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THE NEW ZEALAND AND AUSTRALIAN

BEE JOURNAL

Devoted exclusively to Advanced Bee Culture.

VOL. I.

AUCKLAND, N.Z., JULY, 1883.

No. 1.



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INTRODUCTION.

SCIENTIFIC bee culture, so successfully introduced into New Zealand about four years ago, has now reached that stage when the need of a representative journal is beginning to be seriously felt. We have for some time been fully aware of this want, by the large amount of correspondence received from various parts of the Australasian colonies relative to matters connected with the details of management. Difficulties are sure to arise with beginners in a new industry, when it is of the utmost importance that they should receive the most practical advice available; this can best be obtained through a journal devoted to the interests of the particular industry. It is also of vital importance that the followers of any pursuit should have a knowledge of what is being done in their particular branch in all parts of the world; the latest and most approved methods and appliances, and also the best market for their produce.

In introducing the NEW ZEALAND AND AUSTRALIAN BEE JOURNAL as a candidate for public favour, we are aware of the difficulties attending the bringing out of a new publication; but, having given the matter much thought, and being determined to do our best in the interest of our favourite pursuit, we have not the least doubt of making it well worthy the support of the bee-keeping public, without which we cannot hope to prosper. We have always had great faith in New Zealand as a honey-producing country, and have taken every opportunity of impressing the same upon our country settlers; whilst recent reports go to show that we have even underrated her capabilities in this respect. The increased knowledge of the habits and management of bees, together with the improved apicultural appliances brought into use within the last few years, have been the means of placing honey producing in a leading position amongst rural pursuits. Bee culture in the United States has now assumed proportions of enormous magnitude, many scores of thousands of people find employment in connection with this industry; and the quantity of honey raised annually amounts in value to many millions of dollars. A very large export trade in honey is done by the leading dealers of New York and San Francisco, hundreds of tons being sent to England, the continent of Europe, and, in fact, to all parts of the world. Six bee journals are published in the United States—one weekly and five monthlies,—several of these have a very large and extensive circulation, both in America and throughout the civilised world. There cannot be the least doubt that the honey industry there owes its present position to the diffusion of knowledge through the various

bee journals. Although America has hitherto taken the leading part, the United Kingdom and many of the continental countries are now pushing for a forward place in advanced bee-culture.

There are several bee journals published on the continent of Europe and one—the *British Bee Journal*—in England. The latter, until lately, was published monthly, but owing to the rapid development of the industry and the increased desire for knowledge pertaining to bees, it has been deemed necessary to publish it fortnightly. Looking at the matter from our stand point, we believe it is quite time that the bee-keepers of New Zealand supported a journal of their own, in order that their interests may not suffer from the want of being represented, more especially, as we believe that in the very near future New Zealand is destined to take her stand as one of the principal honey-producing countries of the world.

THE NEW ZEALAND AND AUSTRALIAN BEE JOURNAL will be devoted exclusively to advanced bee-culture, our motto being "Forward." We shall aim to give the very latest information on the subject from all parts of the world, including all the leading honey market quotations, both local and foreign. We shall make a leading feature of the question and answer department, wherein our subscribers may ask for and receive special information on all subjects in connection with the management of bees. We have always considered this department to be of incalculable value to the beginner, as, in all cases of difficulty, he can apply for and receive advice from those who are most likely to be best able to give it. Our correspondence columns will be open for the discussion of all matters that will tend to the advancement of knowledge in bee-culture, and we cordially invite those of our readers who are in a position to give any information with regard to the honey industry, in any part of the Australasian colonies, to do so. We shall also deem it a favour if all our bee-keeping friends will send us a general report for publication of their apiary and surroundings—that is, the number of colonies of bees in their possession, whether black or Ligurian, the kind of hive in use, their locality whether good or indifferent, the main honey plants in their district, and any other information that may be of value, in order that we may bring our industry prominently before the public.

We are endeavouring to make arrangements whereby we may secure regular contributors from amongst the most advanced bee-keepers in the Australasian colonies, and shall spare no pains in trying to make this Journal—what it is intended it should be—the authority in this country on all matters connected with bee-keeping. Of course, the success of a journal of this kind must necessarily depend in a great measure upon the number of its patrons; therefore we would ask our friends and subscribers to do all they can to assist us in our undertaking in the way of securing new subscribers, remembering that when helping us they are doing good to themselves. We shall take advantage of the first opportunity to enlarge the Journal, and to make every department as complete as possible.

As the Journal will have an extended circulation throughout the Australasian colonies, more especially amongst the agricultural and settler classes, we consider it will be second to none as an advertising medium between the trader and producer; and as our terms will be moderate, we hope to receive a fair share of support in this department.

In conclusion, we extend our greetings to all and sundry, and anticipate a bright future for bee-keeping in the Australasian colonies, and assure our friends that nothing shall be wanting on our part to make the production of honey one of our leading industries.

EDITORIAL.

CALENDAR—JULY.

IF the necessary attention has been given to the bees in preparing them for winter, very little will require to be done during this month. Although July is usually the most wet and stormy month of the year, we occasionally get some warm sunny days, when advantage should be taken of them to examine any stocks that are liable to be running short of food, or that may show signs of being out of order. Bottom boards of hives should also be cleaned where necessary, to destroy any eggs or larvæ of the bee-moth that may be secreted about them; the hive should be placed on a temporary bottom board alongside while this is being done. Any spare combs that are stowed away for next season's use should be examined, and fumigated with sulphur, if attacked by the larvæ of the bee-moth. The foregoing also applies to comb honey.

TO FUMIGATE COMBS.—Hang them in a small, close room—or, if only a few, a large tight box, such as a packing case, will do as well—take an old iron pot, put some ashes and hot embers in the bottom, and pour on the sulphur at the rate of one pound for every one hundred cubic feet contained in the room or other receptacle. Place the burning sulphur above the combs, and keep the room or box closed for two or three days.

FEEDING.—When feeding becomes necessary to supply a colony with winter stores, it should always be done, if possible, before cold weather sets in, as the bees can take the food more rapidly, and store it where it will be most required. The best food that can be given, of course, is honey; when this is at hand, a frame of sealed honey should be slightly warmed and placed in the centre of the cluster. Next to honey, a good thick syrup or candy made from sugar answers very well. Syrup may be made by adding a half-pint of water to every pound of sugar used—during very cold weather a little less water will be better—put into a saucepan and boil for a few minutes, keeping it stirred to prevent burning; when cool it will be ready for use. Candy—Take, say, 10lbs of sugar, add about three half-pints of water, mix well and boil till it becomes brittle. To test it, dip your finger into cold water, then in the candy, then back into the water. When it breaks easily from the end of your finger it is sufficiently boiled, and should be taken from the fire. As soon as it commences to cool round the side of the saucepan, keep stirring until it gets quite thick. It may then be poured into frames, and, when nearly cold, hang in the hive. Previous to pouring in the candy, the frame should be laid on a perfectly flat board or table, placing a piece of greased stiff paper between the frame and board. The edges of the paper may be lapped round the frame to prevent any candy running underneath. Before putting it in the hive, it would be advisable to take

a turn or two around the frame with a thin piece of wire to hold the candy secure should the bees eat away the upper portion first.

For feeding syrup, spare empty combs make excellent feeders. Fill the combs by immersing them in the liquid; hang them up to drain, and, when free from drips, hang in the hives. To guard against robbing, all food at this time of year should be placed within the hive.

During wet weather preparations should be made for the ensuing season's work, by making hives, &c., so that everything may be in readiness when required. Now is the time to study and plan for the future and to decide upon a mode of procedure for the coming season. Everything necessary should be done to keep the bees snug and warm, and the hives free from dampness, as excessive moisture in the hive is most injurious to the bees.

PROSPECTS OF FUTURE BEE-KEEPING IN NEW ZEALAND.

During the ten years of our experience of bee-culture in this country, more especially the last four years of it, we have had opportunities of forming a pretty correct idea of what the future of bee-keeping in New Zealand is likely to be. Through business and privately, we have been in communication with bee-keepers in all parts of the colony, from the most of whom we received reports of their doings each season. From these reports we have learnt that the majority of country settlers have been in the habit of keeping a few hives of bees under the old box-hive system, and that large quantities of honey has been raised annually, which has principally been kept for home consumption. The difficulties attending the culture of bees on the box-hive principle deterred many from having anything to do with them, and also prevented others keeping as many hives as they otherwise would have done. But, notwithstanding the disadvantages of the system, the reports went to show that bee-keeping was made highly profitable to those who devoted the necessary care and attention to their bees. The eagerness with which enquiries were made from all parts of the country—when we first began to give a description of modern apiarian appliances, and the method of using them, in the local papers—as to where the appliances could be procured, showed at once that bee-keepers were fully alive to the profits that would be attached to bee-keeping under an improved system.

In 1879 we first began to offer these appliances for sale, and since that time many hundreds of bee-keepers have availed themselves of the opportunity to procure them, and as our reports from some in this issue will show, with a very satisfactory result. Many of our first customers are so well pleased with the result of their experience during the past two or three seasons that they have now determined to devote the whole of their attention to bee-culture, and we feel convinced that, with the same careful management and heedfulness necessary to ensure success in any other occupation, that they will find it an exceedingly profitable undertaking.

One valuable item of knowledge we have gained by experience, and which has assisted us considerably in forming an opinion as to the future of bee-keeping in New Zealand, is the fact that we are not so liable here to those excessive fluctuations in the honey season experienced in most other countries. During our ten years of bee-keeping

we have found the seasons average remarkably well; only once in that time have we had what might be called a poor one—the season of 1880-81; even then, with the aid of modern appliances, we were enabled to take a considerable amount of surplus honey. This equality of the honey seasons we look upon as having a very important bearing upon the matter before us, for, with advantages in this respect, a lower average yield per season would pay better in the long run than if we were getting an extraordinary crop one season, and little or none for the two or three following.

Taking into consideration the mildness of our climate, the variety and excellence of our native flora as a bee pasturage, and the suitability of the country generally for bee-culture, it must be admitted that the bee-keeping industry in New Zealand has a bright future before it. Looking at the extraordinary progress that has been made in the industry in countries not nearly so well adapted for it as ours, and after taking an impartial view of the question in all its bearings, we firmly believe that as soon as scientific bee-culture is thoroughly understood by the majority of our bee-keepers, New Zealand will stand out as one of the foremost honey-producing countries of the world.

APICULTURE IN QUEENSLAND.

(For the *New Zealand and Australian Bee Journal*.)

C. FULLWOOD, BRISBANE

APICULTURE in this colony has sunk to a very low condition indeed. Bee-keeping, as known in America, being almost unknown here until recently.

Some years ago large quantities of bees were kept by farmers and others in a very primitive fashion, and the bush resounded with the hum of the "busy bee." Timber getters, wood carters, and aborigines frequently secured large quantities of honey from hollow trees; both the black bee and stingless bee, peculiar to Australia, were found almost everywhere. Gin cases, tea, or any kind of rough box was appropriated to bee use, and such is the climate, and the yield of honey so regular, that bees appear to thrive everywhere, and in any kind of hive, so long as they had a cover under which to build their comb and rear their brood. No skill was demanded in their management. Given a swarm—put it in a box, on a stand, under a sheet of bark; then look out for swarms in a few weeks; and, after a while, turn up the box, cut out some honey, or drive the bees into another box to go through the process of building and storing, to be again despoiled in like manner.

No thought about the destruction of brood, waste of honey and wax; no care about the queens. Would not know a queen from a drone, or their value in the hive. What matter if a few boxes (stock) perish? Such was the natural increase by swarming that a few losses were of no consequence.

Anybody could keep bees who had courage enough to rob them. The aborigines knew how to do it. "With a tomahawk and fire stick they would attack the "white-fellow sugar bag," and driving the bees with smoke, deprive them of their honey. "Pettigrew's old Irishman" was not required here to teach the Australian aborigines how to rob the bees by means of smoke.

A few years ago, however, a great change came over the land. A moth, unknown previously, commenced its ravages. The bees succumbed before it, and were rapidly swept away. Farmers owning, from 50 to 200 stock, lost all. The bees in the bush gave way also before the terrible onslaught, leaving the invader all but master of the field. Only a very few individuals, by dint of determined persevering watchfulness and care, managed to save a few stock amid the general devastation.

Bee-keeping naturally came to be viewed as a very precarious, risky and unprofitable business; and, although it has its charms for many, there are but two or three persons in the colony who have any number of stocks, or who attempt bee-keeping as a means of obtaining an income. Several attempts were made to introduce Italian bees, but until recently such attempts proved abortive. It has been affirmed that it was by means of the first attempt to introduce the Italians from America, that instead of Italian bees (that is living bees), the American moth, that has proved so awfully destructive, was introduced and acclimatised; and it really does appear to have been the case.

The writer of the present article, however, finally succeeded in safely landing from England five Italian queen bees, direct from the apiary of C. Biunconconi, of Italy. In another paper we will say how it was done and the result.

[We are glad to know that in Mr. Fullwood Queensland has at least one progressive apiarist; and his example will, no doubt, act as a stimulative to other bee-keepers to work their apiaries upon modern principles. We hope through the journal to be the means of placing bee-culture on a scientific basis throughout the whole of the Australasian colonies, and to point out methods by which the difficulties at present experienced may be overcome. We shall be very pleased to receive further papers from Mr. Fullwood.—Ed.]

OUR HONEY IMPORTS.

We clip the following from the *British Bee Journal*, for March and April, 1883:—

In accordance with my promise, I beg to subjoin the figures relating to this subject which I have just received from the principal of the Statistical Office. In his letter he remarks that the amount "seems small, but I suppose you would not expect large importations at this time of the year. I have no reason to believe that honey has been brought in to any other ports than those named. If there is anything wanting in accuracy at the start, I will do my best to improve upon our plan of acquiring the information as the months go on so as to have something that can be depended upon when the honey harvest arrives."

As we shall probably find these returns growing in interest from month to month, I make no apology for asking you to publish them.—E. H. BELLAIRES, Christchurch.

Value of honey imported in London, Jan. 1883:—

			£974
"	"	Liverpool	627
"	"	Newhaven	6
"	"	Harwich	5

£1612

The value of honey imported into the United Kingdom for February, 1883, amounted to £2,175.

HINTS ON ARRANGING HONEY-HOUSE, WORKSHOP, &c.

(For the N.Z. and A. Bee Journal)

R. WILKIN.

In answer to a question *re* the above, propounded by us, Mr. Wilkin sends the following:—

Most bee-keepers here place their honey-house at one end of their apiary, extract upstairs, and run the honey below where it is drawn off in a cellar. This can hardly be arranged on a piece of ground level enough for an apiary without having a great deal of carrying up and down stairs. As there is a great amount of running about during extracting time, everything in the apiary should be arranged to lessen steps as much as possible, especially as extracting must be done in a hurry, and at a time when skilled assistance is not readily obtainable. Having these points in view, I would place my dwelling ten or fifteen rods below the apiary, surrounding it with trees and vines to ward off the bees. The extracting house I would have in the centre of the apiary, as the carrying of the combs to and from the hives and extracting house is the most important part of the work. As you cannot have your workshop with piles of empty hives, lumber, &c., in your apiary, nor does it suit to have the necessary waggon road to the shop through it, I would make the upstairs of the honey-house my workshop. This building I would locate half way between the centre of the apiary and the dwelling house, for it is about the honey house and workshop that your tools accumulate, and this is the nearest point you can have them for convenience, both to the apiary and dwelling; and, being in line you are thus, in going to and from the apiary, passing just where you require to get or leave something. The extracting house need not be large; mine is 8ft x 12ft, with hives butted up against it. The materials are prepared and kept at the shop, while some for immediate use can at any time be placed in the centre of the apiary, especially empty combs and comb foundation.

The top of your wheelbarrow or wagon for conveying the combs to the extracting house, should come on a level with the table thereon, so that the combs can be put in through a sliding window on to the table without having to lift them. The table should be on a level with the top of the extractors and uncapping arrangement. The honey should run through a pipe from the extractors to the tank in basement of shop, the lower edge of the tank being about 20in. above the floor, for convenience of drawing off the contents. In this basement room you have your arrangements for canning and storing your honey, which can be loaded into a waggon at the door.

Having given this matter much thought, I believe I could say some things to a good purpose for the journals if I had the time. If you think there is anything in this worth publishing, you are welcome to publish it.

San Buenturo, California.

[Of course, we consider any information in connection with bee-culture, coming from so experienced an apiarist as Mr. Wilkin, to be of the greatest value, and shall account ourselves fortunate if we can secure him as a regular contributor to our columns, which we are now endeavouring to do.—Ed.]

CORRESPONDENCE.

A GREETING TO "THE NEW ZEALAND AND AUSTRALIAN BEE JOURNAL."

DEAR SIR,—It has given me great pleasure to hear of your intention to start a monthly Bee Journal for New Zealand. You have done a great deal already to promote bee-culture in this colony by your articles on the subject, which appeared some years ago in the local papers, and especially by the publication of your very practical and clearly-written "Bee Manual" in 1881, as well as by the example you furnished yourself in the adoption of all the latest improvements in apiary implements, and the arrangements you made for enabling colonial bee-keepers to supply their wants in those matters. Nothing you could now do would tend more to advance the same object than the establishment of a Journal devoted to that speciality, which may be the means of supplying the latest information as to the progress daily made, both at home and abroad, in bee-culture, to all those engaged in that most interesting and useful branch of industry, and which will afford them a convenient opportunity of exchanging their views and experiences, of offering and receiving useful suggestions and information.

Every bee-keeper in the colony, no matter how small his scale of operation, should be glad to avail himself of the advantages offered by such a medium of communication. I trust, therefore, that you may find an ample measure of support in your undertaking, and also that you shall find, in all parts of the colony, correspondents ready and willing to give, through your columns, an unreserved account of their personal experience, with a view to mutual instruction, and thus pave the way for the most practically useful application of every improvement in bee-culture to the peculiar circumstances of our country and climate. That these circumstances are in the highest degree favourable for the purpose has been my conviction since I came to know anything of them. Some three years ago I sought, in some articles upon rural industries, published in the local journal, to draw the attention of the settlers in this district to this amongst other points. There can be no doubt that every farmer would find his household account lessened in keeping a few hives, which he could easily attend to without at all neglecting his other farming business, and which would give an ample supply of honey for his family use, at a very small expense. But these hives must be of the proper sort, and worked upon proper principles. One or two such hives would be worth any number of the barbarous substitutes made out of old candle-boxes and leaky packing-cases, such as one often sees in country places. With the aid of your Bee Manual, and as a reader of your BEE JOURNAL, the farmer would find the working of these few hives on the improved system a source of pleasure and intellectual enjoyment, as well as of profit.

Beyond all this, however, is the more important question of carrying on the industry with a view to production of honey upon a large scale, and for export. This is, of course, a matter for those who are prepared to devote the necessary time, skill, capital and commercial energy to the working of large apiaries. I see no reason why New Zealand should not take one of

the first places as a honey producing country. But if this object is to be aimed at, there is every reason why those engaged in the attempt should work together cordially in seeking to establish a character for New Zealand honey, and in the endeavour, if possible, by the intelligent use of our natural advantages, to produce large quantities of the best article, and at the cheapest cost, than any other country, so as to compete on better terms in the foreign market. If such an attempt prove successful there can be no danger of overdoing the industry. The market for honey of acknowledged purity and good quality may be looked upon as unlimited—there need, therefore, be no jealousies between New Zealand and other countries. Let the Home markets be supplied in the first instance by all means, so as to relieve the colony from the reproach of having to import such an article from our friends across the Pacific. In this there will be, and ought to be competition enough; but the field is not very large, and the inducement, as to price, to undertake the extra trouble of putting up the honey in the small parcels, and in the style required to suit the retail markets, will not be found so great as to lead many into the competition.

In seeking to secure a footing in the wholesale market it is of the greatest importance to make a favourable impression as to quality in the first instance, and to keep up the character of the brand afterwards by scrupulous attention to grading of different qualities and the mode of packing. I happen to know, upon good authority, that some New Zealand honey has already got into the London market, which I am informed "was not up to the mark, and found poor sale;" while, as already said, there is, practically speaking, an unlimited demand for the best qualities. Now, we know that the honey gathered in the proper season here, and properly extracted and packed, is at least equal in quality to any we can get from California; we know, also, the importance of starting with a good name, and, therefore, we may easily see the benefit of united action on the part of the producers—not in a futile attempt to keep prices above their natural level—but in the endeavour to produce the best article at the lowest price. I hope that a general conviction of this truth will induce your correspondents to place at your disposal all kinds of information that may be calculated to make your journal practically useful. Any such that I may possess you can always command. I am only a novice in the art myself, and much more prepared to receive than to offer information; but I dare say the great majority of your readers will be in a similar condition. I believe, however, that, especially for beginners, a candid statement of actual experience, in which no attempt is made to disguise mistakes and failures, or exaggerate success, will be found the most useful. Acting in this spirit, I send you a short description of the apiary which my son and myself have started at this place, and an account of last season's operations. With the best wishes for the success of your journal. I remain,

THOS. J. MULVANY.

Bay View, Katikati, June, 1883.

[We tender our thanks to Mr. Mulvany for the kind manner in which he has referred to our endeavours to promote scientific bee-culture in these colonies, and can assure him and our readers that our best efforts will always be directed towards the same end.—Ed.]

ENCOURAGING WORDS.

SIR,—I have read your "Bee Manual" with great pleasure and profit, and must say that it is the best work on bees I have ever read. I can easily see that the profit and pleasure to be derived from bee-keeping may be more than doubled by following the system advocated by you. I may state that I have kept bees for several years, and have been in the habit of marketing my honey in open frames, made of two end pieces and battens all round, which fit into the top boxes, but since reading your "Manual" I have decided to adopt the Langstroth hive altogether. With regard to your directions for making the hive, you state "the end pieces on inside must be rabbeted three-quarters of an inch on;" and again, outside, three-eighths of an inch, which, added together, makes $1\frac{1}{8}$ inches. Even then, following your directions, as I understand them, I cannot make them fit. If I am wrong, please let me know.

QUEEN BEE.

[There is a slight misunderstanding. The "Manual" states, after giving the length of the pieces to form the hive: "The end pieces must be rabbeted on inside of upper edge, three-quarters of an inch on by three-eighths of an inch deep, to form shoulders for the ends of frames to rest on. The upper edge of the outside of both ends and sides should be rabbeted three-eighths of an inch on by five-sixteenths deep." Evidently you have misunderstood the meaning of the word "on." By "on" is meant on the board, i.e., from upper edge toward the bottom edge, and not through the thickness of the board. The depth of the rabbet is through the thickness, and as both rabbets are only three-eighths and five-sixteenths combined, there is still left about a quarter-of-an-inch of wood between them.—Ed.]

HUMBLE BEES FOR MATAMATA.

SOME few months ago Mr. J. C. Firth, the proprietor of the Matamata Apiary, with his characteristic thoughtfulness for anything that will benefit his adopted country, sent an order to England for a number of nests of the humble bee (*bombus terrestris*). By an unlucky mistake on the part of those at Home, the first consignment—contrary to the order—were shipped too late in the season, and, as might have been expected, the bees were found to be all dead on arrival. This is to be regretted very much, as no doubt the successful introduction and acclimatizing of the humble bee would prove a great benefit to the country, inasmuch as the fertilization of the red clover flowers might for a certainty be expected to follow, when farmers could save their own seed instead of having to import it as at present. Mr. J. C. Firth, nothing daunted by the failure, has already despatched another order Home for one hundred nests, with instructions to ship them as early as possible after the bees become dormant next season, which it is expected will be some time in November, when they would arrive here in January next, just at the time red clover is in full blossom. Every precaution will be taken to ensure the safe arrival of the bees, and I sincerely trust that every one of them may live to take flight at Matamata.

Matamata.

I. H.

REPORTS, &c.

We shall be glad to receive reports, &c., for this department from bee-keepers in all parts of the Australian colonies.

EXTRAORDINARY YIELD.

For the New Zealand and Australian Bee Journal.

HEREWITH I give you a report of my season's work for 1882-83: The honey season commenced with us in October and ended in February. White clover, dandelions, ti-tree, Scotch thistle, and flax are our principal honey plants. I started in the spring with 40 strong colonies and 20 nuclei and increased to 120, all Italianized. My yield of honey for the season was 9000lbs. of extracted and 2000lbs. comb-honey, which has all been sold at satisfactory prices. I have extracted as much as 520lbs. of white clover honey in one day, but it is impossible to extract flax honey, as it is so awfully thick; consequently, I was obliged to break up the combs and strain it.

SUPERIORITY OF ITALIAN BEES.—A word in favour of the Italian (Ligurian) bee. I got as much as 450 $\frac{1}{2}$ lbs., half extracted and half comb-honey, from one pure stock. I kept this hive on a scale to see how much was brought in daily. The greatest quantity gathered in one day was 19lbs. I can say that one Italian colony will produce as much honey as two black ones.

J. KARL.

Ohaupo, N.Z., May 22nd, 1883.

[The above gentleman is using the "Simplified Langstroth Hive," and was one of our first customers for hives, comb-foundation, extractor, &c., shortly after we started in business at the Thames. His report shows what can be done with bees under scientific management.—Ed.]

BEGINNING BEE-KEEPING.

SEEING that you are going to start a NEW ZEALAND AND AUSTRALIAN BEE JOURNAL, I write to wish you every success. Though I have nothing of any very special interest to communicate, still I fancy that an outline of what I have been doing during the last two seasons may possibly have sufficient interest to others, who, like myself, are beginners in apiculture, to be worth publication. Up to the winter season of 1881, I had never thought of bee keeping in any practical manner, nor had ever in my life had anything to do with handling bees, though I remember having seen them kept in the old straw skeps on the farm in the old country on which I was brought up. During the above-mentioned winter I happened to visit a friend for the purpose of borrowing some books to read, and, whilst overlooking his library, I accidentally came across Root's *ABC of Bee Culture*. I borrowed this from mere curiosity, being struck with some of the illustrations; on reading it I became so deeply interested that I determined to try and find out as soon as possible for myself whether these (to me) wonderful statements were facts or not. I set to work at once to find out someone

who kept bees, and, by great good luck, was directed at the outset of my enquiry to Mr. J. Karl, of Ohaupo, than whom, as you, sir, well know, I could not possibly have found a more obliging or more thoroughly competent guide to what I wanted. Mr. Karl at once showed me his bees (at that time all blacks), and answered all my questions. This, of course, led to further visits, and to my sending for five single story Langstroth hives, with frames and comb. In the spring I obtained four swarms from a neighbour—all in November, I think, but, unfortunately, I have not kept dates. I had intended getting five, but one swarm was such a big one when received, that I decided to top story it, and so used my fifth hive. During the season three of these swarms swarmed again; two of the swarms were hived successfully, one by my wife, the third cleared out; the two were hived in common boxes and had time to fill these before I received more "Langstroth's," when I transferred them successfully. I got an extractor that season, but got it late, as I had not originally intended getting it, so that the bees wasted a lot of time; but, in spite of this, and a lot of mismanagement on my part, I took some 3 cwt. (if not more) of honey, and left the six hives strong. In the autumn I got six more hives from neighbours, condemned bees which I drove—I actually drove seven, but united two. One other I found queenless; but got a queen given me from a handful of starving bees in a box, and introduced her successfully. The whole twelve colonies wintered all right, the six driven ones on candy, the others on their own honey. In early spring I moved them from Pukerimu to this place, a journey of some eleven miles, in a spring trap. When here, fed them with syrup in the open air every morning for a fortnight or so.

This season I have been working for increase, and have now 59 colonies in strong condition. The 12 increased to 47 almost entirely by dividing—two natural swarms among the lot, I think. Three more natural swarms cleared out, but I got three from elsewhere in their place, making a total of 50. I then drove no less than 22 condemned colonies from neighbours all round, making my total up to 72; but, on going through them to see that they were all right for winter, I found several of these so much lighter than I cared for (and besides had two good colonies queenless through having removed their queens to make room for Italians, which I expected, but was too late to get this season) that I united down to 60. During, or probably immediately after, some heavy rain, about a month or five weeks ago, a strong colony that had a leaky roof and got wet through, cleared out on their own account, leaving some honey behind them. So I now commence with 59. These are strong and comfortable, and I have great hopes for the coming season, as I intend to give all my time to the bees and do my best with them. I forgot to mention that of the above 69, eight are hybrids. Mr. Karl most good-naturedly gave me pieces of Italian worker brood, from which I reared queens. Three out of this eight have been hybrids for the greater part of the season, and have shown me most conclusively that they are far away ahead of the blacks for business qualities, but they are terribly cross. I propose to Italianize my whole apiary as soon as I conveniently can do so. As to honey, I am sorry that I cannot give any certain report; will be careful to do so

next year, but I am sure I am within the mark in stating that I have had 15cwt. this season; report as to increase I have given fully in the body of this letter. May I ask you, Mr. Editor, or some of your correspondents, to give us a few notes on feeding, more particularly: (1) Do bees in New Zealand winter as well on candy or syrup as on honey? (2) Is candy, or syrup run into empty combs, the best thing for winter feeding? (3) Is candy from white sugar much preferable to, or cheaper than, that from brown?

E. D. H. DALY.

Woodside Apiary,
Hautapu, Waikato, N.Z., May 28th, 1883.

[We have given the necessary instructions on feeding in our calendar for this month, but, in answer to your questions, we may state: 1st. We have wintered bees in New Zealand on candy and syrup with excellent results, but no doubt sealed honey is the best food for them. 2nd. Either will do, but candy should be run into frames (see calendar). 3rd. We believe the white or a good medium sugar to be preferable to the brown for making bee food.—Ed.]

BEE-KEEPING IN THE POVERTY BAY DISTRICT.

So you are going to give us a Bee Journal for New Zealand. I am heartily glad of it, and don't think it comes a day too soon. I am a subscriber to the American "Bee Journal," and am familiar with the names of Root, and Heddon, and Doolittle, and all the rest of the American apiarists, but I declare to you that with the exception of yourself and that enthusiastic experimentalist, Mr Adams, of Gisborne, I could not name a single bee-keeper in New Zealand who uses the moveable frame hive, and am in a state of profound ignorance as to the progress of bee-culture in the colony. This state of things the journal will put an end to, and it is to be hoped that every bee-keeper will subscribe and furnish regular reports. The journal will also be of service in finding customers for our honey, and by bringing it before the notice of the public, will be the means of increasing not only the supply, but the demand for honey.

It would be presumptuous in me, albeit armed by a diligent study of your "Manual," of "Root's ABC Book," "Cowan's British Bee-keeper," and the American journals, to give myself out as an authority on bees; on the contrary, at the close of a year's practical experience, I am more inclined to take what Mark Twain calls a "back seat in the ship," than at the beginning. I propose, therefore, in this article to confine myself to a description of Poverty Bay as a bee-keeping district; of the hive in general use therein; and of the various bee-keepers who use it.

My travels in New Zealand have been chiefly in the Middle Island. I have not been further North than Gisborne; but nowhere are there to be found richer alluvial flats, bearing an abundance of white clover, than in Poverty Bay. For an apiary I should select Makauri as the best district. Here there are miles of cabbage trees and extensive flax swamps on the flats, while the hills behind are covered with scrubby bush, and the soil is the richest in the Bay. The drawback

to much of the district is its liability to be flooded by the overflow of the Waiapoa River, which would be fatal to an apiary unless each hive was raised considerably above the ground.

Coming to the matter of the hive in use, I fear the Yankees would class us among the old foggy bee-keepers. We have a hive which we have used for many years; we have discovered nothing better, therefore nothing better exists. What do we want with artificial comb? Do you think the bees don't know the best way to do their own work? And who is going to work night and day extracting comb, one at a time, when we can strain the whole lot at once? Besides you say you have no wax, and that pays. These are a sample of the arguments your journal may do something to refute. There is a fertile mission for it here.

In its way our hive is not a bad one. It is not a gin case, though lots of gin cases and worse substitutes are to be found. The hives used in most apiaries consists of a detached bottom board, a case 16in x 10in, 8in deep, with a number of battens along the top, another case for surplus honey fitting over this, but only 6 inches in depth, and a flat top over all; the combs of course are fixtures. As a box hive, the only objection to this one is its style. It is too small. In November and December, when clover is in full bloom, and almost every plant is bearing honey, the queen is in charge of the surplus honey case, and two-thirds of the space is filled with brood. Some bee-keepers delay taking honey till the brood has hatched and the combs are filled up with honey; the majority take off the boxes, cut out and throw away the brood (Maoris are less wasteful, for they eat it) and replace the empty box; but I have only seen one bee-keeper who tiered up the cases and practised returning swarms to the hives.

Almost every farmer keeps a few hives, but till very recently there was only one apiary at Roseland, about three miles from Gisborne, now in the occupation of Mr W. Knights. Mr Knights has occasionally advised me to burn my Langstroth hives. His argument is that his hives cost four shillings, whereas mine are three times that price, and though I may assert that they are capable of producing three times as much honey, not yet being able to demonstrate the fact, he has yet to be convinced of their superiority. Nevertheless he is a most excellent bee-keeper, and has introduced some great improvements into the apiary, both by enlarging the size of the hive, and by the very attractive boxes of comb honey he is now producing. These boxes are framed of wood, with glass sides, and hold 5lbs of honey. On the top of the brood hive is a board with holes bored through it, and over each hole is placed a box which the bees enter and fill with honey. Mr Knights hopes soon to have thousands of these boxes every season, and aims at finding a market in England where comb-honey always commands a good price. At present the bulk of the honey is strained, and the yield from four hundred hives is, I believe, about four tons.

Next in importance to the Roseland Apiary is that of Mr. Thomas U'Ren, Te Arai. This gentleman is a born bee-keeper. His apiary is a pattern of neatness. He thoroughly understands the handling of bees, so far as bees are handled under the old system, and I would specially point him out to you as a promising subject

for proselytism. He is particularly directing his attention to the making of honey wines, which he is confident will pay better than honey. This season he made twenty casks of grape, peach, elder and other wines. Not much over a ton of honey was required, yet he reckons these casks worth £10 each. A license is required for this branch of the business; but, in Maori districts especially, there is no doubt of it paying, and Mr. U'Ren will probably utilise the bulk of his yield next season in the making of wine. He has 254 hives, and his yield last season was 2½ tons. This was much below the average, but it was a poor season for honey in this district. The year before he had three tons from much fewer hives.

Mr. Bolton, schoolmaster, of Matawhero, is a very enthusiastic bee-keeper. He is well read up on the subject, and knows what to do—but does not do it. He began in the proper way; he even got the length of importing Ligurian queens, if I am not mistaken; but latterly his scholastic have interfered with his bee-keeping duties, and the bees have had to content themselves with working away in the good old style. Mr. Bolton has just taken a farm of 70 acres, and means to make a specialty of bee-farming, and his knowledge of the art and mechanical ingenuity will, no doubt, enable him to take a leading place among the apiarist of the Bay.

Some of the farmers who keep bees, such as Mr. J. Hammond, Mr. Cahill, and Mr. Saddler adopt the plan of selling the honey in the rough, thus saving themselves all trouble, except securing the swarms. The price asked is 2d to 2½d. Having bought some at the latter price, I found the amount of bee-bread and other unsaleable matter so excessive, that it simply doubled the price, so I gave it up as a bad spec.

Of bee-keepers who use Langstroth hives, and have adopted the modern improvements, there are two—Mr. Adams, stationer, of Gisborne, who has a very nice little experimental apiary of 10 or 12 hives, and myself. My apiary is stationed at Ormond, a district not to be compared in fertility with Makauri and other parts of the Bay, but as I was unsuccessful in getting a suitable place elsewhere, I made a start here. I stocked the apiary with 50 small box hives, bought from Mr. J. Hammond, and sent to Bagnall Bros. for 100 Langstroth hives in the flat. Had I got my hives earlier in the season I would have transferred the swarms to Langstroth hives, but long before I was ready swarming commenced, so I contented myself with securing every swarm, and increase being the main object, did not return any to the hives. I have now 80 in Langstroth hives. I extracted 2000lbs. from 48 of these; the remainder, being January and February swarms, I did not disturb. One difficulty I met with, and I would like to know the experience of other bee-keepers on this point: The honey from flax was so thick that it would scarcely extract, and I found myself at the very start breaking down heavy combs again and again, and only securing a small quantity of the honey in them. In January and February all went well; the honey was light in colour and ran easily, and the bulk of my crop was gathered in these months. To get over the difficulty as much as possible I intend to turn out comb-honey in the first part of the season and to extract later on.

On the whole I am well enough satisfied with the result of my venture. I did not expect in my first season to do much more than accumulate swarms, but I find that my yield per hive is beyond that of any other bee-keeper in the Bay, which is an encouragement to persevere.

The weather here, during April and May, has been very wet, and the bees have not been able to gather any honey for winter use. As a result, a great deal of robbing has been going on, and my small box hives have dwindled down to 30. If I succeed in wintering these I will transfer them to Langstroth hives in spring. Meantime, if the stores get very low, I shall resort to feeding. Winter is short here; gorse hedges will soon be blooming, and in little over two months the young willow-leaves begin to shoot, while the gums and acacias are in full bloom now; so, if the weather is fine, the bees can always pick up a living.

GEORGE STEPHENSON.

Ormond, 26th May, 1883.

FROM OUR CONTEMPORARIES.

FOUL BROOD AND ITS CURE.

THE following paper by Mr. C. F. Muth, a gentleman who has made the above disease his particular study, was read by him before the National Bee-keepers' Convention at Cincinnati, U. S. A.:—

It is gratifying to observe the growing attention paid by bee-keepers in this country to the dangers of the spread of foul brood. Utah has a bee inspector in every county, a State officer, drawing pay from the State. It would be a move in the right direction if other States would imitate our Mormon brethren in this especial particular, since bee-keeping has become so important a factor in the commonwealth of the country.

It is very essential for every bee-keeper to know his position in regard to foul brood, should it make its appearance in his apiary, as the pleasures and profits would be destroyed if this pest is permitted to become predominant in his neighbourhood. A country like ours, where an abundance of forest trees afford homes for absconding swarms, is very favourable for the spreading of the disease. There would be no end to foul brood in a neighbourhood, after a number of bee-trees become infested, as every bee running over those devastated combs for years afterward, is liable to take home to its own hive the germs of the disease. Let us, therefore, be on our guard.

Foul brood is a disease, imported, and spreads by contagious spores. It is of vegetable growth—a fungus. Little specks of it, hardly discernible with the naked eye, are carried along on the legs of the bees running over infested combs. Wherever one of the spores drops into a cell containing larva, the larva dies, changing soon into a brownish putrid mass, settling into the lower corner of the cell, and foul brood begins its growth. It happens that larvæ are affected and die just before the cells are capped, or while the bees are performing their usual labour, capping, unconscious of the trouble below. We find those cells, a few weeks afterwards, perforated at or near the centre,

and easily recognize them as diseased. Larvæ in uncapped cells, killed by this disease, settle into the lower corner as a ropish substance, and dry up in the course of time in a hard, coffee-coloured mass. They are easily recognized.

Bees continually running over these cells will soon carry the micrococcus to a large number of others containing larvæ, until every comb is affected. The putrid stench becomes so strong in the hive that often the bees swarm out in despair, unable, however, to rid themselves of the curse of foul brood adhering to their bodies. The disease does not affect old bees, but, killing off the young, soon decimates a colony.

Micrococcus dropped into empty cells, or cells containing honey or pollen, may remain dormant for years. As soon, however, as the queen deposits eggs in such cells, and they develop into larvæ, the trouble commences. I have had a case where the spores from an infected hive were hidden among the fissures of a plank exposed to the weather for more than twelve months, and were ready to do the mischief the following season when I put a hive on that plank, the bees ran over it and dragged in with them the germ of foul brood.

Dr. Schönfeld has taught us the true nature of foul brood, and that its growth is destroyed by salicylic acid, while Mr. Emil Hilbert found the proper proportion and application whereby foul brood is destroyed without injury to animal or life. Mr. Hilbert applied his medicine by means of an atomizer, subjecting every comb, cell and bee to a spray of the same. Every infected cell had to be disinfected, as also every comb and frame, and the inside of the hive and adjoining surroundings. Several thorough treatments of this kind will cure a colony of foul brood. I have cured quite a number of them in this manner, and speak from experience.

The only objection I now have to the above method is that bees from other hives visit the combs under treatment in your hands, or the open hive before you, and take the spores home with them, and by the time one colony is cured we may find a number of others affected. So it was with me in spite of the greatest care. Mr. Hilbert treats his diseased colonies in a closed room, so that no bees from other hives have access during the time of treatment.

I had come to the conclusion that it was the cheapest and safest remedy to destroy an infected colony, with all the brood, combs and every bee belonging to it. However, I learned a better method this summer. A neighbour offered me, in March, two empty hives and combs, the bees from which had died during winter and were robbed by other bees, as he stated. I was convinced at first sight that those bees had died of foul brood, and sent a warning, to look out, to my neighbouring bee-keepers, one of whom discovered one of his hives affected afterwards and burned it up. In April I discovered two colonies in my apiary affected with the disease. I brimstoned the bees the same evening, burned up the combs and frames, and disinfected the hives. Another colony showed it in May. Feeling sorry to kill a beautiful queen, besides a very strong colony of pure Italians, I brushed them on ten frames of comb foundation, into a clean hive, and placed over them a jar with food, as I shall describe hereafter. The old combs and frames were burned up, and the hives disinfected. This feeding was kept up until all the sheets of comb foundation were built out nicely and filled with brood and honey. It was a beautiful colony of bees about four weeks

afterwards, full of healthy brood, and with combs as regular as can only be made by the aid of comb foundation. Four more colonies were discovered infected, one after another. All went through the same process, and every one is a healthy colony at present. I was so convinced of the completeness of this cure, that I introduced into one of these colonies my first Cyprian queen sent me by friend Dadant.

All are doing finely now, and no more foul brood. Should, however, another one of my colonies show signs of the disease, it would not be because it had caught it from its neighbour which I had attempted to cure, but because the germ of foul brood was hidden somewhere in the hive, and of late had come in contact with a larva.

The formula of the mixture is as follows:—

16 gr. salicylic acid
16 gr. soda borax
1 oz. water.

I kept on hand a bottle of this mixture, so as to be always ready for an emergency; also a druggist's ounce glass, so that I may know what I am doing. My food was honey, with about 25 per cent. water adding. But we may feed honey or sugar syrup, added to every quart of food an ounce of the above mixture. Bees being without comb and brood, partake of it readily, and by the time their comb foundation is built out, you will find your colony in a healthy and prosperous condition.

Thus you see foul brood can be rooted out completely, and without an extra amount of trouble, provided you are sufficiently impressed with its dangerous, insidious character and are prepared to meet it promptly on its first appearance.

When an atomizer is used on combs and larvæ, the medicine should be only half as strong as given in the formula.

HONEY AS AN ARTICLE OF FOOD.

THE following is taken from a valuable little pamphlet entitled, "Honey as Food and Medicine," published by Mr. T. G. Newman, editor of the *American Bee Journal*, Chicago:—

Pliny speaks of Ruinilius Pollio, who possessed marvellous health and strength, at over 100 years of age. Upon being presented to the Emperor Augustus, who inquired the secret of his liveliness of spirits and strength of body at so great an age—he answered: "*Interus melle; exterus oleo*"—Internally through honey; externally through oil.

Among all the myriads of insects, there certainly is none, the product of whose industry is more pleasant and tempting to the palate—more nutritious and health-giving to the body, or more valuable as an article of commerce, than the product by the Bee—delicious and immaculately-pure honey.

How astonishingly appropriate is even its name—Honey! Derived from the Hebrew word *ghoney*, literally it means DELIGHT. Humanity may, therefore, delight itself with Honey, as long as the sun endureth!

Its early history shows that it was for ages man's principal source of nourishment—and wherever civilization extended its sway, the "little busy bee" was carried as its companion and co-worker in the cause of elevation and refinement.

Why, then, did honey lose its honored place as an article of food? The introduction of sugar gave it the first blow; its use became general in the seventeenth century—and as its use increased, the use of honey decreased, until at length the bee-masters' guild was abolished, and the skill and experience of the old bee-masters were lost.

The introduction of the vile compounds, known as "Table

Syrups," with their impurities and adulterations, has had the effect of opening the eyes of consumers, and of re-opening for honey its God-given place as an article of food. Instead of dealing disease and death promiscuously to those who indulge in its use, as do these syrups, honey gives mankind, in the most agreeable manner, both food and medicine.

It is a common expression that honey is a luxury, having nothing to do with the life-giving principle. This is an error—honey is food in one of its most concentrated forms. True, it does not add so much to the growth of muscle as does beefsteak, but it does impart other properties, no less necessary to health and vigorous physical and intellectual action! It gives warmth to the system, arouses nervous energy, and gives vigor to all the vital functions. To the laborer, it gives strength—to the business man, mental force. Its effects are not like ordinary stimulants, such as spirits, &c., but it produces a healthy action, the results of which are pleasing and permanent—a sweet disposition and a bright intellect.

The use of honey instead of sugar for almost every kind of cooking, is as pleasant for the palate as it is healthy for the stomach. In preparing blackberry, raspberry or strawberry short cake, it is infinitely superior.

Pure honey should always be freely used in every family—Honey eaten upon wheat bread is very beneficial to health.

Children would rather eat bread and honey than bread and butter; one pound of honey will reach as far as two pounds of butter, and has, besides, the advantage that it is far more healthy and pleasant-tasted, and always remains good, while butter soon becomes rancid and often produces cramp in the stomach, eructations, sourness, vomiting and diarrhoea.

Well-purified honey has the quality of preserving, for a long time in a fresh state, anything that may be laid in it or mixed with it, and to prevent its corrupting in a far superior manner to sugar; thus many species of fruit may be preserved by being laid in honey, and by this means will obtain a pleasant taste and give to the stomach a healthy tone. One who has once tried it, will not use sugar for preserving fruit; besides, honey sweetens far more than sugar.

In fact, honey may replace sugar as an ingredient in the cooking of almost any article of food—and at the same time greatly add to its relish.

Digestion (all-potent in its effects on the mind as well as the body) depends largely on the food. Poor food received into a poor stomach is the cause of many unhappy homes—while good, healthy food, received into a healthy stomach becomes "an Angel of Peace" to many a household.

HONEY MARKETS.

We shall be in a position, shortly, to give monthly quotations from the principle honey markets of the world.

EXTRACTED HONEY.

AUCKLAND, July 2nd, 1883.

The demand for extracted honey is very good. Up to the present California has supplied the market but the superiority of the local article has completely closed up the importation. Prices at present are—for 1lb tins, wholesale, 8s 3d to 8s 6d per doz.; retail, 10d to 1s per lb.

AUCKLAND AGRICULTURAL AND MERCANTILE Co., Limited.

AMERICAN HONEY.

A little of this still remains upon the market. Prices—2lbs glassed, wholesale, 24s per doz.; retail 2s 6d per 2lb.; 1lb, wholesale, 12s per doz.; retail, 1s 3d per lb.

COMB HONEY.

Very little in the market; demand fair. Prices for first-class, well filled sections, wholesale, 9s per doz.; retail, 1s per lb.

EXPERIMENTS IN COMB BUILDING.

BY PAUL L. VIALLON.

To ascertain the quantity of honey or sugar required to build one square foot of comb, and the quantity of honey required for one pound of wax, the following were my experiments:

I took the bees from two colonies, putting them in two empty hives, and confined them in a room arranged for the purpose. I gave them nothing but water for two days, so that I would be certain they would have used all the honey taken during the shaking and brushing into the empty hives. In two cases during my experiments I had to feed after twelve hours, as they showed signs of starvation. Before feeding, I took care to clean out and scrape all the combs they had made. The hives were numbered one and two, the bees weighed every time, so as to always have as much as possible the same amount of bees. Number one contained five and three-fourth lbs., and number two five and one-half pounds of bees.

Fed number one with two pounds of brown sugar made into syrup, and number two with two pounds of white sugar also made into syrup. Number one gave 167 square inches of comb, and number two sixty-eight square inches. I reversed the feeding, and number one gave seventy-seven inches, and number two 148 inches. I fed each with two pounds of honey, and got from number one fifty-five inches, and from number two forty-eight inches. The forty-five inches of comb, including all scrapings, weighed two and one-fourth ounces, and its average thickness one and one-eighth inches. Judging from that, it would take fourteen pounds of honey (without pollen) to make one pound of wax.

By taking the average, it would take about two pounds of brown sugar, four pounds of white sugar, and nearly six pounds of honey to make one square foot of comb of an average thickness of one and one-eighth inches. But as the combs were thicker than those generally built naturally, we may safely reduce the above quantities one-fourth to one-third per cent. Now, as we know from analysis, that honey contains from forty-five to fifty per cent. of grape sugar, we may account for the difference of results between sugar and honey, and I am certain that in a flow of nectar that more inches would be built and more wax secreted from the same amount of saccharine matter, as nectar is composed of fifty-five to sixty per cent. of cane sugar and contains no grape sugar. Having no grape sugar I could not experiment on it so as to see if bees would build combs with it only. I have repeated these experiments several times with but slight variations.

As the above experiments were made without pollen, I went over the same with pollen, and the result was a gain of about fifteen per cent. in inches and quantity of wax. In each experiment I changed bees so as to always have old and young, and always have the queen with the bees. I would also state that it was not always the colony containing the most bees which gave the most wax, and on one occasion using a smaller hive three and one-half pounds of bees gave about the same result.

During the above experiments I had a chance to observe the eggs laid by the queens which they would do moderately as the combs were built, and noticed that when fed with sugar the eggs were removed by the bees; in one instance a few remained in the cells and seemed to be dead, nearly as soon as hatched; with the honey a few eggs would hatch, but the young worm would be invariably removed in two or three days. This living of the worm was due, I suppose to the small quantity of pollen contained in the honey, as, after diluting the honey and filtering it, the result was the same as with sugar. I went so far as to give them a frame containing eggs and larvae one day old, taking care that there was not a grain of pollen, and continued the feeding with honey, and in twenty-four or thirty hours all the eggs and larvae had been removed by the bees. After several other trials

with negative results, I collected some pollen from some combs and gave it to them during the feeding, and in every case the eggs hatched and the worms went through all the ordinary phases and hatched perfect bees, and I came to the conclusion that without pollen or a substitute, no brood was reared. In all the operations, I always had some water in the hive.

As these experiments were made in confinement, I intend to repeat those in regard to the quantity of honey required to make one pound of wax in the open air, as soon as there is no flow of nectar from the field, though there is always a little; but I will place another hive with the same amount of bees on a scale and watch if there is any honey coming in during the experiment, and deduct the difference. If it was possible to obtain enough nectar, I am certain the result would be the same as with brown sugar, and that not more than five or six pounds of honey is required to make one pound of wax. I believe that in the open air the bee will give more wax, as being at liberty they will work with courage.

By these experiments, you will see that some of the feed is stored in the cells, and the feeding must be pushed a little further, and when the combs are removed, they must be weighed with the little honey in them, these washed and reweighed after they are dried, and the amount of honey deducted, etc., from the amount fed.

You will excuse me if I do not enter into more minute details, but I think that you will fully understand how the experiments were made, and that you will be able to repeat them, and I hope your result may corroborate mine. Do not be afraid to ask for more details, as I am at your service, and will cheerfully give them.

Bayon Goula, La.—*Bee and Poultry Magazine*, for March, 1883.

NOTICES TO CORRESPONDENTS.

JAMES CRUICKSHANK, Greenlaw, Matakana.—Write to Messrs Bagnall Bros. and Co., Turua, Thames, for a price list of their Extractors, Smokers, &c. We expect to have some seeds for sale in the spring, when we will advertise the same in the JOURNAL.

C. W. B., Te Korito, Wanganui.—We do not advertise Cyprian bees. As far as appearances are concerned, we do not see any difference between our Holyland and Italian bees. We know that the Holylanders raise more brood than the Italians, but have not yet had an opportunity to thoroughly test their honey-gathering qualities as against the latter variety.

R. B., Newcastle, N.S.W.—The second edition of the *New Zealand Bee Manual* has been published. Write to the publishers, Messrs Champtaloup and Cooper, Auckland, N.Z., who will, no doubt, supply you.

AN exchange remarks: The sting of a bee, it is said, when compared with the point of a fine needle under a powerful magnifying glass, is scarcely discernible. But the trouble is, that when a man gets a bee sting, he forgets to compare it with a needle; hence it always is discernible, and by a large majority.

THE STRENGTH OF BEES.—The *Norristown Herald* makes the following comparison between the strength of bees and horses:—Mons. Pateau has discovered that while a horse can pull only six-sevenths of its weight, a bee can pull twenty times its weight. When some one discovers how to grow bees as large as horses, the latter will have to take a back seat. But it would be fatal to fool around the heels of such a bee. With its javelin it could pin a man against the side of the stable. Perhaps it would be better not to raise bees any larger than the present crop.

QUERIES AND REPLIES.

We shall from time to time give replies through this department to questions pertaining to bee-culture, propounded by our subscribers. We would ask our correspondents to be as concise as possible, and to number their questions 1, 2, 3, and so on.

QUERY.—Diseased Bees.—Will you give me your opinion and advice concerning a disease which is among the bees in this district. On looking over the combs of some affected colonies, I find them partly filled with dead brood, the same as you describe under the head of "Foul Brood," in your *Bee Manual*—"brown and salvy." The caps of the cells concave instead of convex, and have a little hole through them. I have never seen it mentioned in any work on bee-culture when speaking of foul brood, that the old bees die off in hundreds. Last spring I had four strong stocks in box hives affected in this way. I had just got some hives from Bagnall Bros., so I drove the bees into the clean boxes, let them work in there for a week, and then put them in the new hives on comb foundation. They all worked well until a month ago, when I saw one had foul brood in the combs, and the old bees commenced dying in great numbers every day until I thought it was time to destroy them. The other three stocks, as far as I can see, are doing first class.—
J. L., Bulls, Rangatikei, Wellington.

REPLY.—From your description of the disease affecting your bees, there can be no doubt, we think, about its being a case of foul brood, although this would not cause the old bees to die off, as it is only a disease of the brood, and not of the bees. Possibly the colony had become weak, and robber bees had attacked it, in which case the large number of dead bees you speak of would be accounted for. We would advise the most stringent measures being adopted to eradicate the disease. In another column will be found a paper on "Foul Brood and its Cure."

QUERY.—Transferring Bees. I have several colonies of bees in box hives, and after reading your *Bee Manual* have decided to start on the scientific method. I see you recommend transferring in early spring. Would it be better to allow the bees to swarm first, putting the swarms into improved hives, and then transfer the box hives afterwards?
E. B., Dunedin.

REPLY.—No; it would certainly not be the better way. The sooner you can get the bees transferred the more profitable you will find them, as, when once in movable comb hives, with proper management, a very much larger increase could be procured, if increase were required. We have known cases when half the season has been lost through waiting for box hives to swarm.

QUERY.—R. H., North Oruawhoro.—Having taken an interest lately in bee matters, and perused your book in which I have found a great deal of fresh information, I find one or two things therein I don't quite understand, and should be obliged if you will kindly explain. 1st. Will comb out of other swarms do instead of foundation, say out of a rata tree? 2nd. Is it better to fill the frames with comb, or will narrow strips do to cause the bees to work straight? 3rd. Where do the tin separators go? 4th. What is the value of honey per pound. I have four swarms on the old gin case system. I sold ten shillings worth of honey last year, not "bilge water," but equal to the best, at fourpence per pound. I could have sold more if I had had it. I do not sulphur the bees but go dressed, lift the box, shake it, and when I think most of the bees are out, I dump the box on the ground, clear the bees that stick to the comb, gather them up and put them into the box again after the comb is

out. One stock has remained, after being treated in this way three times, but most of the others, after collecting themselves together, clear out. I should have had one dozen swarms if they had remained. Of course, since reading your book, I mean to turn over a new leaf. I have since found out where the tin separators go.

REPLY.—1st. Yes; providing it be nice, clean, straight-worker comb, otherwise it would be better to melt it into wax. 2nd. Narrow strips will do to make the bees build straight combs; but the profit of using comb foundation lies in giving the bees all they require. 3rd. requires no answer. 4th. It depends upon the kind, whether comb or extracted, quality, and your market. At Auckland and Thames we have been getting ninepence per pound for comb, and eightpence for extracted, wholesale. At present there is really no market quotations for local honey in New Zealand that we are aware of, which state of things alone shows the necessity of bee-keepers supporting a representative journal. [Since the above was in type we have obtained the Auckland quotations which see.] We do not wonder that the bees "clear out" after such treatment as you describe. We really cannot tell which would be the most humane to sulphur or dump the bees. We are, however, very pleased to hear that you intend to follow the instructions given in the *Manual*, and that it has been the means of preventing further cruelty on your part.

QUERY.—T. O'R., Hampden, Nelson. One of my little girls got a swarm of bees two years back and they have increased very rapidly as she has now 21 boxes of bees, besides a great many swarms have absconded. They are all in gin cases and I see no way of getting the honey at any time except by the old process of destroying the bees, which I consider a most barbarous practise. In looking over your *Bee Manual* I find that it gives very clear instructions on the improved methods of bee-culture. What I would like to know is this—would it be better to keep the bees until I could transfer them into proper frame hives than have recourse to the objectionable mode of killing them to obtain their honey?

REPLY.—By all means keep the bees and procure, or make, frame hives ready to transfer them into in the spring. We cannot see the necessity of asking such a question when you have our *Manual* on hand.

SPECIAL NOTICES.

QUERY AND REPLY DEPARTMENT.—Correspondence for this department should reach the editor not later than the 15th of each month, when replies are required in the next issue.

ADVERTISING DEPARTMENT.—Advertisements for the next issue should reach the publisher by the 24th of each month.

SUBSCRIPTIONS, ETC.—P.O. orders for Subscriptions, Advertisements, &c. to be made payable at chief P. O., Auckland, and drawn in favour of Mr J. C. Firth.

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Our Correspondents will oblige by writing articles for publication on one side of the sheet only.

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