The Australian bee bulletin. Vol. 7, no. 3 June 24, 1898

West Maitland, N.S.W.: E. Tipper, June 24, 1898

THE ANNUAL CONVENTION

OF BEEKEEPERS

WILL BE HELD AT THE

TECHNICAL COLLEGE,

HARRIS STREET, SYDNEY,

ON

Wednesday, Thursday and Friday,

29th and 30th JUNE, and JULY 1st, 1898.

The following items will be on the programme :—"Points in Judging" ; "Effects of exhibiting Honey at Shows on the Industry" ; "Native Bees of Australia" ; "Adulteration" ; "Bee Paralysis" ; "The Importance of mating with selected Drones" ; "Enemies of Bees" ; "The Honey Bee—its natural history" ; "Bees and Honey, as mentioned by ancient authors."

Time will be set apart for consideration of such subjects of interest as may be arranged to be brought before the Convention.

The Convention will open at 10 a.m. on 29th June. The President (Dr. R L. Morris) will deliver his address. The Annual report will be read and an adjournment made to enable beekeepers to fraternize.

On Friday, 1st July, the Evening Session will consist of a Social.

The Australian Bee Bulletin.

A JOURNAL DEVOTED TO BEEKEEPING.

MAITLAND, N.S.W.—JUNE. 24, 1898.

Again we would call attention to the advertisement of the Beekeepers' Convention to be held at Ultimo, Sydney, on the 29th and 30th inst., and July 1. We do hope to see a good gathering of interested and practical beekeepers, and that some steps will be taken towards the bettering of the industry.

Langstroth frame—the Standard—Length of top bar 19 inches : bottom bar 17½ inches : total depth 9 inches : thickness of top bar ⅞ inches. The thick top bar prevents burr combs.

The specific gravity of beeswax is ·963 ; of paraffine, ·909. The melting point of parafine is 130F. or 15 degrees below that of beeswax.

We acknowledge receipt from Messrs W. S. and H. J. Wilson of a photo of the Deansmarsh Ligurian Apiary, Victoria. It shows a goodly array of hives, with honey house, &c. We wish them every success.

Work for Month—Get your hives, sections, &c., ready for the spring flow and swarming. Give an occasional look after stormy weather, to see there is any damp on the blankets or whatever is on top of frames. Should the hives need shelter, now is the time to think about planting. The privet is strongly recommended by Mr. I. Hopkins, of New Zealand for this purpose.

We had a pleasant visit at our apiary recently of Mr. W. Hill, late of the Junction Hotel, Muswellbrook. He is residing temporarily at Quirindi, having brought his 15 hives there from Muswellbrook. He is on the look out for a farm for sheep and dairying purposes. Also Mr. and Mrs. Johns of Braefield paid us a visit. Their bees are doing well at present. He was successful with his wheat crop the past year, and his ground is now seeded for the next crop.

A friend at our tea table recently asked if bees produced butter as well as honey. Needless to say there was a laugh. Strange, a few days afterwards that friend paid another visit, when the post arived with a little parcel for Mr. H. Jervis, containing a sample of candied dandelion honey, a kind Mr. J., says that candies befere it is extracted. A block of it in a glass plate, with its beautiful light straw colour could only be distinguished from honey on being cut and tasted. The taste too, the grain being very fine, was splendid.

N. S. W. NATIONAL BEE-KEEPERS' ASSOCIATION.

Committee met on 9th June.

Present:—Albert Gale (President,) Roberts, Trahair, J. D. Ward.

Letters were received from H. Lord, Technical College, and from Department of Lands re the Forbes ringbarking case.

Mr. Trahair volunteered to print programme for forth-coming Convention.

It was resolved that Dr. Morris of the Technical College be asked to deliver opening address at the forth-coming Convention.

The programme was then considered in detail and left in the hands of the President and Secretary for completion.

Try and get to Convention in Sydney. See Advertisement.

QUESTIONS.

158.—The matter of honey exhibited at Shows is one that must have a great influence on the sale and consumption of honey. Loyalstone makes some remarks on another page. He believes in the honey exhibited at shows being samples not faked or strained up, and should be taken from say a bulk of two tons? We want some opinions on this subject.

159.—What is your opinion of "Was the bee imported," on page 30?

GIPPSLANDER.

160.—What experience have you had with Carniolans or Carno-Italian bees? Have you found them better for honey-gathering than the Italians? Are they more subject to disease?

W. S. & H. J. WILSON.

161.—If requeening an apiary of blacks, what strain would you decide on, and why?

162.—What qualities do the Cypri-Italians and Carni-Italians possess (if any) over and above the Italians?

163.—When do you consider the best time for re-queening? Give reasons.

164.—Should the Victorian B. K. A. hold a Convention in June, and where, and why?

R. HELMS.

156.—This is really a question for an accountant, who could answer it equitably only if he had all particulars regarding the value of the assistance given by the owner, together with the interest on the value of the bees, against the interests on the value of the hives together with the deposition of their value, etc.

157.—I fail to see the purport of this question. What next?

SHUMACK BROS.

158.—We are of the opinion that Mr. Loyalstone's remarks are quite right.

159.—We don't think that the bees referred to on page 30 are natives of the country.

160.—Our experience of Carni-Italian bees is that they are not as good as the Italians, as they are more liable to swarm.

161.—We should decide if re-queening an apiary of black bees, we would do it with golden Italians, as we find them more prolific and better honey gatherers.

163.—We should consider the best time to re-queen an apiary would be in the fall of the year. As buying queens and having them mailed long distances, they are knocked about, and do not do much for the first month or two.

W. REID.

158.—Should be taken as offered for sale, no extra dish up. A lot of two tons is not reasonable. 1st, A beekeeper may not raise one fourth that quantity in one season. 2nd, A beekeeper may, say in some districts have 4 cwt white clover honey; 12 cwt yellow box; 10 cwt white box; 12 cwt from various gums; 2 cwt mixed, then there is lucerne and other plants. Are we to crush the man of small means because he has not two tons of honey of same test? Try again, friend Loyalstone.

159.—Will enquire from a resident of 60 years aged 84. Old bushman.

161.—Golden Italians. I believe them to be the most profitable all round bee.

163.—Between 1st October and 1st April, if there is abundance of bloom. Hives boiling over with bees; thousands of drones flying; weather warm. I raised the best queens in 1896, January; 1897, April; 1898, March. When all conditions are favourable, no other time. If queens are obtained from other beekeepers I would say March or April.

AUSTRALIAN YANKEE.

156.—I would not have anything to do with bees on shares, in any shape or form. Either buy the bees or else let them alone.

157.—I should say not.

158.—Certainly the samples should not be faked up, but when it comes to saying that the sample should be taken from a bulk of two tons, it is quite a different thing. I think it would be cruel and unjust. How many times beekeepers with from 40 to 80 colonies find themselves at the end of the season with less than two tons of honey, and then at other times the apiarist will have three or four different grades of honey. Is it not right and just that he should exhibit the best grade. No, no, Friend Loyalstone, let every one be free to exhibit and let the best honey take the prize, no matter if it is taken from a bulk of two tons or from 100lbs.

159.—I fully believe they were imported.

160.—No experience.

161.—Italian, gentleness, prolificness, beauty, and all the rest of their good qualities too numerous to mention.

162.—Don't know.

163.—Early spring, because, 1st, there are not so many bees in the hive, therefore it is much easier to find the queen. 2nd, You then have the young queen for the full season.

164.—Yes, in Sydney with the N. S. W. beekeepers. Let's federate.

SPARROW.

159.—I thought this was settled long ago. As there appears to be some doubt, I hope Mr. Gale will settle definitely.

160.—I tried one Carni-Italian queen, and in comparison with Italians, her progeny was a failure, don't think I shall bother with any more. I admit that one is not a fair test, but I'm quite satisfied until someone can prove the contrary.

162.—I also tried one Cypro-Italians queen and although her progeny are good honey gatherers, I don't think they are any better than Italians.

D. FISHER, VICTORIA.

164.—No. Very few would attend on account of the bad season. I think the Association might as well disband for the good it does. I have attended 3 Conventions and I can see no good result from any of them. The scheme of having an Association of beekeepers in every electorate as was resolved upon at the last Victoaian Convention was bound to result in failure for the reason that beekeepers are so scattered. I am the principal beekeeper within a ten mile radius and bees are only a secondary thing with me, and a similar state of things prevails more or less throughout the colony. Further, some beekeepers object to Mr. Chambers being the Association's secretary. I have been told by prominent beekeepers that the Association would never do any good so long as he remains so, and yet, when the Conventions meet nobody has a word to say in opposition, and nobody else is proposed for the position. For my part I question whether anybody else would give greater satisfaction than Mr. Chambers does. The statement is made that Mr. Chambers does not depend upon bees for his living. His business is making hives and that is only a part of his business; he also makes fruit boxes. Some think that a bona-fide beekeeper ought to be secretary, but the trouble is that beekeepers do not live in or near Melbourne, and there are advantages in having the Secretary in the metropolis. At the last convention we drafted a Foul Brood Bill, and so far as I know nothing has been done in the matter since. Mr Beuhne says "Federation Bill" smothered him. A committee was elected at that convention, and I question whether there has been a committee meeting from that day to this. The conventions meet and we all have a yabber, and then nothing seems to be done until the next convention. We once had a country "Committee of Advice" elected. I was on it, and although the committee was in existence two years, our advice or opinion was never sought during all that time. Either a radical alteration, or disband. That is my cry.

A. J. BROWN.

158.—As one who has exhibited largely, and knows the benefits derived from winning at different shows, I may say that exhibits should represent a certain bulk of honey crop, but think two tons too high, as it would prevent many beekeepers who keep say 10 or 12 hives from exhibiting. Again, a beekeeper with a crop of 5 tons, may get 4 or 5 different classes

of honey, and would be debarred, or in a bad season, fairly large apiaries may not get a surplus of two tons. I would suggest that exhibits be true samples of half a ton.

160.—I have kept both Carniolans and Carni-Italians. They are both good honey gatherers. But, as I prefer to run my apiary for honey, without much swarming, I discarded both, and for all round business go straight for Leathers direct from Italy. Re disease, it is unknown here, so cannot say.

161.—Leather coloured Italians. I consider them the best all round bee we have yet had dealings with.

162.—None to my thinking, I have tried both.

163.—Spring time, with young prolific queens. That will give you a tip top colony in short time, and a surplus just as soon.

R. H. JERVIS.

158.—Loyalstone's idea re honey for shows to be taken from bulk. Judges would have to visit the apiary to see the bulk, (not practicable.)

160.—Very easy bees to handle. Too much like hybrids in colour, and the queens are all the way from coal black to bright yellow.

161.—Ligurian with a little Cyprian blood.

163.—About swarming time, has then the ueens one breeds are the best.

QUESTIONS NEXT MONTH.

165.—Linoleum on top of frames under cover. Which should be next the bees, the absorbent or non-absorbent side?

W. REID.

166.—The best hive for a man of small means. How made, resulting in profit?

W. TODD.

167.—Is it best to have hives on the ground, or on stands?

F. L., McLaren Vale, Vic. June 11th: Thanks for the regular delivery of all back numbers of *A. B. B.* Last season was a very poor one here with the bees but that is the way with the little things either a feast or a famine.

BEEKEEPING IN GREAT BRITAIN.

Mr. Cowan, editor of the *British Bee Journal*, gave the following address at a recent Californian State Convention. We copy from the *American Bee Journal*: While in California large apiaries are common and encouraged, in England there are but few large apiaries, and large apiaries are not encouraged; the small apiary is the rule in England, and many of the apiaries are kept in fruit-growing districts for the purpose of fertilizing the fruit-blossoms.

Beekeeping, according to improved methods, began about 1860. The Langstroth hive was introduced at that time, and was used by the most progressive beekeepers, but the real advance did not become general with beekeepers until 1873. Up to this time many straw and other rude hives were used, but now the Langstroth hive is gradually superseding all others. In 1874 the BRITISH BEE JOURNAL was started and an association organized; something of an impetus was also given to the industry through the exhibits of honey in the Crystal Palace in London.

In organizing the British Beekeepers' Association it was difficult to get beekeepers to attend. The Association is now made up from affiliated societies. The various county societies are obliged to elect two delegates to represent them in the council, which meets every month. Often the delegation from a county society will number eight or ten, and a large attendance at the council is the result. Refreshments are served, and then follow papers and discussions upon topics of interest to the various societies.

Through its thorough organization the British Beekeepers' Association is doing excellent educational work, several books upon the different branches of apiculture having been published. The Association grants certificates to the most proficient in the manipulation of not only frame hives, but straw hives as well, and in the management of foul brood and other diseases. When an examination of candidates for certificates is to be held, several counties unite and select a place where bees can be manipulated. After the candidate is examined, the examination papers are sent to London and past upon by the council. In order to

secure a certificate the candidate must be able to give a lecture upon any subject in the practice of beekeeping.

Experts for the handling of foul brood are appointed and compensated according to the work done. The expert does not visit keepers who are well up in their business, but it is the careless or ignorant beekeeper whose bees are found diseased. In many districts in England the bees have all died from this disease. It was virulent because many beekeepers had no knowledge of the interior of a bee hive; straw hives, or something equally inaccessible, were in use; such beekeepers would defy the expert, for there was no law to compel the destruction of diseased bees. The Association has adopted a system of payments where foul broody colonies were to be destroyed, and though the payments were small it satisfied the owner of the bees, and enabled him to purchase healthy colonies if his own were all destroyed.

The honey market is developed by the holding of honey shows in the various counties, and a central show in London. A system of labels has been adopted. These labels are issued by the county association. Each member is allotted a number which is stamped upon his label; if he sells inferior honey it is traced to him, and his name is stricken from the Association.

The Association employs an analyzer, and if a person is caught adulterating honey or selling it under an Association label he is imprisoned; they are not left off so easily in England as they are in this country.

There are about 53,000 beekeepers in the British Isles. They will average five colonies each: in favourable localities the yield is from 100 to 150 pounds per colony, but the general yield is from 50 to 60 pounds.

The bulk of the product is extracted honey, and is put up in 50 lb,, 28 lb., and in as small as 4 lb. tins; packages smaller than that are of glass.

The wholesale price for comb honey is from 14 to 20 cents; extracted honey 12 cents. The value of the annual product is about $750,000. Besides the home production there is a monthly import of from 10,000 to 15,000 pounds, the greater portion of it from the United States and Canada.

Imported honey is not inspected until it is put upon the market. American honey was held in good repute until in 1879; in that year a New York, firm sold a large amount of adulterated honey and American honey has not regained the prestige then lost.

The sources of honey in England are white clover, sainfoin, linn, buckwheat, and the heather honey of Scotland. Heather honey is darker even than buckwheat, but it sells for a better price on account of its delicious flavour; it is usually sold for 60 cents per section. It is so thick that it cannot be extracted. To secure it in the liquid form the comb must be submitted to pressure; this honey sells for 36 cents per pound. The best imported honey comes from America and the Sandwich Islands. Granulated honey sells readily, and the beekeepers' association is educating people to use it in that form.

The beekeeper and the fruit-grower are in accord; the fruit men recognize the utility of the bee in the fertilization of blossoms, and seeks to have the bees near his orchards.

An Orchardist in Gloucester planted 200 acres of fruit; the orchard was a complete failure in fruit-bearing until a Scotch beekeeper put in 50 colonies of bees. When properly fertilized by the bees the orchard began to bear. The acreage was then extended to 500 acres, and the apiary was increased to 200 colonies; the orchard now produces a large amount of fruit, a large jam factory is operated on the tract, and all of this prosperity is owing to the beneficial intervention of the honey-bee. Several instances of a similar nature might be cited. The honey-bee is certainly a great factor for the production of perfect fruit.

THE CARPENTER BEE.

The "large carpenter bee" is well named, for no human carpenter could bore neater holes, or chisel out the wood to form a dry and cozy home better than does this little creature with no tools save those Nature furnished in the form of sharp, horny mandibles or jaws. After boring the hole to a depth of about an inch, the carpenter bee turns at right angles to the entrance, and patiently cuts a long tunnel, a foot or more in length, parallel to the surface of the wood. The completion of this long, dry chamber necessitates hard unceasing labour for several weeks, and then the little carpenter combines business with pleasure by taking frequent excursions to sunny fields and gardens, to gather honey and pollen from the flower-store. From the nectar thus obtained she forms a paste, which is packed closely in the end of her newly-built house, and on it lays a single egg. Next, small chips, made in boring the hole, are brought, and mixing them with a secretion from her mouth, she fastens them on the sides of the tunnel, working round and round in a spiral, each turn of which reaches nearer the centre; until, finally, a thin wooden partition is formed, walling off the egg and its little store of honey paste. Against this wall more honey is packed, another egg laid, a partition built, and the operation repeated until the chamber is completely filled. The first egg laid is the first to hatch, and the tiny white grub comes forth and at once commences to feast upon the food so providentially placed within his little chamber. Finally he goes to sleep, and while he slumbers his skin grows hard and brown, while ridges and protuberances appear upon its surface. At last the little pupa bursts open, and a perfect bee comes forth, with his shining black head close to the dainty wall his mother built. This, all unmindful of her toil, he immediately tears down only to find his way to freedom checked by his next younger brother or sister, still asleep in its pupa-case. After waiting patiently the pupa which bars his progress hatches out into another bee, who tears down the wall to his own cell, to find another pupa barring his way, when both are compelled to remain by the pupa beyond. Finally, the last bee is hatched, and, breaking down the barrier which hides the world of flowers and freedom from his view, the whole brood swarms forth to try their restless, gauzy wings in the bright sunshine.

H. R. B. K. A.

A largely attended meeting of the H. R. Beekeepers' Association was held in the Technical Museum on the 11th inst., to discuss the advisability of holding a Beekeepers' Convention during the next Maitland Show, 1899. It was pointed out by several members that the first and most successful convention ever held in Australia, took place here under the auspices of this association, and it is remembered yet by many beekeepers for the most instructive discussions that took place.

Believing that such another meeting would be beneficial to beekeeping it was unanimously carried that a Convention be held during the next Maitland Show, when cheap (1d a mile return) tickets would be issued. Further that the show committee be induced to make a special feature of the Apicultural section by offering a liberal prize list for competition among distant beekeepers.

CAPPINGS.

J. H. Martin says, in *Beekeepers' Review*:—From an educational point of view, an exhibit at a fair is a failure; not a *total* failure, for there are a few people in every crowd who can absorb and remember all about interesting exhibits. The observatory hive with its queen bee is always a centre of attrac-

tion ; and for the four or five days of the fair our bees, our honey, and our appliances excite as much notice, comment and questioning as any other fine exhibit. But now let us follow the crowd and see how the educational feature works. There are, perhaps, 25,000 people on the fair grounds; our exhibit is in the agricultural or domestic building with a passage six feet wide on one side of it for the surging crowd ; now out of a crowd of a thousand that march before our exhibit, there are 250 that are doing the fair so fast that they only get a bird's eye view of the entire contents of the hall, and could not the next day, for the life of them, remember a single thing they saw in that building. Then there are about 500 who will remember what most interests them; while there may be a score that will go away with more or less of an impression of our honey exhibit. About a week after the fair a very few of this score will think enough of the exhibit to hunt up the beekeepers' card and order a case of honey. There *may be* a few permanent customers. The dear people are not to blame for not taking hold of the sweets stronger ; they attend the fair to have a good time ; and, generally, they have it. There is too much to absorb ; and by the time they have been through all the buildings, taken in the cattle show, horse trot, sideshows, and listened to the fakirs, the thousand and one things to be seen and heard the result is a confused idea of what they have seen, outside of some *special* object in which they are directly interested. Therefore, the premium, if generous, is the best thing to work for at a great or small fair.

A writer in A. B. J. says:—The best California dealers estimate that the honey crop in this section of the State is about 200 carloads ; the Exchange has handled about 25 car lots; therefore, instead of handling one-fourth of the crop, it is only one-eighth, which makes quite a difference. The time to know how the Exchange is going to succeed is after the settlement for the year is made. If the beekeepers have realized as much for the sales as they would to have sold to dealers, then there will be no cause for complaint. But if the net price falls short of that, then look out. The Exchange idea is all right, but the trouble just now is the lack of confidence in its workings. "We do not anticipate much of a honey crop this year, as the rains are few and light."

Mexicans say that honey is no good for eating, it is too irritating, and they have the bees only for the wax, which is worth from one dollar to one dollar fifty cents a pound.—F. HUSSLER, IN AMERICAN BEEKEEPER.

The colony that will do the most propolising is the weaker colony. If you get an exceedingly strong colony or a very strong colony able to keep up the temperature, and so on, that colony will propolise less, other things being equal than the weaker colony.—R. F. HOLTERMANN.

KEEP STRONG COLONIES.—A factor of immense importance in beekeeping, cheapening the cost of production and getting the largest profits from an apiary, is to keep bees from desiring to swarm when strong. There is no difficulty in keeping bees from swarming when they are weak and do not fill the hive, but when they fill the hive and are gathering a full quantity of honey and especially when running them to secure a nice lot of comb honey it requires good and careful management to keep them together and get good returns from them. The larger the number of bees that can be kept together in a contented way the better. As in a business, so many dollars worth of goods must be sold at a gross profit before the fixed expenses of a business is paid for. Or in live stock, when fattening animals it takes so many pounds of food to keep up the requirements of the animal, and what is digested, beyond that goes to give the increased weight. So in beekeeping we have a problem on a somewhat similar basis. It takes so many bees to do the work of the hive; that is, build comb,

attend to the queen, feed the larvæ, keep up the warmth of the hive, and gather the honey necessary for their own use, which is much more than many imagine. Of course, the amount of this work collectively, varies according to the number of bees; that is, a strong colony has more work to perform than a weak one, but the proportion per bee, other things being equal, decreases as the number of bees increase. The stronger the colony the more they are able to do for their owner. Hence there may be bees to just provide for themselves, when under the same conditions, twice the number of bees would give the owner a surplus of 6 lbs. per day. I think the idea is so clear that even the beginner will understand. Now supposing it takes 20,000 bees to balance accounts, and bees are hatching at the rate of 2,500 a day. When there are enough bees in that colony to have a large number storing for you, then they swarm. Two homes have now to be provided for before the beekeeper can get returns, and two colonies have to be provided with winter stores where there was one before, and the result will be that, although your apiary may increase, your returns have decreased. I venture to say that the conditions where it pays to go in for increase at the sacrifice of surplus are rare. Even a beginner who sails into the business with flying colours, will, in the end find that he could have made as much' progress if he avoided undue increase—in short, work for SURPLUS not INCREASE. Many swarms generally give weak colonies to go into winter quarters, and these are not desirable for that purpose. Now how shall we prevent undesirable increase? By giving the bees room in time, giving them enough of it, shading and ventilating the hive. I believe also that where the bees are placed closely together and they are excited by many neighbouring bees flying, they are more inclined to put on the swarming impulse. Supers should be put on the hive before the bees get the swarming impulse. Generally the drawing out of the cells along the top of the combs is an indication.—CANADIAN BEE JOURNAL.

C. D., Scone—Bees working nicely. The ironbark, gum and box coming into bloom. More rain and we have a good prospect for the winter. I have 30 swarms of bees, all nice and healthy. I send postal note as subscription, 5s. Thanking you for your valuable and interesting little paper.

G. W. V., Rawdon Island, June 8:—The season on the whole has not been a very good one here. I heard several beekeepers complain of the scarcity of honey and the peculiar flavour of what they did get. I myself did not extract any to speak of, and what I did get was taken in November of last year. I dare say I would have got more just after Christmas, but I met with an accident, Christmas week which necessitated my going to an hospital for three months, and I was not strong enough to look after them for some time after I came back. A great many swarms got away from me. A neighbouring beekeeper doubled his swarms this year from 25 to 50 odd. This last month or so it has been raining every few days, and the weather is very cold. It is raining now very heavily, and has been all day. There is every prospect of a flood. Can you inform me if a tin of honey is sold gross weight? I sent some to Sydney, and the commission agent gave me 2½lbs short of 60lb weight in every tin. I am sure my scales are right as I have them tested every year. Honey is sold here by some beekeepers at 6lbs for 1/-, so there is not much profit for beekeepers who go in for the latest improvements. Can you tell me a cure for paralysis, and if it is in the honey, and is likely to spread if robbers are about? I have one hive only that has it, but a friend of mine said his were very bad with it, and he thought he would lose all his swarms.

Was the gross weight of the tins 60lbs or 62½ lbs? The best cure for paralysis is to get fresh queens.

FOUL BROOD.

GEO. JAMES.

I have intended on several occasions to say a few words re Foul Brood, not that I have any cures to offer, but nevertheless, any information gleaned on the subject that may be of help to one another is of acceptance at any time, more especially to one who is so situated that he has Foul Brood all around him, and is in daily dread of contracting the disease. To anyone so placed I can honestly recommend crude carbolic acid as one of the best disinfectants that can be used, and should be more generally known. The crude carbolic is quite different from the refined article, containing as it does a large amount of coal tar, and being much cheaper (about 2/6 per gallon at wholesale), can be used without stint, is quite pleasant to handle, and not so injurious to the bees. A quarter pint to a pail of water is none too strong to wash all floor boards. Hives, mats and combs should be washed thoroughly once or more each year. Have a pailful always on hand. Dip your bee brush in, in fact everything you use about the bee yard should be washed. A good syringe is needed to churn the crude carbolic in the water, as being heavier than the water (at least the tarry part) it sinks to the bottom. There is used at most of the hospitals a solution that resembles phenol, and is quite soluble in cold water, but whether it contains the tar nature I cannot say. If it is of the same composition as the crude carbolic so much the better, on account of so readily and more evenly mixing with cold water. There is an article in *Gleanings in Bee Culture* for April 15th, 1895,* that I hope the Editor can find space to re-print, as that article, in my mind, should be in every beekeeper's hands, even though he may never have occasion to put it into force.

On re-reading my back numbers of the A.B.B., for August, 1895, I came across an article that I intended to answer at the time, but, being unsettled, I passed it over; but if it is not too late would like to give it an answer. The part that I take exception to reads as follows:—(Page 116A) "Foul Brood is altogether unknown on the Richmond, Clarence and Tweed districts, and is altogether unlikely to ever occur there, the climatic conditions being unfavourable. California, Cuba, Jamaica, and the other West Indian Islands, Chili, &c., are all close to countries absolutely (as far as bee-hives are concerned) stinking with this disease, and yet no case of it has been reported from the former countries, simply—it may, I think, be fairly presumed—on account of their sub-tropical climates—much the same as that of our northern rivers—being unsuitable for the development of the disease." So far so good. Now let us look at the other and true version of the "climatic" condition of Cuba alone, and I presume we can sum up the whole of the sub-tropical climates, that will show the fallacy of the claim put forth by our northern contributor. Many, no doubt, have hoped that at least one part of the colony was immure against the dreaded Foul Brood, but they cannot shut their eyes to the following facts, supplied by the sufferers themselves, and which I now quote from *Gleanings in Bee Culture* of October 1st, 1894, page 752: F. L Craycraft says that of one apiary of 700 colonies became affected with foul brood, and in the curing process lost heavily, that year being an exceptional one for the development of Foul Brood. Again, April 15, 1895, page 310, W. W. Somerford says of his brother that during the past four years he was scarcely without it, and there mentions that A. W. Osburn had varied experiences of the disease in California, and thinks that F.B. in a *hot climate*, and in large apiaries, is something too progressive. Once more—page 707, October 1, 1896, we read: During the last four years, six apiaries, containing about 1200 colonies, have been destroyed by foul brood. Now if that is not sufficient

*Page 308, fifth paragraph, commencing at "on account."

evidence that foul brood can, and does exist in tropical climes, what more do our northern friends want? and they should take the first opportunity to back down. Certainly you may have never had it in the district. Let us hope you never will. That it is in the colony of N.S.W. should be quite sufficient to place us all on our guard, no matter in what part we keep bees. Trusting none will think this is meant for a thrust—far from it.

CHICAGO CONVENTION.

At the Northwestern Beekeepers' Convention, held in Chicago, Nov 10 and 11, 1897, Mr. Whitcomb said: I do not think that the sting is poisonous. It is the formic acid that is injected into the circulation that is poisonous. It is not only poisonous in the circulation, but in the stomach, and it is the most deadly poison known. That is one reason why honey makes some people sick. There are people all over the country that cannot take any honey. We have made some experiments on that lately, with people who had never previously been able to eat honey, giving them honey in which we knew there was no formic acid, and without a single exception they have reported that it failed to make them sick. This honey was taken off by the Porter-escape process. But by the old-fashioned robbing process, going to the hives and robbing the bees, the instinct of the bee is to save its honey, and in stinging small particles fall off on the honey, and that makes people sick.

Mr. Heffron—I saw in a French journal awhile ago that a man had been stung very largely, had 150 stings around his neck at one time; they were extracted afterwards, and the injurious effects were prevented by making a plaster of ipecacuanha powder. They just wet it up with water and put it on around his neck, and it hardly swelled at all, and produced no injurious effects. I have used it this summer in perhaps a dozen cases. I havn't guarded myself very much against the sting of bees because I learnt I could prevent any evil effects. I took a little ipecacuanha powder and wet it and put it on the place, whether on my face or on the front or on the side of my neck, front or back, as I had been stung in all those places. It didn't swell at all, and I used to swell badly.

Mr. Whitcomb—Four or five years ago, while attending a farmers' institute, Prof. Bruner, of the Nebraska State University, made the assertion that bees had no ears and could not hear. Nobody over there cares to contradict Prof. Bruner very much, but I did "call him down" at once, and the Professor qualified it by saying that if they had any means of hearing he could not find it. Since then I have investigated the matter considerably. I am not a scientist, but nobody has ever handled bees for any length of time without being satisfied they could hear. There is the hum of fear and anger, and of satisfaction, that seem to be understood by every bee in the colony at once. If I take a colony of bees in this room and make it dark, and scatter the frames here and there, the minute the hum of satisfaction has started up on the comb where the queen is, they will all leave the other frames and go to the queen, going across the floor. And the peculiar noise the queen makes, in case of starvation or of abject fear, seems to be understood entirely by the bees at once. On investigation I have come to this conclusion, that bees hear entirely through the nervous system, the nerves coming to the surface along the abdomen of the bees, and they operate the same as our ears, and they understand that way. The nervous system of the bee is very finely constructed. After a friendly controversy Prof. Bruner has agreed with this idea. I say they hear, and hear as distinctly as we can through our ears.—*A. B. J.*

W. T. M., Spring Hill, May 18—It has been a bad season for the bees this year. No honey worth speaking about.

NOTES OF TRAVEL AMONG BEEKEEPERS OF YORK STATE.

Cogshalls' Apiary: His Methods of Work.

BY E. R. ROOT, IN "GLEANINGS."

Mr Cogshall is wedded to no particular hive; but he does have a system, and a very thorough one, under which all his work is done, and by which his marvellous results in dollars and cents are secured.

The first yard that I visited (I do not remember the name of it now, for he has a name for every one of his apiaries) is located an eighth of a mile, perhaps, from any roadway, and a quarter of a mile from any house, right in the midst of a big thicket of wood. On arriving at the place, there was that high-keyed hum as if robbing was going on; and, sure enough, bees were prowling around numerous cracks in the honey house, going in and out. Unlocking the door and going inside, we found that bees had gotten into the bunghole of a half-barrel of buckwheat honey. At the time of our visit the barrel was nearly empty. Over each bunghole had been placed little strips of wire cloth to allow the honey to evaporate further if it would; but somehow the wire cloth had become displaced, and the bees were making things "interesting." Most of us would have become considerably excited, and would have made apologies for such a condition of things; but Mr Cogshall took the matter very coolly, remarking, "Never mind, I will get the honey back all the same."

Some of you may wonder why he uses honey-houses all full of cracks and crevices, through which the robbers might pass. Simply for the reason that it does not pay him, he says, to go to the expense of constructing a bee-proof building. It is made of cheap lumber, and so constructed that if, for any reason, he desires to move the yard from ground that is leased or rented, the building can be taken down, loaded on a wagon, and can be set up in some other location. The cracks and crevices—what does he care for them?

After spending a little time at this yard we drove to another. The boys had preceded us, and were getting ready for extracting, as Mr. C. wished to show me his method of working. I was supplied with a veil, and it was well that I was. The boys had already mopped out the floor, gotten everything in readiness, and were just preparing to extract as we arrived. The buck-wheat honey flow was about over, and I expected that robbers, of course, would make things lively. But that did not make any difference. The boys went at it just the same.

Now for the extracting, or, rather, getting combs ready, preparatory to extracting. A sort of hand-cart large enough to hold four supers, each 8-frame L. size, was stationed just at our rear. In one corner of the hand-cart was placed an empty super. Observe this point, for I shall have occasion to refer to it again. Next, the cover of the hive was removed. The quilt was pulled up a little way, and smoke blown under. The quilt was then flopped up and down between each alternate puff of smoke, in such a way as to suck or draw the smoke down into the super, almost to the brood nest below. This flip-flop act was continued for a space of about half a minute, when I should judge that at least two-thirds of the bees were driven into the brood-nest below. I will remark, in passing, that the bees cannot be driven out with smoke with the smoker alone nearly as well as when the smoker and quilt or cloth are used in the manner stated.

Well, when two-thirds of the bees are out of the super the first frame is taken out and shaken in front of the entrance. It is then put into the super on the hand cart that I have already referred to. The next frame is grasped by the two projections at the end; and while in a horizontal position, and before it is out of the hive, it is given three or four rapid shakes up and down in the hive. It is true, a bee or two may be killed, but that makes no difference. The next frame is shaken in the same way *in the hive*; and if there are a few bees still clinging, they are brushed off from the comb with a long whisk broom that is tied to a short string around the waist of the operator. One sweep with Cogshall's broom on a side will usually finish up the job. This operation is repeated with each frame, shaking it in the super, not on the ground, until all the combs are freed of bees, when it is placed in the super on the hand-cart. During all this time the operator will use the brush perhaps once or twice, as he seems to be able to remove nearly all the bees by simply shaking.

The super that is on the hive now empty of combs is yanked off, sometimes kicked off,* during which operation it is freed of all adhering bees. It is then set on the hand-cart, and the next hive is gone through with in the same manner—that is to say, the combs are taken out and put into the super that was on the hive first opened, but now on the hand-cart filled with combs from which the bees were cleaned. The super now empty on hive No. 2 is kicked off and set on the hand-cart, and filled with combs from hive No. 3 in the manner before described. In this way the operator goes through the whole yard. As each hand-cart is filled with supers it is drawn over to the house where the boys are extracting, unloaded, and set before the next hive to be opened. The super that was kicked off from the last hive opened is set on the hand-cart, and so on the work of smoking, flip-flopping, and shaking of the frame goes on.

*Mr. Cogshall does not believe in taking *time* to pry the super off. A *yank* or a kick removes it, and clears it of bees besides. Of course, it angers the bees, but Mr. C. considers that of small moment compared with the time. He runs his bees, not for convenience, but for dollars and cents, and if a kick will earn another cent or two, he "kicks," stings or no stings.

Well, by this time things got to be interesting, if not exciting. My hands went deeper into my pockets, while the stings went deeper into my clothes. In the meantime Mr. Coggshall had a kettle of rotten wood and rags, and was making a most awful smudge at the door of the honey-house. The smoke would rise and curl up, and come out of the openings of the building, the purpose of which was to keep robbers from getting in. Meantime the robbers were poking their noses into the combs outside that had been set into the supers preparatory to being extracted. But that made no difference. The combs were rushed into the house and extracted, bees and all.

"Did the bees sting?" you ask. Sting? I never saw them prod worse; but the men worked on just as though they were mere flies, or bees without stings. Combs were taken from the hives, rushed to the extracting-house with a celerity that was simply astonishing. I would not have supposed it possible to do such work in an apiary where the air was literally full of buzzing, mad, stinging bees. Mr C. and his men are evidently used to this plan, and certainly do get the honey out of combs at a pace that is simply record-breaking. The men work so rapidly, flip-flopping smoke, shaking combs, that a bee scarcely has time to land its sting on the hands. Did you never notice that, to sting, a bee must take time to get a "good holt." Coggshall's men, for more reasons than one, don't give the bees time to get much of a "holt." The man who opened the hives worked bare-handed; I should have thought he would have had them filled with stings; but I don't think he received more than a *dozen*, all told, in his hands, but that was nothing.

I will not now attempt to tell you how many thousand pounds two of their men will take out in a half day or day. In the first place, I have forgotten what the record was; and in the second place, if I were to tell you I doubt whether you would believe it, and I could hardly credit the figures myself till I saw the men work.

As soon as the hand-cart was loaded it was drawn to the honey-house and the supers of combs were piled up one on top of the other. As was to be expected, robbers were flying all through the building, nosing into everything, especially into combs, and about every minute one would strike the reel revolving in the extractor, and then be thrown by centrifugal force against the side of the can. These, together with the robbers already on the combs, rattled against the sides of the can as they were thrown out with the honey. Of course, the surface of the honey in the extractor was covered with dead or struggling bees, and these extended to the depth of an inch or more into the honey.

I asked Mr. Coggshall if he used any strainer. "Don't need any," said he. As the bees were lighter than the honey, they would float; and when the honey (and swimming bees) reached almost to the reel of the extractor the operator stopped a moment, placed a pail under the extractor-gate, and drew it down pailful by pailful, and emptied into the half-barrel. I watched very carefully, but I could not see a single dead bee in the honey so drawn off. After a day's extracting, or perhaps half a day's, there would be from two to four inches of dead bees in the honey. The liquid portion is drawn off through the honey-gate below, and the dead bees—well, I don't just remember what was done with them; but I think that, after they got through extracting, they were taken out and "dumped," to be cleaned by the bees.

Mr. Cogshall probably loses, I should say, anywhere from a quart to a peck of bees at each extracting. But that does not matter. "Why," said he, "I can raise bees for fifty cents a colony, and the cost of trying to save those few bees by constructing a bee-proof building, and working slowly and carefully enough to avoid robbers, would amount to a good many times more than the value of the bees."

CAPPINGS.

A wet pack sheet is said to be very effective for bee stings.

According to the *British Bee Journal*, £21,869 worth of honey was imported into the United Kingdom in 1897.

J. E. Crane, says in *Beekeepers Review*: I believe better queens of the Italian race can be found in America than in Italy.

"Special Notes by Business Manager" in *Gleanings* says: "Not only they, but the other large manufacturers of bee goods, are working to their utmost tension. The demand this year seems to be more than double what it was last year, and "none of us were looking for or were prepared for such a tremendous increase." What will be the outlook of this in the prices of honey next year, judging by this?

At the late Ontario Convention Mr. Olmstead said he had gathered the pollen with his own hands from the corn-tassels by going around in the field with a boiler-cover, holding the same beneath the tassels, giving them a vigorous shake. A portion of the dislodged pollen would, of course, land on the cover. Thus he had proceeded, and gathered some two gallons of the pollen, which he had mixed with honey and put up in cans for future use.

To separate swarms clustered together, have ready a very large tub. Take it where the united swarms are, and sprinkle it lightly inside. Arrange several branches of trees in the tub so they shall not touch each other. Dump in the swarms in a single cluster, cover the tub with boards, leaving free entrance for bees still in the air. Each queen will take a separate branch, and in half an hour the separate swarms can be hived. It is well to sprinkle the branches with sweetened water.—*A.B.J.*

Doolittle says in *Progressive Beekeeper* that after having watched hour after hour he believes that not one bee in a thousand returning with a load of honey ever enters the sections till it has given up its load to a young bee an inch to six inches from the entrance. The field-bee rests a few moments to half an hour, then goes fieldward again. The young bee evaporates the nectar, and if the yield of nectar is too big to be evaporated by the young bees they deposit some of the nectar in the cells, and at night all hands turn to evaporate.—*A.B.J.*

O. O. Poppleton, says in *American Bee Journal*:—Bees that are removed from one location to another in the spring will usually do better work than will those colonies not moved. I noticed this fact when first beginning beekeeping, nearly 30 years ago, and repeated observations since then have confirmed me in my opinion that such is a fact. I am not able to give any theory why it is so—I can simply say that all my experiences in moving bees seem to uphold that opinion.

S. T. Pettitt, says in *C. B. J.*:—That plain section is a delusion and a snare, in every count; if it is lighter, then you must put in more honey to make it up. It takes less space in shipping-cases, but it is more exposed to injury in many ways, and more than that the vaneer will make up in cost. So after all the gain to the poor bee-keeper is only imaginary all round. But of course every change makes business you see. [The editor *Canadian Bee Journal* adds: We dread the thought of bee-keepers adopting this style of taking comb honey because it will be a disappointment, and they will lose money.]

R. C. Aikin says he has tried paint of all colours, and a hive painted *straight black* was the worst he ever had for swarming. Has had many dark red, and thinks they get too hot and cause swarming. Prefers light shades. Doolittle thinks hives should stand in shade from 8.30 to 4.30 o'clock, in which case colour will make no difference. But he thinks bees do much the best in hives not painted at all, if the hives have single walls. If there's any *good* reason for paint other than looks, he has never seen it advanced. He wouldn't let any one paint his single-walled hives for $1.00 each. It would lose him $2.00 in honey, because it would hinder early breeding.—*Progressive Beekeeper.*

J. G., Canada, in *Gleanings*:—To tin a soldering iron, take a common brick, and scoop out of one of its faces a depression about the size and shape of a table-spoon. Fill this space with common pulverized resin. Next take the iron and file off its four faces bright and clean; heat it to about soldering temperature; clean it with a moist rag, and then rub the iron in the pulverized resin in the brick; at the same time apply the bar of solder; work the iron back and forth, revolving it until the faces of the iron are covered thoroughly with the tin. In order to do a good soldering job on the honey cans it is necessary to clean the tin thoroughly. The parts should be either scraped or filed. By working right you can usually solder such places with common resin. You can use acid, but it is better not to use it, for every thing of this kind is apt to corrode and make matters worse.

H. S. Arwine, says in *Gleanings*:—If I were a sporting fellow I would wager a pink bean against a black-eyed pea that I could take any bee-yard that will not carry over 200 colonies without overstocking, and do all the work necessary—that is, put all the sections together, put in all foundation, put the sections on

the hives, and remove the same to the amount of 100 1lb. sections to each hive, clean all the sections, nail all the shipping cases, grade and put the honey in the cases, marking the grade on each case, my supplies being all on hand when the weather is warm enough in the spring for soft maple to begin to bloom, and have all done up in good order, and the bees ready for winter by Nov. 15. I would as lief do the work where the average is 90 to 100 lbs per colony as where it would be only 25 or 30, provided the bees were as long in gathering the small amount as they would be to secure the larger one. With the larger yield, propolis would be at a minimum, and at the maximum with smaller. With the bountiful yield I could remove full supers; with the smaller I should have to remove one or two to a dozen or so from a hive to prevent travel-stains, and I have no doubt the exhalations from the cluster will in time stain the combs perceptibly. In the larger yield, my compensation, or that of my employer would be much greater as the case might be. If I work for a man I want him to get more out of my labour than barely enough to compensate me for doing it. The greater his profit, the more is my rejoicing.

G. M. Doolittle, on Uniting.—Select a time just after the bees have had a flight and become quiet, if the weather is cool, or wait till near evening if the weather is warm, and then carry the colony having the queen to the stand of the queenless one, and shake the bees from the latter off their combs and from their hive in front of the hive having the queen now on their own stand. Previous to shaking the queenless bees off their combs, blow some smoke in at the entrance of the one having the queen, till they set up a loud humming, which shows that the guards are conquered, when the hum will be interrupted as a call by the queenless bees, which will run in immediately, and no fighting will result. After dark take the now united colony to the stand formerly occupied by the one having the queen, and remove the hive and all pertaining to it from where the queenless colony stood, and no bees of any amount will return to be lost. The other plan is this, and often works nearly or quite as well as the first: Crowd the bees having the queen upon as few combs as possible with a division-board, having a half-inch hole near the centre of the same. Having previously taken the most of the combs away from the queenless colony preparatory to uniting, set the remaining combs with the adhering bees in the space on the opposite side of the division-board, closing the hive. Have the entrance open only on the side occupied with the colony having the queen, and the bees will unite of their own accord in a short time, as they will open up communication through the hole in the division-board soon after the queenless bees are placed in the hive. Use the same precaution about removing the hive, stand, etc., from the situation occupied by the queenless colony, and the work is done.—*A. B. J.*

When a colony swarms I hive it on the old stand in two supers containing sections filled with foundation. The queen is caught and caged in a section containing a partly finished comb. The section is made into a cage by tacking wire cloth on both sides. The section containing the queen is placed in the upper supers, on top of these supers is placed the old hive and its contents. If the bees were working in a super when they swarmed the super is left on top of the old hive. In five or six days I shake the bees from the brood combs and cut out all the queen cells, unless I wish to supersede the old queen, when I leave one cell, and destroy the old queen. The hive is then placed on the bottom board, all the supers put on top, and the old queen released at the entrance accompanied by a puff or two of smoke. The bees must now be given plenty of room by tiering up. By this method all the vim of a newly-hived swarm is employed in putting honey into the sections.—*Golden in Beekeepers' Review.*

C. P. Dadant, says in *A.B.J.*:—In the January *Review*, one of the contributors, speaking of beeswax spoilt by water, suggests that this is caused by some chemical change. It is *not* a chemical change, but simply a mechanical mixture. Take the white of an egg, which is a viscous, ropy, clammy, adhesive substance; beat it awhile with a fork, and its condition will change entirely. You will then have a light, white foam without adhesiveness or viscosity, yet there has not been any chemical change. The white of the egg is simply mixed with air and its capillary attraction is broken or lessened. Beeswax overheated and beaten by steam is in the same fix. Its tenacity is broken, its colour is changed, and it may be made to contain as much water mixed with it, and yet not actually apparent, that it will lose 25 per cent. of its weight when returned to its proper condition. I once had a half-barrel of cappings which had been neglected till midnight, and I tried to render these cappings by simply turning a steam pipe into the barrel among the cappings. Not an ounce of this made good beeswax till I had remelted it with the sun extractor. Therefore, I strongly urge those who render beeswax to heat their wax slowly with water, of course, but boil it a little. You can boil beeswax till there is nothing left but this fine, grainy residue. Some of our leading beekeepers seem much occupied with the thought that beeswax when rendered is made more tough and less fit for foundation because of its becoming mixed with propolis. I believe there is nothing in this. Propolis is much softer than beeswax at a high temperature. You and I have all had our fingers soiled with it when handling the bees in warm weather, and if it was mixed with the beeswax in rendering, instead of making it tougher it would make it softer. But very little if any of the propolis mixes with the wax when it is properly rendered, and what does mix cannot injure it. There is much more danger to the wax from the water than anything else, and the water only makes it brittle, and apparently rotten. I say "apparently" for I believe there is no such thing as actually rotten beeswax under any conditions.

QUEENS LAYING ON SIDE OF COMB FURTHEST FROM FOUNDATION.—G. M. Doolittle, in *Gleanings*, says: In enlarging the brood nest, the queen often lays first on the side of a fresh comb furthest from the brood-nest. The only satisfactory solving of the matter, to my mind, is that the pollen has all to do with it; for when little pollen is coming in I have generally found the first eggs next the comb having brood already in it. When pollen comes in plentifully the bees pack it in the cells immediately surrounding the brood, and hence it comes about that, when the hard maple is in bloom, in this locality, we have combs next the brood-nest solid, or very nearly so, on the side of the comb next the brood, on either side of the brood-nest, so that the queen can find no vacant cells to lay in; hence she is obliged to go clear around the comb to a point opposite the centre of the brood in the comb adjoining, to lay, when the brood is on the increase. Immediately on her doing this, pollen is rushed into the cells of the next comb opposite the eggs she is laying; this, in turn, compels her to go to the opposite side of *this* comb to lay her eggs also, and thus it keeps on until the outside of the hive is reached. Soon after she has filled the cells furthest from the brood with eggs, hundreds of larvæ are hatching in the comb opposite the cells which are filled with pollen, this causing the bees to remove this pollen for use in the manufacture of larval food, when the queen now fills these cells with eggs, though she often scatters eggs all through this pollen mass, if there are any vacant cells, before the general removal of pollen. From this cause we always find, during proficient brood-rearing in May and the first half of June, the first eggs and the first sealed brood on the outside of the combs, or on the sides furthest from the centre of the brood-nest.

The advantages of co-operation among beekeepers have been recognise

in California, where a Beekeepers' Exchange has been successfully established. The difficulties of obtaining pure honey in America are just as great, although there are 100,000 beekeepers there, as they are in Australia. To remedy this state of affairs the Californian beekeepers' Exchange was established, and its first year's operations amounted to £12,000 worth of honey being disposed of. In Victoria the price of honey at the stores was sixpence a pound when the beekeeper was netting twopence, and there are hundreds of townships where honey is an unknown luxury, owing to want of organisation among beekeepers. Beekeepers' associations have been established in various parts of the colony, but the smallness of the subscriptions has precluded a properly paid secretary from being employed, and the discussions which have taken place at the annual gatherings have been wasted time so far as practical beekeepers selling honey for a living are concerned. The professional beekeeper rapidly finds this out, and ceases to subscribe to a society or association which is really educating amateur beekeepers into competitors, and not attempting to do anything to alleviate the lot of the professional honey-grower. Essays on foul brood and such things are very small game compared with the establishment of a proper association for the distribution and sale of honey. The former class of beekeepers' association can be run by any interested amateur; but the establishment of an association that shall be of real advantage to beekeepers will need to have a paid secretary and a live working body of directors. Their duty will be too important to allow of them wasting their time on mere abstract subjects in beekeeping proper; they will have to combine the beekeepers; to grade their honey; and while reducing the price of the honey to consumers, to raise it for the producer. That there is room between twopence and sixpence is certain, the margin being out of proportion. Foreign markets could be dealt with after the home markets had been secured. In Victoria, honey is an almost unknown luxury, where it ought to be on every table. Particularly is this the case in the country towns. Very few hotels keep it on their tables, while inferior jams are plentiful. If, however, honey could be purchased at a reasonable price by the consumer, it would be extensively used. At present few, so few that it might be said no beekeepers try and push the sale of honey by personal canvass, the exceptions being merely sufficient to prove the rule. Under these circumstances it can hardly be wondered at that honey is so little known as a food, and beekeepers have only themselves to blame for this result, as their associations have been content with discussions on how to make Acts of Parliament instead of actions upon making a profitable market for the honey they annually produce.—*The Drone, in the Australasian.*

For fronts of bee veils use silk tulle. Be sure it is silk tulle. Very few shops keep it. But it is better for the eyes than cotton tulle, also stronger.

W.D., South Woodburn, May 14—This season has not been a good one for the bees, on account of so much wet weather. The white ti-tree was only three days in bloom when heavy rain set in and spoiled the flow of honey. The bloom of the mahogany was also spoiled by rain. The bee moth got into some of the weak hives; they destroyed about ten hives.

J.D.W., Lawrence, Clarence River, May 23rd, 1898:—We have had a very fair season until the new year—a fine lot of honey from the bees, but after the wet set in the honey flow ceased, and the bees went mad swarming. Very little honey came in since New Year, and any young swarms will have a hard time to pull through the winter unless fed. I found a great number of queenless hives, more so than any other season, and on examining the hives I found numbers of queens dead in the queen cells; the queen cells were very thick and hard.

REPORT

Of the Apiarist of the Ontario Agricultural College and Experimental Farm.

R. F. Holtermann.

We give a synopsis of the above. The first part refers to wintering. Ontario is in north latitude, 46, very much colder than any part of Australia, and therefore bees are principally wintered in cellars. One example, however, is given. It says:—

"In last year's report we gave the result of a three years' test in outside wintering, the conditions briefly being as follows: The experiment was conducted with one hive, the brood chamber being divided into two parts—the lower set of frames, ten in number, measuring 14¾ x 8¼ inches, and the upper ten measuring 14¾ x 4½ inches. After swarming the young queen in the parent hive was lost, and we introduced a queen of our own rearing. In the fall of the year the entrance of this hive was contracted to five inches, and an empty super filled with old woollen clothing for packing placed on it. Without further protection the hive was left on its summer stand, the entrance being kept clear of snow. The hive has now been left in the same condition for four years, including the winters of 1896 and 1897; and in every case it has come through in first class condition."

COMB FOUNDATION IN SECTIONS.—In connection with the production of comb honey, a very thorough and extensive test was made with comb foundation of different sizes in the sections. The results go to show that it is of very great importance that the sections should be filled to sides and bottom with comb foundation. Anything less increases the number of pop holes in the section, and even tends to prevent the comb from being fastened firmly to the sides or bottom board.

DEEP CELL FOUNDATION.—During the past year there has been put upon the market what is known as "Deep Cell" Foundation. It differs from the ordinary comb foundation, in that it is flat bottomed instead of natural base, and the side wall is thin and one quarter of an inch deep or thereabouts. Thinking that this deep cell foundation would have a tendency to draw the bees into the sections and save them work we decided to test it. It arrived too late to make a thorough test, but when placed in the hive with four other grades of foundation, and in no more favourable location, it was the first section the bees began to cap. In a section 4¼ x 4¼ inches we found two cells in which the bees thickened the base of the comb to give it the shape of the natural comb, thus increasing the wax in the section. If much of this was done it would prove a decided objection. In comparing weights of comb foundation we found that running about twelve square feet to the pound to be most readily accepted by the bees; when thinner there is a greater tendency for the bees to gnaw it and cut pop hole

So far the work in our apiary would lead us to recommend the following in the production of comb honey:—

Full-sized separators not slotted.

A bee-space above the section.

A double bee-space and divider between the side of the hive and the first tier of sections.

A full sheet of comb foundation, about twelve feet to the pound.

A wedge between the bottom board and the side of the hive.

CARNIOLAN BEES.—During the fall of 1896 we received two dozen tested Carniolan Queens, and introduced them to colonies of bees made queenless for the purpose. This was done in the latter part of July and August, in ample time to give the colonies time to develop a large uumber of those bees to go into winter quarters. It was our intention to test these bees in a general way, but owing to the conflicting reports as to their tendency to swarm, we decided to test them, first of all as to their disposition in this direction.

First let me say that more than ordinary precaution was taken to give the hives shade and ventilation, particularly the latter; and room was given as far as conditions and circumstances would warrant. The swarms from twelve of the colonies were placed in hives with only foundation starters in the frames, while the other twelve were given frames containing full sheets. I may say that in general we found the bees very gentle; they built up well in the spring; and the only point I could detect in which they were inferior to the Italian, was that the queen being black, there was much greater difficulty in finding her in the hive.

The swarms put upon full sheets of foundation did not exhibit any undue tendency to swarm; but those hived on starters swarmed excessively and built exceedingly poor comb.

The result of the experiment must of course be received with caution; but thus far, without full sheets of foundation, the Carniolans have shown themselves a decided failure. They do not appear to build a proper proportion of worker comb, and the building is done very irregularly, but this deficiency seems to be overcome when the foundation of the comb is supplied. In the meantime we would advise beekeepers not to be in any hurry to introduce the Carniolan bees until another season's test can be made.

FOUL BROOD.—Having, during the season of 1896, rendered Mr. F. C. Harrison, B.S.A., College Bacteriologist, what assistance we could in securing material with which to carry on investigations in connection with the disease known by beekeepers as "Foul Brood" (Bac-

illus Alvei), Mr. Harrison during that season continued his investigations in connection with the disease.

This year the experiment with comb foundation made of bees-wax infected with the germs of Foul Brood was repeated on a more extensive scale. Mr. Harrison made cultures of the germ, and, instead of incorporating these in the melted wax and then re-melting the wax to make it into comb foundation, he sent the wax to the makers of this article and had the germs incorporated in it when it was made up, thus managing to have one melting less than last year. The wax was barely melted and at once cooled. Six hives were prepared and given full sheets of this infected wax, and at the close of the season there was not a trace of disease in the hives. The colony put upon such infected comb foundation last year was entirely free from the disease this year. We should like to pursue investigations in feeding medicated syrup to colonies infected by foul brood with a view to effecting a cure, but to do this under normal conditions it would be necessary to take the diseased colonies to some isolated district, in some of the more sparsely settled parts of the Dominion. We hope in another season to be able to co-operate with Mr. Harrison in this matter.

THE CONDITION OF THE BROOD CHAMBER IN EARLY SPRING.—Those who are known as our most advanced and progressive beekeepers (and many of the more conservative) have advocated leaving the brood chamber of the hive undisturbed during the cold and changeable weather of spring, even to leaving untouched the sealed quilts shown on the hive, to prevent as far as possible the escape of the warm air.

With great reluctance we decided during the past spring to make a series of extensive experiments as to the effect certain conditions would have upon the amount of brood reared in the hive. The first bees were set out on the eleventh of March; and the remainder at varying intervals during the next three weeks. The results from the various settings out showed a very marked difference—so much of a difference in fact, that, in almost every case, after examining the brood chamber, we could tell the date of setting out. Upon examination of the colonies when first placed on their summer stands, brood was found in only one or two hives, and these showed indications of imperfect wintering. The inspection at that time went to show that in healthy cellar wintering there is no brood rearing. The days the bees were set out they had an exciting and cleansing fly, after which the queen began to deposit eggs and and kept this up for a day or two, unless followed by weather suitable for flying. During the past spring, owing either to continuous low temperature or wet weather, the bees were confined for as long as a week at a time. The different stages of brood in the hive, upon inspection, gave indication just when the bees were ready to fly, the stimulus from flight, aided probably by the increased temperature, having a marked effect. Some colonies were fed diluted honey by means of a feeder above the brood chamber; the results were very beneficial, and the brood chamber under this condition was enlarged by the bees. Great care, however, should be taken not to over estimate the value of one season's work.

MOVING BEES FOR FALL PASTURE.—Upon referring to the report of the last two years, it will be seen that it paid well to move a certain number of colonies a distance of about 10 miles to fall pasture. This year, after the clover and linden flow was over, we moved one hundred and fifty-five colonies to fall pasture. The season was unfavourable, and, although the bees made a very good showing for a short time, the crop secured barely paid the expense of moving them. Taking the average for the three years we find that this plan has paid. Taking the fall of 1897 alone, and considering the risk, trouble and expense of moving the bees, the returns received would not warrant a repetition; but during the other seasons better results have been obtained and the average would justify continuing the work.

DO BEES MOVE STORES FROM THE BROOD CHAMBER TO THE SUPER.—About two years ago a bee-keeper, recognised as a leader in his profession, wrote an article in one of the leading United States bee journals upon feeding bees sugar syrup in the spring of the year, and by this means crowding the brood chamber, the object being to compel the bees to store all the honey they gathered in sections in the super. Some did not hesitate to venture the opinion that the bees when given super room, would carry a portion of the sugar syrup into the sections and in this way make an adulterated article of the produce put upon the market; others thought not, as the quantity thus taken up would not be large, but as the appliances for readily detecting adulteration were not within easy reach of the practical beekeeper, a definite answer could not be given. The matter was not allowed to rest however, and our experimental apiarian was asked to make a test. About the middle of May ten strong colonies were purchased, and the combs in the brood chamber contained in every instance an abundance of brood and stores. The latter consisted entirely of dark honey, almost exclusively of buckwheat honey gathered the previous autumn. When clover opened, extracting supers were put on the hives with a queen excluder between the supers and the brood chamber, and the results were as follows: Upon removing and holding the combs to the light, the contents of many appeared dark. Upon uncapping these combs the honey underneath was amber in colour, and the flavour unmistakeably buckwheat. This was the case in seven out of the ten supers. No buckwheat being in blossom during the early

clover flow, the bees must have carried the buckwheat honey from the brood chamber. This should be very conclusive evidence that when the brood chamber becomes crowded, before the supers are placed on the hive, the bees are likely to remove a portion of the store from the brood chamber. Their object, in all probability, being to make more room for brood.

In the above there is another lesson for the practical beekeeper. By this carrying up about 270 pounds of first class honey was deteriorated to the extent of about three cents per pound. In the production of comb honey extracting supers should first be put on, to allow the bees to store this dark honey in the extracting comb ; and after they have ceased to carry up the dark honey the sections should be put on and the mixture extracted. The above directions are given because it is not practical to remove the dark honey from the sections. If it is the intention to produce extracted honey it should be removed from the extracting supers when the bees appear to have ceased carrying up the dark honey ; by so doing a smaller percentage is deteriorated. At the present time many beekeepers allow the dark and light honey to be mixed, as described above, and do it at a financial loss.

THE PRODUCTION OF COMB HONEY.—To improve the finish of comb honey taken in the Province is an important matter. To get a well finished section improves the appearance of the honey, increases the demand, puts it in a better shape for the inexperienced retailer to handle, and makes it less liable to break out of the wood when jarred in shipping. A repetition of the experiment in the production of comb honey will be of interest and practical value, as during the previous year's work, the main objects in view were :—

1st. To compare the number and size of pop holes in the sections of supers with the bee space above, and of those without. Those without had a quilt or board next the sections ; those with, had a board with a quarter inch bee space over the supers, between the board and the sections.

2nd. To compare comb honey having the face of the last section and wood sides of supers separated by only the usual bee space, and those having two or more bee spaces. The two or more bee spaces were secured by means of dividers of different construction. Some were of solid boards very thin, with holes three-eighths inch in diameter. During the season of 1896 they were of wood only, but during 1897 we used some of wood and others of metal. The bee space was quarter inch in every case.

During 1897 we also tested, in connection with the above experiment, a wedge placed at each side of the hive, and between the bottom board and brood chamber, the wedge being seven-eighths inch square at the end next the entrance and tapering to a feather edge by seven-eighths inch at the other end.

The following is the result of a group of seven colonies with cloth or board and no bee space over the sections compared with seven having a quarter of an inch bee space above :

Those without the bee space had decidedly more pop holes in the sections ; there was also decidedly more propolis about them. Where pop holes existed, in those having no bee space above, they were much larger.

The result of seven colonies with the perforated divider and one bee space between it and the wall of the hive, and those without the divider and additional bee space :

The sections in the tier next the outside of the hive were much better filled where the divider and extra bee space were used. In addition to the repetition of last year's work, in a number of cases perforated metal was used in place of the divider of wood, and in no case did there appear to be any difference between the metal and the wood divider. The metal has, however, the advantage that it can be thrown into a weak solution of lye and cleaned, lasting for an indefinite time. This cannot be done with the wood.

Our object was two-fold in trying the wedges between the sides of the bottom board and the sides of the brood chambers. First, to increase the facilities for ventilating the hive ; next, to compel the bees to go to the sides and end of the hive when coming in to unload honey. While we found them of great value in ventilating the hive, we are not prepared to say just to what extent the wedges assist in filling the outside sections. A more thorough test will be made of this next season.

The rest of the report deals with Pure Air, Ventilation, and Artificial Heat in the Ventilation of Bees, all relating to wintering in cellars. It concludes with saying :—

A good colony of bees, taking one year with another, will more than double itself ; yet the winter mortality is so great that the total increase in bees kept in Ontario has been very gradual during the last ten years.

BEE RECOGNITION.

J. KERR.

It is often stated in books and by word of mouth that bees distinguish strange bees by the smell.

I believe that it is quite erroneous for any person to state so, as I believe the bees recognise their companions and strangers much in the same manner as we do ourselves, viz., by sight.

Take a hive of bees and call it No. 1.

It swarms, you have now No. 2. Should the latter be returned to No. 1 a few days afterwards, no fighting is likely to take place. Why? Most people would likely state because they smell alike. I maintain it is because they still remember each other. Had they been kept separate for a number of days longer it is most likely that fighting would have taken place, as they had failed to remember their former companions.

Now if the smell theory be advanced, I would simply ask when or where did the bees of No. 2 hive acquire the strange smell.

Were they not all of one family in the first instance and when nature separated them, did she not still place before both colonies the same surroundings.

Did they not gather nectar from the same kind of flowers and secrete wax from exactly similar material. How then could the bees of No. 2 smell differently to those of No 1. Is it not far more likely that after the lapse of many days they ceased to remember their former companions and now regard them as intruders?

Take an apiary say of 250 colonies. Now if the smell theory be the correct one you have in the above apiary 250 different smells, because each hive must necessarily smell different to the adjoining one or else there would be no fighting if you were to unite any two of them.

Is it not far more likely that the bees of each of the 250 hives regard the inmates of other than their own hives as strangers and deal with them accordingly. Why should the bees of any hive not become intimately acquainted?

There is no doubt but they know each other thoroughly and that they can detect strange bees at sight. If you place honey comb near to your apiary, say in an open shed, you will find your bees agreeing fairly well over the treat, but let the bees of an apiary at a distance visit the honey and you will most likely see your bees fighting with the strangers and stinging them to death. I have repeatedly observed the foregoing and I easily distinguished the visitors, as they were black bees. The bees of an apiary have likely a slight knowledge of each other owing to their close location, whereas the bees of an apiary at a distance are regarded as total strangers by the bees of the former and treated accordingly.

It can easily be seen that the smell theory is nowhere in the foregoing instances.

It is quite possible that the bees of a diseased hive may smell differently to those of healthy hives. I am, however, writing of bees existing under healthy conditions, and I believe that I am the first to state that bees know each other by looks and by acquaintance and not by smell.

VICTORIAN NOTES.

R. BEUHNE.

FOUL BROOD.

In regard to Loyalstone's anti-foul-brood foundation (for it would never do to use it for comb honey,) there can be little doubt that tar is a preventative, but I am not sanguine as to its properties remaining active for any length of time in the wax of the foundation. It is only the comb built out of the starter, which contains the preventative properties, the rest built by the bees to fill the frame is the undoctored article. Even when full sheets are used of tarred foundation, after the first generation of brood the cocoons intervene in ever increasing number between the wax and the brood. The experiment is however well worth a trial, which must necessarily extend over several swarms.

I have never had a fresh outbreak after transferring diseased colonies into clean quarters, but once, and by accident I discovered the cause of it. The colony in question worked extremely well at the end of the season 1895-96, when all others were idle. After treating them in the usual way, they again worked with great energy, flying till dusk in the evening. As I noticed them departing for stores all in one direction, I traced them one day to a tree a quarter of a mile away containing a deserted bees nest of enormous size, rotten with foul brood. From the combs, although badly moth eaten, I pressed 7lbs wax, and as I had expected, foul brood appeared again in the robbing colony a fortnight later.

I have no doubt in many cases it is not no cure, but reinfection.

Although foul brood is rampant here, I am sure it has done me more good than harm. It

has wiped out more than half the box hives, and nearly killed all the nests in trees, thus leaving more pasture available. Of course I have had a share of it. But if you are on the alert, it is insignificant and no more trouble to deal with than hiving a swarm. Any case I discover during the season of honey flow, I put on full sheets of foundation, allowing all brood to hatch out. Those found at the end of the season I transfer on to combs of sealed honey early in winter, when they have little or no brood. This latter plan I have now practiced for two years without a failure. I use no chemical or preventative of any kind.

HIVE COVERS.

I quite agree with Mr. Tipper, that a leaky cover is a great source of ill, but as for the linoleum I would not use it if sent to me gratis, freight paid, excepting to tack it on the outside of the cover. On the top of the frames I want something that will soak up water like a sponge. Layers of blotting paper an inch high laid on a bag quilt, would suit me best only for the expense. It is far easier to keep rain water out than to get rid of the moisture generated by the bees which in cold weather condenses on the outside of hive wall under the cover and on any combs not covered with bees, souring unsealed honey and decaying pollen, thus causing spring dwindling. It is more essential to the welfare of a colony to keep the hive dry than warm in winter.

ODDS AND ENDS.

A queen cage recently occupied is supposed to attract the queen of a hive and thus enable us to find her. I have had from one to a dozen queens caged in hives every year and visited them after all sorts of intervals when re-queening and never yet found the queen of a hive fooling about the cages looking for a rival. The jealousy of queens when once laying is not nearly so great as is supposed. I have no trouble in keeping two on the same combs, and sometimes three for months provided the conditions are right. But they generally came out with one only in spring. It is the workers that commit the murder. They get rid of their drones on the approach of winter and one queen is enough for them when no brood is wanted. Only once have I wintered two together.

I heartily endorse what Miles says in *A. B. J.* page 38 of last *A. B. B.* Beekeepers are the only class who are always urging others to go into their business. As there is but one step from the sublime to the ridiculous, so there is but a short step from enthusiast to fool, and many take it.

Apple tree bark, I consider good smoker fuel, but since I used decayed honeysuckle wood (Banksia something or other), I don't like the apple bark at all. The honeysuckle makes no tar, almost no ashes. The smoke is cool and aromatic and the fuel is the most lasting I have yet tried.

STATE OF THINGS IN CALIFORNIA.

We acknowledge receipt of the following from Mr. Bennett, the editor of the *Pacific Bee Journal*:—The publication of the *Pacific Bee Journal* has been postponed, owing partly to my connection with the National Guards of California, who daily await orders from the Government to take the field, and partly to the lack of support owing to the unfortunate dry year. I intend to resume the publication at some more fitting time, advancing all paid up subscriptions.

Wishing one and all a successful pass over a dreadfully dry year, and a prosperous future, I remain, Yours with best wishes.

C. J., Guilford, W.A., June 2:—We have had a very bad honey season over here this last season. We generally as a rule have a very fair one, but I hope next one will be better.

J. S., Dubbo, June 6:—It has been a splendid autumn for the bees here; they have made up splendid swarms to face the winter. They are gathering plenty of pollen, and a fair amount of honey, from white box and muggar, and should come out of winter OK. Wishing success to the A.B.B.

F. J. K., Wartook, near Horsham:—My bees have returned no profit this season, it being our off year. That combined with the drought has caused severe losses in our district. However, I have 100 colonies fairly strong and healthy, and next season promises to be a real good one.

W. R., Paupong, writes:—Some two inches of rain fell here in May. About two days in a week are fine and warm enough to admit of bees being on the wing. For an hour or so some hives carry in pollen. The honey extracted here in March can now be cut out in square blocks. I have been very much pleased and instructed by answers to questions in A.B.B., and consider we beekeepers have a great privilege, and

think it very manly, so many offering their experience.

S. B., Binnaway, June 11th:—Just a line to let you know we are experiencing a good winter so far, any amount of honey coming in of excellent quality. Some time back we were expecting we would have to assist bees with artificial pollen. But happily we had a splendid fall of rain, just at the right moment, which did away with the necessity of artificial feed. We have taken as much as 50 or 60 lbs. of honey from a large number of hives since the middle of May.

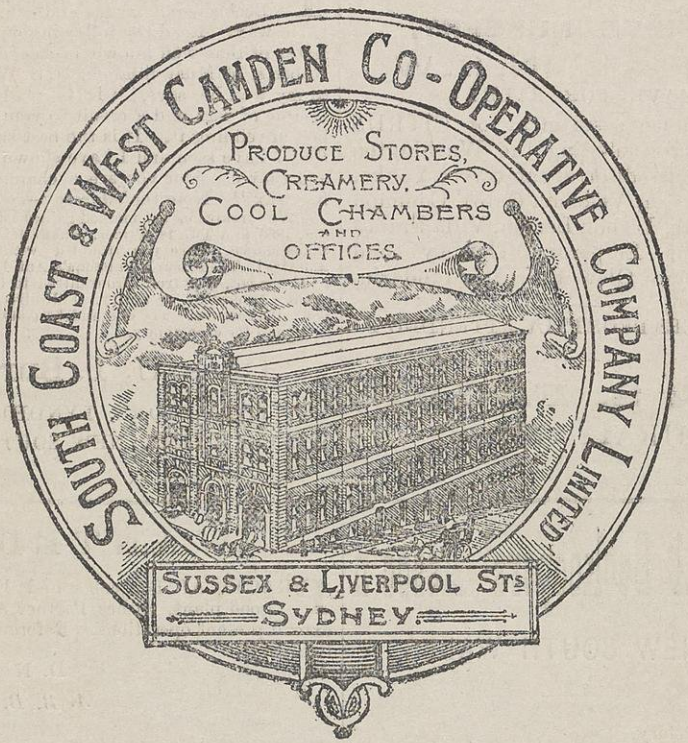
Dr. Miller and C. C. Greinger, have in *Gleanings*, been set thinking over the idea of throwing a stone attached to a string over a limb with a swarm on. By the way, Doctor, it was a lady who we first saw adopt the plan. We intend to try one better this coming season. Get a few rockets on hand, less trouble than stone throwing.

J. D., Bowenfells, June 13th, 1898:—I am well pleased with *A. B. B.* and I get it to its time. I haven't got much bee news to send you. It hasn't been a good season with me; this place is too cold for them, the bees had paralysis with me through the spring and summer. Paralysis is worse than foul brood. I have tried to cure them in different ways; best remedy I have found is to spray them with lukewarm syrup and then powder them with sulphur. I change the queens and then it didn't stop. Loyalstone was speaking on tar felt. I believe its worth a trial, to those who have got foul brood. When I wintered my bees I found two of my swarms had a touch of foul brood. A tree was fallen about 1½ miles from here, it was rotten with foul brood, and the comb was lying all over the ground last Autumn. Every success to your worthy paper.

H. W. W., Beechworth, Vic., June 5: The past three years has been a time of trouble, I trust I shall never have to face again. Last winter after feeding 600lbs of syrup, I lost all but 9 hives out of 45, and had to start this season with 9 weak colonies. These I worked hard with, and got them into good trim in time for business, with the result I extracted just on a ton of honey, had a few sections, and increased to 21 colonies. I feel that I have been successful, and am thankful for the better prospects that are looming up on the horizon. I am much pleased with the *Bulletin*; it improves every month. There is such a diversity of interesting reading, and so many experiences recorded, that unless one were a *Sparrow* he could not help but sing for joy, that at last we poor beekeepers are able to communicate to each other the knowledge we have gained while handling our intelligent little pets. And now dear friend, *Au Revoir*, and with it I wish you more and more success, and trust the pages will still contain the matter that is dear to the hearts of all beekeepers, as well as that important matter of exportation, and why the people of England do not like our honey. *Vive la Bulletin* is the wish of yours sincerely.

C. E. R., Goulburn River, May 28—My bees have done better this season than last; averaged about 112lbs. to the hive. Honey is still rolling in well from ironbark, for this time of the year.

Honey Sales a Specialty



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