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THE AUSTRALIAN Bee Bulletin.

A MONTHLY JOURNAL, DEVOTED TO BEE-KEEPING.

Edited and Published by E. TIPPER, West Maitland; Apiary, Willow Tree, N.S.W

Circulated in all the Australian Colonies, New Zealand, & Cape of Good Hope.

VOL. 14.

No

JULY 28, 1905.

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RULES & OBJECTS.

1. The careful watching of the interests of the industry.
2. To arrange for combined action in exporting honey to relieve local glut when necessary.

Proposed new rules published in this issue will be placed before members for alteration or approval, previous to next annual meeting.

3. To advise members as to suitable localities for establishing apiaries.

4. Any beekeeper can become a member on approval of committee, subscription 2/6 per annum.

5. That every member with more than 50 hives shall be allowed an extra vote for every additional 50 effective hives.

6. No member be eligible for office who has less than 50 effective hives, or his subscription is in arrear.

7. The Association to consist of a central body and district branches affiliated with it.

8. The principal officers be such as will undertake to meet each other in committee at least once in twelve months.

9. The officers shall consist of President, Vice-President, Treasurer and Secretary, and Executive Committee.

10. After the first election of officers, arrangements to be made by the Secretary to call for nominations for office-bearers, and issue ballot papers prior to the next annual meeting.

11. Supply dealers or commission agents cannot become members.

12. Members unable to attend meetings or conventions can authorise or nominate any member they know will be present to vote for them on any subject brought forward. Such vote or votes to be in addition to the member's present own vote.

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E. TIPPER,

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**THE AUSTRALIAN
BEE BULLETIN.**

A MONTHLY JOURNAL
Devoted to Beekeeping —
*Circulated throughout the Commonwealth of
Australia — New Zealand & Cape of Good Hope*

MAITLAND, N S W.—JULY 28, 1905.

Seasonable.

Spring is now approaching. In a short time bees will be breeding up. On warm days, now open your hives, disturbing as little as possible, and make sure there is a queen in each, also if there is plenty of pollen and honey in each, so that if wet or cold spells come on they may not starve. Some may have fullcombs they can spare to give to others. Better mark those that need, also those that can spare. If none to spare take a frame from those that need, leaving the space vacant. In the evening warm and stir sugar and honey, then pour it on empty frames of full comb and place in the empty space. If queenless or an old queen, order from the breeder you have most faith in. When arrived, be sure the hive you place it in is queenless. Place the cage with queen in face downwards on top of frames. Two days after tear off paper over candy. In another 24 hours the queen will be eaten out by the bees. There are many ways recommended of introducing queens, but the above is the one we have always adopted and with success. Should swarming set in, when you see queen-cells remove hive to new situation, place another empty hive in its place, with a frame with queen-cells from the original hive, making sure the queen is not on it. If the queen is an old or poor one, leave a cell in both hives after killing queen, or you may utilise all the queen-cells; if a specially good queen,

by placing in West's queen cell protectors after cutting out very carefully, and giving to other hives or nuclei — small hives made by two or more frames with brood taken from several hives.

In the Melbourne Museum, at the Exhibition Building, is a room for bees and ants. In the former are two frames with combs in endwise to each other, enclosed in two sheets of glass, with bee entrance at window. Only dead bees in it. Evidently they had all been chilled. The ant's nests were more interesting, showing sections of ant hills with galleries worked by them underground. The ants were all dead too. There were nests of different species.

Travelling.

Having during the past month gone to the Melbourne Convention, it may be interesting to note a few incidents by the way.

It is interesting as you sit in the carriage among strangers, to look around and ask yourself, what can this or that individual be. Our first query of this kind on starting, was a copper-skinned individual, rather tastily though strangely dressed, with bicycle lower rig. He must be a Japanese, no; turned out to be a peddling Jew from California, just on a trip to see the colonies. Had made £200 above all expenses in one year.

Lost £700 the next one. Wife in Melbourne. His raspy Semitic voice and the noise of the train, rendered conversation difficult, and we were glad when he got out of the train. Getting down near the Hawkesbury one middle-aged man, accompanied by a younger man, got in. They seemed business men from Sydney. There was a most glorious sunset, one of the most beautiful I ever saw in my life. The dark shadows of the mountains rising out of the water, the rich crimson of the sunset also contrasting with same, led to conversation on photography, and the possibility of reproducing colours in photography. The elder gentleman was enthusiastic, but the evening shadows increased, the big tunnel was passed, and the fiscal question cropped up. The old gentleman was a staunch believer in free trade, had done so since he was 16 years old. A gentleman passed a remark in opposition to his views. There was a transformation which caused a lady to say, "just touch the button and the machine will work." It did it to perfection. His whole body was in motion. Face and nose well forward, hand and feet well in action. The old gentleman that had set the machine in motion was scornfully neglected and the whole force of the politician's logic was turned on an unfortunate young man sitting opposite him. As he gradually cooled down his tormentors would quietly ask, "but how about Mr. McKinley." The machine would immediately be as vigorous as ever. Another cool down, and the word Roosevelt would have the same effect. At last his friend went and whispered to him, evidently telling him not to be making a fool of himself, and his Railway station being reached, we lost the further benefit of his company. Three ladies and two gentleman in a carriage of an excursion train for twenty hours, all had read the latest writings of Marie Corelli, and other good authors. Two were good vocalists and all good yarners, especially the widow and a younger lady who were both coquetting a young fellow of twenty five, from the Fijis. During the early

time of morn, sleep was attempted by all but when one burst out with "Hail smiling morn," sleep flew with it, and the refreshment station was gladly welcomed for breakfast. When Spencer Street was reached, though none knew the other's name or occupation, all agreed it had been a most pleasant 20 hours' ride, and wished success and pleasure to each other.

Some twelve months ago we had an experience that showed there is some barbarism yet in the Victorian Government. We were in a compartment in which were two ladies, and three youths going home to spend their holidays. The train stopped, and in came a gaol warder, accompanied with two prisoners in full gaol uniform, marked with broad arrows, etc. I remonstrated, it was no place for them, but the warder would hear of no change, and sat down with his charges. The ladies and one of the lads immediately cleared out to another carriage. I remained myself, and got into conversation with the two unfortunates, who were both educated men. One over 70 years of age, and he said he had never been in trouble before, a sort of quack doctor I took him to be. He had taken up a gold claim, differed from his neighbour, a squatter, and the two meeting on one occasion, a gun managed to go off, wounding the neighbour in the shoulder, for which the holder of the gun got two years. The look of the old man was that of one who had endured intense mental suffering. "Never in trouble in my life before!" I looked at the younger man, "And what did you get into trouble for?" He came straight out with "Taking what didn't belong to me." He had friends well-to-do in Scotland, and his sentence was being commuted on condition he left the colony, for which he was now on his way to the ship he was to go away by.

This barbarous system of exposing prisoners does not now prevail in New South Wales, where special carriages are set apart for prisoners en route to different gaols. We remember on one occasion seeing a number of prisoners marched through Newcastle guarded by warders.

But that is some years ago. Punishment is bad enough, but exposure makes it far worse, and does not tend to reform, but harden.

Going to the Melbourne Zoo was a gentleman who stated his age to be 50, he came across a niece with her mother. He was so pleased he was introducing them to everyone, including tram guards and all, to the intense disgust of the ladies and the amusement of every one else.

In some respects Melbourne has advantages over Sydney. The trams do not cause disfigurement of the streets, with overhead telegraphic arrangements as in Sydney, and they stopped at the beck of passengers, not at fixed stations. The Botanic Gardens on the banks of the Yarra are very beautiful. We remember the same grounds in the 50's, when, from Princes Bridge to Toorak there was not a single building, it being all rough bush. Now, what lovely walks, cosy nooks, rookeries, lawns, shady avenues, etc. Their size also. What a boon to the inhabitants of Melbourne! Yes, and as in the Sydney Domain you can take your choice of orators, and be converted as you choose to any phase of social or religious thinking. On the Sunday morning we attended the Cathedral. We enjoyed the beautiful singing, and heard an excellent discourse. And we can say the same of the Presbyterian Church, in Collins-street, which we attended in the evening. On the Saturday afternoon we took a trip to the Zoo, where we spent a pleasant hour. There is a fine collection of animals, birds, and reptiles here. We watched with interest the animals being fed, and seeing the ravenous nature of some of them, contemplated the fate of those who might happen to meet them in unexpected places. In company with Mr. D. Morgan who was unfortunately detained in Melbourne through illness in family, we visited the Exhibition Museum. The extent and variety of such was a great surprise to us. The Cyclorama of Melbourne in 1845, the Aquarium, the Armoury, the Egyptian tomb and

mummies, the picture gallery, and as the advertisements say "such a host of other things," a good two or three days could be spent there. I must not omit to mention the Public Library and Art Gallery, where you may spend hours and hours, and if you get the time, days and days, both pleasantly and profitably.

In company with Mr. Sumpson we visited the Agricultural Chambers in Flinders-street, under charge of Mr. Knight, who has charge of the exportation department. We spent a very pleasant half-hour there, looking at the samples of wheat, fruit, etc., etc., prepared for exportation. Also machinery for the manufacture of cider and the freezing department. Mr. Knight was very courteous and free with information. We might mention Mr. Sumpson is an inventor of a washing machine which he showed us. It is on a very improved principle, and we feel assured a good many of our beekeeping house wives would consider they had a good boom if they had one. The price is also moderate, £2 10s.

Below the Lands Office there is a very interesting Japanese garden, which visitors would do well to have a look at.

As in Sydney there are big quantities of honey in the commission houses, that seems to go off very slowly, and there are people who still think there is a big market in England. We heard many opinions on the matter. One is that if Australian honey was labelled straight out Eucalyptus honey a big demand might be created for it there for medicinal purposes. Another gentleman who had been in England said he had asked some gentlemen there their opinion of some Australian honey he had. They took it to be clover honey, and praised it up very much. The same shown to them again, and told it was Australian honey, they run it down. When asked why such diverse opinions, replied, "Well, you see it would not do to run our own honey down in preference to foreign honey, which yours really is." Then the difference in tastes of the two communities.

An English person don't like the flavour of our honey at first, but when once accustomed to ours, prefers it, and perhaps vice versa. One gentleman, Mr. W. D. Russell, placed a number of samples of foreign honies on the table, including Scotch heather, Canadian, Sainfoin, and Jamaica, none of which we considered better than Australian. In his opinion the Jamaica logwood honey was the best of all. Another matter is the difference in freight from Australia to England, to and from Canada, the West Indies, and other seaports. West India has great sale in England. The Minister of Education, Mr. Swinburne, promised the deputation that waited on him that every opportunity for placing our honies in the various English shows should be given by the officers in charge of our colonial goods in the old country.

Several persons seem to be of opinion that all our honies should be sent to one depot to be blended and classified. Don't let it be forgotten that what honey we have exported—and let our readers look over the figures in our last issue to see the amount of same—has nearly all been done through the push and energy of our commission agents. We cannot do without the commission agents. While going through the agricultural sheds in Flinders-street, where thousands and thousands of rabbits and other produce are being classified and prepared for export, they all seemingly go through the hands of commission agents. One individual says the Australian honey can go through the same process of expansion as the butter industry did. The idea is preposterous, and was scouted by members of the Conference, as the two products are very diverse.

Along with ourselves a number of those who attended the Conference stayed at the Federal Coffee Palace. Although the tariff is not the lowest, the conveniences are very good. Well furnished compact rooms, 450 in number, with every convenience of hot and cold baths, comfortable reading rooms, obliging attendants and whatever needed to those

visiting Melbourne, and want things as like their own homes as possible.

We have again to thank the members of the Victorian Apiarists Association for appointing the *A. Bee Bulletin* as their official organ. As we stated in returning thanks for the honour, a newspaper should be a photo of the industry or district it represents, and such we always have endeavoured and will endeavour to make the *A.B.B.*

The Secretary of the Victorian Apiarists Association, Mr. W. L. Davey, has a fine apiary, which he finds time to see to, beside holding a very important position in a large Melbourne manufactory. A smarter and more business like man we have seldom come across.

Mr. R. Beuhne has again been chosen president of the Victorian Apiarists Association. A good speaker and a thoroughly clear-headed man. He had a fine collection of photos of his apiary in the meeting room.

There were some 50 beekeepers present at the Conference.

Owing to serious illness in his family Mr. H. Russell was unable to be present at the Conference.

The Grampian and Blue Blocks in Victoria seem to be a wonderful place for honey, Messrs. Morgan have this season secured fifty tons—2,000 60 lb tins, and they intend to hold for better prices.

There seems to be any amount of honey in the stores both of Sydney and Melbourne.

The different commission houses, both in Sydney and Melbourne, still seem to be glutted with honey, most of it of good quality, that has been in stock for months waiting to be sold. The price of butter which always has an effect on the price of honey, is also going down, so that there is no immediate rise expected.

The women of Melbourne have a far more healthy look than their sisters in Sydney. The English bloom on their faces is very conspicuous.

At the last Melbourne Conference one gentleman stated he had a number of communications with different foreign markets for honey. I did not hear him give any report of same this year. Shall look forward next year to results of this years work by the Government.

The top price of honey in Sydney is 2½d. The commission houses seemed all chock-a-block with honey.

New South Wales Bee Farmers Association.

Many of the replies to the papers sent out with the new and old rules have come in. There are a few more yet to come to hand. Will members please forward such at earliest. We will publish them all together in the August number of the A. Bee Bulletin.

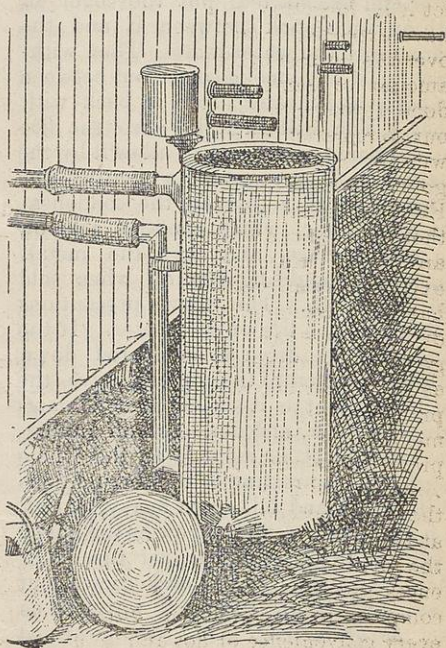
E. TIPPER,
Sec. and Treasurer.

MELTING HONEY.

BY F. W. PENBERTHY.

Since my advertisement appeared a few beekeepers wanted to know how I melt the candied honey in my tanks. I thought perhaps a good many would use this system if they know how to go about it. I will try and explain the make and working of it as simply as I can as I would not like any one to spend money on a failure for the want of detailed information. My tanks are 5 feet in diameter 2 sheets high, the circular 1½ inch iron pipe with bends are put in the tank before the top is put on, the two straight pipes are passed in through the holes made for them and screwed up tight in the bends, the bottom straight pipe lies dead on the bottom of the tank, the circular pipe rise gradually up all around until it joins the top straight pipe, which also rise to pass over the circular one, and both pipes soldered to the tank. The pipes should be fastened to the tank inside to keep it true. Fig. 1 should make it clear so far. The pipes in the tank should be painted with beeswax hot, and when on its stand plug up the bottom

pipe and pour boiling water in the upper one until full for a few minutes, draw the plug and fill again. This will warm the pipe hot enough to melt the wax into the rough surface of the pipe. This will prevent black stains in the honey. Fig. 2 is the heater, 15 inches outside diameter and 3 feet high, the fire tube is 12in. in diameter, which is put in near the side so as to give as much room for the circulation of water at the side of the inlet and outlet as possible. It can be made out of 24 gal. iron. I prefer 22 gauge iron for the fire-tube. The vessel on the top isscrewed on, which makes it more convenient to renew, as it is the first to rust through. It acts as a funnel and to hold a reserve of water. I find the best cover for the fire-tube is an old camp oven cover upside down, as it has the smallest point of contact, to be cemented down by wood-tar. A slip in cover will not do on that account. The cover has a two-inch hole bored in



or near the centre, and a washer put over the hole. With two or three sizes you will soon find which gives the best result. I find a $1\frac{1}{4}$ inch the safest. This, of course, controls the fire. I don't allow the water to simmer, although it may be safe. I use stove wood and fill up, coarse charcoal is better, or coke. To connect the heater to the tank I use two pieces of $\frac{1}{2}$ in. rubber hose, a foot long, slipped over the pipes, and twisted strips of calico, puddled in clay and water, rammed in between the hose and pipe with a hooked caulking iron, to make them water-tight. I find the hose far more accomodating than screwed unions, as it is very hard to get tinsmiths to put pipes into all the tanks alike in length and distance apart to join up with unions watertight with the one heater. A fire-grate is necessary of course, and closed in except a hole for draught; this is to prevent sparks from blowing about.

When the heater is fixed and filled with water and fire started, put the cover on with an inch stick between it and the heater, until the water is hot. Then withdraw it; if any smoke comes out between the cover and heater, stop it back with ashes. You will then be sure the fire has no more vent than you allow it by the washer. The reason for getting the water hot quick is to avoid the condensation of thin tar, which contains acid on the cold surface, and burn the metal. The water should be run off when cold and done with. The above precautions will double the life of the heater. If the honey is solid, drive a small rod down through it down to the pipe, to give the hot honey vent as it swells, to avoid damaging the tank, and don't run off any before most of it is melted, or the whole weight will be resting on the corrugations of the tank, and fall down heavy, a risk in both cases. I do not now let the honey candy solid, but prefer it just turned or thick. It melts quicker and comes out clearer and brighter than if warmed as soon as extracted. After once warmed up it takes months to set again, even

White or Red Box honey. It is not necessary to get the honey very hot, between 105° and 120° , nice and warm to the hand.

If your honey is a bit thin, leave the cover off with a piece of wire cloth in the place of it to keep bees out. This will thicken the honey up a bit. I have a neck to the opening of my tanks, six inches high, to keep the strainer out of the honey when the tank is full, 18 in. in diameter. In frosty weather it is best to put on a skirt of double bagging around the sides, and a few bags over the top, to keep in the heat.

I believe two rounds of pipes in the tank would be an advantage, but as I begun I had to continue, as the two rounds would bring the pipes outside further apart, and would not couple up with the same heater. It is not 2 p.c. of the labour melting as it is melting in the tins, and candied honey is not so high by $\frac{1}{2}$ d per lb. as clear liquid of the same quality in Sydney.

My honey always sells freely in Sydney, in fact I have received a little over £200 clear of freight and tins this year already. The cost of the tank itself (£6) is very little more than the cost of tins to store the same honey in, and it does away with the settling tanks altogether.

I may add in skimming the tank of honey I use two pieces of pine, in length about half the diameter of the tank, pilot them around from one another until they come together on the opposite side under the opening, where all the scum will be. I leave the sticks in the tank.

THE WINGS OF THE BEE.

III.—The Development of the Wing. BY E. F. PHILLIPS, P. H. D.

The first indication of wings to be found in the developing bee is the presence of folds in the body-covering on the upper side of the meso and meta thoracic segments of a young larva. On account of its habits of life the larva needs neither wings nor legs; but both of these begin to develop during this stage and in a very similar manner. A vesicle, or pouch, of

the body-covering is formed, which is to be a wing; but since the presence of four such protuberances would hinder the larva they are pushed into the body like the finger of a glove turned in until the tip of the finger is just below the surface of the glove. At the same time that these infolded pouches are formed from the body-wall, the rudiments of the future tracheæ of the wing can be seen. These infolded wings increase in size during the larval stage; but since they do not extend beyond the body-wall they become folded.

During the pupa stage, when the young developing bee ceases to take food, and is sealed up by the workers, the wings gradually unfold outside of their pouches, due to increased blood-pressure, and go through various changes until they reach the adult condition. From the method of formation it will be seen that each wing consists of two membranes. This unfolded pouch is, in the early stage, filled with the blood, and tracheæ grow out into it. Thickenings appear on the membranous, which ultimately become the veins or nervures of the adult wing. At a later stage the layers corresponding to the future upper and lower surfaces of the wings become closely applied, and fuse, except along those lines where tracheæ are present; here also the blood circulates, and these lines form part of the future veins.

In many insect wings each vein marks the location of a branch of the tracheæ in the developing wing, but this is not true for hymenoptera. In the pupal wing of the bee there are three tracheal branches coming from the thorax along the radius, cubital, and anal veins (see Art. I for the location of these veins). The first and third of these follow the veins regularly; but the one beginning in the cubital vein passes along the medio cubital cross-vein and there divides, the anterior branch following the vein radius one, and the posterior being found on the outer portion of the medial vein. This is of importance, since it indicates that, in the hymenoptera, changes have taken

place in the development which make it hard to homologize the veins of the insects of this group with other insect orders.

The entire surface of the wings is covered by very short hairs with an expanded base, while near the bases the hairs are comparatively long. The cuticle of the wing in the pupa stage was, of course, composed of living cells; but as the insect reaches its adult condition these dry up and nothing remains but the cell membranes. Careful microscopic examination will reveal some of the boundaries of these cells, although they have ceased to be living units.

In the development of the wing the size of the cell in which the pupa is placed is a very important factor in determining the shape of the adult wing. If the cell is small the wing cannot become wide, and to give the proper amount of wing surface it becomes relatively longer. If, on the other hand, the cell is large, e.g. a drone cell, the wing becomes wider and relatively shorter. This was shown to be true by a long series of measurements of the veins *M* and *m*. The vein *m* is about twice as long as *M*, but the ratio varies all the way from 1:1.7 to 1:2.6. For bees in large cells and with wide wings the ratio was less than for bees from small cells and with long wings, and the relative widths and lengths are in inverse proportion to each other within certain limits

Whole cans of honey that have granulated solid are stripped of their tin, as it were, leaving a solid cake which is then cut up into small oblong bricks weighing about one pound or a little over. Each brick is then wrapped in p raffine paper, after which another sheet of strong paper is put on. These are then placed in small cartons, and the whole (the carton with its brick of honey) is neatly wrapped in a beautiful wrapper of light-tinted paper with appropriate printing in gold. This makes a dainty package of nature's sweets that catches the eye of every person, and they sell like hot cakes, and at a fancy price too.—*Gleanings*.

PRICES OF HONEY.

Maitland Mercury.—Honey, 2d. per lb.
Small tins 2s.

Melbourne Australasian.—Honey—
Prime clear garden in demand at from
2½d to 2¾d. Inferior samples difficult to
quit. Beeswax from 1/- to 1/1½d, accord-
ing to quality.

Melbourne Leader.—Honey. — Prime
2¾d to 3d per lb.; good, 2½d. Inferior
qualities unsaleable.

S. M. Herald.—60lb tins prime ex-
tracted 1½d to 2d, some choice lines 2½d lb.
tin lots, 2½d per lb.; candied 1½d. Bees-
wax, dark 1/1½, prime clear 1/2 per lb.

A dead Queen is reported in *Shweiz.*
Bztg., with a hole in its abdomen out of
which crept a two-inch parasitic thread-
worm.

HONEY.—

Supplies of choicest quality have been com-
ing forward very freely, and the market is
easier, 2½d being the ruling rate for quantities
and 2½d for odd lots. Dark and strong
flavoured lots are extremely dull of sale from
2½d.

BEESWAX.—

In good supply. Light 1/ Dark 1/-

PRESCOTT LIMITED.

COMMISSION AGENTS,
336 & 338 SUSSEX STREET,
—SYDNEY.—

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Bred from Imported Stock.

R. H. JERVIS,
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FOR SALE.

MY WELL-KNOWN APIARY AT
CLEAR CREEK.

JOSIAH E. TAYLOR.

HONEY. HONEY.

WE are open to SELL ON COMMISSION
A FEW THOUSAND 60lb. TINS

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None But Best Samples Sold.

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BEE BULLETIN.

A MONTHLY JOURNAL

Devoted to Beekeeping —

Circulated throughout the Commonwealth of
Australia — New Zealand & Cape of Good Hope

MAITLAND, N.S.W.—JULY 28, 1905.

VICTORIAN APIARISTS' ASSOCIATION.

ANNUAL MEETING & CONFERENCE MELBOURNE, JUNE, 1905.

The Sixth Annual Conference of the Victorian Apiarists' Association took place at the Federal Coffee Palace, Collins Street, Melbourne, from Tuesday, 27th, to 29th June, 1905. There was a good attendance of beekeepers from all parts of the State, and representatives from New South Wales. Mr. Beuhne, president of the Association, was chairman.

PRESIDENT'S ADDRESS.

The President, in opening the Conference, said: This is the sixth Annual Meeting, and I am very pleased to welcome you here. The position of our Association is again satisfactory. During the past twelve months there have been difficult and delicate questions to decide, questions that affect the welfare and the very existence of the Association and Industry.

Our industry, according to statistics, shows a wonderful expansion during the past twelve months. The number of beekeepers has increased by 885, and the

number of hives in boxes and frames by over 8300; the quantity of honey produced increased by 1,072,220 lbs.; and beeswax by 9674 lbs. I am not in possession of the totals for this year; these are the increases for the last season. This yield must be considered very satisfactory. In the western district it has been a splendid yield; in the central districts, however, it has been an utter failure—a complete failure, one man's total crop only amounting to eight tins. The increase is great, but it may not be maintained; we are bound to have a decrease, perhaps next year, and it is to be hoped that those left out in the cold this year will get their fair share during the coming season. The yield in Victoria during the past year has been supplemented by the importations from other States, the market in consequence being over supplied. One good result of this time of plenty is, that the consumption is very largely increased, and it is possible to increase it further. We must not lose sight of the limit, and that limit will soon be reached. We must look for another outlet, for a market outside, because we cannot increase the local consumption very much further. In the interests of producers we have inserted in our programme, "Beekeepers' Licenses and Classification of Crown Lands suitable for beekeeping." In regard to the financial question, it is

always a very important matter for your earnest deliberation, which should be considered without haste and dealt with finally. I hope you will give your opinions clearly to the Executive, so that they will know how to act.

SECRETARY AND TREASURER'S REPORT.

The secretary read the minutes of the last annual meeting.

Mr. Morgan moved and Mr. Crute seconded "That the minutes be confirmed." Carried.

The Secretary, in reading his report, said the Association would have much practical work to do during the coming year, in connection with the industry. The Association had grown apace, and our membership at the present time is 170 members, 140 being financial. Last year we had 99 members, now we had 170 members. I think under the circumstances that is a very satisfactory growth. In May, 1900, we had only 11 members. I am glad to state the Association is stronger and moving forward more rapidly. I might enumerate a few of the items which came along since our last Conference. We have received a small concession from the railway department, as a result of your deputation last year. The license is increased from one to ten acres, and I think we have to thank Mr. Bolton for moving in that matter. The Lands Department has been communicated with in connection with illegal ringbarking on the blue blocks, and as usual they are considering the matter. Enquiries for information on bee sites have been many, and were duly answered. We have approached the prime minister as regards a Federal Department of Agriculture; he is considering it. Although it is twelve months ago, we have not had an answer yet. When it comes it will probably be yes-no.

During the year branches were formed at Stawell, 45 members; Mildura, 14 members; and Wartook, 23 members. I don't think we have been asleep, although we might have done more.

Mr. Davey read a reply from the Railway department in answer to his corres-

pondence re "concessions to beekeepers," in which the department said "that in reference to the reduction of apiarists commodities, no reduction can be made in the rates for bee-hives or honey jars. It has been decided to modify the rates for bee-hives containing bees in small quantities, they will be carried in Class 2 instead of Class 3 as heretofore. The truck rate will remain as at present.

Mr. W. Crute moved that the secretary's report be adopted. Mr. D'Alton seconded. Carried.

BALANCE SHEET, 1904-5.

RECEIPTS.

| | |
|---------------------------------|----------|
| To subscriptions, &c. ... | £38 15 6 |
| „ Advertisement on Circular ... | 4 2 6 |
| „ Deficiency, 1905 ... | 3 7 10 |
| | <hr/> |
| | £46 5 10 |

EXPENDITURE.

| | |
|--|----------|
| By Deficiency, 1904 ... | 13 0 0 |
| „ Rent of room ... | 2 0 0 |
| „ Printing large circulars ... | 4 15 0 |
| „ Advertisements ... | 0 5 6 |
| „ Stationery ... | 2 3 9 |
| „ Secretary's allowance ... | 15 0 0 |
| „ Affiliation fee, Chamber of Agriculture, | 1 0 0 |
| „ Postages ... | 4 2 6 |
| „ Sundries ... | 0 15 3 |
| „ Stawell expenses ... | 1 5 0 |
| „ Mr. Beuhne, travelling expenses | 1 18 10 |
| | <hr/> |
| | £46 5 10 |

Mr. Davey pointed out that a debit balance from last year had been reduced to £3 7s. 10d, and there would be more economy the coming year.

Mr. Bolton moved that "The Treasurer's report be adopted," and remarked there were a number of "go-ahead beekeepers" who were yet untouched by the Association, and who were getting all the benefits and yet not assisting the Association, it would be advisable to try and reach these men; there are several of them in the western district. Mr. Geue seconded. Carried.

CORRESPONDENT'S REPORT.

Mr. Beuhne, in reading his report, requested the members to assist the Executive in its vigilance on behalf of the Asso-

ciation. Every member should report to the officers of the Association anything coming to his knowledge concerning or likely to affect the industry. The analysis of honey commenced by Dr. Howell, late chemist of the Agricultural Department, will be continued by his successor, and a promise is made to furnish us with a report for this meeting. The analysis of pollen is also to hand.

Re delegate to Chamber of Agriculture—He was unable to attend the meeting of the Chamber of Agriculture at Kyneton in order to read his paper on "The preservation of timber on roads and reserves." The matter of a Federal Department of Agriculture, the proposal was postponed to the Annual Meeting to be held at Horsham next week.

RULES.

The Secretary read the rules of the Association.

The President remarked that members of the Association when they received orders which they themselves were unable to fill, they should make it a practice of sending the order along to another member of the Association, in preference to buying up the quantity required to fill the order, from outsiders.

The Secretary moved that rule 5 read:—Members of the committee be decided annually by the Conference. Mr. Stender seconded. Carried.

Rule 15. Moved by the Secretary that Rule 15 read:—"Any beekeeper wishing to become a member of this Association may be accepted by the Secretary." Seconded by Mr. Morgan.—Carried.

Rule 16. Moved by Mr. Bolton that Rule 16 read: "The membership fee shall be: Life members-not commercially engaged in beekeeping -£2-2/-; honorary members 2/6 per ann; ordinary members, 5/- for first 30 colonies of bees. Above that 1d. per colony per annum with a maximum of £1. New members shall be admitted on payment of 2/6 for first year.

Mr Colston seconded.—Carried.

Rule 17. Mr Beuhne moved that rule 17 read as follows: "That every member have one vote except on special occasions

involving the constitution or rules of the Association, when the voting shall be one vote for every 5s paid up." Mr. Bolton seconded. Carried.

Rule 18. Moved by the Secretary that Rule 18 read: "In the establishment of apiaries by members of the Association, etc., it shall be recognised as a general rule that a distance of 3 miles shall be kept from any other member's apiary, except in localities where the beekeepers of any branch agree that 2 miles is sufficient, such branch regulation shall be binding on the Association as regards that particular district." Mr. Howard seconded. Carried.

Rule 19. Moved by the Secretary that Rule 19 read as follows: "That 50 full colonies shall be deemed to constitute an apiary of more than one bee site." Mr. Bolton seconded. Carried.

Rule 23—Moved by Mr. Morgan that Rule 23 read as follows: Branch Associations may be represented by delegates, provided, however, that no delegate shall have more than 10 votes." Mr. Kilner seconded. Carried.

Rule 24.—Moved by Mr. Anderson that Rule 24 read as follows: Treasurers of branches shall forward to the Treasurer of the Central Association all moneys received, but the sum of 25 p.c. may be retained for incidental expenses. Any special expenditure to be approved of by the Executive of the Central Association, and to come out of the General Fund. Mr. Howard seconded. Carried.

Rule 25.—Moved by Mr. Crute that Rule 25 read as follows: Members of Central Association generally, may delegate their votes to other members of the same. Provided notice is received by the Secretary before the meeting or proxy presented by their deputy, no deputy to have more than five votes. Also provided that the name of the deputy or delegates be furnished to the Secretary 14 days prior to the Annual Meeting.

Mr. Beuhne seconded.—Carried.

PAPER BY R. BEUHNE Esq.**THE INFLUENCE OF LARVAL FOOD ON THE PROSPERITY OF THE COLONY.**

At our last Annual Meeting we had a very valuable address from Dr. Cherry on "The Growth of the Grub." Dr. Cherry demonstrated by scientific reasoning that ill nourishment of the larva results in lack of vigor, and impaired vitality in the perfect insect. It is not a question of quantity of food, but one of quality, a deficiency of Nitrogen. As beekeepers we know that a deficiency in quantity of larval food is corrected at once by the worker bees in restricting brood rearing, or should it occur suddenly by throwing out eggs and even larva. We have no proof, however, that bees can discriminate as to the quality of the pollen and even honey, in fact we do know that they sometimes have recourse to substitutes, they occasionally store flour for pollen and fruit juice for honey, both of which decompose in the combs, under certain conditions of atmosphere. Assuming, however, that bees will use these substitutes only under stress of circumstances which would be evident even to the beekeeper and leaving them therefore out of consideration, the report of the analysis of pollen we have received from Dr. Cherry shows that the percentage of Protein, that is Nitrogen, in a digestible form is very variable in different kinds of pollen, ranging from 27% down to 17%. As you all know larva under normal conditions are supplied by the nurse bees with all the food they can absorb and in the case of queen larvæ with a surplus, so that deficiency in quality could not be made good by additional food. Taking the best sample of pollen and the worst, that with 27% of protein and that with only 17% we find the larvæ consuming the latter get more than one third less Protein in the same quantity of food than the former resulting, in feeble resistance to disease germs in the larval stage and weakness, predisposition to disease, susceptibility to cold and premature wearing out of the perfect insect. Having been the first some years

ago who suffered severe losses from the mysterious mortality of bees which has made its appearance in many other localities since, I have naturally taken great interest in the matter all along. The view I first expressed at first that the cause was one of food was much opposed and ridiculed for some time, I have found no reason so far to alter it. When all the facts connected in reference to this trouble were put before Dr. Cherry he came to the conclusion that it was a question of quality of food.

Dr. Cherry's address at our last annual meeting explained the scientific reasons for this conclusion, and gave me fresh stimulus to try and find out how far this is borne out by facts. I made enquiries into all the cases of disease that came to my knowledge, and in every case where the mortality was not actual starvation of the adult bees or virulent paralysis, it appeared to be the result of defective quality of food. As instances Mr. Bennett lost over 70 p.c. of his colonies in one apiary last Spring while in another apiary of his six miles distant they came through in a normal way. Mr. Jackel suffered heavily with bees he shifted to north of Bendigo while those he left behind were alright, I myself lost a few and had all of the colonies very weak in the home apiary. While at the out apiary only six miles away they were strong and there were no losses, although they were the same bees and taken from the same apiary at random. Now in the case of Mr. Bennett's losses and in my home apiary, brood was raised and bees wintered on Flatweed honey and pollen, whereas in Mr. Bennett's apiary and my own out apiary there was no flatweed and no losses. Reference to report of analysis as published in "Bee Bulletin" will show that flatweed contained the smallest percentage of Protein. In Mr. Jackel's case no pollen was sent in by him for analysis, there was a flow of honey from smooth leaved iron bark during June, July, and August. In this case the trouble seems due to honey. In other cases sugar feeding apparently caused the trouble.

I think Mr. Davey first pronounced sugar feeding a failure some years ago. Mr. Wills after experimenting on an extensive scale endorsed that view, so did many others. Mr. Davey even had an idea that feeding sugar syrup produced paralysis; if he means in the way that dry grass produces bush fires I agree with him. Others think that there is some injurious ingredient in sugar. During last season I have experimented with sugar syrup and the two colonies fed turned out to be the worst or rather weakest colonies in Spring. The Chemist for Agriculture informs me, however, that the better samples of commercial sugar are almost pure Hydro-Carbonates, and entirely free from injurious ingredients. Assuming that the absence in sugar of that small percentage of protein which honey contains is accountable for its unsuitability for stimulative feeding, there still remains the fact that under certain conditions as experienced by Mr. Wills and myself feeding honey for brood rearing has proved equally unsatisfactory. We are therefore forced to look for the cause in another direction. When flowers secrete honey there is usually a production of pollen at the same time, with however some exceptions. On the other hand there, sometimes, is a great amount of pollen coming in, but no honey. If such pollen is of the proper composition such as is produced under normal conditions, then stimulative feeding for brood rearing will prove successful and no bad after effect will follow. When however, we practice feeding during a dearth of pollen, the stimulative effect of feeding causes bees to look for substitutes for pollen and to use substitutes and kinds of pollen that are possibly deficient, and which they would not use but for the stimulation of feeding. There are, however other circumstances and cases in which pollen is plentiful but of low grade, this condition appears when the pollen is the product of flowers which have suddenly sprung up after rain in Jan. Feb. March or April succeeding a period of hot dry weather. Under these conditions plants

cannot elaborate the right percentage of protein. You will perhaps wonder where the practical use of all this comes in, in my opinion it comes in in this way.

(1) If you feed for brood rearing when things through dearth are at a standstill you must supply the nitrogen, that is the flesh and tissue forming protein, as well as the honey or sugar syrup, which are the heat producing hydro carbonates.

(2) If you are feeding for stores to prevent starvation feed all you are going to give in as short a time as possible, to give as little stimulation as possible.

(3) When pollen and honey are being gathered suddenly after rain succeeding drought, from some annual plant such as Native Dandelion, shift your bees beyond the reach of it.

On this point our information is as yet very meagre and the result of further analysis which we expect to-day will supplement it.

In conclusion I should like to draw your attention to the necessity of being extremely careful in the matter of samples for analysis. Don't jump to the conclusion that because a certain plant is in bloom and pollen is coming in that it is necessarily from that source. Go and see if any one of the bees on the bloom are gathering pollen and whether the pellets on their legs are the same as your sample.

In this connection I should like to ask is there any yellow box pollen? Has any beekeeper seen bees gather it? I have never been able to and it is a well known fact that in some districts brood rearing comes to a standstill altogether when there is no bloom but yellow box.

I have only superficially touched this subject of the influence of larval food. There is still the possible influence of the greater or lesser inversion of the various honeys, percentage of water and protein in honey to be considered and the report of analysis of honey also promised for to-day may open a new line of experiment, but I think I have said enough to show you the importance of investigations and experiment and the necessity for your co-

operation. Dr. Cherry tells me and will probably tell you to-day that analysis will demonstrate the composition of a compound, but, its effect upon the animal system or insect life must be found out by yourselves.

EXPORT OF HONEY

Mr. W. L. Davey said as regards the Export Trade, from the outlook at present he did not think that it was going to be a success, others might think so. If you want to export honey from Victoria, I say first of all we want £500 or £1,000 in order to have a fair prospect of success. I think the time is not yet ripe for this question until we have all the beekeepers of Victoria to assist the Association, then we will make a success of it. We are organising towards that end, that is to work the local market properly and the export to other countries.

Mr. Tipper (N.S.W.) considered it the duty of the Agent General to look after the honey as well as any other product; it is his duty to do so. Canada sends home her produce to the great shows of Great Britain and Scotland, and sends an expert to bring them before the public.

Mr. Sumsion thought the whole life and soul of the beekeeping industry lies in the proper marketing of their produce. I suggest that the Association favour the formation of a league or company similar to that of the butter industry, and try to get the honey sent direct to the retailers and consumers instead of to the Agents.

Mr. Beuhne said that looking at returns the export of honey seemed to have declined, but that does not affect the position at all. The conditions under which the honey was sent was the cause of the failure. He was in favour of selling through the Commission Agents. There would be more sold by having the several agents having part of it than in sending it all to one place. We must have a capital of £5000 to open up an export trade to England, and also a uniform sample of honey. There is nothing that kills a trade so quickly as variation in quality. I am of opinion that we should agitate until we get a Federal Department of

Agriculture; I don't think we will do any good before that is accomplished.

Mr. Morgan suggested a Federal Conference to discuss the subject, as the Victorian Association is not strong enough to work up a big export trade. If New South Wales and Queensland joined with us we might then be able to do something in the matter.

Mr. Pender said that the reason that the yellow box honey was not liked in England was because of its "glucose consistency."

Mr. Bolton pointed out that a good deal might be done by Mr. Taverner in England for the preparation of a future export trade by presenting them properly at the shows in England. He knew of a man who got 9d to 9½d lb. for a small consignment. He thought the time had come when we should try and adopt a uniform standard of honey by blending.

Mr. Beuhne moved "That the export of honey be referred to the Executive in conjunction with the New South Wales, Queensland, and Western Australian Associations." Mr. Kilner seconded. Carried.

The Secretary read a letter from Mr. H. L. Jones, Goodna, regretting that he was unable to be present. He said there were several subjects on the programme he would like to hear discussed, particularly "exportation of honey." He considered efforts should be made to induce all State Associations to take the matter up and move in unison. The Queensland B. K. A. is taking a timely interest in this question. Another problem that demands attention is the development of our home markets.

REVIEWING BEEKEEPER'S LICENSES.

Mr. W. L. Davey said that it rests with the members of the Association whether they are satisfied with the licenses as at present. The Government have allowed others to take up licenses alongside member's sites. This is not fair, we want some protection in this direction from the Government.

Mr. W. Crute suggested that the Government be asked to pass a law not to have licenses issued nearer than 2 or 3 miles apart. His branch was in favour of 3 miles apart.

Mr. A. Anderson moved "That $\frac{1}{4}$ per acre for a radius of one mile on each side of the apiary, and $\frac{2}{6}$ for license be offered to the Government." Mr. Howard seconded. Carried.

CLASSIFICATION BY LANDS DEPARTMENT OF LANDS SUITABLE FOR BEEKEEPING.

Mr. Sumsion said that the timber on Crown Lands should be classified according to its value for honey production, and such information given to honey producers.

Mr. Russell said the Association would give the Government any information as to classification of trees.

Arrangements were made for a deputation to the Minister of Agriculture on the following day.

ADDRESS BY MR TATHAM.

Mr. Tatham, in giving his address on "Forests and their Uses," said his subject was a very big one. It was necessary for the Forest Officer to be thoroughly trained; he must be able to extract the utility, and work the forest. He must know what every tree is made of, and what diseases it may be attacked by, and also the harmful insects; he must also study silkworms and bees, and pass severe examinations. Forests, as you know, do not grow in dry, arid places, forests prefer a cool, moist soil, because a tree absorbs a lot of moisture, and must have it before it can make use of what it obtains from the atmosphere. A tree gets more from the atmosphere than from the earth. As far as the beekeeper is concerned high forests are practically useless, because you cannot get the amount of blossom from them. There are the mixed forests and the pure forests; a pure forest is where the trees are all of the same species—redgum and ironbark, these are pure forests. I think the mixed forest is best for all round work. From experiments he had found that it was possible to get

bark of wattle trees without killing them, he did it by shaving half the bark of the trees; the tree would not die, but the bark would grow on the tree again and the same process could be gone on with. Further experiments would be gone on with in this direction. The Lecturer gave some of his experience in India where the forests are preserved on account of their influence upon the rainfall.

Many questions were asked and answers given, after which a hearty vote of thanks was passed to the lecturer.

HONEY FLOWS.: BY MR. W. L. DAVEY.

Mr Davey who was unable to prepare his paper as intended gave a short address. He said it was a subject that was very interesting at certain times of the year, it might not be now as it would be in December of a good year. What induced him to take the subject up was that Mr. Beuhne mentioned to him the word electricity as connected with honey flows. He was unable to look the matter up as intended, but trusted to do so during the coming year. Mr. Davey referred to the difference of Yellow Box in his district and the same timber in the Stawell district. In his district on examining the blossom the honey could be seen and the nectar also, but only for the first two days of its bloom. Mr. Tatham's address led him to believe that there is over moisture in his country, there is something in the soil, it is too rich, and the rank growth instead of producing nectar, all the strength goes in blossom and further growth. Mr. Tatham promised to go into the matter and let the association know the results. Mr. Beuhne said that the electrical influence on honey flow was a new theory. As to the production of nectar, it may be summed up that the nectar is the excess starch turned into sugar. Mr. Tatham told us, the tree absorbs carbonic acid gas, from the oxygen which returns to the atmosphere, and the carbon goes to the formation of the tree. The nectar is only present when there is an excess of starch, which under favorable conditions of atmosphere is turned into nectar, if

there is no surplus of this particular element there can be no nectar. He considered there was a good deal in what Mr. Davey had said, the throwing out of fresh growth will take up the surplus which would be available for the formation of nectar in certain localities.

He considered there was an interchange of positive and negative electricity between the earth and the atmosphere, and is greater or lesser in different localities according to the geological formation of the country, and according to the amount of moisture in the ground, moisture is a good conductor of electricity. Under these conditions of soil electricity brings about a delicate chemical change in the

elements of plant life. Mr. Sumsion was of opinion that stunted timber was better for honey production than that which had a rank heavy growth.

ADDRESS BY DR. CHERRY

Dr. Cherry, in giving his address, said that he wished to address them on two points: 1st, to recapitulate and to some extent to illustrate what he was speaking about last year; the relationship of the food of the grub to the activity of the adult insect"; and secondly "a few points in connection with diseases of insects," and in making it resistant to disease."

He would, however, refer them first to the analysis of honey.

Department of Agriculture, Melbourne, 27th June, 1905.

For the Victorian Apiarists' Association, per Mr. Beuhne.

| Sample No. | Producer. | Variety | Polarization | | Moisture | Ash. | Acidity as Formic Acid | Condition |
|------------|-----------------------------|-----------------|------------------|-----------------|----------|------|------------------------|------------------------------|
| | | | Before Inversion | After Inversion | | | | |
| 14422 | Beuhne } Tooborac } | Bastard Box | 21 30 | 22.80 | 23.50 | .30 | .092 | Clear brown |
| 14428 | " | Yellow Box | 24.30 | 27.00 | 17.45 | .17 | .037 | very brown comb |
| 14429 | " | " | 24.20 | 28.50 | 17.00 | .15 | .037 | |
| 14430 | " | Red & Grey Box | 24.70 | 28.40 | 17.51 | .15 | .037 | Semi "Solid |
| 13124 | H. Beuhne } Tooborac } | Grey Box | 31.80 | 34 00 | 20.50 | .20 | .023 | |
| 13125 | " | " | 24.75 | 27.50 | 23.15 | .25 | .032 | Solid |
| 13237 | " | Flatweed | 18.80 | 23.50 | 19.05 | .32 | .046 | brown solid |
| 13787 | Bolton } Hamilton } | Red Gum | 12.80 | 22.00 | 14.85 | .22 | .032 | dull, partially crystallised |
| 13977 | Howard } Glenorchy } | Heath | 22.50 | 26.50 | 18.00 | .25 | .055 | clear liquid |
| 13978 | " | Red Gum | 19.70 | 24.80 | 15.60 | .15 | .027 | semi "solid |
| 13979 | Morgan } Grampian } | Mountain Scrub | 24.00 | 27.40 | 21.97 | .25 | .046 | |
| 13980 | " | Yellow Box | 22.00 | 26.00 | 16.35 | .17 | .023 | clear pale white solid |
| 14127 | P. Smith } Sandon } | Spotted Thistle | 19.50 | 24.00 | 16.41 | .17 | .092 | |
| 14128 | " | Red Box | 28.00 | 29.00 | 16.00 | .08 | .055 | clear, "semi-solid |
| 14131 | W. Davey } Eltham } | Red Gum | 13.30 | 17.70 | 15.45 | .23 | .023 | |
| 14279 | E Garrett } Briagolong } | Red Box | 24.70 | 26.40 | 17.07 | .25 | .037 | clear solid |
| 14278 | " | Wild Hop | 22.75 | 25.60 | 16.87 | .12 | .032 | white solid crystal |
| 14280 | Penglase } Marrung } | Stringy Bark | 26.00 | 27.50 | 18.70 | .22 | .027 | |
| 14420 | Jackel } Taradale } | Red Box | 26.00 | 28.00 | 17.45 | .10 | .035 | dark liquid |
| 14421 | " | Iron Bark | 23.20 | 24.40 | 20.21 | .20 | .055 | semi-solid |

A comparison of the foregoing analysis results obtained from the examination of samples guaranteed to be pure honey, furnishes a guide as to what polariscope readings will indicate a condition of purity.

The readings in the case of these samples, were, with one exception, high. Sample No. 4 might be questioned as it shows about 7 per cent of cane sugar. Authorities, however, differ as to the possible contents of this ingredient in a sample of undoubted purity.

In appearance and condition the samples differed considerably, some being crystalline, some liquid (No. 18 exceptionally so), and others varying between the two. The variation in colour was particularly marked.

Regarding the growth of the grub, you remember that last year I pointed out that, so far as we know the whole of the provision for the building up of the active tissue of the insect is made while the insect is in the condition of the grub. It is while the grub is actively growing that it has to lay up a sufficient amount of the active flesh forming material to enable it to carry on the whole of the operations during the active portions of its life. Insects of the crustaceous life differed from other animals in having their shell on the outside instead of on the inside. In addition to that we find that the material that these insects live on during the early period very frequently differs in character from that which the adult insect lives on. You all know that in the case of all animals food stuffs are in two classes—the flesh former (proteid albumen) and other substances for the active working tissues. Then a large number of our foods consist of substances which do not go to build up the working tissues, which may be contrasted to fire-wood to a steam-engine. That is the way with all animals; they should have two classes of food, one for the working tissues and the other simply to act as material which furnishes the energy for those active working tissues, so that we

divide the food into two classes—"Flesh formers," and "Heat producers." We find that the struggle for life is the struggle for nitrogen, it is the most difficult to obtain. Animals have to get (directly or indirectly) their proteid from the elements of the earth. The food of the grub must contain proteid and nitrogen. An insect soon uses up all his available material if there is no provision made for the supply of new material, and his life is a short one. Dr. Cherry gave several instances of the other smaller insects' life in connection with the nitrogen for food.

Last season there were six samples of pollen from different trees, and in this case we carefully tried all the pollen; from these analysis we find out that the smallest amount of nitrogen is 2.9 per cent., and to get the amount of albumen and proteid, you have to multiply by $6\frac{1}{4}$, in order to turn them into "flesh formers" you simply multiply them by $6\frac{1}{4}$. One contains 2.90 per cent. of nitrogen, while another contained 4 per cent., so that there is nearly a difference of 40 per cent. in the two lots of pollen. Yellow Box contained 3.70 per cent., one lot of Bastard box 3.80 per cent, one per cent. more than the first; the next is Bastard box (April '05) it contained 3.49 per cent., the next is Messmate, that contains 3.55 per cent.

ANALYSIS OF POLLEN.

The following is the result of analysis.—

| Sample No. | | Nitro. in Water Free Po ^l . |
|------------|--|--|
| 14423 | Yellow Box, col. from Taradale Jan., 1905 | 3.70 p.c. |
| 14424 | Bastard Box, col. from Heathcote March, 1905 | 3.80 p.c. |
| 14425 | Bastard Box, col. from Tooborac April, 1905 | 3.49 p.c. |
| 14426 | [1] Messmate or Swamp Gum | 3.55 p.c. |
| 14427 | [2] Yellow Box | 2.90 p.c. |
| 14475 | Unnamed | 4.00 p.c. |

Taking the eucalyptus, we have a variation from 2.90 to 3.80, one yellow box and the other bastard gum. There is a difference of 30 per cent. in the amount of nitrogen which the forest eucalyptus con-

tains, from the largest to the smallest. Some of the food is very rich, and some more is very poor. A difference of 18 and 25 per cent. would have a marked difference in the results as far as building up the tissues is concerned. The two samples of bastard gum coming from slightly different localities, one contained in March 3. 80 per cent., and the other in April 3. 50 per cent., are fairly close together. I would like the association to give us some more samples, some of the eucalyptus and wattles and other plants, to see the difference from pollen obtained. A man going in for bees had, to some extent, a difficulty in rearing his bees. 5 per cent. of the white of an egg added to the sugar and other food was said to be beneficial in helping to supply the necessary amount of proteid; of course it does not do to make their food too albuminous. In regard to the albuminous food the suggestion of giving milk to drink instead of water was one of these, although the white of an egg seemed to be the most rational method.

The next point I would like to draw your attention to is the important relationship there is between the vigour of the grown up insect and its liability to disease. You know the chief disease that bees are subject to is the different forms of foul brood, which are most destructive. Some 20 years ago, when it was discovered by Cheshire, that it was owing to a micro-organism, which was the sole cause of the disease. Since that time a long extended series of observations have been made in connection with the cause and conditions under which the disease flourishes. Experimental work made it perfectly clear that in addition to the micro-organism the condition of the animal is of equal importance. They vary very much in their virulence from time to time.

Coming to the disease "*Bacillus alvei*" which produces foul brood, it was an organism on the surface of the earth, a few grains of the soil would enable you to obtain a micro-organism which resemble those which come from the bees. Still

foul brood depended upon the undermined condition of the hive. It was precisely similar to some of the most fatal diseases of 100 years ago. They have completely disappeared, because it was found that those people affected were in conditions which undermined their constitution. And while I do not say you will be able to eradicate the disease by feeding, attention to the general constitution and the vigour of the bee is of much more importance than seeking the cause. In regard to the one special case, foul brood, if we can build up their constitutional vigour we render them immune from the attacks of the disease.

Mr. Russell.—In the event of a hive being diseased, would the feeding of albumen to some extent eliminate the disease from that hive?

Dr. Cherry.—Of course in that case you are asking me to give you expert advice, and I came to give an address. I know very little about bees, what I thought was to give you an outline of the problem of insect physiology from the point of view of the physiology of the higher animals. As to whether it would make a clean sweep of it, I could not say definitely that it would. If it is a mild outbreak, then probably by building up the constitution of the bees you will be able to resist it.

Mr. W. L. Davey.—If we have a case of foul brood the spores may live in the hive for a number of years and cause an outbreak at any time.

Dr. Cherry.—It might in years if the constitution is run down, if the bees are not vigorous enough to resist it. Once a hive is affected the spores may remain invisible for a long period of time.

Mr. Russell.—What is the best remedy for the destruction of spores?

Dr. Cherry.—In the case of boxes and frames the best thing is to get the copper full of boiling water with a mixture of washing soda, the same strength as for washing clothes and immerse the boxes and frame for a moment or two. This is far better than using boiling water only.

Mr. Sumsion.—What is used to prevent honey from candying? and what is the best way to keep honey candied?

Dr. Cherry.—I would suggest that you supply the department with a fair amount of samples of honey in both conditions, and we will carry out experiments to see and throw some light upon the subject.

Mr. Russell.—What is the cheapest nitrogen? Dr. Cherry.—Peas and Beans. Plucks and livers boiled I think would be the cheapest. I think eggs would be the best for albumen, they are perfectly soluble in water.

Mr. Pender.—Does albumen deteriorate in mixing?

Dr. Cherry: Not unless it decomposes. If it is not mixed it will putrefy in 24 hours. Mixing it with honey or sugar will prevent it from decomposing.

Mr. Beuhne moved a vote of thanks to Dr. Cherry which was carried by acclamation.

Dr. Cherry in reply said it was a great pleasure for him to be present, and hoped his address would give the members of the association some light in connection with their work.—(Applause.)

In connection with the samples to be sent for testing, he would suggest that a committee be appointed of say six; one for the North East, Central, North West, South West, South East and South. You would then have practically the whole of Victoria divided into six regions, and if you throw the responsibility upon one individual in each section you are more likely to get a reliable sample that we can rely upon, than to trust upon every one to send samples. Samples should be taken from Wattles and garden flowers. You will find that the wattle pollen will be the richest as far as nitrogen is concerned. The amount we would require is a pellet about the size of a pea.

Mr. Duffus (Secretary for Agriculture) who accompanied Dr. Cherry, said as far as the department is concerned it will always be ready to give them any assistance and to any industry.—(hear hear.)

The bee-keeping industry has been carried on under difficulties. Some few years the department did take a hand in trying for an export market, but the prejudice was to great against colonial honey that much progress was not made in the finding of a market. (Applause)

HINIS ON INTRODUCING QUEENS.

BY R. BEUHNE, ESQ.,

Mr. Beuhne said his intention was not to discourse in a system of introducing queens, but to put before them the principle of introducing queens, and they are very simple. If you understand all the surrounding circumstances, but there are difficulties which you must not overlook, the circumstances differ in different times of the year and with different bees. It is beyond doubt in that bees recognise one another by sense, such is possible. Some beekeepers may doubt that in an apiary of say 500 hives, but there is no doubt about it. Under certain favorable conditions you can introduce queens any way, in fact throw them in, there is no a system which will not fail sometimes. Let the queen be of the same "scent" as the hive you are introducing her to and there will be no difficulty, provided of course the old queen is removed. You need not remove the old queen until a short time before you let loose the new queen. The simplest way to transfer a given scent of a hive is to get her in an introducing cage, and the cage must be so constructed that the bees will have access to her but she cannot get out. It must be hung in centre of the scent, i. e. the brood Chamber. You can let your old queen run about (it is quite safe) till a day before you release the new one. The scent is acquired in about three days.

WAYS AND MEANS.

Mr. Beuhne in referring to the financial aspect of the association, said that the showing of a credit balance was not the aims of the association. Shortness of funds was a great drawback to the association. People come to

us for information, and even school teachers, and it ought to be the duty of the State to supply such information and not the members of the association at their own expense. The Government have experts in every other branch, but we have no such expert. He thought it was only fair that the Beekeepers Association should receive a subsidy the same as the Silk Industry Association, which was paid £50 one year and it was then increased to £100. It did very little good for the money and I think we can show a much better record.

Mr. McFarlane moved—"That the Government be asked for an annual subsidy to the Association. Mr. J. R. D'Alton seconded. Carried.

ELECTION OF OFFICERS.

President—Mr. Russell moved that Mr. Beuhne be re-elected President. Carried.

Vice-Presidents (2)—Messrs. Cox and Jackel were elected.

Secretary and Treasurer—Mr. Morgan moved that Mr. Davey be re-elected with the same allowance (£15). Carried.

Hon. Correspondent—Mr. Crute moved that Mr. Beuhne be re-elected hon. correspondent. Carried.

Executive Council—Messrs. F. Barnes, L. Wills, G. McFarlane, V. R. Davey, —Edgerton, were elected.

Official Organ—Mr. Pender moved that the A. B. Bulletin be the Official Organ. Mr. Morgan in supporting the motion said that the journal had a practical man behind it, and it would be doing Mr. Tipper an injustice to appoint any other journal. Carried.

Mr. Tipper said that the A. B. B. had a circulation in all the colonies and in New Zealand. He suggested both papers be supplied with information from the Association from time to time, which was agreed to.

BEEKEEPERS AND A FEDERAL DEPARTMENT OF AGRICULTURE.

Mr. Beuhne said that Mr. McLean, M.P., was in favour of a Federal Department of Agriculture.

Mr. Bolton considered that there was a great many things in connection with

agriculture which could be better dealt with by the Federal than by the State departments. The Federal Government could procure the services of a better officer because it would only require one instead of one for each state, and could also offer a much better salary for a first class man. The Federal Government could afford to have the best man procurable.

Mr. W. Crute moved—"That delegates of the Association to the Chamber of Agriculture be instructed to advocate the establishment of a Federal Department of Agriculture. Mr. Anderson seconded. Carried.

DEPUTATION TO THE MINISTER OF LANDS.

A well attended deputation waited upon Mr. Murray, Minister for Lands, on Thursday afternoon. Mr. Beuhne said that the deputation wished to bring several matters before the Minister, and also to protest against ringbarking on the Blue-Blocks. Second for a classification of the remaining Crown Lands with a view to supplying intending settlers with information as to the localities most suited to the industry.

Mr. Bolton in referring to the ringbarking in the districts best adapted to bee farming and the most of which was too poor for any other industry. The grazing capacity of this land would not exceed one sheep to four acres, it is, therefore, very easy to arrive at its value as an asset to the country. At present there is a great value in honey, and if you allow the country to be ringbarked you will injure that industry. Some say that they only want to weed out the useless timber, but that would be risky unless there was some supervision by an officer of the department.

Mr. Beuhne in referring to the second request, The classifications of Crown Lands, according to their value to the beekeeping industry. The more that come into the industry the better for those connected with it, because there is a glut in the local market and we want to increase the production so that we can get an outlet by exporting.

Mr. W. L. Davey, said that there was

a lot of bee country in the State which was well worth fostering. The beekeepers have been willing to pay for anything that the department sees its way to grant, we are willing to negotiate for what is a fair thing for the protection of the industry. We have come in the past unprepared, but now as beekeepers we don't want to go into the forests without paying you for it. As regards the ten acres, it was really more than we asked for, all we wanted was 3 acres.

Mr. Murray—It is optional whether you get one or ten acres.

Mr. Davey, we want a radius fixed so that there will not be any clashing of licenses. We will pay so much per acre if you will fix the radius, as a limit for bee license.

Mr. Beuhne said that the royal question had been discussed and the association was prepared to offer $\frac{1}{4}$ d per acre for a radius of 2 miles, and our rule is "That 40 colonies constitutes an effective occupation of a bee license.

Mr. Murray, I am in favour of one man having one apiary in order to give others a show. The usual price in England for honey was 1s lb. If the honey would suit the English market and it would not vary, the beekeepers would be on the way to make a fortune.

Mr. Davey, we only get one good season out of two, and seeing that we would have to pay $\frac{1}{4}$ d per acre in the off year, it would amount to $\frac{3}{4}$ d per acre for one good crop, for which we could only clear 2d not 1s per lb.

Mr. Russell, we ask for the licenses not to be issued nearer than 2 miles in some districts and 3 miles in other districts.

Mr. Murray, we have to consider the owners in occupation; there is a great deal of the land under grazing lease which carries with it certain rights which cannot be disregarded. I have been told that the thinning of the timber and letting in of the air and light through the forest would increase the blossom; there must be a good selection of the trees. I think that some further legislation would be re-

quired in connection with the matter. There are grazing area leases on the Blue-Blocks which gives them a right to selection and after selection they can do as they like. Give in written form as to the legislation what you require, from your point of view, and supply us with statistics and we will consider the business.

Mr. Beuhne thanked the Minister and the deputation withdrew.

BUSH FIRES.

Mr. Beuhne considered that the Association should take the matter up as the beekeepers stand the risk of losing his apiary as well as having his crop destroyed. He was of opinion that the law as it stands at present is not sufficient, and besides the law is not carried out as fully as it should be. There has been no fresh legislation since 1892.

Mr. Jackell said the Insurance companies would now insure bees and all classes of beekeepers property.

Mr. Sumption moved—"That the subject be referred to the executive to act in conjunction with the Chamber of Agriculture in regard to bush fires." Mr. Morgan seconded. Carried.

REGULATING THE PRICE OF HONEY.

On Thursday night there was some discussion on the regulating of the price of honey, in which several members took part. Mr. W. Davey did not think that the association would be able to do very much until all the beekeepers joined the association and then the subject would be able to be dealt with more fully than can be done at present. As the conference was closing he hoped the beekeepers would not forget that there was a good deal for them to do in canvassing those beekeepers in their districts and getting them to join the Association. We will then be stronger and more representative, and at the next conference we will be much ahead of what we are to-night.

The Secretary then read a paper by Mr. Ager which was discussed and a vote of thanks was tendered to Mr. Ager for his instructive paper.

Mr. Bolton moved a vote of thanks to the Chairman (Mr. Beuhne). Mr. A. Crute seconded. Carried with applause.

Mr. Beuhne then asked for a vote of thanks to the Secretary which was heartily given.

Some discussion took place on minor subjects and the Conference was then brought to a close, the only item left being the deputation to the Minister of Agriculture on the following day.

DEPUTATION TO THE MINISTER OF
AGRICULTURE

On Friday morning a deputation waited upon the Minister of Agriculture and asked for some concessions in the way of assistance in opening up an export trade with England and other countries. Mr. Beuhne referred to the disadvantage in Victoria in comparison to the other States of New South Wales and Queensland, where the climate is more suitable. In the other countries and in the United States they have a special export and experimental apiaries. Yet we are ahead of other countries in the average production per colony, and yet there is much more done for the beekeeper in these countries than there is here. It is an industry which is particularly suitable for people who are not able to do hard work.

Mr. Sumsion said that the honey industry is now what the butter industry was before the export trade was worked up. The English market was not properly manipulated, it has been found that the honey at home is no better than the Australian honey. The export of honey is the very life of the beekeeper.

Mr. Swinburne, you have opened up a

lot of questions which are above me to answer straight away. It would be better to appoint a Committee to talk the matter over. The point was, could we supply the honey that would suit the palate of the English consumer. There was an agent of one of the co-operative societies from England in Australia a few months ago. Mr. Swinburne thought it would be an easy matter to appoint one of them to take the matter up and interest themselves in Australian honey.

Mr. Sumsion offered to supply the Government with $\frac{1}{2}$ cwt of honey made up in jars for advertising purposes.

Mr. Bolton asked the Minister if the association sent a man home could the Association expect any assistance?

Mr. Swinburne, I think something could be done in that way; the association then takes some part of the responsibility. If we as a Government advertise it and it fails because you have not sufficient supplies, the Government is blamed. If you know your business I see no reason why the Government should not assist you. If you do your fair share I shall advocate it with pleasure.

Mr. Beuhne—As far as Europe is concerned it is hopeless to try to export there. There is a 25 per cent. duty, but there are many other places, as for instance, South Africa, India, China, and Japan.

Mr. Swinburne said there was an agent going to Japan shortly. He would consider the matter as he now understood a good deal more about it than he had known before. If you can let us know how we can do this I will do what I can for you.

STANDARD WORKS. STANDARD QUEENS.

Root's "A.B.C. of Bee Culture," latest edition (1905) just arrived, 5s 4d; "Langstroth Revised," 5s 9d; "A Modern Bee Farm," 5s; "Cook's Manual," 5s 9d; "Scientific Queen Rearing," 4s 10d; "The Honey Bee," by Cowan, 3s 10d; "Quinby's New Bee Keeping," 5s 5d; "Rational Bee Keeping," by Dzierzon, 4s; "Advanced Bee Culture," 2s 6d; "40 years Among the Bees," 4s 11d; "Bees and Honey," 4s 11d; "How to Keep Bees," by A. B. Comstock, 5s 6d. All books post free at above prices. Aus. agent for "Gleanings in Bee Culture," the finest bee journal in existence. Twice a month and only 5s 6d per annum, post free. Sample copy 2d.

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Edited by a Practical Apiarist,

E. TIPPER,
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Honey Guides, Bee Eaters, etc.

(Continued from last issue).

I have not heard of any bird with a similar peculiarity of habit being found in any other part of the world than Central Africa. In other countries the bee hunter is generally left to his own resources for finding out the hives of the wild bees, to which end he is said to adopt the expedient of trapping bees, liberating them in different places, and watching their lines of homeward flight, converging towards the position of their hive. Even in semi-tropical Africa, as mentioned in the last paper of "Occasional Notes," the honey-guide appears to be wanting, and the natives in the Kalahari desert practise a peculiar plan of their own in tracking out the bees' nest. The "Bee-Eater" seems to be a much more widely spread species of bird. In Europe some of the small birds, chaffinches, tits, etc., are said to do some damage by watching about the hives and picking up stray bees as they find an opportunity. I have never detected any such freebooters here in New Zealand, though there are abundance of sparrows, yellowhammers, fantailed fly-catchers, and sometimes kingfishers in the garden and orchard surrounding the apiary. However, the bee-eaters, properly so-called, all belong to some species of the genus *Merops*. The species best known in Europe is *Merops apiaster*; but there are, it appears, many other sorts in the tropical regions of Africa and Asia, and I believe, also in Australia. Livingstone mentions them in the account of his first expedition, as found on the banks of the Zambesi, near Naliele:

"These banks harbour a pretty species of bee-eater (*Merops apiaster* and *M. bullockoides* of Smith) of gregarious habits; the face of the sandbank is perforated with hundreds of holes leading to their nests, each of which is about a foot apart from the other. As we passed they poured out of their hiding places, and floated overhead."

Again, on his return journey, when at the water-shed between the Congo and

Zambesi rivers, near Lake Dilolo, he met with "fiery-red bee-eaters in flocks"; and on his second expedition, when in the Makololo country, he tells us:---

"In some places the steep banks were dotted with the holes which lead into the nests of bee-eaters. These birds came out in hundreds as we passed. When the red-breasted species settle on the trees, they give them the appearance of being covered with red foliage."

Du Chaillu found more than one species on the west coast, along the seashore near the river Fernand Vas. He mentions them as follows:

"This is the bee-eater, of which I discovered two new species. A common one is the the *Meropicus bicolor*, a splendid little fellow, whose head, of a gorgeous roseate hue, looks as he flies about like a lump of fire. The bee-eaters feed on bees and flies, and are remarkable for the nests they build. These are holes in the ground, always on the edge of some bank or declivity, and from three to four feet deep. Great numbers of these nests are found in every hillside, and in these they sleep at night.

Wallace, in his "Malay Archipelago," describes three different species found in that region. First, "the rose crested bee-eater (*Nyctiornis amieta*)" as found in Malacca, Sumatra and Borneo, but entirely absent in Java. Next at the Island of Lombok:—

"Here, also I first met with the pretty Australian bee-eater (*Meropo ornatis*). This elegant little bird sits in twigs in open places, gazing eagerly around, and darting off at intervals to seize some insect which it sees flying near returning afterwards to the same twig to swallow it. Its long, sharp, curved, bill, the two long narrow feathers in its tail, its beautiful green plumage, varied with rich brown and black and vivid blue on the throat, render it one of the most graceful and interesting objects a naturalist can see for the first time."

And again at the Island of Celebes:--

"In the next family, the bee-eaters, is another equally isolated bird (*Meropogon*

forsteni), which combines the characters of African and Indian bee-eaters, and whose only near ally (*Meropogon breweri*) was discovered by M. Du Chaillu in West Africa."—*New Zealand Farmer*.

✻CORRESPONDENCE.✻

J. R., Mentone, Victoria.—Please inform me what ply of ruberoid you use in your hives. Do you put it under the cover, and state if the mat is flush with the inside or outside measurements of hive. Do you use any cover above the hive cover as well?

[About the thickness of eight post cards. Under the cover, easy, so as to let moisture escape around it. Nothing over the hive cover.]

J. W. G., Wavertree, Gramzow, Logan River, Q. I regret to have to request you to stop the A.B.B., as I really cannot afford to continue it, as I do very little with bees, in fact I don't believe I have opened a hive these two years, too disgusted with the price and no demand. However, wishing you every success with your paper, which I have taken, in fact now have every copy issued.

W. J. B., Tyndale, Clarence River.—The past season was a very good one throughout this district for bees to gather plenty of nectar, but I am sorry to say the price of honey is far too low. I have to depend principally on the Sydney market to get rid of my honey, as there is a very poor demand for honey around here. Nearly everybody has a few hives for their own use, and of course this makes the man with his tons of honey look a bit foolish. I have consignments of honey over eight months on the Sydney market without being sold. I am inclined to think that there are far too many producers for the consumers in this State. It is a great pity that a sound export trade couldn't be worked up for our honey. I am afraid the home markets have not been properly tested yet.

E. J. C., Tarrawingee, Victoria.—The past season in this part of Victoria was a poor one. How do you manage with an out-apiary if you desire no swarming? I have practised cutting out the queen-cells with good results, but it's a tedious game. At home our bees had plenty of room. I did not cut out the cells, gave them all three story boxes, and had plenty of swarms. As a rule only about 12 per cent swarm with me. Last season every box I had at home swarmed, despite every method I tried, except cutting out queen cells.

[The only means I know of to prevent swarming at out-apiaries, is plenty of room, clipping queen's wings, cutting out queen cells, keeping no black or Carniolan bees, breeding from those that don't swarm.]

J. F., Black Range, June 9th, 1905.—Please send me no more Bulletins. This is no spot where I am living for a Bee-keeper. The timber is being cut down for firewood by woodcutters before the saplings become flower bearing. There is no other flora but the eucalyptus for the bees about here. I shall be going out of the business as soon as I get a chance.

Novice, Victoria.—I have had a good season, sold all my honey at 16/- per kerosene tin. When I had sold the last tin honey from the Grampians was hawked round at 9s. per tin, and they might just as easily had 15/-. Honey was never sold under that before, and people expected to give that much at least with fruit failing and a rise in sugar. Could you give in your next issue an article on introducing queens. I think I will get a decent queen or two, I have never introduced a queen. I have never had any kind of disease in 10 years that I have had bees. I have everything up to date but breeding. Suppose next year I will have to meet the times in price if I want to sell my honey. Although I keep bees for amusement, that is the reason I never have cut prices, because others have to live by honey.

[The simplest and perhaps the best way of raising queens for home use is to select a strong hive, blacks if possible, and unqueen. In about

4 or 5 days time cut out all queen-cells that may be formed, and remove all eggs and unsealed larvæ. Go to your best honey gatherer, and take a frame containing larvæ just developed from eggs, and put in the queenless hive. In eight or nine days cut out queen cells (do it very carefully, put them in West's cell-protectors for small cages, so they cannot be destroyed by bees, and put in other queenless hives; liberate when the young queens emerge. There are more elaborate ways for those who produce large quantities of queens for sale. It is best done during a honey flow, or when there is plenty of food in the hive.]

C. E. H., Emu Bay, Tasmania, 22nd June, 1905.—I find the mainland people can sell honey in this State at such a low figure that bees are really not worth keeping, and I have decided to get rid of my apiary as soon as possible.

WANTED, SIMILAR EXPERIENCE.

W. T. P., Glenorchy, Victoria.—We have had a good year in this part, we have the honey but very little sale for it. Now, Mr. Editor, I beg to ask you through your valuable paper if you or any of the beekeepers know anything of the following. Last January I felt very unwell, but not bad enough to lie up, in about a week my face and hands commenced to itch for one night, and very much inflamed, then die away and the skin peeled off. I then got all right until I start extracting again. Altogether from January to April the skin came off seven times. Now sir, the strange part of it is that it only effects my face and hands, the parts that are exposed. I have been keeping bees for 15 years and have had no trouble before.

[We have known a person have breaking out or a rash on hand and face after one or two stings, but cannot give similar experiences as above. Will some of our readers give some information on this point. Don't you wear a veil?]

J. W. R., Freemantle, W.A., 1st June, 1905.—I look forward to your journal every month as it contains so much of interest to bee-keepers. I think bee-keepers here have had a better season just passed than we have had for some time, but the trouble here as it is in the Eastern States is to dispose of the honey. People do not seem to take the honey too well, I think they want "educating" up to the various uses it can be put to,

besides being so much more nutritious than syrups and molasses. I intend to get three or four young queens from some one breeder in the East for next season. When would be the best time to have them sent over here for starting to business? I suppose queens are sent away over sea safely and with not much risk. Hoping you are in best of health, and wishing you and your journal ever success.

[In the early spring.]

D. H. S., Ridgeland, Miss., U.S.A. May 15, 1905.—I have been receiving, the A.B.B. for two years and have never paid you a cent, and I think it about time we had a settlement, or you will be sending "The Flying Squadron" over here—and there will be an international controversy that will get our names in the paper; and that would never do, as I do not want to disturb the present friendly relations that exists between us. When I wrote to you two years ago, I was a beekeeper, but I quitted the business soon after, for I could not make bees pay in this section of our country. Sometimes they will make quite a lot of nice honey, but the seasons are so variable that it is hard to depend upon it. Fruit bloom yields quite a good deal if we do not have too much wet weather. And one great drawback to this place for honey is that it is either too wet or too dry. During the latter part of the summer there is lots of honey made from wild flowers, mostly Dog Fennel or Bitter Weed, and it is so bitter that it is unfit to eat. Consequently I gave away all of my bees, and do not suppose I shall ever handle them again. I prefer to raise fruits and vegetables, there is more money in them and less stings. I have always been interested in Australia, and if I ever go to a foreign country it will be there, but do not think that will be very soon, as my health is quite poor, so poor in fact that I shall not live many years longer, I think.

C. E. R., Goulburn River, via Muswellbrook.—My bees are wintering well so far, mostly strong swarms, plenty of brood for this time of the year. Trusting your bees are also doing well.

W. G., Cambelltown.—We have had a very fair season so far plenty of honey, mostly bloodwood and cabbage gum and honey. Low of price in Sydney markets. Hoping you have a good season for your bees and wishing you and your paper every success.

Colonial Honey in London.

We copy the following from the "Daily Telegraph" of July 1:—The steady growth of the bee-farming industry in New South Wales, and the consequent increase in supplies of honey on the Sydney market, have for some time past caused agents to look with no little anxiety for some new channel whereby to dispose of surplus stocks. With a view of testing the London market an enterprising Sussex-street firm despatched 77 cases, equal to about four tons, of northern river honey to that centre. Although not absolutely the primest obtainable, this honey was of very fair quality, but the reception it received on the other side was far from calculated to encourage this branch of commercial enterprise. The best price obtainable was 13s per cwt., or slightly less than 1½d per lb., which is ½d per lb. below the current quotation for the same class of honey on the Sydney market.

THE ISLANDS.

MR. THOMAS HALLORAN.

I see Mr. Abram writes of bees in Fiji. I have just returned from a holiday in the South Sea Islands, I spent 13 days at Suva or about that end of the Island. What I could learn about bees at Suva was as follows:—Bees do not store honey as there is no off season; queens have been imported with no better result. I saw a man who had 28 hives, but had sold them just before my visit, and the above was what he told me. I suggested extracting continuously, then the difficulty of ripening the honey by artificial means presented itself. That this would be real difficult will be understood when we consider the extreme moisture of the

climate, this is such that house keepers have to empty the salt cellars every second day, or mix with cornflour to keep it dry. I left Suva on 14th June, and the whole country side was in bloom, just like spring. Lambassa, where Mr. Abram has sent queens may be different, but his client does not speak of honey gathered, only of increase. I have no doubt Suva would be alright as far as increase went. I went from Suva to Latoka. This is about 60 miles away on the west of the main Island, Viti Levu, and is altogether a dryer place. Something like a drought was on, judging by the appearance of the cane fields. Sugar is the principle industry of Fiji. Bees should do alright at Latoka, Lambassa may be equally good. It is on the other principal Island, Vama Levu. I did not call at it, so cannot speak from personal knowledge. I called at Noumea, New Caledonia, and saw some very good bush honey, and was told bees did well and were plentiful. Noumea is a dry place, there was a seven months' drought on when I was there, though I was told the other end of the Island was enjoying a good season.

Winter here is wet. Bees did fairly well last season.

Publications received.

From Dr. Martin M.D. 151 Hyde Park Sydney, "The Diseases of Men and Woman." This, we take to be a most valuable medical work, and one that should be in every house, especially those who reside in the bush, away from town advantages. It is well illustrated, consists of 632 pages, and has an index of 32 pages at the end, the price is 7/6.

We acknowledge receipt of copy of the 1905 edition of the A B C of Bee Culture. A circular received says:—It contains over 500 double-column octavo pages, bound in cloth, half morocco, or full leather, to suit the taste of the purchaser. It is not an A B C in the sense that it is written for beginners only, but an exhaustive cyclopedia for the veteran as well, covering every subject relating

to the practical management of bees. Its rapid sales have made it necessary to revise it at least once in two years, and sometimes oftener. Neither time nor money is spared to bring it clear up to date and so extensive have been the changes that many of our customers get a new copy as fast as each new edition is issued. The book was originally written by A. I. Root, who as far back as 1877, saw the need of a work of this kind. There are still quite a number of the articles remaining written by himself; but ill health, together with interest in other things, made it necessary for him to drop the work he had so grandly started. The general work of revision and keeping the book up to the times has devolved on his son, E. R. Root, who has probably written two-thirds of the work as it now stands. The book includes a very complete index, so that any subject or division may easily be found. We presume Messrs. A. Hordern & Sons of Sydney stock them, also Mr. H. L. Jones of Goodna, Queensland.

We acknowledge receipt, with compliments of the author, Frank Benton, M.S., of Farmers Bulletin No 59, of the Department of Agriculture U.S. Its title is Beekeeping revised up to March, 1905.

We acknowledge receipt from Mr. Pen-glase of his catalogue of long tongue and golden queens, together with his prices. We would refer to his advertisement elsewhere.

We note the June number of South Australian "Garden and Field" has altered its size from demy folio size pages to demy 4to. giving double the number of pages. It is a beautifully got up and illustrated journal, the editor is W. Catton Gasby, F. L. S.

Bee Literature.

There are now close upon a hundred newspapers dealing with bee-keeping, as well as somewhere about three thousand books of reference. Over 25 per cent. of this literature is French; 16 per

cent. German, 12 per cent. English, and 9 per cent. Russian.

Rendering Old Combs into Beeswax

BY C. P. DADANT.

MR. DADANT:—I read in your instructions on rendering combs that they should be soaked in a tub of water before rendering. Shall we set them up straight in the tub or lay them flat? They seem to soak best when set up.—A Reader.]

The old combs, such as are generally taken from very old colonies, contain more than nine-tenths dirt and cocoons. It is therefore of the greatest importance to put them in such condition that the wax will not soak into the residue, since there would be hardly enough of it to fairly moisten the dirt. That is why so many people think that there is no longer any beeswax in old combs. The only method to keep the wax from soaking into the rest when liquefied is by wetting, for beeswax will not stick to anything that is wet. So we instruct the bee-keeper to soak the combs. It matters little how they are soaked, but if they are very dry it will not take one long to find out that they are difficult and slow to soak. But if you leave these old combs in the shape given them by the bees, each of those cells, coated as it is with the cast-skin of a larva, will retain its shape and make a nice little nest for some of the liquid wax to sink into. Anyone who has rendered much beeswax and old combs has noticed occasionally a cell full of clear wax, which may be removed only by a press.

Now, our method is to break and crush these old combs out of shape, so that the cells may be closed or flattened. In this shape they will sink in water more readily but there is a very good way to compel the combs to become soaked, and that is to put the stuff all in a coarse sack and load it down with bricks or stones at the bottom of a tub filled afterwards with water. You will notice that in a short time the water will begin to take color. When the entire lot is well soaked, it may be melted with hot water. No hard water should be used.

Here permit me to explain: Hard water contains mineral invariably, in fact it would not be "hard" unless it did. Some of this mineral will act on the beeswax and damage it. For instance the least amount of iron in the water will darken the wax. That is why in so many localities bee-keepers seem entirely unable to produce nice bright beeswax. If they were to use rain-water there would be no trouble.

The man who has a wax-press has no difficulty in getting out all the beeswax, or nearly all. But even he who has a press needs some direction for its proper management. It is just as necessary to soak the combs when using the press as when melting the combs and skimming the wax off the top of the water, because whatever the residue will soak will be impossible to secure, and much less will soak into the residue if it is already wet, when the wax is melted, as I said before. But those who use the press are all liable to go too fast and use too much power. If the press was filled with well melted old combs, and kept hot, a turn now and then is all that is needed, and one hardly needs to use more power than what may be applied without effort with the hand on the screw. It is just like pressing grapes for the juice—if you try to get it out all at once, you simply imprison some of the juice so that it has no means of escape; while if you give it time to slowly leak out, you will get more result with less effort.

With the man who has no wax-press, although there is more difficulty in rendering the combs, still nearly all the wax may be secured by using plenty of water and skimming the melted wax off the top of the kettle as he goes. If the worst residues are put into a sack with very coarse texture, and this is turned over and over under hot water, nearly all the wax will ooze out. Of course this wax must be rendered once more, in order to remove the remaining impurities.

Rendering combs with the solar extractor will do well for those who have but little residue, and especially for the odds

and ends of the apiary, as they are gathered during the summer. When they are rendered by sun heat, they are out of the way of the moth, while the keeping of these is difficult till they are rendered, especially during the last of the summer months.

But the solar extractor is not at all fit to render old combs. The beeswax in them soaks into the cocoons, and nothing is left for the apiarist.

In rendering beeswax care should be taken not to over-boil it. The mealy residue at the bottom of cakes of beeswax is nothing more nor less than water-spoiled beeswax—beeswax that has been beaten into a sort of meal by boiling water. Sometimes a bee-keeper will spoil his entire product in this ugly way. A good boil is all that is needed.

Do not use sulphuric acid in rendering wax. You will be likely to use a half-pint where ten drops would be too much, and it will give your product a sickening and bad smell.—*A. Bee Journal.*

Crown Lands and Apiarists.

An effort is being made by the Victorian Minister of Lands to reconcile the conflicting interests of Crown lessees and beekeepers. Legislation will be required on the subject, but in the meantime tentative arrangements have been made under the existing law. Under the Land Act of last season beekeepers can select an area not exceeding ten acres upon grass licences held by other people from the Crown, the idea being that, in gathering honey from the flowers the bees will not interfere with the cattle fattening upon the grass. This, however, forms a double tenancy from the Crown, by different people from the same land, and some nice questions of administration arise. The beekeepers seldom select as much as ten acres, but their industry is increasing in importance, and will, without doubt, increase its demands. It has been decided by the Minister of Lands that beekeepers who take up areas shall be charged a registration fee of 2/6. They will also be charged a rent of 2/6 for the first acre

and 5/- for each additional acre. Unless specially ordered, the casee will not be heard by the local board, nor will a survey be made. Only a temporary habitation can be erected on a bee site, and this is at the applicant's own risk. If they are clearly defined, the licensee will be permitted to fence. Two licences are to be the maximum for any one holder, but only in special circumstances is more than one to be granted. Land officers are to specially submit every case to the secretary before definite action is taken, and only in the most exceptional case will the maximum area allowed by law be allotted.—*Exchange.*

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
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