The Australian bee bulletin. Vol. 3, no. 29[b] September 23, 1894

West Maitland, N.S.W.: E. Tipper, September 23, 1894

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THE AUSTRALIAN BEE BULLETIN.

A MONTHLY JOURNAL, DEVOTED TO BEE-KEEPING.

VOL. 3. No. 29. SEPTEMBER 23, 1894. PER COPY, 6d

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Save your copies of the A. BEE BULLETIN. Send to us and we will bind 12 numbers of them for you for 3s 6d.

E. TIPPER.

The National Beekeepers Association.

A MEETING of the Committee of the above will be held at the Technical College, Harris Street, Ultimo, on Friday, the 28th September, at 8 p.m,

Business—Very Urgent steps re Foul Brood Act, and certain clauses in LAND Act.

A full attendance is respectfully and particularly requested.

H. RAWES WHITTELL,
Secretary.

Hunter River Bee-Keepers' Association.

MONTHLY MEETINGS.

TUESDAY, OCTOBER 16TH.
TUESDAY, NOV. 13.
TUESDAY, DECEMBER 11TH.

C. MANSFIELD, Hon. Sec.

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The Australian Bee Bulletin

A JOURNAL DEVOTED TO BEEKEEPING.

MAITLAND, N.S.W.—SEP. 23, 1894

THIS is another important month to the bee-keeper. Queens with proper surroundings will be breeding fast, and the frames become filled with brood. Nature who orders everything wisely, causes that plants and flowers should now yield an abundance of pollen. From pollen comes the nutriment that feeds and nourishes the larval bees. So should there not be much in your district, you should feed such to your bees by giving them meal. Plenty of pollen now means strong hives when the honey flow comes. Examine the hives more frequently, to see the queen has plenty of room to lay in, otherwise as the young bees emerge, and the hive gets full of bees and brood, swarming will be the order of the day. One strong colony that has not given a swarm, will often give far more honey than one that has thrown out swarms, with the swarms included. The queen should be stimulated to increased laying. Try Mr. Bradley's recipe on page 115. Be sure that water is accessible. Should you purpose queen raising, you should now select the hives from which you wish your mating drones, placing drone comb in the centre of the brood nest, and keeping drones and drone comb down in all other hives Strengthen the colony having the queen from which you wish to raise your queens, by giving them plenty of hatching brood. As Artificial Swarming is the Special Subject for this month, we hope our readers will well study the different contributions. Drone-laying, or poor queens should be superseded by purchasing from reliable breeders.

Have you seen all the supply catalogues issued this season ?

We would call attention to Mr. Donald Grant's letter re Foul brood in another page. Now National Bee-keepers Committee N.S.W., are you awake ?

Mr. H. Sutton, of Tatura, at a recent meeting of the Debating Society there, read a paper on "Bees and Bee-keeping," that occupied five and a half columns of the *Kyabran Union*.

A Mrs Dunkin, in the *American Bee Journal*, says she knows sweet clover seed will keep moth out of flannel goods, and if she had bees she would lay it thick around her hives to keep the bee moth out.

Mr. R. K. Allport informs us that a ton of honey, sent by him to London, per s.s. Thermophyle sold at a satisfatory figure. He thinks, had it been a larger consignment, it would not have been so profitable.

Mr. Albert Gale is still on the war-path. The *Port Macquarie News* of September 8, gives an interesting accouut of a lecture he delivered in that town, to a very appreciative audience. He went from thence to Rollard's Plains.

A Mr. Graden, in reply to Mr. McEvoy in the *American Bee Journal*, says Foul Brood is not necessarily carried by robber bees, but the odour of the disease will spread it. Wasps and hornets are affected by it, and from their nests it can be communicated to the bees.

The Foul Brood Act of South Australia will be found on page 91 ; of California on page 134 ; and of New Zealand on page 164, of Volume II of *A. Bee Bulletin*. We take it that the New Zealand one, with slight alteration, will be most suitable for New South Wales.

New South Wales Beekeepers !—Have you taken shares in the Honey Supply Co ? If not, then don't grumble if, when you have a good honey flow, the country market is glutted, you cannot sell your honey, and at the same time thousands upon thousands in Sydney and other large towns dont know the taste of it, or if they did, wont buy because it looks too expensive, or else mistrusts it for being "made-up stuff!"

The New South Wales postal authorities have instructed their officials not to exchange postage stamps, the money order and postal-note system entirely answering the same purpose. Will our friends note in sending their subscriptions to send postal notes or post-office orders.

Mr. Alley, in the June *Apiculturist*, gives his method of keeping surplus queens:—"One way to keep surplus queens—either virgin or laying queens—is to place them in nursery-cages, about 35 queens to a frame, and insert the frame in a queenless hive. Here the queens remain quiet for weeks."

The Editor of *Gleanings* says:—Unless there are nerves in the wings clipping can give no pain whatever. The microscope, if we are correct, shows no nerves, or anything that corresponds with them. There are nerves in the hollow of the horns of cattle, the same as in the human tooth. Hence the cutting of either causes pain.

Visiting Mr Mansfield's apiary recently we were shown a sample of what can be accomplished by the aid of a little shrewdness. He had first purchased a small circular saw; at an old machine shop a pair of cog wheels and a spindle; then some hardwood and nails—total output £1. Ingenuity, elbow-grease, and a few carpenter's tools made up what he calls a capital Barnes' saw.

The *Port Macquarie News*, Aug. 25, says:—"We are pleased to announce that Mr J. Dick, sen., has again entered into the holy bonds of matrimony. It was with no little surprise when the Fernmount arrived last Tuesday week that we learned that Mr Dick had taken unto himself a wife: but we offer him congratulations on his choice."—So do WE.

We have had a little foul-brood experience that may be interesting. We visited our out-apiary on July 31. Discovered foul brood bad in No. 2 hive. The day had been fine, but as we were looking at this hive a cold wind came up from the sea, accompanied with drizzling rain. The foul brood was in two frames, and it was a pitiable sight to see. We hastily cut out all the affected brood and threw it in the fire. Procured the sprayer, filled it with carbolic acid, 1 in 17, poured it well into the combs and about the hive. The bees were soon all outside. Covered bees and hive with bagging. They were back in the hive next day, and on 14th September was one of the most prosperous hives in the yard, not a trace of foul brood in it. A good sprayer is a necessity in every apiary. That alone will reach the bottom of the cells where the home of the disease is.

Now is the time for the Committee of the National Bee-keepers Association of N.S.W. to look alive. A Land Bill is being passed by the parliament of that colony, and clause 16 provides for "Homestead Selections without Personal Residence," one of the proposed provisions of which is that the selector must have one-tenth of the area within three years and and one-fifth during the fourth and fifth year under cultivation. Clauses 23 and 24 provides one quarter of the land to be cleared of scrub during each seven years occupation for settlement lease. In the interests of bee-keeping, would it not be well to watch these clauses, and if instead of the word "cultivation," or clearing of scrub, let a certain number of beehives be placed instead, or else reserves of mountainous or otherwise useless country set apart for beefarms. Perhaps the quantity required to be cultivated or cleared might not be a great object, still it is well the committee of the N.B.A. should take the matter into consideration. This subject is well called attention to in this number, by Mr Studdart, of Boggabri.—[After writing the above we have been pleased to receive a notice of a committee meeting to be held in Sydney on Friday evening, the 28th inst. We feel assured that not only every member of committee but other beekeepers feeling keenly on the above matters, will put in an appearance.]

PUBLICATIONS RECEIVED.

Among the publications received this month are Messrs Hebblewhite's new catalogue. It is very complete, and the compilation and whole turn-out is excellent, reflecting very great credit on the management. Those who have not copies should send for them. We have to thank them also for kind notice of the A.B. *Bulletin.*

The *Journal of the Bureau of Agriculture of Western Australia*, is also to hand. It is full of informatien and shows us that the government and farmers of that comparatively young country are determined to be up to date and make the most of the splendid heritage they find themselves possessed of.

Also we have to acknowledge the receipt of copies of the Annual Report of the Beekeepers' Association for the Province of Ontario for 1893. It is very full, comprising 52 pages of royal 8vo. Also the Annual Report of the Farmers' Institutes of the Province of Ontario. This consists of 176 pages of royal 8vo. Throughout the reading is very instructive.

We have to acknowledge the receipt from Mr. Stirley, of Port Elizabeth, of a very nice pencil sketch of part of his apiary. Also a copy of *De Express en Oranjevrijstaatche Advertentieblad* of Juli 6, published at Bloemfontein, South Africa. It is printed partly in English and partly in Dutch. The English part and the advertisements are very interesting, there being some good racy writing. We presume the Dutch part is equally good.

H.R.B.K. ASSOCIATION.

The annual meeting of the above took place at the Technological Museum on Tuesday evening, Sept. 17. Mr. J. W. Pender, vice-president, in the chair. Minutes of the two previous meetings read and confirmed.

Mr. Mansfield, the Hon. Sec. read the annual report, which was of a very satisfactory nature. It represented the Association as the premier one in the colony, spoke of the exhibits sent by it to the Chicago Exhibition, and the obtaining of a bronze medal for same; the success of the honey department at the last Maitland show; Mr. Pender's visit to Italy, England, and America; and his reception on his return; the general progress of the industry in the district as illustrated by the establishment of Messrs Pender's factory for manufacturing bee supplies; the success of the *Australian BeeBulletin.*, and to the presentation of a testimonial to Mr. M. Scobie for his several years services as secretary.

Mr. W. S. Pender read the treasurer's report, which showed a balance of £2 16s 0d in hand.

The report and balance sheet were adapted unanimously.

The following gentlemen were elected office bearers for the ensuing twelve months :—Mr. Robert Scobie, president; Messrs J. W. Pender, J. Tucker, and C. Hardy, vice-presidents; Mr. W. S. Pender, treasurer; Mr. C. Mansfield, secretary; Mr. G. Pender, assistant secretary; Committee, Messrs Munday, Harden, Tipper, Robert Pender, Buttsworth, M. Scobie, and Pullen.

Mr Buttsworth laid on the table sample of bluish coloured blossom on a spotted gum tree near Cessnock, very different to the usual spottom gum blossom. Mr Scobie thought same must be a parasite.

Mr. Tipper called attention that at the late Singleton show, Mrs. Walter May had been a successful prize winner in fruits preserved in honey, that that lady had made cookery by using honey instead of sugar a special study for some years, and had offered to give an evening for the purpose of practical demonstration and instruction in such uses, whenever the association should think fit.

Mr M. Scobie suggested that the forthcoming H.R.A. and H. Association's Show would be a most suitable opportunity, as more people would be present, and the object being to educate people in the uses of cookery, more good would result.

Mr Tipper placed on the table a basket containing samples of Mrs May's cookery with honey, including blanc-mange,

honey cakes, biscuits, plum pudding, &c. These were handed round the table, and were very highly appreciated and recommended. A resolution was carried inviting Mrs May to give such a demonstration, and a sub-committee was appointed to carry out the several arrangements necessary.

Mr Tipper alluded to the proposed Land Act at present before the country, and moved that this association urge the committee of the National Beekeepers' Association to watch the same in the interests of the beekeeper, particularly in the matter of substituting apiaries for other improvements, as beekeepers required all possible natural forests for feeding grounds.

Seconded by Mr Scobie and carried.

Mr Tipper moved that the matter of a Foul Brood Act be also urged on the attention of the National Bee-keepers' Association. There were parts of the country where it existed badly, and in the apiaries of careless beekeepers was causing trouble and loss to their neighbours, whose living oftentimes depended on it. Seconded and carried.

It was also agreed on the motion of Mr M. Scobie, that the matter of Foul Brood be a special subject for next night of meeting, to be opened by Mr Tipper.

A very handsomely got-up testimonial, executed with pen and ink by Miss Gertrude Willard, of Largs, was now presented by the chairman to Mr M. Scobie, as an acknowledgment of his valuable services to the association as secretary for several years.

Mr Scobie suitably responded, and alluded to the pleasure he had derived from the work, and the interest he had always felt and would feel in beekeeping.

SPECIAL SUBJECT OCTOBER
INTRODUCING QUEENS.

QUESTIONS.

By A. A. Grindrod.

25.—How and in what proportion is honey used in preserving fruit.

26.—Would some of your contributors who have brought honey largely into use in cookery kindly give some of the ways of using it.

SPECIAL SUBJECT.
ARTIFICIAL SWARMING.

W. S. PENDER, West Maitland.

I presume the subject is "dividing" or getting increase by making one colony into two. The best way to do this is to shift the hive to be divided to one side, place a new hive with combs or foundation in its place and place two combs of brood one with bees on and the queen therein and a comb of honey, if there is none in the combs. Remove the old hive to a new stand and introduce a laying queen. No hives should be divided just before or during a honey flow unless increase is wanted without regard to honey.

BINNI, Bolwarra.

I presume by "Artificial swarming" you mean "Dividing."

I gave up the practice of dividing long ago, except of course in connection with queen raising. I found it in effect too disorganising to the bees and too expensive to the beekeeper.

No method of dividing that I have seen published, or tried, compensates in practice, in my opinion, for the loss of that vim that bees have under the impulse of natural swarming, for storing surplus honey. Some beekeepers think it very convenient to have their bees in such shape that "looking for swarms" is unnecessary I am not of their number. *I want each of my hives to swarm once every year.* It is far easier to unite in the autumn, if you have too many hives then, than to divide in the spring. My energy is therefore directed to so stimulate my bees that they get swarming over early, and if possible before the principal honey flow opens.

J. F. MUNDAY, Woodville.

Artificial swarming is only resorted to when increase is desired. My method is this :—I first make some nuclei (the frames of my hive are well suited for that purpose), and when the young queens are laying in them, I divide the strong colonies thus : About mid-day I take an empty hive and from a strong colony transfer the frame of brood on which the queen is and the bees (just as it is), to the empty hive. Then I transfer the combs containing eggs and *unsealed* brood *without the bees*, leaving only two or three frames of sealed and emerging brood with the bees in the old hive. I fill up the hives with frames of comb or foundation and remove the old hive some 10 yds away and put the new hive in its place. In the evening I introduce a young queen in the removed queenless colony. Most of the old bees will have gone back to the hive in which their queen is. Both colonies will soon be strong and prosperous.

A. FRANK BURBANK, Queensland.

Re artificial swarming, for a nine-frame Langstroth hive take two frames of honey, three frames of sealed brood, bees and queen, from parent colony, and put them in a new hive where you intend them to remain; see that you get plenty of young bees with the frames of

brood for the new colony. If you get all old workers into the new hive they will on returning from work go to their old stand.

The new swarm will generally start work about five days after being swarmed.

Give the old colony a few frames, with full sheets of foundation, and see that they have queen cells, or brood young enough to rear a queen, or better still, introduce a laying queen. The best way to artificially swarm a double colony (two full stories) is to remove the old hive from its old stand, and in its place put a new empty hive, then go to the old hive and take two frames of honey and two or three frames of brood; put them in the new hive, taking care to have a frame of honey on each side of the brood, and fill out with frames filled with foundation. All the old workers will return to the new hive, and generally make a nice single colony. Always see that the queenless colony has means of getting a queen as soon as possible. Now put the old colony where you intend it to remain. The bees will do the rest. I answer this subject, but do not believe in artificial swarming; natural swarming is far better—you get stronger queens, and the bees work with a better heart.

J. D. G. CADDEN, Windsor.

The swarming season being at hand accounts for subject this month. I suppose it is intended only to refer to plans for season, for to atttempt to give all the various plans, practised, successfully, would take up whole of September No of *A.B.B.* If strong colonies, and I desired to count stocks only, I would purchase untested queens or (if a heavy purse) tested queens, and divide my colonies according to strength and honey in each; into say four colonies, giving a queen to each and placing each hive a distance apart. If I desire to add queen rearing and Italianize at same time, I would start my Italian queen colony raising queen cells, and then put a cell when just ready to hatch on a frame, and each frame with sufficient bees and honey, and thus form any number up to number of frames in any hive so as many colonies, filling remainder of hives with empty combs or frames filled with foundation, To an amateur, I would say, go slow and do not be too anxious to increased numbers, rather strengthen stocks. Of course if queen rearing is attempted, be sure that you have drones flying or else take first method given. I prefer natural swarms and with clipped queens; all tree climbing is done away with. I rear queens by Doolittle's method and prefer it and find the best of queens reared so, but I do not ask one colony to raise more than 10 or 12 cells at a time. I go for good queens, not number, and strong colonies. Much more might be said on this subject, but fancy from all replies a number of methods may be given, so content myself with short notice.

FITZ GEEBUNG, Paterson.

Artificial swarming or artificial increase, which?

Artificial increase I would recommend on the following plan:—Take an empty hive, place it on its stand, now go to one of your most populous colonies, select a brood frame with plenty of young bees on it and plenty of young bees just hatching, but not many of unsealed larvæ or eggs. Place it in the prepared hive, bees and all, but be careful not to take the queen. Now take another frame from the same hive which also should have plenty of young bees on it. Shake into the prepared hive and cover up with a cloth. Now put the last named frame back in its place, also an empty frame or comb. Now go to another of your best colonies, take a frame from this one, which should be about in the same condition as the first. Shake the old bees off, place it in the prepared hive next to the first frame. Now take one or two frames with unsealed honey and pollen, place them one on each side of the brood frames. That would make a nucleus of four frames. After three or four days give them a frame of brood in all stages, or insert a piece of comb with eggs from your best queen; or give them a queen. You may add frames with hatching brood from time to time; or better still exchange those frames where the bees have hatched out, for brood frames from which young bees are just emerging. Taking care not to give them any more brood than they can cover. Care must be taken that the bees do not raise a queen from any other eggs but those inserted from your best queen, if you do not give them a queen. There are other methods by which artificial increase can be made. But for a novice the above plan I think the best, because it does not depopulate the old colonies very much.

GEO. COLBOURNE Jnr., Cave Creek.

I am often asked which I think best, natural swarming or artificial increase? My answer to such questions is artificial increase. I know that some of our leading lights in apiculture advise otherwise, claiming that natural swarms work with greater energy. On this point I beg to differ, as my experience, extending over many years, tell that a well made artificial colony works with equal vim to a prime swarm. I know that many of the ways of making artificial swarms are objectionable. I do not like the practice of shaking the bees off the combs into an empty box or hive cap, and then putting them into a hive with combs or empty frames, as so many of the bees go back to their old hives, and so weaken the new swarm, that it takes them a long time to build up to a strong colony. With the method that I have practiced for years, I can have my new swarm working in the supers a few days after making them. My method is as follows:—As soon as the hives are full of bees and brood, and honey is coming in freely, I take one or two frames of hatching brood and adhering bees from the center of one of my strongest

colonies, and carry them to the new hive (which I had previously prepared) and hang them at one side. I then go to a nucleus hive and take two of the frames of brood and bees and queen, and hang them beside the frames first put in the new hive. I then take enough frames of hatching brood and adhering bees from other hives, to fill the brood nest of the new hive, when the brood nest of the new hive is full of frames, I shake the bees from two or three frames (taken from other hives) on top of the frames of the new hive. The bees so given will make up for what few will return to their old hives. In this way I have a strong colony at once, and there are bees and brood of all ages in it and a laying queen. Of course I am very careful not to take the queen from any hive along with the bees and brood. To make sure that I do not take her, I look through the hive until I find her, and then stand the frame she is on outside the hive until I have taken what frames and bees I require. I then return the frame she is on and fill the place of the frame that I took with empty combs or starters. I feel sure that every intelligent apiarist will agree with me when I say that artificial increase made in the above way, is far superior to natural swarming. If we give frames filled with comb to the natural swarm, there is not a bee hatched until 21 days, and what a great number of the bees that came with the swarm are dead, and if the swarm was hived on empty frames, then there is a lapse of 30 or 40 days before many young bees will hatch. Thus we see the great advantage of artificial swarms. In my opinion any method of artificial increase that does not allow of making each new colony equally strong as our best colonies is faulty and to be shunned. Let our motto be strong colonies, and then if the flowers secrete nectar we will be able at the end of the season to rejoice over a bountiful harvest.

D. G. GRANT, Muswellbrook.

I consider Artificial Swarming one of the most intricate branches of the art of bee-culture and the one above all others in which "a little knowledge is dangerous" and experience likely to be dearly purchased. It is the "*pons assinorum*" of the novice. As I presume it is for the benefit of this individual that these monthly questions are gone into, I will say that there are two ways of "swarming" artificially. The first, the wrong way, is that generally followed by the novices. He goes to his hive, regardless of time, season, honey flow, etc., lifts half the bees into another hive and leaves the queenless half rear a queen for themselves. As they have larvae of all ages in their combs, they just as generally choose the oldest they can find to convert into a queen: result, an imperfect queen, which in all probability turns out a drone-layer before the season is out; or it may be that the division is made so late in the season that there are no drones flying, and the following spring finds our friend with one weak colony (or perhaps none) instead of the two he meant to possess.

The right way is mainly to divide at the right time, and to make sure that the queenless portion of the colony, if they have to rear their own queen, have none but the very youngest of larvae to do so with, whether it be their own or selected from another hive. Of course the apiarist who sells bees and wishes to increase the number of his colonies, regardless of results in honey yield, will adopt different methods to the one who expects his bees to return him a honey crop as well as increase in numbers of stocks. As the former probably understands his business, I will deal with the latter only.

In the first place, unless you have a fair amount of experience, do not attempt artificial swarming, only during or near natural swarming time, and do not try to multiply your stock by 6 or 10. About the simplest method, and the one nearest approximating the conditions ruling during natural swarming, is that given by James Heddon, in "Success in Bee Culture."—"Remove the old queen and one frame of brood, unsealed preferred, placing them in the centre of a new hive, filling up with frames of foundation and comb. Remove the old hive to a new location—place the new hive in its stead, Shake about half the bees from the old hive in front of the new one. On the following day give the old stock a queen cell or a virgin queen just hatched. If these are not at hand, let them rear their own queen." If you have fertile queens on hand, introduce one by one of the methods explained at different times in these columns. To the above I may add that this operation should be done early in the season, as soon as drones are noticed in the hives, also that as the queenless bees, if they are allowed to rear their own queen, will probably start cells on brood of different ages, it is a good plan to look through them three days later, and break off any cells that are capped over, leaving only two or three which are still unsealed, and consequently contain the youngest larvae, which will produce the best queens, or if it can be managed, leave in the hive combs containing only sealed brood and the very youngest larvae. There are, of course, variations of this plan, but to any novice intending to practice artificial swarming I should certainly say "go slow."

Personally I do not favour artificial swarming though I admit that in many cases it is a very useful operation (as at out-apiaries.)

C. MANSFIELD, Largs.

Of course the object in resorting to artificial swarming is to secure increase, and information on this point will be sought chiefly by beginners. The subject is a very important one at this time of the year. Occasionally, I receive from a correspondent an enquiry like the following:—"It is now three years since I bought a hive of Italian bees, and I have never got a swarm from

them. They work well, I have only taken the honey from them twice. I thought by not interfering with them too much they would send out swarms. What would you advise me to do?" In a case like this, with a practically non-swarming strain of bees, the end sought was effectually frustrated by the means adopted for its accomplishment, viz., leaving them the honey, and not "interfering" with them. The honey should have been removed to give laying room for the queen, and when overcrowded the swarm should have been divided. And by this time at least a hundred colonies could have been secured from the one, provided the range was a good one That is, the one could have been made into five the first summer, the five into twenty-five the second summer, and the twenty five into a hundred or more the third summer. When increase can be so rapidly secured for stocking the home yard, or for furnishing the out apiary, where is the use of those much-swarming bees? Oh, no! When the apiarist has his range stocked, he wants bees that will fill his hives, and stop "on the job" and work.

To swarm bees artificially, or, which is about the same thing, to divide them, we must be careful to wait till the weather is warm, and the swarm to be divided is pretty full of bees. Then having an empty hive prepared, and, in this case I should strongly advocate the use of full sheets of foundation, with foundation or starters in the frames, first find the queen, and place the comb she is on to one side. Remove the old hive from its stand and put the new hive in its place. Take a comb of honey from the old hive, and place in front of the new hive, next that an empty frame or frame of foundation (an empty comb would be preferable) then the comb with the queen, then another empty frame, then a comb of unsealed brood, and next a comb of honey, and then fill up with empty frames. Now take the old hive to a new location with the greater part of the bees, and the combs having mostly sealed brood. In the old hive place the combs without empty frames between, for the present, tuck both hives in nice and snug and leave them so for nine days or ten at the latest. Then examine the old hive which of course has no queen, and most likely several queen cells will be found. Cut all these out but one, and place in protectors (Doolittle's or West's) for use in the following manner:—Divide as many colonies as there are nice big queen cells, and place one cell in the queenless half of each divided colony. The queenless half of a divided colony will appear at a standstill for a week because all the old or field bees will return to the old stand where the new hive is. And from this it will be seen why the queen is left on the old stand where she will be supplied with laying room by the extra force of workers, and it will also be seen why the unsealed larvae must be left on the old stand. In resorting to artificial swarming we must be careful to remember the old Latin adage, "Festina Lente" — hasten slowly. Let the colonies be in good strength before dividing, because one good colony with its one queen will increase, that is build up, more rapidly than half-a-dozen weak nuclei with as many queens. I heard a very wise remark once from an old man relating to agriculture. He said, "if we would do well at farming, we must plough plenty of land, but let it be ploughed downwards." In the same way if we would do well at bee-keeping we must keep plenty of bees, but let them be in few hives—deep ones. Full hives, few swarms, much honey. Many swarms, much bother, and little honey. We sometimes hear of a beekeeper getting three or four swarms from one hive in as many weeks. Well, if such a one had his yard fully stocked, with say, a couple of hundred hives, what a lively time he would have, but not with the extractor. Young queens are now so cheap that it would be more advisable to buy them from reliable breeders and introduce them to the queenless halves of divided colonies. In this way time would be saved, and the risk of the loss of the queen, when abroad for mating, obviated.

TRANSFERRING.

Geo. Colbourne, junr., Cave Creek.

As early spring is the best time of year to transfer our bees from undesirable hives, whether such hives are bar frame or box hives, I think a short paper on the subject of transferring may not be out of place this month. The best time to transfer is as soon as the bees are gathering honey, and the weather is warm. I would never attempt to transfer when there was no honey coming in, as to do so is only to court robbing. Of all the many ways of transferring that I have seen given in the various text books and bee journals, there is not one that I like so well as one that I found out a few years ago. It is original with me. If anyone else practices it I have never heard or read of it. In this paper I prefer giving it to the beekeepers at large, as I consider it far to good to keep to myself. To transfer from a box to a frame hive proceed as follows:—Remove the box hive from its stand, first blowing a little smoke in at the entrance. Invert the hive and remove the bottom; place a box on the inverted hive, and drum nearly all the bees into it. Now place the hive that we wish to transfer our bees into on

the old stand, being sure to have the entrance in exactly the same place that the old one was in ; hang four or five frames of empty comb in the new hive. It is a little better if one of them has a little brood in it. Put on the cover, and spread a sheet in front of the new hive, bringing one edge close to the entrance of the hive; now lift off the box into which the bees were driven, and set it on the sheet, and throw a bag or sheet over the old hive, so that the bees cannot see it. Now jar the bees out of the box upon the sheet, letting them fall a few inches from the entrance to the new hive; we want them far enough away, so that we can see the queen as they run in. If we do not see the queen we must drum out a few more bees from the old hive, throw them on the sheet, and watch them as they crawl into the hive, so as to see the queen, as we want to be sure that she is in the new hive. If I fail to see her in the second drumming I now drum all the bees out of the old hive, and shake them in front of the new hive, drive all the bees into the new hive, and remove it from the old stand, placing it at one side, so as to be out of our way. Now place the old hive in its former stand, still leaving it inverted, *i.e.*, let it stand on that part which was formerly the top. Place a queen-excluding board on what is now the top of the old hive, and set the new hive upon the honey board. Of course the new hive is not to have any bottom board. Leave an entrance into the new hive directly above where the old one was, and lean a wide board in front so as to prevent the bees from going to the place where the old entrance was. They will alight upon this board and crawl up to the entrance to the new hive, attracted hither by the hum of their sisters. Leave the hives thus for at least twenty-one days. By this time all the brood will be hatched in the old hive, and the young bees gone up to the new hive, and if plenty of empty comb was given to the bees in the new hive they will have carried up all the honey from the old hive. I have never known the bees to rear a queen in the old hive when following this method of transferring, whereas with the Heddon plan they will always do so ; and besides, we have to unite the young bees that hatch after drumming the old ones into the new hive. With my plan the young bees go up to the others as they hatch, only enough bees staying below to keep the brood warm and fed the larvæ. This I consider a great advantage over all the other methods, as we have the full working force of the colony in the one hive. When all the brood is hatched from the comb in the old hive, remove the old hive and set the new hive on a bottom board in the place that the old one occupied, always having the entrance face same way, and transfer all the comb from the old hive into frames, not wasting a single inch of straight comb. Fill as many frames with worker comb as possible, and hang them in the brood nest of some fairly strong colony. Put the drone comb into frames by itself, and use them for extracting combs. Thus there is no waste of comb. I for one cannot for the life of me see the poetry in melting up good comb and selling the wax for 8d or 10d, and then buy foundation for 1s 9d or 2s per lb. I have hundreds of frames thus filled with combs from transferring that I would not exchange for combs drawn out from foundation. No, I consider transferred combs far superior in strength and we can fill the frames right into the corners when transferring which the bees will seldom do when full sheets of foundation are used.

To transfer bees from one size frame hive to another, I set the hive that I wish to transfer the bees into, on a board or sheet beside the old hive, hanging a few frames in it, as when transferring from boxhives. I then look for the queen in the old hive and when I find her, I set the frame she is on outside the hive, and shake the bees from two or three frames into the new hive, and hang the frames back in their place in the old hive. I then find the queen on the frame that I stood outside the hive, pick her up by both wings, and place her on one of the frames in the new

hive, put a honey board on the old hive, shake the bees off the frame from which I took the queen into the new hive, hang the frames back in the old hive, and set the new one on the honey board, as with the box hive. Put on the cover, and contract the old entrance so that only one or two bees can pass in or out at a time. This will induce them to use the entrance into the new hive above the queen excluding board. Leave them thus for twenty one days, so that all the brood may hatch, and the young bees go up to the colony above. Always give plenty of surplus room above the queen excluder, and the bees will take the honey from the lower combs and store it above.

Perhaps some will say, I would rather shake the bees off the frames, to be transferred, cut out the comb, and put it into the frame I want it to occupy. Stop a minute, and think what a lot of brood you kill by cutting out the comb while the brood is in it, and also think what a sticky mess it is with all the honey in the comb, whereas when the combs are free from honey and brood, it is clean and pleasant work.

The best way to fasten the comb into the frames, is that one invented by Captain Hetherington. He bores small holes in the tops, sides, and bottom bars of his frames, large enough to permit the passage of the long spines of the hawthorn. In transferring, he simply presses those spines through those holes into the comb, and they are held firmly in place until the bees make them fast all round. As there are very few hawthorns around my place, I have modified his plan, I use small splinters of deal, and find that they answer just as well.

WHOSE FAULT IS IT?

The July number of the A.B.B., under the heading "Special Work for July, N.Z." contains a paragraph on "Food," and the writer—his name is not appended—there states, citing Mr Cheshire, "Then the production of 1lb. of bees, i.e., nearly 2lbs. of larvae, will reduce the honey stored by 16lbs." That is absolutely wrong. He continues: "The above quotation from one of the most scientific beekeepers of the day, &c." The production of 1lb. of bees to cost 16lbs. of honey! Let us see, leaving the "most scientific beekeeper" out, and referring to the quotation alone.

A pound weight of bees number about 4,500. A queen lays that number of eggs in about two days during the breeding season, so that it would cost about 8lbs. of honey per hive every day for the production of the brood. Let us take the whole season. In August the queen starts to lay, and continues till April, say eight months. She does not however, lay over 2000 eggs every day all through, but if we take 1000 as an average we are not very far off the mark. This means 240,000 eggs, or developed, about 50lbs. of bees. According to "quotation" the production of these 50lbs. of bees must reduce the honey stored by 800lbs! 250 hives of bees would require 200,000lbs. of honey—all used for their reproduction! Value the honey at 3d. per lb., and you have the neat sum of £10 per hive, or £2500 for 250 hives. Apart from that, let us bear in mind that the bees do not live on pure honey, nor do they feed it to their brood pure. Brood food on an average contains 70 per cent of water. Pollen is also largely used, so that 1lb. of brood food does not contain quite ¼lb. of honey. Well, now, take the 800lbs. of honey per hive used in the one season, the bees require about 2000lbs. of water extra to make it palatable; 250 hives would want 500,000lbs. of water. Enormous! But it is not true, as can easily be ascertained, with very little trouble. Under ordinary circumstances and conditions bees are very economising with their stores, and do not squander 16lbs. for a paltry pound of bees. So much for the quotation of one of the most scientific beekeepers of the day—too scientific altogether.

W. ABRAM.

Please note if the blue mark is on your wrapper.

FOUL BROOD.

Silver Oak Apiary, Muswellbrook,
Sept. 15, 1894.

Dear Editor,—It has been a matter somewhat surprising to me, to find that, at the last Convention, much valuable time was wasted in discussing the "civil servant" question, while not one mention was made of that all important subject, "protective legislation against foul brood."

Never was the necessity of getting something done in the matter more apparent to me than last Wednesday, when on looking through the apiary of a bee-keeper in this town, no less than six colonies, out of some twenty or so, were found to be hopelessly affected with the disease, while a couple of others are, to put it mildly, in a very doubtful state of health. I worked with the owner of the bees, till nearly midnight that night, destroying the contents of five of the affected hives, and on the following day, induced him to sell me the whole of the remainder, my object being to put the whole of the apiary through a thorough overhauling and cleaning, which I knew the owner could not, and would not do, and would not allow me to do as completely as the case requires. As my bees represent a large portion of my living, I could not afford to run the risk of leaving to a careless bee-keeper the job of caring for a lot of foul broody bees (for I am positive that the disease exists in a latent state in all his hives, and is only waiting warmer weather and increased brood rearing to declare itself.)

The intelligent bee-keeper who has the welfare, not only of his bees, but of Apiculture generally, at heart, will of course do his best, even at great expense to himself, to eradicate so deadly a foe as foul brood, but when the want of a foul brood Act is felt as in the case of the careless or ignorant bee-man, the box hive man, and the man who, knowing the danger, wilfully refuses to do anything, or, if he does anything, makes bad worse, by going about it in a slovenly slipslop manner, risking pounds worth of property in the shape of his and others bees, for the sake of saving a few pence worth of honey, or wax, or frames.

That is where the law is needed! To step in and say, that proper remedial measures *must* be carried out, under penalty of a fine, or, as in Germany, imprisonment!

The New Zealand Foul Brood Act ought to furnish our law givers with a sound basis to work on, though I consider hiving on starters and spraying far before any medicated syrups.

Hoping the matter will be taken up by abler hands than mine, I remain,

Yours truly,
DONALD G. GRANT.

A NEW BEE DISEASE.

Professor Cook thus speaks of the above in California:—

The new bee disease is becoming very serious in this region. Mr. R. B. Herron, bee-inspector for the county of San Bernardino, called on me the other day and reported that at least 5000 colonies of bees had been destroyed by this malady between Claremont and Grapefield—twenty miles east. He said he found none east of Grapeland. I have heard of it in at least four counties. I have examined several colonies, and find in every case that not only are the mature bees dying but the brood also. The dead brood is scattered, and does not seem at all like foul brood. The dead bees are always in shape, and never in the brown sticky, ropy, mass that we find in foul-brood cells. I am not sure that the dying brood and mature bee mortality necessarily go together, but I have found them so in all cases that I have examined. Is it not probable that this is some epidemic, like "epizootic," that attacked the horses in 1872, or like the grip, which has carried off so many people in the last few years? I hope this will prove to be the case, and that we shall very soon be rid of it. Even now I see signs that it is disappearing."

THE CONVENTION.

(Concluded from our last.)

Questions were now placed on the board.

The first was—"Is the honey which bees gather when they have paralysis fit to eat." One gentleman said he had sent such honey to an analytical chemist, who said there was nothing at all wrong with it.

Mr Whittell asked if the use of queen-excluding zinc between the brood and super was advisable?

The Rev. Mr Ayling said, if you wanted your honey pure and no trouble with brood in your supers, he should advise to put zinc excluders on.

Mr Worrell's experience was that excluding zinc hindered the bees somewhat. A board with sharp edges scrapes their little abdomens and they don't like it. Had we wooden excluders it would be much easier for the bees to get through.

Mr J. E. Taylor would give them another story and let them breed away. Had used queen zinc excluders to a great extent, and had found it a great hindrance to bees, and had ceased using them.

Rev. Mr Ayling thought the locality might make a difference.

Mr Taylor did not think so.

Mr Shallard said Mr Taylor had a short honey-flow, which was well-watched. Had he a steady honey-flow he must have the queen-excluding boards on, as there was so much room for the queen to lay.

Mr Whittell asked if zinc was the best material?

Mr Shallard said the bees gnawed the edges away. Wood rots and iron rusts.

Mr Worrell, for another gentleman, asked if any one had had experience with non-swarmers?

Mr Gordon had discarded them, but Mr James had told him very good results had come from them.

Mr Shallard had come to the conclusion they were no good.

Rev. Mr Ayling had bought them, but they were too much trouble to use.

Mr Trahair had heard Mr James talking to a brother beekeeper in his store, and he was telling him that he had had some wonderful testimonials in their favour, both in rearing up nuclei and in strengthening weak colonies; and also in the honey-flow, by having the two colonies with the one top story; he had given it a trial of fifteen months, and had come to the conclusion it was a great success if properly applied.

The next question was, "Which is the cheapest and best method of destroying weeds and grass around hives?"

The Rev. Mr Ayling said he took a spade and dug up all the couch grass, and then went round with a Dutch hoe. He sprinkled white clover seed. There was nothing compared to elbow grease. Would turn the horses in at night time.

Mr Tipper said sheep as well as geese had been recommended.

Mr Worrell gave an instance of one sheep having made a hole in a fence, and a flock of them followed it into the apiary, doing a lot of damage.

Mr Shallard said bees would not sting goats.

Mr W. S. Pender stood fronts of hives on wide boards and used a reaping hook beyond. Had kept his hives on cinders a depth of four inches, but had to run the hoe over it every now and then. Had used about a cwt. of salt, but after rain it would be useless.

Mr Worrell suggested a little cement just around the beehives.

Mr Gordon of Paddington suggested a flower garden just round the hives.

Mr Trahair did not find a success with cinders. Had used about three inches. Would use about five inches this year.

Mr Rumsay had been troubled with white ants about his hives.

Mr Whittell said the cure for white ants was simply arsenic and grease.

The Convention then adjourned.

FRIDAY.

Mr Abrams took the chair.

Owing to Mr Helms, of the Agricultural Department—who had taken such

a great interest in bee matters and diseases at and since last Convention– being unavoidably absent, some members communicated with the Department, and Mr F. B. Guthrie now attended to represent same, stating that he had made some analysis of honey forwarded to the Department, the details of which would shortly be published, [The paper in question has appeared, and we copy it in full elsewhere.] Of five samples of commercial honey examined by him three were adulterated with starch syrup, one grossly so, the other two to a greater or less extent. The remaining two samples were apparently pure honey.

Conversation followed, in which Messrs Wilshire, Shallard, Gale, Pender, Tipper, Bradley, and Trahair took part.

Mr Bradley said, when they sent to a store for honey the storekeeper should be compelled to sell pure honey, and only sell adulterated honey when they were asked for honey and glucose.

Mr Trahair said the Sydney stores were right enough. The different grocers get the honey from the wholesale storekeepers. The only cure was co-operation. While the storekeepers were under the thumb of the merchant they had to get what they could, whether they would or not.

Mr Wilshire moved that a deputation wait upon the Crown Law Department to draw under their notice the adulteration of honey as proved by the Agricultural Department, and that the following constitute the deputation—Messrs. Bradley, Shallard, Abram, and Gale." Further discussion ensued, and the resolution was carried.

Mr Abram said a matter which he wished discussed was the return of empty honey tins per rail. There was no allowance made for empty tins returning. He thought this was an injustice. If the tin is not returned they ought to return the freight on the empty cases.

Mr Shallard said it was not so with the fruit sellers.

Mr Gale related how he had written to the Railway Commissioners, who replied the rates were so low that at present no further reduction could be made.

Messrs. Shallard, Niven, Whittell, and Mansfield spoke on the matter, and it was resolved to leave it in the hands of the National Beekeepers' Association.

A proposition to organise a picnic on the Saturday was made, but not sufficient names being handed in the matter dropped.

Mr Guthrie alluded to the result of a sample of Mr J. E. Taylor's (of Cowra) honey that had been sent to the Agent-General in London by the New South Wales Government, with instructions to sound the market. A cablegram had been received from that gentleman recommending it as better to test the market through some commercial agent, that the sample contained 73 per cent. of glucose, and spoke of the eucalyptus flavor. He (Mr Guthrie) was not long in the colony. In regard to the eucalptus flavour his impression was it was a myth; he had never noticed it in the honey he had tasted. Australian honey compared very favourably with other honey. In speaking of glucose, it is unfortunate that a commercial article glucose (American starch syrup) should be called by the same name as chemical glucose, for the two articles are widely different, and to say the above-mentioned sample contained 73 per cent. of glucose was misleading. Pure honey contains mostly what is known to chemists as glucose (not American starch syrup). The two articles are so different as to be easily detected by the polariscope. It was unfair to say you cannot have honey without glucose. In the first case it was the natural sugars of the honey, and the second was obtained from starch or cane sugar by inversion.

Mr Patten suggested a sample of the best English honey, as exhibited by Mr J. W. Pender, should be handed to the Minister for Agriculture, to be compared with Australian honey, and that the

analysis be published in the *Australian Bee Bulletin.*

Seconded and carried.

Mr Mansfield moved and Mr Shallard seconded, "That the Department be requested to take immediate steps to remove the wrong impression that might accrue from the wording of a recent cablegram re Australian honey."—Carried.

A vote of thanks was accorded the Department for sending Mr Guthrie to the Convention.

The committee appointed to consider the matter of co-operation now brought up their report, recommending the formation of a Co-operative Honey Supply Co., which was adopted,

Mr Mansfield proposed, and Mr Harry seconded, that the gentlemen who had brought up the report be provisional directors to carry the same into effect, viz., Messrs. Patten, J. W. Pender, J. E. Taylor, J. Trahair, Whittell, James T. Wilshire, and Albert Gale." Carried.

Mr Seabrook now exhibited his combination hive and read the following paper—

HIVE SUITABLE FOR NEW SOUTH WALES.

The subject which I have the honour of bringing before your notice on this occasion is "Hives suitable for New South Wales."

I may preface my remarks by stating that I will confine my attention to describing what I consider to be the best hive for general use in this colony, or rather, Australasia. I do this because I would rather refrain from pointing out what, in my opinion, are, if not absolute defects, at least drawbacks to hives which are in use and found fairly satisfactory by others. In this way I hope to avoid introducing personal feeling into the deliberation of this Convention. No doubt many of you here have various opinions in regard to the different kinds of hives in use, and I think you will agree with me the principal object we must consider is a hive that will give best results with least labour. I therefore wish to draw your special attention to one which I am about to show you, called the "Convention Combination Hive." It was first brought into public favour in England about 12 years ago by a Mr Abbot, whose name is associated in all beekeeping circles as being a thorough bee master, and having great faith in the originator I patronised it very shortly after it was introduced, and it was not until about two years ago the thought struck me it was the hive for Australasia. Having made one for experimental purposes, I claim to have added severa marked improvements. During my experience in bee-keeping, extending over 18 years, I can assure you I have tried numerous kinds of hives, and therefore feel in a position to state what I consider a perfect hive. The Combination Hive has many advantages over all other hives, viz

1.—Being long, and having all the frames in sight on one floor board, you can work a very large brood nest until a sudden honey flow, when by setting off 8 or 10 frames of advanced brood behind the excluder board, as fast as the brood hatches the cells will be rapidly filled with honey.

2.—By having the honey chamber behind the brood, instead of on top, you avoid the very objectionable burr combs, besides the exposure of so many frames and bees when removing the upper storey containing the honey from the lower.

3.—When the hive is fit for extracting, the evening before operations commence, you just remove the lid which covers the honey chamber only, and by putting the plain division board in front of the excluder one, you at once cut off direct communication with honey chamber; you then open your side entrance for an escape. By so doing you can visit the honey chamber early next morning without the trouble of shaking or brushing the bees, thus saving considerable time, besides the risk of robbing.

Mr Wilshire asked why beekeepers used a flat roof?

Mr Seabrook said it was more convenient to handle, and a flat top fits better.

Mr Wilshire said he had made an ornamental hive with a spire. Had he made a mistake?

Mr Seabrook said spiders would get into the top.

Mr Patten said where he found one spider in the gable he found twenty underneath the bottom board.

Mr Harry thought the size of the hive should depend on the district in which it was in. The long idea hive was suitable where there was a good honey flow.

Mr Shallard said the long idea was given up years and years ago in the United States. It was proved conclusively bees will store more honey over the brood nest than at the end of it. He had all his cut down.

Mr. Patten said we must not overlook the one fact that the man who has made a remarkable yield uses the long idea. He (Mr. Patten had tried them and given

them up. He liked the Simplicity top above all. Did not like the flat dovetailed hives. If you do not paint the ends before you put on the cleat in some hives there will be a slight warp. If the hives are placed with a fall of one inch from back to front the cleat is the very thing to collect the water and it will rot the ends of the flat tops. By capiliary action damp will come in on top of the hives. He liked the Simplicity top. At Cowra the greatest success was with the Simplicity.

Rev. Mr. Ayling would not sit in judgement on a hive which he had never tried. It was too big for him. He preferred the Simplicity hives. The hive in question before them was too cumbersome.

Mr. J. E. Taylor kept a long hive simply for his best queens, but not for producing honey. It was a non-swarming hive. Putting brood behind and empty frames in front, they had plenty of room in front, and had no intention to swarm.

Mr. Seabrook said as to storing honey another story could be placed on the front or back. From his experience it had given him good satisfacion in every way.

Mr. James used the Gallup frames. It was more a matter of bees than hives.

Mr. Niven had kept bees near Mr. Peterson's for twenty-five years and had always looked on the reports as incorrect. He never saw any extraordinary yields of honey there.

The subject dropped.

Mr. C. Mansfield introduced the subject:

MAILING QUEENS.

Mr. Mansfield explained different methods he had tried and proposed to try to get queens mailed successfully, and had communicated with beekeepers in Honolulu and Ceylon, half way between America and Europe asking them to receive queens, and refresh them. He thought in this way they would come out as fresh as if just taken out of the hive. He had made these remarks with a view to get more light on the subject.

Mr. Jones of Queensland asked Mr. Mansfield how about sugar.

Mr. Mansfield generally used Company's No 1. Sugar.

Mr Jones used the best and got it ground himself. He said in the raking bees in to put in cages you often get old bees. He did not think water was necessary. Had kept bees for 40 days without water As to bringing them half way he would get them direct, without stopping at Honolulu.

Mr. Seabrook had imported a good many from Italy and from Austria. They had been sent in the Benton cage. One came in splendid condition and the next lot were all alive. Was under the impression that there was flour mixed with the candy.

Mr Jones: You get starch in it.

Mr Gale: It might have been icing sugar.

Mr Jones: The more workers with the queens the more likely to lose them. Some queens that arrived from Italy arrived dead, simply, he believed, from the water. He thought they had gorged themselves; it brought on dysentery and they were smothered. He firmly believed you could not beat Benton's system of sending out queens.

Mr. Patten called attention that a few years ago the percentage of arrivals alive was 70. Now the arrivals were nearly all dead. Why was this? Perhaps owing to the increase of articles, that enterprising individuals might have put in insecticide; or owing to the increase of mailing without a corresponding increase of space in the steamer, the bees were jammed, and their air circumscribed. He suggested we ask the Postmaster-General that it would be expedient for a very coarse canvas bag to be used to mail queens from here to America and Italy, the bag to be used solely for the queens, and placed on top of the mails en route. There must be something more than mere matter of food. He was interested in Mr Jones' experiment, that he could keep bees for 40 days on a shelf. He had kept

queens in a cage for 21 days. The queen was the last to die. Probably younger queens and younger workers might have helped the matter. If we can keep queens in confinement for 40 days the matter has been settled.

Mr Jones said he killed her at the end of forty days.

Mr Patten gave a plan of a cage with a cylinder, with honey in the centre.

Mr Shallard said the thanks of the beekeepers were due to Mr Patten for the trouble he had taken in the matter of mailing queens.

Rev. Mr. Ayling gave an instance of a queen and one worker coming alive out of four cages. A friend had all workers alive and all queens dead.

Mr Pender said he was sent ten queens and nine arrived safe.

Mr George James gave an account of a cage in which 23 out of 24 arrived safe.

After further conversation Mr Patten moved that the Hon. the Postmaster General be requested to provide porous bags for the conveyance of queens from this colony, to be hung in an airy place. Seconded and carried.

After tea the matter of the next Convention was discussed, and it was ultimately decided it should be held at Bathurst.

On the motion of Mr Shallard, the date of the next Convention was fixed to be held at the end of June, 1895, or the first week of July, to enable public school teachers to be present, days to be fixed by the committee of the National Beekeepers' Association.

Mr Whittell suggested that ultimately the Convention should be intercolonial, and if the railway commissioners of the other colonies could give free passes to delegates of other industries, a strong representation to the commissioners of New South Wales might have the same result for beekeepers.

A debate on the Wells hive ensued. Mr Patten had tried it with doubtful success. Mr Seabrook said according to the *British Bee Journal* it had given great satisfaction.

Smokers were now discussed. The Bingham seemed to be the favourite.

On the motion of Mr. Patten it was resolved "That this Convention recommend the N. B. A. to take steps to call together an intercolonial Convention of Beekeepers."

Seconded and carried with acclamation.

The next question was "How much comb foundation do you use? half sheets, full sheets, or starters? The majority were in favour of full sheets.

The best fuel to be used in smokers. Opinions were expressed on something light for Clark's. For the Bingham chips or something solid, a handful of chips on a hot coal. Bark was also recommended.

On the motion of Mr. Whittell, seconded by Mr. Patten, a vote of thanks to the retiring officers of the Union was carried by acclamation.

Mr Abram and Mr Shallard replied.

Mr Tipper moved a vote of thanks be given to the superintendent and officers of the Technical College for the use of the room, and the extreme courtesy and attention shown by them. Seconded by Mr Seabrook, and carried by acclamation.

On the motion of Mr Roberts a vote of thanks was accorded to the visitor, Mr Jones, of Queensland.

A vote of thanks was accorded to Mr Pender, senr., for the sample of British honey he had given to the Agricultural Department for analysis.

A vote of thanks to Mr. Abram for his conduct in the chair concluded the Convention. In replying, Mr. Abram expressed the hope that we shall be united in Bathurst next year.

AUSTRALIAN HONEY.

[BY F. B. GUTHRIE, IN THE *Agricultural Gazette* OF NEW SOUTH WALES.

THE following notes on the constitution of a few samples of commercial honey and of honey obtained from well known apiaries may be found of interest to bee-keepers.

Of five samples of commercial honey examined three were undoubtedly adulterated with starch,

syrup—or glucose. The following table gives the polarimeter readings and the percentage of glucose, water, and ash in eleven samples;

	Water	Ash	Direct Reading Sugar Scale.	Reading after inversion.	Glucose by Copper.	Glucose after inversion for 3hrs. at 100°C
1 Commercial (adulterated)	20·0	·32	+65·12	+61·12	52	76·6
2 Commercial (adulterated)	21·33	·27	+14·32	+7·37	64	76
3 Commercial (adulterated)	19·50	·26	+130·3	+119·8	50	80
4 Commercial ..	21·0	·10	—26·6	—28	74	
5 Commercial ..	26·18	·14	—11·7	—12·1	69·4	
6 Honey from apiary of Mr T. H. Moore, Singleton.	23·02	·21	—17	—19·5	71·4	
7 Mr. Walker, Tenterfield, bees fed on white clover,	19·18	·06	—9·1	—15·6	71.02	
8 Mr W Abram (Beecroft), bees fed on mixed flowers	25·29	·16	—23	—23	72·46	
9 Mr W Abram (Beecroft), bees fed on orange bl'sm.	26·33	·20	—23	—23	72·45	
10 Mr J. E. Taylor (Cowra).	23·23	·04	—24·2	—27·3	73	
11 Mr. Worrell (Baulkham Hills)	24·34	·35	—20·8	—21·6	68·6	

The polarimeter readings were always taken at the same temperature before and after inversion and the temperature is taken into account in the percentage calculations in the second table.

At the risk of introducing technical terms I will briefly explain the bearing of some of these observations. This will save time and trouble later on, and will enable those who care to follow this work to understand future notes on the subject.

Honey consists principally of a mixture of two sugars, dextrose and levulose. A solution of dextrose observed in the polarimeter rotates the polarised ray to the right, levulose to the left. Levulose, however, turns the ray nearly twice as far to the left as dextrose does to the right, consequently a mixture containing equal parts of these sugars will exhibit a left-handed rotation, and this left-handed or levo-rotation will be observed if there is any considerable quantity of levulose present. Now, cane-sugar is also a somewhat doubtful constituent of honey. This substance is strongly dextro-rotatory; but after inversion, that is, after having been boiled with acids for a certain time it is converted into a mixture of dextrose and levulose in nearly equal proportions, and becomes in consequence levo-rotatory. Hence, in comparing the figures in columns three and four in the above table, any increase in the angle towards the left is attributed to the inversion of cane-sugar, and any adulteration with cane-sugar may be detected by this means.

Our knowledge of the composition of honey is very unsatisfactory; but it is reasonable to suppose that it consists essentially of these two sugars, dextrose and levulose, together with a very variable proportion of cane-sugar, and of 1 to 4 per cent. of substances whose nature is unknown.

The most reliable observations of pure honey would seem to establish the fact that pure honey, except under exceptional circumstances, is levo-rotatory, and it will be seen that all the honeys in the above table of known origin are levo-rotatory. Now, the substances with which honey is most likely to be adulterated are starch-syrup or cane-sugar. Glucose obtained from starch exhibits a strong right-handed rotation, consisting as it does of maltose, and dextrin. Cane-sugar we have seen is also dextro-rotatory, consequently we may regard a honey exhibiting a strong right-handed rotation as having received the addition of one of these substances. One other technical point and I have done. The sugars, dextrose and levulose, have the power of reducing alkaline solutions of copper. This gives rise to the figures in column 5, which give the total percentages of these sugars. Maltose possesses this power to a less degree and dextrin not at all. After inversion for three hours at 100° C. (see column 6), dextrin and maltose are converted completely into dextrose, and hence the higher percentage of glucose in column 6 is due to the presence of dextrin and maltose.

If we now examine our table in the light of the above data, we notice that the first three honeys all show a strong dextro-rotatory reading. They all, moreover, yield a precipitate of dextrin on the addition of alcohol. The high reading of No. 3 excludes the possibility of there being any levulose present. It is simply starch-syrup or American glucose, with a slight flavouring of honey. Nos. 1 and 2 probably contain genuine honey, together with a considerable addition of starch-syrup. The composition both of pure honey and of starch-syrup are so variable that it is not easy to state dogmatically the amount of such admixture which in the case of No. 1 is probably considerably over 20 per cent., and in No. 2 over 10 per cent.

The above facts suggest the probability that the bulk of the so called honey in the market is largely adulterated, and it is to be hoped that the bee-keepers of New South Wales will be able to see their way to protect themselves against such practices.

The remaining honeys, Nos. 4 and 5, give the same readings as genuine honey, and there is no reason to doubt their genuineness. No. 5 has granulated (dextrose has crystallised out),

which is an additional indication of its purity No. 4 is somewhat more strongly levo-rotatory than the samples of genuine honey, but not strikingly so, and is not unlike Mr. Taylor's honey. If invert-sugar is used as an adulterant the reading will be more strongly levo-rotatory; but as honey is to all intents an invert-sugar, the estimation of this substance would be a very difficult matter in the present state of our knowledge, provided the mixer were ordinary judicious. The higher price for invert-sugar fortunately renders its use extremely unlikely.

The following table shows the approximate composition of the genuine honeys examined, including the two commercial samples, and are calculated from the readings given above, on the assumption that honey consists mainly of dextrose and levulose, with cane-sugar.

Percentage Composition of Genuine Honey.

	Water at 110° C.	Ash.	Dextrose.	Levulose.	Cane Sugr	Unknown.
No. 4..	21·0	·10	36·2	38·4	1·03	3·27
No. 5..	26·18	·14	39·0	30·4	?	4·28
No. 6..	23·02	·29	37·0	34·4	1.8	3·51
No. 7..	19·18	·06	39·12	31·9	4.8	4·94
No. 8..	25·29	·16	36·15	36·3	0	2·09
No. 9..	26·33	·20	36·16	36·3	0	1·02
No. 10..	23·23	·04	34·6	38·4	2.3	1·43
No. 11..	34·24	·35	33·5	34·1	?	7·71

None of these honeys gave any indication of dextrin by the test applied, and they were all granulated or have granulated on keeping. I have to express my indebtedness to Mr. Helms for the samples of genuine honey, obtained through the courtesy of the gentleman named; and to Messrs Walton and Steel, of the Colonial Sugar Refining Company, for several useful hints as to working and calculation.

VISIT OF HORTICULTURAL DELEGATES TO S. AUSTRALIA.

In the *Garden and Field*, Adelaide, South Australia, we read—

"During the month we had an extended visit from Messrs. C. B. Cairnes, manager of the Bank of Mew South Wales, at Parramatta, and President of the Fruitgrowers Union of N. S. W., J. T. Wiltshire, President of the National Horticultural and Pomological Society of Sydney, and H. E. Whittell, Secretary of the Horticultural and Pomological Society and the Beekeepers Association. These gentlemen spent a busy fortnight enquiring into different phrases of our horticultural industries, and proved to be keen observers, hard working delegates, pleasant companions, and altogether thoroughly progressive Australians first, but loyal New South Wales Welshmen all the time. Mr. Wilshire appears to have nothing to do but to please himself, and is so energetic and is possessed of so many interests in fruit and flowers, that he has an easy task. Mr. Whittell is doing good work in organising the producers of the colonies, and if he can succeed in establishing the Federal Fruitgrowers' Union, he will be entitled to the practical gratitude of all."

SOUTH AUSTRALIA

We take from the *Garden and Field*, the following paper read by Mr. C. Smith junr., at the Southern York Peninsula Conference, on July 27 :—

Where to Keep Bees.—As bees do not make honey but only gather it from the flowers which secrete nectar, it follows that bees should be kept near to some such source of supply. Now the honey varies in quality and character, according to the source from which it is derived. As there are no large fields of clover, lucerne, peas beans, or other honey yielding crops cultivated on the Peninsula, beekeepers have to depend principally upon the indigenous flora. The eucalypti, known locally as "peppermint," is regarded as the best for honey of first-class quality. In some parts of the colony quite a different tree is known as "the peppermint." Next comes the species known here as "white mallee," which yields a nice honey, but it has only blossomed freely twice during six years in this locality. Another narrow leaved variety of mallee gives a fair quantity of honey, dark in colour, and having a hot pungent taste. The teatree (Melaleuca) is a most consistent honey-yielder, but this has a strong unpleasant taste and smell which clings persistently to it. There is also a prickly bush (Hakea) with white strong-scented flowers which gives a honey bitter and not eatable. Bees are said to fly five or six miles to procure honey, but they could not possibly store up much under such conditions and the nearer the hives are to the source of supply the better it will be. Those who have a number of peppermints and white mallees in their neighbourhood will be in a good position, and where sugar gums have been planted freely there will soon be a difference in the quantity of honey gathered.

Kind of Hive to be Used.—None other than the

bar-frame hives can profitably be used for keeping bees in, and the extractor must be used in conjunction. When honey sold at double or treble its present price, it was possible to make beekeeping pay, even when using the old skeps and boxes. Then the bee moth and foul brood were unknown, and the indigenous timber and shrubs had not been destroyed; but under the changed circumstances of to-day, the modern appliances must be adopted. In the box hive the bees build their combs on the top, ends, and sides of the box, and when it is full the beekeeper has to turn the box upside down, place an empty box on it and by persistent drumming on the sides of the full box drive the bees in it to the site of the old box, and then tear or cut out the combs out of the old box, together with the eggs, brood, &c., and hang them up in the sun or near a fire over a dish, into which the honey is drained out. This is very wasteful, for it is not uncommon whilst the honey is coming in that a hive will have from 20,000 to 30,000 immature bees in it in every stage from eggs to to the perfect bees, and the whole of these will be destroyed by this method. Secondly, before the bees can gather any more honey, or the queen increase the strength of the colony they must build fresh comb with cells for the young bees and for storage of nectar. In order to make one pound of wax for combs the bees must consume from 15 to 20 lbs of honey and remain idle for two days ere the wax is produced, so that there is loss all round. By the bar frame system only the combs containing pure honey are lifted out, the cells are uncapped in one act by the aid of a specially constructed knife, the combs are placed in a centrifugal separator, the honey is extracted, and the empty combs are returned to the hives to be again filled up with honey. No young bees are destroyed, The eggs are also left untouched in the brood combs; no comb is wasted, and no time is lost by the bees in resuming their work. In the old box-hive one has to guess at what may be the state of the combs, but the whole of the combs of the bar-frame hive can be examined at any time, and if the bee-moth has gained an entrance, or if anything is wrong, it can be easily rectified. If the queen gets lost, as often happens at swarming time, the colony can be supplied with unsealed brood from another hive, and the loss will soon be rectified by the bees raising a fresh queen, and by using another comb it is possible to prevent the raising of an excessive number of drones. The average yield taken over a period of six years has been about 140lbs., ranging from 60lbs (the lowest), up to 200lbs per hive for the highest year. During the year when 200lb average was got there was a number of weak colonies, but from one hive 485lbs of surplus honey was obtained. Last season the average of 120 hives was 155lbs per hive.

Drawbacks.—The drawbacks to beekeeping are foul-brood, beemoth, uncertain seasons, uncertain market, and low prices.

Foul Brood.—So far, the Peninsula appears to be free from this disease, and bee-keepers should be very careful to avoid introducing swarms, queens, or anything likely to bring the foul brood over. Swarms, &c., should first be examined carefully by an expert before being sent across.

Bee Moth.—This is abundant enough in some parts of the peninsula. This moth seeks to lay its eggs upon the comb, just as the blowfly seeks animal matter. The caterpillars, or larvæ, when hatched, feed upon the comb and destroy it. Black bees do not keep the moth away so effectually as do the Ligurians.

Markets.—Although depressed, there is reason to hope for payable returns to honey. There is, unfortunately, a prejudice in England against Australian honey generally, just as there has been against Australian wine, meat, butter, &c. These prejudices are being gradually overcome, and, if exporters will be careful to send away only the best quality honey to the English market, there is little doubt that the prices will improve, and the industry will become more certain and profitable than at present.

Mr R. J. Cribb, Brisbane, reports, August 24:—I have to-day received one of Doolittle's best Italian queens alive, but only three workers survived, landing in good order.

Mr Henry Crosier, Harefield, writes—My bees have wintered well; brood have emerged very early for this district. Bees are working on the peach and wattle blossom; nothing much in this part except wattle and peach blossom at present, the timber being ringbarked many years ago. Wax moths and ants are very troublesome in the summer months. My neighbours have lost all their bees; they do not seem to manage the blacks very well, but I may say I find no trouble with mine, only using attention, and I am increasing. I have the Langstroth hive, and I get along with it very well for a new chum. I had to rob last May to give them room to work. Sealed honey in section boxes now in hives. I have sent my A.B.B. abroad to parties new beginners in the art, for to canvass for subscriptions to the journal. Section honey sells best up here; getting as high as 8d per 1lb. section box well filled.

N. Z. BEE FLORA.

Dear Sir,—I have no wish to further prolong the controversy with Mr. W. Horsfall, on a subject which I am certain he can know comparatively nothing from but one season's experience. It is a pity, I think, that he should have spoken so dogmatically on several points in his first letter when there is positive proof that he was in error on all of them. It is always wise to allow of time to correct or confirm first impressions, otherwise we are very liable to err in making assertions on matters of which we have but a limited experience.

I. HOPKINS,
Auckland, N. Z.

SEASONABLE WORK FOR OCTOBER N.Z.

With the month of October we fairly commence the honey season, for, though very little surplus honey may be stored this month, still, as swarming takes place, there must of necessity be more honey gathered than is actually required for the purpose of brood rearing.

In the north of New Zealand, the bees generally came through the winter months in good condition, and as the season so far promises to be a favourable one, bee-keepers should be prepared for a good honey harvest. Indeed, so far, as we have at present heard, the prospects for a good harvest throughout Australasia are very favourable indeed.

BREEDING.

Attention should be paid to the instruction already given with regard to breeding. An early season is favourable for equalising the strength of the colonies, that is, assisting the weaker colonies by giving them emerging brood from the strongest. Care should be taken to have the hives made snug, as, an extra cold night may otherwise have the effect of driving the bees from the outside brood and so leave it to perish. Division boards should be looked to and be shifted as required.

SWARMING.

Unless it is desired to increase the number of stocks, it will be best to get on the supers just before the bees commence preparations for swarming. By doing so, swarming will be delayed till some weeks later at least, usually until the top box has been filled with surplus honey, and where it is desirable to keep down swarming, if more room be given by putting on an empty super next the lower hive before the first one has become too crowded, it may be kept back still longer. Under this system when a swarm does come off, it is generally large enough to occupy both the brood chamber and super at once, while the parent hive takes only a very short time to recover from the loss of the swarm. A great deal of time is lost by allowing the bees to swarm early in the season from a single bodied hive, as the swarms are comparatively small, and as the weather is colder the work of comb building cannot proceed so rapidly neither can the parent hive recover so quickly as under the plan of using the supers. We are satisfied, in fact, after many years experience, with both methods, that the former is by far the best plan.

HIVING SWARMS.

A few handy little boxes somewhat larger than a candle box, should always be kept in readiness during the swarming season, and should be ventilated by having a few holes bored in them, which should be covered with wire cloth or perforated zinc. As soon as the bees commence to settle place the prepared hive in which the bees are to be permanently kept as near the cluster as possible, taking care that the frames are an equal distance apart, with the mat on top. Raise the front of the hive about two inches by placing two small pieces of wood at the corners and spread a sack or sheet in front. The hive being now ready and the bees settled, shake the latter into the swarming box and from the box on to the sheet or sack in front of the hive, near to the entrance, through which the bees will quickly go. A few may rise and cluster again on the same spot, but unless there be a very large

number, no notice need be taken of them as they will soon return to their companions. When they have all entered, the hive should be lowered on to the bottom board and the whole can be returned to its permanent position. By following this method no time will be lost, as the bees can start work right away. Plenty of ventilation should be given to newly hived swarms and when the sun is very hot the hive should be shaded with something for a few days.

Another method of hiving swarms is to leave the hive on its permanent stand and to allow the swarm to remain in the swarming box till near sundown, taking care that in the meantime it is properly shaded from the sun. Then carry the swarm over to the hive and hive it in the usual way.

SUPERSEDING QUEENS.

Mr. Alley says, "'Tis a good idea to supersede queens as often as once in two years." A good prolific queen will lay nearly her full quota of eggs during this time especially under the present system of managing bees, and will certainly have spent her best days during this period. It will be advantageous to keep some queens longer, but this is the exception, not the rule. Young and vigorous queens are the most profitable ones." However this theory may apply to the Northern Hemisphere, I am sure from experience that it is correct for this part of the world. In the warm climate of Australasia, queens lay more or less all the year round and thus exhaust themselves much earlier than they do in colder countries where they are at rest for several months during the winter. I am convinced that it is rarely profitable to keep queens after the end of the second season. Colonies that appear listless and producing only a comparatively small quantity of brood at this time of the year should have their queens superseded as soon as possible.

MISCELLANEOUS HINTS

Everything, such as sections, extractor, spare hives, &c., should all be got in readiness as they will soon be required Honey plant seeds may still be sown on waste patches. See that nothing obstructs the entrance to the hives.

BEES IN THE SANDWICH ISLANDS.

WILLIAM HORSFALL.

I came to these islands about the beginning of May, and soon after coming to Lahina, the place I am now living in I bought a stock of bees for four dollars, transferring them to a frame hive. Since then I had a few swarms given to me by an old beekeeper in the place, who says he cannot make honey pay. Three of these swarms I united so as to make one good strong colony. The fourth swarm, I united to the stock I had bought in the first instance. Already these bees have produced some very delightful section honey which is now being sold at one of the village stores. The honey here is really beautiful, it is clear and white, with a distinct flavour. The wax is of snowy whiteness without an approach to yellow. Never since I have kept bees have I seen such lovely sections as the 22 I took from the hives the other day. I am at a loss to discover from what flowers the bees get the greatest part of their honey, but it is evidently from trees. We have large numbers of tamarind, mango, algaroba, pandanus, royal palm, and many others. The humming of bees in the tamarind trees speak clearly of their being favorites. While, when the royal palms are in flower, one would think it was a swarm of bees, rather than bees attracted by nectar, hovering about the heavy plumes of flowers. Beeculture is making progress in these islands. I have been told of several persons who have apiaries but whether they make them profitable I cannot say. Honolulu is well suited for bees owing to its wealth of tropical trees and shrubs. Lahaina, once the old capital, is not so well adapted to a large apiary, not to speak of apiaries. The settlement runs about two miles on the sea-beach. The houses for the most part are surrounded with trees about 300 or

400 yards. Behind the beach road stretch sugar fields for about a mile inland to where the mountains begin to rise. Here there is no vegetation. Nothing but dry earth and volcanic rocks. So then we only have a honey field some two miles long by one broad. Here and there in the sugar fields are houses surrounded with groves of trees. The bees are thus limited, but nevertheless they do well. But where a small apiary of 20 to 30 hives would be successful, the apiary of 150 or 200 hives might be a failure. The old beekeeper already referred to has about 30 stocks of bees in soap and other boxes, old style. Other people have bees but one person has rarely more than two or three stocks. The bees on this island are the ordinary English or German variety, but probably owing to the climate having some decided characteristics of their own, the queens and drones are small, some drones most ridiculously small. The bees are bad tempered, and require much smoke before they can be mastered. In fact the tropical climate has caused them to degenerate. I feel sorry for the queens, who never seem to get any rest from their labours at all. I am informed by my friend, the same old beekeeper, that there are two swarming seasons in the year. Now, as to bee pests, well we have the moth, a much smaller fellow than his cousin in N.Z. and certainly more destructive in his depredations. Any little bit of wax he can find is a happy find for him, and in the smallest chink of the hive is the dreaded grub to be found. Then the Mynah birds, the Indian Starling, make many a good feed on bees. They perch on or near the hives and pick the bees up in the coolest manner possible. Other pests such as foul brood and dysentry are I believe unheard of here. As to these islands being well adapted to bee-culture, I should have some doubts. Except in places here and there, there is no forest worthy of that name, and a great part of the islands barren and desolate to a degree. True that in the mountains there is a stunted forest, consisting of metrosideros and acacia trees, but too hard of access for any one to pick on it for an apiary. The famed Honolulu was at one time merely a desert. Every tree and shrub in and about the city has been introduced. And so on with other places. Nearly all our trees and flowers are foreign introduction while the native flora is not to be found except occasionally on the mountains and in the gulches away from the ordinary haunts of man.

VICTORIA.

Mr. W. D. Russell, Fyan's Creek, Victoria, writes Sept. 14th., :—Dear Sir,—I have been reading over again your paper on "Marketing of Honey," given at the Convention, and also the paper and comments on it, about Schoolmasters and Beekeeping. It seems to me that as far as schoolmasters keeping bees is concerned, we need not worry very much about it. All the difference they make to the market price of honey is not enough to materially affect us as a whole though some beekeeper living near some such beekeeping schoolmaster may be affected. Further, it is a question whether we have any right to complain. For my own part I think not, and if I had, I would not. The whole trouble is getting our honey sold, and it does seem that we are not going to get anything done this year unless someone takes the initiative. I'll tell you what, Mr. Editor, I'll subscribe as I offered to you towards expenses of some one going to England to sell for beekeepers exclusively, or after next April (1895), I'll go to England myself to sell for beekeepers on my bare expenses being paid, and a commission on sales enough to make it worth my while, if I can sell a large quantity; or else what would suit me better, I will make one to pay the expenses of some one else willing to do as I have suggested. Now Mr. Editor, please help me to bring this to a head. I am positively sure of the immediate success of

the venture, and also its permanent continuation if once started. What do you say to calling for offers of assistance, those helping to pay expenses only having the right to send honey.

P.S. Let some one else make some suggestion in next paper.

[Will some of our beekeeping friends note Mr. Russell's offer, and assist him to carry it out. We shall be very glad to get communications on the matter.]

NON-SWARMING BEES.

R. BENHUE, Garfield, Victoria.

In spite of all that Mr. Colbourne has to say about and against non-swarming bees in the August number of A.B.B., I am firmly convinced that—1. They are desirable. 2. They are possible. 3. We shall have them sooner or later. 1. A majority of beekeepers having from 100 colonies upwards, will, I am certain, think they are desirable. Swarming some years ago very near drove me mad, taking swarms all day, and making hives and frames at night. Most colonies swarmed twice, some three times, in spite of ventilation, empty combs, &c. Yet there were a few very strong colonies which did *not* swarm, and two of these gave the highest yield of honey for the season. From these I bred some queens quite late in the season; raising queens from one, drones from the other and controlling the mating. Some of these queens proved non-swarmers, and some swarmers. I bred again in the same manner from the non-swarmers, &c. I only had 20 swarms from 120 colonies last season, and ten pounds more honey per hive than in the previous season, when I had 176 swarms from 120 colonies. 2. They are possible. Mr Colbourne himself had a non-swarming colony. Would our queens be as prolific? Why not? A non-sitting hen lays just as many eggs as, or rather more than a sitter. Are not some of our best breeds of poultry non-sitters, and if left to themselves would become extinct. The instinct to sit (which is certainly very strong) has been bred out. If we look at all our domestic animals of to-day, and compare them with their wild ancestors; who will say what is impossible? 3. That such a race will eventually be produced I have no doubt. Let us assume for arguments sake, that some day in the future every square hill of country is fully stocked with bees (the same as is now the case in many places with cattle and sheep.) The supply has long overtaken the demand, and a great reduction in the price of honey must take place to widen the field of consumption. Will not, then, the beemen be compelled to manage a maximum number of hives with a mininum of labour? It is then we may expect non-swarming bees, if they are not produced before. I am convinced that if the subject were systematically taken in hand and patiently persevered in, we should have a race of bees with which swarming would be the exception instead of the rule, within a few years. Any isolated effort must however sooner or later fail, from the want of infusion of fresh blood necessary to maintain vigour of constitution and other qualities in the bees experimented on. If however a number of people were working for the same object, it would be possible to maintain the standard of quality concurrent with non-swarming. The principal difficulty of obtaining certain desired results in breeding bees has always been the imperfect control over, and uncertainty in regard to pairing of queen and drone. Too little attention is, I think, up to the present paid to the influence exercised by the male on the progeny. What results could we expect, if we in breeding for a particular type of bird or animal, after carefully selecting the female, did not also exercise the same care in regard to the male. The mating of queens can under certain conditions almost be as readily controlled as that of any other kind of stock. Those wishing to experiment in the non-swarming direction may do so without any fear of deterioration, providing they select as a starting point colonies which during the previous season though non-swarming were amongst or actually the best for honey producing. It would certainly be the greatest mistake to start breeding from any one queen simply because that colony did not swarm. The next condition is to get the young queens mated to drones from another non-swarming colony, and this can only be done at the end of the season; why and how I shall, if desired state on a futnre occasion.

Mr Samuel G. Schumach, Binnaway, writes—Bees are doing well here; some of them will soon be swarming.

Mr A. Frank Burbank, Castra Apiary, Queensland, writes—Heavy brooding is a month later this season. Common and silky wattles are giving a good supply of pollen; honey is coming from white gum and turpentine. The winter has been dry; colonies are in splendid condition.

Mr. Geo. Kelly, Dungog, asks:—Will some of the readers of the *A.B.B.* kindly let me know, through your valuable little journal:—"If bees will do well within a few yards of thick forest of unlimited extent, comprising various timbers, but very little clover and cultivation within two miles, plenty of water within a few yards?

[You cannot have a better place. And, in the interests of honey raisers, no land should be unnecessarily cleared.]

PARALYSIS.

GEO. COLBOURNE, junr Cave Creek.

I see that some recommend sulphur for the cure of paralysis in bees, and so perhaps my experience with brimstone may be of interest In the early spring of 1884 one of my colonies had a severe attack of what I now believe to have been paralysis, although at the time I did not know what it was. The bees died in great numbers, many of them dying in the fruit blossoms. I came to the conclusion that they would all die; so, as they had a lot of honey, I thought I would kill them and take the honey—they were in a gin case. So I got some brimstone paper and put it into an empty gin case and set it alight, and then set the hive with the diseased bees upon it, keeping bags around it to keep the fumes of sulphur in. When I thought the bees were dead, I took their hive off, when to my surprise I found them as lively as could be. Well, thinks I, if brimstone won't kill you, I will give you another chance to live; so I set them back on their old stand, and they never shewed any signs of disease after. I should like someone to try the experiment on some badly diseased stocks to see if it will cure them. I would by way of caution say, do not let the sulphur be too strong, or you will kill your bees instead of curing them. Of course I am not sure that it was paralysis that my bees had, as I was but a small boy at the time, but whatever it was the brimstone cured them.

APIS TRIGONA WAX.

Mr Donald G. Grant, Silver Oak Apiary, Muswellbrook, writes .—Just one year ago I wrote to your paper a short article on our native bee (*Apis Trigona*), to which several correspondents answered, disclaiming several of my assertions. I have secured another colony of "natives," which, by the way, were sent to me from your part of the country, and hope to find out something more about their habits. I may mention, however, that I can see no more sign of the tiering of brood combs in this colony than in others I had. I can only come to the conclusion that our native bees must behave in a different manner to those of other parts of the colonies. In this belief I feel confirmed by the fact that in November number, 1893, of your paper, Mr Wilson Green, Logan River, Q., says, among other things in connection with *Apis Trigona*, that he has failed to get a trace of wax from a bucketful of cells." Now, under separate cover I am forwarding you a *piece of native bees' wax*, the half of a cake given to me some time ago by a friend, who, on his way back from a droving trip to Maitland, cut the nest out of a log in (I think) Branxton Reserve, and brought it home in his billy can. His son, a youngster of 10 or 11 years, rendered the comb down in the usual way, and the substance I send was the result. It differs, of course, from the wax produced by *Apis Melliffica*, but not more so than the honey of one differs from that of the other. I would feel obliged if you will, when opportunity offers, show the sample to some of your many bee-keeping friends, and get their opinion of it. I am quite open to correction, and conviction too, if I am making a mistake.

[There is no mistake about it being native bees' wax. We handed it to one whom we thought might know, in the dark, asking him what it was. The reply came promptly, "Native Bees' Wax." We do not know if it has any commercial value—perhaps because there has been too little of it to test the market.]

QUEEN RAISING.

W. S. GOARD, Murrurundi.

SIR,—I should be pleased if you will kindly find space in your next issue of the *A. B. B.* to publish the following, which may be of some benefit to novices like myself, or those who have had only a very short experience in the art of beekeeping. Of course the matter I am going to mention is well known to experienced beekeepers or those who have read the ordinary text books on

the subject, but so far as I know nothing of the kind has ever appeared in the columns of the *Bulletin*.

I may mention at the outset that my bees are all Italians, of the genuine strain, and last year I got no increase from them; not one of them swarmed, which may be considered a very good feature by those who are puzzled to know how to keep down swarming. Speaking for myself, however, I was rather disappointed, for it has put me back considerably this season. About the middle of last year I divided one of my strongest colonies, and gave them a frame with eggs to raise a queen. The queen was hatched in due course, and the hive increased in strength, honey was coming in, and apparently everything was going on well, but some time afterwards I noticed there was very little life about the entrance to the hives; the bees appeared quite listless, and were evidently decreasing in numbers. I opened the hive and soon found out the queen had stopped laying. She was much smaller and darker than the queens I had purchased, and was lacking that stately bearing so characteristic of the properly matured mother bee.

Unfortunately I determined to go on the same lines this season, but commenced rather early. On the 25th of last month I selected from one of my strongest hives, 5 frames with adhering bees, and containing eggs just laid and brood cells with larvae in all stages of development. What I expected was that the bees I transferred would at once have set about raising a queen from one of the eggs, and that I might expect her appearance about the 14th day from the time I inserted the frame. Seven days afterwards (the 31st) I opened the hive to see how matters were progressing, and was astonished to find a queen cell capped and ready to hatch. I had another look the following day, and found the cell empty, and the young queen running about gaily among the bees. But what a puny little thing she was! Slightly longer than a workingbee, with a more tapering body, almost if not quite black at the end, just like her royal sister I had raised last year, I certainly did not like the look of her, and began to think something was wrong, so I consulted the "A.B.C. of Bee Culture," and the problem was solved.

In my ignorance I had foolishly supplied them with larvae as well as eggs, and on the principle, I suppose, "that half a loaf is better than no bread," they had selected the former as being the quickest way to extricate themselves from their helpless condition. It seems strange that the instinct of bees, which teaches them to at once detect the difference between a laying and a non-laying queen, does not also warn them against the folly of providing themselves with a queen which cannot by any means ever become profitable to them.

THE SHALLOW EXTRACTING SUPER, WITH HALF-DEPTH FRAMES.

BY W. S. PENDER.

In writing on the above subject my remarks will bear directly on the 8 frame hive so as to simplify description, but the same can be adapted to any hive. Now if we have shallow frames, what depth should they be? I prefer the supers to be exactly half the depth of the full body, viz., 4¾ in. exact, then any time a full-sized body is required simply use two of them, one above the other, besides, 4¾in. just suits sections with section holders. Now a frame to suit this super allowing ¼ bee space between each set of frames will be 4½ deep and with a top bar ⅞ thick and bottom bar 3-16th gives very nearly 4 in depth of comb surface. Sections and extracting frames can be worked in the one super if desired. Some will say there are too many combs to handle. I say they are more easily handled, but, my difficulty is too many frames to nail up and wire, &c., but this once done is everlasting. Now about the handling, one of these frames hold when full, just about 3¼ lbs of honey, so eight will make about 26 lbs., just a nice weight to lift, with the weight of the super, in all about 32lbs, and not so tir-

ing as a full sized body at double the weight, *First, less wear and tear on the beekeeper.* When a super is full it is not necessary to lift out each comb singly and brush off the bees, as with full depth frames, and so disturb the whole colony, but simply raise the cover, give a few puffs of smoke to drive the bees down, raise the super (if another empty one is at hand, slip it under), a few more puffs of smoke from a good smoker, and the super is practically clear of bees, and ready for the extractor, A few bees may be left, especially if any honey be unsealed, so it is a good plan to take off a good number of supers and pile them in sixes on a board and put on a cone-bee-escape or any of the quick acting escapes, while other things are being got ready or more supers gathered. These combs are very easily uncapped, a single slice with a Bingham or Abbott knife cuts the caps off the combs, and two small combs can be uncapped in less time than one full depth comb. *Second, saves time.* Two of these combs just occupy the same space in the extractor as one large one, so there is no loss of time in extracting.

For tiering they are excellent. How often do we find a queen that will keep more than eight frames filled with brood? Give her a half depth super and she has equal to 12 frames. If she can fill more and it is advisable to give it, another can be given under the first. By giving supers in shallow sections the brood is more confined to the width of the hive and too much room not given at one time, By giving a full story, too much room is often given and perhaps too many bees reared when we do not want them. When a flow starts the honey will be stored above and as fast as brood hatches out the cells will be filled with honey. When the bees have made a good start at storing, raise the super and put an empty one between it and the hive, and keep on giving room as required by lifting the supers and giving empty combs immediately over the brood chamber. This makes the hives very expansible. Honey is always sealed at the top, so as fast as all the combs become sealed (no honey should be extracted except from sealed combs), it can be extracted and returned as one of the lower supers, or the supers can be left on after sealing to give more room in the hive, provided plenty of empty supers are put on as fast as needed, Honey is much improved by being kept some time in the hive. Now if full stories had been worked this way what an extensive honey flow must be at hand to put a second super on before the upper one is quite full, and what a large addition had to be made to the hive each time, besides the honey is so long in being sealed when the combs are so deep, i.e., 9⅜ in. I have frequently had full depth supers three parts full, and did not care to extract on account of about one half being unsealed or unripe and the flow drawing to a close, where, with the shallow frames the upper half could have been taken. Again, if the flow was continuing for a short time only, in order to get these full depth frames sealed I would have to compel the bees to store the fresh gathered honey in the brood chamber until the unsealed honey above was sufficiently evaporated to allow of more, as I would not care to give a set of full depth frames for there would be no chance of filling them.

In a poor honey season, when a surplus of say only 30 or 40lb per colony could be obtained, we do not wish to give the queen too great a chance to rear large quantities of useless bees and swarm as blacks and crossbred bees will do, so we only enlarge their hive by giving a half story, which when nearly full may allow of another being added. 3rd. *Easily and advantageously storified.* Swarms, when we have enough bees and do not want to increase, can be hived in a shallow body on foundation starters, a queen excluder put on and one or more sets of drawn combs put above. Before the queen can lay, she being confined below the excluder combs have to be built and the brood apartment being so small, bees will be crowded to above the excluder, and will consequently commence storing honey. We are thus converting our bees into

honey by this means and laying queens being with the swarm a nice set of combs will be built, all worker, without the expense of full sheets of comb foundation, so bees are also converted into wax. When these colonies become weak another treated in the same way can be united with it. Two of these half stories make as good a brood chamber as a full story. If we still have more bees than we want we can make any colony build us more combs by hiving the bees on starters with a queen excluder and empty combs over, the brood from the hive being distributed among other colonies, which may in turn be treated in the same way. If combs are thus built toward autumn, no drone comb is likely to be built, so full sheets of comb foundation are unnecessary and thus avoid wiring as well, for these shallow frames do not require wire except to keep comb-foundation straight. There is one disadvantage I did not mention, full-depth and half-depth combs are not interchangeable, but being of the same length this is not half so bad as may seem. I may also mention that I have wintered a fair colony of bees in one half story and they came through as well as those on the full size frames. To get sections well started, as soon as bees are well on with one super of shallow frames place a super of sections under it and you will be surprised to see how quickly they will enter and work them out.

IMPORTATION OF QUEENS.

The Editor A.B.B.

Sir,—I see by last issue that Mrs. Jennie Atchley was sending out a "heavy shipment" of queens to Australia, and anxiously awaited results. Doubtless some of your readers would also be interested to hear. The queens in question came, some in cages, by post, and some in nuclei; and, out of the heavy shipment, as far as I can learn, not one came out alive. In fact, a very small per-centage of the queens dispatched from America come safely, and the speculation is so very risky, that it would be, in my opinion, be unwise for any but large queen breeders to venture. Some American breeders are very sanguine in getting them over safely, and undertake to land them alive at a a certain price per head. One has got through two alive, to one customer, out of seventeen. So far I have only heard of one arriving from Mrs. Atchley. Sixteen sent to one customer, all arrived dead. Several come safely each season, from A. I. Root, and from Doolittle, but the successes are like the proverblal angelic visitations, "few and far between." Anything bearing upon the question of long distance mailing of queens, is of interest to the whole beekeeping fraternity, but more especially, to queen breeders. And, I may, by your permission, have a few words to say on a future occasion upon a new departure in connection therewith.

Yours, &c.,
C. MANSFIELD.

Mr A. Moodie, Harden, writes—Will you please let me know what is the best thing to do with my bees. They are in first-class order; queens have just started to lay, but we had a great flow of honey last year, and I left them such a lot there is not room for the queens to lay, only a small patch for brood. Would it do for me to extract as soon as hot enough. I took over a ton of honey last year from 22 hives, and there is any quantity of honey in top and bottom stories now. I thought I would not be able to sell it all, so I left it for the bees, but I sold it all but two tins, and I expect to get rid of them. I am afraid if I extract the brood chamber I would chill the brood, and it is not hot enough here to extract. I never had bees so forward, and there is every prospect of a good season here this year. Let me know as soon as you can make it convenient.

[Allow us to compliment you on such a good honey-flow. We think, under your circumstances, we would extract the upper story to give empty combs, then break the cappings of sealed honey around the brood to cause the bees to carry it to the empty combs, and thus make room for the queen to lay.]

In a recent number of *Good Words*, is a terrible account of the sufferings endured by the Stundists or Russian Nonconformists, in Kief and Siberia. One unfortunate, however, winds up a thrilling account of the horrors endured with —"You will find it pleasant enough here," and adds, as a special attraction, that there "are splendid opportunities for bee culture."

Our enterprising experimentalist, Mr. R. Patten, having written some time ago to His Excellency the Governor of Ceylon, touching the indigenous bees of that island, we notice the leading daily paper of that island, the *Ceylon Observer*, devotes a leading article to the matter. Among other things the surprising intelligence is contained therein that large quantities of honey are at certain seasons brought into the markets of Ceylon by the natives, the Singalese. This quite upsets our preconceived notions that Ceylon was barren of honey. It appears also from the said article, that Mr Patten may expect to receive sample colonies of the two bees, the *Apis Indica* and the *Apis Dorsata*, which are indigenous to Ceylon. While we are doubtful of the ultimate usefulness of these bees from a commercial point of view we must express our lively interest in the forthcoming importation, and trust that good results will accrue from same.

Mr R. L. Studdert, Boggabri, writes—We have had a remarkably good year in the past season; the bush trees of all kinds blossoming very freely, and strange to say several kinds blossomed twice; we had blossoms right through the winter, quite up to middle of August, but think this will be a bad year on that account; hope for the best. Re new Land Act, I think it would be a step in the right direction if certain areas of mountainous country were set aside for selection at cheap rates for persons who would be desirous of starting apiaries. Round this district alone we have miles and miles of scrub and well-wooded mountains, that would not feed a bandicoot, but would be just the thing for bee farmers, and instead of ringbarking clause, useless trees and dead wood could be cleared off, and a certain number of hives would have to be kept. In this way useless lands could be made profitable that are now laying idle, and a source of annoyance by harbouring vermin of all kinds. I trust to see this matter taken up by some abler pen than mine. Through showing neighbours how bees should be manipulated I have been the means of half-a-dozen or more residents round here taking the bee fever, and have no doubt that it will become a great industry here in the near future. No better place in the colony I believe exists than this for bees.

Mr Henry Nancarrow, Wellington, writes—We have had a remarkably good winter, and every fine day honey has been coming in in abundance. Some of our Association boys have been extracting since August 1st, rather early in my opinion. Re the Sydney Honey Supply Co., the only drawback that we are afraid of is that our honey will be adulterated by inferior stuffs to make a better class of other consignments from the coast. It is admitted by all who have seen and tasted our honey that it is far superior to anything to be had in Sydney, and therefore should bring the highest market price, if not adulterated by inferior sorts. It is probable that we will hold a Poultry, Flower and Apicultural Show in November, when I hope some of the bee-keepers in other parts will compete. I will let you know if it is coming off, and give you a list of prizes.

Your fear that your honey will be adulterated with inferior is very groundless. The classification of honey will be one of the features of the Company. Then the directors will be elected by the shareholders, and it will be their own fault if they put incompetent or unjust men on that body. We shall be very glad to get full particulars of your show.

Mr W. Bennington, Dulwich Hill, writes—I have now only four hives; I had twelve last year, and they have all dwindled away; one I sold, and one I gave away. They do not make any honey—only about 20lbs. each hive, and they are all Italians with the three

bands on. I look after them well, and I can work them well enough in Artificial Swarming—I have plenty of empty hives, and any amount of frames, but the bees seem to get less. I had no swarms last year. I think the cause was my trying to make a lot more swarms with artificial swarmiug. The place round here is not much good for bees—no bush flowers, only garden flowers, and no orchards here; only dry flowers out of the gardens. My bees are pretty weak at times. I would like them to make enough honey to keep my family in, but they do not, for I have to buy all the time. They have not got any foul brood or any complaint with them, for I keep looking all the time. Could you tell me what to do with them. I think I will get another hive from some one. Which is the best to get?

Strong colonies only store honey in a locality like yours. Too much handling of bees hinders them. Dividing is not good unless done at proper time and in proper manner.

Mr. W. Nicholson, Garland, writes :—As I noticed the blue pencil mark on my last A.B.B. that reminds me my yearly subscription in advance is due. Enclosed you will please find 5/- in P.O. stamps I appreciate the B. B. very much and look forward to the 23rd of the month. It is generally several days after the 22rd before I get it. I daresay that is owing to the postal department. Last season was a splendid season for honey. With the exception of a few weeks the bees have been bringing home honey nearly all the winter Although my bees were very weak in the spring, I averaged 60lbs. per colony, but a friend of mine got 780lbs. from eight colonies (blacks.) I was very much interested in the last *A.B.B.*, particularly that discussion in reference to Public School teachers competing with beekeepers. One of the speakers against the teachers obtained all his knowledge from a Public School Teacher and then reported him to the Minister of Public Instruction, but only received a reply amounting to a snub. I taught a friend all I knew regarding the practical working, &c., and lent him my extractor for two seasons, and as soon as he got surplus honey for sale he came to my own door almost and undersold me. So you see from the above that teachers have their little grievances as well as beekeepers. We are having very severe weather at present. Last week was nice and mild and bees were bringing in pollen very quickly, as the wattle are just coming out in bloom in this district. Last season we had clover in bloom for at least eight months. This winter the apple tree has been in bloom in the depth of winter. Went into winter with 14 colonies and came through the winter without losing one.

Mr John Robinson, New Lambton, writes :—I like the *A. Bee Bulletin* very well. I am pleased when I receive it, and it seemr far too small as it is so interesting. I have thirty-three boxes of bees, in fair condition, Italians and hybrids. The hybrids are ahead of the Italians. I think we are going to have a bad honey season here.

Mr. W. S. Goard, Murrurundi, writes :—Dear Sir,—I have something unique to send you, "re swarming." A Mr. Norman, a brother beekeeper, had occasion to change his residence last week, and not finding it convenient to move his hives (Italians), with the rest of his furniture, left them behind for a day or two. Meanwhile, the incoming tenant took possession, and chained up a valuable dog in the back yard. The bees swarmed the next morning, and strange to say, settled on the dog, the result being that the poor animal died shortly after in dreadful agony, having torn up a large hole in the ground in his death struggles. I don't know whether it is a fact or not, but I have heard it said that bees have a peculiar liking for the smell of animals, such as horses, cattle, dogs, &c., but cannot stand the smell of pigs.

Look out for the Blue Mark on your wrapper.

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