Programme Committee of the Association met in Ottawa on Wednesday, Sept. 20th, and have decided on the dates—5th, 6th and 7th December, for the meeting of the Convention in Toronto. An interesting programme is being drafted—items of which will appear in the November and December issues of the CANADIAN BEE JOURNAL.

The committee regretted the absence and illness of Secretary Wm. Couse, Streetsville.

From Many Sources

MR. S. T. PETTIT'S SYSTEM REVIEWED.

—Farmers' Advocate.

Bee-keeping, as an industry, or even as an adjunct to farming or other occupation, is not as general in a country so favorable to it as ours as its advantages would seem to warrant. True, it is an occupation for persons of leisure, but on a farm where the family comprises several members, a few colonies would be found to give very little trouble, and furnish an article of food which would be not only a relish but a healthful daily adjunct of diet.

Going further, we may state from experience that after the habits of the bees are commenced to be understood, and therefore the methods of manipulating them mastered, they become a source of real interest and pleasure, and if gone into on an extended and thoro scale, a means of considerable revenue. If one has the qualifications of being cautious, observing, and prompt, bee-keeping can be engaged in without fear of failure, and to persons who swell up and become seriously affected with the stings, it may be some comfort to know that after a few stings the system becomes inoculated against the effects of the poison, when a prod from an angry bee becomes of little more account than a mere mosquito-bite.

The management of an apiary is not a difficult matter, and needs very little outlay to commence with. One handy with tools can make the hives and nearly all their attachments. True, no matter how full instructions are received, or how many bee-books are read, many points will have to be picked up by experience and observation, so that to succeed in getting the most from the colonies, observation, perception and invention play an important part. These and many other necessary qualifications have assisted the very successful apiarist and proprietor of "Evergreen Farm" and bee-yard, Mr. S. T. Pettit, of Elgin County, who now, at the end of 25 years of studious experience, is looked upon by the more advanced bee-keepers of Canada and the United States as one of the first authorities of apiculture.

On July 20 we spent most of the day with Mr. Pettit, who, with his son, was busy taking off the last of this season's extracting. This will be finished in a few days, when the fine harvest of fat-comb sections will be removed. By observation and conversation we gathered many important features of Mr. Pettit's system, which we will endeavor to give to our readers.

COMB HONEY THE SPECIALTY.

Mr. Pettit, like many advanced bee-keepers, makes a specialty of comb-honey production. The proportion taken is largely governed by the extent of the swarming, as new swarms are better suited to comb-honey production than those that have come out from winter quarters. This year (1898) swarming has been under the average, and, as a result, Mr. Pettit has only about one-third of his hives supplied with comb-section supers. The spring is usually commenced with 75 to 80 colonies, which come out in vigorous condition from the cellar.

The hives used are of Mr. Pettit's own invention, having brood-frames 9 inches deep and 14¾ inches long, and extracting combs 14 inches deep, and of the same length as the brood-frames. The hives are built to hold 12 frames. When the bees are first brought out in the spring they are confined to the brood-chamber until maple blossom commences. Shallow supers are then put on, and the brood is spread in the brood-chamber by placing the centre frames, which contain most brood, on the outside and exchanging for them the outside frames, which contain more or less honey. This is uncapped, so that the bees can readily remove it to the super, leaving room for the queen to lay in these combs when emptied. This exchanged position of frames is only to keep the outside frames of brood warm. When clover honey-flow commences, the strongest colonies are given comb-supers in place of the shallow supers first put on, but the others are given extracting-supers 14 inches deep. Usually two comb-honey supers, each holding 36 sections, are put on, but when the strength of the colonies and copiousness of honey flow will warrant it, three supers, or 108 sections, are put on. Sometimes the third super is added after others have become filled, or nearly so. At the time of our visit nearly half of the comb-honey-producing colonies had three supers, which in most cases contained

about 14 ounces of beautiful, well-capped honey per section.

EXTRACTING HONEY.

Mr. Pettit has his own method of taking off extracted honey. As soon as the frames become filled the first time in the season, the six fullest frames are selected out of each hive, and the remaining six are shoved to one side, and empty frames placed in the empty half of the super. The date and side removed are written on the back of the hive, and as soon as full and capped the other side is extracted. By this means the bees are not delayed for a moment, and the work of extracting is facilitated. This is the means adopted till the last extraction (which was in operation at the time of our visit), when all the combs are exchanged for empties. It is remarkable the amount of honey these bees are made to produce, viz.: from 150 to 160 pounds per colony of the extracted honey.

Mr. Pettit has an ingenious and simple method of removing the full combs. When it is desired to remove six frames, as is the custom early in the season, the hive-cloth is stripped off just the width of the six frames, a few puffs of smoke sends the bees down, when the frames are quickly lifted out and the empty ones placed in before the bees have commenced to return. The cloth and cushion are replaced with very little disturbance to the bees. As the full combs are lifted out they are each given a shake before the hive, and then stood up at the back of the hive till the cover is put on and they are ready to be taken to the extracting room. The few remaining bees, which by this time feel lost and lonesome, are swept off with a feather, and all is over in a very little more than a minute, with no commotion, no stinging, and no chance for robbing. The extracting is done by a large extractor, which handles four frames at once.

The empty frames last put on continue to receive a little honey throughout the remainder of the season till brood-rearing has ceased, about the middle of September, when the supers are all removed. This is done throughout the whole yard as nearly as possible at the same time. Each super is left uncovered and placed on the ground a few feet in front of the hive from which it was taken, and which is now covered with cloth-cushion and hive-cover. This sets the entire working population in active service, carrying the honey into the brood-chambers for winter stores.

True, a big commotion is set up, but practically each swarm is attending to its own case, and no evil results from robbing or any other cause. About the end of September the hives are examined to see what stores are needed, and the feeding is proceeded with as it is deemed necessary. The food given consists of four fifths granulated sugar and one fifth honey. It is calculated to allow each colony 30 pounds of stores for the winter months.

SOME NICE POINTS IN MR. PETTIT'S SYSTEM.

Bee-keepers know generally how difficult it is to have the outside, either comb or extracting, frames as well filled as those in the centre of the super. Mr. Pettit has quite overcome this difficulty by allowing the entrance to extend clear across the hive, and by raising the front an inch and a quarter above the bottom or floor, by a wedge on either side of the entrance. This allows the bees to enter the hive the full width, and compels them to walk up the sides or back of the hive, so that they always fill the outside frames first instead of last, as is the case with the narrow entrance.

Another means to this end with comb sections is to create a bee-space between the outside comb sections and the walls by inserting a perforated divider held out from the wall by tiny blocks of wood a bee-space wide. This allows the bees to pass up and down freely, which they do the same as between the sections, and holds more bees at the outside of the sections.

Another advantage afforded by the wide and deep entrance is the ventilation and comfort afforded the bees, especially in hot weather. Undue swarming is thus prevented. The extracted-honey hives are ventilated at the top and at the back, but no top ventilation is given the comb-honey hives, except for a few days after a new swarm is hived, when it necessary to afford them comfort in order to commence their working at an early date. This is usually permanently closed up on a cool evening when all have settled down.

Another practice with a newly-hived swarm is to substitute two frames on either side of the brood-chamber for dummies, so as to contract the brood-chamber and get the bees working in the sections above. Late in the season six dummies, or three on either side, are inserted, but it requires the judgment of

an experienced bee-master to manipulate these nice points.

Regarding the capture of swarms, Mr. Pettit always keeps his queens clipped, so that they are not able to take flight with the swarm, but commonly fall on the ground in front of the hive. She is picked up and placed in a cage, which is placed in the entrance of a new hive, which takes the place of the old one, which is moved about two feet back and left there about six days. As soon as the issuing swarm find their queen is not with them, they return to the old stand, but new hive, find their queen, and at once proceed to occupy the hive.

Some of these ingenious methods may be used in general practice, but not a few of the most valued of them originated with Mr. Pettit, who delights in giving to the bee keeping world the benefits of his experience and invention.

* * *

"The Vitality of Foul Brood Germs. How the problem now stands." Is discussed in the September Bee-Keepers' Review by critic R. L. Taylor, as follows:

The problem as to the amount of heat necessary to render honey infected with foul brood safe for feeding to bees is provoking some attention, as it ought, both from a practical and a scientific point of view. It will be remembered that editor Root of Gleanings recently gave up his opinion that "a few minutes" at the boiling point rendered such honey innocuous to bees, and went to the other extreme, now holding that two and a half or three hours' boiling is necessary to render it safe as food for bees. He appears not to have noticed that an experiment has been made by F. C Harrison, B. S. A., Bacteriologist, Ont. Agricultural College, which appears to sustain him in his later opinion. Mr. Harrison prepared test tubes in three different ways, viz., with dry spores, spores in honey, and spores in water. These tubes were then suspended in boiling honey which reached the temperature of 113°, C., to 116°, C., which is equivalent to about 235° to 240° F. Every fifteen minutes spores were removed from the tubes and put in nutrient media kept at the proper temperature for promoting growth, with the result that growth was obtained from spores from each preparation after 2 hours and 15 minutes boiling, and from two of the preparations after 2 hours and 30 minutes boiling. I say this experiment appears to sustain editor Root in his present opinion, but there is another side, for even scientists must reckon with practical affairs. It may be that the condition under which the spores were placed in the nutrient media were much more favorable to their growth than are any set of conditions in which they could find themselves in the course of nature. Practical experience, at least, seems to sustain this view. Doolittle related recently how his bees once happened to test the point pretty thoroughly. He had a quanity of honey affected with foul brood and desiring to prepare it for feeding to the bees he placed it over the fire, and when it was near the boiling point something called him away, with the usual result that the honey forthwith boiled up and ran over on the floor. A combination of circumstances prevented his gathering it up until his bees undertook the job, when he found it convenient to let them finish it. The bees of his entire apiary joined in the work, and yet without a single colony contracting foul brood. Mr. McEvoy, inspector of apiaries for Ontario, had also had large practical experience, and he holds that such honey is safe to feed to bees if just made to boil sharply. In my own experience I have fed a good deal of such honey to bees after boiling, making it my aim to boil it fifteen minutes, without finding in a single case any indication of foul brood as a result. I am strengthened in my opinion that such boiling renders honey safe to feed bees by the results of an experiment I made during the present season in feeding foul broody honey which was never boiled at all. The experiment was this. I procured some combs containing some honey and much brood dead of foul brood. These combs I placed in a solar wax extractor where they remained until both the wax and honey were pretty thoroughly extracted. The temperature in this extractor sometimes reaches 180° F., but I believe I never found it to go higher than that. After the honey was ready, just at the close of the basswood season when no nectar was coming in from the fields, I took a virgin queen with two or three pints of bees and put them on frames with starters and gave them the honey just mentioned, amounting to one or two quarts. The bees took the honey readily, and built comb amounting to more than a square foot, in all, storing

therein a considerable portion of the honey In due time brood appeared and I looked carefully for signs of foul brood, expecting, naturally, to find them, but as yet I have not done so; at least, I have not according to the accepted canon on that point. There has been indeed, some dead brood; but none of it has been found viscid, and the bees have removed it all without difficulty. There thus appears, so far, a considerable interval between practical results and the scientist's results. It remains for future investigations to explain and harmonize these apparent differences.

Editor Hutchinson in the same issue adds his quota on the subject as follows:

BOILING FOUL BROOD GERMS.

In this issue of the Review, Mr. Taylor calls the attention to the experiments of Prof. Harrison of the Ontario Agricultural College in boiling the germs of foul brood. According to these experiments the germs will grow even after two hours' boiling. In this connection it is interesting to note that Harry Howe, who has been taking a course in bacteriology at Cornell University, reported at the Philadelphia convention that he had prepared cultures of foul brood in almost every conceivable manner, and boiled them under different conditions, and in no case had he succeeded in getting any growth from a culture that had been boiled fifteen minutes. "When doctors disagree, who shall decide?" It appears to me that some factor in this problem has evaded us. Mr. Whitcomb called attention to the influence of altitude in this matter, which is of course, an important factor, but not, I think, the one that is misleading us.

THE APIARY EXHIBIT

—Farmers' Advocate.

Toronto Exhibition is again a thing of the past. Year after year bee keepers have not been slow to embrace this opportunity afforded them of placing before the public the products of the apiary, and exhibiting the various appliances and at times methods used in obtaining the same. There is perhaps no other rural industry and its possibilities about which so little is known by the public generally as modern beekeeping, while perhaps, on the other hand, no other one institution in Ontario not directly interested in bees and honey has done more to dispel this ignorance than the Toronto Exhibition, through the object lessons which it annually presents to the public by its honey and apiary exhibit.

The honey exhibit this year, in magnitude, number of entries, or quality of honey exhibited was not up to the average of former years, This was no fault of either the management or of the beekeepers exhibiting, but simply means that the honey crop was a failure, and, consequently an exhibit equal to that of former years an impossibility. Considering this, the exhibits were fully as creditable to those making them as any they had heretofore shown The neatly and tastefully built pyramids of comb honey, and also of liquid and granulated extracted honey, put up in glasses of various sizes and design, were certainly attractive and pleasing, and would command the attention and leave a favorable impression upon those visiting this department of the exhibition.

A practice, which we consider a mistake, is that of exhibitors bringing to the exhibition a quantity of their cull stock and selling it out in small quantities to the general public while they are visiting the honey and apiary exhibit. From the honey thus purchased, many of these persons will form their opinion of what good honey ought to be, for if there is one place more than another at which we expect to find things at their best, it is at an exhibition like this; therefore, to give the public at such a place any thing but our best is to educate them to a low conception of what our product is. We would also like to emphasize just here what is already a rule of the fair, namely, that the judges do not award a prize unless the article competing be of sufficient merit to warrant it. To be definite concerning this in the honey department, we would suggest that no article of honey receive a prize unless if offered for sale it could be strictly called first-class.

The set-up of the exhibits was very pretty, and neatly done, but we have noticed what we thought might be lack of originality. The exhibits as presented year after year are very similar, one exhibitor largely following the lead of another. Just here we think is a chance for the display of some originality, and have wondered who will be the first to give it to us; something, while not less neat and tasty, yet new and striking.

An interesting and instructive exhibit was that of an experiment by Mr. J. H.

Shaver of Cainsville, Ont. He had taken two comb honey surplus cases and filled them with sections, a part of these sections being filled with foundation made by the Weed process, and the remainder of them with foundation made in the ordinary way; also, the sections containing these different kinds of foundation were placed in the cases so as to be mixed one among the other. When thus prepared these two cases were given to the bees, and when about one-half to three-quarters completed by them, were taken away, and just as left by them placed upon exhibition. An examination revealed the fact that the sections containing the foundation made by the Weed process were much farther advanced than those containing the foundation made in the ordinary way.

Concerning the honey crop, the exhibit showed it to have been practically a failure this year, at least in Ontario. Further inquiry of the wholesale honey dealers in the city revealed the same fact, and that it was hard to get Those having honey, therefore, need have no fear of being able to dispose of it at a good figure, prices already having advanced from forty to sixty per cent. over last year.

FROM AUSTRALIA.

Mr. W. S. Pender of West Maitland, Australia gives the readers of the new "Australian Bee-Keeper" for August 15th some "suggestions for improvement in Australian Apiaries" from which we take the following:

Having had a desire for many years to visit the United States of America and study some of their methods of bee-keeping under different climatic conditions to what we are used to in our sunny land; my wish was gratified in the beginning of this year. As my trip was solely of a business nature in connection with our bee-keepers' supply manufacturing trade. I was lead to many places where I could get the very information I required, and had opportunities of investigating for myself. I visited all the principal manufacturers of bee-keepers' supplies and their apiaries, and also made special visits to the apiaries of Dr. C. C. Miller, Messrs. G. M. Doolittle, F. A. Salisbury, W. H. Pridgen, R. F Holterman, J. H. Martin, better known as "Rambler," and the Jennie Atchley Co.,

It it not my intention to allude to any one of the above in particular. but say a few words on the following subjects that lead to success in American bee-keeping, viz., wintering, building up colonies in the spring, and mailing queens, with suggestions for discussion by this convention as to what advantages are to be derived by the adoption of similar practices in Australia.

WINTERING.—In the Northern states of America where the winter is intensely cold and of several months duration, special attention has to be paid to the wintering of the bees, in order that any bees may survive, and even then it is not sufficient to be able to save enough bees to build into a strong colony the following summer, but the colonies must come through the winter sufficiently strong to be able to store honey from the first flow. There are many bee-keepers who contend that we have no wintering problem to solve in our favoured land, and yet there are many apiaries where the bees do no more than build up during clover and fruit bloom, when probably if the bees had been protected and attended to they would have been strong enough to store honey during those blooms. My locality is among the lucerne which seldom yields honey after March 1st, and very often not after Feb. 15th, there is but a slight flow from weeds and grass to induce a small amount of breeding for the next two months, and by June 1st hardly a colony can be found with laying queens, the queens rest until about Aug. 1st. During this time the colonies will continue to weaken through loss of old bees, and those attempting to fly are often chilled with cold winds and lost, so by August 1st instead of colonies covering 8 or 10 frames, they are reduced to about four frames. Clover starts to bloom about August 15th to September 1st, and unless special provision be made for keeping up the temperature of the hive and stimulate the bees, they are not ready to gather more than sufficient nectar for breeding purposes. There are also localities where there is a honey flow right through the winter, this stimulates the colony to brood rearing, and hence there are young bees emerging right through the winter, and when spring comes the colonies are in about a normal condition. Now during these winter flows where is the

honey stored? As close to the brood as the bees can get it which restricts the queen's laying. During the cold nights the cluster contracts, and so brood rearing is further restricted. If we made the hive warmer the cluster would not so contract, there would be more bees reared to replace those lost, the honey would not crowd down the brood so much, and the bees covering a much larger area of comb surface would store the honey further from the brood. Many bee-keepers do not reap much advantage from the winter honey flows on account of the loss of old bees, and I will ask would it not pay us to protect our hives, and in what form are we to get most suitable protection? In the Northern States of America, cellar wintering is most generally adopted. On the approach of cold weather the colonies are carried into a cellar and packed one on top of the other, and by this means they are brought out in the spring in strong condition, proper attention having been paid to temperature and suitable stores. I was in Dr. Miller's and Mr. G. M. Doolittle's cellars and found the bees comfortably clustered on the combs after a confinement of about four months, and in stronger condition than I have usually found the bees in any apiary I have visited during winter in N. S. W. Of course there is total loss of some colonies from various causes and from the long continuous confinement, which is to some extent unnatural. At Mr. Doolittle's, of those colonies wintered out of doors and chaff packed at sides and top, there was considerable loss. At Mr. Holtermann's the bees were packed four colonies together in a large box made waterproof and packed with straw between and around the hive and inside of case. The bees were wintering very well even though there was about 8 to 10 inches of snow in front of the entrances, the heat from the hive entrances kept the entrances open and prevented suffocation. At Mr. Pridgen's apiary the bees had no Autumn flow, so breeding ceased very early and he had but few young bees to winter with. He is not in a very cold locality, and it is usually sufficient to use a chaff packed quilt on top of the frames, but this season the winter lasted a month longer than usual and was more severe at the end than before, the result being a very heavy loss. If the winter had been as short as usual, in spite of the loss of a fall flow his colonies would have been fairly strong, or if they had had more protection they would not have suffered so much. The Jennie Atchley Co. being almost as far south in the United States as they can get have practically no winter problem, though every now and then a cold spell strikes them and then the bees are much reduced in numbers, but in ordinary winters they can rear queens right through the winter, the locality is so warm. This, to my mind, proves that protection is very desirable. American bee-keepers do not consider it a difficult matter to winter their bees, but find more difficulty in carrying them through the spring on account of dysentry. The long confinement in the hives, whether in cellar or chaff packed outside, causes an accumulation of fœcal matter in the intestines, to void which they must fly, and being prevented from so doing causes dysentery, when the combs, frames, &c. of the hives become a dirty mass of dark brown glossy matter with a foul smell. Those colonies wintered outside do not as a rule suffer so much from dysentry, the bee, having their liberty, but when they attempt to fly, when the sun shines warms are chilled and fall on the snow and perish. We are not much troubled with dysentery in this country, so need not consider it. I never knew the disease to recognize it before, but think I saw one case of it about six years ago.

BUILDING UP IN SPRING.—I find on inquiry, when spring once commences, the weather continues warm and favorable to rapid "building up" without any setbacks in the form of cold winds as we often experience in August and September, so when the bees start breeding there is no great attention necessary to have them strong for an early flow, beyond having plenty of room, plenty of stores, and an occasional spreading of brood. The method usually adopted to stimulate for early breeding is to uncap patches of sealed honey opposite patches of brood in the next comb, and a moderate yet cautious spreading of brood. Queens reared late in the autumn are said to build up more rapidly and earlier in the spring than those that have had an opportunity to lay many eggs previous to the winter. Artificial pollen is sometimes fed but it is a matter of doubt if it proves beneficial.