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THE AUSTRALIAN Bee Bulletin.

A MONTHLY JOURNAL, DEVOTED TO BEE-KEEPING.

Published by E. TIPPER, West Maitland

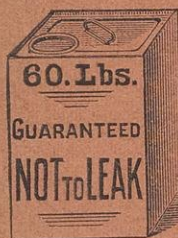
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VOL. 18. No. 4.

JULY 31, 1909.

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MAITLAND, N.S.W.—JULY 31, 1909.

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

MEETING OF THE EXECUTIVE.

The first meeting of the executive of the above Union took place on Monday, the 19th inst., at 11.30 a.m. Present: Messrs. W. Abram, J. J. Branch, Henry Lord, D. W. Parker, J. J. Parry, and by invitation J. Richardson and E. Abram, junr.

Mr. W. Abram was voted to the chair, and he in a few words indicated the steps taken in the organisation of the Union, as detailed in the April, May, and June numbers of the A.B.B. The scrutiny of the voting papers to hand was then taken and resulted as follows:—President, W. Abram, by all votes but three; Secretary, H. Lord, by a two-thirds majority vote; Treasurer, J. J. Branch, by a two-thirds majority vote; Committee, Messrs. Parker, Parry, and subsequently Mr. Lord.

Mr. Lord said that however much he appreciated the honor of being elected secretary, and felt grateful to those who had cast their votes in his favor, still he had so many calls on his time that he regretted that he could not see his way to accept and take up the duties of secretary.

It was then agreed that Mr. J. Richardson, Botany, fill the position. Mr. Richardson accepted, and stated that he kept bees

for seven years, and that he is making bee-keeping his sole occupation, and will do his best to carry out the duties of secretary.

Mr. Niven's suggestions were then discussed, and it was decided that at present matters remain as they are.

RINGBARKING : FOREST RESERVATION FOR BEES AND TIMBER.

On this subject Mr. Hunter's letter was read, and considerable reasons were given to point out the very difficult task of obtaining relief in that direction, and to make the matter worthy of its importance it was decided that a circular be sent to members of the Union and the readers of the A.B.B. to vote on the subject, and give their views, and with these the Union's Executive will then press their claim. The larger the number of votes in support, the more power to the industry.

At 1.30 p.m. adjourned for lunch. Mr. Lord had to attend elsewhere in the afternoon. At 2.30 p.m. meeting continued.

It was decided to style the Union "The New South Wales and Commonwealth Bee-Keeper's Union."

How to improve the price of honey to producers without rising it to consumers was next debated, and Mr. Veness's proposal, as published last month, and Mr. Curr's letter, received attention. It was agreed that at present the matter must stand in abeyance, but will be taken up as soon as practicable. It was a unanimous decision that the control of the sale of bee-keeper's products should be in their hands, if they wanted to better their position.

Lectures on bee-keeping was next considered, and it was agreed to make arrangements accordingly.

On practical—not theoretical—information to be given at bee-keepers' apiaries, also on treatment of honey for market, decisions were agreed on, and should prove of benefit to bee-keepers.

Reference was made to the bee farm at the Hawkesbury College, which had been visited by several of the Executive, and explanations were given.

Export of honey received careful consideration, with the view that next season, which promises well, an over-production might occur, and provisions be made beforehand to secure profitable markets.

Mr. Munday's letter was then read, and it was decided to leave that subject in abeyance till next meeting.

It was agreed that all correspondence shall be addressed: "The Secretary, c/o W. Abram, Beecroft."

The secretary was instructed to inform Mr. Hunter, Trunkey, that the correspondence of the Trunkey bee-keepers and members of this Union be through Mr. Hunter.

The amount of subscriptions received by Mr. Abram to date was then handed to the treasurer, and it was decided to post receipts for same with the next circular, to save postage.

The secretary was authorised to buy the necessary books and stationery for the Executive requirements.

An arrangement was then made for some of the Executive to meet on Wednesday morning, the 21st inst., in furtherance of the above-mentioned decisions, and they have done excellently in those directions, further information of which will be forthcoming at a later date.

At 5.30 p.m. the meeting closed.

* * * *

Trunkey,
July, 1909.

The President,
Commonwealth Bee-keepers' Union,
Beecroft.

Dear Sir,—We most earnestly require in this district a modification of ring-barking, and with that in view, request that you immediately consider, in so far as your time at this juncture will allow, the advisability of putting before the authorities the great sacrifice that is being made

of valuable timber, for honey and other purposes, for benefit of sheep.

The mountainous land of this district does not improve by ring-barking, as the soil is too shallow, and thus is parched and burned when unprotected by the shade of trees; also as trees decay the roots also become decayed, and therefore the shallow soil is not held in cohesion by the roots, and is thus swept by heavy rains from precipitous slopes into gullies; thus a fairly fertile hill being denuded of its timber, roots and shade, soon becomes a barren heap of bare rocks. Sheep men are beginning to admit this.

We have not to go to St. Helena for an object lesson. St. Helena was at one period of the world a fairly fertile island, but by introduction of goats, by the Portuguese, it was soon turned into a barren heap of rocks. The goats ate the low scrub on sides of the steep slopes, and the soil having nothing to protect it, it was very quickly out at sea.

Some of the Abercrombie mountains today, through being ring-barked "out of a face," are fast approaching St. Helena in their barrenness.

Ringbarking does not improve all land. Even if it did, why should the mighty sheep have all the say? Everything must be sacrificed for wool. I say wool advisedly, because notwithstanding this cheap method (to the squatter) of improvement, no fat sheep are ever sent to market from here. The miner, the splitter, the builder, the bee-keeper, all take a back seat in this district.

As the Forestry Department is now separated from the Lands Department, this is probably an opportune moment to ask for some big timber reserves.

I am, yours truly,

E. F. HUNTER.

Iona Apiary,
Woodville,

15th July, 1909.

Dear Sir,—Please find enclosed a postal note for 5/-, my subscription to the Association. I should have sent it to you before, but it escaped my memory. I am glad to know the Association promises to be a success. A good Association is, in my opinion, necessary to regulate and control, as far as possible, matters appertaining to bee matters. Among others the points and considerations respecting the prizes given for bee products at our annual shows. It very often happens that several of the exhibits of honey and beeswax are equally good, in fact, exactly the same, yet one exhibit must be allotted first prize. I consider that not satisfactory. Why should Smith's exhibit only get a second prize when it is quite equal to Jones', which was awarded first prize. I would suggest that a certificate of merit be awarded to all exhibits of equal merit, when superiority cannot conscientiously be detected. I know I would much rather my honey be awarded a first-class certificate of merit than be classed second when it was worthy of a first prize. What say you? I consider this an important matter. In judging beeswax, do you consider a particular shade of color should decide the point in allotting the prize? Color fades, you know. I must not trespass on your time, so will conclude.

Yours faithfully,

J. F. MUNDAY.

Mr. Munday raises a matter which should engage beekeepers' attention to its full extent, and an expression of views. While it is disappointing to be adjudicated second prize where two exhibits are equal, it is more so when an inferior exhibit gains first prize, as has happened more than once, and at more than one place. This subject requires very careful consideration in order to adjust matters more satisfactorily to the industry, and the union of beekeepers must try and do it.
—ED.

Get all your HONEY LABELS printed at the "Australian Bee Bulletin" Printing Works.

Mr. F. Curr writes: I think all apiarists should join and give the Union a start. There is certainly not much to lose in the small subscription, and may be much to gain. I think the most important matter for the Union to deal with would be the regulating of prices of our honey. If the price can be raised a little for the producer without raising it to the consumers much good will be done. Wishing the Union every success.

Mr. A. Butler states: This is a step in the right direction, and he wishes the Union every success.

Mr. T. Mow writes: I am pleased to see by the A.B.B. that you are taking such an active part to form a beekeepers' union, which I am sure is very much needed for the benefit of all bee-men. I think Mr. Veness's ideas are very good, but it would be more up-to-date for the Union to keep the honey market under their own control. Wishing the Union every success, etc. I trust Mr. Tipper will soon be restored to good health.

Yes, Mr. Mow, you are right. If at all possible, let beekeepers control the honey market, and that can be done if all join and work in harmony.—ED.

Mr. G. A. Zeibig, Rockhampton, wishes the Union every success.

* * * *

ITEMS.

In the interests of the industry beekeepers should join the Union at once. Subscription, 5/- per annum from 1st of July. Send postal note and full address to the secretary, care of W. Abram, Beecroft.

Members of the Union get full information of its work by reading the "Australian Bee Bulletin," edited by W. Abram, Beecroft, and published by E. Tipper, West Maitland. It is the oldest bee journal in Australia, and solely devoted to the industry. It is not a party paper, as some pleased to say; its aims are to give absolute reliable information, which, if

followed correctly, will aid and assist the novice, without inveigling him in costly experiments and probable failures.

The Government Statistician states: Last year's honey yield, 3,064,366lbs., was the highest on record; wax, 58,697 lbs.

According to the Victorian Year Book for 1907 the amount of honey gathered in that State was 2,965,000 lbs.; wax, 46,780 lbs.

* * * *

BEE-KEEPERS.

Although lately the price of honey has gone down rather than up, vide the daily paper reports, I do not think that beekeepers with honey on hand need to be scared thereby if they will only keep firm, and not rush their products. Next season's honey crop is a long way off yet, notwithstanding that in many coastal districts bees are having a rich field of bloom provided for them. But the weather is too cool, and the few warm hours of the day are too short to assist the bees much; in fact, it is a tax on the bees to gather honey at this time of the year. Some vigorous stocks will build up well, and be ready for early swarming, others will lose many of their field bees, and be worse off than if they had absolute rest.

The other day I saw a paragraph in the daily press by Mr. Gaggin, Lismore, wherein he refutes the quotation for northern honey. He is quite right, I think, as I have seen northern honey to equal any. Some honey is inferior in almost any district, both in taste and appearance, but not all. Would it not be possible for the Union to get their honey graded, and fix a price for each grade. It can be done to the benefit of the industry if all beekeepers will join the Union. There are many in it already, but there are yet others who stand aloof. Combined organisation means success, divided action may bring failure.—W. ABRAM.

**SOUTH AUSTRALIAN
CONFERENCE.****ADDRESS BY MJR. NORTON.****THE MARKETING OF HONEY.**

The first Conference of the South Australian Beekeepers' Association was opened on Thursday, July 15. The Attorney General (Hon. S. J. Mitchell) presided over a fair gathering of members.

The Chairman, in returning thanks for his election, expressed the hope that the conference would be the precursor of many others, which would help the industry to reach large proportions. In seeking to conserve the interests of beekeepers they could serve the interests of the State. Honey could not be obtained without plant life, and they were taking a proper course in putting in the forefront of the Conference the necessity for the preservation of trees from destruction. He desired, on behalf of the meeting, to move that a welcome be accorded to Mjr. Norton, D.S.O., the Commercial Agent, for whose appointment by the late Government the State ought to be devoutly thankful. (Hear, hear.) If the Government Produce Department cost even more money than the Government got from it—and he did not think it did now—it would still be a magnificent department, for it had done wonders for South Australia. One of its most important results had been the opening of the English market to Australian honey. That had realized the beekeepers large profit already, and would do more in the same direction. (Applause.) He hoped the apiarists would also support the Produce Department of the Depot as well. Many and fitful attempts had previously been made to put honey on the English market, but he had never heard of anyone who profited by them. Mjr. Norton, however, had succeeded beyond their expectations. (Hear, hear.) Mr. G. A. W.

Pope, who was at present in England, had also spared no time or trouble to make a success of the business. He hoped both gentlemen would in following years go on with the work they had so well begun. (Applause.)

Mr. R. McDonald (vice-president) seconded the motion. Before Mjr. Norton's appointment there had been no encouragement to beekeepers to go far from the city; but now they could go out for long distances and produce honey at a profit.

Mr. H. E. Hannaford supported. Beekeeping was on a better footing now than ever before, and that was largely the result of Mjr. Norton's work.

The motion was carried with acclamation.

The Commissioner of Crown Lands (Hon. H. E. Coombe) said he appreciated the invitation to be present in his official capacity. He was glad that the beekeepers had enough public spirit in connection with the industry to keep the association going. Their common interests could not be so well promoted if each went "on his lovely own." (Laughter.) More enthusiasm and co-operation were required so that the best might be made out of the industries of the State. (Hear, hear.) While the large farmers and wool-growers were enjoying prosperity in which all the community were sharing, it was one of the dreams of his life that they should see thousands of people settled on smaller areas, giving attention to the minor rural industries that would yield them a more comfortable existence than they were now able to get in crowded towns. Country life allowed an independence that could not be found in the city. The beekeeping industry was more satisfactory than had been the case several years ago, but a still larger number of people could be profitably employed in it. Much of the prosperity of the business was attributable to Mjr. Norton, whose appointment was one of the best that had been made by the Price-Peake

Government. There was yet a deal to be done in regard to the marketing of South Australian produce in England, and he believed Mr. Norton would fulfil the commission the public had reposed in him. The knowledge he had obtained had helped him to make suggestions that would be for the advantage of the producers and the State generally, and he was glad that great attention was being paid to his recommendations. None but the best honey should be sent to England. He had been told that three years ago 10 cwt. out of 8 tons had been rejected; two years ago 9 cwt. out of 63½ tons; last year only 3 cwt. out of 134 tons. (Applause.) He hoped great development would take place in the minor industries of beekeeping, egg production, poultry raising, dairying, and bacon production, and that South Australia would thereby be able to add largely to its population. (Applause.)

Mr. Norton acknowledged the compliments paid to him by the meeting, and delivered an address on "The Marketing of Honey." They had formerly been told that the British people did not like Australian honey. Before he went to England he had attended a meeting of beekeepers, who had informed him that they would be satisfied if they got 2½d. f.o.b. at Port Adelaide for their honey. When he reached London five cases of honey was sent to him. An agent there who ought to know something about the business told him he must go to some of the dozen or so of honey brokers in the metropolis. He did so, and they told him Australian honey was no good, and offered 12/- to 14/- a tin for it. Realizing that those gentlemen were interested in Californian, French, German, and Italian honey, and probably did not want competition from elsewhere, he went to a large retailer—Mr. John Sainsbury—whose weekly capacity for trade was 1,500,000 eggs, 2,000 sides of bacon, and the total output of 30 Danish butter fac-

tories. When interviewed, Mr. Sainsbury said he never touched honey. Mr. Norton pointing out that the establishment had 100 branches in London, and that not only could the dealer make a profit for himself, but could also help to weld the Empire together by taking up the South Australian honey, the question in reply was, "How are we going to have it put up?" He informed the dealer that he would help in that himself. It was arranged that he should buy apparatus for melting the honey, a store was set apart for him in Gravel Lane, and the first lot of honey put into the stores he bottled himself—(applause)—and put the Government label upon it. The honey was exhibited at the Westminster Food Show, and a man gave away samples, while placards informed the public "You can get it at Sainsbury's." At the Franco-British Exhibition permission to sell on royalty was obtained. On one Saturday night 1,400 sixpenny jars of South Australian honey was sold, and afterwards 600 to 800 daily. Tests established showed that many repeat orders came in, and that it was not the British public that objected to the honey, but the broker. Brokers were useful in relation to other products, but they were all worth watching. At present several large dealers were running the local honey, which had in the season following what he had related also been put on sale at Birmingham, Manchester, Bristol, and Edinburgh. It was imperative in connection with exhibits of produce to show that there was bulk stock behind, by saying that the goods could be purchased from So-and-So.

At present the local producer was almost in direct touch with the consumer in England.

When he got his first lot of honey in London he thought it would help if he obtained a certificate from the Health Officer of London that it was pure. His report said that it contained 78½ per

cent. of glucose. Startled, he informed the doctor that was all nonsense, for the honey was pure, and it would not pay the growers to adulterate it. "Who said anything about adulteration?" the doctor enquired. "Did you ever hear of honey that had no glucose in its composition?" He then learned that the verdict was a testimony of excellence, and not an indication of defect. (Applause.) If the apiarists were going to ask for their honey more than 28/- in London (equal to 2½d. per lb. f.o.b. at Port Adelaide), they would not sell any more; for that gave the dealer, after packing in jars, only 1½d. lb. profit—not too much after all the trouble. Then there was the competition of Chili, California, and Jamaica honey to contend against. He could buy the Jamaica article at 22/6. He would not say that it was all honey, though. He had had some analysed, and had found that 30 per cent. of it was maple syrup. They were popularizing honey as a food in England, and that should be done also in Australia. They were getting the doctors to order it as a necessary diet for children, on the ground that sugar in that form was preferable to the manufactured article. In going around the houses of Adelaide, how seldom did they find honey on the table. Provided the quality of the article shipped to England were continued, they could easily keep up the market. Honey from certain districts suited certain buyers, and the Department now knew just what kinds were preferred in various parts of the United Kingdom. He would have looked for fresh channels disposal, but that he had been advised that a short year had been experienced, and that stocks were small; therefore he had told Mr. Pope for the present not to bother after seeking new business.

The question of spending a little in advertising should be taken into consideration. If people like Fry, Cabury, and Colman thought they could sell their

goods as well without advertising they would never spend such large amounts in that way. It was up to the beekeepers of South Australia to do something of the same kind if they wanted influential London firms to take their product. If the Apiarists' Association could form a co-operative society it would pay it to spend £50 to £100 a year in advertising. Supposing the annual yield were 500 tons. (A voice: "It is far more than that.")—Well, 1,000 tons if they liked, if they were getting an extra £2,000 to £3,000 worth of trade by their export, it was surely worth while to advertise a little.

It had been suggested that South Australia should join the other States in trying to market honey in England. He smiled at that. He had seen in the papers a report by Mr. T. A. Coghlan (Agent-General for New South Wales) wherein that gentleman had stated that he had submitted samples of New South Wales honey to various persons, who had said that the reason why the highest price offered was 14/- to 18/- per cwt., was because South Australia was unnecessarily cutting the price of honey in London; and because firms whom the South Australian Government were supplying were retailing it at 6d. The funny thing was that four of the firms which offered Mr. Coghlan 14/- to 18/- had been buying South Australian at 28/-.

Mjr. Norton then answered a number of questions asked by apiarists. To an enquiry whether he could place beeswax in England, he replied that with a Government certificate of purity it would realize 1/6 per lb. without trouble. He would not mind taking all they now had at 1/3, and chance the result, if pure and in 10lb. blocks. A lot of the beeswax on the London market was half paraffin wax. Honey at 6d. per lb. in London was much dearer than jam. Jam "of a kind" could be bought in London at 3lb. for 7d. He would not recommend the substitution of larger packages for the pre-

sent tins in the shipment of honey. Blending might prove a good thing after awhile; but at present it was better merely to keep separate the honey from different districts. One buyer preferred Port Lincoln honey and another asked for another variety.

(From the "S. A. Register.")

SOME JOBBERS WONT BUY HONEY AT FAIR PRICES.

Mr. E. S. Miles, of Dunlap, Iowa, complains quite bitterly of the methods of some of the jobbers who advertise in the bee journals that they desire to buy honey. He says that they advertise simply to get in touch with "suckers," and don't expect nor try to buy of any one well enough posted to get a fair price for their honey. He says that one firm who carries a full page advertisement the year round in a leading journal replied very slightly, almost insultingly, when he wrote in regard to selling them honey. Other buyers, who advertise all of the time that they wish to buy honey, replied that they did not care to buy at that time, or else offered prices below what might be realised if sold on commission. Mr. Miles is inclined to class some of these offers to buy honey as he would the patent medicine ads., or the mining schemes. He says that his experience in trying to sell to jobbers is very similar to that of Harry Lathrop's, and he thinks it is time that the editors of journals who print the ads. for these men should know of their methods of doing business. He says that the "Review" has always shown a willingness to show up all sides of a question, hence, he has written to me.

Naturally, my sympathy is with the producer of honey; I wish him to get a good price for his product, all that it is worth, but I can't blame a dealer for buying honey just as cheaply as he can, providing he does not misrepresent, and does it honestly. A dealer in any kind

of product is expected to buy it at as low a price as he can buy it, and sell it at as high a price as he can get. I think it wrong to take advantage of a man's ignorance, or of his necessities, but when a man writes to a dealer and asks him how much he will pay for his honey, I feel that the dealer has a perfect right to make him any kind of an offer that he sees fit—if the price is too low, then the producer ought not to sell. It is possible that I have not clearly caught the spirit of Bro. Miles' complaint, but if I have, then I don't blame the jobber for offering a low price; instead I blame the producer for accepting it.—"Beekeepers' Review."

HONEY.—

Choice quality is not by any means plentiful. What there is of it is selling at 3½d. per lb., with good offering at 3d. per lb. Medium quality, of which there is a good deal on the market, is selling at 2½d. to 2¾d. per lb.

BEESWAX.—

Demand quiet. Best bright is worth 1/2½ to 1/3 per lb. Dark from 1/1 to 1/2 per lb.

Highest market prices obtained for
Honey and Beeswax by

PRESCOTT LIMITED.

COMMISSION AGENTS

336 & 338 SUSSEX STREET

—SYDNEY—

GLASS HONEY JARS

(MACHINE MADE.)

1/4 & 1lb. Screw Top
1/2 & 1lb. Tie over Top
and all kinds of Glass Jars.

Indents through well-known Shippers.

JULES LANG & SON,

16 Bury St., St. Mary Axe, London, E.C.

Factory: Eu (Nr. Dieppe), France.



CO-OPERATION.

J. J. PARRY.

Co-operation is not proof against the errors of ignorance or mis-management, neither proof against fraud or theft, but I believe with an honest, persevering manager, a co-operative marketing association would pay, and would get for the bee-farmer a better return for his labour, and give the consumers honest value for their money.

Co-operation is a scheme whereby the dividing of the fruits of industry goes to labour instead of capital. Men work in unison to accomplish reforms political, others unite for their social and moral advancement. There is family interest, social interest, and business interest. Interest of any kind keeps the mind alert, and is the root of what to-day we call solidarity.

With reference to Mr. Veness's scheme of agency, its a grand idea on the face of it, but the interest of the men that have to keep it going is not there. They must be part owners of the concern before that interest is aroused to any extent.

I myself would sooner have articles drawn out for a union, and pay a fair salary, to a man for a start. But let integrity, intelligence, and ability be the indispensable qualities of the manager. (This is no reflection on Mr. Veness' ability, because the failures of co-operative effort are invariably due to the methods employed, and not to any weakness of the principle of co-operation.)

He need not be an accountant, because the business must be run on cash lines; very little book-keeping, so long as he had plenty of push and business tact. There would be very little risk, through injudicious purchasing, because we should at first be only sellers.

I do not know what value of honey is sold in Sydney market, but should take it there is enough that an efficient manager could easily be kept. I think times justify the necessity for a reform in this direction.

Associations have been started in many parts of the world, in a small way at first, and by constantly adding to their capital became large concerns.

It is said that the men on the land are the bulwarks of the country, but the organizations that control them and their products are in the cities. Wages have advanced in the city, which has also advanced the cost of the farmers' living. It seems as if the country exists for the convenience and benefit of the towns.

Co-operative marketing is within the realm of possibility, and that bee-farmers especially should support some organisation to further its economic or business interests. There has been for years a deplorable lack of any associative efforts among the beemen. Bee forage is getting scarcer, with no increase in the price of honey, and one of the strongest evidences of the practical merit of co-operation is the extent to which the name is applied under false pretences. Some merchants advertise their stores as co-operative, simply to mislead the public and attract patronage.

Union is strength. Beemen, unite and help yourselves, and create a force to get your wants attended to.

VICTORIAN APIARISTS' CONFERENCE.

VICTORIAN EUCALYPTS.

(By A. D. Hardy, F.L.S., Victorian State Forests Department.)

At the recent Apiarists' Conference held in Melbourne, Mr. A. D. Hardy delivered an address on the above subject. He said:—

"Of the 200 or more recorded species or varieties of eucalypts found mostly in Australia and Tasmania, about 50 are Victorian natives, and out of these I have selected fifteen as being not exclusively but of greater interest to the apiculturalist, as most of them are found in fair distribution; and by means of specimens carefully identified, blackboard illustrations, photographs of identified trees, and microscopic exhibits, we should

gain a better idea of these 15 trees, both as to their classification and peculiarities, and the structure of the flower and its parts.

The classification of eucalypts has been attempted in many ways, none of which has given entire satisfaction to its author or anyone else. Gradation as a law seems to have affected the genus in nearly all of its characters, and no hard and fast line can be drawn between groups. Such difficulties have arisen from variation caused by cross-fertilization between distinct species producing hybrids, and from the variation induced vegetatively by different geological conditions, and other strong influences.

The anthers, as an aid to classification, are mostly considered by botanists, but as these pollen producing organs are of vital importance to the apiarist, I will take them into account first, and afterwards add some remarks about the bark, fruit, etc. Let us first examine a flower; and for our purpose what could be more appropriate than that of the "honey box," "yellow box," "emelliodora." The first thing that strikes us is that, compared with garden flowers, there is something missing. There are no petals which, assisted by scent in most flowers, are the advertisements held out by them to attract insect visitors. And of the green sepals which, as in the rose, first enclose the bud, and are afterwards bent back by the expanding flower, there appears no trace. If, however, we watch the growth of a yellow box flower, we see a little cup or lid thrown off. In this lid we have the equivalent of petals, and the lower part of the bud is the calyx. From the circular rim of the calyx the stamens spring, but while in the covered bud they are bent inwards and downwards until they are coiled in a mass in the cup-like depression which surrounds the central style, and from the bottom of which epidermal or surface cells yield the sweet, sugary nectar. The genus *eucalyptus* is thus well-named: (eu, well; and kalypto, to cover),

in allusion to the complete covering of the reproductive organs while in the bud. With the growth of the bud the stamens straighten, and throw off the lid (or cap or aperculum, as it is variously called.) The stamens then radiate from the calyx rim, and ripen the anthers in the sun, at the same time exposing the nectar in the cup. Then all is ready for the bee, which may be attracted by the sight or honey scent of the flower, or both. The work of the bee is to carry pollen from flower to flower, thus assisting in cross fertilization. A very small amount of pollen serves for this purpose; the surplus pollen and the nectar are the rewards or bribes, or, if the bee is an unconscious agent, which is quite likely, this good is simply one of nature's provisions for the working of her complex machinery. To return to the stamens. In many *eucalyptus* flowers the outer stamens bear no anthers, and in others the anthers of the outer stamens are not fertile, and this of course reduces the pollen-producing capacities, and the tree, frequently the yellow box, may be found with only filaments for the outermost stamens. The anthers of flowers vary greatly in shape, though the colour at maturity is mostly yellowish, because of the ripened pollen clinging about them, and in *eucalyptus* there are at least three types on which the grouping according to these organs is founded. The law of gradation seems to have been strongly impressed on this genus, and there are many connecting links.

The anther, when ripe, is composed of two more or less complete lobes, and is attached to the filament by the base or back of the anther by means of a piece called the connective. In these lobes, by repeated division, the pollen grains are produced. Pollen grains vary much in size and ornamentation, but many species of *eucalypts* have grains of a four-cornered shape, with rounded corners, bulging sides and grooved exterior. The grain has at least two coats; a soft inner

lining called intine, and an inelastic shell, the extine, and the contents are soft, jelly-like protoplasm, a complex substance containing nitrogen and other chemical matter. The first of these three groups of anthers is that in which the lobes are joined where the anther is attached to the filament, but with the free ends diverging more or less to form an approximation to the shape of a kidney, whence the name of the group. The anthers of this type open by a slit, which reaches generally across its face, the slits of the lobes running into each other.

* * * *

MARKETING OF HONEY.

Mr. J. Barrow, of Messrs. Barrow Bros., Melbourne, delivered an address on the marketing of honey. He urged that some uniformity in marketing was necessary. He thought an effort should be made to supply honey of uniform quality. Uniform packing was also required. Heavy losses were incurred through forwarding honey in unsatisfactory tins. He suggested that only tins of a capacity of 28lbs. or 56lbs. should be used. If the honey was shipped in the newly designed tins with patent tops, there would be a better chance of disposing of the product, as it would be displayed in a more presentable package.

Mr. D. M. Morgan said that he had already adopted the new tins. The objection was raised by some beekeepers that the cost was too much. That was not so. The tins cost no more than the kerosene tins all told. If a man shipped his honey in the new tins with the patent tops he would have a chance of getting a higher price in the market than if he forwarded the honey in kerosene tins.

Mr. Barrow: The point is: you have a presentable package for your buyer. That is half the sale of the honey. There was also a better chance of your article carrying to market than if you used old tins.

Mr. Freeman (Great Western), said that a consignment of tins of honey sent by him had arrived at its destination with holes in the tins. He had spoken to Mr. Tait, chairman of the Railway Commissioners, about the matter. Mr. Tait was sympathetic. "I told him," continued Mr. Freeman, "I had about 200 tins lying at the railway station, and asked him what I was to do." He said "Will you risk sending down the tins without cover?" "Yes," I replied. I packed the tins in the truck, and telegraphed to the railway department in Melbourne that the tins were leaving the station. All the tins arrived in Melbourne without a single drop of honey on them, and all were in good condition.

Mr. Barrow: When you are putting the honey in the truck pack it as snug as possible. Place the tins as firmly as possible on the bottom of the truck.

Mr. Freeman: I have received a letter from the Railway Commissioners stating that the hooks will not be allowed in unloading of cases in future.

Mr. Jackel: I find in sending away large quantities of honey the safest plan is to put the load on the truck yourself. Even if you have to pay a shilling a ton for loading it pays you to load it yourself.

Mr. Morgan: By packing with straw I have never had any trouble.

The President: What is Mr. Barrow's opinion with regard to 7lb. tins? and is he in favour of a standard rate being adopted so as to fill all tins up to 56lbs?

Mr. Barrow: I would advocate 7, 14, 28, and 56lb. tins

The President: Not 60lbs.?

Mr. Barrow: No, make the weights uniform. Take treacle for instance. You can get 21lb. or 4lb. tins. You can also get honey done up in neat jars, but for all that I do not see why tins should not be introduced to the trade also. I am in favour of the 56lbs. weight. Sometimes you put a little over the 60lbs. in the tin. We don't want that. It is against ourselves. We want to give the trade what they pay for. Be careful that you do not

POLLEN SUBSTITUTES.

By D. M. MORGAN.

fill your tins too full. An over-filled tin may get a knock on the corner, and if the tin is not extra strong away goes the honey. You can get 56lbs. tins at 10d. each and 28lbs. tins at 8d. each from the British Imperial Oil Company.

Mr. Bolton: Is it practicable to lodge any claims, supposing you find the tins half empty?

Mr. Barrow: In only a few instances is a claim upheld by the Railway Department. An article is invariably sent at the owner's risk.

Mr. Bolton: Would it not be well to advise the customer to pay 10 per cent. extra on the ordinary charge, and then place the risk on the Railway Commissioners?

Mr. Barrow: Will they take the risk or the tins?

Mr. Bolton: Yes. I get 16 7lb. tins in a case. I am always charged a 3lb. reduction in weight when it should only be 2½lbs. Was not that unfair?

Mr. Barrow: We cannot help it. It is the rule of the trade.

The President: With the solder some of you gentlemen use the weight is about 3½lbs. (Laughter.) Half pounds are not reckoned in connection with honey. It would pay you better, instead of bothering about half-pounds, to have a good scale, and put the exact weight in the tins.

Mr. Barrow: The different qualities of honey should be kept separate in a consignment. Then the beekeepers would get the benefit of a good article.

The President: I use a label to distinguish the qualities and in the letter of advice I tell them the colours I use for the different qualities. You need not put on "first" or "second" quality.

Mr. Bolton moved a vote of thanks to Mr. Barrow, the only commission agent who had the pluck to face the beekeepers in their den. (Laughter.)

Mr. Armour seconded the motion, which was carried unanimously.

The subject before you, gentlemen, is pollen substitutes. I have no need to mention the great importance of pollen to practical beekeepers. Many parts of the Wimmera district, Grampians, though first-class for honey production, suffer considerably at times through a growth of pollen. I have visited other parts, such as "Blue Blocks," further west, which I find much the same as honey producing country.

I have heard from practical beekeepers that Gippsland and other southern parts differ considerably; one instance brought before me by a beekeeper there. He said that he was over-supplied with pollen, and his trouble was how to get rid of the bulk of it. I should very much like to have that experience, if only for one good honey season.

Now not being always able to rely on a sufficient supply of natural pollen, has led me for a good many years to experiment to try and find a substitute in artificial pollen. I have tried all kinds of meals set at different times, but the final results have never turned out right. It is a very easy matter, I find, to start an apiary breeding. Some years ago I experimented very heavily with pea meal, and very soon found my apiary breeding in full swing. I was pleased with this, and naturally thought I was on the right track. The bees seemed to me to be using the meal as fast as they could take it, but after a month or two I could see it was labour in vain. The young were reared and hatched, but there was some constitutional weakness; they were short-lived through the effects of the feeding. That meant a loss to me for another whole season, which was not the first. Being present at one of your annual conferences I was very much interested in an address given by Dr. Cherry on "Pollen," when he stated beef-steak and white of eggs contained the albumen which is deficient in artificial food for bees. I never

thought to ask Dr. Cherry at the time in what way he could suggest mixing these albuminous foods with the meal deficient; however, I determined to try a plan different to other plans. In November, 1907, we had a yellow box flow of honey, and a good one, but the pollen famine set in, and the apiary was on the down-grade in brood-rearing, so I started feeding for pollen—whites of eggs, honey with pollard. The white of eggs was beaten up into a froth, then beaten up with honey, and then kneaded into the pollard, something like a stiff dough. Pieces were flattened out thin enough to place between the frames amidst the bees, then a double cloth matting was placed over to keep out the drying hot air. This being only an experiment, I selected four colonies only for the purpose, and they were the weakest on the stand. They bred up very quicky, the pollen substitute being taken very greedily. I continued feeding these colonies until well into March; when natural pollen came in I ceased feeding. They were then the best I had on the stand.

As I said previously I selected four colonies, but I only fed them with eggs, honey, and pollard. The other I experimented with pea meal, but whether it was my fault or the food I don't know, but it hardened quickly, so I gave up the attempt for the time, but I intend taking it on again. Whether I am on the right lines or not, I was well pleased with this experiment, and should, any time in the future, natural pollen become scarce, I intend feeding heavily in my apiaries. In the meantime I would advise my brother beekeepers who are so situated like myself to experiment on it and give their experience to the public. The colonies so treated wintered well with me.

The past season was a bad one for pollen, on account of the failure of red gum. Being away from home so often I had not the opportunity to feed regularly, but in February I started on a big scale. I used 100 colonies, and all through brood-rear-

ing was at a standstill at the time. They quickly got into line, and began breeding, but the grey box broke at the beginning of March, therefore they stopped taking the artificial food which, I have no need to say, pleased me. Now, gentlemen, this closes the result of my experiments.

I would like to say right here that I believe this pollen difficulty is the most important that a beekeeper in a good honey district has to contend with; it means success or failure.

It is far easier for a novice to do well where pollen is in abundance than a real practical beekeeper where there is a scarcity of it.

What we require badly is a Department of Agriculture, where an ordinary beekeeper may be years experimenting, and then all goes for nothing; a specialist might solve the difficulty in a few days.

Quantities as near as I can give them: I kept no account: are about six whites of eggs, 2 or 3 lbs. of new warmed honey to 3 lbs. of pollard.

* * * *

EXPORT TRADE.

Mr. J. Knight, Chief Inspector of Exports, said that he wanted it to be clearly understood that he did not pose as a beekeeper; his experiences in bee-keeping would not be in any way edifying. (Laughter.) He worked up to 100 hives, and a disease came along, and the hives were reduced to one or two. He then thought it was time to give up bee-keeping, at all events until he knew something more about it. Some years ago he thought he would make another start, but after a short spell the same fate overcame the hives. He had not touched the industry since, and he did not intend to. Beekeeping, like every other industry, required special attention and scientific treatment to make a success of it. He simply quoted his unfortunate experience, and that has been the experience of others as well. Many a time people he had spoken to on bee-keeping had shaken their heads and said, "No more for me."

He wanted to make it clear he was not present to instruct or to give any information on the business. He was present as the officer who had charge of the Commonwealth Commerce Act, and was present to give his experiences in connection with that Act, which came into force in March, 1906. He had a return of what had passed out of Victoria from then to the present date. In 1906 the industry was in and is still in a rather unsatisfactory state, but its condition was decidedly improving, and it was only by such efforts as the delegates were putting forward by united and not individual efforts, that the industry would be raised to a proper standard. Valuable lessons could be learned from the growth of the butter and the fruit industries. The rise of the butter industry began with a simple conference, and now the dairyman did not go to the Government and ask for a thing—they demanded it. That was because the industry had become organised and had become a power in the land. He asked the bee-keepers to unite and show that they had an industry that was worth the consideration of the State. He was not quite clear of the information that had been sent to him, but there were one or two points in connection with the marketing of honey that should be explained. The Commerce Act demanded that every shipment of honey should be granted a permit before it left the State, and a penalty was fixed for anyone who attempted to send a consignment of honey unless it had the necessary permit attached. That is a good thing. They often heard of the vile compounds made up in America and other places. If the industry was to prosper it must advance on straight-forward lines. He had the power to order examinations of honey by the analytical chemist of the Commonwealth. He was proud to be able to say that never in a single instance had he found the slightest attempt at adulteration. (Applause.) The Act provided, he was sorry to say, that honey might be exported for glycerine. It must, however,

be stated in the packages. He would rather it was not allowed. Application had never been made for a permit for anything but the pure honey. That being the case it only required a little attention to see that principle carried right through. He could not help noticing the vast difference between the exports of Victorian honey and those from other States. The figures were published by the Commonwealth, and supplied him as accurate. To numerise them:—N.S. Wales exported 30,717 lbs. of honey, value per lb. about 3½d.; Victoria exported 37,690 lbs., value £1,088, or an average of 7d. per lb.; Queensland exported 1,960 lbs., total value of £11, or three-farthings per lb.; South Australia, which the bee-keepers quoted so freely, exported 137,354 lbs., of a total value of £1,470, equivalent to 2½d. per lb. West Australia exported 16,740 lbs. at 5d. per lb. How was that brought about? He would give the places to which the honey went. In 1906-7 30 cases, equal to 15 cwts., went to China, 28 cases to India, 36 to Fiji, 166 to South Africa, 29 to Colombo, 30 to Manilla, and 248 to London. The exports to those parts were increasing gradually. A total of 508 cases, amounting to 259 cwt., was shipped to South Africa last year. The export to China increased from 30 to 36 cases. There was no increase in the trade with Great Britain, where the bulk of the South Australian went, but the outside markets were increasing their trade. He thought it was the right course to pursue, the development of the outside markets. The great variations in prices were accounted for in this way. The demand was principally for honey in glass jars. That was one of the great troubles the trade had to deal with. The expense of the jar was enormous in comparison with the cost outside the bounds of the Commonwealth. They should go to the Commonwealth Government and ask for a concession. There was a big demand for honey at home, but he thought the apiarists of Victoria would scarcely agree to come

down to the level they required. Those jars (pointing to a collection of jars of honey and preserved fruits) were samples sent home to Mr. Taverner for distribution through the country. It was very questionable whether the prices that would be offered in Great Britain would be agreeable to the Victorian apiarists. If they decided to take the prices offered they should get some assistance from the Government, but not in the shape of a bonus. There were ways other than a bonus in which the State could assist the industry. The Association should appoint an energetic committee on the same lines as the dairymen's committee with a view of developing markets. One of the greatest objects of the beekeepers should be to get rid of their second-grade honey, to utilise it in some way. For instance, fruit could be preserved with honey. He hoped they would make the test, and see if it was not equal to preserving fruit by means of sugar. The syrup of sugar was generally made up on the proportion of a pound to a quart, with honey the proportion was $1\frac{1}{4}$ pounds to a quart. A large field was open for the making of a good wholesome vinegar, and mead must be made before vinegar. It was hoped to develop the cider industry. A good temperance cider and a light alcoholic cider were required. Honey was also used in the tobacco trade, and by chemists.

In answer to questions Mr. Knight said that the Agent-General had repeatedly said that we could not expect to get in England the price we wanted for honey, but if we could produce it at 2d. or $2\frac{1}{4}$ d. per lb. there was a great market for it in Great Britain. From Manchester the Department had received a letter asking for quotations for five tons of pound jars.

Mr. Knight was accorded a vote of thanks.

Get all your HONEY LABELS printed at the "Australian Bee Bulletin" Printing Works.

CHEMICAL COMBINATION OF POLLEN.

EXTRACTS FROM DR. VON PLANTA'S INTESTIGATIONS.

Not being aware that that great scientists' research (Dr. von Planta) having been published in any of the Australian bee journals, and believing his to be the most expert investigation made, beekeepers and others interested may find some useful information therein, since the pollen plays an important role in the household of the bees.

As experiment, object served pollen from *Corylus Avellana*, for the reason that this pollen permits successful gathering and collecting.

The covering of pollen grains consist of two, by a wax-like body, closely united membranes, whose molecular attraction to each other, and to the wax-like body is so strong that they cannot be separated by mechanical means. The pollen grain consists of protoplasma and oil. Starch is also in existence. The intine of pollen consists of cellulose, or a cellulose-like body. The exine consists exclusively of cuticula.

Investigation of pollen upon the contain of water gave the following results:

Water, 4.98 per cent.; protoplasma, or albumen, 4.81 per cent; ash, 3.81 per cent.

Pollen dried over sulphuric acid: water, 4.98 per cent.; albumen, 30.06 per cent.; albumen free substances, 61.15 per cent.; ash, 3.81 per cent.

It will be observed that the pollen is rich in albumen-free substances. The view that the protoplasma contains mostly albumen is quite incorrect. It is notable that the pollen not only provides a rich material in albumen for the building of body-parts of the young generation and for the energy of the older field bees, but more especially is rich in carbon (sugar-like substance) for wax formation and the respiration process.

The following substances were found: Globuline, peptone, hippoxanthin, amide,

carbon (some pollen contains a high percentage of cane-sugar), starch, colour cuticula, wax-like substance, fat, cholesterolin, resin-like bitter substance, and other organic bodies. Thus: Water, 4.08 p.c.; protein, 4.81 p.c.; albumen, 30.06 p.c.; albumen-free, 61.15 p.c.; ash, 3.81 p.c.; hippoxanthin, 0.15 p.c.; cane sugar, 14.17 p.c.; starch, 5.26 p.c.; color substance, 2.06 p.c.; cuticula, 3.02 p.c.; wax-like body, 3.67 p.c.; fat acids, 4.20 p.c.; bitter substance, 8.41 p.c.

Pinus sylvestris pollen gave: Water, 7.66 p.c.; albumoids, 16.56 p.c.; albumen free, 72.48 p.c.; ash, 3.30.

* * * *

COLOUR IN WAX.

On this subject Dr. von Planta states: Lucerne pollen is yellow, which when concentrated shows reddish, whereas heather pollen is slightly yellow, almost white, though the anthers of the latter are brown-yellow. Pollen contains colouring matter. Not only is this observant to the naked eye, but it is chemically proved. Pollen contains the elements of wax. Unquestionably the main factor in the preparation of wax by the bees is the honey, and in preparation obtains its color from the pollen, which is always used in wax-building. Honey contains no separating colouring material. Beswax melts at 63.5 degrees C.

Wax is not a product all ready in honey, the bees produce it. The process is—the sugar in the honey is separated into wax, water and carbon. The honey produces the wax, pollen colours it. The bees use the protein as nutriment for the young larvae.

The colouring of honey is mainly due to oil of ether, partly in the presence of fruit sugar and resin-like substance, both of which do not readily crystallise. The more fruit sugar, water, resin-like matter and oils honey contains, the more liquid are the remaining proportions. In other words: the more non-crystallising substances honey contains, the less solid it sets. This does not mean that the more

liquid honey be less palatable; on the contrary honey rich in oil of ether tastes splendid. To isolate respectively chemically discoloured honey has not yet been possible.

* * * *

HONEY.

Honey is by no means a sweet sugary juice only, which the bees suck out of the blossoms; it is a manifold composed product of the bees. Honey in the cells consists of not less than twelve parts: water, cane sugar, grape sugar, fruit sugar, resinous substances, albumen (digested), fat, formic acid, lecithin, oils of ether, ash and saliva. The latter is a product of the saliva glands, and comes in the mouth and in the honey sac in touch with the nectar, which becomes honey. In the laboratorium of the honey sac the cane sugar, resinous substances and albumen become invert-sugar, and this activity continues in the cell: thus old honey of equal water-proportions is richer in sugar than fresh. The albumen is added to the honey in the body of the bee; the nectar in the nectaries has none, at least not in such nutritious form. The small quantity of formic acid aids the keeping qualities of honey. This richness of nutriment of various kinds depicts the benefit of honey for the organism of the queen, etc., as also its value for human beings. It is easy to digest, and a great heat-producer, and entitles it to be in use at every family table.

Different honey examined:

1. Ash, max. 0.4431 p.c.; min. 0.0990 p.c.; medium, 0.2694 p.c.
2. Thosphosi acid, max. 0.0883 p.c.; min. 0.0140 p.c.; med. 0.0281 p.c.
3. Albumen, max. 2.0700 p.c.; min. 0.4881 p.c.; med. 1.0730 p.c.
4. Water, max. 33.36 p.c.; min. 17.5p p.c. med. 21.48 p.c.
5. Dry substance, max. 81.39 p.c.; min. 66.64 p.c.; med. 78.51 p.c.
6. Grape sugar, max. 88.70 p.c.; min. 81.60 p.c.; med. 84.52 p.c.

7. Cane sugar, (a) fresh honey, max. 10.07 p.c.; min. 8.83 p.c.; (b) old honey, max. 0.95 p.c.; min. 2.56 p.c.; med. 3.51 p.c.

Next time I will give the results of investigation of brood food.

* * * *

ABOUT BEES.

A colony of bees consists of a queen (or mother), a large number of worker bees, and a greater or lesser number of drones.

QUEEN.

First: I shall describe the queen, as being the most important in the colony, and upon her depends not only the prosperity, but the very existence of the colony. The bees thoroughly understand her value, which is evident by the respect love and homage they bestow upon her; no matter how crowded they may be they make room for her as she moves about fulfilling her motherly duties. When she gets lost, they search for her inside the hive and outside the hive, giving forth a most sad lament. Should the beekeeper perceive this, he ought to at once repair the loss by giving another queen. If he cannot do this, as the accident might occur in the winter, when there is no brood in the hive, the consequence will be fatal, but if it happens in the breeding season, they are naturally endowed with the power of producing a new queen, in the following manner: the bees select one or more worker larva, not more than three to four days old, breaking down the surrounding cells to make artificial queen cells, and then proceed to feed these larva with specially prepared food, called "royal jelly," and in due time a queen is produced. In further explanation I may state that the queen and worker bees are the females, and from any worker larva not more than three days old a queen can be raised as above-mentioned. Queen cells are of two kinds, swarm cells and artificial cells; the former are begun by

the bees when they want to raise a young queen in the ordinary way with the view of swarming: they are larger than the worker cells, and hang downwards. In these partly made cells, called queen cups, the queen deposits eggs, which after two days develop into a larva, and are then fed on plenty of digested food. The cells are gradually lengthened, till on the sixth or seventh day, having nearly filled the cells with food, they are capped or sealed over. The larva then gradually develops, and emerges from its prison in fifteen or sixteen days from the date the date the egg is laid, the better food bringing the queen larva to maturity much quicker than the worker bee. It is not difficult to distinguish the queen from the worker bees, as she is much larger; the abdomen of her body being longer, which make her wings seem to look shorter. Her legs, particularly her hind legs, are much longer, but they have not the pollen baskets like the hind legs of the worker bees, these baskets not being required in her case. But not only in her outward appearance does the queen differ from the others; her internal organism is perfectly developed, and renders her capable of impregnation by the drone. This impregnation must take place within the first five or six weeks from her birth, as after that period she will be incapable of becoming fertilised. One impregnation is sufficient, and with a very few exceptions lasts during her whole life. Her intercourse takes place outside the hive, while on the wing, so she must be strong and well-winged, and there must be plenty of drones about, or else the chance may be lost. Her wedding trip takes place during the warmer hours of the day, between twelve and five o'clock in the afternoon, which is the time the drones take their daily flight also. Her marriage having been consummated, she returns to the hive, and unlike the most of them, remains henceforth at home; and after two or three days she commences to lay, which fully occupies

her time, and she does not seek to leave the hive again unless it is to lead a swarm and form a new colony. The queen, like the working bee, possesses a sting, but she only uses it in conflict with another queen, as she will admit no rival to her throne, and except at swarming time a second queen is rarely found in the colony; in fact, one of the first acts of her life is to search for and try to destroy any princesses that are likely to be antagonists to her.

* * * *

WORKERS.

The worker bees are the smallest of the three kinds, and are produced in octagon cells and their development takes twenty to twenty-one days; they are undeveloped females, and from this defect it is not their vocation to lay eggs and reproduce their kind, but their duties nevertheless are not less important, and are certainly as necessary to the whole working of the establishment, both in and out of doors, and almost from the moment of their birth their life is one of the unceasing labour of various kinds, some of which are very skilfully and untiringly performed that it is a pleasure to watch them. They build the combs, they gather the sweet nectar, bring it home and store it in the cells; they gather the pollen, feed the larva, clean and feed the young bees when hatched, thus taking upon themselves all care and responsibility; they clean the hive, guard and protect it against all of their many enemies of various kinds, and are ready to lay down their life in its defence, their only, but dangerous weapon being their sting, which they fearlessly use when required, although its loss is almost invariably their death, as the sting is barbed, and can seldom be withdrawn by them. A strong colony in the summer should contain about 30,000 to 70,000 workers. The stronger the hive is the more profitable, and thus produce larger yield to the beekeeper.

DRONES.

The drones are the male bee, and differ greatly from both the queen and the worker bees. They are larger in body, and the abdomen less pointed as that of the queen or workers, and they have a loud hum when flying. They are reared in larger cells, called drone cells, and require twenty-three or twenty-four days for hatching. The cappings are high, and are very easily distinguished from the other brood cells; the sole purpose of their existence is for the impregnation of young queens. They take no part in the labours of the community, consequently they have received the names of lazy drones. Unlike the male of most creatures, they are the weakest and most helpless. They have no sting to defend themselves, and no natural appliance of procuring their own food; they are only produced in the summer months in anticipation of swarms and impregnation of virgin queens, and when the honey season is past they are no longer required; they are then destroyed by the bees in order that they may not consume the stores in the hive during the winter. However, when a hive is queenless, they are generally kept for some time longer. In a hive there may be as many as several thousand drones, which may appear far too great a number of these useless idlers, but this is a wise provision of nature, as it is a matter of great importance that the queen should be certain of mating soon when taking her flight. The experienced beekeeper avoids the rearing of too many drones, which are only consumers of food, and no other beneficial value.—E. ABRAM, JUN.

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VICTORIAN APIARISTS' CONFERENCE.

BEE DISEASES.

Mr. T. Bolton delivered an address on Bee Diseases, and the need of legislation to protect bee farmers. In the course of his address he said: So far as bee diseases are concerned, my wish is to set the ball rolling from the point where it left off rolling eight or nine years ago. The burden of the matter seems to be that there is a great need for legislation to prevent the spread of diseases amongst bees. There are three or four diseases which are prevalent in Australia and other parts of the world. The principal ones are bee paralysis, dysentery, and foul brood. There are two other things I would like to name—the bee moth, which is a pest, and something else, which is more like a plague, or a “result.” This “result” is worse than any other I have mentioned. Some call it the “disappearing trick,” others the “unknown trouble.” It was felt severely in the Western district of the State last spring. In fact some beekeepers lost 75 per cent. of their hives. In my own case, out of 200 hives at the beginning of October, only 30 were left at the end of that month. They were wiped out without any known cause. But I wish to deal more particularly with the other diseases. Some years ago we spent a good deal of time in trying to draft legislation, but we had to give it up, as the question was very difficult. Now, however, Germany, England, Ireland, and many other places have their foul brood bills, and we have a much better knowledge than we had then. Speaking generally on the subject of foul brood, I may say that I was very much struck with figures regarding America. Taking a number of places in America for 1897, the losses on bees through diseases amounted to 39,000 dollars. Legislation was introduced dealing with foul brood, and in 1900 the loss had been re-

duced to 20,000 dollars. In 1905 the loss was estimated at only 2,000 dollars. This shows the value of wise law, which aims at stamping out disease. Ontario has just increased the foul brood inspectors in the province from 7 to 14. In this State we are in the simple condition of being entirely unprotected so far as the spread of bee disease is concerned. In the “Blue Blocks,” which is the best bee-keeping district in Australia, two apiaries were started, but the men in charge were taken away, foul brood got into the hives, and they are now in such a state that you can smell the foul brood from the road. Yet we have no power to do anything. A couple of miles away there are struggling bee-farmers who are powerless to do anything to stamp out the disease. It is time that legislation was introduced. I am not competent to propose what the remedy should be, but there are many ways in which the Agricultural Department might assist us in pending legislation. One of these would be to devote more attention to the subject in the “Agricultural Journal.” I suppose when it comes to making the law the question of cost will be the chief thing the Department will consider. It is undesirable at the outset to have a lot of men going about inspecting the bee-hives, particularly if those men don't know half as much as ourselves. If this Association were to a certain extent recognised by the Department of Agriculture, and we know a man whose hives had foul brood, and who was neglecting it to our peril, we could send a complaint to the Department and the Secretary for Agriculture could despatch an expert to investigate the matter. This would not involve a large cost, but it would benefit us by bringing beekeepers into line. If action of this kind on the part of the Department could be assured many more men would probably join our Association to reap the advantages of membership. I have heard that a man known as a foul brood farmer is coming down close to where some of my

out-hives are situated. Something should be done to prevent men introducing foul brood into a free district. It is only a fair thing to ask that we should not have to suffer for the carelessness and the sloth of others. (Hear, hear.)

Mr. W. J. Holden (Stawell) said that foul brood was the worst disease they had to combat. Nothing could be more effective than legislation. They should report any suspicious cases to the Department, who could then appoint an expert to inspect the suspected apiary. The value of legislation in New Zealand had been generally admitted, and Mr. Isaac Hopkins, the expert in that dominion, has recommended the removal of all box hives. Since the year box hives were done away with the honey crop had been doubled. In Victoria in 1907-8 the average for frame hives was 35½lbs., while box hives only produced 10lbs. If box hives were done away with the honey production in Victoria would be increased by three times and a half. Mr. Hopkins had said that they would have had the same difficulty in New Zealand as in other places if the box hives had not been done away with. With frame hives it was much easier for experts to make an inspection of the honey.

Mr. J. Scullin (Dunkeld) said that on June 14th his branch carried the following resolution: "That this Association is of opinion that bee diseases legislation is now an absolute necessity, and trusts that the June Conference of the Victorian Apiarist's Association will use its influence in endeavouring to obtain the same." He spoke of the disastrous results of foul brood, and emphasised the need for legislation. He also pointed out how easy it was for disease to be transmitted from one apiary to another. A grazier had in one instance threatened to introduce diseased bees with a view to affecting and destroying the hives of a neighbouring beekeeper.

A voice: Shame.

Mr. Scullin pointed out that all the hives of a man who depended on the industry might thus be ruined. The Agricultural Department must realize that legislation against bee diseases was absolutely necessary. The industry was not yet large enough to justify the appointment of high-salaried inspectors, but an expert bee-farmer or some other competent man could go to different places where foul brood was supposed to exist. If a man settled down in a district and introduced foul brood, other bee farmers should have the right to appeal to the Government to protect them. The Department could either send its own expert or depute an expert from the Association to deal with the matter. He hoped the Department would see its way clear to enforce a Bee Diseases Act, which would protect beekeepers from those who were practically "up to their eyes" in foul brood. He knew one individual who had introduced the disease into half a dozen different places. So far as diseased bush bees were concerned it was easy to close up the hole in the tree or use a little kerosene and set fire to it.

Mr. R. Beuhne (president) related his early experiences in Gippsland, and said that as the result of another man introducing foul brood he had, as a struggling beekeeper, lost £120 in hard cash. He was under the impression that the Agricultural Department did not recognise the importance of the industry. Beekeeping was a calling in which a physically poor man could make a fair living. He wished to quote a few statistics. According to the "Victorian Year Book" for 1907 the number of beekeepers in Victoria was 4,974; the number of hives, 48,005; the amount of honey gathered, 2,965,000lbs.; and the amount of wax, 46,780lbs. That gave an average per hive of 61½lbs. of honey. The total value of the honey at 2½d. per lb. was £33,977, while the wax was worth £2,534, making a total of £36,511. If they

compared those figures with those of other countries they would find that our industry was as important as in other parts of the world. The value of the production per hive worked out at 15/2½; those statistics were always below the mark. The actual number of hives was much larger than was shown in the "Victorian Year Book." It was contended that there was no export market for the honey. He pointed out that legislation dealing with bee diseases was in force in Canada and other places. New Zealand legislation, which, amongst other things, did away with the box hive, was decidedly on the right lines. If the industry were better organised, and the output increased, honey might be produced as profitably for 2½d. or even 2d. a lb. as it was now for 3d. If the price were thus reduced it might open the way to an export trade.

Mr. D. M. Morgan (Glenorchy) spoke in high terms of the New Zealand Act. In his district he could point out twenty colonies of bees which he thought were infected. Yet they had no power to interfere with the owners of those hives. He thought the Government should give the clean apiarist protection from the unclean one. It would not be necessary to have a large number of inspectors so long as they could get men to visit the various districts as required.

Mr. G. Bingham (Tasmania) said he knew that a number of hives in his district were infected with foul brood. He spoke of the advantages of frame hives over box hives.

Mr. F. Barnes (Melbourne) cited the case of a man who had invested £300 or £400 in hives in the Stawell district, but whose stock had been reduced from 150 hives to 40 or 50 hives, owing to the introduction of disease from another bee-keeper. The Agricultural Department was very particular so far as fruit inspection was concerned, and it was only reasonable to ask for legislation to prevent the spread of bee diseases.

Mr. R. G. McLachlan (Dunkeld) approved of the introduction of legislation as suggested by Mr. Bolton, so far as the question of penalties was concerned.

Mr. Beuhne: The Government will have the power to inflict penalties if a bill is passed. But this is merely a matter of detail. He read a letter from Mr. Hopkins, the New Zealand expert, in which the latter stated that he understood Victoria intended to move in the same direction as New Zealand legislation. He (Mr. Hopkins) would be pleased if Victoria could adopt such legislation, as he felt that the New Zealand Apiaries Act was the best in existence for the present time for coping with disease. The clause that made it compulsory that bees must be domiciled in frame hives was a valuable feature. He (Mr. Hopkins) was suggesting a further clause in the direction of dealing with imported bees and queens, and guarding against the introduction of "black brood." He enclosed a copy of the New Zealand Act.

Mr. Duffis (Secretary for Agriculture) said: "I have attended this afternoon with a view to hearing a discussion on apiaries rather than to take a part in the discussion. It occurred to me that unless the product can be put before the householder in a very cheap form it may be looked upon as a luxury. Your Association some twelve months ago laid proposals before the then Minister of Agriculture (Mr. Swinburn) who appreciated the views laid before him, but was so busy with regulations regarding the Vegetation Diseases Act and other measures that he had not the time to give much attention to the matter. Upon his departure from office the proposals were left in abeyance. It will be for you to interview our present Minister (Mr. Graham) and impress upon him the necessity for going into this matter in a practical way. Legislation might be provided so as to overcome bee disease just the same as diseases of stock. I take it that if legislation were provided in regard to bees it

would in the first instance only be a means of education. It would be necessary to educate your growers what to do. Then we might have applications from several beefarmers for positions as inspectors. That was one of the things that hampered the Government. If we had legislation it would be very difficult to find a man who would do the work to your satisfaction. You say that the Department should take steps to advise beekeepers what to do. I am sure the Government would be only too pleased to assist you, and further than that, I believe that Mr. Beuhne would be willing to go round if the Government asked him. If we have neglected to send anyone around to give advice the blame has not altogether rested with the Department. The "Journal of Agriculture" will always be open to an article on the subject of beekeeping. I have a letter from the Agent-General, who states that the Franco-British Exhibition Medals for honey were awarded to Mr. Bolton, Mr. McFarlane, Swallow and Ariel, and the Stawell district. These medals however will only be supplied if the winners paid for them to be struck off. (Laughter.) The certificates showing the prizes won were being sent out to Australia.

Mr. Beuhne remarked that he did not want the position of bee inspector. (Laughter.) We should do as they did in South Australia, namely take a vote amongst beekeepers to see who was the best man to administer the Act.

Mr. Duffis: That is anything but a satisfactory arrangement.

It was agreed to approach the Minister of Agriculture on June 24th, with a view to asking him to introduce legislation on the lines desired.

* * * *

At the Victorian Conference, Mr. A. D. Hardy, of the Victorian Government Forests Department, gave an address on "The Eucalypts of Victoria," which he illustrated by photographs of various

kinds of leaves and flowers of the Eucalypts growing in Victoria. Mr. Hardy also gave a microscopical demonstration of the growth and transference of pollen, and the manner in which the inoculation of plant life takes place. The address was listened to with great interest, and at its conclusion a hearty vote of thanks was accorded the lecturer.

Mr. T. Bolton dealt with the question of trespass on bee range licenses by men who only held a bee farm license. This matter had been before the Department for over twelve months, and as yet there had been no satisfactory settlement. It was resolved that the Association by deputation wait on the Minister of Lands and ask him to have the anomaly in the Act amended.

Uniform weight of honey in tins:—The President pointed out that it was a mistake to fill 60 or 61 lbs. of honey in each tin, as it would not allow for any dinging in or bumping of the tins in transit, and in this way much honey was lost. It would be far better to adopt a uniform weight of 56lbs. to each tin. After some discussion the suggestion of the President was adopted.

[[SPRING STIMULANTS.

Do not over-stimulate in early spring if you wish for success; aim at getting the bees ready for your own particular district's honey-flow. The best advice I can give is to know your district, then work accordingly. And right here let me lay down a proven axiom: "Always feed, or see that your bees have sufficient food, in the early autumn to carry the colony over till the following May for early districts, and till June for the later ones." These well-stored combs keep the bees in good heart. Depend upon it that the wise, foreseeing little creatures extend the brood-nest in springtime according to the amount of stores they have secured in the previous season.—Writer in "British Bee Journal."

AUSTRALIAN V. ENGLISH HONEY.

In the course of a lecture delivered at the Beekeepers' Conference on Friday evening by Mr. T. Whitelaw, expert to the British Beekeepers' Association, who has recently arrived in South Australia to engage in the industry here, that gentlemen pointed out that there was a far larger percentage of water in English honey than there was in the Australian honey by nourishing sugar, and consequently a pound of the local product was of more value as a food than a similar quantity of the English. Beekeepers in the old country were prejudiced against imported honey, as their palates had been educated to a mild-flavoured product. The price of honey, however, in England, averaging as it did about 1/- a lb., put it beyond the reach of the great mass of the people, who regarded it in the light of a luxury. This being so, they had not acquired a taste for any particular flavour, and he thought it a splendid opportunity for South Australians to push their honey on the English market and educate the people to its flavour.

SHAKING UP THE BEES.

Shaking up the bees seems still one of the topics under discussion across the ocean. It appears to me that a pair of drum-sticks would give them a good jarring, or the hive might be placed on a housemaid's cinder-sifter and gently rocked, especially if the combs are fixed both top and bottom. We may have our hives made with rockers, if we find that shaking increases the honey-gathering powers of the bees. I am not trying the shaking up method myself, at least not this season. I'll bide a wee.

With large apiaries orders should be placed for goods at once where not already done, and I would commend the use of new 1909 super foundation for

filling the sections. Any old foundation left over from last year may be used for the second or third racks on strong colonies, but to start the season use new extra thin "Weed." I prefer "British 'Weed'" myself, and each year proves the utility of using full sheets for sections. I use Abbots little roller fixer, which fixes the foundation by warmth and pressure at the top of the sections only; but by careful cutting, so that it touches the sides and hangs within $\frac{1}{4}$ in. of the bottom, we get excellently filled sections. Warmth is essential for supers if you wish to be successful in producing commercial sections.--W. Woodley in "British Bee Journal."

AUSTRALIAN HONEY IN LONDON.

At the time of the holding of the Franco-British Exhibition in London accounts of the fine display of South Australian honey reached Adelaide, writes a local exchange, and much good to the industry was predicted as the result of this splendid advertisement, Mr. A. E. M. Norton, the South Australian commercial agent in London, not content with the exhibit alone, persuaded Messrs. Whiteley and Sainsbury and the Army and Navy Stores to allow him to have the honey sold in small lots. This was a great concession, gained only after considerable hesitation on the part of the parties mentioned. Then sales of 1000 to 1500 1-lb. jars, labelled "Approved South Australian honey," were made per week, and as the majority of the visitors hailed from the country districts of Great Britain the extent of the advertisement given to our honey must be apparent. Many inquiries have since been made from the counties of England for South Australian honey, a number of firms being desirous of ascertaining where wholesale consignments could be purchased. The honey, too, won the Grand Prix at the exhibi-

tion, and the praise of the jurors. Contrast this with the conditions that prevailed before Mr. Norton's advent in England. There was no demand whatever for Australian honey there, and shipments that had been forwarded to London had to be returned to the Commonwealth, because the loss on the consignments would have been greater than the amount involved in handling the honey, and in the freight to and from England. This is a noteworthy instance of how trade in a country's products can be opened up by a capable business agent and by judicious advertising—"Leader."

SENDING QUEENS BY MAIL.

Some years ago, in the United States, virgin queens were sent through the mails; but owing to the difficulty of introducing them to strong colonies the practice seems to have been all given up; but in these years we have learned, writes a contributor to "Gleaning," that a virgin queen more than two days old should be introduced, not to a strong colony or one of medium strength, but to a very weak nucleus of not more than two or three hundred bees. She will usually be accepted by such aggregations, and when once laying she may thereafter be introduced to any strong colony.

To make up these little two or three hundred bee nuclei, take a couple of unfinished sections containing honey; make or produce a small box, just large enough to receive them. This box should have a cover and an entrance not larger than a quarter-inch hole.

Go to any hive when the bees are flying the heaviest, and dump in about a cupful of bees. In about twelve hours one may introduce a virgin with perfect safety, because the old flying bees will have gone back to the parent colony from which they were taken. The young bees will, of course, accept any thing. They will afford their young princess a safe

home until she is mated, after which she may be readily introduced anywhere.

Another way to introduce virgins is to put them on hatching brood. The young bees will, of course, receive them kindly.

It is true that five and six days old queens may be introduced at times to strong colonies; but three times out of five they will receive either rough treatment or be killed outright. Very often these old virgins, if they escape being killed, will have torn wings or missing legs. Such treating incapacitates them from doing full duty afterward.—
"Leader."

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