THE CANADIAN BEE JOURNAL

Vol. 20, No. 8. AUGUST 1912 $1.00 Per Annum

CONTENTS

The Canadian Bee Journal

Devoted to the Interests of Bee-keepers

JAS. J. HURLEY, Editor

Published monthly by

THE HURLEY PRINTING CO.,

Brantford, Ont.

TERMS

$1 per annum; two years, $1.50, payable in advance. These terms apply to Canada, United States and Mexico; to all other countries, 12 cents per annum for postage.

Discontinuances—Any subscriber whose subscription has expired wishing the paper discontinued will please notify us by post, otherwise we will assume that its continuance is desired, and that it will be paid for. If the paper is to be stopped at the expiration of the time paid for, it should be so stated when giving the order.

Receipts for Money—The receipt of the Journal will be an acknowledgment of receipt of money to new subscribers. The receipt of renewed subscriptions will be acknowledged by postcard.

How to Send Money—You can send money at our risk by Postoffice Order or bank cheque or draft, and where none of these means are available, bills and postage stamps by registered letter. Money sent any other way is at your risk. We pay no exchange or express charges on money. Make all express orders, cheques or drafts payable to **The Canadian Bee Journal**, Brantford, Ont.

ADVERTISING

We are in no way responsible for any losses that may occur in dealing with our advertisers, yet we take every precaution to admit only reliable men in these columns.

Rates of Advertising

Time	1 in.	2 in.	3 in.	4 in.	1 col.	page
1 Mth...	$ 2.00	$3.00	$3.50	$4.50	$6.50	$10.00
2 Mths..	3.00	4.50	5.50	6.50	11.00	17.00
3 Mths..	4.00	5.50	7.00	9.00	15.00	25.00
6 Mths..	6.00	9.00	12.00	15.00	25.00	40.00
12 Mths..	10.00	16.00	20.00	25.00	40.00	75.00

The Canadian Bee Journal

PUBLISHED MONTHLY

JAS. J. HURLEY, EDITOR, BRANTFORD, ONTARIO, CANADA

Vol. 20, No. 8. AUGUST, 1912 Whole No. 570

WHY LOSE FIFTY PER CENT. PROFIT?

By F. B. Cavanagh.

The articles by Mr. Samuel Simmins are good—only one has to read between the lines to discover the method of obtaining the extra 50 per cent., and I expect to show that it is not obtainable by a 16"x10" frame hive any more than an L frame hive. Mr. Simmins has proven conclusively that a queen bee cannot lay a bushel of eggs in a half bushel hive, and states that said queen must be an extra good one to accomplish best results. He also recalls the fact that a deep hive has some advantages in wintering bees.

However I have looked in vain for any proof of superiority in a 16"x10" frame hive over a 17⅝"x9⅛" frame hive.

If the reader will pardon a digression I will suggest that I am using frames in one yard which are about 12 " square. In others I have Langstroth size, 5⅜ shallow and Danzenbaker frames. I speak from practice and trust I am unprejudiced in the matter of hives when candidly I say unto you and our friend, Samuel that the extra 50 per cent. hath not yet appeared in the deep framers.

Returning to my text. Mathematically, 16"x10" on two sides of a frame and 11 frames equals 3520 square inches of comb space, while 17⅝"x9⅛" (L size) on two sides, 10 frames equals 3275 square inches in comb space. The two hives contain practically the same number of cells for the queen to lay in.

And then, too, a 10" frame is only ⅞" deeper than a 9⅛" frame, which he calls a "shallow" chamber and says it makes more work as a "divisional" brood chamber, and that the use of two such L chambers is on the part of the L frame man a sign of weakening, yet feels no signs of "weakening" when using several brood chambers of 16x10 frame size in order to give the queen room. Why not also call them shallow divisional chambers I fail to see a material difference, nor wherein the 50 per cent. is hidden. e

Wintering in L Combs

We use a set of empty combs under a set containing winter stores. No matter how much honey there is above the bees have clustering space below until they eat out a winter nest if they should not happen to already have it.

No lack of honey above when there is 8" to go on and 17" long. With two L stories we have a hive 20" long, 16" wide and 19" deep. Pretty fair proportions, eh, and a chance for bees to cross over between the two sets of comb? The Danzenbakers are the best of all wintering hives when used on top of empty L combs or several stories high. The shallow 5⅜ do well also. Of course they wouldn't be the thing if used alone, but we don't use them singly in America. The superiority of the Danzenbaker when used thus lies largely in its closed ends

Spring Management on L Combs

Two brood chambers ready to fill with brood. The upper one comes first. The queen is then put below an excluder with

a frame of brood and the colony fed. From the way some of my queens lay in L frames, it is evident the poor things don't know the advantage of a "deep" 10" frame.

It takes a good queen, sure thing, and it takes syrup or honey and pollen, whether the hive be deep or shallow. If Mr. Simmons has a location which will back his queens up, he is fortunate. Others who have not, had better be looking well to spring feed as well as a good queen in a big hive, or that extra 50 per cent. will still be lacking.

Advantages of the L Comb

I like the L comb because it is a good size, sufficient to contain 5 or 6 lbs. of honey— 50 to 60 lb. to the 10 frame super. A twelve frame hive would be just as good or perhaps better if not so wide to carry and too heavy for a little 10 frame man like me to carry when two stories deep or filled with honey. A shallow comb is always easier to remove from the hive and less clumsy to handle, and when extracting 9⅛" is plenty for a capping to reach with one stroke, and we usually let one stroke of the knife do the work, and then its just as easy to sail on to 17⅝" as to stop the knife at 16". The L frame is standard size in this country and I believe not without merits of its own.

In conclusion I wish to say that any 10 frame hive will get the 50 per cent. profit alluded to by Mr. Simmins if the operator will follow out the right methods. It isn't in the hive, it's in the man; in the manipulation; in the queen. Not the kind of hive, but in the way the hive is handled. If your hives are too shallow therefore pile them up until deep enough. If they are too narrow, splice them out until they are wide enough. If your queens won't lay in divisible hives, get some of J. E. Hand's divisible queens or some others which will lay. If the queen doesn't know the way into the next brood chamber when she gets one full of brood, pen her up in the next body with a single frame of brood until she learns to like the place.

The proper queen with the proper backing and there won't be any 50 per cent lacking. Plenty of room, pollen and stores, then if the queen won't lay eggs in the parlor, shut her down there with a queen excluder for a week or two.

The way to secure a honey crop is to first secure the bees and this can be done in any style of hive. Next to secure the honey in sections, a shallow hive is needed and here is where the Danzenbaker comes in. For a fall flow or for extracted honey production it is of course advisable to have a double brood chamber most of the season.

Mr. Simmins brings out some valuable points during his discussion, but what I object to is his spending so much time in trying to convert us to the 16x10 frame against a 17⅝"x9⅛, when they are so near alike. Why call a Langstroth 10 frame hive "shallow" when it is common practice to tier up both winter and summer to proper height, resulting at all times in a well proportioned hive with decided advantages in manipulation.

By using L hives intelligently and following out some of Mr. Simmin's other suggestions as to queens, wintering, etc., it will be discovered that the 50 per cent. is still within the reach of even those Langstroth size hives you may have thought of scrapping. The right man in the right location will secure the honey in most any kind of hives.

The Rheinische Bienenzeitung gives a poor account of the lime or basswood as a nectar yielding tree. A mighty uproar in the sweet smelling braches— but little profit. It is as if an intoxication comes over the bees, through the scent of the limes—many will verify this from experience.

MR. F. W. L. SLADEN, F.E.S., AS ASSISTANT IN APICULTURE TO DOMINION DEPARTMENT OF AGRICULTURE

Important Appointment

We are pleased to be able to announce another forward step taken by the Dominion Department of Agriculture in the interests of apiculture. The notable work performed by Drs. White and Phil-

MR. F. W. L. SLADEN, F. E. S.

ips at Washington has proved of immense benefit to the bee-keeping fraternity all over the world. A succession of bulletins issued by the American Government on the subject of the investigation of Foul Brood problems has placed our profession under a great debt of gratitude to our brothers over the border. It is then but meet that our own people, stimulated by such worthy example, should endeavor to make the same efforts on behalf of beekeeping and the appointment of an eminent authority to occupy a position at Ottawa similar to that occupied by Dr. Philips at Washington will not come as a surprise. It is in fact what many of us have been anticipating. Dr. Hewitt, the Dominion Entomologist is to be congratulated on his choice of the man. Mr. F. W. L. Sladen, Fellow of the Entomological Society, is well known, not only throughout the English-speaking apicultural world but also in several other countries in which translations of his well known work on queen-rearing have appeared. The recent articles which have been published in the Canadian Bee Journal will no doubt cause our readers to look forward to many more such, now that Mr. Sladen has come to reside among us. Mr. Sladen's experience in beekeeping dates from the time he was a mere lad, and he has made on several occasions, long trips both east and west investigating some of the more abstruse questions affecting beekeeping. Mr. Sladen's training, both academic and practical, has fitted him for the post he is now about to occupy. Among entomol-

ogists he is recognized as an authority upon the various races of bees, and he is peculiarly fitted, both on account of his own experience in bee-keeping as well as his scientific training, to conduct a department whose *raison d'etre*, we venture to predict, will prove to be experiment work along lines we have for many months been advocating. Mr. Sladen's work in bee-breeding is well-known and we believe he was one of the first beekeepers to recognize the value of modern biological discovery to apicultural practice.. Although we imagine that more extended investigation will have caused Mr. Sladen to modify much that he has written regarding the application of Mendelian principles to bee-breeding, the series of articles contributed by him to the British Bee Journal some two or three years back still remain the most helpful and suggestive writings that have yet appeared on the subject. Important as is the subject of Foul Brood to us—and it was never more menacing in its attitude that at the present time—yet we trust that the question of bee-breeding as distinguished from that of queen-rearing, will occupy a very high place in the activities of our newly appointed assistant in Apiculture. No one of the present races of honey bees can be said to be the ideal from the beekeeper's point of view, and perhaps no effort is more worthy than that which has for its accomplishment the breeding of a bee that is capable of withstanding the rigors of our northern climate, the attacks of disease and at the same time proving fully efficient in the matter of honey gathering.

At the suggestion of Mr. Arthur Gibson, Chief Assistant Entomologist, Ottawa, we append the following biographical sketch reproduced from the British Bee Journal.

Mr. Frederick William Lambart Sladen, of Ripple Court Apiary, near Dover, whose portrait we have pleasure in presenting to our readers, and who is known as the originator and breeder of the "British Golden" bees, was born on May 30th, 1876, at Shooter's Hill, Blackheath. He is the son of Lieut.-Colonel J. Sladen, R.A., and his mother, Lady Sarah Sladen, is a daughter of the eighth Earl of Cavan. He was privately educated, commenced bee-keeping at the age of thirteen, and soon after he began to study wild bees, especially the humble-bee. Our attention was first drawn to Mr. Sladen in 1892, when we saw in the daily papers a notice of a small book of forty pages written by a "young naturalist," and entitled "The Humble-Bee." We sent for the book, and were much gratified by its perusal, as it was perfectly unique, inasmuch as it was altogether the production of the author, not only the writing and illustrations, but the printing (by stylography) and the binding. Although Mr. Sladen was only sixteen years of age, in this work, written from actual investigation, he showed an acquaintance with the subject far beyond his years, which gave promise that if he took up bee-keeping he would some day rise to prominence. He did become interested in the science, and visited India in the winter of 1896-7 to investigate the honey-bees of that country. He found *Apis dorsata* and *A. florea* useless for domestication, but brought home alive a queen of the Himalaya honey-bee. On his return from India he decided to take up bee-keeping as his calling, and went in for honey production on a large scale. Finding English-Italian hybrids to be larger honey producers than native blacks, he decided to breed them for sale. Close observation, with a study of the laws of heredity and the work of breeders of other animals, as well as of plants, led him to the conclusion that a distinct breed of bee selected for the production of honey in the English climate should be superior to the Italian for crossing with the English bee. The great difficulty of producing and maintaining such a breed in England, where isolation is unobtainable, Mr. Sladen overcame by the aid of a distinctive color, obtained by cross-breeding his hybrids with American Goldens, and the new variety was introduced under the name of "British Golden." This variety is now bred in its purity year by year in Ripple Court Apiary, the present generation (1910)

being the result of selection strictly carried out through eight successive generations, and shows many qualities not possessed by foreign bees. "British Goldens" have proved a success in spite of much criticism from those who hold the opinion that there can be no better bee for the British climate than the native black, and also from advocates and breeders of "three-banded" Italians. Mr. Sladen believes that for progress in bee-breeding purity of stock is essential, and has shown that three-banded bees—even the brightest—are indistinguishable from hybrids, so that it is as impossible to breed in England a pure three-banded race distinct from the ordinary bee as it is to breed a distinct pure black race. As a matter of fact, "British Goldens" are the only yellow bees bred in England without reinforcement with foreign blood. A year ago Mr. Sladen published in the B.B.J. (December 9, 1909, page 482 et seq.) an account of his bee-breeding work giving figures which not only prove the truth of his claim that he has succeeded in breeding bees by selection, but show how he has done it. He has thus worked out the system of queen-rearing which under the trying conditions of the British climate produces thoroughly well developed queens, and has invented several appliances for the use therewith.

In 1901 he discovered the function of Nassanoff's organ, a membrane situated at the base of the sixth dorsal segment of the worker-bee. Mr. Sladen found that the bee, in her joy at finding herself unexpectedly in the vicinity of her home, exposes the membrane and emits from it a pungent odour, which attracts other bees searching for the hive, thus saving much loss of bee-life (see B.B.J., vol. xxix., page 142). In the autumn of 1901 he made a tour of America, visiting the A. I. Root Company's establishment and several prominent bee keepers, including Doolittle, Benten, Pratt, and Captain Hetherington.

In 1902 Mr. Sladen married Miss Violet Barton, daughter of Captain C. R. Barton, D.L., of Pettigo, Co. Fermanagh, Ireland, and has two sons. He has gained several first prizes from the B.B.K.A. for scientific exhibits connected with bee-keeping. Mr. Sladen has also successfully shipped both "British Goldens" and queens of foreign races to India, Ceylon, Java, Uganda, Pretoria, and the Seychelles, and has also been successful in sending humble-bees to New Zealand. With regard to the latteer, it may be noted in passing that *Bombus terrestris* and *B. ruderatus* were introduced into New Zealand as a result of shipments made in November and December, 1884, by Messrs. Nottidge, Dunning and Baldwin. *B. terrestris* having been found to injure the flowers by biting holes in them, Mr. Sladen was asked to ship other species to compete with it. His shipments made in 1905 and 1906 consisted largely of *B. lapidarius*. He was fortunate in having a loss by death on the voyage of only about 40 per cent. of the queens, the 1884 shipments having sustained a loss of about 80 per cent.

Mr. Sladen has been for some years a contributor to the B.B.J., and wrote a series of articles on "Our Wild Bees," his writings being frequently illustrated by himself. His work on "Queen-Rearing in England" originally appeared in the B.B.J. in March and April, 1904, and was published in book form in 1905. A German edition translated by Pastor Strauli, appeared recently. He has also contributed the "Hymenoptera of Kent" to the "Victoria History of the Counties of England," and has worked out the life history of *Psithyrus* and added to the knowledge of *Bombus*.

We hope that Mr. Sladen may long be spared to continue the useful systematic work that he has undertaken, which must result in great benefit to the industry.

HOW TO SECURE THE HONEY HARVEST WITHOUT SWARMING

By A. C. Allen

(At National Beekeeper's Assoc.)

During the past fifty or more years the attention of all large honey producers has been turned toward devising some means of absolute control of swarming; and at the same time not detract the amount of honey that a colony will gather, did it not contract the desire to swarm. For we all know that honey gathering is effected to a greater or less extent where the swarming fever exists. This subject has been discussed at length in nearly all conventions, nearly every issue of our bee journals contains some thing new which grasped at and tried by many, only to find it a failure. Various styles of hives have been constructed and tried with like result. The writer has also been studying this matter clearly for the past ten years, and not until the summer of 1906 did success crown my efforts. Most apiarists who have given this the most thought have gone at it by studying the *cause of swarming*; but I cared little about that so long as I could prevent it; therefore went after it in a different way, for to be successful I wish every colony to get so strong that it will want to swarm; therefore I *studied those things that satisfy desire* and thereby fulfil the laws and demands of nature.

The plan that I now give to the world has been used in my apiaries three seasons without one case of failure; does not in any way detract from the strength of the colony or amount of nectar gathered, but rather increases both. A colony can be treated by the expert or novice alike in ten minutes time or less; and he can rest assured that his bees will not swarm for that season; and the plan is so simple that I often wonder that it was not discovered before.

The Plan

The first requisite of success is in having a young and vigorous queen in each colony when they go into winter quarters and at least thirty pounds of good stores which will keep them until fruit bloom the following spring. At this time each good colony should be strong enough to take a super of extracting combs which is put on without an excluder, thus allowing the queen free access to both stories. From this time on until the clover flow starts each colony is fed twice a week one quart of warm syrup at evenings. The abundance of feed which the colonies had when spring opened and the feeding after fruit bloom, has resulted in the queen doing their best at egg laying, and when the clover flow starts the hives are full of bees just anxious to go to work. With me the honey flow usually starts from nothing, to good business in two to four days, the pasturage being such that the profusion of blossoms open at once. Just at this juncture I apply the treatment which causes the queen to continue laying just as vigorously as before and get a supply of bees ready for the fall flow, rather than almost stop laying as is the case if left to themselves.

I go to a colony and remove it from its stand putting in its place a hive full of empty combs less a centre one. Next a comb containing a patch of unsealed brood about as large as my hand is selected from the colony and placed in the vacant space in the new hive. A queen excluder is put on this lower story and above this a super of drone comb and on the top of all an empty super. The bees and queen are then shaken in front of the new hive onto a cloth which has been placed in such a position that the bees can easily crawl into this new home and the top supers filled with combs full of brood, which is left there to hatch and reinforce the colony. Thus the swarming fever is satisfied, the colony is stimulated to do its utmost

in honey gathering and the queen encouraged to lay anew.

In another hour the bees are at work and there is no sulking.

The whole colony is kept together and as the brood hatches the bees fill the combs with honey and usually before the flow closes I have to put a third super on, so the hive is four stories high.

If I happen to notice the queen on one of the first combs taken out I see that she goes at once into the lower story and no more shaking is done, simply putting the brood in the top story, thus shortening the job.

Nearly every colony which is strong enough to treat in this manner has more combs of brood than will go in this super and the surplus is used to strengthen any weak colonies that may be found. Why do I use drone comb in the second story? For two reasons: I bought an apiary having a lot of these combs and this is a good place to put them,—and because the bees store honey faster and get more of it into a super of drone comb than in a super of worker combs; so I really like them for this particular place although I would not produce them for it. If increase is desired, nine to twelve days after thus placing the brood on top, it is removed to a new stand and a ripe queen cell or queen given, and by the time the fall flow comes these new colonies are usually ready for a super. When a laying queen is given, a super of fall honey is often secured and when a cell or virgin is given, the colony often secures its winter stores. This is the first season that I removed the brood for increase and to ascertain whether this detracted from the amount of honey secured for extraction I weighed the honey taken from each hive separately. Those from which the brood were taken, stored just as much clover honey as those in which the brood was left to hatch and return to the parent colony. The only way I can account for this is that those bees do not become old enough for field workers on clover, but they did store, a little more fall honey than those from which the brood were taken, but not as much as the two divided colonies did. So the making of increase would be a gain, even if the bees again united after the season ended. When first using this plan to control swarming, fears were entertained that so much honey would be stored in the brood chamber that not as much would be realized from the surplus apartments, and I used dummies in the brood chamber for two weeks after shaking, giving the colony only six combs, but I found this unnecessary in the case of eight frame hives; as at the close of the white honey flow there are five to seven combs filled with brood. With ten frame hives one dummy is still used on each side being removed after the flow and replaced with empty combs which are filled with honey for winter stores. When queens are thus forced they are used only two seasons. Although I think as Mr. Doolittle did about his comb honey plan, that this is head and shoulders above anything ever given for the production of extracted honey.

DEATH OF MR. F. SWITZER

We much regret to state that Mr. John Fletcher Switzer of Orangeville, Ont. died at his residence on the 24th ult. at the age of seventy-two, following a paralytic stroke. The late Mr. Switzer was a well known apiarist and maintained a large apiary on his extensive grounds, which were admirably situated and specially adapted for the cultivation of honey. The deceased was formerly a resident of Toronto Township, Peel County where he was a well known and prosperous farmer. He was a lifelong reformer and a staunch adherent of the Methodist Church. His wife survives. —Communicated.

The report of the Swiss Minister of Commerce for 1910 states that there are 23 factories for making artificial honey in Switzerland.

THE CROP

CANADA

HONEY EXCHANGE COMMITTEE

Prices of Light Honey

The Honey Exchange Committee of the O. B. K. A. met in the Secretary's office on July 24, to consider the reports on crop conditions. Replies were received from double the number of beekeepers that reported in 1911, which year was then a record one in this respect. These replies show a still further decrease per colony, the average being 48.7 lbs. as compared with 50.9 in 1911, a short year, and 58.3 in 1910 It was further noted by the Committee that there was a decided shortage in the eastern counties and many large beekeepers did not report as crop was a failure.

Owing to the heavy losses in bees as a result of the past winter, which condition was shown by the spring report of the Provincial Apiarist, there is, no doubt, much less honey in Ontario than at this time last year. Fruit, which comes in competition with our honey, is selling at firm prices, the only crop which is reported as being at all normal being apples. Under these circumstances the Committee would recommend the following prices:

No. 1 Light Extracted (wholesale) 11½ to 12½ cents per lb.

No 1 Light Extracted (Retail) 14 to 15 cents per lb.

No. 1 Comb (wholesale) $2.25 to $3.00 per doz.

No 2 Comb (wholesale- $1 50 to $2.00 per dozen.

A later report will be issued for buckwheat honey.

THE NOSEMA DISEASE

The development of the *Nosema apis* has been further studied in the last year by Dr. Maassen and the most important results in the form of miscroscopical studies have been shown at the International Hygienic Exhibition in Dresden 1911. Dr. Maassen writes in the Bienenwirtschaftliches Centralblatt for June:— If one takes the excrement or contents of the rectum of an infected bee, in a hanging drop, and puts it under the microscope, he will see the ripe spores of the parasite in great numbers with quantities of the bacteria. The spores are uniform in shape and almost opaque. They differ in size which is not unusual with microsporidien spores.

In the contents of the middle intestine we meet with the free spores of the parasite as well as large round growths which are filled with spores or have the appearance of cysts—these are discharged epithelial cells, still furnished in most cases with the fine brush appendage that is found on the epithelial cells of the middle intestine of insects. Often the drop contains besides a quantity of very small glistening granules, contents of the epithelial cells, the young pear-shaped spores of the parasite that are a little larger than the ripe spores, and whose skin is not so stiff or rigid as that of the ripe ones.

The epithelial cells are mostly found filled with the bacteria in different stages of growth. The parasite, when young, has the appearance of a large coccus possessing two nuclei; it increases by division and often forms long chains.

It has been found that these bacteria, like many other kinds, can be dried for quite a long while, and still revive, but research as to its ultimate vitality has not come to any conclusive results.

We understand that the Executive of the O.B.K.A. are asking for suggestions for the coming convention. Some beekeepers are under the impression that the last Convention devoted itself too much to discussing business matter. Well, just send along your suggestions to Mr. Morley Pettit, O.A.C. Guelph.

THE CAUCASIAN BEE

Several correspondents have written us regarding the merits of the Caucasian bees. We can do nothing better than quote the opinion of Mr. R. A. Morgan, who stated at a recent National Bee-Keepers' Convention:—Some few years ago I received from the Government some Caucasian queens, and I have been testing and trying ever since what their merits were. Before that I had been using the yellow bees, the Italians; some I got from Root, some from Doolittle, and some back as far as those that Langstroth sold, and my experience has been that the Caucasians are superior to the yellow bees in every respect that I have ever noticed, both as honey gatherers and as to hardiness; they are more energetic in honey gathering and more docile in handling, and it would be impossible for me to think of going back to yellow bees; I wouldn't take the best stock of Italian bees and run them without superseding their queen if a man gave them to me, I am just that much of a crank on bees. I prefer the Caucasian bee to any other race I have ever seen, and especially to the Italians. They are much more easily induced into the boxes.

I don't think they are more likely to swarm than the ordinary Italians, that is, the hybrids as they are generally kept in this country. Of course, the very best strains of Italians, when they are pure, are not quite so liable to swarm as the Caucasians, but for me that is rather a good feature. They are more industrious and more vigorous; and as I said here once before in this room last winter, when any animal or stock of bees is in a very vigorous condition they are more likely to increase and swarm than they would otherwise. Other things being the same, I don't think they are any more liable to swarm than the Italians. In regard to propolis, they gather a good deal, and use a great deal of it around the entrance to the hive in the fall of the year in order to protect themselves. I think that is a characteristic they may have acquired by living in a northern climate. I think they do not use propolis around the honey any more than other bees.

Dr. Philips at the same meeting also testified as to the good qualities of this race of bees as follows:—I think Caucasians are by far the gentlest bees that have ever been brought to this country. I have never seen any Italians that would compare with them in gentleness, and I would also agree with Mr. Morgan in regard to their propolizing tendencies. They do propolize their entrance almost solid, but they apparently do not propolize any other parts of the hive any more than any other race. The chief objections I would have to Caucasians is that they build burrs and burr combs over everything.

Even in a well spaced hive they will often build comb into the proper space, and that was, to my mind, the worst feature of the Caucasian. Their propolizing has never seemed to me to be anything serious, and I am inclined to agree with some of the Russian writers in attributing this tendency to the fact that it is a very primitive race. Italians are one of the more highly specialized races If a colony of Caucasians or Cyprians is made queenless they raise a large number of queen cells, or if they fail to raise queen cells they very easily become fertile workers, showing that the division of labor between the queen caste and the worker caste is not so well defined. I would therefore consider that races of such characteristics are more primitive; and I think this propolizing of the entrance is going back to an ancestral condition where they had to build not only an entrance, but perhaps a large part of the nest. It may go back to something like a bumble-bee tendency, particularly the stingless bee of South America.

Other gentlemen also spoke regarding their experiences with the Caucasians and their remarks may prove of interest to our correspondents. Mr. Darby says:—I had a little experience just last week in handling some of these bees, and I want to say that this burr comb is one of the worst features I see about it. One yard was so badly glued up that the owner took his hand axe and went at it with main force to get those frames loose so that he could examine them. I find that when they are crossed that they are as bad to sting as any bees I know of. In fact with these that I have had to work with I have not seen the great difference in the gentle qualities that you speak of, but I know there is a great difference in different strains of bees, and I think possibly these were not of the gentlest. Another thing I noticed was that in these yards there was not the honey that there was in the neighboring yards of Italians

within a quarter of a mile of them, and I have noticed this difference two years in sucession. The owners are doing their best to get rid of them. So that there is a difference in bees or a difference in the people handling them. One man was so disgusted with them (his start was given to him by a friend, and he is a very rough man and uses very rough language) that he said he would just as soon the man had given him the Prince of the warmer regions (Laughter)

Mr. Snyder—Of course one swallow doesn't always make a summer, but I have had one colony of these Caucasians and this is the second summer, and I have not observed any of these bad qualities. They have neither built burr combs nor propolized their entrance, and this one colony has gathered more honey than any other colony in the yard. I have some very fine Italians, but this colony of Caucasians has outstripped them a little bit this summer, and they did not swarm either.

Mr. Morgan—I would like to admit the facts with regard to this burr comb question. I didn't think of that at the time I spoke first. I will admit they are a little more likely to build burr combs than any other races I have seen, and the only separator I have been able to use with success is the tin separator, and I have tried four different kinds this season. I use wire, quarter inch mesh, galvanized, and I use solid wood. I shall Caucasianize anything I have hereafter, no matter what color they are.

Dr. Philips—I have noticed one thing rather striking in regard to the crosses between Caucasians and other races. I noticed in a striking manner particularly last winter the fact that they propolized the entrances. We maliciously left the hive entrances open to see what they would do, and they did all that we could expect, where they were pure Caucasians, Our bees are very close to some good Italian bees from one of the best breeders in the country, and whenever the Caucasians had interbred with the Italians the entrance propolizing was almost entirely absent, and the brace and burr combs were almost always entirely absent, but the cross of the Caucasians and the Italians is about as cross as the two combined; there is no half way business in gentleness between the Caucasians and any other race; they are decidedly ungentle. In fact that is about the quickest and easiest way to tell whether you have bred your Caucasians purely or not.

DINES' METHOD OF RAISING QUEENS

Where the Scheme Originated

Mr. Dines' method of raising queens published in our columns in March last has created wide spread interest and we understand that it has been tested in many quarters during the present season. Mr. Holtermann first made the plan known to us and we immediately recognized it as a good thing. Mr. Dines assured us privately that he did not claim originality in the idea and full credit was given to those to whom he considered such credit due. As, however, Mr. Isaac Hopkins points out in an interesting article in *Gleanings*, it was in the C.B.J. for July 1909 that the scheme was first given to the English speaking world, and we have pleasure in reproducing Mr. Jacob Haberer's description of the method gleaned by him from the Wiener-Bienenvater;—

Insert a nice but somewhat dark comb in the centre of your choice colony. In four days, when the eggs commence to hatch, take the comb and lay it on the flat side. Take a ruler and cut the one side in strips, leaving one row of cells unharmed. Cut only to the centre of the foundation of the comb. Between the sound cells scrape off the cells with a sharp chisel; in rows of cells destroy every other cell. Now you have a sheet with a lot of rows of one-day-old larvae from your choice colony. On your colony that has been made queenless, and all open brood removed, you put a rim; lay your prepared comb on it flat, with sufficient room under for the queen cells. Close every space on top. Of course the young larvae on top will be lost, but in two days the lower side will be covered with a mass of queen cells, which can be nicely cut out when ripe. Of course you have to feed your colony well from below This method has already been carried out with good results by J. Humvall, of the Austrian Bee-Keepers' School.

We believe that the method will have considerable vogue amongst bee-keepers, more especially those who raise queens only for their own use, and the following

article by the veteran New Zealand apiarist reprinted with special permission from the columns of our esteemed contemporary *Gleanings*, will be perused with much interest by our readers.

Under the above heading there appeared in the *Canadian Bee Journal* for March last, page 75, an article by Mr. Oscar Dines, on the plan he adopted for raising queen-cells, and also an editorial introduction to the article, in which it is claimed that Mr. Dines is the originator of the method. The plan is also described by Mr. Holtermann in *Gleanings* for March 15, page 177, Mr. Dines experience being given as set out by himself.

Now, it is not often that American editors are caught napping; but I think I can prove that they do indulge in a nap sometimes, and that Editor Hurley, of the CANADIAN BEE JOURNAL, must have been sleeping soundly when he wrote that editorial or he would certainly have known where the scheme really had its origin, which was neither in America nor Canada.

Scheme First Adopted in New Zealand Among English-speaking People.

Although not the originator, I believe I was the first to adopt the method among English-speaking bee-keepers. During the season of 1909 I made my first attempt at one of our state apiaries, which resulted in 60 fine cells, and on the second venture 80 grand ones were obtained. I took photos of both combs (one of each of which I am sending you) but as they were taken in a very bad light, inside, to avoid draft, they are not very clear. Being a staunch advocate of the Alley plan of raising queens, the method appealed to me, and we still carry it out in the Government apiary.

On October 23, 1909, I wrote Dr. E. F. Phillips, giving him a brief description of the method, telling him where I got it, and sent him a photo of the

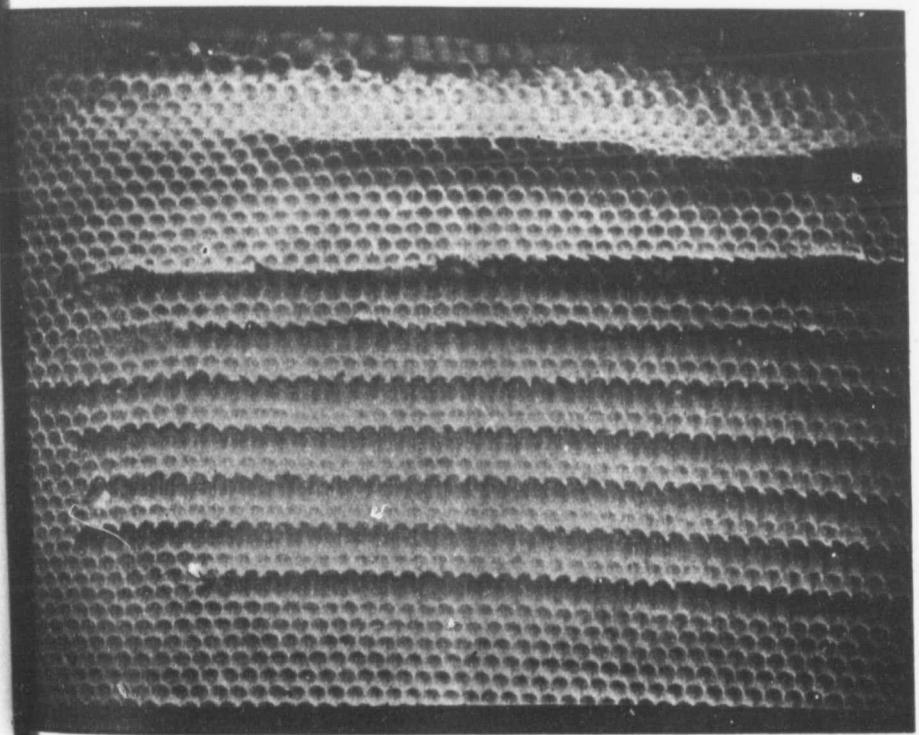

FIG. 1.—Portion of comb prepared for cell-building in New Zealand.

first batch of cells. He afterward informed me that he had explained the system before, I think at the New York Convention of beekeepers. In the August number of the *New Zealand Farmer* for 1910 (which you Mr. Editor may have on your files) I published the process in full with illustrations; and when revising for the fifth edition of my "*Australian Bee Manual*" in June, 1910, I included it, so that the method, though apparently having failed to reach the majority of beekeepers in America, has been well ventilated in this part of the world for over two years and a half.

Possibly Dr. Phillips may have forestalled me in this matter; but as I am ignorant whether he has or not, I cannot to blamed for repetition if he has. I hope Editor Hurley will not get too great a shock when I tell him that it was out of his own journal for July, 1909, page 255, I got the information, contributed, I think, by Jacob Habera, or Habbera, and translated from an Austrian bee journal. This, I think, will clear up the mystery.

The Practical Usefulness of the Method

You, Mr. Editor, (page 178, March 15,) express a doubt about its being wise to allow more than two dozen cells to be attended to in one colony. That was about the number I considered enough at one time; but more mature experience has convinced me that a strong two or three story colony, overflowing with bees, with many thousands of nurse bees, and plenty emerging every day, deprived of all unsealed brood, can readily attend to and bring to maturity more than twice that number (as I have abundantly proved) of first-class queen-cells. All our cells at the government apiaries are raised in such colonies. I never did believe in the swarm-box and small colony system of raising queen-cells.

Mr. Dines describes his plan of supporting the frame of comb in a horizontal position, the trouble connected with which seems to me unnecessary. All we we do is to lay an empty frame on its flat, over the lower frames; place the frame of comb on this; cover the latter

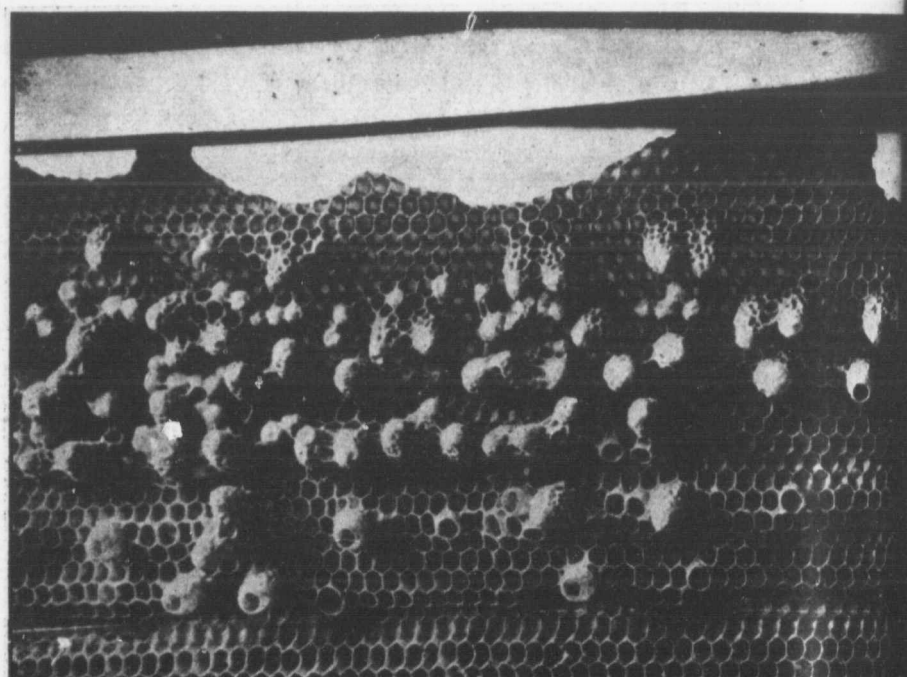

FIG. 2.—Sixty good cells obtained on this comb at the first attempt. First week in October, 1909.

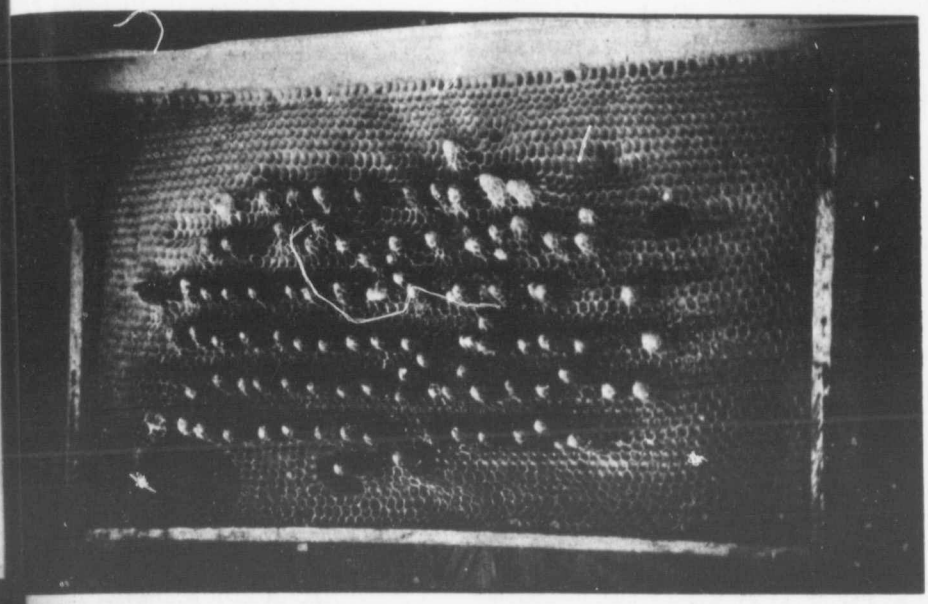

FIG. 3.—Eighty good cells—second attempt, second week in October, 1909.

with a light mat; put on an empty half-story, and the top box or boxes above it. In four or five days we return the queen to the broood chamber; place on a queen-excluder above, and the cells and top boxes as before.

Preparing the Comb for Cells

I prefer a last season's built comb that has been bred in, after getting it well filled with eggs from one of my breeding queens in the usuual way. I cut down on one side to the midrib on each side of every fourth row of cells with a thin budding knife, and scoop out the three intermediate rows with a broad bradawl; then one out of every three eggs in the rows is left, and the others killed with a splint that has been dipped in wax. I don't touch the other side of the comb. In very hot weather the comb may need a center support. Securing such a large number of cells, one can well afford to discard any that appear to be below a high standard.

Auckland, New Zealand.

Editor Root appends the following note:

Dr. E. F. Phillips, of the Bureau of Entomology, after seeing our footnote calling attention to the similarity of this plan to the Alley method, stated that he obtained it from Mr. I Hopkins, of New Zealand. He thought so well of it that he placed it before the beekeepers of the New York State convention some two or three years ago.

While we admit that as many as eighty or a hundred good cells may be secured in one batch, experience in rearing thousands of queens every season has shown us that it is better not to try to raise over two dozen at a time. One may suppose that the cells are all good; but our experience seems to indicate that queens raised from the cells where so many are built at a time are likely to be short-lived. We can raise a hundred cells in a batch—have done it time and again, years ago.

There may be some advantages in the method here described, particularly for beginners and professional honey-producers who have not the time to learn the intricacies of the art of raising cells by the grafting plan in the wooden cell cups; but our men who raise queens by the thousand say the other plan is too slow. But we are going to get them to try it over, following very carefully Mr. Hopkins' directions as here given. We will report results.

THE WASHINGTON STATE BEE-KEEPERS' ASSOCIATION PASSES A RESOLUTION OF NATIONAL INTEREST

The following resolution was read at a well-attended meeting of the Washington State Bee-Keepers' Association, held at Wapato, Washington, May 25, 1912, and, after general discussion, was put to a vote and carried unanimously.

Whereas, Foul Brood, an infectious disease of the honey bee in its larval state, has been spreading at an alarming rate during the past six or seven years, and,

Whereas, The essential cause, a bacillus, or microorganism, has to be carried from one locality to another by some agent to which it attaches itself, chief of which has been the extensive mailing of queen bees and their attendants, and,

Whereas, Queen breeders without especial training do not understand the details of sterilizing objects, such as the queen cages, their hands, implements, etc., and as boiling the honey used in the mailing cages without any precautions would be a false safegaurd and furnish no assurance of safety to the purchaser and calculated to do mischief because it is now endorsed and sanctioned by a ruling of the post office department, and,

Whereas, Honey properly sterilized by boiling would be taken by unsterilized hands using an unsterilized spoon or other intrument, put into an unsterilized cage, a queen and her attendants without any knowledge as to condition is put into the cage and by the present ruling is accredited as safe to the purchaser; and,

Whereas, In our economic conditions the general welfare of the bee-keeping industry is vastly of more importance than is the rearing of queens.

Now, therefore, be it Resolved, That we, the Washington State Bee-keepers' Association, in convention assembled, respectfully petition the post office department at Washington that Queen breeders with foul brood in their yard or among the bees in their charge, be denied the use of the mails for the transmission of queen bees or other objects or appliances intended for the use of bee-keepers, and we would further respectfully petition that a ruling embodying the following features be adopted, viz: that queen breeders furnish the local postmaster with a certificate from a properly authorized bee inspector, stating that all bees in their charge are free from foul brood or, when no inspector is available, they are to take an oath before a notary or other person authorized to take acknowledgements, that they do not have foul brood in their yards, or among the bees in their charge, and that the honey used in their mailing cages is a product of their own apiary, and, further, that they are not personally, *i.e.*, with their own hands, bottling or otherwise handling honey bought from outside localities.

The certificate of inspection or affidavit to be renewed every ten days during the mailing season of queens, a copy to be furnished the postmaster and one sent to the purchaser.

And further be it Resolved, To make our position as public as possible in order to warn the queen buying bee-keeper. Also that a copy of this resolution be mailed to Postmaster-General Hitchcock, Dr. E. F. Phillips, of the Bureau of Entomology, Washington, D. C., and Secretary Willson, of the Agricultural Department, and the various bee journals and bee-keepers' associations.

E. BURDICK, President.
J. B. RAMAGE, Secretary.

THE HONEY CROP IN THE STATES

Editor Root writes in Gleanings: We are having a remarkable flow of clover honey in Northern Ohio; and if the season were as good all over the United States as we are having here, and there were enough bees to gather it, the honey market would be glutted in short order. We have practically four weeks of clover; and it looks now, July 9 as if we might have two weeks more of it. Bees are booming at all our outyards; and swarming—it took us completely by surprise that we were unprepared for it. The region around Zanesville, O., is likewise reporting a remarkable yield from clover.

Apparently the yield of clover honey has not been as good elsewhere in the United States; but from reports that are now in, there will be far more honey produced this year than for some time past. Clover seems to be yielding best in the central and eastern states—more

particularly the
Illinois, however
much of a showin
of Canada will h
other parts only

There have bee
from the East, pa
York, Philadelph
Excellent yields h
Maryland, some pa
Kentucky and Ala
and Kansas good
New England Stat
far no large yiel
There will be some
gan, Minnesota an
little basswood.

Colorado will ha
bably.

Reports are unf
fornia. Some orang
but there appears t
Winter losses have h
of the other weste
and while alfalfa
as usual, there wil
gather it.

Prospects in Pecos
are poor.

In Texas the seaso
the same is true of
the other southern S
good yield.

Mr. E. D. Towns
Review say:—

Throughout the e
United States, or th
crop has been a grea
last year. This in spi
of bees last winter.
Wisconsin, Indiana,
New York, Maryland
Carolina and New J
heavy flow of honey.
ports the crop in Mic
about one sixth more
the winter loss see
heavy in this State.
increase over last yea
these reports we must
are from the better cl
and that undoubtedly
honey will be consume

particularly the central. Indiana and Illinois, however have so far not made much of a showing. Some of the parts of Canada will have a large yield, and other parts only a fair one.

There have been several good reports from the East, particularly around New York, Philadelphia and Washington. Excellent yields have been reported in Maryland, some parts of West Virginia Kentucky and Alabama; Missouri poor, and Kansas good. Reports from the New England States are scattering. So far no large yield has been reported. There will be some clover honey in Michigan, Minnesota and Wisconsin, with a little basswood.

Colorado will have a fair yield, probably.

Reports are unfavorable from California. Some orange has been produced, but there appears to be very little sage. Winter losses have been reported in some of the other western irrigation States; and while alfalfa will furnish nectar as usual, there will be fewer bees to gather it.

Prospects in Pecos Valley, New Mexico are poor.

In Texas the season has been poor, and the same is true of Florida. Some of the other southern States report a very good yield.

Mr. E. D. Townsend writing in the Review say:—

Throughout the eastern part of the United States, or the Clover belt, the crop has been a great deal heavier than last year. This in spite of the heavy loss of bees last winter. Illinois, Michigan, Wisconsin, Indiana, Ohio, Pennsylvania, New York, Maryland, Vermont, North Carolina and New Jersey, have had a heavy flow of honey. From present reports the crop in Michigan will be only about one sixth more than last year, as the winter loss seemed exceptionally heavy in this State. Canada reports an increase over last year. In considering these reports we must forget that they are from the better class of bee-keepers, and that undoubtedly a great deal more honey will be consumed in home markets, owing to the fact that there will be no competition from the small farmer bee-keeper, whose bees were practically wiped out last winter. Minnesota reports about the same amount of honey as she had last year.

A different story, however, is told from the West. California and Oregon both report practically a failure. Colorado is yet to be heard from, as it was too early for their report. Idaho has about the same as last year, Utah a trifle more, and Montana considerably more. Iowa and Missouri both report heavy crops. From the South we find Alabama a failure, Arkansas one-half less and Texas at least one-sixth less.

It must be understood that thees figures are based on the crop secured last year, which in the East was practically a failure, so that while a good deal more clover honey is reported this year, it would probably not be more that an average crop, taken one year with another. Then considering the fact that some of the western states report a failure, it would seem that those who have some honey to sell should realize an average price for the same, but little, if any less than was received last year.

With the honey reaching the highest price a year ago, consumption was cut off to a certain extent, but this was at the latter part of the season, when the prices were raised above normal.

I hope to be able to give you a more definite report next month, as all of the crop reports should be in by that time.

I don't want any producer to get scared on reading the above and sell his honey at a low price. Either get a fair price now or wait until you get the September Review giving further reports.

What Has the Harvest Been?

This is a question that interests both the producer as well as the dealer in honey. The dealer, with his numerous ways of finding out, already knows long before the producer, who has been altogether too busy producing the crop to think much along the line of turning his product into cash. Now that the crop is upon the hive at least, the producer begins to think "what has the harvest been?" and what about the price to ask for the crop that has taken him toward a year to produce, taking into consideration the getting his bees over the hard winter, which was no small job, when a half of the bees in the northern states died outright or were so reduced in numbers that they were of very little

use as surplus honey gatherers during the season. Another point to be taken into consideration this year is, bees died much further south the last hard winter than usual. Almost the whole scope of the clover belt suffered this loss, so in considering the prospects of the extent of the clover crop of surplus honey at this time, it would be necessary to about double the product of those that did winter and get into shape for the harvest, to make this year's crop as large as a year ago, which was the smallest on record.

It is true that very large yields of honey per colony have been harvested in some locations this season, but the number of colonies that were strong enough to gather a normal quantity of surplus honey this year were very few indeed. It is my opinion that the better grades of both comb and extracted honey for table use will be about the same as a year ago, and we are asking the price for ours with expectation of its selling rather better than a year ago, as the quality of Michigan honey is much better this year than last.

The fact is, it has been several years since we have had such a normal flow of honey as this year, and the honey seems correspondingly better for this reason. What is true in Michigan is likely true all over the clover producing region. What I have said about the quality of the clover honey is equally true of the Michigan raspberry and basswood. Rich, ripe, that exquisite flavor so much relished by the discriminating public is prevalent this year. This "quality" feature will surely go a long ways toward creating a demand for this year's crop of honey. The producer who sold his better grade of white extracted honey suitable for table use a year ago for less than 9½ cents to 10 cents per pound, on track, can now take out his pencil and figure up his loss, for he surely lost the difference, aside from making it "just a little harder" for his brother bee-keeper to get the price for his honey. Comb honey should bring about twice that of extracted was the way we used to figure when we were producing comb honey.

Brother, it is up to you. The situation is in your hands. You, the most of you at any rate, still have your crop of honey on hand, much of it upon the hive. You can have the market price for your hard-earned product, or you can part with it at a cent or two below the market, the dealer pocketing the difference. Which will you do this year? Your selling below the market will not help the consumer one whit, for the dealer is wise enough to look out for number one, when once the honey is in his hands. Demand a good fair price for your product this year, brother. It's yours for the asking.

The dealer is not your enemy, far from it; really he is your very best friend, but he is human, and will buy at the best figure he can—it's natural, it is business. All one need do is to meet him half way. You have the opportunity this fall.—E. D. Townsend, in the *Bee-keepers' Review*.

A GERMAN METHOD OF QUEEN-REARING

(From the Münchener Bienen-Zeitung, by Kreiselmeier, May, 1912.)

In the system I am going to describe it is only necessary to have a flight hole in the honey compartment (which in some German hives is situated behind the brood chamber) and some cell protectors. After a properous colony has swarmed, I search in a few days to see how many queen cells there are. I consider the 4th or 6th day to be the best because then the cells are ripe. I do not advise waiting any longer for possibly the queens might hatch or the other cells be destroyed. The colony will now be left one queen cell, the rest of the combs with cells attached will be hung behind in the honey room, to protect them from chill. The surplus queen cells will be used for re-queening colonies headed by poor queens or be reared for reserve queens. I use for this purpose the honey compartments of certain colonies and combs with young or partly sealed brood.

The honey room will then be closed from the brood chamber. From the brood chamber one frame with hatching brood will be taken and put in the honey compartment. Then I take from the swarmed hive a comb with a queen cell and attached bees and hang it likewise in the honey compartment—next follows a comb of honey and some empty combs; sufficient for the number of existing bees

in the honey compartments. One must take care that a portion of the bees does not return to the brood chamber and release. If there is more than 1 cell on a comb they should be cut out and put in cell protectors and placed on the brood comb in the honey compartment in which case I take one more frame from the brood chamber so that the cells are situated between 2 brood combs.

One can also rear in the same way even a second queen in honey room up of the swarmed hive, then the swarmed hive must be strengthened with sealed brood from other colonies.

The nucleus is allowed its liberty next day. By the 14th day the young queens should be mated, when you are certain of this, the old queen is destroyed and the entrance to honey compartment is again opened and the young queen accepted by the other bees because they will all have the same smell.

THE COLOR CHARACTERS OF BEES AND THE MENDELIAN RULES OF TRANSMISSION

By Otto Dengg

Mendel's contemporaries showed no appreciation of the value of his work. It was not until 16 years after his death in 1884 that his secrets were brought to light and put to the proof. Tests were made with plants and animals for size, form and color as well as for fertility and hardiness, all of which followed the prescribed mendelian rules of heredity. Mendel himself showed the validity of his scheme for twelve different characters.

If we take a pure black queen and mate her with a yellow drone or take a yellow queeen with a black drone the progeny of the first generation are throughout composed of dark colored bees. We are supposing both parents to be pure as regards their color. The dark color of these resulting hybrids in the first generation is not pure but contains also the hidden color factor of the yellow parent. But with bees, the sure selection of parents and the control of mating are extremely difficult of accomplishment.

Mendel, himself an enthusiatic beekeeper, experimented with bees, but unfortunately his observations were not published and his work in this direction appears to have been fruitless. So far as we are aware the selection of bees, following the path indicated by Mendelian rules, has not since been attempted.

Supposing now one of the above hybrid queens of our first generation was mated with a like hybrid drone. By Dickel's teaching, the drones of the first generation were hybrids and therefore useful for our purpose.

We should be able easily to obtain some idea as to the influence of the parent drone over the progeny more particularly over those of the cross between a pure colored yellow queen and a pure black drone.

The black color dominates in the first generation over the yellow and from such a cross of externally black hybrids, black drones also would result. The influence of the male parent would not be noticeable in the male progeny.

According to the Dzierzon theory the drone is fatherless. They must therefore, to be of use for our purpose, be true hybrids. What ought we to perceive in the second generation if both parents are hybrids? To every three black bees must come one pure yellow; of the three blacks one is pure black and two only externally black, possessing the recessive yellow factor, and therefore a hybrid. If we wish to breed them further in accordance with the above scheme it would be possible to obtain a different combination. Really there are 16 combinations, but for our purpose No. 2, 5 and 8, as well as 4 to 6 only represent repetitions and so the nine combinations satisfy us completely. And the result? Always the same for all the

succeeding generations, the pure blacks mated together always produce pure blacks, as do the pure yellows mated together produce only yellows. Pure blacks and pure yellows mated to-gether, on the contrary give throughout hybrid blacks, pure yellow crossed with hybrid give again pure yellow and hybrid in equal number; hybrids mated together give us the well known Mendelian ratio of the second generation, 3 blacks (1 pure and 2 impure blacks) and 1 pure yellow.

We obtain the same ratio if we combine the total production of the third generation.

Hybrids crossed together or crossed with pure animals result in hybrids and a certain proportion of pure stock. Extinction of the pure race is therefore not feared. But it is a mistake to add fresh blood through crossing with another race, even as the view is false that it completely alters the pure race; for we have seen that the pure races, notwithstanding the crossings always appear to come true and to remain so.

Translated from the German by M. E. Newland.

REVIEWS

Producing, Preparing, Exhibiting and Judging Bee Produce.

By William Herrod, F.E.S., Junior Editor British Bee Journal.

We have received from the office of the British Bee Journal an excellent little manual dealing with the details, large and small of Bee Shows. The author, Mr. William Herrod, is a bee-keeper whose name stands in the minds of the bee-keeping fraternity in Britain for all that is reliable, safe and trustworthy in things pertaining to his craft and he has had perhaps more experience in showing and judging bee products than any other individual in the Old Country. Our personal knowledge of Mr. Herrod enables us to state that there are few writers better equipped to deal with the subject than he is, and he has produced a book worthy of a place on every bee-keeper's book-shelf.

While the work is preëminently written for British bee-keepers, there is much practical information and advice that will prove valuable in all other lands where bee-shows are held, especially in our own country, in which we believe a wide circulation of the book would do much to stimulate effort amongst our Canadian beekeepers in this direction. In addition to general information respecting the producing of wax and honey for show purposes, the book contains chapters on judging, rules, regulations and schedules, advantages and inducements in exhibiting. The illustrations are very numerous and are mostly the product of the author's own art of photography, in which art he is more than usually proficient.

We can thoroughly recommend the book to readers of the C. B. J. amongst whom we trust it will have a large sale.

The following extract will furnish them with an idea of Mr. Herrod's comprehensive method of treating his subject and at the same time furnish valuable information upon a very interesting topic:—

Judging by Points

Not only in apiculture, but in many other branches of exhibiting, a great deal of nonsense is said and written, more especially by novices or those who know very little about the work. Some advocate a hard and fast point schedule, but this is absolutely impossible for many reasons. Take for example, aroma. How is it possible to standardize the olfactory senses of each judge or unify the sense of flavor.

It would be quite possible to have a standard for color, but hardly for density. A judge would frequently be criticised for inconsistency, not only at separate shows, but also in various classes of the same show. For instance, at one show at which he is officiating he might commence judging on a fairly cool morning, part of his work being done

before he went
time the tent
heated by the s
that when he res
the honey will h
would consequent
than the same
morning. Of cou
take such a cont

By remelting th
the flavor, aroma,
spoilt, yet the e
exactly the same
and he conseque
he is placed lov
whom he had beat
Slight granulation
one show which
previous one. In
have seen cases w
and other influenc
had taken place
honey between th
may be also cases
exhibitor at his n
broken bottle at
replaced by one c
entirely different c
averring that it sh
ence to the judgin
sound at one show
veling become dam
thus spoiling their
Granulation may al
duce the number o

To wax that has
long exposure in
different character
aroma and hardness
stated to be "exac
shown before," no
to the fact of its re

A wise judge wil
down by hard and
make his awards on
ranging, by the on
arriving at those poi
ing the exhibits place
one particular time.
also to fill in card
awarded to each in
the reason stated, and
the endless time inv
of doing this. He
himself open to endl
varying awards in the
at different shows, w
occur. At some of
would take the judge
to do all this, for in
one hundred to two h
staged. A point card
an exhibitor who cann

before he went to lunch. In the meantime the tent or building has become heated by the sunshine, with the result that when he resumes his duties some of the honey will have become thinner, and would consequently receive lower marks than the same samples judged in the morning. Of course, the exhibitor never takes such a contingency into account.

By remelting the honey between shows, the flavor, aroma, and even color may be spoilt, yet the exhibitor declares it is exactly the same honey as shown before, and he consequently grumbles because he is placed lower than an exhibitor whom he had beaten previously on points. Slight granulation may also be seen at one show which was not present at the previous one. In granulated honey I have seen cases where, through exposure and other influences, slight fermentation had taken place on the surface of the honey between the two shows. There may be also cases of grumbling by an exhibitor at his non-success owing to a broken bottle at one show having been replaced by one containing honey of an entirely different character, the exhibitor averring that it should make no difference to the judging. Sections perfectly sound at one show may by constant traveling become damaged and leak badly, thus spoiling their appearance altogether. Granulation may also take place and reduce the number of points awarded.

To wax that has been remoulded after long exposure in showing, an entirely different character is given, both to the aroma and hardness, yet it is repeatedly stated to be "exactly the same wax as shown before," no mention being made to the fact of its recent manipulation.

A wise judge will refuse to be tied down by hard and fast rules, but will make his awards on points of his own arranging, by the only safe method of arriving at those points, i. e., by comparing the exhibits placed before him at any one particular time. He should refuse also to fill in cards with the points awarded to each individual exhibit for the reason stated, and also on account of the endless time involved in the work of doing this. He will otherwise lay himself open to endless criticism by his varying awards in the various classes and at different shows, which are bound to occur. At some of the large shows it would take the judge a couple of days to do all this, for in many cases from one hundred to two hundred exhibits are staged. A point card is of no use to an exhibitor who cannot attend and compare his exhibit with the others staged in competition with it. Very few exhibitors attend the shows, so the card teaches them nothing, and only serves to make them discontented with the varying points awarded at different times.

The fallacy of hard and fast point judging has been proved and given up in the case of horses, cattle and poultry. Those who write favouring this system show an utter ignorance of the practical side of the subject, and try to hide this by a comparison of what they term "inconsistency of the judge." Those who have attempted this system deserve all the adverse criticisms written about them for their foolishness in endeavouring to attain what is impossible.

That the comparative method of judging is a reliable one has been repeatedly proved. Here is a definite example. In 1910 Mr. Ernest Walker was one of the judges of honey at the Grocers' Exhibition, and also sole judge at the Dairy Show. Many of the exhibits at the former were shown at the latter, and in every case he placed the winning exhibits in the same order of merit. The following year he judged both shows alone, and did exactly the same thing.

HOW TO INCREASE THE PRODUCT OF THE APIARY

H. A. Surface, D. Sci.

(From the Bi-Monthly Zeological Bulletin of the Division of Zeology, Pennsylvania Department of Agriculture

Among the different ways by which one can increase the product of the apiary are the use of modern devices and the improvement of the stock or strain of bees which he keeps. Proper attention has not generally been given to improving the stock of the bee yard, although in all other lines of live stock industry this has been emphasized again and again, until it has become the prime thought with live-stock breeders.

1. *Improve the Bee Stocks.* The stock in the bee yard should be improved by the same methods that are practiced in in improving live stock of. all kinds

This must be by keeping careful and accurate records, rejecting those that are poor, and preserving, propagating and breeding from those that are good, and occasionally introducing some new and desirable blood. This is what the dairyman has done to improve his dairy, the poultryman for his flock, and the beekeeper must observe and practice for his bees. The keynote of success has been in keeping records, and in taking out the "free boarders."

In every bee yard there are colonies that give very low returns and others that give very high yields. This may be due to various causes but it should not be due to the presence of moths or bee diseases, as it is the business of the beekeeper to attend to these troubles, and not let loss from them enter into his account and confuse his records. If it is due to poor queens, he will soon find this out, and destroy the old queens and introduce new ones. He shouuld remember that he is keeping bees for honey production rather than for mere recreation. To increase the honey production his records should show the exact amount of honey taken from each colony during the entire year, and the treatment of that colony. The poor colonies should be requeened from the descendants or offspring of the good colonies. He should not let the poor colonies produce either queens or drones, and he should not depend merely upon the introduction of queens from outside apiaries for building up the bee yard. No dairyman would think of suggesting the improving of his herd by introducing a few blooded animals from outside sources, and at the same time pay no attention to taking out the poor ones, and thus permit unchecked indiscriminate breeding.

2 *Get Drones from Good Colonies.* Beekeepers in the past have been giving attention chiefly to the queen only, which represents but one side of the house of bee improvement. It certainly appears reasonable that the drone from a poor colony is just as liable to impart to its offspring the undesirable traits of that colony as is the queen from either a good or poor colony to impart to her offspring the characteristics of her own ancestry.

In bee improvement the first step should be to make sure that all the breeding bees will be only from desirable colonies with high records. Therefore, the keeper should insure against reproduction from the poor colonies. To do this he should examine the hives where the records are low or the bees are cross, or for any other reason propagation from them is undesirable, and cut out all drone comb and insert in its place worker comb. If he should have old-style box hives, and cannot do this, he should have his bees promptly transferred to modern hives, or he can, for temporary emergency, use drone traps on the old hives.

Drone Traps. These are little trap cages put in front of the hives to let the workers pass through, but will trap and retain the drones and queens. They can be attached to any hive, and can be purchased of almost all dealers in bee supplies.

After making sure that no drones are to be propagated from poor colonies the next effort of the beekeeper should be to insure that they will be propagated in numbers from the best colony. He should select not only for high records in honey production, but also for temperament of bees, whiteness of capping of comb honey, reduction of the amount of propolis used in the individual colony, reduction in the number of burr combs, consideration of immunity from diseases and worms, and other points that enter into consideration for real bee improvement. Early in the spring of the year he should decide upon which colonies he wishes to use for propagation purposes. From these he can obtain drones by setting into the brood

chamber frames

Here is where
of interchangeab
A frame of dro
can be suspende
the hive a time,
will perish, when
middle of the bro
desired for prop
the worker bees
queen will soon la
when it can be m
part of the broo
middle if desired;
will be cared for,
appear in about
weeks. If he shou
a frame containing
he can make one
blocks of drone co
strings wrapped a
by splints of wood
such a way as to ho
together. If he sl
drone comb he can
duce it by using a
full sheet of found
and setting this int
brood nest. As the
comb in a populous
spring when honey is
be glad of the oppo
abundance of dron
will be laid full o
time. He can
tion with cell bases
and use this in choi

Now it is an easy
its place this frame
brood, shake the bee
it to another colony t
In this way the str
colonies can be kept
two or three drone co
filling them with eggs.
eggs or larvae can
colonies to rear drones
their tendency in this
the same time it wil

chamber frames containing drone comb.

Here is where one of the advantages of interchangeable frames is to found. A frame of drone comb from any hive can be suspended in the wind outside the hive a time, and the eggs or larvae will perish, when it can be set into the middle of the brood chamber of the hive desired for propagation purposes and the worker bees will clean it out. The queen will soon lay it full of drone eggs when it can be moved toward the outer part of the brood nest, or left in the middle if desired; and the drone larvae will be cared for, and the drones will appear in about three and one half weeks. If he should not be able to find a frame containing enough drone comb, he can make one by setting together blocks of drone comb held in place by strings wrapped around the frame, or by splints of wood tacked across it in such a way as to hold the blocks or comb together. If he should not have any drone comb he can cause the bees to produce it by using a starter instead of a full sheet of foundation in the frame, and setting this into the middle of the brood nest. As the bees build down the comb in a populous colony during the spring when honey is coming in, they will be glad of the opportunity to make an abundance of drone comb. This also will be laid full of eggs in a short time. He can purchase foundation with cell bases of drone comb size and use this in choice colonies.

Now it is an easy matter to lift from its place this frame filled with eggs or brood, shake the bees off, and transfer it to another colony to receive their care. In this way the strongest of the bee colonies can be kept busy constructing two or three drone combs at a time, and filling them with eggs. These frames with eggs or larvae can be given to other colonies to rear drones, and thus satisfy their tendency in this direction, but at the same time it will make sure that the drones are propagated from the most desirable colonies.

3 *Obtain Queens from the Best Stock.* While it is desirable occasionally to buy new queens from the queen breeders, it is not at all necessary for the beekeeper to depend entirely upon the purchase of queens for building up the apiary, and, indeed, it is not best for him to do so. Again the rational methods of the live stock breeder should be adopted and they consist chiefly in making use of the records which he has been careful to keep. In buying queens, in many cases, they do not come from colonies any better than the purchaser owns.

As in drone production, every effort should be made to be sure that queens are not produced from poor colonies. To do this the owner should cut out all queen cells in poor colonies, or place queen traps in front of the hive from which he does not wish queens to emerge. Let it be remembered that the neglected queen trap is worse than nothing, because it may trap, hold and finally kill the queen and leave the colony queenless. To avoid this it should be examined three or four times per week to see if it contains a queen or drone that should not be killed.

Just as soon as a colony is proven to be poor the queen therein should be killed and replaced with one from a good colony. When a good queen is mated with a drone which has been developed in a good colony, it is but reasonable to expect that the progeny will be of improved quality.

BEE-KEEPING IN AUSTRALIA

Beekeeping in Australia is carried on under different conditions from those existing in other countries (writes F. R. Beuhne, Victorian State Bee Expert). In the Northern Hemisphere, and also in New Zealand, the principal supply of

nectar comes from flora on meadows, roadsides, fields, and gardens. Bee-keepers in Australia depend almost exclusively on eucalypts and a few other native trees and shrubs. Owing to hot summers, which prevent the secretion of nectar in soft, herbaceous plants except on irrigated land and in exceptionally cool districts, the amount of honey obtained from other than native flora is small in comparison with quantity harvested from eucalypts.

Even when climatic conditions are favorable to the secretion of nectar the system of closely feeding down pastures which is largely practised in Australia, does not permit of the proper development of the nectar producing plants and the maximum production of nectar. Probably over 90 per cent of the honey produced in Australia is obtained from eucalypts.

Pay attention to small things and they will pay you.

CROP BULLETIN

A bulletin on the crops and live stock of Canada is issued by the Census and Statistics Office today. The correspondents of the Office report that in the Maritime provinces and generally through out eastern Canada the weather of June continued cold and wet, and growth was therefore slow. In the Northwest provinces the weather of June was hot and dry, and rain was badly needed at the beginning of July. Rains have since fallen however and conditions have improved. Prospects for spring sown crops are generally favorable.

According to revised figures obtained at the end of June the total area under wheat this year is 10,047,300 acres, compared with 10,377,159 acres as returned by the Census of 1911. The area sown in fall wheat in 1911 was 1,097,900 acres, but winter killing has reduced this area to 781,000 acres. The area sown to oats is estimated at 9,494,600 acres, compared with 9,233,550 acres in 1911, and to barley 1 449 200 acres as against 1,403,969 acres in 1911. In the three Northwest provinces spring wheat covers 9,029,000 acres as against 8,946,965 acres in 1911, the increase being in Saskatchewan and Alberta. Including fall wheat the total wheat acreage in the three provinces is 9,246,100 compared with 9,301,293 acres in 1911, the decrease being accounted for by the large area of fall wheat winter killed in Alberta. Oats in the three provinces occupy 5,037,000 acres and barley 826,100 acres, as compared with last year's census figures of 4,563,203 acres for oats and 761,738 acres for barley.

Whilst not equal to the exceptionally high figures recorded this time last year, the condition of spring sown crops is generally good. The highest figures for spring cereals are recorded in Prince Edward Island and British Columbia, the per cent. condition ranging from 97 to 99 in the former and from 90 to 95 in the latter province, the average for the Dominion being from 80 to 89. Fall wheat remains low being only 70 for Canada, 73 for Ontario and 71.6 for Alberta. Last year the condition was also low, viz., 75 for Canada; the average of the four years 1908—11 was 81.5. Spring wheat is 89.73 p. c., compared with 94.78 last year and 88.25 the four year's average, oats 86.43 against 94.46 in 1911 and 90.42 average, barley 88.58 against 93 in 1911 and 89.28 average. Rye is 87.84, peas are 80.08 and mixed grains 84.98. Hay and clover show a condition per cent of 85.59 against 84.97 in 1911, alfalfa 90.59 against 82.31 and pasture 95.56 against 90.77. In the three Northwest provinces spring wheat, oats and barley range from 80 to 88 p.c. figures that are close to the average of the four years 1908—11 and which are below last year's exceptional records by from about 10 to 15 p.c.

The estimated numbers of live stock

show further decreases except as regards horses and dairy cattle, the former being 70,400 and the latter 14,500 more than last year's estimates. The Census figures of 1911 are not available. The condition of all live stock in Canada is uniformly excellent, the number of points being 97 horses, 98 cattle, 97 sheep and 96 swine.

ARCHIBALD BLUE,
Chief Officer.

July 17, 1912.

TO PRISON FOR POISONING ROBBER-BEES

A curious poisoning case took place in Germany lately. Luka's bees were molested by those of his neighbors, and the former protested but to no avail. He thereupon threatened to poison the robbers if the nuisance was not stopped. No sooner said than done. Luka got some arsenic and mixed it with water and honey. The robbers greedily took it with the result that $120 worth of damage was done.

Luka had six weeks in prison and a $16 fine for his experiment.

An original honey theft is described in a German paper. One night a pastor had a heavy skep stolen, and next day he filled an empty one with tiles and remarked in the village inn that he was glad that his heaviest stock had been left him. The following night, to the great delight of the secretly watching owner of this heavy colony it was also removed and the thief promptly caught.

FOUL BROOD IN NEW ZEALAND

The New Zealand Department of Agriculture, says the *Australian Agriculturist*, has issued a pamphlet on foul brood in bees which should help bee-keepers to cope with this pest.

The following notes on the subject will form a succinct guide worth following by all apiarists who have foul brood in their hives:—

Bees should never be fed with honey; sugar-syrup is safer, cheaper, and just as good.

Until the apiary is clear of foul brood the combs should not be exchanged from one hive to another.

All swarms in an affected apiary, and all bees transferred from box hives, should be treated as if they were diseased.

Robbing should never be allowed to get started.

Should bad weather set in after the bees are put on to the full sheets of foundation, they should be fed until the weather clears.

In case honey gets spilt on the ground when treating, it is well to dig over the ground about the hive.

It is an advantage to detect the disease when first it gets started. There is less infection to deal with, there has not been so much loss of brood, and the colony, being stronger, does much better after treatment.

On rare occasions colonies swarm out after treatment, but this is not likely to occur when honey is being gathered freely. It can be guarded against by giving a wide entrance, and placing queen-excluding zinc across until there is brood in the combs.

Every beekeeper who imports queens should destroy everything that comes with the queen—bees, cage and candy—to prevent the possible introduction of foul brood or other diseases.

It is a good plan to requeen every affected colony with a young queen from a choice stock, preferably one that has not had foul brood. This will tend towards breeding a disease-resisting strain, and in any case the colony will be the better for having a young vigorous queen.

There is always a chance of disease germs being present in honey robbed in the previous autumn and stored along the tops of the combs. This accounts for disease breaking out after two or three seasons, especially if heavy feeding is practised. The bees not being short of honey, take longer in coming to the old stores.

Super combs that have never had brood in them, and that are entirely free of honey, are safe to use again, even though they may have come off infected colonies the previous autumn.

No treatment will be successful if the bees are allowed to get at any of the the combs or honey removed from an infected hive.

ST. JOHN EXHIBITION, ST. JOHN, N.B., AUG. 31 TO SEPT. 7, 1912

PRIZE LIST—HONEY AND APIARY SUPPLIES

Entries Close on Thursday, August 1st, at 25 Cents Each Entry

Competition open to the world. All honey exhibited must be the production of the exhibitor.

Exhibitors selling honey during the exhibition (for which right a small fee will be charged) will not be allowed to make any removal from their regular exhibit, but may have a special supply on hand, from which their honey sold may be taken.

Exhibitors offering Comb Honey for sale will not be allowed to cut the sections, but must sell whole sections, put up securely in manila or pasteboard boxes or bags, and purchasers notified not to eat it in the building.

Exhibitors must not interfere with or attempt to influence the judges in the discharge of their duties.

A breach of these rules will forfeit any prize that may be awarded.

CLASS 70—HONEY AND BEE SUPPLIES

Sec.		1st	2nd	3rd
1	Best display of extracted granulated Honey in glass, not less than 50 lbs.	$5 00	$2 50	$1 00
2	Best display of liquid extracted Honey, not less than 100 lbs., of which not less than 50 lbs. must be in glass, quality to be considered	10 00	5 00	2 00
3	Best 20 lbs. Clover Honey in comb, packed for shipping	3 00	2 00	1 00
4	Best 20 lbs Buckwheat Honey in comb	3 00	2 00	1 00
5	Best display of extracted liquid Buckwheat Honey, in glass, quality to be considered, not less than 20 lbs	2 00	1 00	....
6	Best display of extracted Clover Honey in glass, quality to be considered, not less than 20 lbs	2 00	1 00	....
7	Largest samples of extracted Honey from different flowers	2 00	1 00	50
8	Largest and best variety of uses to which Honey may be put, illustrated by individual samples of the different things into which it enters as a component; for example, say one or more samples each in canned fruits, cakes, pastry, meats, vinegars, etc.	6 00	4 00	2 00
9	Pure Beeswax, not less than 10 lbs	4 00	2 00	....
10	Latest and most useful queen nursery cage	2 00	1 00	....
11	Best foundation for brood chamber	2 00	1 00	....
12	Best foundation for sections	2 00	1 00	....
13	Best Apiarian supplies			Diploma
14	Best style and assortment of tins for retailing extracted honey			Diploma
15	Best style and assortment of glass for retailing extracted honey			Diploma
16	Best section super for top storey and system of manipulating, product to be exhibited in super as left by the bees			Diploma
17	Largest and neatest exhibit of the product of the apiary; can be the same as exhibited in other sections			Diploma
18	Largest and best display of honey-bearing plants, properly named and labelled			Diploma
19	Latest and most practical new invention for the apiarist			Diploma

CLASS 71—BEES

Sec.		1st	2nd	3rd
1	Best colony Italian bees in observation hive	$3 00	$2 00	$1 00
2	Best colony black bees in observation hives	1 00	75	50
3	Best colony, any other variety bees, in observation hives	1 00	75	50
4	Best exhibit of bees in embryo, showing the different stages of development, from the egg to mature bee	3 00	2 00	1 00
5	Exhibit of live queens in shipping cages with attendant bees	3 00	2 00	1 00
6	Best full colony of any pure race of bees in movable frame hive	2 00	1 00	50

BEWARE OF FOUL BROOD

Brief Instructions for Treatment.

In a honey flow, in the evening, remove the colony from its stand and set in its place a clean disinfected hive containing clean frames with foundation starters. If the weather is very warm, place an empty hive under the one containing the starters for a few days, to give a good clustering place for the swarm. Cover the entrance with queen-excluding metal. Now shake the bees from the combs of the old hive into the new; but if any fresh nectar flies out in shaking it will be necessary to brush the bees. Get these combs immediately under cover, and clean up very carefully any honey that may be around, so robbers from healthy colonies cannot carry home disease.

When the diseased colonies are weak in bees, two or three should be put together into one clean hive so as to get a good-sized colony. In doing this diseased colonies must be united with their next-door neighbor and not carried to another part of the apiary.

All combs from the supers as well as from the brood-chambers of the diseased colonies must be either burned or melted and boiled thoroughly before the wax is fit to use again. The honey that is removed is entirely unfit for bee feed and should be buried deep enough to be out of the reach of any bees.

For fuller particulars in reference to Foul Brood see Bulletin No. 197, issued by the Ontario Dept. of Agriculture, which will be sent you on application to the Director, Fruit Branch, Parliament Buildings, Toronto.

When writing to advertisers, please mention the Canadian Bee Journal.

CANADIAN NATIONAL EXHIBITION, TORONTO, AUG. 24 TO SEPT. 9, 1912

HONEY AND APIARIAN PRODUCTS

Prize List

Entry Fee: 50 cents each entry

All exhibits in this department to be in place and arranged by Monday noon, August 26th.

All Exhibitors must be bonâ fide bee-keepers.

The prizes are awarded only for the quantity of honey specified in the various sections, and no two members of the same family will be awarded prizes in the same section.

Exhibitors must not change their exhibits after the judges have given their awards.

Exhibitors selling honey during the Exhibition will not be allowed to make any removal from their regular exhibit, but may have a special supply at hand from which the honey sold may be taken.

In the solicitation of customers no unseemly noise will be permitted.

Comb Honey must be exhibited in natural form, paper or any other trimming not allowed.

Exhibits in this department will be judged by points.

For lists and entry blanks write J. O. Orr, Manager, City Hall, Toronto.

CLASS 272

Sec.		1st	2nd	3rd	4th
1.	Best and most attractive display of 50 lbs. of extracted granulated Clover Honey, in glass, 50 points for quality, 50 points for display	$5	$4	$2	$1
2.	Best and most attractive display of 50 lbs. of extracted granulated Linden Honey, in glass, 50 points for quality, 50 points for display	5	4	2	1
3.	Best display of Clover, Linden, Buckwheat or Thistle, of 300 lbs. of liquid extracted Honey, not less than 150 lbs. must be in glass, quality to count 50 points, display 50 points	18	12	8	5
4.	Best 300 lbs. Clover, Linden, Buckwheat of Comb Honey, in sections, quality to count 50 points, display 50 points	20	15	10	6
5.	Best 24 sections of Comb Honey, any variety, quality to be considered, clean sections and best filled	6	4	3	2
6.	Best 100 lbs. of extracted liquid Linden Honey, in glass. Display to count	7	5	3	2
7.	Best 100 lbs. of extracted liquid Clover Honey, in glass. Display to count	7	5	3	2
8.	Best 100 lbs. of extracted liquid, A.O.V., in glass. Display to count	7	5	3	2
9.	Best display of 100 lbs. of extracted liquid Honey, any kind, display to count 80 points	7	5	3	..
10.	Best 20 lbs. of extracted liquid Clover Honey, in glass	4	3	2	1
11.	Best 20 lbs. of extracted liquid Linden Honey, in glass	4	3	2	1
12.	Best 20 lbs. of extracted liquid Buckwheat Honey, in glass	4	3	2	1
13.	Best display of 200 lbs. Comb and extract Honey suitable for a grocer's window or counter, space to be occupied not to exceed 6 feet square by 4 feet high	10	7	4	2
14.	Best and most attractive display of Beeswax, not less than 10 lbs.	4	3	2	1
15.	Best 10 lbs. Beeswax, soft, bright yellow wax to be given the preference	4	3	2	1
16.	Best exhibit of Italian Bees, with queen, in single comb observatory hive	7	5	3	..
17.	Best exhibit of any other variety, with queen, in single comb observatory hive	7	5	3	..
18.	To the Exhibitor making the best and most attractive display	15	10	5	..

The prize in Section 18 is given by the **Ontario Bee-keepers' Association.**

Entries close August 15th

Darwin pointe
of bumble bees
mined by the nu
bumble bees' ne
by cats, consequ
cats there are m
ble bees. Here
gested that, as old
and usually keep
animals as pets, i
whether there sh
crop of red clover
"Glean

Darwin pointed out that the number of bumble bees in England was determined by the number of cats. Mice rob bumble bees' nests and in turn killed by cats, consequently if there are few cats there are many mice and few bumble bees. Here Professor Huxley suggested that, as old maids are fond of cats, and usually keep one or more of these animals as pets, it depended upon them whether there should be an abundant crop of red clover or not.

"Gleanings in Bee Culture"

Want and Exchange Column

Advertisements for this column will be received at the rate of 50 cents for 25 words, each additional word one cent. Payments strictly in advance, as the amounts are too small to permit of bookkeeping. Write copy of ad. on a separate sheet from any other matter, and on one side of the paper only. Say plainly how many times ad is to be inserted. Matter must reach us not later than the 23rd of each month.

WANTED

WANTED—Offers wanted for this season's crop of Light Extracted Honey, buyer to furnish tins and bear all transportation charges. Mention size of container when writing. Miss F. Palmer, Shetland, Ont.

HIVES—Wanted, a few 10-frame Langstroth hives, in good condition, second-hand, Ham & Nott goods preferred. A. Crutcher, Bee-keeper, Burns, Ont.

WANTED TO BUY—Wax and Honey in any quantity. Bee-keepers' supplies for sale. Root's goods a specialty. F. W. Bell, 4 Cherrier St., Montreal.

WANTED—I would like to contract now for your this season's light honey, either comb or extracted. I can supply tins. Write me. G. A. Deadman, Brussels, Ont.

WANTED—Your order for untested, leather-colored Italian Queens. One 75c; 10 for $7. Select virgins, 10 for $4.50. N. E. France & Son, Platteville, Wis., U.S.A.

WANTED—To buy, Bees, Honey and Wax. Bee-keepers' supplies for sale, especially the A. I. Root Co.'s line of goods. Address F. W. Bell, 4 Cherrier St., Montreal, Que. tf

WANTED—Representative wanted in each locality to mail circulars for Cut-Rate Grocery Mail Order House. Few hours' spare time will easily earn $20 weekly. Any one can do the work. Outfit furnished free. Dominion Grocery Co., Windsor, Ont. tf

FOR SALE

FOR SALE—25 colonies of bees and outfit. A good locality here for keeping bees. George Ott, Arkona, Ont.

FOR SALE—A limited number of leather colored Italian Queens for sale. Warranted purely mated. $1.50 each. Geo. B. Howe, Black River, New York.

FOR SALE—Queens and half-pound packages. A good strain of 3-banded Italians for honey, now ready. Satisfaction guaranteed. W. D. Achord, Fitzpatrick, Ala., U.S.A.

BEES FOR SALE—Forty-five colonies Italians or their crosses, in 8-frame Langstroth hives. Good colonies and free from disease. Apply to Stephen McNeill, Conn P.O., Ont.

GOLDEN QUEEN BEES, ready to mail, at $1.00 each; six for $5.00. This stock has been favorably reported upon in black brood localities; also for foul brood. J. B. Case, Port Orange, Fla., U.S.A.

FOR SALE—Golden Italian Queens; tested $1.00, select tested $1.25, untested 70c each, dozen $8.00. After July 1st: Untested 60c each, dozen $7.00. Send for price list. D. T. Gaster, Rt. 2, Randleman, N.C., U.S.A.

FOR SALE—10,000 lbs fancy honey, light and dark amber, barrels and 60-lb cans, same as we use for bottle trade; dark amber, 10c. Exhibition White Wyandottes, $1.00 per set; baby chicks, 15 to 20c. Queens, $1.00. Todd Bros., Milltown, N.B.

ITALIAN QUEENS after May 1st. Robey, Alexander or Case strains. Untested, 75c; tested, $1.25 breeders, $3.00; Carniolan, Cyprian, Caucasian and Banats, untested, $1.00; tested, $1.50. Honey packages and supplies. W. C. Morris, Nepperhan Heights, Yonkers, N.Y., U.S.A.

ITALIAN QUEENS—3-banded, finest quality; raised in latitude 59°. Tested: June, $3.00; July, $2.50; August, $2.00. Breeders: June, $6.00; July, $5.00; August, $4.00. Rebate of 25 per cent. when purchased by the dozen. Alexander Lundgren, 12 Tomtebogatan, Stockholm, Sweden, Europe.