The Australian bee bulletin. Vol. 14, no. 6 September 28, 1905

West Maitland, N.S.W.: E. Tipper, September 28, 1905

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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.

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N. S. W. BEE-FARMERS' ASSOCIATION.

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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.

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.

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

Printed and Published by E. TIPPER, Proprietor, High Street, West Maitland, N.S.W.

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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

EDITOR & PUBLISHER, West Maitland & Willow Tree.

MAITLAND, N S W.—SEPTEMBER 28, 1905.

The following is a list of advertisers in our present issue, all of whom we would recommend our readers to patronse :—

Supply Dealers.

C. J. Manning, Chuter-st., North Sydney.
A. Hordern & Sons, Haymarket, Sydney.
John Rush, Mentone, Victoria.

Queen Raisers.

W. Abram, Beecroft.
H. L. Jones, Goodna, Queensland.
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Honey Tins.

Chown Bros. and Mullholland, Ltd., Thomas St., Ultimo, Sydney.

Miscellaneous.

A. Hordern & Sons, Haymarket only, Sydney.
P. J. Moy & Co., 161 Sussex St, Sydney.
Prescott Limited, 336 & 338 Sussex-St, Sydney.
W. L. Davey, Station-St., Fairfield, Vic.

N.S.W.

BEEFARMERS' ASSOCIATION.

My warmest thanks are due to those members of the above who showed their approval of my uses of proxies, as printed in last issue of *A. Bee Bulletin.* I have always endeavoured to do what I considered right, and your approval has given me cheer. I will always try and merit the same.

Yours very sincerely,

E. TIPPER,

Hon. Sec. N.S.W. Bee-Farmers' Association.

We have been asked the question, "How is it you have to pay 6d per lb. to buy honey in Sydney, when the producer gets only 1d to 2d per lb?" We will tell you. There are people in Sydney who do fairly large retail businesses, who buy as cheap as they can. They go round to all the commission houses, examine the honey, find every possible fault, educating the commission men, so the latter can

beat the producer down. But they keep up their retail price. The public or producer gets no advantage. Some of them would do their best to destroy the Bee Farmers' Association.

SEASONABLE.

We hope soon to be extracting. Have everything ready. If not tanks get 60lb. tins. Don't extract unless the combs are at least three parts capped. If honey left to settle in tanks, all impurities go to the top. Don't send to market too quick till this has been done. Leave it for a few days at least. Unite weak colonies. One strong colony is worth far more than several weak colonies. To unite, place an empty hive between the two to be united. Sprinkle a little scent on the two, then take frames alternately from each hive and place in the fresh one, keeping the brood frames together.

As the bees increase and the honey-flow comes on, give room by adding supers, putting empty frames between full ones. Extract from frames in which the honey is nearly all capped. Get honey off before the flow ceases. To wait till the flow is over you have to face robbing. See that all hives have queens, and that all queens are clipped. Remove all drone comb out of brood nest; place same in supers or melt for cappings.

To prevent swarming, remove brood.

Sections are being retailed in Dublin, Ireland, at 6d each.

Old foundation may be better than new if dipped in warm water, not too hot.

The average consumption of honey by a colony is calculated at 200lbs. and over.

In the month of June, 1905, £3,630 worth of honey was imported into the United Kingdom.

The desire was strongly expressed among the Queensland beekeepers that more literature respecting the uses of honey as f od should be circulated.

Mr. I. Hopkins has been appointed Bee Expert to the Government of New Zealand. His supply-business has been disposed of to Messrs. Bagnall Bros.

Owing to being away from home at Brisbane for a time, we were unable to reply as promptly as we would wish to much of our correspondence during that time.

We acknowledge from Mr. S. Colbourne copy of pamphlet on Foul Brood. We also note that Mr Colbourne is going to change his Poultry Journal back into a bee journal.

Robber bees may be readily distinguished by their cautious flitting, dodging, sneaking, guarded movements as they hover about the entrance in fear and doubt as to the advisability of entering.

In early summer, when bees multiply very fast, there are numerous nurse bees with not enough work to do, and they become discontented and incite the swarming fever, when immedi tely queen cells are formed.

At the late St. Louis Exhibition in the United States, there were honey exhibits from France, Madagascar, Roumania, Bulgaria, Argentina, Nicaragua, Mexico, Cuba, Phillipines, Japan, Canada, besides all the States of the Union.

Some German beekeepers believe that hives with entrance half way up or on top will both give more honey and swarm less than others. We are not certain of the former, but believe the latter. There are others who claim a round hole is the most natural entrance for bees.

The A.B.C., speaking of Japanese logwood, says it is a strong competitor with the sage, alfalfa, clover and bass-wood of the United States. It yields so enormously that the average amount of honey produced is anywhere from 120 to 200lbs. per colony. Even with the duty added, it might be able to compete with the American product. From the best

evidence to hand, it will give more honey for a given average than any other tree or plant in the world. Its growth, however, is confined to the West Indies.

N. S. W. BEE-FARMERS' ASSOCIATION.

ELLIOT J. RIEN.

It having fallen to my lot to take an active part re the Proposed New Rules, I naturally take considerable interest in the same, and offer the following comments on the notes in your last issue, from our beekeeping brethren. I do not quite agree with Pankhurst withholding his vote, for it is only by members exercising their privileges to the full in this way that the will of the majority is obtained, and so we are likely to arrive at a safe and good result. As to one man one vote, it might be some benefit; but the man with a large share in the industry should, I think, in all fairness, have a larger say. As to counting, the rules should say when count is to be made either spring count, or, better still, at about time of Annual Meeting. I do not wonder at his annoyance; when a man goes to the meeting with the express intention of causing discord, one could not expect better results than were reached at last meeting. Mr. Gorton has about sized up the new rules alright, but as far as anyone interested in beekeeping being members, I do not see any objection to this, provided they are not permitted to hold any office. If the bee-farmers cannot fill the offices then we had better shut up. He has struck the great objection to New Rule 12. A man receives the proxies, he should not give them to anyone else, as they are given to him in confidence. I agree with you regarding the Hon. Sec., and have always sent my proxies to him. Shakespeare's hint re holding meeting earlier might be worth the Executive considering. Anything that will facilitate the attendance of members should be considered. As at Easter there are much cheaper tickets issued by certain trains than are obtained by using the concession certificate; e.g, Wyee to Sydney by train referred to, 5/11, concession certificate, 8/-, and then we are limited to time. With regard to Wm. Niven's note I do not understand them. The referendum must be taken before next meeting, and new rules cannot become law unless approved by a majority. Vide promises and arrangements made at last meeting. As J. E. Taylor says, the papers might have been sent to be opened at next meeting. This, however, is only a matter of detail, and was not provided for. J. Pennington, I do not see that it makes much difference whether supply-dealers, etc., are members, provided they pay their subscriptions and are debarred from office, and so of running the Association. Brown hits the right nail on the head when he speaks of country members being done out of their votes. It certainly is not the thing for country members to pay the piper, and others set the music, just because by accident or misfortune they cannot be present. Shaw's notes are to the point, as see, an effort has been made to foist the new rules upon us by a meeting, when only seven (7) members were left in it, and that after a distinct promise being made to me that they would be submitted to all members first. The quorum should be fixed, and not at too low a number. His suggestion that rules should not be altered in any way until they have been before members for three months is a good one. Volz is right. It is significent that although Mr. Ager announced his intention of being present, and his views concerning the Association and the Secretary in no measured terms, yet he got no proxies, showing that members had no confidence in him or his views. I agree with Penberthy that subscription is not high enough at present to provide sufficient funds, and in this the new rule is some improvement. Let a beekeeper have one vote up to fifty hives, and for each 100 or part thereof one vote, and pay say a subscription of 2/6 for up to 50 and 2/6 or 1/- for each 100 or part thereof.

registered. Hon. members, 5/- per annum. His remarks on Rule 10 are apt; it is neither here nor there, while the same applies to Rule 11. Non-bee-keepers should not be allowed to hold office at all. It is a Bee-Farmers' Association, and bee-farmers should run it or shut up. I agree with you; the majority should rule and minority help. One is not always in the majority. Moorefield's notes are much to the point. The Secretary has spared neither time nor expense in working for the B.F.A.

While I believe a majority of members will vote against the new rules and throw them out, I am not sorry because: 1st, I do not think they are any better than those they are intended to replace, and 2nd, they were, by one of the principal movers in their preparation, I am afraid, intended as a slap in the face of the Hon. Secretary, and so members whose confidence he retains must vote against them. Yet I think the time has come when we must amend our rules if we are to do any useful work. We must give and take one with the other. It would be a great pity if our Association was to break up, for there is greater need for its work now than ever. It has materially helped bee-keepers in the past, and prevented their being annoyed by inspectors, and gained a number of concessions, but if the meetings are to be a repetition of the last they are not worth going to. Regarding the proxy vote, this must be retained or a good substitute provided. It must be admitted that in its present form it does not work well, for naturally we all send our votes to the Hon. Sec., knowing his views so well. I have always done so. The result is that he holds all the votes, and, as in last meeting, can outvote all the others twice over. This places him in an awkward position, and makes it of little use anyone else attending the meeting. I believe some suggested that he should distribute them in the meeting, but this would only be child's play, and would not be right. The proxies are given to him on his views, and if he gives them to Brown or Jones they may vote right against us. So it was thought to make a limit of 5 proxy votes, so as to compel them to be distributed or what? This is a worse provision than the former. and as it was pointed out in the meeting, would work unjustly on absent members. How are we know who will be present. They say "we ought to go down and find out." Such talk is cheap. N.S. Wales is large, travelling is expensive, and often other things hinder us going; so some better arrangement must be made.

Let the beefarmers put their heads together and try and solve a better rule in time for next meeting. Below, I throw out a few suggestions combined with those made by members in their notes in last issue, and let members all consider them, suggest alterations or improvements and then there will be some hope of a good result being arrived at. Taking the Proposed New Rules as a base, let us see what can be done. Rule 1 may stand as it is. Rule 2; beekeepers should pay a subscription of 2/6 up to 50 hives, and 1/- or 2/6 for 100 or part thereof thereafter registered, but no one should be compelled to pay more than 2/6, then Rule 4 might be made Rule 3, and read: "Every member shall be allowed one vote for up to 50 hives registered, for each 100 or part thereof registered, an extra vote; the count to be spring count, or as may be decided." Rule 4; the present Rule 3; add to it, "but they shall not be eligible for any office." Rule 5 may stand. Rule 6; and shall pay an affiliation fee of 1/- or 1/6 per member, and each member shall have full privileges of Central Association. Rule 7 may stand. Rule 8 should have "not less than 4 Vice-Presidents, also Auditor." Rule 9: "All offices shall be filled by bee-farmers only, with not less than 50 hives of bees." Rule 10; "Ballot-paper shall be sent to all members two months prior to annual meeting, and returned to the scrutineers to be opened at annual meeting. No nomination will be accepted for any office unless the person so nominated signifies his intention of being present. Should the member receiving a

majority of votes be absent at declaration of poll, the person next on the list shall take the office, and be declared elected; and so on for any office." This will prevent confusion by a person being elected who is an absentee, and will put the election in the hands of the beekeepers themselves. Rule 11: This must go. The old rule was better, for we knew what we were doing, but I would substitute the following: "After the Annual Meeting the secretary shall cause all important motions on the business-paper to be printed and sent to each paid up member for a referendum vote, before any action is taken on the several matters, the result to be published in the official organ, and the ballot-papers or referendum papers be presented at next annual meeting. Allow say, a month after Annual Meeting before the count is made and action taken." This places the whole thing in member's hands, and would secure majority vote, and prevent us being run by city people. With regard to Rule 12, there should be added "no amendment shall take effect until after the election of officers at next annual meeting." These are only suggestions, and ought to be susceptible of much improvement. Let bee-farmers consider the matter well. We must keep going; there are people who are watching for the chance of fat Government billets, and such like. Then there are a lot of questions waiting to be dealt with, but unless we are a united body, not much can be done.

You are at liberty, sir, to use this as you wish and like. I trust the Bee-Farmers' Association may not suffer the fate of the N.S.W.B.K.A., etc.

VICTORIAN APIARISTS' ASSOCIATION.

Will all our members kindly read, learn and inwardly digest the following, and act promptly thereon.

We are fighting one of the greatest fights for the beekeepers of Victoria that will ever be fought. It is a question of the freedom of the axe against the life of our industry. We are now nearing the vital point of having a law placed upon the Statute Book that shall save to us for our life time at least, the valuable asset of a naturally-given honey supply, or of having our honey-supply crushed out of existence (see copy of letter in this issue).

Now, beemen and members, is the industry worth anything to you? are the green timbers valued at all by you? Do you think this Association means business. If so, I must appeal to you to make your answer a practical one; *I must have funds, and at once*, if we are to win the day. Every member must pay now and not wait until the end of the financial year.

Many of our members have got into the bad habit of waiting until the Conference and then sending in their subscriptions, forgetting that we want the money to spend at any moment on their behalf and for their own benefit. Now, I want a large amount for the next Executive meeting early in October. This is absolutely necessary if the law that is coming into force is to benefit the beekeepers, and not hamper them. This should be our law, and not somebody else's law, and on behalf of the Executive of the Association and the industry, please send promptly the amount now due (and if you can spare it add a donation to your subscription) so that we will be in a position to secure the best and most expert assistance available, etc., etc., in this matter. If all members are staunch and loyal now, I have no fear of the result.

W. L. DAVEY, Sec.

Department of Lands and Survey,
Melbourne, 1st Sept.

Sir,

In reply to your letter of 28th ultimo, I have the honor to inform you that the Minister is considering the whole question of ringbarking and preservation of timber in the interests of beekeepers,

with a view to bringing a Bill before the legislature.

I have the honor to be,

Yours, etc.,

J. W. SKENE,

Sec. for Lands.

To W. L. Davey,

Sec. Victorian Apiarists' Association,

Melbourne.

TASMANIA.

S. T. MAIN.

Have been waiting a favourable opportunity to supply you with some bee news, but so far nothing of much interest to record in the bee line. I had a chat with an orchardist at Huonville, who had about 40 colonies in Langstroth hives. He was not giving them much attention, having had bad seasons of late, so had allowed a number of his hives to die out from starvation. Also came across a bee man in the district of Port Cygnet, having 80 colonies in single and 1½ story hives, hand-made. Mr. Pollard also makes all his frames and sections, and that without the aid of a circular saw. I found him feeding the bees, which were a black strain, no attempt to Italianise them having been made. Advised this beekeeper to introduce a good Italian queen in the spring, and re-queen through out. Stringy-bark, peppermint and blue gum being the chief honey source. The former trees only give a good flow once in seven years. Came across many keeping a few hives of bees in fruit districts. Some say they have lost their bees through being poisoned when spraying of trees is carried on. I think also, from appearances, many have died out through neglect. Had a chat the other day with Mr. Strand, who has an apiary of about 70 colonies a mile out of Longford. He advertised queens for sale at one time in A.B.B. Of late he has not given them so much attention, and has given up queen-rearing; in consequence many black bees are to be seen. Being open farm country, one would not expect to get a big crop of honey. Fortunately, Mr. Strand has other "irons in the fire." Honey must be scarce in Tasmania; it is seldom seen on the table. The hostess at the Temperance Hotel said she would be glad to obtain good honey at 4d per lb; had paid 7d per lb., and not too good. But I have tasted some very good light honey over here.

Had an interesting chat with the Sheffield State Schoolmaster about bees and honey, who takes an intelligent interest in bee matters, having a number of colonies in American hives. Mr. Smith informed me that the bees build up in the spring on the heath, and gather a nice lot of honey from it; also work well on a shrub known as the native hop. This enables the bees to get strong for the clover and blackberry flow, from which a nice lot of surplus honey is obtained, being indeed the main source of supply. The honey obtained from the blackberry bloom is of a fine mild flavour, being very white in the granulated form. Messrs. Hope Bros., of the Roller Flour Mills, also keep twenty colonies in Langstroth hives, and this gentleman spoke highly of the blackberry honey. I was surprised to find so many people keeping bees in this district, of 900 feet or more above sea level, with a cold and wet climate, and very little forest timber. Foul brood has given trouble at times in this district.

Now, sir, a few lines about Tasmania. Coming from a drought-stricken country like N. S. Wales, and to travel in this beautiful island, is a thorough change. A change of scene, people, and clime. And just now, travelling through splendid farming country, with well-tilled farms and pretty homesteads; the hawthorn and privet hedges, the lanes with the blackberry and sweet-briar brambles also the gorse, yellow with bloom, remind one much of the mother-country. More population is wanted here, as in Australia. The country towns are very small, though on the west coast I believe there are some larger towns. Railway travelling rather slow. I noticed recently in a carriage, the following notice:—"Pass-

engers are requested not to get out and pick flowers while the train is in motion." But on some of the lines the curves are sharp, and many so; would be impossible to go at express rate without accident.

SOUTH AUSTRALIA.

I see in your *Bee Bulletin*, page 83, a correspondent complains of an attack of itching on the hands and face. It will, perhaps, be interesting to you if I give you my experience, which is similar to that of your correspondent. I have been keeping bees for 21 years, and have had on an average about 200 hives, and until last year have experienced no unpleasantness from working among them, but last spring I noticed that the ends of the frames were thickly smeared with propolis. On lifting the combs I naturally pressed my knuckles on the other combs in order to break them loose. Thus my knuckles became smeared with the propolis. My fingers began to itch and then to exude a watery substance, then they became scaley and the scales peeled off. After this my fingers cracked in several places, similar to chapped hands. This did not affect my fingers further than the second joint; the remainder of my hands were not affected at all, and the middle finger of each hand was by far the worst; my thumbs ached very little. My neck and eyes also were affected similarly, though not so severe, and my eyes also swelled, but, unlike your correspondent, it did not affect my health. I tried Cuticura Soap and Ointment, and also took Sarsaparilla, but with very little benefit. When the main rush was over, we left off taking honey for about three weeks, and my ailments were very soon better. Then there was a flow of White Gum, and as soon as I commenced taking honey all the symptoms came back again, which again recovered very quickly when the honey-season was over, and I was not sorry either. Now, I do not think it was the bee-stings, but the propolis or something on the combs, for only a few weeks ago, three months after we finished taking honey, I had about 250 supers with empty combs in sent down from the hills, where we had been taking honey to our home on the plains. These combs I had to space in the hives (supers), which took me about two days, when, to my astonishment, the itching of my fingers and the swelling of my eyes came back again, though not so severe as before. There were no bees in the supers; they had been left up in the hills.

Now, Mr. Editor, if you can give us some idea how to get out of this difficulty I shall be very glad.

T.H.

Not having had any such experience, we cannot give the information he asks. Would some other of our readers give experiences. Our correspondent also asks for particulars respecting the getting up of thick honey. In our last (August) issue, on page 108, some such is given. We may, however, add, when you have honey you know will candy, see it put up at first in clean tins, and the honey has been well strained. Honey may be made to candy by frequent stirring.

THE LONDON MARKETS.

We take the following from the Sydney Morning Herald of Sept 12th being an extract from its London Correspondents letter dated August 11th.

HONEY AND FRUITS.

There is some New South Wales honey on the market, which is found to be difficult of realisation at a decent figure. Twenty cases were offered at auction, and the only bid was 15s per cwt, which price is the value now set upon ordinary Australian honey, according to brokers' lists. Jamaica honey—a favourite kind with importers, possessing a strongly aromatic flavour—is arriving in large quantity, and the make in this country is stated to have been high, so I cannot see any favourable prospects for colonial, though brokers persist in saying that if "placed here when the market is favourable" Australian honey would sell at satisfactory prices. I have not heard of the sale of a parcel of colonial at a really good price, likely to reward the exporter for his enterprise for years

PRICES OF HONEY.

Maitland Mercury.—Honey, 1½d to 2d. per lb. Small tins 1/9.

Melbourne Leader.—Honey.—The demand is not great in this department; prime clear garden lots are selling at from 2½d to 2¾d, a fraction more being obtained occasionally for an extra prime sample; quantities of cloudy and congealed are offering at from 2d. to 2¼d. Beeswax—Up to 1/1½ is obtainable for really prime wax, but there are full offerings of medium, more or less discoloured, at down to 1/-.

Melbourne Australasian.—Honey. Prime clear garden, 2¾d to 3d; medium and off-flavoured lots, 2¼d to 2½d; inferior lower. Beeswax—1/- to 1/1½d, according to quality.

S. M. Herald.—60lb tins prime extracted 1¾d to 2d, choice tin lots, 2½d per lb.; candi d 1½d. Beeswax, dark 1/1½d, prime clear 1/2 per lb.

Brisbane Paper.—Honey, 1½d to 1¾d.

HONEY.—

Since the advance of Butter to 11½d, there has been a better demand, and stocks are moving off more freely. Choicest quality is selling at 2¼d. and occasionally we can secure 2½d. in small lots. Dark and Candied lots are slow of sale from 1½d to 2d.

BEESWAX.—

There is a splendid demand for this at present, and we have several orders unexecuted at 1/1 to 1/2.

THE NUTRITION OF THE BEE.

By T. Cherry, M.D.M.S., Director of Agriculture

An address to the Victorian Apiarist's Association. Annual Conference, June, 1905.

In thinking over the question of the food supply and nutrition of insects from the point of view of the physiologist, it seemed to me that some points were of sufficient importance to bring under your notice at your annual conference. While we are not yet sufficiently informed on all the points connected with the growth and life history of insects to enable us to make any statement of value with regard to some of the details of the process, yet there are one or two broad facts which stand out so strongly that they must be kept in view by every one who is aiming at making an economic success of his work with insects. While great differences are found to exist among different classes of insects, it appears to be the general rule that in those that exhibit the phenomena of complete metamorphosis, there is special provision made during the early history of the individual for building up the active working tissues of the adult. In all animals the food which is consumed is devoted to two separate purposes—part of it goes to build up the active working tissues, the other part is utilized by these working tissues in the course of their activity. Hence the distinction between the flesh-formers and the heat-producers. The former are the foods utilized to make good the wear and tear of the active living portions of the animal. The latter, although they may be incorporated with the living tissues for a longer or shorter period, seem, on the whole, to bear the same relation to the living tissue as the fuel does to the steam-engine. Flesh-producers always contain appreciable quantities of proteid or other nitrogenous substance. The heat-producers consist chiefly of carbon, and are typically represented by sugar and fat. It is at some stage in the development of the bee from the egg to the imago (adult insect) that provision is made for the formation of the muscles and other active working parts. As the process of development is followed, it is found that this provision must be made either in the egg itself, or during the life of the larvæ. There is no great amount of proteid material provided by the food of the imago. This consists, as is well-known, almost entirely of sugar in one form or another; while should the bees begin to eat pollen or other substance of a similar nature, they are liable to quickly fall out of health. Experiments have shown that they are able to thrive and remain active in the adult stage on food consisting solely of pure sugar and water. On the other hand, the food of the larvæ is composed largely of pollen; and pollen differs from honey chemically in containing a comparatively large amount of nitrogen in the form of proteid and other allied substances. When we consider that during their active adult life the muscles and other organs of the bee are kept extremely active, and when we remember that during this period of activity no provision is made by means of the food for making good the wear and tear of these active tissues, we understand at once why it is that the life of the insect is so short. In all the higher animals provision is made in the food for the supply of material to renew the worn out parts; and special provision is seen in some of the organs of the body for the removal of this worn-out tissue. But with the bee the opposite is the case—no provision is made in the food for the repair of the active working parts—and it is doubtful if there is any provision amongst the organs of the body for the special removal of the waste products arising from their wear and tear. As we watch the development of the insect from the egg, we find that as soon as the grub is hatched food has to be supplied from outside. Previous to the period of hatching there was sufficient material stored away in the egg to supply the wants of the growing embryo, but as soon as the grub is hatched the whole of its energies seem to be devoted to con-

suming and storing away as much nutriment as possible. Although we are not yet acquainted with the full details of the series of changes which take place in the interior of the grub as it develops first to the chrysalis, and then to the perfect insect, it is quite certain that the food consumed by the grub forms the foundation upon which all the subsequent parts of the insect are built, whatever may be their chemical composition. In other words, it is the food supplied to the rapidly-growing larva which determines the activity of the imago.

RELATION OF THE LARVA TO PROTEID.

A glance at some of the facts in the economy of insects as a class will show the importance of this generalization. Many habits and peculiarities which otherwise seem very strange, are thus easily explained. If we remember that the struggle for existence in the case of the grub is almost identical with the struggle for nitrogen, we obtain the key to many curious habits. It is well-known that proteid material is relatively scarce in ordinary plants, but what they do contain is, to a large extent, accumulated in or about the seed. The pod-bearing plants, such as peas, beans, and clovers, obtain an unusually high percentage of protein through the medium of the little bacterial masses growing on their roots. It is the function of the plant to build up proteid material from simple chemical substances. Animals are unable to manufacture proteid at first hand, and must obtain their supply directly or indirectly from the plant. Hence the growing portions of the plant, its seed, and the various parts of the animal, represent protein in a purer and more concentrated form. Animals which are solely vegetable feeders will therefore have to consume and digest a much larger proportion of food in order to obtain a given amount of protein than is the case with the flesh eaters. This distinction holds good with regard to the larvæ of all insects. Caterpillars and other forms which live entirely upon vegetable material are noted for their voracious appetite, and the great quantity of food they consume in proportion to their weight. Even in the case of those insects in which the larvæ and the perfect insect use the same kind of food, the appetite of the latter is small compared with what it was when in the larval stage, but in many cases besides the bee, we find that the larva lives on totally different food from that which it uses when it assumes the imago form. I presume that it is the richness of the tissues of the apple close to the seed which induces the grub of the codlin moth to bore towards the centre of the fruit. Many flies lay their eggs in putrefying animal matter, where their larvæ are well provided with nitrogenous material, while their food in the imago form consists entirely of sugar. In the case of parasitic insects, such as ichneumon flies, which lay their eggs in the body cavity of caterpillars, the reason seems to be not so much a question of protective influence as that of a more liberal supply of nitrogenous food. The caterpillar has the trouble of collecting proteid material from the plant, while the parasitic larva simply consumes the tissues of its host, and in this way obtains its nitrogenous food with a minimum of trouble. Even while the parasites confine their attention chiefly to the "fat body" of the caterpillar, they are obtaining proteid from its juices without injuring the vital parts of their host. What little we know concerning the economy of another great class of social insects, namely, termites or white ants, all tends to impress upon us the importance of protein from the insects' point of view. The food of these animals consists, in the first place of the wood and other material through which they are boring. Such crude material contains a very small percentage of protein. The food which one of these insects obtains from the secretions and excretions of the other members of the community all tends to furnish protein in a more concentrated form. But the termites go further than this. By the simple process of eating every particle of the dead mem-

bers of the community, they keep the aggregate amount of protein available from the one to the other, with scarcely any diminution or loss whatever. Other insects supply food to the larvæ by storing up half-dead caterpillars and spiders in the cells, or choose the muscular tissues of the beetles for the same purpose. In each case the explanation is the struggle for nitrogen.

(To be continued.)

THE DETERIORATION OF RACES OF BEES.

By Arthur C. Miller.

From time immemorial until a comparatively recent date it was the custom among the so-called Christian peoples to "take up" or destroy their heaviest colonies of bees, which meant the killing of the most virile, and left the less suitable to perpetuate the race. The evil results of this practice at last became apparent, attention possibly being called to it by information from Eastern peoples; at any rate, beekeepers in the 17th century began to practice "taking up" the weak and medium colonies, and leaving the best for stock.

Also, there were soon begun efforts and devices for securing part of the honey without destroying the bees. The evil results of the long-continued practice of "selecting the unfit" for breeding were not to be overcome in a season, and until after the introduction of the yellow races we find frequent references pointing to weak stock.

The yellow bees came from the followers of Mahomet, who are forbidden to take animal life except for food, and whose practice was to deprive the bees of only a part of their honey, which gave opportunity for the law of the survival of the fittest to work untrammeled by the hands of unwise men. Despite their sojourn in Italy, this Eastern blood seemed virile enough when it reached here, and its superiority to the native stock was quickly seen.

The introduction and spread of the yellow bees from Italy, and the benefits derived therefrom, are too recent history to need repitition here, but not long ago evidences of weakness began to appear in this race in various parts of the country. Contagious diseases spread with alarming rapidity, and reports of less serious ailments came from all sides. These conditions have been ascribed to various causes, but there is a disagreement as to which one is the most important. Possibly the publicity given the subject of bee-diseases accounts for the recognition and reporting of many cases, but while this would explain the increase of reports, it does not shed light on the conditions upon which the reports are based.

The existing state of affairs is strikingly like that existing before the introduction of the Italian bee, the natural inference from which is that the stock has been losing its vigor.

What we may properly consider a further support of this belief is, that not many years ago many bee-keepers began reducing the size of the brood-chambers of their hives and calling for smaller hives. Their queens were not keeping the 10 Langstroth frames properly filled, and the size of the hive was blamed. Perhaps the blame was rightly placed, and then again perhaps it was not.

Most of such reports come from bee-keepers following well defined lines of instruction and practice. The spread of diseases and the gospel of small hives have followed not far behind the heels of the "transferred-larvæ" system of queen-rearing; just far enough behind to give strength to the suspicion that they are related. The system was well exploited, judicious advertising increased the sale of queens reared by the system, and the evils have increased also.

It is idle for the advocates of that system to say the queens are as fine as any that can be produced by any method, until they can show that the above-mentioned evils have no connection with that system.

The system as taught and practiced, together with the confining of the young queens in cages on candy food, makes impossible the fulfilling of the natural laws of developing. I make this statement knowing full whereof I speak, and knowing also that it will raise a storm of contradiction. Now and then queens may be found reared by this system, that are all that could be desired, and it would be strange if among the thousands reared some were not found which chanced to dodge the evils. But they are the exceptions.—*American Bee Journal.*

ARTIFICIAL INCREASE.

I lost so many bees during the winter and spring of a year ago that I was not able to get my combs occupied with bees again during the summer, and I wish to know if you have some plan of rapid increase that I can adopt next summer so as to get bees on these combs early in the season.

There are different ways of making increase under circumstances similar to yours; but after trying all I like what is termed the 'nucleus-box system' the best of any.

To work this plan we first want to get out boxes of suitable size for our operations, and I know of nothing better than an ordinary twenty-section shipping-case for colonies of the size you will wish to go on your combs. After having made your cases, all but the glass, use a piece of wire cloth for each side where the glass would go, nailing the wire cloth permanently to one side while the other side has wire cloth nailed to a frame, and this frame hung to the open side, similar to the way a door is hung to a house.

I use leather for hinges, cut from an old boot or shoe, and find that this answers all purposes; but if you prefer you can buy the small butts or hinges sold at the hardware store.

Having your nucleus-box completed, get your tinsmith to make you a great big funnel, which should be 18 inches across the top, with the usual slope of side, coming down to a 2½ inch upright, or outlet, which should be about 2½ inches long. If this outlet is much less that 2½ inches in diameter, the bees will clog, instead of readily passing down through, when a frame of bees is shaken into the funnel. Having the funnel made, strike two opposite sides against something, or squeeze together till you have an oval funnel about a foot wide and 22 inches long, in the diameter of the two ways across the top. This will collect the bees in better, when the frame is shaken in it, than it would if left in the ordinary funnel shape, especially securing those which have a tendency to fly when they are being shaken from the frame. A hole is to be bored in the top of the nucleus-box which will just let the small or upright part of the funnel down into it, this holding the funnel in an upright position ready to receive the bees when shaken into the large part. Over this hole fix a little door or button, to cover the same when the bees are in and the funnel out. Then, by means of a spring, button, or wedge, fasten a section of honey taken from some of those you have left over (only partly filled) from the season previous, and your box is complete. This section is for food for the bees while they are in the box, as we often wish to keep them thus longer than the food they take in their sacs when shaken off their combs will last them.

The next work is to crowd the colonies you have in the spring toward full colonies, just as fast as possible, using any or all the plans with which you are familiar for keeping them warm, stimulating, etc.; and as soon as any one of them gets strong enough, prepare it for the rearing of queen-cells by slipping a queen-excluding division-board down in the hive so as to cut off a part of the frames of brood from the queen. As soon as any of the colonies are full of bees, so they can spare bees from two frames, or from half a pound to a pound, and you have ripe queen-cells, take the cells out and put them into a queen-nursery to

hatch. Then as soon as these queens are from one to two days old, go to any hive which can spare bees and take out two frames, being very careful that you do not get the old queen on either of them, and shake the bees from them down through the funnel into the box, doing this about ten o'clock. Now close the box and set it in some dark room till near night, when you will get one of the virgin queens in a cage having a stopper in it filled with 'queen-candy,' so that it will take the bees about fifteen hours to eat out the candy and liberate her. Pick up the box of bees and set it down suddenly, hard enough so that all of the bees in the box will fall to the bottom, when you will quickly open the funnel-hole, put in the queen-cage, and secure it there, an inch or two from the top of the box, by means of a bent wire. Having the caged queen in, set the box away again, leaving it till near sunset the next day, when you will find the bees all clustered about their new queen, and hanging like a swarm from the top of the box, or about the section of honey.

Queenless bees will always worry to get out of a cage, and you will find these bees will, till they have the queen given to them. You will now go to any hive that can spare a frame having brood in it, and, after taking it, replace the same with one of your empty combs you wish to use, when you will brush all the bees off the frame of brood, at the entrance of their hive, and put this frame of brood in a hive where you wish your new colony to stand, having in the same three or four of your old combs, some of which should have honey enough in them to keep the little colony from starving, should there be a scarcity of honey from the fields. Put the frame of brood in the centre of the old combs used and use a division-board or dummy to contract the size of the hive to the number of combs used. Having your hive fixed as I have just outlined, take your box of bees to it and open the door, and poke out a few in front of the entrance, when they will immediately run in with fanning wings. As soon as they begin to do this poke or shake out more, or, in other words, proceed to hive them the same as you would a swarm. When all have run in, adjust the entrance to suit the size of the little colony, making it not very large if it is at a time of scarcity, when they will be likely to be troubled with robbers. It looks like considerable work when telling it; but after practicing all the plans given I do not see that it takes more time than the easiest of the others, and has the advantage that you can take bees from any colony you wish, and they will stay where put, and work as well as any swarm of like size.—*Gleanings.*

EXPORT OF HONEY.

Mr. Beuhne writes to the *Leader*:—There is now no doubt whatever that even our very best honey is not liked by consumers in England, who are used to a very different flavour and a more liquid honey, both of which Australians consider inferior to our own. Europeans, however, very soon acquire a liking for Australian honey if once they can be induced to use it. In his opinion, what is wanted is not the dumping of a quantity of Victorian honey on to the London market, but a persistent continuous effort, beginning on a small scale, taking care that any connections established are not lost again for want of a continuous supply through a failure of the crop in an "off year." This would, of course, necessitate the holding in stock of sufficient honey to tide over a year of comparative failure, and would therefore require some capital. It would also be necessary to establish a uniform standard sample for export, so that all honey exported should always be of the same flavour, color, and density. As our honeys vary considerably, and the same kinds are not produced for two or three seasons in the same districts, the standard sample should be such that it can always be reproduced. It is therefore necessary to ascertain the quantities of each kind produced annually, and this work the Victorian Apiarists' Association has now

in hand, besides giving expert advice and practical information to members and beekeepers generally. Although the Association represents two-thirds of the production of honey in Victoria, there are very many of the smaller beekeepers who have not joined the Association owing to the somewhat heavy annual subscription which is imposed with the object of carrying on the work of organization and the dissemination of knowledge and instruction which in other countries is carried out by State departments. It is hoped, however, that the present Government will at least assist in doing for the industry the work which its departments are doing for other rural industries.

BEEKEEPING IN SOUTH AFRICA.

I went to the upper district, 6000 feet above sea level, where, in my past experience, bees were rare. But cultivation had increased in that locality, (i.e., East Griqualand, Cape Colony), and there were large fields of Indian corn, and as it was it full bloom, I saw the native wild honey bee was active and at work there; in fact, a swarm came and took up its quarters in a store hut, and I watched them hard at work bringing in pollen. My nephew told me he had frequently captured swarms and kept them in boxes, and had clipped the wings of the queens, otherwise with the least disturbance or attempt on his part to rob them of a portion of their store, they would leave and forsake all. That was my experience also, but as I had not taken the precaution to put it beyond the power of the queens to leave, as soon as I took a little of their honey-comb (of course I smoked them a little), they rose and forsook all immediately.

Bees are in great quantity in the forest country of Natal and Cape Colony, and quantities of beautful honey can be had readily by tapping the store of strong colonies of bees in hollow trees. Latterly, quantities, or hundreds of acres, of "*Wattle Australian*," "*Acacia Mollisims*," are grown for their bark for tannin, and the bark is sold in the London market. The bloom on the acacia is full in winter, and the bees store the pollen as food, and now it is difficult to get good honey in the locality in which the acacia is grown, as the combs are full of a yellow, thick substance instead of honey, Also on the coast of Natal, bees are in great quantity, but at the season of the year when sugar mills are working and you rob a swarm, instead of good honey you find a kind of treacle, black and disagreeable. Italian and different kinds of our tame bees have been imported to Natal, and, I believe, give good results. While I was there this time last year the country was being boomed by an American firm who had sent an agent with bee boxes of most approved style, and bee appliances.—Writer in *Irish Bee Guide*.

PACKING COMB HONEY.

When taken from the hive all sections should be carefully cleared of all brace-combs, propolis, or thumb marks. Prevention in the last case is better than cure, so the beekeeper should never handle sections with unwashed hands, but have all receptacles scrupulously clean. The other two substances are easily removed by scraping with a common table knife. Hold section firmly in left hand, and run edge of knife sharply along surface of wood till all is clear. All scraps of comb should be collected and melted into wax, which will be of the purest, as it is all fine, fresh "virgin comb." Sections may then be placed in a cupboard until orders arrive. Be careful to place all sections in rows in the position in which they were in the hive, split top up. Several tiers may be placed above the first, but not over many, or the weight may prove too heavy a strain on the lower row, in which case injury may lead to unsaleable sections. Sheets of clean paper should be placed between each tier to preserve them from dust, and to catch any drip from unsealed or injured

cells; or sections may be returned into their racks and left piled up until required.

As orders come in provide grocer's empties of the size required. These can generally be had for a few pence each, and therefore need not be returned. Lay in each box two or three inches of straw, hay, springy grass, planer shavings, or cut packing paper, to form a soft bed, which will act as a set of springs for the honey when the box is handled harshly, as too frequently happens when porters and carters are in a hurry. Now take each section, having previously graded them into three classes, and place it on the centre of a sheet of wax paper cut to the size required, so that the split end is down. Fold up the two ends of the paper, pressing them down firmly. After this reverse the section, placing it with the folded ends below, on a sheet of clean brown paper, when the simple weight of the section will hold all firmly in position. It will be noted that the section is again as it was on the hive, right side up; this is important for several reasons. Place six of the sections thus side by side, and make a neat parcel of them, tying it lengthwise very tightly with fairly strong twine, so that it may remain rigid when handling and packing in the box. Place each parcel on the bed of hay or straw to the amount of your order, packing them between each row and at sides and ends; pads of the material used, wrapping each of these in old newspaper, make the neatest, cleanest, and most effective cushion packing. All the lower tier must be fixed quite solid. If the order requires a second or even third layer, these may be safely packed in one box, but a new cushion of the packing material should be placed between each tier of sections, and again over the top. A box measureing about 16 in. by 12 in. by 6 in. deep serves for a dozen order.

In the larger boxes, before packing in the sections, bore two holes in each end, about two thirds of the depth, to receive rope handles for two porters to carry by. In smaller boxes the rope generally fastened on serves for lifting and carrying. Be sure the lid is nailed on tightly and firmly, and that the material is not too weak. Thus packed boxes of honey can travel with perfect safety to any part of the country.--*Beekeepers' Record.*

BEEKEEPING IN NEW ZEALAND

Mr. Isaac Hopkins, the newly appointed apiarist to the New Zealand Agricultural department, has returned to Wellington from his tour of portion of the North Island. His inspection included generally the districts along the railway line from New Plymouth and Napier respectively to Woodville. Mr. Hopkins found that bee culture is carried on on a fairly large scale, but there is some considerable backwardness in method, which he hopes to be able to overcome in the course of a few seasons. In the Hawke's Bay district, from Hastings to Woodville, the industry was found to reach its highest standard. Wherever bees are kept Mr. Hopkins paid a visit, and this of course, led him often into the back blocks. The largest beekeeper he has visited so far is Mr. William Lenz, of Kuripuni, Masterton, who has 800 hives, and whose output this season will probably amount to 20 tons of honey. Mr. Lenz's establishment is on a most comprehensive scale. The bees are distributed over eight apiaries, and in connection with the farm there is a factory for the manufacture of the boxes. The whole output of the farm has been disposed of without difficulty. There are several apiaries of 250 hives in the districts that have already been visited.

Mr. Hopkins finds that since the department has taken bee culture in hand there is an increasing desire on the part of beekeepers to learn all they can about the business. As a first step a bulletin has been prepared. It will deal with the subject under five heads, as follows: The use of comb foundation; 2, ripening extracted honey; 3, foul brood; 4, the bee moth; 5, bee culture in relation to

agriculture. The bulletin is expected to be ready for publication in a week or so. It will take probably three seasons to bring the bee industry to anything like its proper dimensions. Then there will be a great increase in the output. The amount of honey required for the New Zealand market is something like 600 tons a year; but there is an unlimited outside demand. There are canning factories in Wellington that are putting up a great quantity in 2lb. tins, and this is absorbing a very large proportion of the locally raised honey. "We raise the finest honey in the world," says Mr. Hopkins, "and it brings the highest price on the European market." Some honey has been exported, but the local demand has increased greatly since the price of butter has gone up, and it will be possible for some time to come to absorb all the output locally.—*Exchange.*

Producing both Comb and Extracted Honey in the Same Full-Depth Extracting Upper Story.

In producing extracted honey we use the ten-frame Langstroth hive, and use eight combs in a ten-frame upper story to extract from. Now, when starting a new yard, usually by buying most of the bees, our practice is, in furnishing them with combs to be used in their upper stories, to go to a yard having their upper stories all full of drawn combs and take half their combs to the new yard. This leaves four drawn combs for each upper story at both yards. Now we put in the place of the combs removed four wired frames with full sheets of foundation. Some of you, by this time are likely wondering what this has to do with raising comb honey in an extracing upper story. It is this. We find with the upper stories arranged with half-foundation and half-drawn combs we can prevent swarming to nearly the same extent as when full sets of combs are used. Taking advantage of this fact the next question arises: How many wide frames of sections each can we substitute for these four frames of foundation, and still prevent swarming? If we could sandwich in only three to each upper story, that would be 24 sections to each upper story.

Perhaps it would be well to close the season with a full set of combs placed on top, with a single-depth super. The idea is to get all our partly filled supers exclusively in the extracted form. The object is this: Every wide frame of sections we can get in this way is worth in the market about twice what it would be in the extracted form. It is a quicker sale, and the tendency of the times is that specialists, with their increasing number of yards that are at the present time starting up over the country, will in the future produce such large quantities in the extracted form that there is a possibility of a still wider margin in prices between the two articles unless some such arrangement as I have outlined above can be worked, so quite a per cent. can be taken in the comb-honey form, and still control swarming in the out-yards.—*Gleanings.*

Many people complain of getting their ankles stung—especially the ladies, yet a few simple precautions will stop most of this. To begin with, don't hold frames over them. When possible, hold frames over the hives, then those that fall go inside and out of the way. When I first set to work to solve this problem of ankle stinging, I tried Mr. Danzenbaker's plan of tucking the pants iuside the socks. The bees went straight for my ankles. Then I tried the plan with two pairs of socks, and this worked perfectly well, only it was too much bother. Next I tried using longer trousers, so that they came well down to my heels, and since then I have only once had my ankles stung. You will say this is good enough, but I was determined to hammer this matter out fully, and at last I hit on the plan – a plan I especially recommend to ladies: instead of sitting or standing by the hive, kneel – and your ankles will be "yards" away from the bees.—*Exchange.*

HONEY EXPORT FROM NEW SOUTH WALES.

The export of honey from New South Wales to London, it would appear, has not proved a financial success, according to the Sydney "Morning Herald." Some months ago a well-known firm of produce merchants in Sussex-street sent a consignment, consisting of 78 cwt. of good honey, for sale in London. The account sales for this consignment have just been received in Sydney, and a glance at its contents is enough to make even the most enthusiastic advocate of honey exportation pause before exploiting in the same direction. The account shows that 13/- per cwt. was received for the consignment. The expenses in London amounted to over 20 per cent. of this sum, while the freight came to about 10 per cent., thus leaving the net return at less than 1d. per lb. The honey was worth 2d. per lb. in Sydney. The transaction therefore showed as much loss as there was hoped would be gain. The London charges, which seem incredibly heavy, include discount, landing, rent, delivery, sale expenses, fire insurance, brokerage, commission, with petty expenses. According to the "Produce Market Review," when the last mail was despatched American white sage honey, strained, was selling in 1lb. jars, 2 dozen in case, at 9/6; Jamaica, in casks, good amber, 2½d. per lb.; fine pale, 3d.; and finest cream white, 4d. These prices hardly indicate a margin of profit on Australian honey shipments, unless the latter can command a sale by being of specially fine quality. The West Indian Islands, which include Cuba, ship honey largely to Europe, and the cost of production, handling and transit is much below what Australian shipments have to carry.—*Leader.*

MEAD AND HONEY VIENGAR.

The ancient Irish beverage, mead, can be made at a cost of less than 1s. per gallon. The best time to work is in September or April, when the natural temperature suits the growth of the fungus. For mead the fall is more convenient, as it is followed by cool weather unsuitable to secondary fermentation. If worked in a building where there is artificial heat, October or March would probably suit better than the other months named. Mead prepared in spring would have to be put in a very cool cellar directly the working ceased.

The "wash" for mead intended for use within three months ought to consist of three pounds of honey to each gallon of water. It is best to put the combs in the water in a straining cloth, so that when the honey and pollen have been washed out the wax can be easily removed. This ought to be effected in a couple of hours by frequently raising and lowering the bag. If the operation be protracted fermentation will probably set in, and it will be difficult to apply any test of strength on account of the rising bubbles. The apartment where operations are carried on must be kept as cool as possible until it has been ascertained that the "wash is" the right strength. When right, a new laid egg will remain at top of liquid, and show about the size of a sixpence of shell over the surface. Needless to say, the egg would be uncooked.

When putting in the combs, the quantity of honey and water ought to be ascertained, so that if the fermentation should "get away" before testing, the mixture can be made approximately right. Keep atmosphere excluded during fermentation. If in a cask, the bung hole must be left open while fermentation is active, but as soon as it weakens the bung goes into the hole with the light pressure of the hand. It will probably rise again but the process is repeated until it sticks. Sparkling wine is produced by bottling before fermentation is complete. By omitting the insertion of the bung as described a secondary fermentation will transfer the mead into vinegar. A piece of muslin ought to be spread over the bung hole during the secondary fermentation to

admit passage of gases without letting in foreign matter.

Each 1lb of honey to the gallon of water for mead gives 5 per cent. alcoholic strength.

Two pounds of honey to the gallon would be the minimum to produce mead or vinegar for prompt use. A mead to be kept 15 months, say from September to second Christmas, would be made from a wash of 4lbs. to the gallon. Made from a wash of 5lbs. to the gallon, mead would keep in a sound cask, 5 years, and the period might be lengthened by drawing off clear and bottling at say, the end of the second year, the wine having been racked once or twice beforehand.

Should the fermentation for mead fail to start, baker's yeast (in the proportion of an ounce to 10 gallons) dissolved in water at 80 degrees Fahrenheit will set it off, but as a rule the fermentation, under suitable atmospheric conditions, begins with startling rapidity and strength.

Bad mead will make inferior vinegar, while good vinegar can be made from good mead only.

In the British Isles the most satisfactory fermentation takes place at 63 degrees Fahrenheit, but abroad mead makers speak of using 90 to 100 degrees.

After draining off the honey, the wash of the cappings from 200 lbs. of extracted honey, ought to give one gallon of sweet water suitable for making mead or vinegar.

When proceeding to convert mead into vinegar, the temperature being right, 60 to 70 degrees Fahrenheit, should the liquid fail to sour, a little of the ropy matter from the stale remains of a bottle or cask of good vinegar, ought to be added.

A good "airing" tends to make a finished vinegar, and to effect this, vinegar, before being bottled, is by some makers run slowly through a cask of wood shavings.

Should the mead fermentation "get away" before testing when the estimation of the quantity of honey has been omitted, it would still be possible to ascertain it by means of a gravitation test. Weigh a gallon of the liquid. In another vessel add 3 lbs. honey to a gallon of water, stir thoroughly and measure a gallon of this mixture, weigh that, and a simple calculation will tell approximately what is to be added. As a matter of fact, it will somewhat understate the amount to be added, as the first gallon, being partly composed of air bubbles, will not really be quite a full gallon.

A full gallon would weigh more, but not very much more, as putting the "wash" into a metal or earthenware vessel would temporarily retard the fermentation.—*Irish Bee Journal.*

VICTORIAN APIARISTS' ASSOCIATION.

R. BEUHNE, President.

NOTICE TO MEMBERS.

I am compelled to ask members who have not yet forwarded their subscription to the Treasurer to do so forthwith, to enable the Executive to carry out the very important work which they have in hand, in matters vitally affecting our industry in connection with the Department of Lands and of Agriculture.

Not only are the funds required for expenditure already incurred, but if we are to succeed in the matter of receiving the financial assistance a deputation from this Association asked for at the time of our last annual meeting, it is absolutely necessary to show a large list of fully paid up members.

BEE LICENCES.

In going through the correspondence received by the Secretary, I find there is a great deal of dissatisfaction and not a little grumbling at the officers of the Association, on account of the non issue of bee licenses, some of which were applied for many months ago. I can assure members that everything possible is being done in their interests. A Bill regulating the bee industry will shortly be introduced into Parliament, and, pending its passage, the Minister of Lands has not sanctioned the issue of any licences for some time back, hence the delay. I have obtained a copy of the Bill at the earliest possible moment, of which the extract from the "Age" (*printed on page 134*) is a summary. Some of the clauses are not exactly as we expected, and we are making every effort to get them modified. In the

meantime I would ask members to have a little patience and more confidence in their officers than some of the correspondence shows. For obvious reasons it would not be wise to publish everything even in the Official Organ, and silence therefore does not mean inaction. Remember that a Bee Journal may be read by others as well as beekeepers.

CHAMBER OF AGRICULTURE.

Messrs D. A. Morgan, and H. Russell and myself attended the Annual Meeting of the Chamber held at Horsham July 3. 4. 5. as delegates of this Association. Mr. Morgan read a paper on Beekeeping, and myself one on the The Relation of Apiculture to other Rural Industries. A resulution that the assistance of the Chamber be given to the Apiarists Association was carried unanimously and I have since been requested to state the case for our Industry at the next quarterly meeting of the Council of the Chamber, when I hope to be able to show how the Chamber can assist our Industry. During my stay in Horsham I made the aquaintance of several beekeepers amongst them Mr. E. Fraser (now one of our members) who gave a highly appreciated humorous recitation at the smoke night "The Blue Blocker."

NEW MEMBERS.

It is desirable that Secretaries of Branches should send the names of new members to the Secretary of the Central Association without delay to avoid the possibility of their being treated as non-members by the Central Association.

THE INFLUENCE OF LARVAL FOOD.

If Mr. Abram will read the full text of Dr. Cherry's address as published in the August issue of the Journal of Agriculture of Victoria, he will find the answers to most of his questions. With the others I shall deal on a future occasion. The investigation is still proceeding (and was so even before Mr. Abram's request). Just at present I am too much occupied with the "Bee Industry Bill" and other important Association work to reply to Mr. Abram fully, but can assure him that the answers will not lose anything in keeping.

The *Irish Bee Journal* says: Jamacia honey arrives in London valued at 1¾d., and reaches the consumer at 9d., an increase of 400 per cent.

From the *Irish Bee Journal* we learn that hives to the number of 32,107 were tenanted in Ireland in May, 1904. These sent out 22,240 swarms, but only 26,474 survived the winter, being a shrinkage of nearly 20,000, or one out of every 4.

The *Irish Bee Journal* says:— After three successive years of misfortune, it is most gratifying to receive reports of success from every part of the country, and also from England and Scotland.

A lot of Interesting Items unavoidably held over.

STORING EXTRACTED HONEY IN TANKS.

During the last two years I have been trying to discover the very cheapest and most profitable method of storing extracted honey. When a large amount of honey is to be stored it is found that the 60-pound cans generally used represent a large outlay, and unless sold quickly generally become dilapidated. Large tanks, such as are used for water, vinegar or pickles are expensive, and very much more so when they leak. Oak barrels are costly, and if granulated sugar is taken out of them it costs nearly as much to cooper a barrel together again as to buy a new one. I have been using rectangular tanks made of flooring, the ends and sides of which could be removed after the contents had granulated. Although they were well waxed they sometimes leaked at the corners.

This year (1904) I tried, with entire success, lining these tanks with manilla paper painted with hot paraffin wax. I experimented with dry goods packing cases lined with waxed manilla paper, and found these boxes absolutely proof against leaking.

To store honey in this way a box must be used, the interior of which is free from any projections which would cut the paper when pressed against the sides of the box. Then a full sheet of manilla paper is laid on the bottom of the box (completely covering it), and another sheet around the interior sides. Where the two ends of this sheet meet in one corner is nailed a carpet strip so as to cover both ends of the paper, and other pieces of carpet strip join the edges of the sheet on the interior sides to the one on the bottom. Manilla paper can be bought in sheets of any length, and 36 or 42 inches wide. Then the paper and carpet strips are painted

over with hot wax, and wherever the paper is accidentally torn a small piece of shingle is nailed over the break and then covered with wax. This box makes the very cheapest means for storing extracted honey, and one that is perfectly safe.

Nearly all bee-keepers strain their extracted honey through cheese-cloth. This is a very slow process. The honey runs slowly, especially if it is not very warm, the cloths become clogged with minute particles of wax, and more or less honey is spilled in changing cloths. Others run their honey into tanks; and after the impurities have risen to the surface, they run the clear honey out of the bottom of the tanks. But this can not be done unless the honey is thin, either from heat or from not being sufficiently ripened. I have made this method very reliable by using a large tin storage-can placed out in the sun. The can is painted black so as to absorb heat more readily from the sun. The cover of the can is a wooden frame with glass top, sloping after the manner of a hot-bed sash or solar wax-extractor, and this glass is kept turned towards the sun. When the sun is strong the honey becomes very warm, and the small particles of wax and other impurities come to the surface.—*E Rowan in A. B. Journal.*

CORRESPONDENCE.

W. H. C., Stoke, N.Z.—My bees are wintering very well, and are just commencing on the weeping willow and a few other flowers. Wishing you and the A.B.B. prosperity.

D. M. M. Stawell, Victoria.—Rather cold to have a look at the bees yet. We don't expect any flow until about March, then from Grey Box. There is a good enquiry for honey now, I think it will rise. I have some in Melbourne now with a reserve of 3d on, and I think I will get it directly.

E. B., Eden,—I have had a little better luck this last winter with my bees, only four queenless. They are doing well just now and every prospect of a fair season. I hope to get more increase this year than last they are breeding up well now and I expect early swarm. The last two years have been very bad down this way, but I think we will have a better year this time. Wishing you success and the Association.

Mr. H. L. Jones writes: —Those replies you published in last A.B.B. are decidedly interesting, and it is a pleasure to me to note the genuine confidence that the honey-producers in New South Wales have in you. Thanks very much indeed for your kind offer to appeal to the New South Wales beekeepers to join Queensland in an export scheme, if necessary. I will communicate with you later as it will be imperative to do something before very long. And now I must thank you most sincerely for your very nice write up. You certainly have a good memory and very keen powers of observation.

L. S. E. S., Burindi.—I'm very anxious to take up bee-farming, but know absolutely nothing about it. I'm told that as I've no means that it would be too expensive an undertaking. Yet no one will give me a hint as to how much capital would be required to begin on a small scale. If you'll oblige me with such information, I shall be extremely grateful to you. First of all, what is the smallest amount of land needed to bee-farm for a livlihood; secondly, what would it cost to make it a going concern; how long before there were any returns, and what risks would one incur? Also, would you advise getting a little experience on a bee-farm ere venturing one's self.

[The amount of land you require is not much. What you need is plenty of honey-bearing timber in the neighbourhood. That has to be learnt by a little experience, some trees blooming every year more or less, others every other year; some two years out of five. Of capital to begin. A good hive of Italian bees is worth 30/-, Then there are other things to get, such as extractor, uncapping knife, etc., etc. The best book is *Roots A.B.C.*, which you can get of H. L. Jones, Goodna, Queensland, or Hordern & Sons, Sydney,

price 5/6. The *A. Bee Bulletin* is 5/- per annum. To make it a going concern you want £60 or £70 at least. If you have a good local market, you might get returns soon after honey comes in. If you have large returns and send to Sydney, you might wait for months.]

PREVENTING SWARMING BY DE-QUEENING.

We discouraged swarming until we were ready to remove the queens. Then, if any were found preparing to swarm, the queen was removed, also one frame of bees and brood. If the queen was an extra good one she was put in an empty hive with the frame of brood. The next six or seven colonies dequeened had their queens killed and one frame of brood from each taken to put with the queen that was saved, which made the increase. The eggs that these queens would have laid if they had been left in the hive would hatch after the main honey flow. After dequeening began, each yard was gone through and the cells removed just before they would hatch Since there had been no eggs laid for several days when the cells were destroyed the second time, the bees had given up all idea of swarming, but were very anxious to have a queen. We now select a cell from some colony preparing to swarm, place it in a West cage and give it to the dequeened colony. This operation should be timed so the young queen will begin to lay at the time of the opening of the main harvest, and this colony will have its share of surplus honey, as this plan prevents the bees from dividing their working force at the beginning of the best harvest, and also gives them a vigorous young queen during the honey flow. In destroying these cells we *must be sure* that we don't skip even a small one, or it may upset the whole plan. — *Exchange.*

CONSUMPTION OF SWEETS DECLINING.

A recent canvas of some leading grocer elicited the statement that the proportion of the consumption of all sweets but candies has steadily declined, the purchasing public taking more fresh fruits, vegetables, canned supplies and novelties of sundry sorts. The stores at all seasons are stocked with these things as never before, and they are natural competitors of honey. There is a limit to the purchasing and consuming power of the public and the advent and display of the thousand and one palate-teasers are bound to have effect. Candy was never so extensively made and sold as now and persons who eat freely of it are not likely to eat honey at meal times with the avidity they otherwise would. All these factors, coupled perhaps with a greatly increased production of honey have much to do with the stagnation of the honey market.— *American Beekeeper.*

CAPPINGS.

Honey does not injure the teeth as confectionery does. From a medical standpoint it is excellent in most of the lung and throat affections, and is a good substitute for cod liver oil. Honey is laxative and sedative, and is especially valuable in cases of bladder and kidney diseases.

HELPING WEAK COLONIES.—Many beekeepers consider it the proper thing to help along and build up weak and queenless colonies found early in the spring by giving them frames of brood and bees from stronger colonies. Better not. The queenless colony at this season of the year is usually worthless, and the weak colony had better be left to its own devices until later. The frame of brood you would give to it is worth more in the colony from which you would take it. If a colony is strong enough to spare profitably a frame of brood, better give it to a colony of medium strength than a weak one. Remember the harvest depends on the number of bees at work, not on the number of hives with bees in them.— *Exchange.*

BEST HIVE-ENTRANCE FOR BEES.— "Swarthmore" says in the "American Bee-Keeper": Bees prefer a 1-inch auger

hole to all other forms of entrances. This may be proven by boring a hole into the back of any hive having a slot entrance at the front.

THE NEW VICTORIAN LAND BILL.

REGULATING THE BEE INDUSTRY.

Yesterday the Minister of Lands gave a summary of the provisions of a bill which he will shortly introduce into Parliament in connection with the Land Acts, for the regulation of bee industry. Under the present law provision is made for bee farms up to 10 acres on any Crown lands, or upon any grazing area, leaseholds or pastoral allotments; but as there are a large number of applications, many of them conflicting, for bee farms, it was felt to be impossible to deal with them satisfactorily without fresh legislation. Some of the clauses of the bill are the result of suggestions from the Victorian Apiarists' Association, and the principal ones provide that no person, company of firm shall hold more than two bee farm licences for more than ten acres in the whole. Licences will issue for a period of one year, but during a period of seven years may be renewed by endorsement. The rent in each case will be fixed by the Minister. A licensee can only erect buildings or boundary fences at his own risk and must remove them when ordered by the Minister. No fence is to be erected unless the site be properly surveyed. As a protection to sheep on adjoining lands, the licensee will be forbidden to keep any dogs. The licensee must not permit the careless use of fire, and may not transfer or sublet his site without the Ministers consent. Where a bee farm site is taken up on a grazing area or pastoral lease, the Governor in Council may at any time excise such site, subject to payment by the bee licensee of the cost of resumption. A clause forbids a grazing area lessee, pastoral lessee or grazing licencee, unless he be the holder of a bee farm license, from keeping more than 10 hives of bees on his holding, and penalties are provided fo any breaches. Provision is made for the right of access for the bee licensee, his family, workmen, &c., to and from any bee site situated within a grazing area, leasehold, or on a pastoral allotment. In addition to this, provision is made for the holder of a bee farm license, or an apiarist on private land, for the right as far as possible to the use of the trees on Crown lands, including lands held under grazing area lease, pastoral allotment or grazing license for an area of one mile in radius of his apiary site at a charge not less than one penny per acre.

It is laid down that what is termed a bee range licence shall not be granted in respect of any apiary which is within two miles from the site of any other apiary in a licensed bee range area. The bee range licence does not confer on the lincesee any right whatever to enter or remain on any Crown land or any land held by any other person under lease or licence from the Crown. One important provision is that in the event of any lessee of grazing area or pastoral allotment applying to the Board of Land and Works for sanction to ringbark or destroy the timber on any land within a bee range area, such application will not be considered until at least one month's notice in writing has been given to the licensee of the bee range. The provisions as to renewal, transfer or subletting a bee range area are similar to those relating to bee farm sites. The areas proposed to be let under bee range licences must be proclaimed as available for such in the "Government Gazette."—*Age.*

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