The Australian bee bulletin. Vol. 7, no. 81 December 28, 1898

West Maitland, N.S.W.: E. Tipper, December 28, 1898

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THE AUSTRALIAN BEE BULLETIN,

A MONTHLY JOURNAL, DEVOTED TO BEE-KEEPING.

VOL. 7. No. 81. DECEMBER 28, 1898. PER COPY, 6D

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HAPPY NEW YEAR TO ALL.

NOTICE

SHOULD any beekeeper have a doubt of the genuineness of any honey sold in his neighbourhood, send a sample to the Chairman Board of Health, Sydney, who will cause it to be analysed, and take procceedings if necessary.

The Australian Bee Bulletin.

A JOURNAL DEVOTED TO BEEKEEPING.

MAITLAND, N.S.W.—DEC. 28, 1898.

WHATEVER success our many readers may have had with their bees so far this season—good or bad—up to expectations, or not up to expectations, the festive period of the year has come round, so we wish them all the happiness and joy that season affords. If disappointments have been their share, let them as it were rest and breathe, and then take thought how best to work things to ensure better success in the future. If success has been their lot, may they enjoy its fruits to their heart's content. What a grand break to the toil of the week the Sunday is, and are not those festive seasons of Christmas time and Easter enlargements of the same, and as necessary to continued success in any line, by the rest and relaxation they give? To our readers one and all, successful and unsuccessful, we therefore wish a Merry Christmas and a Happy New Year.

Quite a number of new and unexpected subscribers coming in lately.

Persons who complain of honey making them sick should try milk with it.

Read the work of the N.B.K.A. in Mr. Gale's (the president's) communication.

Dr. Miller makes smoker fuel by dipping rags in saltpetre, then drying them.

Some beekeepers are urging the importation into America of the *Apis Dorsata* from the Phillipine Islands.

A tool like a stove lifter at one end, and a chisel blade at the other, is recommended for use in apiaries.

Through the poorness of last season's honey crop in the United States price of honey has an upward tendency there.

A fire lately occurred at the apiary of Mr. G. Bloxham at Peel, Cheshire Creek, destroying honey house, including tins, extractor, &c., to the value of some £50.

Mr. James Trahair was lately for three weeks confined to his room with severe illness. We are, however, pleased to state he is now well and able to attend to his business.

NATIONAL B.K.A.

A sub-committee meeting of the above was held on November 21st. Present: The President, Secretary and Mr. Roberts. Business to arrange for a deputation to wait on the Minister for Agriculture re supplementing the prizes offered by the Royal Agricultural Society. The schedule of prizes of the next Show of the Royal Agricultural Society, to be held in Sydney on Easter next, was left in the hands of the President.

A sub-committee meeting was held on Nov. 29th, Mr. Albert Gale in the chair. Messrs. Abram, Roberts, and J. D. Ward were also present. Mr. Ward reported that he had an interview with the secretary of the Royal Agricultural Society, who suggested that the committee should draft a schedule for the Show Catalogue, and accordingly a draft was placed before the sub-committee. It was considered, and left in the hands of the president for completion. The president reported that he had made arrangements for a deputation to be received by the Minister for Agriculture on the 1st December, at 11 a.m.

The sub-committee, Messrs. Albert Gale, W. Abram, and J. D. Ward, met on December 1st as a deputation to the Minister of Agriculture. The deputation was received by the Under-Secretary, on behalf of the Minister, and Mr. Gale, in placing the matter before him, pointed out that the beekeepers were not like some other industries, in the habit of running to the Government for aid in every little matter. Messrs. Ward and Abram supported the president therein. The matters dealt with by the deputation were:—1st. That £20 be granted for

prizes to supplement those of the Royal Society. 2nd. That the Government bear half the cost for a pavilion for the exhibition of honey and other bee products.

Result of the Deputation. — Mr. Cook said their request was a reasonable one, and he was pleased to see they had approached him on the matter, as he considered the industry was one that should be fostered, and would be likely to develop into a big institution in this colony. He expressed his willingness to subsidise any prizes their association thought fit to offer at the forthcoming show. A suggestion was made as to the advisability of sending an exhibit of bee products (honey, wax, &c.) to the London Exhibition, and Mr Cook advised those concerned to wait upon the Exhibition Commissioners, who he felt sure would take the matter up with enthusiasm. Another matter discussed was the question of honey export. The deputation said that owing to the rapid strides that had been made in the honey industry there was now a surplus of the product in the colony, and beekeepers were looking to the home market as a means of remuneration. They wished the department to help them to ship a trial consignment to test the London market. Mr. Cook said that if the beekeepers of the colony would get together a large quantity of honey and beeswax the matter would be taken up by the Board for Exports, who would see the produce was properly graded and shipped, and received every attention at the other end, where it would be handled by experts, who would see it placed to the best advantage.

The sub-committee again met on the 12th December, Messrs. Gale, Abram and Ward, present. The President reported the receipt of a letter from the Department of Agriculture calling attention to the result of the deputation's interview.

Greater Britain Exhibition.—The President reported a letter from the above which will be dealt with at the next committee meeting.

A letter was also received from the Secretary of the Board of Exports, conveying an offer from an English firm, who will advance up to £15 per ton for honey and £100 per ton for wax. Account sales would be rendered to the owners less expenses for freight and commission.

This offer will also be considered at a full committee meeting.

I am very pleased to add that the schedule of prizes at the forthcoming show already referred to amounts to upwards of £40. The amount is made up as follows :—Royal Society, £12 ; Government £20 ; Beekeepers' Subscriptions £10. Besides these figures I am in hopes of obtaining another £8 or £10 so as to bring the lot of prizes up to £50. I will forward you the schedule as soon as ready. The trophy is £7 and no second. I want to make it £10 and £5 for a second. There are many other prizes of from £1 to £4.

I think the Australian beekeepers and especially those of N. S. W. should roll up at Easter next. We intend to make it worth their while to do so. Kindly advise our fraternity to prepare for the Royal Show and also to send along subscription to you or our secretary so as to get the Government £20. About 1/- each from all beekeepers will do it well. Your committee and Sydney beekeepers will dip their hands deeply into their pockets in the matter, The bee exhibits at this show *must* be a great success.

Albert Gale, President.

Hear, Hear.—Editor.

INVERELL B. K. A.

Mr. E. Williams, writes, Dec. 16 :— On 1st instant we held a special meeting, our previous two monthly ones having lapsed through various causes, but on this occasion we had a good muster of eight members, viz : G. H. Arkinstall, (chairman), T. Mather, B. Pennington, R. Cooper, F. W. Penberthy, A. Piggott, and E. Williams, (Secretary.) A large

amount of business was got through, amongst which was the alteration of the subscription to the Association, which will in future be 3/6 per annum. We are in future to hold our meetings on the Thursday *nearest* instead of previous to the full moon, a motion to amend our rule relating to that being carried. We would suggest that it would be a great convenience to a large number of your subscribers if you would publish the dates of the full moon following the publication of your journal. Several new members were elected, bringing our roll up to 15 members with prospect of more to follow. During the meeting the question of Marketing of Honey was discussed, and a suggestion put forth that N.S.W. Beekeepers should combine in forwarding a honey exhibit to the Greater Britain Exhibition. We have written to the National Beekeepers' Association on the matter, and think that if you were to take the matter up in the columns of your journal, something tangible might result.

Honey has almost stopped coming in here owing to the drought and bush fires which are in full swing just now.

VISITING.

We lately paid a short visit to Mr. Abram's apiary at Beecroft. Mr. Abram was early trained in apiculture in his native land, Germany, and still adheres to the Berlepsch hives as used there then and now. The peculiarity of those hives are their opening at the back, the last frame being a glass door, and all the frames having to be taken from the hive if you want to examine the combs or look for the queen. You cannot take a single frame out of the middle without taking away all behind it. They are arranged on stands near each other, and the apiarist, instead of taking off the cover as with the Langstroth, walks along the back of as it were an avenue, opens the backs of his hives, removes the backboard, sees the bees through the glass, which he removes, and as he does so puffs a whiff from his tobacco pipe, and proceeds to work, not molested by the bees, as their exit is in front. The stands are at a convenient height, so there is no stooping to do. Quite a number of hives can be placed in a small space. Mr. Abram's are arranged on the sides of a moderate sized flower garden, overlooked from the dining room window, so that the issuing of swarms can always be noticed.

Mr. Abram's apiary is some seventeen miles from Sydney by rail, and not far from the railway station, with plenty of rough forest all round, the comfortable residences of some better class Sydney people close by, and the neighbouring hills commanding lovely views of the surrounding country, including Sydney itself. Red gum was in bloom. He was complaining of its bad quality, also its density, the extractor not being able to get it out of the combs. But a rich flow of good honey from black butt was near, the black butt trees being heavy in bloom. This honey is of excellent quality. It is not for us to speak of Mr. Abram as a queen raiser, his ability in that direction being well known. He tried honey wine making, but gave it up he says for want of a cellar. Mrs. Abram is an enthusiast among poultry, having some excellent white leghorns, and has been most successful in the rearing of choice flowers and trees, well utilising the poultry manure for such. We spent a very pleasant and instructive time with them and wish them and theirs every success.

H. R. L., Goondiwindi, Nov. 22:—The size of hive is 15¼ x 17 inches, depth 10½ inches, entrance 7-16th x 4 inches, depth of frames 9¾ inches. They were all young queens. I do not think that there was anything wrong with the queens, as I found some of the queens with a few bees, and at last they all went, queens and all.

PHASES OF THE MOON.—JANUARY.

Last Quarter, 5th, 1.22 p m. New Moon, 12th 8.50 a.m. Perigee, 12th, 12 p.m. First quarter 19th, 2.36 a.m. Apogee, 26th, 4 a.m. Full Moon, 27th, 5.34 p.m.

BEES IN OLDEN TIMES.

..... Once on a time
When Love, the Thief, was stealing from a hive
Its honied store, a naughty bee did stiug
His finger tip. Love wept and wrung his hand
And stamped upon the ground and danced with pain,
And then to Aphrodite showed his hurt
Complaining that a bee, so small a thing,
Should deal so sore a wound. But laughingly
His mother answered, "Thou art like the bees
For small thou art, yet see what wounds thou deal'st."

—*Theocritus, Idylls* XIX.

"They pierce and leave their lives within the wound."—*Virgil, Georgies* IV-238.

Also on bees swarming:—
"Yet all this life and movement, all the strife
May with a pinch of dust be brought to silence"
—*Virgil Georgies* IV-86.

"Just as the bee in flowery meads from every blossom sips,
E'en so we feed on every word that falls from golden lips."
—*Lucretius*: *De Rerum Natura* III, 2.

Again,
"The thrifty live the lives of bees, who work as though they would live for ever.—*Democritus, Ethica Fragment*, 80.

ETHNOLOGICAL STUDIES

Among the Qufensland Aborigines.

By Dr. Walter E. Roth, B.A., &c.
Published by authority of the Queensland Government.

The spread of ci ilization in new countries inevitably results in the elimination of the native races, and it becomes a positive duty of the invaders to gather and record accurate information concern-in the superstitions, beliefs and ceremonial rites of the races they displace. Of course the first essential in conducting such an enquiry is the confidence and trust of the aborigines in the expert observer. In this respect Dr. Roth had unrivalled opportunities. The book is filled with details of interest to anthropologists, but a particular value is to be attached to the chapter on the expression of ideas by manual signs. These are not only fully described in the text, but are also illustrated by a profusion of figures on several plates. The value of these "ideagrams" is apparent in the case of individuals travelling over country the spoken language of whose inhabitants they are ignorant of or only partially acquainted with; also on the warpath or the chase, where silence is so essential an adjunct to success. Of especial interest are the observations on certain small flies, which form quite an interesting group among themselves in the connection of the expression of ideas by signs: Thus the circular or lateral flight, as the case may be, is well portrayed, while the region they may particularly affect is shewn. Also the method adopted by the victim in obtaining relief from the scourge can be seen with a mosquito suddenly crushed by the palm of the hand, or deftly caught between the finger and the thumb....or with some larger member of the same fraternity being brushed away from either side of the face. But he nowhere found any ideagrams directly intended for a honey bee, though those for the "sugar bag" itself—i.e., the honey—are common. One of these signifies the idea of its viscosity, while the other two are expressive of the means of obtaining it.

The existence of these ideagrams for the whole of North West Central Queensland, also from the head of the Georgina waters to the McArthur River, in the Northern Territory, has been personally proved by Dr. Roth.

"Honey: [A honey bee.]—Its distinctive physical characteristic, its viscosity, is expressed by the circular motion imparted to the stick or finger to prevent its dropping off, somewhat after the fashion in which a European would twirl a spoon when taking treacle, &c., from out the tin on a plate."

"Flowers and Honey.—The blossoms of the blood-wood (*eucalyptus corymbosa*) and bauhinia trees at Glenormiston, and of the ti-trees (*cordyline*) at Roxburgh, are sucked for the sake of the sugar or honey contained.

Honey, or "sugar bag," as the more civilized aboriginals call it, is found throughout the North-West Central Districts, especially along the river

courses, except perhaps the Upper Mulligan, and obtained by one or other of the following methods: Its locality in the particular tree is tracked, during the winter time, by watching carefully for the minute pellets of dung lying on the ground around the butt; in the summer months by observing the bees going in and out of their nest; and occasionally by putting the ear down to some natural orifice at the base of a tree, and listening to the insects' hum and buzz. The trunk is often tapped lightly with the fingers or with a stone for indications of a hollow core—a likely situation for a nest. When the nest has been discovered the limb may be removed bodily or the tree climbed. Where the tree which bears the comb is too massive or too tall to be cut down, the aboriginal will climb it by means of "nicks" cut alternately into either side, so as to form successive steps. To remove the honey from out the cavity either the hand or a stick is inserted; this is swept round and round to prevent the glutinous mass from dropping off, somewhat after the style of a spoon with thick syrup on it.

A bee is known as *ool-too* in the Boulia district, *bung-go bung-go* in the Cloncurry; honey in the latter is *koong-ga*.

Another district—honey: *chee-noyne*; honey-basket (for collecting the honey)—*Marroing* or *marreeing*.

The picanninnies are gradually weaned on honey, kangaroo and opossum flesh.

THE BEE MANDIBLES.

We clip the following from *Knowledge*, a high class English Illustrated Magazine of Science, Literature and Art:—

To the Editor of Knowledge.

Sir,—May I ask the attention of your readers to the curious hooked process on the mandibles of the worker bee? I am not at all certain that they have been observed before, as I find no mention of them in various works on bees, or in Cheshire's *Bees and Beekeeping*, which I understand from an authority in the Natural History Museum, is the latest standard work on the subject. Indeed they are not easy to make out, as the mandibles take a long time to clear—the specimen which enabled me to see them had been kept six months in turpentine before mounting for the microscope. The hooks bear a great resemblance to those on the smaller wing, which give the name to the Hymenoptera. They are nine in number, and run along a raised rim or buttress of chitine, parallel with the cutting edges of the mandibles. The process begins at the lower end with some hairs, which are obviously later on modified, to form the hooks. The difference between the hair and the hook is of interest, the latter being much shorter and coming abruptly to a somewhat blunt end. I have no practical knowledge of bees, but if I might hazard a guess as to the use of the process (which I do with diffidence), I would suggest for the purpose of hooking on to the claws of the hind legs of the bee above, when clustering. In favour of this view, I find that the hooks are absent from the mandibles of the queen bee and of the drone; also from the humble bee and the queen wasp. The queens and humble bees do not cluster, but I am uncertain as to the drone. This is one of the points on which your readers might help me.

WALTER WESCHE.

To the Editor of Knowledge.

Reply to Mr. W. W. Wesche and "Hooked Process on Bee Mandibles."

Sir,—There is a row of hairs on the inner surface of a worker's jaw, situated along the side of a ridge or keel, and he will find them mentioned and illustrated in "Cowan's *The Honey Bee, its Natural History, Anatomy, and Physiology*," which is the standard text book used in the examination for certificates granted by the British Beekeepers' Association. This is a much more recent work than "Cheshire's *Bees and Beekeeping*," also Schinienenz in his, "*Neber das herkommen des Futtersafter*" mentions and also gives a very accurate illustration of them. The function of these delicate hairs is to assist in mastication, and they come into operation when the saliva, produced by

the gland, known as System IV, in connection with the mandible, is found out while chewing pollen and kneading wax. They entirely differ in shape from the wing hooks and are not twisted like these. They are not used for clustering as suggested. In clustering, bees hang on by their claws, those of the hinder legs of the bee above being hooked into the claws of the forelegs of the one below. The hooks on the smaller wing do not give the name to the Hymenoptera. This name is derived from *vuze*, a membrane, and *weepon*, a wing, meaning membranous wings.

THOS. WM. COWAN.

To the Editor of Knowledge.

Sir,—"Hooked process on Bees' Mandibles," (*apis melifica*). Mr. Cowan asserts that they are not hooks, but hairs, and points out that they are correctly figured in his book on the honey bee..... I have asked the opinion of several gentlemen of authority as Entomologists—amongst others Mr. Fred Enock—and they endorse my view, that the objects under discussion are hooks and not hairs. I have carefully examined Mr. Cowan's book, and I find they are *not figured* there, neither is any reference made to them, inclining me and others to think that Mr. Cowan has mistaken the hairs that fringe the mandible for the hooks that are placed on the buttress of chitine that bridges the concavity of the mandible. They are so specialized that Mr. Enock says they must have some very practical use, but at present that use is a mystery. Sir John Lubbuck was kind enough to inform me that he had not previously noticed them, and had no idea of their utility; so that perhaps I may, though with humbleness of the tyro, be permitted to claim that I was the first to call attention to those interesting microscopic objects, all the more remarkable for having remained so long unnoticed on an insect so closely studied as the hive bee.

WALTER WESCHE. August '98.

HOW TO START AN APIARY FROM BUSH BEES.

D. N. MCLEOD.

Get a suitable box to bring your bees home in, a whiskey case will do, as it is about the right size for ordinary bush swarms, out of the two sides of this cut holes, say about 6x6 inches, cover these with wire cloth, fasten your lid so that it will close easily and securely. Take your nests any time during the summer months, when there is plenty of blossom about. Choose a day that bees are at work very busy, 2 o'clock or later is the best time; at this time a great many bees will be out in the field, and so be out of harms way when the tree falls. When taking the honey carefully brush off all bees clinging to the combs into the barrel of the tree, where the strong bees will clean those daubed with honey. After taking the honey do not meddle with them any more until next morning, when you had better see to them early. As a rule when they first swarm out they cluster somewhere close by, though I have found them clustered fully 300 yards away; very often they do not remain clustered above a quarter of an hour. If the day is a warm one and they have not clustered by about 9 o'clock, give them a good smoking out; if you have a good hot blast smoker, it will bring them out in a hurry, they will then cluster close as usual. If you keep a sharp look out whilst the bees are clustering, you might see the queen; catch her by the wing and with scissors or sharp knife clip off one wing; then place her in your receiving box, and dump a cluster of bees with her and the remainder will follow. If clustered when you arrive, shake them into your box and when they have fairly settled you had better close the lid; if you want all the bees to be got there, leave your box with lid closed down until near sundown, then open and let the remainder of the of the bees in; by night all bees will be in; then close up and bring home. Very often the queen is killed or badly hurt,

then instead of clustering when smoked out they will return to the tree again. In this case take another nest and after hiving them bring your receiving box to this nest, dump a lot of bees into it and smoke out the rest; those you placed in the box finding the fresh trail of a queen will call the rest; dump these along with your first swarm, and give an eye about every half an hour to see they do not fight. When you find them getting in holts, give them a few puffs of smoke in at the entrance, this will have the effect of making them gravy eyed, so that they cannot tell which from t'other. You should be at hand too in case they swarm out to put them back at once into the hive. Use full sheets of comb foundation, and always 2, or even 3 or 4, if small swarms to each hive, then a week later I would introduce an Italian queen. By this time there will be only one queen in the hive, and as the bees should have the combs well built out you could easily find her.

SOFALA.

J. W. IRVINE.

In replying to your request for bee news, I might say I have not much bee news to write about. I regret to say that although beekeepers are within cooee of each other almost all over the district, we have no association and therefore do not come together as other beekeepers do. By what I can learn, stocks in this district came through the winter in good condition, but there has not been many swarms. My first swarm issued on September 18, and I thought I was in for a busy time of it, as nearly all my bees were strong and more than half of them preparing to swarm, but the dry weather was not without its effect on swarming as well as other things, and so far I have only had 17 swarms from 100 colonies. At present there is a moderate flow of honey on from yellow box, and red gum, but I doubt whether it will last long on account of the dry weather. This is the fifth dry summer we have had in succession. It is to be hoped we will get some rain soon to help the trees make bud, otherwise the prospects for next season will be only middling. According to Mr. J. Sterling's letter published in last issue of the *A.B.B.*, Cape Colony ought to be a good market for some of our surplus honey. I think every beekeeper who sends his honey to the Sydney market ought to put a reserve on it; selling without a reserve has in my opinion a lot to do with the present low price of honey. Here is an instance: A beekeeper whom I am personally acquainted with and who follows another occupation, but keeps a few bees to help him along, sent a consignment of yellow box honey to a certain agent in Sydney with the request that it should be sold as soon as possible. This was in the beginning of June 1897, when best honey was selling as high as 3½d per lb. He got the proceeds about a fortnight after, which was 2d per lb. for best yellow box. Now we will suppose the buyer give only 2d per lb for this honey, he may want some more of the same quality and looking around he finds it, but this time it may be from a practical beekeeper with a reserve of 3d per lb on it. Is he likely to purchase it when he can get honey equally as good for 2d per lb? I don't think so. And thus the man who is striving to earn an honest living, and build up the industry, is handicapped through what I shall call the ignorance of the man whose harvest is a different kind of crop. I ask any one who lives on the western side of the Blue Mountains if 2d per lb will pay? No. For honey gathered about Sydney, or where the expenses of getting it to market are trifling, it may in good seasons leave a small margin, but out back the cartage and trainage are quite an item, to say nothing of bad seasons, losses, etc. Wishing you every success with your handy little paper.

F. M., Scone, Novr. 29:—Bees are doing alright, no swarms yet.

SECTION HONEY.

This is a matter that should be divided into two headings, the Professional and the Amateur.

THE PROFESSIONAL

The man who has gone properly into beekeeping for a living, has a large number of hives, and has them situated in the best honey producing locality he knew of, regardless of dearth of social surroundings. To such the raising of section honey does not commend itself. Hives set apart for such under the necessary treatment have a greater tendency to swarm; the extra price realised is not sufficient to recoup the loss of wax. The market is limited by the fewness of well-to-do people who indulge in what may be termed luxuries; most people preferring the pure extracted, to the comb with the honey, also the extra care needed in marketing and keeping comb honey in stock.

THE AMATEUR.

With one or two hives in his garden, who has not got the bee fever so far as to believe that with such hives he has started on to fortune, or to assist in advancing an industry that will eclipse the butter and fruit trade. To such perhaps the raising of section honey would be desirable for his own domestic use. We know of such beekeepers now, who if a neighbour calls in of a Sunday, will go to the hive and cut off a chunk from a comb to place on the tea table. How much better a nice section! The trouble is to get the bess to work in the sections. The crate with the sections—foundation starters in them—may be placed under the hive proper for a few days till the bees have well started them, when it (the crate) can be placed on top of the hive, and the bees, if the honey flow is on, will complete them. Many like a sheet of queen excluder zinc, between the hive and the crate, to prevent the queen getting up and laying in the sections. The question arises whether such obstruction may not be a hindrance to the bees, and our own experience has been we have had no trouble in the matter. A really useful item, however, is a bee escape in the centre of a board, to be placed say overnight between the hives and the section crate, all the bees will be found below in the morning, and the full sections can be removed without annoyance from the bees, and fresh sections with starters put in their place.

QUESTIONS NEXT MONTH.

E. J. R.,

188.—What is largest comb any beekeeper has handled or seen of our ordinary bees (Apis M. and L.)?

F. W. S.

189.—Why is the honey and pollen of poisonous plants like the foxglove not detrimental to bees visiting the flowers?

F. BOLTON.

190.—I found 8 queen cells in a hive after a swarm issued, and when cutting them out I noticed all the caps were sunken in and the contents brown and rotten. Can you give any reason, as the queen that left with the swarm was healthy and all the rest of the brood?

191.—Are Autumn reared queens better or worse than those reared at other seasons?

NO NAME.

192.—When robber bees are about a hive, what method do you adopt for opening the hive so as to prevent the robbers getting in?

193.—When robbers have effected an entrance into a hive, what is the best way to get rid of them? I have tried contracting the entrance, also putting wet grass over the entrance, but without avail?

194.—What is the best way to get rid of the wax moth from a colony of bees, when it has been in for any length of time

195.—How often should you look through your hives.

196.—Is there any danger of bees leaving their hive if smoked too much.

197.—Which is the best extractor for a small apiary.

BEE CHAT.

We acknowledge receipt of Nos. 1, 2 and 3 of "Bee Chat", a quarterly review of apicultural progress, edited by S. Simmins, and published at 112 Fleet street, London. It is very nicely got up. Mr. Simmins' name is not unknown to Australian beekeepers as the author of the non-swarming method—the keeping a space between the body of the brood and the entrance, he maintaining "that no colony in normal condition attempts to swarm unless it has all its brood combs completed" and "no colony in normal condition will swarm if by so doing it must leave the old colony unable to defend its entrance.

The primary cause of swarming is to be found in the completion and over-crowding of the brood-nest. How can this be proved? (1) Very small skeps are productive of numerous swarms. (2) The ordinary ten-frame standard hive which accommodates more than double the contents of such skeps, seldom throws off more than two swarms when working for comb honey. (3) But when extracted honey is to be secured, so many more combs can be given than are occupied with brood, that swarming is of even less frequent occurrence. (4) Going still further, where very much larger frames of comb than the Association Standard are used in the stock chamber (such as will absorb the contents of three or four skeps) yet a smaller percentage of swarms will be found to come out. (5) Where bees take up their abode in the walls of old houses, under the weather boards or tiles, the combs are often so long (we have found them three feet in length) that the queen is not crowded, and the brood nest is, as it were, never complete. Under these conditions a swarm is seldom known to issue; indeed we have not heard of one from the many stocks of this kind that have come under our notice. Following up this process of reasoning, and after experimenting in various directions, where Association or smaller brood frames are used, we have found the most effective means of prevention to be that of providing a double brood-chamber, or its equivalent, the lower half of which is never filled with the combs.

Bee Chat, is very interesting reading from an Australian stand point. The following notes for February read funny to us: —

Should any colony be discovered out of stores, and too far gone to take candy, or a warmed comb of sealed stores, then move them into a warm room, or use hot bricks or water bottles, pouring thin warm syrup over the seams of bees. Stop the entrance with perforated zinc, with a porous cloth above the frames. Return to the garden towards evening and give a quart of thick hot syrup. Open the entrance and cover up as warm as possible.

It states the great cause of non-success of beginners, has been the adoption of the British Association brood frame. There is no single instance where permanent success has been attained on a large scale, where this frame has been adopted! Why? echo repeats "Why!!" The answer is given forth, as the record of repeated failures and unlooked for disasters— "*Because the Association frame is not adapted to the needs of commercial Bee-Culture!*"

SIMMINS' NON-SWARMING SYSTEM.

We were at one time greatly plagued by numerous swarms coming out at the same time, and settling together in enormous clusters, causing loss of valuable queens, or almost as valuable time, before such queens and swarms could be separated. We decided this sort of thing must be stopped, but we had no faith in excluder zinc, and have always avoided its use in building up the method of prevention known for the past twelve years as Simmins' Non-swarming system.

At the time we were troubled by so many swarms, we had several hives standing inside large airy cases, with outer openings some 2in. deep by 12in. to 14in. wide. Now the stocks therein, standing back from the entrance, were never known to swarm, while they yielded some 70 to 80lbs. of comb honey each. Here then, quite accidently began the idea of space between the stock and entrance—an extra—large entrance, and thorough ventilation all round the stock chamber itself. Moreover these were not the only stocks we had possessed in large outer cases, for in another locality some years before we remembered that quite a number of stocks under similar conditions had worked well without the least desire to swarm.

This was between the years 1874-80. We next proceeded to adapt the process to hives in general use, while at the same time we were carefully considering the construction of a hive containing in

itself all the necessary features that would establish as nearly as possible a Non-Swarming arrangement, but it was not until the winter 1888-9 that we offered the "Conqueror" as the outcome of our numerous experiments.

The hive adapted to the system has been successful in the hands of the merest novice, as well as with beekeepers of many years standing; while some of the former express an innocent surprise that—"The bees are working in the supers, but doing nothing in the chamber below the stock."

THE TRUE PRINCIPLE.

As already stated the principle adopted is that of placing the bees in the position of never having the brood chamber filled. This is done by arranging a second full depth or shallow chamber, as a super or otherwise, under the actual stock; and this additional chamber, acting as a "safety valve" has in one instance its full complement of frames, having guides only in which little or no comb is built for the following reasons: An extra large entrance is provided and during the heat of summer is fully opened, thus inducing too much ventilation for the bees to care to build below the stock; but on the other hand their whole energies are directed towards the supers, which must be provided with full sheets of foundation, or when possible ready worked combs; and those who have the time to give such attention, will find a hot water bottle never fail to bring the bees up, while comb-building will then proceed at an astonishing rate.

The super or section crates are also so arranged that they may in the first place be started under the stock in the place of the lower frame chamber, and then lifted above as soon as the bees start working in the same. In this case the entrance must be narrowed until it is desirable to return the lower frame chamber.—*Bee Chat.*

Owing to the small crop of honey in the United States this year it is anticipated prices will rule higher.

BEE PARALYSIS.

ATTEMPTS AT CURING IT.

By Adrian Getaz in A.B.J.

I want to state some of the peculiarities of the disease. Considering the individual bees, the disease develops very slowly; the first symptoms are the peculiar twitching so often mentioned, then a sort of slowness of movements. This increases gradually. By that time the affected bee begins to lose its hair, and finally becomes completely hairless and shiny, the stiffness gradually increasing until the affected bee leaves the hive, to drag itself on the ground until death terminates its existence. I will add that the twitching ceases about the time the falling of the hair begins. As to the duration of the disease, I cannot tell, it depends how badly the bee may be affected, and at what time of its life the disease was contracted. We may say, however, that several weeks elapse during the evolution of the disease.

As to the colony itself, it also depends how badly it is affected. The disease develops worse during the winter, and when the spring comes the majority of the bees composing the colony will have reached the hairless stage. In consequence of the weakness of the diseased bees, more or less spring dwindling follows. Nevertheless, in most cases a start at brood rearing is made, and by and by young, healthy, or at least comparatively healthy, young bees appear in the hive and gradually take charge of the institution. Eventually they see that something is wrong with the old bees, and expel them. By that time the apiarist, not seeing any more shiny bees, thinks the disease is cured. Nevertheless it is not. A close inspection will reveal here and there a twitching bee, and now and then some sick bees expelled by the others. These are invariably thought to be robbers, unless the apiarist is fully posted. There is, however, a difference between the appearance and the quick movements of a robber-bee and those of a diseased bee.

During the summer very few bees, if any at all, reach the hairless stage, either because they are expelled before reaching that stage of the disease, or because they die of natural causes before the disease has fully developed.

In badly affected colonies it may happen that the young bees contract the disease so rapidly that they fail to expel the old ones, and carry out brood-rearing and other work. Such colony, as a rule, dies in the course of the year or during the following winter.

The queen does not seem to contract the disease very early in her life. The first effect seems to be a diminution of her laying powers; this leads to her superseding, which almost invariably occurs during the second year of her laying. If, however, the season is bad, and very little brood can be reared, she may become so diseased as to lay infected eggs. In such case trembling and twitching bees can be seen hardly more than a few days old. In the absence of a microscopic investigation, I cannot prove that the queen lays infected eggs, but the following case seems to show it conclusively:

I had a colony in that fix, that is, showing the disease in very young bees. The colony was pretty strong yet, the honey-flow and temperature favourable, so, as an experiment, I replaced the queen. Nothing else was done. By and by the progeny of the new queen hatched, but did not show the disease at all at the beginning. Eventually the young bees were numerous enough to expel all the old ones, and now the colony is neither worse nor better than the others.

I first tried to feed salycilic acid, but I could not feed it long enough to get satisfactory results. During a honey flow the bees will not take it; during a dearth it is difficult to feed without starting robbing. I did not want any to go in the surplus. I thought of fumigating, and then of putting some medicated substances easily evaporated in the hive, so as to make the fumigation automatic.

I tried carbolic acid and camphor. I put them in the hives in the fall, and renewed them two or three times during the winter. The effect was marvellous. When the spring came not a shiny bee could be seen, and the colonies were strong and healthy. The diseased bees that went into winter quarters were probably dead. But to my sorrow, the diseased, twitching bees began to re-appear about six or eight weeks after the use of the camphor or carbolic acid was discontinued. Applied in summer time the effect was the same. While the camphor is there the disease will not show itself, but will invariably re-appear six or eight weeks after its use is discontinued. The inference is natural, that the fumes of the camphor or carbolic acid are strong enough to prevent the development of the spores of the disease, but not to destroy them.

During the last five years I have used camphor every winter, and invariably with the above results. As a rule, I do not use it in the summer, because it gives the honey a slight taste and odour, enough to spoil the sale of it.

Sulphur is not good. In light doses it has no effect; in strong doses it kills a number of bees. The sick ones being the weakest are sure to die, and then the operator not seeing any more shiny bees imagines that he has cured the disease.

Changing queens, introducing young bees, etc., all have the effect of increasing the number of young and comparatively healthy bees, and hastening the expelling of the old ones. At any rate, no queen should be allowed to get old enough to become seriously diseased herself, and a yearly re-queening is considerable advantage.

It is not necessary to send for outside queens. The queen bought elsewhere will contract the disease before long, and will be disabled nearly as soon as one reared in the apiary.

A Mr. R. C. Aikin is making a combination hive and cover which includes a slate and permanent feeder.

DEVELOPMENT OF BEES.

American Bee Journal.

Dubini gives the following table of days for the different stages:—

	Queen	Worker	Drone
Egg	3	3	3
Growth of larvae ...	5	6	6½
Spinning cocoon	1	2	1½
Period of repose	2	2	3
Metamorphosis into chrysalis.....	1	1	1
Duration of perfectioning	3	7	9
Average from time egg is laid until bee emerges	15	21	24

HOW TO INTRODUCE A VALUABLE QUEEN SAFELY.

G. M. DOOLITTLE, IN *American Beekeeper.*

From nearly the first year of my bee-keeping life I had known that queens could be let loose on frames of hatching brood with a certainty of success, providing the brood did not get chilled, or some hole was left so the queen could crawl out and die; and this set me to thinking that if a frame could be made that would go in the hive, into which a frame of hatching brood could be slipped, then I would have the thing complete, for the heat from the hive would keep the brood in the right condition for hatching, the same as it did that not caged. Accordingly I got two pieces of wood one-eight of an inch longer than my frame was deep, by two inches wide and three-sixteenths thick. On to these pieces I nailed a strip of wire cloth long enough to go clear around, except the top. This wire cloth was wide enough so that the space between the pieces was one-eighth inch more than the outside width or length of my frame, while a cover was made attachable to the cage, which would closely cover the top, where it could be tightly secured. Into this frame I could slip a frame of hatching brood, let out my queen and the few bees that came with her, secure the cover and then hang the whole in the centre of any colony of bees that was strong enough to keep up the normal heat throughout the whole hive, the cage taking the place of two frames. To make sure that the whole thing should not starve, the frame of hatching brood should have some honey along the top bar as feed for the bees while in the cage, and thus confined, as bees from the colony will seldom feed them.

Having all fixed as above, the cage is left for five or six days, by which time the cage will be well filled with bees, if a right choice was made when securing the frame to place in it. It is never best to select a frame having much larvae in it, for, as there are no nurse bees in the cage, this larvae must die, if a frame having such is used. If you should happen to have a colony in the apiary which has been queenless nine days, and from this colony select a frame from which you see plenty of mature bees biting through the cappings of the cells, you will then have something which will be just as you want it. But with a little care a frame which will answer all purposes can be selected from almost any colony during the months of June, July and August. After five or six days are up the cage is taken to a hive which has been previously placed where we wish our new colony to stand (for a new colony it will soon become,) when the cage is to be hung in the hive and the cover removed. After removing the cover, lift out the frame of bees and brood, upon which you will readily see the queen, for by this time she has grown in size, having the appearance of a laying queen, she is, as on inspection eggs will be found in very many of the cells made vacant by the hatching bees, she having become the adopted mother of the little colony. Now set the frame in the hive, together with one of honey, and move up the division board to suit their wants, and the work is done, without the least possible chance of a loss. If you wish to build them up to a full colony in the least possible time, give another frame of hatching brood in a

few days, and in a week or so a second, when by the end of the month, you will have as good a colony as any in your apiary.

I have used this plan very many times during the last fifteen years and know that it can be used with success every time and no failure need occur, even with those having little or no experience in introducing queens.

CAPPINGS.

From American and other Bee Journals.

An assertion is made by an Austrian paper that a French chemist inoculated dogs with poison extracted from bees and the dogs were then unharmed by the bite of deadly snakes.

A question in the *American Bee Journal* as to the average crop of honey in the United States, 23 replies are given, the average of the lot being 57lb per hive extracted.

A honey dealer in California whose honey had been badly reported, states one person had stated the same honey was the finest he had ever tasted. He firmly believes he could, by suggestion, get a dozen different flavours assigned to the same sample.

In a pound, there are, on an average, 5,578 unloaded worker bees; 3,532 honey laden bees; 5,060 pollen bearing bees; 5,447 unloaded pollen bearers; 5,394 idlers taken on the front of the hive; 2,206 drones; 10,965 loads of honey; and 40,580 loads (the amount carried on both legs) of pollen.—*A. B. J.*

My almost invariable practice is to remove the condemned queen from the stock up to say 2 or 3 o'clock in the afternoon and the same evening I insert the new queen (a prolific one of course) after dark, say about 10 o'clock, first giving the bees a puff or two of smoke at the entrance and a good smoking at top. I always insert queens at the top of the hive after 30 minutes' solitary confinement.—*Bee Chat.*

Its a good plan to unite several weak colonies, in the fall, but you may overdo it, for no matter how strong the resulting colony, when the harvest comes you will have only the progeny of the one queen. If you unite three weak ones, making one strong one, that one strong one may do more than the three weak ones would have done. If, however, you unite six, making twice as strong a colony in the fall, you will have no stronger colony for the next harvest than you would from uniting the three.—Dr. Miller in *A.B.J.*

There is positively no advantage in attempting to force virgin queens, or queen-cells, upon bees less than three days queenless. We know of only one method that enables us to do it successfully immediately a fertile queen is removed, but as it often results in the virgin being treated as the fertile mother only just removed (the process rendering the young queen useless) we have discontinued the practice. Queen-cells however can be given immediately with safety only when inserted with the comb on which they were built (not tampered with in any way), and with some of the queenless bees adhering.—*Bee Chat.*

From the *American Beekeeper* we learn that Professor Tamari, of the Imperial University of Japan has been a pupil of Professor Cook in California, and has written a book in Japanese on Apiculture which has reached its third edition, causing great attention to be paid to apiculture in Japan. The Japanese native bees work diligently and are very gentle, though they have the peculiar trait of gathering only a part of the honey from each flower—leaving a portion of it behind. They never cast a large swarm, and other small swarms are liable to issue soon after the first, and first swarms sometimes cast a swarm the same year. The body is somewhat smaller than that of the Italian, and the abdomen is gray.

H. F. Moore, in *The American Bee Journal*:—By a certain statistical table I am informed that there are 300,000 beekeepers in the United States, and a total

production of 100,000,000 pounds of honey. Suppose our population is 75,000,000 persons, and half the people never eat honey at all, this only gives 2⅔ pounds of honey per year to each eater of honey on an average. Doesn't this seem like a demonstration that we should get 30 cents a pound for our honey when properly distributed, if it is as scarce as that? Is there any impossibility in getting at least 20 cents a pound for all the good table honey in the country, if properly sold to the consumer?

A FLOWING HONEY STREAM.—This occurred in the Episcopal church in Tulare County, Calif., it is said. A swarm of vagrant bees, while in search of a suitable home, found an admirable location in the loft of that church, where, having an abundance of space, they increased and multiplied, and at the same time laid up a large store of honey. Great white combs were attached to the rafters overhead, and added to until hundreds of pounds of honey were hidden away in the waxen cells. One hot day the wax gave way, and down rafters, scantlings and joist began to flow streams of liquid sweetness. Through every crevice it poured, and soon altar, pulpit, chancel and pews of the sacred edifice were treated to such a flood of honey as had never been witnessed before.

If there are weak lots unite two or more together after removing the least valuable queen. To unite, shake both or all lots on a cloth and let them run together into an empty skep, where they had better remain until evening. Then shake them in front of a hive that has been properly prepared for wintering. The bees of two lots may be united peaceably by sprinkling them thinly with flour from a dredger and then placing the frames with adhering bees alternately in a fresh hive. The stronger the colony in bees the less is the honey consumed. This appears strange, but it is quite true; a small lot of bees in a hive containing several combs are restless, with the consequence that they consume honey to raise the temperature lowered by the cool air surrounding them.—C. N. White in *A. B. J.*

PARTNERSHIP.—Dr. Miller says in *The American Bee Journal*:—As a rule, anything in the line of partnership operations in beekeeping is not very satisfactory. As you put it, you furnish all the care and labour and all the supplies, the other party merely furnishing a hive of bees valued at $2.00 and a place to keep them. One way to look at it is to say how much he should have for interest on his investment and rent for the land occupied. If money is worth from 6 to 10 per cent interest, 25 cents apiece ought to pay him annually for the number of colonies started with, he to have that same number back at the close of the arrangement. If he gets his share in honey or bees, instead of money, then put a fair price accordingly. A more satisfactory way, probably, would be for you to own the whole outfit, and if you can buy for $2.00 a colony it will not need a very big capital.

There are also but few beekeepers who would prefer an auger-hole entrance toward the top of the hive. While the most of us can find objections to this feature, the most unique was presented by a bee-man I met on the streets of Los Angeles. He evidently was using the Dayton hive, for he said, "I purchased three colonies of bees from a fellow who believes in putting the entrance near the top of the hive. The bees can not do as well in such a hive, for I have tried it to my satisfaction, and know. You see, the bees have to bring all dead bees, miller-worms, and all waste from the bottom of the hive to that hole; and just as they get up there with a load another bee coming in hits it a bump and away it goes again to the bottom of the hive to be lifted to that hole again, and again knocked back. Those three swarms of mine actually spent the most of their time all summer trying to clean house, and finally gave it up in despair and swarmed out."—RAMBLER, IN *Gleanings*.

PREVENTION OF INCREASE.—C. Thielman, says:—I allow my bees to swarm naturally and when a swarm issues I cage the queen and lay the cage at the entrance of the hive from which she

came. As the swarm returns and re-enters the hive, this gives me a powerful colony for the production of comb honey. The queen is sometimes left at the entrance for a week or more, and on the seventh day after swarming, I go through the hive and remove all queen cells, being very careful not to leave one, as to miss a cell is to insure a second swarm and defeat the whole purpose of the operation. Usually by the seventh day a queen will have hatched, but if not, the cells are all taken off just the same, and some of the ripest of them are laid at the entrance also, for the bees to care for until hatched. The first one to emerge will enter the hive to assume her reign and the others will be killed by her as they hatch. This effectually puts an end to second swarming ; or at least until the best of the harvest is over.—*American Beekeeper.*

The Root Company give the following statistics :—We find, on footing up our tally-books, where we keep a record of the different styles of hives packed for shipment, on orders we have sent out this past season, nearly 3,000 Danzenbaker hives; about 3 000 dovetailed chaff hives; about 7,000 10-frame dovetailed hives, and over 50,000 8-frame dovetailed hives, besides a great many of other styles for other people, so that, all together, we have disposed of at least 70,000 hives the past season, or about double the record of any previous year. It is also safe to say that we could have disposed of from 10,000 to 30,000 more if we could have supplied them promptly. We do not anticipate such a record next year, as there are, without doubt, a large number of the hives sold this year in the hands of beekeepers, unused. In view of the outlook we have decided not to build the large addition to our factory, for which we had plans prepared two months ago. We do intend, however, to put in the larger engine, and extend our factory building 20 feet, adding some new machines, and changing others, so as to increase our capacity when needed."

Foul Brood in New York, U. S. A.—F. Boomhower, in *Gleanings*, says :—We have had a few cases of the disease in our home yard, and a few in one of our yards out of town. At present we have none that are diseased, but are fearful that we shall have our hands full of it this fall and next spring, as it has such a foothold surrounding us. We have more fear of diseased bees in the woods than we have from outside yards, as we can control and destroy diseased colonies in yards surrounding us, but can't control those in the woods. All the bees in the northwestern part of the country are practically wiped out, as it got such a start, having been running two years before I found out that the disease existed. If I could have known it in time, and had been inspector at the start, I could have eradicated it before it got such a start. All the bees in the vicinity of Central Bridge, Esperence, Sloansville, Carlisle and vicinity, are practically wiped out. It has reached Montgomery Co. on the northwest and Schenectady on the northeast; and unless we have a *good* hustling State inspector I don't know where it will end. The trouble is, so many farmers keep a few bees, and they don't care a straw for the practical bee-keeper who makes it his whole business; and, of course, those who make it their busines have to suffer for the carelessness of the slipshod farmer beekeeper, of which, I will say, this State has more to the square mile than any other four States in the Union.

Having a queenless colony early in the spring, I sent South and procured a queen, introduced her, and in due time the colony became strong numerically. It may seem strange to the reader, but nevertheless true, I was glad to find those bees badly infected with bee-paralysis, many of the bees having a dirty, black, greasy, starved look. (What next?) Well, I just let them alone till hundreds were being dragged out of the hive by the bees, and then what did I do? Well, I lifted all those frames out and gave that hive a complete scrubbing with a strong brine; then, while damp, I put a handful of air slacked lime in the smoker and gave the inside of that hive

a complete dusting. I then took the atomizer and thoroughly sprayed the bees, combs and all with a solution of salt water, tasting quite a little salty. I replaced the combs and bees, and in three days gave them another spraying, this time by lifting off the cover and spraying down between the combs. In five days I gave another spraying, this being June 18. That colony now has a super of 24 sections of honey nearly ready to come off, and I defy any bee-critic in this broad land to discover a bee in that colony infected with paralysis, or any signs that it had ever been infected.—J. A. Golden, in *A. B. J.*

B. F. Averill's Non-Swarming Plan: When the swarming season approaches, and a colony is indicating its intention to swarm, divide the brood nest, to each of the two portions giving a selected number of the combs of brood. The combs to be selected, and the proportions of brood in different stages of development to be given the division which retains the queen, must be determined according to the future conduct of operations; also, whether the queen is to occupy the compartment with the entrance, or to be relegated to confinement in the rear of the hive, provided against exit to the swarm, should a swarm possibly come forth. When division is made, a perforated zinc division board is placed in the centre of the hive, and perforated zinc strips on top of frames given to the queen. By thus reducing the brood produced by a colony to *just a few points* below the requisite numbers that would augment the swarming propensity, and after the plan was practically understood, extending the method of management to all the colonies of an apiary, or a system of apiaries, the value of the same will to beekeepers, I think, be readily perceived. In working for extracted honey, I judge it preferable to give the queen to the compartment with entrance; then the combs in the rear of the hive would be filled with honey, and could be extracted. In working for box honey, more stores would be carried to the supers, if the queen occupied the rear of the hive. The principles of this will be apparent to the expert, and I hope some of my bee-keeping friends will experiment successfully along this line, and put the matter in a form that will be comprehensible to the novice.—*Gleanings.*

Despite our good resolutions with regard to cleanliness about the apiary, time after time the weeds got the mastery, and we found it impossible, with other work on hand, to keep them cleared. Moreover, there was no proper path through the orchard, and the mud was awful. The discomforts endured when manipulating, too, were great—mud, dirt, and damp everywhere. Having endured this for some time, during which my apiary increased slowly but steadily, as did my knowledge of and delight in the pursuit, I determined to make a really good stand for the hives, and a firm path leading to them. I obtained from an adjacent yard about ten loads of waste and broken bricks; these were broken up, leaving, of course, the smaller pieces on the top. Along the end of the orchard a space was thus covered about 7ft. wide; and down one side a path varying—owing to the irregularity of the hedge—from 4ft. to 6ft. wide. The whole was well rolled, and then, to prevent the weeds from growing through, this was sprinkled with boiling tar; and on the top of all was placed a layer of sand, and an edging of tiles round to prevent the pieces working out. The hives have stood, as depicted, on this path for a year now, and I have every reason to be well pleased with the result. During the past season hardly any weeds have had sufficient hardihood to penetrate the path, though, of course, some twitch grew in from the hedge-bottom at the rear edge. A further dressing of boiling tar and sand will, I hope, prevent this in future. Water drains rapidly away, and there is always cleanliness and order throughout; while any tool, small or large, accidentally dropped, is seen and recovered at once. Dr. Sharp, in *British Bee Journal.*

QUESTIONS.

185.—Reply to H. R. L., page 195?

186.—What is the best smoker to use?

JAMES SAWYER.

187.—In pulling down some queen cells, I came across a queen I should imagine about twelve days old, upside down; I mean head at the bottom of the cell, apparently alive and well developed. I should like to know if any readers of the A.B.B. have come across anything of the kind in their experience?

HEBBLEWHITE AND CO.

186.—From personal experience we cannot tell, but from experience in selling smokers, we would say Clarke's Cold Blast, as that is the one we have sold most of for years. Of course that might be, because it is the cheapest, but we sell more of that kind than any other.

E. J. R.

186.—I prefer Pender's Smoker. I could never get the Clarke to do satisfactory work, and the Crane I had to take the valves out and clean, they stuck up fearful with creosote ash, etc. I have not used the Corniel long enough to report. I am using one of my own make which gives satisfaction. I do not think any smoker can beat the Crane in the volume of smoke. The fault I have with the Bingham is the holes of grate fill up and it is hard to clean.

F. BOLTON.

185.—Have tried oilcloth face downwards and found bees going same way, the sweat accumulates upon the surface and drops upon the combs and causes honey to turn sour and ferment. I removed it at once and tried canvas or strong close bagging and all was right. Dysentry started and bees left the hives for the field and were too weak to return home with their load.

186.—The Crane smoker as it will not clog in the bellows, and has an uninterrupted blast.

187.—Have heard of it but never seen it

F. PHILLIPS.

185.—I think it possible for bees to collect juice from grapes that burst from rain, or it may be from something similar that is not nectar, but sweet enough for bees to collect when little honey is coming in. This mixed with the honey in hive would cause it to sour, and once soured the bees would soon look for a sweeter home.

186.—I prefer the Crane smoker to any I have tried yet.

187.—I have had no experience of this kind, but should think she intended to be out of the common and feed from the right end. I should like to have known how she would have got along.

LOYALSTONE.

185.—This seems a case of spring dwindling. The bees would fly away to die, so you would not notice dead bees lying about; or is it a case of foul brood. You might not notice foul brood before the winter, when it sets in, the consequence would be in the spring you open the hives and find all bees gone—died out. When much moisture collects in the hive it makes the honey sour, and causes dysentry and paralysis.

186.—I have used many smokers, and find the Pender smoker far before all others any way you like to take them.

187.—I have come across cases similar to this but have never known one to hatch, always find them dead in the cell. I suppose the larvae gets turned upside down in some way. You see similar cases with animals.

J. F. MUNDAY.

185.—The cause of the disappearance of H.R. L's bees, I imagine to be the want of honey and pollen for the bees to procure, or the bees having a great distance to fly to obtain it have become exhausted on their return, owing to the unusually strong winds that have prevailed this spring. The hives have become weak in consequence, and then the bees left absconded, or died out. The cause of the honey becoming sour in the combs is owing to the tendency of honey to absorb moisture from the atmosphere when exposed to it. Combs containing honey when not covered by the bees in winter are very likely to be found in a fermented condition in spring, and if extracted with other good honey will be sure to spoil the lot. The hives are alright, they should not be kept in damp or shady places.

186.—I know of none better than the Pender smoker.

SUGAR AND HONEY.

VALUE AS SUSTAINING FOOD.

John Smith, Mount Cotton, Queensland.

It is stated that during the last military manœuvres in Germany a series of experiments were made by the Chief Staff Doctor to test the value of sugar as food. Twenty men were selected out of each of the three battalions, ten of which (the weakest corporeally) received the "sugar diet." The other ten received the usual rations. The result has been published, and according to the official report, the men who received the sugar diet came out best.

It was proved that during long marches the feelings of hunger could be kept down for a longer time by the use of sugar that the sugar men suffered less from

thirst than the others; and that a few pieces of sugar sufficed to allay thirst for a considerable time. It was also observed that symptoms of exhaustion or of sunstroke were quickly overcome by a small ration of sugar. None of the men who were experimented upon showed the slightest disinclination to the new food during the whole course of the trial. As the practical outcome of these experiments Dr. Leitenstorfer now recommends *that sugar be considered a regular article of soldier's food*, and that it be stored with the other provisions for fortresses, hospitals and ships, and above all that *soldiers on the march* should have a supply of it.

There is nothing new under the sun. What is here said about sugar may with equal truth be said about honey. The value of honey as sustaining food was tested long centuries ago in a somewhat singular way during a military expedition. If Honey could be condensed or evaporated and moulded like loaf sugar, and be made more portable as lump sugar or chocolate creams, we should be disposed to think that a great problem had been solved, and the new food would be one of the most valuable in the world.

Once upon a time, when kings were absolute despots. and when the lives and liberties of their subjects were at the disposal of the monarch without any form or vestige of a trial, there was a war. The custom in those days seems to have been for the king or captain of the host to make a vow, or take an oath before the battle commenced. So the king we are writing about, wishing to obtain a great victory over his enemies that day, bound the people by an oath that they should not rest or take any food that day until even, and the man that tasted food, no matter who he was or what position he occupied, he was to die. So the king then dismissed them to the battle-field, saying "Cursed be the man that eateth any food this day."

Everybody was supposed to know all about this oath and command of the king, just as now-a-days everybody is supposed to know all about every Act of Parliament the moment it becomes the law of the land. But then, as now, everybody did not know, and amongst the rest was the king's son, the heir to the crown. He had successfully led one portion of the army, and had completely routed the enemy with very great slaughter. But he was then quite worn out with fighting, fatigue and want of food, when as they were passing through a wood they saw a quantity of honey running out of a tree all over the ground. The king's son, feeling very faint, and being quite exhausted, put the end of his spear into the honey comb and ate some of the honey. It immediately revived his strength, and finding it do him so much good, he asked his followers to eat some of it, saying that "his eyes had been enlightened after eating the honey," and his strength having been restored, he wanted to continue the pursuit and destruction of their enemies. But the people dare not eat of the honey, and they told the king's son about his father's vow, "that whoever eat any food until the evening he was to die." "My father has done very foolishly," he said, "otherwise there would have been a much greater slaughter of our enemies." When the king found out that his son and heir had broken the oath by eating the honey, he was too obstinate and proud to break his vow, so he said that "his son must die," for "the king's oath could not be broken." In the end, however, the people rescued the king's son, because he had fought so bravely, and they would not permit him to be killed.

The point to note is—that the people dare not eat the honey, owing to the king's oath, and so *they had not strength to pursue their enemies* further, whilst the king's son, who had been quite as much fatigued, if not more so, with fighting—(for in those days it was a hand-to-hand struggle)—and he appears to have been completely worn out; but *after he had eaten the honey* he was so greatly and *immediately refreshed* that he was ready to

go on with the pursuit, and urged the others to do so, but they were too exhausted for want of nourishment to continue the struggle.

CORRESPONDENCE.

W. Angell, Wellington, N. Z. :—Re sticking labels to new tins. Take two parts flour paste, and one condensed milk.

J. G., Queanbeyan, December 5 :—I am having a fine honey flow of yellow box honey, the finest I have harvested for years.

P. R., Macleay River, Novr. 19th :—Weather too dry here. Honey so thick that it cannot be extracted. With all cordial best wishes.

W. J. D., Casino, Novr. 23 :—The bees are backward here this year, and a good few died out. Honey coming in freely now. I would like to suggest that the Anuual Bee Convention should be held at Easter, about the time the Royal Show is held in Sydney, as many bee-keepers would like to see both of them, and if held separate some may not be able to attend.

J. F., Chatsworth Island, Novr. 18 :—My bees are doing well this season: I had to rob them to prevent swarming. A good way to get the wax of combs is to put the comb in a cheese cloth bag and boil it, when it is boiled enough two persons can squeeze it dry between two flat sticks. The bag must be kept moving while boiling to prevent burning. The best remedy I find for bee stings, is Calvert's Carbolic Ointment.

D. M. McL., Baan Baa, Novr. 28 :—Being a new beginner in bee culture, I am afraid I could not give you any news of practical value in this line, unless it were to point out to beginners the many pit-falls I have fallen into, in my endeavours to establish an apiary. I may give you an article later on, on my methods of taking bush nests ; this may be of use to those meditating starting an apiary as I have done from wild bees.

Thanks. Send it on.

A. J. F., Warrah Ridge, Dec. 5 :—Honey season just closed for 4¼ tons from 72 hives. Contrary to your expectations those fat combs of mine were a success and I have put all my 12 frames on an 8 frame allowance, and one hive I could only get 7 frames into the combs were so thick, had plenty of them 2½ inches thick. It stopped brood in the supers alright, there being not 10 per cent of what there would have been with narrow combs, also less uncapping to do and that's a saving.

T. E. W., Moruya, Novr. 29 :—The past winter has been the best for bees we have had for a long time, gathering honey and pollen all through. Until this dry spell set in, there was every prospect of a good season, but am afraid the continued dry weather, and bush fires will soon begin to tell. I have been melting down old combs from bee trees in a solar wax extractor, and would like to know if the heat would be sufficient to destroy any possible germs of foul brood in the refuse. The wax generally remains melted for three or four hours. Wishing you increased success for the A.B.B., and a Merry Xmas when it comes.

Not only the heat for the time, but the exposure to air and light ought surely to destroy all germs of foul brood. Will someone else have a say on this.

J. C., Armidale, Novr. 29 :—I have shifted my bees about 1½ miles out of town, nicely situated at a place know as the Springs, so I have given my place the name of "Spring Valley," being situated on the side of a valley joining the springs. My bees are doing very well considering the dry weather, if they continue through the summer as they are doing now, it will be the best season we had for a long time. They seem to be giving their attention more to gathering honey than swarming. I noticed the same thing as I see mentioned in the last Bullelin, that is the absence of drone brood during the last month. I wanted a frame of drone brood last week for a friend of mine, and was surprised when we could not find one. We have

plenty of drones on the wing. Box trees have been blooming well, and the red and white gums are coming out. If we get rain shortly, I think the bees will do alright, but rain is very badly needed.

E. J. R., Wyee:—The weather here is very bad and of course the bees suffer. We hardly know what rain is lately.

W. B., Attunga, December 5:—My bees did well this year. I extracted seven tons of honey from 60 colonies. Next winter will be a very bad one if it keeps dry.

Although bees have been very backward in New South Wales this spring they are now hustling up, and in many places good honey harvests will be gathered.

Ask your neighbouring beekeeper if he is a subscriber to the *A. Bee Bulletin.* If not tell him to send for a sample copy.

P. Bros., Castlereagh, Dec. 15:—We are having a very fair season and the prospect for the fall is very good, if the bush fires do not destroy it, as it is very dry now, and the mountain has nearly all been burnt.

F. P., Nabiac, Dec. 18:—The honey flow here has been very good up till the end of November, but they seem almost at a standstill just now. Although there is abundance of flowers out, there seems to be very little nectar in them, owing I suppose to the hot dry weather. I have taken 154 60lb tins from my bees up to date. The honey market seems very dull, at least the returns are slow. Wishing you and your paper success, also A Merry Christmas and A Happy New Year to you and all my brother beekeepers.

	each	doz
Kuife Heaters (with lamp) ..	4/-	45/-
Knives, Uncapping Novice ..	3/6	40/-
Do do Abbott's ..	3/6	40/-
Do do Bingham ..	3/6	40/-
	100	1000
Labels for Honey Tins (in colours)	2/6	20/-
Do Jars 50 do	1/6	10/-
Do Jars 42 do	1/6	10/-
Label Cartoons	1/-	5/-
Metal Corners for Frames ..	1/-	7/6
Metal Rabbets, 8 and 10 frame, 6d doz.,	5/- gross	
	1lb	12lb
Nails, $\frac{5}{8}$in. (flat head) 19 guage ..	8d	7/6
Do $\frac{3}{4}$in. do 18 do ..	7d	6/-
Do 1in. do 18 do ..	6d	5/-
Do 1$\frac{1}{4}$in. do 17 do ..	6d	4/6
Do 1$\frac{1}{2}$in. do 15 do ..	4d	3/6
Do 2in. do 13 do ..	4d	3/6
Do 2$\frac{1}{4}$in. do 13 do ..	3d	2/9
Do 2$\frac{1}{2}$in. do 12 do ..	3d	2/9
Do 3in. do 11 do ..	3d	2/9

Paint (any colour) 6d lb; 3/- 7lbs.
Queen Excluding or Perforated Zinc. 8ft. x 28in 6/- sheet; 70/- dozen sheets.
do. do. 28in. wide 1/- foot run
Queen Register Cards, 4d dozen, 3/6 gross.
Queen Cages, small (Benton's) 3d each, 2/- doz.
do large do 4d each, 3/6 doz.
Queen Cage Covers, small (Benton's) 6d dozen; 5/- gross
Queen Cage Covers, large (Benton's) 6d dozen; 5/- gross
Queen Cages (Miller's) 6d each; 5/- dozen
do spiral (West's) 4d each; 3/6 dozen.

	ea.	doz.
Queen Cell Protectors (West's) ..	3d	2/6
do do (Doolittle's) ..	2d	1/-
Smokers, Corneil	3/6	39/-
do Small (Pender's) 2$\frac{1}{2}$in. ..	4/-	45/-
do Medium (Pender's) ..	5/-	55/-
do Large (Pender's) 3$\frac{1}{2}$in ..	5/6	60/-
do Little Wonder (Bingham)	2/3	26/-
do Dr. Best's (Bingham) ..	5/6	60/-
do Clark's (Original) ..	2/3	25/-
do Crane	5/6	60/-
do Quinby	4/6	50/-
Smokers Hill's	2/6	each
do Blow's Best (Euglish) ..	4/6	each
do do 2nd	3/6	each
do do 3rd	2/6	each

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Staples for Hoffmann Frames 1/- per lb; 9/- 12lb
Separators (Wood) 2/6 per 100; 22/6 1000
do. (do slotted) 3/- 100; 27/6 1000
Spacing Strips, 8 frame, 2d set (3), 1/9 doz sets
do 10 frame. 2d set (3), 1/9 doz sets
Slate Tablets, 2d each; 1/3 dozen
Scales, Union (single beam) 18/- each
do. (double beam), 22/6 each
Swarm Catchers (Manum's) 3/9 ea., 42/6 doz
do. with tripod do. 5/6 ea., 90/- doz
Swarm Catcher Tripods, 2/6 ea., 27/- doz
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Honey Tins, 1$\frac{1}{2}$in 1/- doz; 9/- gross
do- 2in 1/3 12/-
do. 2$\frac{1}{2}$in 1/- 15/-
do. 3in 2/- 22/6
Screw Cap Honey Gates, 1$\frac{1}{2}$in 9d. 8/6
do do 3in 1/- 11/6
do do 3$\frac{3}{4}$in 1/- 11/6
Saws (Barnes) Circular, complete, £8/8/-
do do Jig attachment, £1/5/-
do do Boring attachment, £1/-/-
do Rip Cross-cut, 6in Set 7/6 ea, 84/- dz
do do 7in ready for use 8/6 ea, 96/- dz
do Files, 10in Cnt, 1/6 ea, 16/- dozen

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do 1lb, 1/3 ,, 12/6 ,,
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do do 30in. wide, 1s yd; 9/0 doz
do do 36in wide, 1s yd; 10/6 doz
Wire Cloth for Extractors. tinned, 36in wide, 6d per sq. ft.; 4/6 per doz. sq. ft.
do Plated, for Strainers, 2/6 per sq. ft.; 26/0 doz. sq. ft.
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Wax Extractors, Jones (steam) 12/6 each

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