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West Maitland, N.S.W.: E. Tipper, February 28, 1903

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MAITLAND, N.S.W.—FEBRUARY 28, 1903.

The following is a list of advertisers in our present issue :—

Supply Dealers.

R. K. Allport, Chuter St., North Sydney.
A. Hordern & Sons, Haymarket, Sydney.
The W. T. Falconer Manufacturing Co.,
Jamestown, N.Y., U.S.A.
Beuhne, Tooborac, Victoria.

Queen Raisers.

W. Abram, Beecroft.
Jas. McFarlane, Lyndhurst, Victoria.
J. W. Miner, Ronda, N.C., U.S.A.
R. H. Jervis, Moss Vale, N.S.W.

Honey Tins.

Chown Bros. and Mullholland, Ltd.,
Thomas St., Ultimo, Sydney.
W. L. Davey, Plenty Rd, South Preston
Victoria.

Miscellaneous.

A. Hordern & Sons, Haymarket only,
Sydney.
Allen & Co, 242 Sussex street, Sydney
P. J. Moy & Co., 161 Sussex St, Sydney

Foundation.

R. Beuhne, Tooborac, Victoria.

WORK FOR THE MONTH.

Some seasons swarming will be in full swing up till the end of March. This season, with us, there has been scarcely any attempt at swarming. Where such has taken place, the clipping of the queen's wing enables her to be found on the ground quickly. Remove the hive, and put another in its place, with a frame containing larvæ and some starters. Place queen in same, and the swarm will soon return. See in the removed hive, there are not too many queen cells. Leave one good one. Being depleted of the swarm that has gone out, and also the body of field bees, they are not likely to swarm again. If you do not wish for increase you may destroy the queen or the cell, and place new hives on top of old in a few days time. Should you in looking over your hives see queen cells formed or forming, as if they were preparing to swarm, follow the same treatment.

See hives have enough honey in them to last through the winter. It is well still to watch for queen cells, as we have known swarming right up to March.

Do not give sealed brood to a young swarm—only uncapped larvae.

It is a well-proved axiom that the road to fortune is not through a beehive.

Light weight buckskin gloves are recommended by Miss Emma Wilson for lady beekeepers.

In some of the United States bee hives are taxed, their value being put at 2 dollars a colony, and the rates about 3 cents a dollar.

Mr. E. J. Rien writes us he has purchased an out apiary, and his hives now number 102.

A solar extractor may be used to liquify honey in small glass or tin receptacles if such is needed.

One way of curing robbing—Exchange colonies, the one being robbed with that of the robbers.

People who cannot eat honey raw can do so by bringing it slowly to a boil, and then cooling—*Exchange*.

We have had our usual autumn visitation from bee martins. A few being shot, the others clear away.

One of the most extensive German beekeepers is H. Thie, claiming to have 14 out yards of 200 colonies each

ERRATA.—In our last issue, page 233, 17th line second column, "Rum" honey should have read "Run" honey.

A solution of copper sulphate is recommended for subduing grass around hives. Better than salt, as that attracts stock.

A colony is in best condition to raise queen cells in from one to four hours after being made queenless and broodless.

The Schedule of the Royal Agricultural Show this year offers prizes for "Wax, natural colour." Has any one been getting prizes for unnatural colored wax?

The Annual Meeting of N. S. W. Bee Farmers' Association will take place at Tattersall's Chambers, Hunter Street, Sydney, on Wednesday, April 15, at two o'clock prompt.

We have done our best, without prejudice, to give all possible information on the state of the honey industry and markets in all parts of the world. We thought all our subscribers knew this.

Two young men in our neighbourhood lately went to considerable trouble to cut down a bee tree, getting two good buckets of honey from same. They boasted much of it to their neighbours. They did not tell however, how long they were cutting it down, and how one got a bung eye; or that, the bees attacked them so viciously, they had to leave the honey,

and when going for it next day, found the bees had taken every bit of it away. A honey flow had just ceased, and the open honey had brought robbers.

Our neighbour, Mr. Barnard who is not only a beekeeper but an orchardist, one night recently had a large quantity of fruit stolen off his trees. In fact some of the peach trees were thoroughly stripped. How contemptible are some human creatures.

The first general yearly meeting of members of the Jamaica Beekeepers' Association took place on 4th December. Some 50 members were present. The report told that 1,307 packages of honey and 7,631 lbs. of wax had been shipped by the Association. The roll contains the names of 163 persons.

W. Gunther said in an address before a convention in Hungary that it was generally accepted: the production of one pound of wax cost the bees anywhere from ten to twenty pounds of honey. He had experimented along that line lately had come to the conclusion that favorable conditions six pounds of wax would be sufficient to produce one pound of wax.

"What nice bread this is! Mr. John's baker's bread, is it not?" "No, I make all my own bread." "What yeast do you use?" "A half-cupful of honey, a pinch of tartaric acid, a little flour, and some water. I prefer dark honey for it." "Well, I would not wish for better bread." In the dry weather bread made with honey yeast does not get so dry as bread made with other yeast. In the United States the large bakers are among the greatest honey buyers.

We have received from W. W. Taylor, Chief of the Department of Agriculture for the Louisiana Purchase Exhibition of 1904 revised classification of exhibits. This promises to be a very great affair, but as there is a duty of twopence per lb. on all honey sent to the United States, not much benefit is likely to accrue to Australia from such exhibition. Those, however, who may have the opportunity of

visiting such may gain a vast amount of valuable information. The classification to hand is very extensive. We shall be pleased to let any of our subscribers who desire such have same.

A Brazilian beekeeper has invented a honey—extractor by which the honey from both sides of a comb may be thrown out at one operator.

PUBLICATIONS RECEIVED.

Wragge, a publication edited and owned by Clement L. Wragge, the well-known meteorologist. In addition to very valuable reading in meteorology, gravitation and astronomy, there are weekly forecasts which are copyright, and for which he claims accuracy to the extent of at least 70 per cent, the daily forecasts giving 95 per cent of accuracy. There is a supplement *The Kosciusko Observatory*, addressed to the people of the Australian Commonwealth, giving the history of same and making bitter complaints against the N.S.W. Government.

The *Golden Penny*, an interesting London weekly, which announces that it has started a regular series of Prize Competitions for Colonials. The present arrangement is to run the competition for two weeks each month, but if they prove sufficiently successful, they will become a regular weekly feature of the paper.

An Appeal to the Christian Women of New South Wales, from the Evangelical Council of New South Wales. 1. To see to it that your name is placed on the Electoral Roll: 2. To inform yourselves upon those questions of a public character that touch upon the happiness and good order of the community. 3. To record your vote when the opportunity is afforded in favour of the candidate whose character and principles most commend themselves to your judgment and conscience.

"Mind over matter" or "The Influence of Will Power on Disease," by Dr Martin, M.D., and published by the Commercial Publishing Company, 37 Pitt Street at 5/-. It describes two great principles of curing and avoiding various diseases, the

greatest opponent of which is the inability or unwillingness of the patients to adopt the means of cure given. Methods which require no medicine, only strength of mind, to follow out the directions. It is thoroughly practical, and should not be confounded with faith healing. The book should be in every family book shelf.

THE SPRING DWINDLING.

W. AGER.

To obtain a little scientific knowledge of the spring trouble, I forwarded a parcel of comb from the brood box of the worst affected colony of my bees to the Department of Agriculture for bacteriological examination. I trust the result of the investigation will throw a little light on the subject. This colony was the only one apparently, in which the larvæ was affected, the bees in it got discouraged, and though I assisted it with frames of hatching brood, the bees showed neither energy or improvement until I destroyed the combs and gave them frames of foundation. The other affected hives I left alone, they built up and I have since extracted from them. Enclosed please find official reply :

Department of Mines and Agriculture,
Sydney, 11th February, 1903.

Sir,—With reference to your letter of the 30th December last, enquiring the result of the bacteriological examination of the parcel of honey comb forwarded under the cover of your letter of the 15th November last. I am directed to inform you that a careful examination of the specimen disclosed the presence of bacterium, similar in several characteristics to the micro-organism known to create foul brood. This bacillus was found distributed throughout the interior of the infected cells in the comb, in the fluids of the larval abdomens in all stages of growth. It will be necessary to conduct further tests to determine more fully the life history of this organism. Sufficient data, however, have been secured to demonstrate its virulent character.

CAUSE OF THE DISEASE.

Many micro organisms are found associated with bee life in its various stages of a harmless nature. Recent researches prove that where bees are neglected and starved, creating a low vital resisting power, these parasitic organisms assume a virulent disease-producing form.

It has to be remembered that last winter was generally throughout the State most unfavourable for bees. There was an absence of bee food, and general weather conditions were of a depressing kind. The absence of natural food, and the failure to provide them with sufficient artificial nourishment, makes the conditions suitable to the development of this disease-producing organism.

Given a well bred hive of bees, healthy, well-fed, and the sanitary state of the hive attended to, they are enabled to resist the invasion or development of disease producing germs.

TREATMENT.

It is possible to destroy the bacilli by various antiseptics or heat, but their seeds or spores are highly resistant. This vitality cannot be restrained, and when favourable conditions prevail the disease will appear from fresh centres of infection. Under the circumstances and with a knowledge of the virulence of the disease and the rapidity of its action, it is best to effect the complete destruction of the hive.

A constant watch should be kept over the brood cells during the prevalence of bad weather, and allow class food supply. On the appearance of a few affected cells remove the bees from the hive containing the diseased larvæ. Keep them for two days without food and then put them in a clean hive with starters. The old frames with larvæ should be destroyed by fire.

Where the hive is generally affected close the entrance after dark, apply bi-sulphide of carbon to suffocate the bees and destroy hive and bees by fire.

Bi-sulphide of carbon is very inflammable and poisonous, and great care should be taken in using it. With care the destruction can be effectually carried out by fire alone.

Starvation is one of the more fruitful sources from which bee diseases are developed, we therefore strongly recommend that at all times, more especially during the winter months, all bees should be well supplied with their *natural* food-honey. By so doing, the dangers associated with this new disease as well as those of a similar type will be greatly kept in check, if not entirely prevented.

I have the honor to be, Sir,

Your obedient Servant,

EDWARD F. PITTMAN,

Under Secretary.

per A.F.

The following has been received by Mr. McDade from the N. S. W. Department of Mines and Agriculture:

Department of Mines and Agriculture.

Sydney, 7th Feb., 1903.

Sir,—Referring to your letter of the 22nd October last, and subsequent correspondence,

respecting a complaint among the bees in your district, and forwarding piece of comb with young brood out of one of the hives which is infested, I am directed to inform you that a careful examination of the specimens disclosed the presence of bacterium, similar in several characteristics to the micro-organism known to create Foul Brood. This bacillus was found distributed throughout the interior of the infected cells, in the comb, in the fluids of the larval abdomens, in all stages of growth. It will be necessary to conduct further tests to determine more fully the life history of this organism. Sufficient data, however, have been secured to demonstrate its virulent character.

The Department gives the "Cause of the Disease, and Treatment" the same as in the previous letter.

VICTORIAN NOTES.

R. BEUHNE.

I say, Mr. Editor, your bees know their own larvæ and mine don't. We will leave it at that, but I have a suspicion that neither you, nor I know whether they do or not. [Till we are certain we will do our best, they shall take what we want them to take.] But you see there are almost no brood combs in my hives on which the bees could build queen-cells in a perpendicular position, and they therefore readily take to the prepared strip of young larvæ. They do sometimes raise some of their own as well as the larvæ given.

THE DISAPPEARING TRICK ONCE MORE.

The object of the discussions in the "A.B.B." and of my very extensive correspondence with beekeepers on this subject is, as everybody ought to know, to find the cause of this mysterious mortality, so as to know how to avoid or circumvent it. I am not wedded to any particular theory. If any one can deduct a better one from the *facts* before us, I am willing to accept it. I have asked for the opinions of all interested, and invited criticism, but neither Mr. Davey's ill-advised "gush" concerning myself, nor Mr. Parry's insinuations of untruthfulness will help us in any way whatever. When Mr. Parry built his first letter (October issue) he jumped to

conclusions, measured my corn with his own bushel. I don't know the extent of Mr. P's beekeeping enterprises, but it is a well-known fact that the fewer colonies a man keeps the better he can tell you how to manage large apiaries. All the facts I have put before readers of the A.B.B. are corroborated, those of my own experience by my record books, by my assistants and beekeepers of standing, who have visited me. I do not expect to be taken on trust, and have taken nothing on trust myself. I have discarded much of the information received as unreliable, when unable to obtain satisfactory proof.

My opinion as to the reason of the small colonies swarming at the out apiary I made known to a number of Victorian Beekeepers before ever the discussion in the "A.B.B." took place, and Mr. P's accusation of inventing my facts I can only put down to his—let us say "innocence"—notwithstanding his attempt to enlist "science" on his side.

Since writing last I have had a visit from Dr. Cherry, Bacteriologist of the Department of Agriculture. After being made acquainted with the facts, and the nature of the losses, Dr. Cherry expressed the opinion that most likely the trouble was caused by a chemical or physiological difference of the bee food, possibly a deficiency of nitrogen, and suggested a number of comparative analysis of different honeys, and honeys gathered at different seasons of the year. Dr. Cherry has kindly undertaken to get these analyses arranged if possible, and should these fail to give results, bacteriological investigations will be undertaken.

THE GRASSHOPPER FUNGUS.

About twelve months ago I received a complaint from a beekeeper of bees dying, and suggesting grasshopper fungus which he had been using as a possible cause.

I have just received through the *Leader* a letter from another beekeeper that his bees (adults only), are dying off, and that he has been using the fungus for grasshoppers. Accompanying the

letter were a few dead bees, and although somewhat stale they certainly did not show the indication of either paralysis or starvation. I have written for fuller information and more specimens, and in the meantime I am trying to arrange for a microscopical examination by an expert.

PHACELIA. -- There are several varieties, the one I have is "campanularis." There is little to be said about its cultivation. Sow in the same way as any small vegetable seed, but I think it requires rather more moisture than it gets in box country. I am now trying to get the seed of another plant that I knew well when a boy. It will stand any amount of drought, and would possibly grow where little else would, it is *echeum vulgare*. I have grown *echeum candican* before; it is a native of Madeira, and had the drawback of blooming in October, when there is plenty bloom of all kinds. It also had to be protected against stock, being very brittle and easily damaged. *Eccheum vulgare* grows on the continent of Europe, on hard dry and waste lands and roadsides, and so far as I can remember will stand a lot of knocking about. If I succeed in getting the seed, I will let it be known.

AN ENGLISH LETTER.

THOSE DISAPPEARING BEES OF MR. BEUHNE'S.

JOHN HEWITT.

Judging from October and November A.B.B., Mr. Beuhne and all other beekeepers seem to be at a loss to understand this matter.

After carefully noting what each has to say, I have come to the positive conclusion it is nothing more than what is the cause of winter dysentery and spring dwindling in North America and Europe, a problem I solved in 1899, see *Beekeeper's Record*, *British Bee Journal* and *Journal of Horticulture* for 1890, and is nothing more than lack of vitality, caused through the way queens are reared by so-called modern methods.

In 1890 I began rearing queens on a large scale, and I guaranteed them, even as virgins, to produce bees proof against winter dysentery and spring dwindling, and I inserted advertisements to this effect in the *British Bee Journal* and *Bee-keeper's Record*. In response to these advertisements I sent out nearly 2,000 virgin queens, over 3 days old, all of which were safely introduced on my system, and though the following winter was very long and cold, not one failed to come out strong in the spring.

When the editors of these papers saw what a success it was, they would not let me advertise again, but adopted a line of action I have exposed in the *Bee Master*. They followed me up with a line of action which made it wise to suspend publication after I had got out seven numbers, to provide funds to fight law suits on side issues.

Since 1890 I have never ceased to send out a large number of queens, chiefly virgins, at least seven days old, every year. I have yet to receive the first report or a stock headed with one of my queens that has spring dwindled or suffered from winter dysentery, so I venture to say *positively*—with 15 years' experience—that the fault is entirely in the queens, i.e., they cannot endow their progeny with sufficient vitality, to face the wear of an ordinary life, consequently bees are old and weak, and fly away to die, when they should not be half old; if the weather is too cold for them to fly then they distend themselves with pollen and becomes dysenteric.

That the fault is entirely due to the way queens are bred, I am certain, as I am always able to rear queens proof against the complaint from such mothers, if I can manage to save a queen alive, but for all that I don't care to use such breeding stock.

The whole trouble is in cutting queen cells and hatching them in small nuclei. If you want to avoid the complaint, select the best stock, and let it swarm naturally; catch the queen and let all the bees go

back to look after and mature the cells; in about eight days this hive will begin to swarm again. Hive the swarm in a box and throw it down before a hive filled with empty combs and with some queen excluder zinc in front of the entrance, by which means the young queens can be riddled out to be put in strong nuclei, as per my system of introducing virgin queens—not little weak ones. When all the queens are caught, the bees will go back to come off again next day with more young queens. If you can keep the swarming fever on, this stock will go on rearing queens as long as they are able; give them combs with eggs or unsealed brood every five days and they will start and rear fresh cells, no matter how many they have sealed, or queens hatched or piping, and what is more they will not allow a young queen to be killed. When I start queen-rearing in the spring, I go on rearing in that stock all summer.

There are a good many points and tricks I have developed, which enables me to produce extra good queens in large numbers, without cutting out a cell, but the above is the outline of my plan.

For instance, it very often happens—on account of swarming and queen-rearing tendency—I use frames of eggs and brood from a stock I don't care to rear queens from. They start large numbers of cells on these eggs and brood; when these cells are nicely on the way and well stocked with royal food, I poke out the larvæ and introduce others from my breeding queens just hatched from the egg, so that, within four hours of hatching from the egg they are floating in royal food that has been three days in getting into its present condition; the consequence is, they always have more food to float in than they require, and therefore develop into extra good queens. This trick is far before Huber's plan, devised over 100 years ago, and dubbed in America "Doolittle's," as there are no queen cell cups to make, and no royal jelly to collect, etc.

There are large bee farmers here who buy all their queens from me, as they cannot rear them so good, and since I got the Punie bees, I can also guarantee them proof against foul brood as well.

ENGLISH MARKET FOR AUSTRALIAN HONEY.

I see from time to time you are troubled over this matter, and to judge from page 173 of November issue, the outlook does not look very "rosy," but looking at the advt. on front leaf, of the N.S. Wales Bee Farmers' Association, I don't see why you should not succeed if you go the right way about it. Take Canada for example. For years she wanted to send her eggs to England—she is not only doing so now, but owing to the way the eggs are packed, she now holds top place in the English market for foreign eggs. What is wanted, is for the N.S.W. Bee-Farmers' Association to appoint a packer in Sydney, and an agent in London—both reliable men, the honey to be of first quality only, and sent to the packer in bulk, who will put it up in 1lb. and 2lb. glass bottles—not larger, and not in tins. You ought to make glass bottles a lot cheaper than we can; let these be of clear glass and useful to fill jam in afterwards—we have enough of useless tins, which are a nuisance. Case these bottles up into a fairly strong box of useful size—there is a big demand for such as packing boxes, but those in which salmon, etc., are sent in are too small, and are all sold for firewood. Cases with about 100lbs. will be about right, or perhaps 72lbs., certainly not less. Each bottle must be neatly labelled, showing it to be Australian honey, etc., with the English agent's name and address. The carriage of these from Sydney in wool ships will not be much—I have sent heavy goods from Liverpool to Sydney at 10s. per ton—very heavy goods, such as railway rails, can often be sent gratis, as there is a demand for such as ballast.* All these points the Sydney packer will get posted in; for this matter of freight is never certain, and all depends on whether bal-

last is wanted or not. A case of 72lbs to 100lbs. would be just a nice size for a shopkeeper to buy, and if nicely put up, there would be plenty to buy a bottle to see what it was like. Now, many of these might not care for the flavour, but there may be many who will like it, so, after putting it on the market the demand will grow year by year. Take heather honey, for instance. I never met anyone who liked it at first, as it has such a strong, bitter flavour, but so many prefer it to all other honey; it sells in Edinburgh and London at 3s. per lb., while clover won't fetch more than 9d., and there are shops that will not cut a super even at this price; a buyer has to take a 20lb. or 25lb. super (wood included) at this price. Then Californian sage honey is all snapped up as soon as it lands in England by people who will take all they can get.

There is, however, a lot of stuff sent in called "honey," some of which is pure, but most nasty, and which is mostly used in various chemical processes. Now Australian honey, if not known to be different, will be sure to be regarded as the worst kind. 7lb. tins are too large—what man or woman would buy a tin this size to try it? It is all a matter of getting known. There is no reason why your box honey should not take a place with Californian sage, and our clover or heather honey, if it is fairly put on the market for what it is.

There is one point you should know. Some years ago I was looking up the import duties on goods into France, and was surprised to find honey was on the free list, although sugar pays about 6d. per lb. duty. There would be the octroi duty into Paris and most other French towns, but all honey produced outside Paris would also have to pay it. Formerly Narbonne honey had a large repute, but there is none now, although plenty of foreign honey brought to England used to be called "Narbonne honey." The False Marking Act has put a stop to this kind of thing.

*Ballast is not wanted this end.

If Australian beekeepers decide to cultivate the English or French market through an organised Association, I shall be glad to give them what advice I can, but I won't have anything to say to shippers of 18cwt. lots in 7lb. tins. If the consignments are regular in saleable bottles, every grocer would try to sell a case, and though the profits or sales might not be large at first, they would increase in time if the honey was liked. The public would take a bottle that could be afterwards turned to use and not thrown away, and if the shopkeeper saw a certain 6d. for the case, that would also be an inducement to him.

The late Mr. Stokes, of Balnastraid, Car Bridge, Invernessshire, sent all his honey to Johannesburg, South Africa, where he got a better price than in Scotland.

Sheffield. England,

ENGLISH EXHIBITIONS.

We acknowledge receipt of circulars announcing Fourth Northern Counties Grocers' Exhibition, Tuesday, March 10th, to Wednesday, March 18th, 1903, St. James' Hall, Manchester, England. The officers are:—Mr. John Holden, Councillor James Kendall, Joint Hon. Secretaries, 60, Grocers' Exchange, Fennel Street, Manchester. Manager: Walter Cawood, St. James' Hall, Manchester.

Northern Counties Brewers' Exhibition, Wednesday, April 1st, to Tuesday, April 7th, 1903, St. James' Hall, Manchester, England, under the auspices of the Manchester Brewers' Central Association and the Manchester, Salford, and Districts Beer and Wine Trades' Defence Association. Honorary Secretary to the Advisory Board—Mr. G. A. Robinson, 10, St. James' Square, Manchester. Manager, Walter Cawood, St. James' Hall, Manchester.

Should any of our honey producers deem it worth while sending exhibits we advise them to be speedy.

KEROSENE BOX HIVES.

Fasten on well top and bottom boards. Turn on side. Remove side uppermost, which becomes top of hive. Now get a Langstroth frame. Hang on the thick board ends, and see how much it is necessary to chisel out of each, to allow the frame to fit, leaving a bee space on top of frame, also a bee space below. It will also be necessary to place a slip of wood inside either end level with the space chiselled out to have proper hanging place for frame. At bottom of one end cut out place for bees to go in and out. Nail board three or four inches wide under this opening for alighting board. Get a second case. Take off one side and nail to side taken off first box, to make a good cover. You might nail pieces at end or side to let it telescope over. Then cover with tin, perhaps an old kerosene tin straightened out, and paint same. Take top and bottom of second box, and nail on the two sides of new hive, making it warm and snug for winter, as the one thin board will be too cold. Tar the bottom and paint the rest. You have now a fair 10-frame Langstroth hive.



Annual Meeting OF THE N. S. Wales Bee-Farmers'

→→→ Association

Wednesday, April 15

AT

TATTERSALL'S CHAMBERS,

HUNTER STREET, SYDNEY,

At Two o'clock sharp.

SCOTLAND.

We have received the following interesting communication from our old friend Mr. Meiklejohn:—

Dunblane, 14th Jan.

I received the parcel of A.B.B. you kindly sent me, and have distributed them among my relations. I am not sure if the notes of some of my wanderings in the Highlands will be of very much interest to the bee fraternity in general, but I have no doubt my friends to whom you kindly sent copies, would be interested, perhaps more from the fact that they knew me. Many thanks for your kindness in sending those copies. We were glad to learn of the welfare of yourself and family, and trust that your expectations in having a good honey harvest in the near future may be amply fulfilled. From what I can learn I think the honey harvest of the past season in Scotland has been disappointing. The heather bloom was poor, as compared with the two previous years, and this no doubt was against a good flow being obtained. Prices keep up and run from 10d to 1s. for heather honey. As I have told you before these prices preclude a large consumption, particularly among people of limited means, and I still think it a pity, that the Australian article cannot be put on the market and sold at such a price as would be within the reach of most, and at the same time be for the benefit of Australian beekeepers. A time may come yet when this may be so. In some of my tours of late through some parts of the Highlands, I have noticed a good many hives, but I don't think the industry is carried on so extensively in the north as in the south of Scotland, where the climate is not so rigorous. Summer in the Highland straths and glens is very pleasant, but as I have had no experience of winter weather there, I can't say much about it, but from accounts of it I have heard, it must very frequently be a terror, and become a difficult matter to keep bees, unless all secure under cover.

Well, since last I wrote to you I have been stirring about seeing some of the grandeur and beauty of this old land, with a nephew who is at home on a trip at present, and who knows more, or as much about Willow Tree and Warrah as I do. We set out on a run away to the West Highlands, and not very sure how far we might go before pulling up. On Oct. 1st we started on our bikes from here, and in an hour's time we were traversing country made famous by Sir Walter Scott. Passing Callander, we have on our left Bochartle Plain, and to the right the entrance to the Pass of Leny, through which the swift malaise at the bidding of Vich-Alpine carried the fiery cross to and beyond Strathgry to summon the clans to resist invasion of their domains. We pass Coilantogle Ford, where the fierce Roderick Dhu measured weapons with Fitzjames. And on, skirting the base of Ben Ledi on the one hand and silvery Loch Vennacher on the other, a few miles on we pass Lanrick Mead, the mustering place of Clan Alpine's followers. The road then passes through a tangled scrub

"Of Juniper and rowan wild,

Mingled with shivers from the oak."

and we arrive at the Brig o' Turk, and while taking a smoke we moralise on the chase through this rough country, and on the feelings of "the headmost horseman who got thus far alone." From the bridge we get a good view up Glenfinlas and the pretty little village at its entrance. We mount again and in a few minutes we are speeding along the margin of Achray. The scenery here is very grand, and leading into the Trossachs—

Where twines the path in shadow hid,

Round many a rocky pyramid;

Shooting abruptly from the dell

Its thunder-splintered pinnacle;

Round many an isolated mass,

The native bulwarks of the pass.

We now arrive at the foot of Loch Katrine, and we have a view all around, which for perfection of beauty rivals any other scene in the whole of Scotland. In front we have the loch in all its loveli-

ness with the finely wooded Ellen's Isle close at hand, while in the near distance towers Ben Venne and Ben Au casting bold shadows on the placid lake. A perfect fairyland. As I had sailed the Loch before, and having a wish to go in another direction, for curiosity we asked a boatman his charge to row us to the head of the lake, six miles, or about an hour and a half's work. He said he would do it for the modest sum of 15s. We at once jumped on our cycles and left him standing with his hands in his pockets, which I daresay he did for the rest of the day. They try to make hay while the sun shines in the Highlands, and do it with a vengeance too. We rode back to Loch Achray, and headed away over the hills to Aberfoyle, a place I wished to see, as I had read much about it in Scott's "Rob Roy." The road was good but steep on the north, but the views from the higher parts were lovely in the extreme, and well worth the exertion of pushing ourselves as well as our bikes up. When we got over the crest we had to keep our brakes hard down in descending to the valley in which Aberfoyle lies. The accommodation house, where Bailie Nicol Jarvie and his companions sought shelter, has disappeared, and a fine hotel now occupies the site. After having a good dinner on the famous spot, we had a turn through the Clachan. In front of the hotel there is an oak tree which is said to have been there in the Bailie's time. And my conscience, there hangs on one of the branches a plough coulter, said to be the identical one which the Bailie made red hot, and with which he burned a big hole in the wild Highlander's plaid in the *mélée*. So big was the hole that one might put a kail pot through it. But the Bailie being an honest man, and the son of an honest man, undertook to gae him another o' the best, and o' his ain clan colours! The Bailie, with Osbaldiston, Andrew Fair-service and the Dougal Crater, must have had an interesting time of it here. We now go on to the north, and are soon

skirting Loch Ard and Loch Chon. It was in some of these lochs that the fierce wife of Rob Roy disposed of Morris, and on the banks of which the honest Bailie got suspended in a somewhat ludicrous manner; all which is related by Scott. In the glen through which we now pass we see many evidences of better times, among which is the splendid Aqueduct by which the waters of Loch Katrine are carried to supply the City of Glasgow, which is about 40 miles distant. In a short time we are on the main road to Loch Lomond. We pass a pretty lake named Arklet, on the south shore of which we see remains of the farm once tenanted by Rob Roy. We soon get a glimpse of the waters of Loch Lomond, and arrive at Inversnaid, which is a pretty place. The waterfalls here are very fine. We hire a boatman to row us o'er the ferry, and land on the beach at Inveringlos, in the McFarlane country. A small stream flows into the loch from Loch Sloy. Loch Sloy was the battle cry of the clan. Without the aid of McFarlane's lamp (the moon) we made our way to Tarbet, a few miles south, and crossed to Arrocher at the head of Loch Long. The pass lying between the two lochs was utilised in ancient times by Haco's invading Danes, affording them an easy way to get their boats transported to Loch Lomond to plunder its shores. As the shadows of some of the mighty Bens were lengthening, we deemed it advisable to secure quarters for the night. We met some old friends here and spent a pleasant evening.

We intended starting next morning through Glen Croe, but our friends advised us not to attempt it, as the road was very steep and hard to get over. We therefore rode down by the margin of Loch Long, and found the road made a detour to Gareloch. If the hills in Glen Croe were steeper than those we had now to climb, it was fortunate we did not go that way. It knocked the wind out of me to get over that hill, even though I got my machine trundled up for me. The name of the place on the top of the hill

is called Whistlefield. I had no whistling there. From there we descended to the Gareloch with brakes hard down. Indeed it was rather dangerous to ride at all. The village is one of Glasgow's watering places. After a ride of about eight miles along the margin of the Loch we pass Roseneath, the favourite residence of the present Duchess of Argyle (Princess Louise), then over the hill to Kilcreggan on the Clyde, and just opposite to Greenock. A boat was just calling at the wharf when we arrived, and as we found out she was going to Loch Goil Head, we jumped on board to have some more of it. We had a fine sail up Loch Goil and had the opportunity of a close inspection of Garrick Castle, a fine old ruin, but in course of being touched up by masons. It stands on a rocky promontary and must have been a place of considerable strength in old times. Some people say that it was hereabout that Lord Ullin's daughter and her lover were drowned, but I am no so sure about that, there being another Loch Goil among the Western Isles. After lunch at Loch Goil Head we started for Loch Fyne by Hell's Glen. Rather an ominous name, and we made up our minds to have a rough road for a few miles, but though the glen had a somewhat terrifying name we found it not to be so bad after all. We certainly had some steep bits of road to negotiate, but the road was good. The scenery was wild and grand. When we got to the highest part we descried in the distance Loch Fyne, and on the further side the town of Inverary, the headquarters of McCallum More (the Duke of Argyle.)

Not being very late we cycled away to the north past Askinglass and Cairndow, and around the head of the Loch. We then had a run of 10 miles along its margin to Inverary. This was a very fine and interesting run, some of the places we passed having much historic interest. Before entering the town we pass the castle, a very fine turretted mansion, and visited frequently by our

late Queen. The town has a somewhat old fashioned appearance, lots of the houses having a somewhat barrack-like look. As they, at least many of them, are old, I fancy they have been built to accommodate the retainers of the Dukes in olden times. The walls of many of the houses appear to be of inordinate thickness. This may have been necessary for defence when the turbulent Clans were on the warpath. A great many fisher folk are located here, who are employed in the herring fishery. Lochfine herring are famous all the world over. Our hostess of the George Hotel asked us if we would have herrings for breakfast. Knowing we were on the spot where we were likely to get them good, we said we would have them. Next morning at breakfast one was put before me, but such a monster herring, I never saw its like before. I am sure it weighed not less than three-quarters of a pound, and as they know how to cook herrings there, I don't think I ever tasted so fine a fish.

We arranged with boatmen to ferry us across the loch on the following morning. As the weather was fine and the water without a ripple, we enjoyed a pleasant sail and landed at a place called St. Catherine. From this place we ran down by the edge of the loch to Strachur, a pretty village, I think, inhabited mostly by fishermen. From there we crossed over to the glen in which lies Loch Eck. This loch is one of the most beautiful in Scotland, and the scenery on either side throughout its whole length of nine or ten miles is very grand indeed. A few miles from the foot of the loch and by a fine road, we arrive at the head of the Holy Loch, which is another arm of the Clyde. I am not aware of anything which gives this loch more sanctity than any other, unless it may be a tradition, that a vessel was wrecked in it once, which was laden with a cargo of earth* which was being brought from Palestine for some religious purpose. Kilmure, the burial place of the Argyle family, is on its shores. At Sandbank, at the head of

the loch, we had a look at scores of yachts, which were drawn up on the slips for the winter, and the builds of many of them appear as very uncouth to a landsman such as I am.

From here we went on to Kirm and Dunoon, watering places on the Clyde. And thinking we had done enough of peddling for a bit, having done considerably more than a hundred miles riding up and down through glens, and having skirted the shores of some fourteen lochs, we thought we would make tracks for home by boat and rail.

We, therefore, soon left Dunoon by boat for Craigindoran, and from there took train for Glasgow, passing on the way Dunbarton with its ancient castle. The people of this quarter are all so well behaved that the war office considers one man sufficient to garrison the castle to overawe any odd tinker who might get on the rampage. We pass Kilpatrick, a sleepy looking old town, but is honoured as being the birth place of St. Patrick. In a very short time we are in the region of smoke, the clatter of hammers and the roar of machinery, the birth-place of the leviathans of the deep, and note some monsters with rams and ponderous ribs, which are being constructed for other purposes than carrying wool.

We are now in the heart of the second city of the empire. But as we feel a little bit dusty and country-looking, and just from the Hielans, we take train at once for Dunblane and arrive home all right without a scratch, having enjoyed our Highland tour immensely.

Since then a neighbour and I had a run to the Braes of Balquhiddier. We of course had to go by the pass of Leny, there skirting Loch Lubnaig and on by Strathyre and Kingshouse. Balquhiddier is a pretty place, situated at the foot of Loch Voil. In the churchyard here we see the graves of Rob Roy, his wife, and son Coll. The stones are flat and some very rude characters cut into them. Rob's has a likeness of a claymore on his. A descendant of the Clan has enclosed

the graves with a bronze railing, otherwise it may have soon disappeared. Vandals are about in these days as of yore, and selfishly were chipping pieces off the stone and carrying them away. This may be stopped now. So here is the last of a freebooter of world-wide celebrity, but traditionally brave and generous withal. Being robbed he turned robber. For why? because the good old rule—

Sufficeth them, the simple plan,
That they should take who have the power,
And they should keep who can.
Since then, said Robin, right is plain,
And longest life is but a day,
To have my ends, maintain my right,
I'll take the shortest way.
And thus among those rocks he lived,
Through summer's heat and winter's snow,
The eagle he was lord above,
And Rob was lord below.

Now we are having frost and snow, the ice on the ponds 4 or 5 inches thick at present, and snow on the ground from 6 to 12 inches deep. Though the frost is intense, this has been a charming day, bright sunshine, and all our surroundings covered in a beautiful and spotless mantle of white. But all days are not alike you know.

FORCED SWARMS.

DIFFERENT WAYS TO FORM; THE SPECIAL ADVANTAGES FOR COMB HONEY PRODUCTION.

[BY L. STACHELHAUSEN.]

In my last article I said a few words about the history of brushed swarms, and how I was catching the idea of using such swarms for the production of section honey. We have different ways to form swarms by forcing, which are exactly like natural swarms in every respect.

1. 1.—*For Increase.*—Gravenhorst's "Feglinge."—I translated this by brushed swarms, many years ago; nevertheless it is not important at all whether the bees are brushed or shaken from the combs. I generally use both manipulations. All the bees with the queen are brushed or shaken into a new hive on a new stand.

The brood-combs remain on the old stand, and a large part of the old bees will return and care for the brood. A queen is introduced. The swarm can be used for section honey, the old colony for extracted honey. Here I will remark that, if the bees fill themselves with honey, and are kept in a swarm cluster for some time, only a few of the old bees will return to the old stand.

2.—Gravenhorst's "Fluglinge," alighted swarms.—A brood comb with the queen is taken from a strong colony and set in a new hive; and this hive is filled with frames with starters; the young bees from another brood-frame are shaken into this hive, which is closed now and set on the old stand. The old hive with the remaining brood-combs is set on a new stand and a young queen from a nucleus is introduced.

3.—Gathered swarms. Take a swarm box as described by H. Alley in his Handbook, or a somewhat larger nucleus-box, as recommended by Doolittle; shake bees into it from different colonies, as they may lie out on some hives, or from supers, or from brood-combs, etc. The box is set into a cellar or other dark place for about ten hours; now drop any queen old or young, fertilized or unfertilized, in among the bees. She will be accepted, and in a short time the bees will form a cluster in the box, and at evening they can be transferred to a new hive on a new stand like a natural swarm.

II.—*For Strengthening other Colonies.*—A Strong colony is shaken or brushed from all the brood-combs: the bees remain on the old stand; the brood-combs are used to strengthen some colonies in the yard which are weaker than the average.

III.—If some colonies are worked for the production of extracted honey alone, and can not be kept from swarming in any other way, during a good honey-flow, Gravenhorst's recommended more than 20 years ago to brush the bees on empty combs and to use the brood-comb somewhere else

IV.—We still have another way to form forced swarms. We make two artificial swarms in such a way that the brood-combs of both colonies together can be set on the old stand of one of these colonies. In 10 to 16 days afterward, this colony will cast an afterswarm naturally. This swarm can be formed artificially too with a young queen, as described above; has mostly young bees, and is quite like a good after swarm.

To all these swarms we should give one comb of brood, because the bees will quiet themselves better. If starters only are given, this brood-comb should be removed the next day, because the swarm will build better combs and less drone comb without any brood. A sufficient space should be given at first, and, if contraction is desired, do it when the bees have commenced cell-building and some larvæ are in these cells. The different ways of forming forced swarms without brood have different advantages under different circumstances.

These artificial swarms can be used in different combinations. For instance, to prevent swarming in out-apiaries I use the following management, which Doolittle recommended some years ago:—The strongest colonies are brushed or shaken on starters on the old stand. The brood-combs and a queen from a nucleus in a Miller cage, closed with candy, are set on the place of another strong colony, and this is set on a new stand. In this way swarming is prevented in too strong colonies.

For comb honey we need very strong swarms, so we can shake all the bees from two colonies into one hive and set this swarm on the stand from which it received the queen. The brood-combs of both colonies are set on the stand of the other colony, without the queen. With the queen, if she is a good one, and one or two brood-combs, we can form a nucleus. Ten days later this colony is brushed off, and the old or a young queen introduced. So we have two strong colonies which can be used for comb-

honey production, and a number of combs containing capped brood, which can be used for quickly strengthening nuclei or other weak colonies.

Now a few words about the advantages of this management.

1. That a forced swarm, if correctly made, will work with about the same vigor as a natural swarm, is conceded by most writers who have tried them. Why this is so, and how the swarm should be formed, is fully explained by Gerstung's theory. It is a certain physiological condition of the bees which causes the swarming impulse, and this same condition must be incited in the forced swarm afterward.

2. That swarming can be practically prevented if we use *large* hives in the spring till the main honey flow commences, and then bring the colony into the condition of a swarm, is proven for me sufficiently, as I used this method for many years in two out-apiaries, which I do not visit oftener than once every week, and sometimes not even as often as that.

3. I never could get better crops of comb honey than from strong swarms if I had them at just the right time. Other beekeepers in other locations may get good crops of comb honey from old colonies in small or in large hives. I do not doubt this; but I never could do it. As we can make our swarms as strong as we like them, I am fully convinced that this method is the best for comb-honey production, in my locality at least.

4. I have had the good luck to have no experience with foul brood as yet; but if the McEvoy treatment is a sure cure, as many bee-keepers report, there can be no doubt that, by reasonable use of forced swarming, foul brood can be held in check in an apiary, even if other colonies in the neighborhood should remain infected with that disease.—*Gleanings*.

That great American beekeeper, Coggs, in enumerating the essential of success in beekeeping, places locality first of all.

LUCERNE OR ALFALFA.

Dr. Miller—The main question is, what is the truth about alfalfa cutting? If it is true that it is for the interest of farmers to cut early, we have nothing to say. But I think the total testimony will not stand with that. What is the truth? Mr. Booth—I make a living by raising alfalfa while my wife tends the bees, so our interests are not the same. Alfalfa cut early is best for the production of milk, but it is most nutritious in full bloom. But before bloom it makes more milk, but not so much butter. I commence cutting just before bloom, so as to finish while in bloom.

Mr. Abbot—The universal testimony of experiment stations is it should begin to be cut just before bloom.

Mrs. Booth—With 100 acres of alfalfa to cut my bees have a chance.

Mr. Aikin—Which crop is cut is also to be considered. The first crop gets woody about the time of blooming, more so than the second. Owners of horses prefer the first crop. I have one cow and one horse, and feed second crop hay to both. My cow eats more pounds of second crop hay than of the first. If I gave her third crop hay, she would give an extra quantity of milk. Buyers will give more money for the third cutting than for the second or first.

Mr. Nichols—It makes a difference whether milk or beef is produced. For beef it should not be cut till in full bloom. A cattleman in Montrose county tested the matter by weighing the hay, although his steers would leave a little of the woody part it was no loss, as that was fed to the range cattle. And in butter production, you don't get the cream from the second or third cutting that you do from the first.

Mr. Gill—It is the truth we are after. They raise better hay on the western slope than here. But old bossy, and the butter-bowl and the beef-pen, don't exactly jibe. The most butter is from the first crop, and the first crop is not so washy for the

horses. I don't care how quickly a man cuts after it is in full bloom, there is something for the bees.—*Rocky Mountain Bee Journal*.

A POISON FACTORY.

M. Benende of Brig, Silesia, narrates the following in the *Leipsiger Bienenzeitung*: "For a long time past the inhabitants of the districts of Glatz, Reichenstein, Frankenstein and Patsekau complain that every spring their apiaries are decimated by a mortality of bees, to such an extent that in some villages not a single hive of bees remains. Not only do the bees perish, but the fruit trees also cease to bear fruit. The small farmers of this country, which is rather poor, lived for a portion of the year from the products of their hives and of their orchards, and find themselves in a rather sad situation.

"All this damage seems to originate from the smelter works of Maifritzdorf, situated in the middle of this unhappy section. It is there that the arsenic is extracted from the product of the mines of Reichenstein. The ore is ground and worked for the extraction of this poison. The vapors are condensed in rooms prepared for the purpose and deposit the arsenic, and after they are sufficiently cooled they are allowed to escape through a high smoke stack. But they are far from having deposited all the arsenic which they contain; in the open air the remainder of this poison settles on the plants and in the water. One stream has even for this reason been called the "poisoned brook." The bees when visiting the flowers absorb of this poison a sufficient quantity to kill them. They have analyzed dead bees, honey and pollen, in all of which they have found traces of arsenic.

"This poisoning has already been noticed in 1895; since that time, they have tried to remedy the evil but without success, by increasing the height of the smoke stacks of the smelters. It would

probably be more practical to increase the number of watering places.

"One thing is to be noticed, the consumption of either water, grass or cereals, does not injure the health of the inhabitants of that country; on the contrary the absorption of a certain quantity of poison seems to cause a certain obesity in man and beasts."—*Rocky Mountain Bee Journal*.

The Bacillus of Foul Brood.

Le Rucher Belge, has published an article of exceeding interest, being a report of investigations made at the laboratory of the Institute of Pathology and Bacteriology of the University of Liege, in Belgium. The report is made by Dr. Ul. Lambotte, who, at the instance of the Society of Apiculture, made the most searching investigations, and announces that instead of the microbe of foul brood being a specific bacillus to be found nowhere in Nature except in cases of foul brood, it is one of the common microbes to be found everywhere, the bacillus alvei being identical with the well-known *bacillus mesentericus vulgaris*. Microbes of the foul brood were obtained from many and widely different localities, and comparisons were carefully made with *bacillus mesentericus*, as also were searching tests, and all led to the one conclusion.—*American Bee Journal*.

Dr. Andrew Wilson states in the *Bee-keepers' Record* that the foul brood which affects the bees is a form of disease that attacks potatoes.

The above ideas are quiet in accord with those we have always held. The bacillus of the disease, like many other bacilli, is not confined to one or two breeding grounds, and it requires only certain conditions to develop it. One of these conditions is damp, cold weather, (such as we have not had in Australia for a long time) combined with bad hives. Lesson: See that your hives have good covers, thick sides, and good blankets under the cover before winter sets in.

WESTERN AUSTRALIA.

Mr. J. Sutton has been appointed Bee Inspector for Western Australia. He visits every apiary, examines every hive, gives instruction, also lectures publicly.

At a meeting of the West Australian Beekeepers' Association, held December 14, 1902, in the museum of the Department of Agriculture, Perth, the only correspondence read were communications from the Agent General and the British Honey Company, in reference to the export of honey to England, and as the general tone showed that only a low price was to be expected for our products there, and as the local markets are not nearly stocked with the local honey, the time had not arrived when we will require to seriously consider the export business; but when we have a substantial surplus no doubt some power may be brought to bear that will break down the prejudice which exists in England, the same as has been done with other Australian products. It was considered best that the papers be held over *sine die*. The secretary was instructed to enter into communication with the Department of Agriculture asking for their co-operation in obtaining the necessary information as to the most suitable class of buildings to be erected at the agricultural show grounds for the use of apiarists; also to obtain plans and all particulars of same.—Journal Department of Agriculture, Western Australia.

A CHEAP WAX EXTRACTOR.

And a good one, too. Take an old dripping-pan—or a new one; split open one corner, and your extractor is made. Put in it the scraps, pieces of combs, cappings, or whatever you have to extract. Better not put in too much at a time. Set the dripping-pan in the oven of the cook-stove, with the slit corner projecting out; the oven-door, of course, being open. Put a little stone or something under the end that is the farthest in the oven, so as to raise it half an inch, or an inch.

Slowly the wax will melt, and as it melts it will trickle towards the split

corner which is lowest. It will not do, of course, to have it fall on the floor, so you must have something standing on the floor for it to drip into. The result will be about as nice wax as you get from the sun extractor, which means it will be very fine.

The sun extractor is less trouble, and takes less time, but the dripping-pan extractor will work at a time of the year when the sun extractor is taking a vacation, and when, perhaps, you have more time to fuss with it.—*American Bee Journal*.

BEEKEEPING IN CUBA.

It is improbable that many beekeepers appreciate the difficulties under which bee-keepers of the Cuban mountains have to labor. Colonies of bees, supplies, the honey produced, and all incidentals have to be "packed" upon the backs of horses, mules or oxen, along the mountain trails, a great distance, to and from the apiaries. Think of having to "pack" 200 tons of honey in this way to the seashore, thence thirty or forty miles by boat to a shipping point. Do Americans recognize no competition in people who display such remarkable pluck and enterprise? Everything about Colonel Vieta's apiaries was of the most improved order; steam power for extracting, and an automatic system of conveying the combs from the apiaries to the extracting house, or room. One case, of two cans on each side—240 pounds—constitute a load for a horse or mule in transporting honey from the mountains. In moving colonies of bees, five are taken at once—two on each side and one secured on top. Few we think, would care to undertake such difficulties in order to succeed in bee-keeping; yet it is this sort of pluck and determination which wins as in any other business.—Exchange.

The general tidying up of the apiary may be done in spare time and the rearrangement of hives is best done during winter months.

QUESTIONS.

20.—Do bees at times prefer other larvae to their own to raise queens from?

21.—Do queens prefer old black combs to new ones to lay in?

22.—Instead of 8 Hoffman frames in $\frac{1}{2}$ super (10 frame), I propose to get made frames self spacing and following size—top bar, 19 in. x $\frac{3}{4}$ x $1\frac{1}{4}$ in. including spacing shoulder, end pieces similar to Hoffman ends with space, bottom bar 1 in. x $\frac{3}{4}$; how do you think they will answer?

W. AGER.

20. On the 28th October, 1900, I removed the queens from two hives; on the 29th I set in each a bar of cells, Doolittle system; on the 31st one cell had taken on one bar and none on the other, both had started a number of cells on their own; I destroyed these and gave each another bar of cells; Nov. 2nd none had started on either bar, the bees had built another lot of cells on their own combs.

21. I have never noticed a case as yet with my bees, a queen will sometimes skip a comb to lay in drone cells.

22. One advantage with wide spacing is obtaining plump combs, giving a clear course for the uncapping knife, and an increase of wax. With wide frames these advantages to a certain extent would be done away with, but there is less chance of comb being built between them. However, a trial should give the best answer.

F. W. PENBERTHY.

20. Bees do not prefer other larvae to their own; they don't know the difference in a very short time. They prefer new combs to build queen cells on.

21. Queens prefer old black combs to new ones to lay in. There are times when a few new combs are as good as dummies to prevent the bees from extending the brood nest. I have known them to put honey in two black combs and leave a new one empty between them in the super in late autumn.

22. Why do you want self-spacing in the supers? What difference would it make if one comb was a little thicker than the others through imperfect spacing? Is the comb basket of your extractor made so that the wide end bar can slip in under the bottom and over the top of the basket, so as to allow the face of the comb to come up against the wires to prevent breakage of comb.

PRICES OF HONEY.

Melbourne Leader.—Honey. —Transactions in this line were decidedly limited to-day, prime, clear garden lots being placed with difficulty at 3d. to $3\frac{1}{2}$ d., the latter figure being paid only for choice; cloudy and congealed lots were unsaleable at various lower prices. Beeswax.—Sales were steady at from 1/ to 1/1, a fraction more being realised for specially prime samples.

Australasian.—Honey and Beeswax.—Honey is dull, prime clear samples being quoted at 3d. Dark and inferior lots are difficult to place. Beeswax is worth 1/ to $1/0\frac{1}{2}$, extra choice white fetching up to 1/1.

Garden and Field, Adelaide.—Good samples of honey, $2\frac{1}{2}$ d. Beeswax, 1/1 $\frac{1}{2}$.

Sydney Morning Herald: Beeswax, 1/1. Honey, choice $2\frac{1}{4}$ d to $2\frac{1}{2}$ d, good to 2d, inferior $1\frac{1}{2}$ d, for tins containing 60lb.

PLANTING BOX TREES.

Mr. Ernest James, of Elaine, writes:—I saw that one of your correspondents asked how to plant box or other trees. I would advice him to carefully dig the ground deep like a very large post hole (of a long trench). Break it up very fine, and make a large mould. Plant say a dozen good seeds in this where you want a tree to remain. If you have more seeds grow than one you can take them out carefully and transplant when not more than an inch or two high, taking care to keep some earth round the roots of each. I advice planting the seeds where the trees are to remain and removing the surplus ones to other places and always pulverize the soil and dig pretty deeply and then the young trees may be transplanted in summer given a little water now and then to get a start. Young native trees will sometimes grow well if nicely put in the hard earth. Digg out a small hole as will suffice to plant them in but they must then be planted in winter or autumn to ensure sufficient moisture in hard earth. I have planted a lot of different young trees and find that when transplanted too old they are likely

Annual Meeting of the N.S.W. Bee-Farmers Association, in Sydney Easter Week.

to die. I got 8/- per 100 to grow up big ones, and 90 per 100 of very young. Guard them with a few small stones. At present I have a large number of sugar gums growing nicely, also red gum, stringy bark, iron bark, etc.

CORRESPONDENCE.

R. S. Crookston, N.Z.—I have got no bees at all now, but expect to start next year. The weather is most beastly here just now, the crops are very backward and in some places it is a total failure.

E. P., Bangor, Jan. 22, 1903.—I am sorry to say we are not doing much in the bee line at present. The red gum blossomed well but there was no honey in it. I only got 21 60lb. tins from 40 swarms as yet. It may be better when the box comes out next month, as we have had some good rains lately; we had about six inches in December. Hoping you are doing better over there.

J. R. H. Gaggin, Lismore.—I enclose nomination sheet and proxy as requested. In your list of members I note you have me down for only 215 hives. That was the number possessed by me 18 months ago. I now have 455 all told in five yards. As subjects for discussion at coming meeting of N.S.W. Bee Farmers' Association I would beg to suggest: 1. The evergreen problem of export of our surplus honey, and (2) the urging of every individual member of the Association to an unremitting canvassing of his neighbouring beekeepers, with a view to the latter joining the ranks of the Association. A stronger combination of honey producers is urgently needed. We can hardly as yet look upon the Association as really representative. As regards the export question it is, in my opinion, of vital importance. At the present moment how many scores of tons of honey are being held back by large producers, because there is no remunerative outlet, and won't be for months, for it in Sydney. How comes it that we cannot—unlike the

dairy farmers with the product—command a ready outside (London) market for a great part of this surplus?

W. B., Tunnack, Tasmania, Jan. 27th, 1903.—In sending my renewal subscription for the coming year I wish to say that I still find the information which the Bulletin supplies very serviceable. Honey is coming in nicely at present, but I have had a deal of trouble with them lately on account of their determined disposition to swarm. This I attribute partly to the unfavourable weather which prevailed since the new year, when they gathered only enough to keep brood-rearing going. As I have had 3 or 4 cases of swarms coming off when I could discover no queen-cells, I would be obliged if you could let me know the reason. In some cases it was a swarm which I had returned, but in one case I had broken off all cells the day before. I again opened the hive thinking I had overlooked a cell, but could find none.

[Did you put young larvæ with the swarms which you say you returned? We always put such with young swarms. If you had shifted them into a new position they might have been more satisfied. Are you sure you did not miss a queen cell, or had a young queen come out before you destroyed the cells? Being then small you might have overlooked her.]

S. T. M., Dungog.—2½d for prime quality honey does not pay sending to market, and there is no local demand. Then there is loss of tins and cases. I think the Bee Farmers' Association should have taken a stand before this, and demanded that the honey be sold gross weight, as I am only credited with an average of 57½lbs. of honey, and lose tins in bargain, which is very unfair to the beekeeper.

R. S., Narrawa.—About that spring dwindling controversy, I think it would be a good idea for those that feel sure that spring dwindling is brought about by bad management, to see if they can, by way of experiment, produce it by the system of management which they think brings it about. Let Mr. Parry take an average swarm near the end of the season, fill the brood-nest with combs, in

which there is scarcely any room left for the queen to lay. Feed well through the winter and early spring, and see what the result would be. One of your correspondents infers that I think no one should keep bees, only those that are engaged in beekeeping solely, everyone should keep bees and there should be no ring-barking. And if every squatter, farmer, Chinese gardener, and in fact everyone where there is honey to be gathered in Australia kept bees, what a fine lot of honey would be saved from going to waste—thousands of tons. The price might be perhaps 1d a pound, but that would not matter to your correspondent, as he says he is not dependent on bees.

CAPPINGS.

From American and other Bee Journals.

A Beekeepers' Insurance scheme is working in Great Britain, to insure against losses by law suit in connection with the bees.

There is a large demand in Ireland for pure white wax, for candles for altar lights. We presume it is the same on the continent of Europe.

Scotch beekeepers have altered the standard frame from 17in. to 15½in., as it allows a hive to be made more compact and handier in travelling to and from the heather.

The *Beekeepers' Record* gives an instance of a strong hive, in which the queen was confined by excluder zinc to the brood-chamber. In the supers above laying workers were in possession.

Potassium permanganate of potash it is said, will render bee poison harmless. The difficulty, however, is in applying it to the poison, which, by the time a remedy can be found, is coursing its way in the blood.—*Gleanings*.

In some parts of America paper packages are used for retailing candied honey. There is no leakage; the honey when it is candied solid is hard, and if you put it

in a paper bag you could stick it in your pocket and go around the corner just as fast as you want to, and it won't leak; it will leave the surface of the honey, where the paper touches it, smoother than would be the skin of a sausage.—*Exchange*

The Austr. Bztg. says: It is useless to furnish a young swarm with a full set of combs. Experiments made, showed that the swarms hived on starters only were heavier and in better condition than those hived on full combs.

A fact: Not one of the men who once quit section honey has gone back to it. We were ourselves large section-honey producers several years ago, but have been converted, and have disposed of most of our section-honey supers, and to-day have a large pile of them awaiting a purchaser.—H. Hyde, in *Gleanings*.

The *Rocky Mountain Bee Journal* says: The catnip produces lots of honey we do not doubt. That it would pay to raise it for honey alone on land valuable for other crops we do doubt most seriously. But every beekeeper should procure some of the seed and sow it in waste places. It is a perennial and when once established is permanent. It has also the quality of not being affected by drought, which recommends it for this country.

The tendency toward specialism is on the increase and only a few more years will elapse before practically all the honey produced for market will be by those who make a specialty of its production. Low prices and the growing prevalence of disease are leading factors in bringing this about. Fewer beekeepers will keep the bees of the future and there will be more bees kept.—*Exchange*.

HIVING SWARMS ON STARTERS.—G. M. Doolittle says: When the five frames are given at the start, one or more of them are likely to have drone comb started in them, and when once started it is likely to be continued to the bottom of the frame. So Mr. Doolittle fills the hive with frames at the start, and 36 to 48 hours later he takes out half of them, leaving those that have only worker-comb

in them, and these will be filled out with worker-comb.—*Exchange*.

If you produce a good article of extracted honey, you can get it candied so dry and hard that you could wrap it up like a bar of soap, or anything of the kind, and carry it home without any danger of it ever melting or breaking; you get a good, ripe article of extracted honey, and when you think it is beginning to granulate then stir it up well and run it through the honey-gate while it is in that condition; let it go as far as it will go so that it will run well, then run it into your packages, and it will be hard, and white, and dry.—J. A. Green, in *American Bee Journal*.

Honey is a valuable and wholesome article of food, which is not so much seen on our breakfast tables—and on our readers' counters—as it ought to be; but it will probably be taken up commercially one of these days. A Colonial Office report on Malta mentions that honey is one of the products of that British Island. In the north-west portion overlying the upper coralline limestone, are uncultivated lands suitable for the growth of the wild thyme. A firm at Birchircara cultivate the bee on a rational and commercial basis, and the honey produced is of the first quality. The output could be increased were it not for the destruction of the thyme, which is, when dry, collected for fuel.—*Exchange*.

It is a difficult matter to get bees to fill out every cell with honey and cap it over. Sometimes conditions are such that it is practically impossible to get a perfectly filled section. There are several essential conditions. One is an abundance of nectar in the fields, and a warm super—at least one that has no leaks for hot air. There should be a large force of bees, and tiering up should not be pushed too far. To get sections nicely filled, do not put the second super under the first one when the first one is partly built out, but put second super on top. Too much forcing in the supers is apt to leave sections not perfectly finished. As to the

proportion of extracted to comb, if you run the hives for the former you might get from 25 to 100 per cent more honey. It is impossible to give any definite figure of proportion.—*Gleanings*.

Two things are essential in rearing prolific queens—a strong colony, and a large hive when she is about to begin laying. I also find that a prolific queen is injured by putting her in a hive too small for her capacity, or by confining her through a honey-flow. A prolific queen that has her brood-nest reduced to 4 or 5 combs through a honey season will seldom be the egg-layer that she was, and I am inclined to believe that where large hives are used and care is taken, when the young queens are about to lay, that they have a strong force of bees. In several generations the egg-laying capacity of queens can be increased, and on the other hand if kept in small hives the tendency is to degenerate and lessen the capacity of a prolific strain of queens.—W. J. Stakmann, in *American Bee Journal*.

The Volucella Plumata has only two wings, instead of the four accorded all the *Hymenoptera*. Yet the close resemblance of this insect to the bee is so very marked that it receives permission to enter the nest of the bee, where it lays its eggs—ingrate as it is—in the living larvæ. On being hatched the young fly subsists on the fleshy parts of the young bee, and contentedly settles itself down to a good nap in its stolen bed, until it comes out a full-fledged fly. One wonders that the bees do not detect the counterfeit, but it would appear the double is so perfect that it is allowed to pass muster as a true bee. The general form and size is indeed wonderfully similar, and the colour of both is almost identical, though when closely examined almost every organ differs anatomically from the corresponding one in the bee it so closely resembles in general form and figure.—*British Bee Journal*.

G. M. Doolittle says in *Gleanings*:—"If a weak colony is deprived of all of its

combs save one of honey and one of brood, and a frame having a starter in it is inserted between the two combs left in the hive, the bees will, ninety-nine times in a hundred, fill that frame with worker comb, and said comb will be as perfect as one built from foundation under the most favourable circumstances. Taking advantage of this fact, I take frames of brood from the weaker colonies I have at the beginning of the honey flow, those too weak to work in sections to advantage, and give this brood to the weaker of the stronger colonies, and set the weak colonies to building comb, as I have explained. You will note here, that I really make a gain in this way as to surplus honey, for this brood where placed, gives better results in section honey than it would have done had it been left where it was with the weak colony, as it almost immediately puts the bees of the colony where given (into the sections) at work, while, had the brood remained in its own hive, these colonies would have been somewhat slow in starting in the sections."

"Never, never leave for a moment honey running from a tank. If you have to take your eyes off the running honey, first close the gate; then it's safe." "In handling combs of honey, always keep them on edge—reverse it edgewise—not flop it over as if it were a piece of solid tumber." "There is but one position for a hive or super containing foundation; that is as it sets upon the hive; never set them down otherwise." "The operator's position is at the rear or side of the hive; never get in front of it; that's the bees' end of the hive."—*Exchange.*

The Hunts B.K.A. (England), discussed and decided to put into operation the following questions:—1. The wholesale price of honey, and how to obtain it. 2. To assist members in case of sickness during the honey season. 3. To assist relatives of deceased member in disposing of bees, &c. 4. To raise a fund in the form of insurance to assist members in the event of their being called upon to

pay compensation for damage done by their bees. In the case of a member dying and leaving his bees to be sold, the Association shall, on receiving such information from the proper quarter, take steps to dispose of the same. There is no doubt that an apiary of a deceased member, offered for sale by the Association, would realise a much better price than if left to be dealt with by people who know nothing about bees, to say nothing about the worry and trouble it would save the relatives.—*Exchange.*

For queen candy *Gleanings* says:—Be careful not to make the mistake of getting confectioners' sugar. In general, confectioners' sugar is brought to a finer state of pulverization than ordinary pulverised sugar. If you examine the former with a glass you will see besides the cane-sugar crystals something else and that something else is starch. Pulverised sugar should show nothing but minute crystal cubes when examined by a glass of high magnifying power. But there is another way whereby you can detect the starch, and that is by the taste. If you can sometimes get hold of some confectioners' sugar and a sample of pulverised, taste one and then the other. You will then perceive a difference. There is, still another difference. Confectioners' sugar has more of a tendency to lump up. While the pulverised will do so to some extent, the other will cling together in chunks that have a sort of flaky brittle feeling.

I was induced to use large hives by some circumstances which I will relate: I helped a man cut two bee trees seven years ago, where the bees had been occupying the trees for four years; one gave us 517lbs and the other 73, both had the space in the trees full of honey. The same year I had a man (who was managing an out apiary for me while running a store) put up 50 boxes in trees to catch absconding swarms. Among them he put up several sugar barrels, some cracker boxes and some nail kegs. We noticed that the barrels and large boxes were

first occupied. One colony in a barrel we left on the ground until the close of the season and it gave us 300lbs of fine honey. Eight years ago I had 56 swarms come out in one day, and although I had four assistants helping hive them, seven or eight swarms clustered together and resisted all efforts to separate them, so I had 2 ten-frame hives and 2 supers made, and placed one above the other, leaving the two openings. Now this colony finished up 365 sections of honey after filling two hives, while none of the other colonies hived that day gave a single pound of surplus. If I put a half-dozen hives on a colony I leave an opening for each hive, and I seldom have a swarm from colonies so treated.—Somnambulist in *Progressive Bee Journal*.

Decayed wood as smoker fuel does not do nearly as well for me as stick of sound wood the length of the smokerbarrel, split up fine. This gives a smoke than can be depended on and nothing else does. It responds to the slightest touch and yet gives a dense clouds whenever wanted. Rotten wood smoke for me is generally thin and blue, and to be obtained in quantity without considerable puffing. Clogging with ashes, and insufficient smoke, unless one is puffing all the time, put old bagging out of the race for me. Excelsior is fair but lasts only a short time. Planer shaving cause poor drought with the smoker frequently going out when not in continual use. Twigs is a nuisance—always crooked, hard to get in and do not burn nearly so well as split wood. Chips from the woodpile are hardly over the right size, and when at their best are still inferior to the upright sticks. The convenient form of these is pieces of old sections split in three. I wonder if the difference in views is not caused more by difference in individual requirements than by the fuel. Some may never want more than a light smoke. — *Progressive Beekeeper*.

In this locality, as reliable a method as I know of for preparing the bees for winter is one that I have partly followed

the last two years. At the time the last super is removed, it is placed by an empty super. If the later is a T-super, it is put on up side down; if it has other fixtures, these are removed. The bees, within the next few weeks, propolise tightly the junction of the super with the hive. When it is too cool to propolise further, two or three thicknesses of a burlap, cut a trifle larger than the hive, are laid over the frames, and the edges tucked down snugly inside all round. In this manner a slow upward ventilation secured through the porous burlap and the loose junction of the cover with the super, while the tightly sealed junction of the super and the hive presents cross-currents of cold wind and snow; and the burlap quilt, being entirely within the hive, does not act like a wick in absorbing outside moisture, as is frequently the case by the ordinary method. This method entirely does away with internal moisture.—F. L. Thompson, in *Progressive Beekeeper*.

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