The Australian bee bulletin. Vol. 18, no. 8 November 30, 1909

West Maitland, N.S.W.: E. Tipper, November 30, 1909

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THE AUSTRALIAN Bee Bulletin.

A MONTHLY JOURNAL, DEVOTED TO BEE-KEEPING.
Published by E. TIPPER, West Maitland
Circulated in all the Australian Colonies, New Zealand, & Cape of Good Hope.

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MAITLAND, N.S.W.—NOVEMBER 30, 1909.

EDITORIAL.

Although the honey flow is not great, the bees are doing excellently, as they just gather enough fresh stores to keep them in good trim. Swarms, though not plentiful, issued at regular intervals, and stocks with virgin queens persisted in swarming, unless steps were taken in due time to prevent them. One hive, left alone, cast off four after-swarms, and all are doing well. The sudden heat on the 8th, 9th, and 10th, of 92, 95, and 94 degrees, respectively, did not materially interfere with the bees, except that the combs were very soft, and handling them was delayed till more suitable conditions prevail. Some exceptionally strong stocks have now given up the swarming impulse, and go in for storing honey. The prospect is excellent for a good season.

Spare room is always desirable, but it does not necessarilly prevent swarming.

Special notice is drawn to the Union's invitation for exhibits of honey, etc., at the Sydney Show. The editor would also wish to see beekeepers taking a hand at submitting matters for publication, and to express their needs and requirements to the Executive of the Union, so that they can deal with them, since the Executive cannot solve all the problems unaided.

N.S.W. & COMMONWEALTH BEEKEEPERS' UNION.

EXECUTIVE MEETING.

The Secretary, Mr. J. J. Branch, convened a meeting for the 8th inst., at 7.45 p.m. Present: Messrs. W. Abram (in the chair), J. J. Branch, hon. sec. and treas., Henry Lord, and J. J. Parry.

After the minutes of last meeting were read and confirmed, and several accounts passed for payment, the president submitted correspondence from the department of Lands and from J. E. Hunt, Esq. M.L.A., and these were dealt with. The president, instructed at last meeting, had written to Mr .Hunt, on the two subjects stated in our report of last month. Mr. Hunt had made application re deputation, but ultimately received a reply from the Department that "the requirements of the deputation, so far as this department is concerned, be stated in the form of a definite request." The President then submitted a letter he had intended to send in reply, but he desired the executive's approval, or rather their improvement thereon. It was, however, decided that the letter be sent on as written. This has now been done, and a fairly strong front has been taken. Specially good bee country, but too poor for agriculture, is claimed for beekeepers. What the result will be remains to be seen, but the executive will do all that lays in their power to see it through.

It is very gratifying to pronounce that the Union's membership is now greater than any previous like concern. The president handed twelve new subscribers' amounts to the treasurer, who has now a nice credit balance at deposit in the Savings Bank on behalf of the Union.

What the Executive now desire is, that beekeepers should respond to the circular of last issue. If they do they help themselves and the industry as a whole. The Bee and Honey Pavilion at the Sydney Show Ground is open for them all, and the Union's Executive will see to the staging of small exhibits; anything in trophy form could not, of course, be undertaken by them. But every little helps, and beekeepers, not dealers, should try and help. The entrance fee will be 2/6, except trophy, which is 21/0, space included. The president hopes to see many new exhibitors, large or small amounts, to come forward and demonstrate the greatness of the industry.

There will be prizes of 30/-, 20/- and 10/- for 2 doz. 1 lb. sections comb honey, 2 doz. 1 lb jars of extracted honey. This alone should bring a dozen entries; besides the numerous entries for wax, honey and bees.

FOUL BROOD LEGISLATION.

(By Dr. C. Bohrer, in American Bee Journal.)

I see by the late Annual Report of the Illinois State Bee-Keepers' Association, that there is a difference of opinion as to the propriety of there being a foul brood law in that State. At any rate, the details as to the matter of specifying the length of time after foul brood has been found in an apiary within which the ailment must be treated, and the disease stamped out, was a subject of controversy. If my judgment is not very much at fault, this is a matter that should be left for the inspector to determine. If it be at a time when there is a honey flow, the treatment can not be applied any too soon. If when there is no honey coming in, and there is a disposition to rob, it is plain to be seen that the sooner the matter is dealt with the better, as the disease will spread rapidly under such circumstances, if neglected.

Then again, a colony may be quite populous and well supplied with honey in the fall, in which case I wintered a colony over, and will this evening (June 9) put it under treatment after the Baldridge method. It is proper to state that I treated this colony last September on the Baldridge plan, but the bee-escape I used (a Porter) was defective, and an occasional bee entered the hive after having come out of it. By which means, diseased honey was no doubt carried into the new hive, and the disease with it.

Others that I treated on the Baldridge plan are perfectly free from it, and are carrying in honey from alfalfa bloom rapidly. I also see that one person assumed the ground that treat the disease, as he may, it will appear again, which position is an erroneous one. For scientific investigation has abundantly shown that foul brood is a germ disease, and it has been also proven in thousands of cases that when the germs are exterminated, and a colony of bees are put upon comb and honey free from foul brood germs, they are no longer annoyed by the ailment. That a failure may, and no doubt will, occasionally occur, as in the case I have called attention to in my own apiary, I have not the slightest doubt. But it does not by any means justify us in concluding that there is no such thing as stamping out this ailment. For there is an overwhelming array of evidence, proving beyond all doubt or question, that foul brood is curable if treated according to well-tested methods.

As to the matter of destroying bees, hives, and honey, there are cases that require just such treatment, and nothing short of fire or burial beyond the reasonable possibility of resurrection, will serve an effective purpose. I refer to old, worthless hives, weak colonies, and diseased honey and poor comb.

METHODS OF INTRODUCING QUEENS.

(By G. M. Doolittle, in "American Bee Journal."

As the best time in the whole year for supplanting superannuated queens is just before the close of the honey harvest, and as I have several letters about this subject, I thought that an article regarding the matter might not be amiss just at this time.

In introducing queens it should always be borne in mind that a queen taken from a nucleus or a colony in the apiary and inroduced to another in the same apiary, does not require one-half the care that must be given a queen from the care that must be given a queen from a distance coming in the mails. The reason for this seems to be that the queen when taken from a nucleus in the same yard is in an immediate laying condition, and will not run around provoking the bees by her different actions from what their old mother had, causing them to look closely after her, and chase her if she sees fit to run, as will a queen after having had a long journey.

In introducing all ordinary queens coming from my own apiary, or carried from the home apiary to one 3 or 5 miles away, I generally adopt one of the two following plans:

The first is to go to a nucleus or the hive from which I wish to get the queen to supersede the one which I do not want, and when she is found I take the frame she is on, bees and all, together with another frame from the same hive, carrying them near the hive from which I am to take the superannuated queen. I next hunt out the poor queen, and after killing her, take out 2 frames from this hive and place the 2 frames brought from the nucleus, in their places, then closing the hive. Now shake the bees off the two frames in front of the hive and carry them to the nucleus, or carry bees and all, as you prefer. The object in taking two frames with them is so that while waiting outside of the hive she and most of the bees may cluster between them, thus becoming quiet, and, when placed in the hive, both are put in together, thus leaving the queen quiet among her own bees. In this way I do not lose one queen out of 50, and as the operation is so simple, and the queen so quickly installed, the advantages more than overbalance so small a loss.

The next plan is to go to my nucleus and get the young laying queen in a cage before looking for the queen to be superseded. I next look for her and kill her, when the hive is closed. I now blow in at the entrance enough smoke to alarm the whole colony, pounding with my fist on the top of the hive until I hear a loud roaring inside, which shows that the bees are filling themselves with honey. I then run in the queen to be introduced, at the entrance, smoking her in, while I still keep pounding on the hive. In doing this nothing but wood smoke should be used, for, if tobacco smoke were used, many of the bees would be suffocated If done when here is danger of robbing, wait till just at night, or do it on some cloudy, cool day when the most of the bees are staying at home, for where robbing is started, or the smoked bees annoyed by robbers, the success is not so certain. The idea is to cause the bees to fill themselves with honey, at the same time smokng them so that the bees and queen smell and are under the same conditions, so that they do not realize that any change has been made. By this plan

I seldom lose a queen, but it is not quite as simple as the first; however it is equally as successful as the other.

In introducing a queen which comes from a distance, I most often use what I term the caged-frame-of-brood plan, which is as follows:

Get out a frame of very thin material which will just go inside of the hive, and at the same time admit of one of the hive frames going inside of it. I usually make this so it will take 2 frames inside of the cage, for where we wish to introduce a queen in the latter part of the season, we shall need all the bees we can get to give the colony sufficient strength for winter. This frame is to be left open at the top, so that the frames of brood can be set in, it being held in position at the top by light strips being nailed on each side, they projecting so as to hang on the rabbetting of the hive. The sides are now covered with wire-cloth, when it is ready for use. When the queen arrives, go to any colony where frames of emerging brood can be obtained and get 2, shaking the bees all off of them, securing those from which the most bees will emerge during the next 24 to 48 hours.

Hang these frames of now beeless brood in the frame cage, and let the queen run in with the attendant bees which came with her, when the whole is to be hung in the middle of any populous colony in place of 2 frames, and left for 3 or 4 days. Of course the top is to be made secure in some way, so none of the bees from the hive can get into the cage, and none of the bees from the cage get out. A proper sized piece of enamelled cloth answers for this purpose nicely.

If you have selected the right frames as to ripe or maturing brood, the cage will be pretty well filled with young bees in 3 days, while the queen will have commenced to fill the vacated cells with eggs.

The cage is now taken from the hive, which has furnished the warmth to cause the young bees to emerge, and carried to a hive where we wish a colony to stand, the cage set in one side of the hive, when we proceed to take out the 2 frames and set them on the opposite side, when a follower or division board is drawn up to economise the warmth of the little colony. If there is not plenty of honey in the 2 combs from the cage, a frame of honey should be set in next to the side of the hive before the 2 frames are taken from the box, and thus this honey is beyond the 2 frames of bees, thus guarding against the robbing of the little colony, and especially so if the entrance to the hive is made at the side the cage is now hanging. It is best to allow this cage to hang here for a day or two, or till we open the hive again, so that all of the bees adhering to it after the frames of brood are removed, can crawl out at their leisure. In cool or cold weather, it is best to leave the 2 frames caged with the colony for 5 or 6 days, instead of 3, for, if taken out too soon, these young bees may not have sufficient vitality to cause the remaining unhatched brood to emerge from their cells. The little colony is now built up by adding frames of emerging brood, occasionally, as they can protect and care for them.

The plan is **absolutely** safe, and if all who have lost valuable queens will try it, we shall hear no more of so many losses in introducing. It requires some work, I know, and takes some time to build up a colony in this way, but after we have once lost a valuable queen we are ready to go through with some labor rather than lose another.

There are other plans which are employed to introduce queens, and general instructions attend all mailing cages, but where a person does not have the success he or she desires with them, the above will satisfy, if they succeed with others as they do with the writer.

CORRESPONDENCE.

Camp Hill, Young,
25th October, 1909.

Dear Mr. Abram,—By to-day's mail I am returning in large envelope the four pamphlets you have so very kindly lent to me, for the use of which please accept my sincerest thanks. I trust you will receive them all in good order.

You have kindly mentioned that I may obtain from you a further supply of books should I require them. Thank you very much. The more I read the more I wish to do so. Should I subscribe to a journal or should I purchase a book? I cannot expect that you should buy pamphlets to lend to me.

I have found the books very good, nevertheless as a beginner I find that mistakes can be made from reading only one set of books, hence my wish to read the same subject matter differently expressed. For instance, I had always believed the "parent colony" in swarming to be the old queen and her followers, and till lately have carefully placed her far from her old stand.

Again, in the present books I have read: "When introducing a queen from a distance do not make the mistake of waiting a couple of days, but kill the old queen and introduce the new one at the one operation." The writer has not mentioned how to introduce a queen out of the one yard. So I killed my three-year-old black queen, and introduced in candied cage an Italian nicely mated, and the bees I find killed her. I have given them another this morning, and they still loiter saucily around the entrance. The bees when first I changed the queens were within a few days of swarming. I destroyed **all** cells.

I am sorry to be such a dunce after the nice books you have sent me, but please have patience with me.

Thanking you very much, sincerely yours,

Kate Tierney.

¶When the bees have the swarming impulse it is very difficult to introduce a queen. Better to let them swarm, and then introduce a good queen in the parent hive, and any time from ten days after the swarm issues introduce another queen, better just three weeks after.—ED.

Lapstone, Emu Plains,
4th November, 1909.

Dear Mr. Abram,—I must apologise for my long delay in answering your letter. I have had it in my mind many times, but my time has been so taken up with the hon. secretaryship of the Warragamba Nepean Irrigation Association and other duties that my private correspondence has suffered.

Now about your enquiry as to my willingness to lecture on beekeeping. I am prepared to lecture to a company of brother beekeepers, but in the case of the general public or the Government I should expect a fee of £3/3/0.

The two colonies you sent me have built up into fine strong hives. The spring here has been almost without rain and the dry season, and the after effects of the fire on the near slopes of the mountain have prevented the bees from having much of a chance. However within the last few weeks we had several showers, followed by two inches of rain, so that prospects are improving, though I do not expect much marketable honey from the range this season. At present pollen is plentiful from wattle and white bloodwood, and honey is coming in from red apple, so that the bees are mostly strong and in good heart. Last autumn I reared twenty or thirty fine queens, largely from some of the old strains that escaped the fire, and have replaced the hybrids and

blacks that I bought after the fire, so that I have quite a respectable apiary again of really beautiful bees, and the improvement in temper as compared with the bought stock is really wonderful. Four or five small swarms from the bush have come to visit me, and been given a home. I have just begun to raise a few cells, and hope to get a dozen nuclei going shortly to raise queens to replace mis-mates and to increase stock.

As your range is nearer the coastal rains that have been visiting Sydney this spring, I trust that you are having a good time this year. With kind regards.

I am, yours sincerely,

W. Hessel Hall.

Wm. H. Watson, Reservoir Road, Pymble, writes:— Knowing that you are an expert apiarist, I am taking the liberty of writing to you to ask you whether the blossom of the "Rhus Succedanica" autumn foliage plant, is injurious to bees or whether the honey from it would be poisonous. My bees are simply swarming into the tree, and the blossom has a very offensive odour.

¶As I am not a botanist, and do not know the name of that tree, will some reader kindly supply the information.

H. C. P., Port Macquarie: Bees did not do too well the past winter. I lost about one third of my hives, but hope to soon build up again the present year. Trusting that you have had a good year and that you have improved in health.

PIONEER BEEKEEPING.

J. J. BRANCH.

It will be patent to your readers that at a time when our local blacks could sell "budgeree feller honey" at one shilling per bucket that the bees had already become feral and had well established themselves in a district that at least flowed with honey, and from whence they spread north, south and west to other rivers and more distant fields, until it was hardly necessary to keep bees, as we know of it to-day, though always there was the faithful few who had their box hive apiaries, many of them in the least expected places, and their owners in some cases not the most likely persons, and that state of affairs was continued for many years till the news of the frame hive got abroad in the place, but just who was the first to have bees on frames in that part I think lies between Mr. Henry St. John, B.B.K.A., and the present hon. member for the electorate, the Rev. Robert Davidson, M.L.A. for the Hastings and Macleay. I can recall that in one of the conversations that took place between Mr. St. John and myself, that that gentleman informed me that he still used the B.B.K.A. hive, frame and extractor, and it was some years before the American system of keeping bees became known that Mr. Davidson made for himself, and established bees in the Berlepsch hive. I remember that on two occasions his bees were raided, and his work destroyed as the result of local larrikinism, with an interval of several years and that he again after some years of interval had bees in American hives, and upon his becoming the proprietor of the "Port Macquarie News" he gave more than passing notice to the beekeeping industry, devoting much valuable space and much intelligent thought and advice to all and sundry who came within his influence upon that subject, among whom were Mr. James Butler, the late John S. Dick, and the writer, who all had established apiaries before the advent of Mr. Albert Gale as Government Lecturer on bees in that district, and though the writer had not the pleasure of meeting Mr. Gale in that part, it was his youngest brother, John R. Branch, and an apiary pupil who carried for over a mile on his head the box hive that Mr. Gale publicly transferred at his lecture in Wauchope.

I have mentioned above that the land at that early time suited bees very well, though of late years the axe and the plough have much altered the whole out look for the beekeeper, and he must go back amongst the more inaccessible hills now to get any good results, but just to illustrate the then position, I will mention one honey-getting trip made by the blacks well on to half a century ago at the instance of a resident merchant, when over thirty tons of honey and wax were taken from the bush. A resident of the Port, who was then a young man, described an incident of that expedition to the writer in conversation. The narrator was a well-known sportsman, and had camped not very far from where the niggers had their honey camp, and upon his party coming upon their camp, en route to the nearest duck lagoon, in the early morning, he described with graphic vividness the previous day's take of honey, hung from poles in the smoke from the fires, and the dust from the camp traffic, and (tell it not in Gath) contained in the necessary number of camp blankets was the honey put to "strain" in a variety of tubs and buckets from which the camp curs took their lick, and the picanninnies their ebony skins glistening in the morning sunlight, with honey daubs fraternally bestowed, shared the loot with the dogs.

I have not attempted to imitate the fluent wealth of descriptive adjectives that accompanied this recital, but if my humble efforts have helped to convince your readers that aboriginally gotten honey is open to suspicion as the most appetising variety I shall feel that I have not written in vain.

Another of these expeditions by the blacks that the writer remembers resulted in seven tons being got, and yet another conducted by a bushman while the writer was a residential selector in the district, accounted for eleven tons in one shipment, on the authority of the local freight agent in each case.

I think I have conveyed from the above how well that coastal area suits the bees, and when I tell your readers that in normal seasons there are two swarming seasons, one October-November, and the second January-February, it will be easily understood how bees thrive and multiply and how the North Coast bee man can produce tons, while less fortunate people can only get tins.

BEE STINGS FOR RHEUMATISM.

Although this is an old story, there are many doubting Thomases who do not believe that bee-stings can be used as a successful cure for rheumatism. The writer was one of these for a long time, although leaning toward the belief that there might be something in it, until several years ago when I was so thoroughly convinced that I have been not only an advocate of such treatment, but have applied the treatment both to myself and to other patients with success.

It is needless to say that a cure can be effected for all kinds of rheumatism, perhaps. However, all the cases of which I know, a cure was made in every case. I do not know of a single case where the bee-sting cure failed, and some twenty cases of treatment can be referred to.

Several persons have told me that after suffering for years, and having tried all the doctors and patent medicines, besides trying different "baths" at various resorts, which have been recommended to them, without avail, their last resort was "bee-stings," and now they are well. Some have stumbled on this "cure" accidentally, tried it, and were cured, while others had known of bee stings as a **relief for rheumatism,** but who dreaded this kind of cure more than the disease. Later, being finally driven to "bear it and grin," the bee-stings were tried, and the patients were healed.

For a time—possibly about three years, I suffered more or less from rheumatism in one arm and one leg. This was during a period in which very little work with the bees was done by me, and hence I was not stung often. Later I took up bee-keeping again, but without the least thought about my rheumatism and the connection bee-stings might have with it. It was not until late in the season that I became aware that my pains were gone. The numbers of stings received in the work ran into the hundreds, and I am sure that they cured me. Never since then have I had any more trouble with rheumatism, and neither is its return expected unless the bee-stings are left off entirely. Then if such should occur my first remedy would be bee-stings.

One of my relatives, and next door neighbour, suffered so severely with rheumatism that he had to give up work entirely for months. All kinds of medicines and doctors had been tried, and mineral as well as other baths, but no permanent relief was obtained. Almost despairing he requested enough of my time to apply the "bee-sting cure." It was agreed that if he would stand the pain I would apply the stings, and after several weeks' treatment he was well. It will be well to say that this was a very severe and obstinate case, and required several hundred of the stings, which were taken in the morning and evening.

My present assistant at an early age was afflicted with rheumatism to such an extent that he was practically an invalid. His sufferings were unbearable, **and all the treatments gave no relief.** He and his relatives had heard of, and were **advised to try bee-stings, but the** relatives scorned such a foolish idea. **Having the grit which we know only** too well a young fellow in his condition can have, he one day, when all were away, slipped out to his uncle's bees. Although the pain was severe from the stings applied by himself, he was determined to get well. Relief was soon felt afterward, and the application of stings continued. He was cured, and is well to this day; and he does not expect ever to suffer so again as long as he is with the bees, which business he at that time took up, and expects to follow for the very purpose in which he earnestly believes—that as long as he receives stings while working with the bees he will be free from the dreadful torture from rheumatism.

Many other cases could be cited which I know personally, while many others have been related to me in detail. Upon several occasions cases have been cured upon my suggestion after everything else had been tried.

There are several persons who have had like experience as above related, and who can bear me out in this kind of testimony.—A.B.J.

HONEY.—

There is no change to report in values of choicest quality, which is selling from 3d. to 3¼d. per lb. Medium qualities are worth from 2¼d. to 2¾d.

BEESWAX.—

Good steady market. Best white, 1/2 to 1/3 per lb,; dark from 1/0½ to 1/1½ per lb.

LECTURE ON BEES AND HONEY.

(Delivered by W. Abram, Beecroft, at the St. James' Hall, Sydney, October 18th, 1909.)

(Continued.)

Then I wished to divide the hive, as it did not swarm, but I did not quite know how; so I arranged with a progressive beekeeper to come and do it for me, and as compensation I went to his place to dig for a whole day.

At the appointed time the beekeeper did not turn up.

We waited for half an hour, and then my brother and I set to work to do it ourselves, and we had just finished when the beekeeper came along.

He said it was alright, and now we knew as much as anyone round about, he said.

I now began to read any bee book I could lay my hands on, and the more I read, and also watched the bees, the more I felt that there was much more to learn. I increased my bees, and also made the bar-frame hives I had read about, but I lacked practice, although I was then known as the best beekeeper in the district, and several persons of high positions in the town near by would ask me to see their bees, which they liked, but were afraid to handle.

Thus it happened that one day Dr. Siehe told me that, as I wished to travel, I should go to a large bee farm and learn professional beekeeping, when the whole world would be open for me; and he would give me a letter of recommendation.

I agreed to this suggestion, and made an application to the then best known bee master, J. Dathe, and I was accepted. I was then 22 years of age.

There I had every opportunity to learn, both in management of bees and hive making, etc., and, though it was a hard time, I made the best of it.

I made such good progress, that at the end of my apprenticeship the master offered me the position as manager of his establishment.

My desire, however, was to travel.

Thus, unbeknown to me, my master advertised in the principal bee journal that his pupil desired a position as bee master.

Within a few days after coming home, I had received six offers, and I accepted the one in Transylvania, Hungary, within a few miles of the Russian and Roumanian border. This was the best equipped bee farm I had ever come across, and I stayed two years there. Then I got an offer from the President of the Provincial Jurisdiction, Baron Karl von Apor, at a very high salary, and I accepted.

This gentleman kept the bees as a hobby, but the place was not suited for bees. Thus I did not care to live on charity.

Besides, my mind was for further travel, and this time it was either America or Australia. Just then I got an offer as bee master in Chili, S.A., but the salary was too small. I also got an offer from the Russian Government as bee instructor at the Agricultural School, Moscow. In the meantime I had decided to go to Australia, and had already made certain arrangements. But at the same time my master had recommended me to the Austrian Minister of Agriculture, and had been informed that a position would be open for me at the Vienna Agricultural School as lecturer and instructor on bees.

When the Baron told me what he had done for me my grief was great to refuse such an offer, but I did refuse, and in due time I left there to depart for Australia, where I have been now domiciled 28 years. And I was the first to start beekeeping here as a sole occupation for a livelihood, and have followed it ever since.

We now come to the real subject: Bees and honey.

A colony of bees in full efficiency consists of a queen, many thousands of workers, and some drones. It is a community consisting of three different parts.

THE QUEEN.

It is generally assumed that the queen is the ruler of the bee hive; she is not, she is the mother, lays all the eggs, day after day, for worker bees, drones, and queens, as occasions may arise, laying as many as two thousand eggs per day in the height of the breeding season.

There is not much rulership in that, is there, thus her's is not the easiest task. Folow me further. The number of bees increases, and they decide to cast a swarm. Swarming is the natural method of propogation. But before the swarm departs the bees build queens cells or cups numbering from a few to over fifty, according to their desire; and the queen-mother lays an egg in each. After two days a tiny young larva hatches out of each egg, and is henceforth fed on digested food, called royal jelly, till about eight or nine days, when the cell is sealed over, and the larva developes into a nymph and then emerges as a full-fledged virgin queen on the fifteenth or sixteenth day after the egg was laid. But what happens in the mean time? By the time the first queen cell is ready for being sealed over, the queen mother and the bees begin to feel nestless, the queen-mother even leaves off laying eggs, because she knows that if she laid as many as two thousand eggs at this critical time she would never be able to accompany the swarm, which is going to come forth; thus she is light at the required moment and when the next day is fine the bees suddenly become restless, begin to rush about the hive and come forth,the queen with them—they swarm. The old queen goes with the swarm, which, when hived form a new colony or hive, and it may be placed anywhere you like, as none of the bees will again return to their old home once the have agreed to remain in the new abode. They say good-bye to their former home. Is this not most wonderful? From their new home they learn the position of the hive, the surroundings anew, though the difference of distance between the old and the new home may be only a few feet. This is one of the greatest marvels in bee life, and it is hard to explain how the little bee possesses such remarkable intellect.

The old queen mother leaves her old home with the first swarm. There is then, therefore, no queen left in the hive that swarmed; but there are queen cells with queens developing in the hive, and in about six to nine days from the time the swarm left, these queens are ready to hatch. At this time the bees may be numerous enough and decide to issue another swarm; this one, or any subsequent one, is accompanied by one or more young virgin queens. In such a case the first fully-developed queen hatches out, and then begins to emit a sound repeatedly, like tee-tee-tee. This evidently done with the object of warning other queens ready for hatching to be careful and remain where they are until the first hatched one has gone forth with a swarm; it is also an expression of calling her sympathisers to get ready and soon depart, as she is in danger where there are other queens in the cells, and may slip out at any moment. The bees know the danger of more than one free queen in the hive, and thus they prevent the other queens from coming out of their cells. I have known such queens to be kept in the cells for over a week, owing to cold and rainy weather preventing the swarm from departing. But these celled and full-grown queens need nourishment, and to obtain that each queen makes a small hole in the side of the cover of the cover of the cell, and puts her tongue through to get fed by the bees in her confinement in the cell. I first observed this forty years ago, and have seen it continually since. These queens in the cells make themselves heard also, only

their piping sounds different, like tut-tut-tut. The sound of the free queen is high, that of the enclosed ones is deep.

When the conditions favour the swarm issues. During this tumult, when the bees have no time to watch and guard the queens in the cells, they quickly slip out, and often some join the swarming bees, and thus there may be more than one queen in the swarm; but when the swarm is hived, and has decided to accet the new abode, then all the other queens but the leading one are killed by the bees. The same happens in the old hive; all queens but the old selected one are done to death.

These young queens are not yet capable to fulfil their motherly duties; they have to be impregnated by a drone, and this has to take place in the open air while on their wings; thus the queen and drone must be strong and well-winged. For this purpose the queen leaves her hive during the warm hours of the day, between 12 and 4 oclock; the drones do the same. But the queen has to find the hive again, therefore at her first flight she takes notice of where she came from, and of the surroundings, and for this purpose, after leaving the hive she turns and then begins to describe circles, small at first, but gradually enlarging them, noticing every particular. When she has obtained the marks of the locality, then on the next fine day she leaves the hive in an almost straight line for the distance out of sight, and if she meets and connects with a drone and returns home, she begins to lay eggs in about two days hence. She is then a perfect mother, and able to lay eggs of both sexes, both male and female, to the extent of several millions during her life. She never meets a drone again—one fertilization is sufficient to fertilise this great number of eggs of the feminine gender. Is there anything in creation more wonderful than this? Where is a comparison of such great mystery? I am not going to explain the scientific aspects of this great problem. My object is to show you that the bee hive contains mysteries that absorb all one's time to study and understand them—to entict some of my hearers to go forth and investigate further, and to show that beekeeping is one of the most interesting studies. To keep bees and rob them of their stores when they have any, and to leave them otherwise to their own devices may be profitable, but the study of their ways and habits, etc., is the interesting, fascinating part. Here we find wonders that it takes a lifetime to solve, and then not all is known.

Worker Bees.

However, we must pass on, and will now consider the bees. Bees are the workers, that do all the work inside and outside the hive. They gather all the food equired for their needs, they store any amount of surplus, if it can be gathered, they build the combs, the wonderful space-saving, the most correct, the most strength-giving structures, they nourish the thousands of young larvæ, all according to their needs, they protect their home against invasion of their many enemies, they clean the hive. They have no eight hours rule—they work when they are able to, every day of the week. They work in the hive day and night. They are also the rulers of the whole community. For this purpose they are provided with a weapon, dreaded by all, human beings included—the sting—which contains a small quantity of formic acid poison, and causes considerable inconvenience to the rude intruder of their happy home, if he comes into contact with them. Without this defence bees would be at the mercy of all.

A healthy colony in the summer season contains from 30,000 to 70,000 worker bees, and the more bees there are in a hive the better the honey-yield, if it can be gathered. It is wonderful what these little workers can do, if the blossoms secrete abundant nectar. They are always busy, always ready and willing to gather stores.

It may be worthy to mention here that the worker bees are female, and this may explain the reason for their continuous energy and activity. From any egg laid in a worker cell and of which under ordinary conditions a bee would arise, a perfect queen may be developed, but in this case the young larva must be chosen when not over four days old, and thenceforth be fed on royal jelly—that is, digested food, and the cell must be enlarged to admit of abundant food, and the full devolopment of the queen, which is larger than the bee. The worker larva, during its early life, receives the same digested food as the queen larva does, but not quite so plentiful, and after four days the food for the worker larva changes to a coarser and undigested material, consisting of honey, pollen and water, the latter amounting to about 70 per cent. In consequence of this the worker larva requires 20 to 21 days from the laying of the egg to develop and hatch out, whereas the queen larva needs only 15 to 16 days. But this change of food, the smaller cell, the longer confinement in the cell, produces just what is required—the worker bee. She is thus capable to fulfil nature's design admirably. How wonderful! It would lead me too far, and delay the lectures finish beyond measure were I to go further into details on this subject, as other subjects are to be mentioned.

(To be continued.)

FLAT ROOFS, OR GABLED?

(By H. M. Read, Expert, and Hon. Sec. Irish Beekeepers' Association.)

There are two points of view from which we may look at the question whether we will have our hives fitted with gabled or flat roofs—the artistic and the utilitarian.

Considered from the artistic point of view, the gable roof, in conjunction with the V-shaped porch, is, I think, more pleasing to the eye. Probably, however, the V-porch is about to give place to the straight one; and then the gable roof will be less in keeping with the lines of the hive.

Considered from the utilitarian point of view, I think there can be no question as to the superiority of the flat roof covered with zinc or other damp-proof material. It is not liable, like the gable roof, to cracks, or openings, at the joints, which admit rain and snow. It affords at once a convenient table for bottles or tools used with the bees, either in the case of working at an adjoining hive, or using the lift and cover of the hive under manipulation. It makes an ideal hiving board when covered with a napkin. If a crate, or a set of crates, must be lifted off for the purpose of manipulating frames, the table formed by placing the lift on the ground and the cover on it, is just the right height for placing the crates on, and it keeps the bees shut in, so that they cannot interfere while one is busy with the box. The flat roof, too, will hold the brick or stone to mark hives needing early attention.

There appears to be, nevertheless, a prejudice in some minds in favour of the gable roof. This is probably chiefly due, not to the more artistic effect, but to its association with the "C.D.B." hive, and the regard in which that hive is held throughout Ireland.

The flat roof has, however, been adopted as the best form by the sub-committee of I.B.A., which was appointed to draw up specifications of an improved hive, and I think beekeepers would do wisely to specify such roofs when ordering hives.—Irish Bee Journal.

Our experience is, never use second-hand cans, excepting in cases where they are sent to a local market, and a person knows the cans. Cans left over from one season to another, having had honey in, 19 times out of 20 will rust. Use nothing but new cans is what we advise.—Aliso Apiary, El Toro, Cal.

SELF-HIVED SWARMS.

Some Curious Instances of Bees in the Walls of Buildings.

(By W. A. Pryal, in "Gleanings.")

The experience of Mr. Frank C. Pellett in "Gleanings," Nov. 1, 1908, brings to mind several occasions when swarms came to my apiary and took possession of empty hives in which I had noticed bees in greater or less numbers for a week or more previously. The first case was over thirty years ago, when I had some discarded Harbison hives stored in the loft of the barn. How the busy little insects knew the hives were there I do not know, though I suppose they had been prying about every nook and corner from which the smell of bees, honey, or wax emanated. They must have made their way through a knot-hole or crack in the ordinary rough siding, and taken possession of the hive. I saw them in some of the hives some days before, but did not think any thing of it at the time, for up to that time I never had any self-hived bees. I bored a few holes on a level where the entrance of the hive would come, and moved the colony up to the wall so that the bees could have easy ingress and egress. This colony did well, and remained in the loft until we raised the building to make room for a larger barn.

In years gone by I have had several swarms take possession of empty hives containing comb right in the apiary. In one instance a swarm came to the apiary in February. The hive was a small experimental one made of ⅜-inch lumber, and it was set aside to go in the hive bone-yard or wood-pile. One day, about one o'clock, in the spring, a year ago, I happened to be in my workshop when I heard a commotion as of bees swarming close to the door. Looking out I saw a big swarm taking possession of a discarded three-quarter Langstroth hive that stood on top of anoher hive. Later the bees were shaken into a regular dovetail-Langstroth hive, and they became an industrious colony.

The cases above referred toare but two of several that came under my observation right in my apairy. There is a large house in our neighbourhood in which bees repeatedly domiciled themselves, much to the discomfort of the human inmates. While the bees found their quarters warm and comfortable, those in the house probably suffered some on a cold days because they could not start a fire in the grate. Smoke would not ascend the flue.

A bricklayer was called, and dismantled the chimney under difficulty, until the colony was reached and removed.

A small cottage on a place adjoining ours has been a favourite abode for bees for something over twenty years. The rustic would be removed, the colony destroyed, and the boards replaced. In a year or another swarm of bees would come and squat on or in the same place. It seemed the bees found an opening in the chink under the eaves. Recently I saw this house, and the rustic is not replaced any more, so the bees could not find it suitable quarter to nest in.

For years a colony of bees held sway in one of the flying buttresses of old St. Joseph's Church, Berkley, near here.

The bees had their entrance within a yard or so of the church entrance, and I never heard of the congregation being molested by the busy honey-gatherers.

A little over a year ago one of my neighbours in the Claremont district, just over the hill from our place, asked me to come to his place and see what he could do to banish a colony of bees that had taken possession of his attic. I found that for years he had been the victim of the bees' industry. They got in between the shingles and the plaster. The case was one of the most extraordinary I ever heard of. Several years, during hot weather, the honey melted and ran down

even into the rooms below. One year, a mass of comb, honey and bees was dislodged by the heat, and went tobogging to the eaves. The plaster was ruined. Buckets, pails, and tubs were set to catch the dripping honey. When I visited the place the ceiling where this colony was located had been re-plastered. The swarm had been removed, and its place of ingress on the outside stopped.

The pestiverous colony that I was called to advise about was lodged in the immense wooden cornice, and was to be reached only from within the attic. One of the owner's sons had made an opening, and was trying to capture or disodge the bees. He procured a smoker, and had tried to drive the bees away or kill them with sulphur fumes, but to no purpose. He was advised by someone connected with the University of California to give them their quietus by means of carbon bisulphid. Liberal applications failed to accomplish the desired result, owing, I suppose, to the fumes too easily finding an outlet at the bottom of the cornice. To ascertain the size of the colony I took a hand-saw and used it as a knife to cut the comb loose. Sheets of comb eight inches wide and over twenty-seven inches long were taken out. The honey was of the finest colour and flavour. But it was impossible to get those bees out—they crawled off into all sorts of corners. Every hole that could be found in the shingles and in the cornice had been plugged, but still the bees found an entrance. I advised the young man to let the bees remain until late in the winter, when there would be fewer of them, and but little honey to make a muss as in the spring or summer, and then he could probably easily rout them from their stronghold.

SWARMING ECCENTRICITIES.

(From the Canadian Bee Journal)

Some time ago I read in your Journal that, while bees have certain rules they go by, yet they sometimes depart from these rules. For instance, one queen to the hive is the rule, yet it sometimes happen that two queens seem to live in the same hive in peace and harmony. Other departures from the usual course may be cited. Perhaps it is because they are all females that you cannot always tell what their line of conduct may be Of course, I do not forget that there are drones in a hive, but like other male animals, they do not count in the management of the house.

I think I have had a rather unusual case this week. A swarm which I will call swarm A came off, and I hived them. Just as I had secured them another swarm came off, which I will call swarm B. Just as soon as I had hived swarm B swarm A came off again and lit on the very spot from which I had a few minutes previously taken swarm B; in fact, I had to carry swarm B to the stand to get them out of the way, so that I might shake down swarm A.

Soon my wife called that swarm A was off again, and, sure enough, about a handful of them came off and went off poste haste to the woods, and I lost them. The remainder of swarm A came off shortly after and filled the air. But now comes what I think is the unusual part of the programme. According to rule, these bees from swarm A, having lost their queen, which had gone to the woods, ought to have returned to their parent hive. A few of them did so, but the great part went in with swarm B, which, as I said, I had placed on the stand. This, I think, is proof again that you cannot always tell how bees will act. And I suppose that is because they are females.

The Editor C. B. J. says in a footnote: Are you not just a little hard on the

"females?" Your experience is nothing new in swarming-time. There are various kinds of swarms—a prime swarm, that goes out with the old queen; a swarm (usually small) that goes out with a virgin queen when they are superseding. If there is only one virgin they usually go back. This accounts for a swarm returning. Should there be more than one virgin queen on the wing at this time, a bunch of bees may leave with one of them. There is, however, an other problem that often arises that is puzzling. If your queens are clipped, and a swarm issues without your knowing it, or perhaps not knowing which hive they came out of, the probabilities are you will lose your clipped queen. In this case the swarm will go back, and will issue again as soon as they have reared new queens. Under these circumstances, you will lose this swarm if you are not at hand to take care of it. The bees know that they can now swarm, and seek a new home with one of the young queens, as the hive is left safe for a young queen, anyway, either hatched or about to hatch, as there is sometimes a day or two difference between the ages of cells. The mixing up of swarms is a very embarrasing thing when it happens. But there seems to be no way of preventing it sometimes. There are many unusual things happening in a bee-yard that test the skill and judgment of the operator.

Mr. Morley Petit, Provincial Apiarist, gave a brief call at a recent meting of the Brant Bee-keepers' Association. He had with him a sample of European foul brood. It was nicely cased up in a small well-matched frame, with glass on both sides. It could be carried about anywhere, or exhibited anywhere, without danger. The idea is a splendid one, and will do much to educate the bee-keepers with whom he comes in contact as to the nature of the disease, and how to recognise it. Doubtless he had a similar one of American foul brood. If not, he should procure it at once.

IS IT EUROPEAN FOUL BROOD?

Having been employed at inspecting bees during the past four weeks throughout the countries of Bruce and Huron, I have encountered a number of very suspicious cases of brood. It is somewhat like the American foul brood at first glance, but upon closer examination I find that it does not string as does the other, and differs in other ways. The larvæ has the appearance of being turned end for end, and when removed leaves a milky substance in the bottom of the cell, which in a more advanced stage becomes dry and black, reminding one of nothing more homely that a dried baking currant. The bees also sip it when disturbed in its earlier stages.

It appears to be very virulent in Bruce County. Many apiaries of 75 to 100 colonies have become extinct or almost so during these last few years. American foul brood is not so prevalent as to account for this great loss, and the writer is strongly of the opinion that these cases found are cases of European foul brood.

I should like to hear from other inspectors as to whether or not they found any such cases, and what their opinions are. —John S. Schank, in C.B.J.

ADVANTAGE OF YOUNG BEES FOR WINTERING—SECTIONS.

Wm. A. Lishman, in "Canadian Bee Journal,"—Last fall I wrote you telling how I tried to have young bees only wintered, and those hives so treated have produced one or more supers of sections than those not touched. They were always boiling over with bees, so this fall I am going to give every hive the same chance.

Another thing I have found out is the advantages of the sectional and eight-frame deep body. So far the eight-frame 9½in. body is ahead, both with ease of handling and results. In another paper I could describe the system by which I

make use of the defects of the deep hive and prevent swarming, and was sure the other hive beat any other for comb honey. and my prejudice died hard.

I used two widths of sections this year, the 1⅛in. and 1 15-16in., and under same conditions the narrow sections were far better filled than the wider; but they are much objected to on account of the light weight, and they cost a bee-keeper just as much as a heavier one.

SLOW COOLING OF BEESWAX.

At one time the American Bee Journal was criticised severely for advising that beeswax should be cooled slowly in ord er to have best quality. However severe the censure, there was comfort in the thought that the suffering was in a just cause. There is now additional comfort in finding that so good an authority as Mr. Thos. W. Cowan in his new book, "Wax Craft," endorses the views then given. On page 61 hesays:

"The scum is then taken off, the cop per covered over with cloths, and the water and wax are allowed to cool as slowly as possible, for the slower in cooling the more refined the wax becomes."

To be sure, one might say, "Keep the wax hot a long time, so as to allow plenty of time for impurities to settle," for that would leave the wax just as clear as slow sooling, but rapid cooling afterward would not be so well on another account. For if the wax cooled rapidly, the outside becomes solid first and the cake cracks. To avoid this, Mr. Cowan again prescribes "slow cooling," saying (page 72):

"The whole of the wax and water from the press is then poured into a can and kept covered so as to cool very slowly, thus preventing the wax from cracking."

So it seems that "slow cooling" is the orthodox thing.

A large quantity of wax covered over, in a warm room, will of itself cool slowly, without any further preliminary. A small quantity cools more rapidly. Add a quantity of hot water, and that will make it cool more slowly. An excellent way is to put the dish of wax (there may or may not be water in the dish with the wax) into the oven of the cook-stove in the evening, leaving it there till the next morning. The slow cooling of the stove insures the slow cooling of the wax. But there may be a bad mess if you forget to take out the wax until the stove becomes very hot the next morning. To avoid this, put the stove-handle in the oven with the wax, and when you take out the handle in the morning you will be likely to think of the wax.—American Bee Journal.

The "Canadian Bee Journal" says:—Inquiries will soon be sent out by wholesale dealers asking bee-keepers how much honey they will have for sale. Be cautious in replying to such inquiries. Wait till the Honey Crop Committee makes it report, and gives you an idea of its selling value. Also, when replying, name your price if you wish, but do not say how much you have for sale, but rather ask them how much they can take at the price named. The business bid must then come from them. Their object in asking the question, "How much honey have you for sale?" is to size up the crop, in order that they may be better enabled to set the price which they will offer. Be careful, therefore, not to give this information too readily. Remember, it is the prerogative of the seller to fix his price, and that of the buyer to accept or reject it. We must not allow ourselves to be stampeded and sell at any old price, because the wholesaler threatens us with a glutted market. Late reports indicate there will not be the quantity of honey that we first expected from the abundant clover crop. The dry weather has cut it off short. Some places report a good yield, others very poor

ITEMS.

The district near the Sydney coast is a picture of red gum blossoms, which show in beautiful white, and the uninitiated would think that the bees could gather ton of honey just now. Such, however, is not the case. They gather pollen in galore, whole combs are already almost full of it; but honey there is very little, just enough to keep them going. I have had similar experience with this and other blossoms before, therefore to me it is no surprise; but I would change pollen combs with someone for full honey combs.

I hope that beekeepers will make up their minds to let me know their intentions as regards exhibits at next Sydney Show. In next issue I may be able to give you some further information on the subject, but at present I deem it advisable to await further results.

The "Town and Country Journal" will publish illustration and description of my bee farm shortly.

On the 25th inst. the pupils of the Beecroft Public School, under the direction of the head teachr, Mr. J. Forsyth, will receive a lesson in beekeeping at my farm, and they will be invited to write a short essay on what they see and hear. If these essays turn out as good as did the last, I shall publish the best to show how observant some scholars are.

Messrs. Hawken and Vance, Sussex-st., Sydney, have just sent me a sample of honey, stating it is from the Northern River district, and they ask for my opinion on it. It is an excellent sample as regards colour, flavour, aroma, etc.; the only thing is that it is a little thinner than most good classes of honey. It is principally consisting of lucerne honey, which accounts for its liquid state; but it is none the worse for that.

Losses in bees are still the experience with some beekeepers, even where there is plenty of pollen being gathered. I shall as soon as time permits translate the German discovery of the disease and its remedy, a short notice of which appears elsewhere already.

Owing to just enough honey coming in to keep the bees gomg nicely, there is very little trouble in raising young queens in my apiary this season.

The other colonies have got ahead of N.S.W. as far as beekeepers are concerned. Is the N.S.W. Government unaware of this? The Union's executive have tried their level best to show the difference, but they are pegging away still.

GRAND EXHIBITION AND CONVENTION OF GERMAN, AUSTRIAN & HUNGARIAN BEEKEEPERS.

The 57th Combine of the above took place at Wiesenfels, Germany, from the 6th to the 11th of August. At these Conventions scientific problems are propounded and debated by authors from all parts.

Over 2,000 guests took part in the opening banquet, and 8,000 reserved tickets for the exhibition were sold out in a short time.

The German Government subsidised the Union prize list by £150, besides numerous medals.

Far over a hundred hives of bees were exhibited, besides the innumerable exhibits of the products of the apiary.

An artistically decorated procession passed through the streets to the Exhibition grounds.

Of the addresses, of which 16 were announced, only 8 could be dealt with, the most interesting, and to beekeepers beneficial, being the address by Dr. Enoch Zander, Erlangen:

Animal Parasites as Disease Producer in Bees.

Dr. Zander, after two years of quietly investigating the serious loss of bees, which is now not unknown in Europe, has discovered beyond a doubt that the

trouble is caused by a parasite, which attacks the main intestine in the bee. Famine of pollen, etc., have nothing whatever to do with this disease; it is a disease of the most serious kind, as within a few days the wall of the centre passage of the bee is almost entirely covered with spores of the microbe. Dr. Zander names the disease "nosema apis." Unsuited or insufficient larval food has nothing to do with it either. The bee that becomes affected is unable to assimilate food or provide such for her sisters. There is no cure for the bee affected. The only thing is prevention. It is a very infectious disease, and may be spread in various ways, which I will ennumerate when I have more time.

Dr. Zander has cultivaed these microbes and infected quite healthy hives of bees, and within three or four days found them dying, and microscopic investigation showed the same parasite and spores they were infected with, and the loss of bees increased until they all died.

I am glad that this matter is now solved, because henceforth we must direct our attention to prevention of the disease rather than its cure, as I have done for years.

Some day I hope to translate the principal part of Dr. Zander's address, for which he received a great ovation, at its conclusion, and rightly too.

Henceforth, I hope, Australian beekeepers will desist from publishing anything about scarcity of pollen or insufficient larval food supply. If practice and science agree as they do between Dr. Zander and my own—if science proves that the malady is caused by a parasite, there is no more use bringing thrashed out assumptions to contradict themselves. I am glad that I have not misled my readers heretofore, and I should imagine that my antagonists will be as pleased as I am that the question is now definitely settled.

Once a bee becomes infected there is no cure for it, Dr. Zander says, and yet this infected one infects others by their habit of feeding one another, or by voiding, etc. Purgative remedies are of no avail either, as the coating of the passage channel is quickly covered with microbes and spores. Infected combs should never be exchanged to healthy hives—rather burn them. Let slightly infected hives build new combs, and feed the bees on honey if not sufficient can be gathered—just as I have always recommended. Comb building is one of the processes in bee life, but it is being retarded in various ways where gain of profit is the main object of beekeeping, and thus Nature asserts herself.

W. ABRAM, Beecroft.

HOW FAR DO BEES GO FOR HONEY?

BY C. P. DADANT.

The article by G. M. Doolittlle on the above-named subject in the June number of the "American Bee Journal" is most interesting to me, especially as the same subject was treated in the "Bulletin D'Apiculture" (Swiss) at the same date, by Dr. Crepieux, of Rouen, France, an old apiarist and bee writer, who was for a number of years editor of the "Revue Internationale." The articles evidence the uselessness of drawing any conclusions from isolated experiments.

Dr. Crepieux has an apiary of some 50 colonies of Italian bees in a country which is stocked only with common bees. He thus had a very good opportunity of recognising his own bees, and of ascertaining the distance which they usually cover in search of honey. With the use of a bicycle on the fine roads of France, he was able to investigate readily the local conditions. He says:—

"I was struck by the fact that my bees were much more fond of the north-east direction than of the south-west, al-

though there are as many profitable fields in the one direction as in the other. Here is my explanation of this fact. The south-west winds are, in our region, those that bring rain. For that reason the bees go out less on the days when those winds are blowing. When the weather is fine, the winds from the east and the north bring the smell of the fields situated in that direction, and the bees go there. It may be also that they have intelligence enough to go in that direction because they can go against the wind when empty, and come back with the wind when loaded; in any event those two reasons and their practice tally and correspond with each other.

"In a westerly direction I have never found any of my bees beyond 500 metres (a third of a mile.) I must mention that we are limited on that side by the forest. This forest extends from south to north about 5 kilometers (over 3 miles.) Its width is between 900 and 3,000 meters. My apiary is opposite the narrowest part. An imporant detail is that the width of the forest is guided by two very steep hillsides. The difference in level is about 60 meters (200 feet.) I have never seen one of my yellow bees on the other side of this forest. Yet there are fields of esparcet, campanulas, and buckwheat, over there, and owing to the direction of the slope, the crops there are a little later than here. I have seen my bees cease to bring honey when the crops around me were ended, when they might still have found flowers on the other plateau. I have ascertained at those times that the fields in question were still visited by bees, but that they were all of the common race, coming from an apiary with which I was acquainted.

"I have also made a number of observations to ascertain the distances travelled by my bees in the other directions. In the south-east up to 800 meters I always saw the yellow bees. At that spot the land has a slope of 8 or 10 meters and I have never noticed bees on the other slope or 200 metres farther. On the east and north the land is level, and as I have stated, under the influence of the northeast winds. It is in that direction that my bees travel. On fine days they go in all directions, but any of my visitors notice at once that half of the bees go to the northeast, the rest of them spreading about to all other points. Observations are easily made, as 48 of the 56 hives are grouped in a house apiary. The reader will probably wonder wehther the best fields are to the northeast. There are of course important differences in the cultivation from one year to another, but it is to the southeast that the best fields are found. The others are scattered in all directions. Last year, in the northeast direction, nothing but cereals were to be seen. I explored the region and found a field of esparcet at 800 meters, it was covered with yellow bees. Another field, 150 meters farther, still showed some Italians. But still farther, 1400 meters from my apiary, a third field of esparcet did not show a single Italian. In this same direction preferred by the bees of my apiary there is a village, Bois-Leveque, where I often have professional duties. I have never gone there without examining the field of blossoms. This village is 2200 meters from my apiary. I have never seen there any of my Italians.

"I have carried bees away from home, slightly marked with flour on the wings and the body. I have seen them come back when released at 600 to 800 meters, but those which were released at 2,000 to 3,000 meters did not come home."

In concluding his article, Dr. Crepieux says that it is quite possible that the circumstances in which his bees find themselves may have influence on the distance of flight. My own experience would indicate that the shape of the land has much to do with the flight of bees. In "Langstroth Revised," the late Mr. Chas. Dadant reports that he

knew bees to starve upon the hills in a year of drouth, while the Mississippi River low lands, less than 4 miles distant, were yeilding a large crop. This experience has again been reproduced since his days. But we must remember that the country between the apiary in question and the low lands is very much broken and covered with patches of timber, orchards, fields of cereals, etc., all unprofitable ground after the spring days are over.

Again, an apiary located on the banks of the Mississippi, which is a mile wide at this point, never yielded as much crop by about half as other apiaries which were further inland. We have always ascribed this to the fact that about half of the near-by pasture was cut off by the river. We rarely see the bees take the direction of the river. An apiary situated in another spot near the stream located about 3 miles from the lowands of the Mississippi, in Missouri, across the river, and which could not be reached except by a bee-line of nearly the entire distance over the water in a longitudinal cross section, absolutely ignored these low lands, during several short crops, though those bottoms were yielding a good harvest.

In moving bees to distances of less than a mile, we have seen many bees return to the original spot unless great precautions were taken, and even then some would return if the moving was done in the busy season. When moving them 3 miles, very few returned. At distances of 5 miles or more, we have never seen bees return. But another evidence of the influence of a stretch of water as a barrier, is found in the fact that at a distance of less than 3 miles across the Mississippi, the bees moved never did return.

Mr. Gaston Bonnier, professor at the Sorbonne, Paris, author of "Cours Complet d'Apiculture," and President of the International Congress of Bee-Keepers at Paris, in 1900, has lately reported some experiments made by him on how bees find their way home. He took bees to the fields and painted their eyes with blackened collodion, then turned them loose after having marked them so they could be recognised. These bees returned home. From this he concludes that bees have the sense of direction apart from sight, and compares their evident ability to return home to that of the carrier pigeon. Bonnier locates the "sense of direction" in the brain of both bees and pigeons.

That collodion experiment seems to me rather indefinite. I would expect that the secretion of their eyes similar to that in our eyes would soon remove the film thus artificially applied, and that they would nevertheless use their eyes to return home, for I cannot very well imagine either a blind bee or a blind pigeon returning home. I have, however, witnessed some very wonderful feats by carrier pigeons. When I was a child, I saw in our old city of France—Langres—the flight of a hundred carrier pigeons which had been brought on a wager from Brussels, Belgium, exactly 200 miles as the crow flies. These were released from the top of the steeple of our cathedral. They circled round, rising higher and higher in the air, until almost out of sight, then took a direct flight towards their home, except half a dozen or so that seemed unable to follow, and returned to the steeple. I was always under the impression that our city had been selected as the place of release because it was on the highest cliff of a high plateau, and the parties who made the wager evidently wanted to give the best possible chances to those pigeons of recognising their direction.

Again, on the transatlantic steamship, when going to Europe, in 1900, I witnessed the flight of half a dozen pigeons, which were sent ahead, a day before our arrival, to announce the ship. By paying a dollar, any of the passengers was enabled to forward a short message to

his friends. The messages were all photographed in minute form, inserted in a small tube, and tied under the wing of a pigeon. Did those pigeons reach home by a "sense of direction" located in the brain, or had they simply travelled enough before being used, to be able to recognise the direction to follow? Let some others, better posted than I am, give the reply. I, however, wish to say that there is a limit to the "sense of direction" either in pigeons or in bees, and that the length of it surely depends in great part on the configuration of the country.

It seems to me that a good place to test the possible greatest length of flight of bees after honey would be the irrigated valley of one of our Western States. In those districts where the blooming region of alfalfa is bordered by boundless dry wastes surrounding a narrow valley, bees ought to go farther than anywhere else, perhaps farther than 8 miles. But if I thought my bees could or would go even 6 miles in any direction regardless of obstacles, and harvest honey profitably, I would quit keeping out-apiaries and would not hesitate to place even a thousand colonies in one single spot.—"American Bee Journal."

PRIZE COMPETITION.

The Publisher of the "Australian Bee Bulletin" offers Prizes for competitive contributions on subjects appertaining to Beekeeping, under the following conditions:—

1. The prizes are:—1st, 7/6; 2nd, 5/0; 3rd, 2/6.

2. Competitive articles to be addressed to Mr. W. Abram, Editor A.B.B., Beecroft, headed "For Competition." Write full name and address, but also affix a sign or mark, as it is intended to omit full name on publication, but to publish name of all competitors first issue after judging.

3. Entries for each month close on the 20th. Any subject may be chosen.

4. One judge will be appointed by the Editor, to act as single judge, but each month there will be a different judge, and his name will be published together with the results. The judge's decision is final.

5. Postal notes will be sent to winners on receipt of the judge's decision.

Our aim is to encourage juniors and amateurs to exercise their skill in beekeeping and in writing, thereby assisting one another. (The editor's son does not compete.) The most efficient beekeepers will be selected to act as judges. A copy of the A.B.B. will be sent to the one selected each month, and the results published next issue. Competition starts now, and prizes will be offered for your work. Who will win?

N.B.—This is a money prize competition—not a disposal of queens.

DEBUTANTS.

(To the Editor.)

Sir—Quite recently the Editor extended a cordial invitation to a number of very capable people to deliver lectures. A capital idea!

Some, I'm pleased to know, responded to the call. The N.S.W. and Commonwealth Beekeepers' Union, exhibiting their usual self-sacrificing character, and generous enterprise, in an endeavour to enligthen those who sit in the darkness of bee ignorance, arranged for the first of a series of lectures for the 18th October at St. James' Hall.

Mr. Abram's lecture of personal reminiscence, quaintly humorous, and miscellaneous facts about bees, told as one who knows these little fellows could tell, was certainly entertaining enough to induce any of these interested individuals to attend.

Most people who dabble in bees know too much "bee." We'll let them hug that delusion till it strangles them; their epitaphs will soon be written—"Fool's Failure. Died, dosed with own ignorance."

The bulk of interested people are not keeping bees in the Domain or Hyde Park, but in the country. The majority of genuinely interested people are too far removed to be able to attend; so that it is evident that unless elaborate steps were taken to attract a city and suburban audience that the lecture would not be sensationally attended.

We are faced then with these facts:—the difficulty of getting an audience, and the facility of obtaining lecturers. From the latter we will I am sure hear in the "Australian Bee Bulletin;" and they who have been deaf to lecturers, if not too blind also, may by paying a trifling five shillings annually receive enlightenment which left to their floundering selves they might not acquire in a life time.

To all those willing lecturers we say "Thank you."

But there is another class of expert I want to bring to the fore.

There are many beekeepers in the State expert in their business—men who have been a lifetime acquiring knowledge, gleaning and garnering by the slow but sure process of local experience information that is not only useful to themselves, but would be helpful to others aspiring. A wealth of information is treasured up in the store house of their experience. Are these men, full of bee wisdom, going to let their useful knowledge die with them? I trow not.

Our worthy editor would, I feel sure, assist in any movement that would have for its object the collection and preservation of such useful kuowledge. I know his zeal for the industry would gladly open a column entitled "Casual Column" in which practical men may drop casual but pregnant observations. Men who might find it irksome or impossible to write an article, and yet know more than they who can write, would deposit therein their good things more willingly and with less trouble.

Resultant benefits from such a course are—that secretiveness of methods which characterises some beekeepers—assertiveness amounting to almost patent rights, and guarded as jealously as the secret parts of an intricate continental machine gun, would be eliminated. That unwillingness about divulging their honey getting operations, which I shall not just now call selfishness, because it might be due to mere foolish conservative progressive to mere foolish conservative unprogress iveness would be exchanged for a graceful diffusive helpfulness.

And what a vast deal of good these brethren of the bee craft could do the industry as a whole by an interchange of bluntly written experiences on various apicultural subjects. They would then all be "en rapport."

Unburden yourselves then in the A.B.B. Divulge the good secrets in language as plain and rough-diamond as you like. Do not fear the Journal. It is not a Cassell or Royal Magazine, run solely as a literary production. It exists for utility, for practical men; and the most useful items that can appear in it are, not rhetorical flights or polished sentences, but Facts! Facts! Facts!

Come along then and make your debut in plain Jack Blunt talks. You who have lived your lives with the bees, you are the men to speak, you to write. You are the oracles, you the fountains of knowledge. We yield to your superior knowledge; to you we defer. We know how retiring you of the delightful humming solitudes are. You are too bashful to take the floor; then take the "Casual Column." We'll have a real good old smoke while perusing your crisp remarks We can't step up alongside you in the apiary for a yarn, so will have to do the next best thing. Just scribble down jottings as you think of things. They will be interesting even in their disjointed

state. Don't be afraid that you will repeat anything stale or monotonous. The best things are told often. All educational and progressional branches have to chant the old but ever new A.B.C.

Perhaps it would surprise some of you diffident, modest beemen, who have loads of bee lore to unship (I hope the strike won't affect the unloading) to know that many of those brilliant articles in various agricultural journals are merely accurate descriptions of what the very unpretentious farmer or orchardist, etc., is doing day after day, little dreaming that he is doing anything out of the ordinary, and oblivious of the fact that he is the real expert in practice, from which practice others deduce their theories.

Much to our pleasure and profit, we are often regaled with apicultural articles taken from British and American sources. We are truly gratteful for them, and hope to be always so regaled. But am I asking the Australian beekeeper too much to write occasional articles on the same subjects from the local Australian experience.

If I am, then beware! I make a threat fearful in the extreme. Apiculturally I'll turn anarchist. I'll stagger the Australian bee world with unheard of novelties. I'll resurrect and usurp the position of bee expert, and inflict and enforce my patent theories on you all. I'll begin now by stating (1) That it is a cardinal principle of good beekeeping that all hives be queened with fine fat drones; the fatter the better, because if they do not turn out two hundred and fifty egg a year layers, you can profitably market them for Christmas and Easter dinners.

(2) If your drones won't lay, try the effect of good example. Just hang up an ostrich egg by a string in front of their hives, and write across it, "keep your eye on this and do your best."

(3) The way to tell a good laying drone is to see him lay an egg; then you'll be sure of it.

(4) I think I'll desist from further advice, as I see a fierce old beekeeper from over the range swinging along at a brisk pace, and carrying a huge uncapping knife dripping with bee gore. Thoughts of Red Indians and scalping knives make me drop my pen abruptly.

O. A. White.

¶ Many thanks for your most esteemed article. Hoping others to follow.—ED.

SOUTH AUSTRALIAN BEEKEEPERS.

The need of co-operation amongst beekeepers to secure the full advantage of the market for honey in England, opened up by the Commercial Agent recently, has been brought under the notice of the Commissioner for Crown Lands by a deputation of bee-keepers. The Government was requested to allow Mr. John Norton, secretary to the Association, to be relieved of his duties at the Waterworks Department for three months, to act as organiser for a co-operative union of beekeepers. The Government acceded and Mr Norton left Adelaide on Thursday to interview bee-keepers in various parts of the State, and impress upon them the necessity of co-operation as a means of placing the bee-keeping industry on a satisfactory basis.

K. Payne, in the British Bee Journal, writes: In most of the guide books we are told that a stock of bees cannot be moved less than two miles away at this season. It may interest your readers to hear how I moved a stock less than half a mile. The entrance was secured with a piece of perforated zinc, and the hive taken (at night) to a dark, cool room and covered over. After leaving the bees for two days in this state, I took them out to their permanent position. The sun was shining brightly, and the busy creatures were soon hard at work bringing in pollen, etc. Only about fifteen bees returned to the old site. I consider this rather a success.