The Australian bee bulletin. Vol. 12, no. 10 January 30, 1904

West Maitland, N.S.W.: E. Tipper, January 30, 1904

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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.

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

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

MAITLAND, N.S.W.—JANUARY 30, 1904.

The following is a list of advertisers in our present issue :—

Supply Dealers.

R. K. Allport, Chuter St., North Sydney.

A. Hordern & Sons, Haymarket, Sydney.

The W. T. Falconer Manufacturing Co., Jamestown, N.Y., U.S.A.

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A. Hordern & Sons, Haymarket only, Sydney.

Allen & Co, 242 Sussex-street, Sydney.

P. J. Moy & Co., 161 Sussex St, Sydney.

WE would call particular attention to a statement of Mr. H. Hall's, that the choicest white box honey was being offered by a Sydney firm at 2d per lb. Now we happen to know that there is not a big crop of honey in either New South Wales or Victoria. Why should therefore, this low price be quoted from Sydney? There are several reasons. During hot weather, a sharp business man, not particular about speaking the truth, will make a false statement in order to buy cheaply. When fruit is plentiful, much honey is not consumed. Another is, there are too many who call themselves beekeepers, having a few hives, who look on the proceeds of those hives as pocket money only, and will take whatever is offered them for it, and in doing so not only rob themselves, but do a serious injury to their fellow beekeepers. For when once honey, or any other commodity is sold below its value, there are those who are only too quick to give that price as a regular quotation. And so the man who looks to beekeeping for the main part of his livelihood has to put up with this wickedly low price. Again, it is not that the general public is the gainer by such; it is the middleman only who is the gainer. He knows that the price is governed by the regular laws of supply and demand, and he has only to keep his cheaply bought honey till the fruit season is over, the honey flows

are over as well, and the colder weather increases the consumption and demand for honey. And then the consumer finds there is no 2d a lb. honey, but it is 4d and 6d. We would particularly call the attention of small apiarists to these remarks.

Good honey contains in the neighbourhood of one sixth of its weight in water.

Note your best honey gathering swarm and let them breed drones. A valuable drone is at times as good as a valuable queen.

A contemporary says—Put a super with its bees on a strange hive during the harvest, and you will find there is no inclination to fighting.

Hedgehogs are great ant-eaters. We recently saw a jew-lizard carefully watching the entrance of a large ant hills. Perhaps some of our readers could tell us something more of this.

Breed from your best honey gatherers, and remember that it is not always the biggest swarm. That shows the necessity of keeping account of the frames of honey you have taken from each hive.

Eight or ten framed hives, which? If you can give attention to the 8 frame hive and put in supers as soon as needed, it matters little which. If not don't be surprised at swarms sooner than in the 10 framed hives.

A German writer claims that an energetic healthy colony cannot take foul brood at all as the bees would remove every diseased larva very quickly; that they have within reach the very best remedy to fight the disease—formic acid.

In taking off honey now, don't take too much. Should there be no fall flow there my be no more honey to gather till perhaps next October or November. They will want a lot of food to keep them all that time. Better leave enough than to have the bother and expense of feeding in the winter and spring.

Not wishing to increase the number of our swarms in one of our apiaries we have on several occasions adopted the following method:—When the swarm issues kill the queen, and destroy all cells but one, the best if possible. That issuing, and larvæ and eggs being in the hive, there will be no more swarming of that hive for a very long time.

Dr Miller was asked in *A. Bee Journal* If in unpainted hives they would produce more honey, ought not looks to be of secondary importance? He replies:—That depends. An amateur with a few hives on a well-kept lawn should keep hives neatly painted. A large apiary kept for the money that's in it, is another matter.

Our own flow this season has been late and poor. Only a third of what it was last year, and that was not a good one. From all quarters we hear much the same state of things. We certainly should advise beekeepers not to be in too great a hurry to dispose of their honey, especially during the hot weather and while fruit is plentiful.

Two proprietors of a honey refinery in Leipzig, Germany, have been fined £5 and £25 respectively for permitting the sale of honey into which a cat had fallen while it was being prepared. The animal slipped into the boiler unnoticed, and the remains were subsequently discovered by the workmen. One of the proprietors did not want to waste the honey, so it was put on the market. The other had it mixed with bilberries and tinted with aniline, as he did not like the colour.

As the season is now on the wave, much caution is needed in various ways. Do not skin your hives too much. Calculate when your next flow is likely to take place, and make sure there is enough honey in each hive to last till then. For those who are raising sections pick out the strongest hive and in it the nearest filled sections. Do not be in too great a hurry to sell your honey.

In the British Bee Journal it is reported that dark honey subjected for about three hours to ozone from an electrical machine became light in color, and that the expense per hundredweight would be trifling.

The fifth Annual Benevolent Societies' Art Union is announced to take place in Sydney at the and of February. The movement has official sanction and prtronage, and has proved of considerable monetary benefit to the various charities interested since its inauguration. The Art Union consists of 100 valuable prizes, the first prize being a Golden Kangaroo, the nett cash value of which is guaranteed to be £150. Members of the leading Art Societies in New South Wales and Victoria, including the Presidents and Secretaries of each, contribute various works of art to the prize list, which also comprises a large number of useful household articles in E. P. Ware. Tickets which are one shilling each, may be sent for direct to the Hon. Secretary, Mr. W. J. Walker, J. P., Market-street, Sydney. Additional particulars will be found in our advertising columns.

We would remind members of the N. S. W. Bee Farmers' Association that the annual meeting takes place in April. Only one subject has as yet been broached for discussion—Forest leases. Those who are interested in this matter should make a point of being present; also of studying and getting all details beforehand. We would be glad to receive the name of any other subjects. Members are also reminded that no important matter can be carried through without a referendum to the whole of the members. Another matter, the co-operation with the Agricultural Chamber of Commerce. Last year this was accomplished mainly with the liberal handedness of one member. We do hope it will not be so on this occasion. In this matter of forest leases the aid of the larger association might be of very great service. Remember it will be the annual election of officers. The secretary will be pleased to receive nominations for such at once.

AN INSTRUCTIVE LETTER.

Mr. Tipper,—Yours of 12th inst. re Annual Meeting to hand. I have no particular suggestion as to the room in which to hold the meeting, except to say that if Chamber of Agriculture has permanent room we should be able, as an affiliated Association, to use it free. I notice from letter I have from Mr. R. H. Lalor, the Sec. (Seven Hills) that the quarterly meeting of the Council is to be held in Mr. Sparke's Rooms, Royal Chambers, Castlereagh-street, Sydney.

Like yourself I have been in correspondence with J. P. Clara, M.L.A., re Apiarists Leases in forest and other reserves. The Department, judging from a letter I have, seem to think no action necessary. But I think we shall have to bring the matter to a head by deputation, perhaps Mr. Clara would introduce it.

My strawberry crop was certainly extraordinarily good and the returns very handsome for the area under crop, but I find it will take a long time to recover the leeway lost financially through the drought. I had a small yield of choice ironbark and fruit blossom honey in the spring, but having so much to do with the strawberry harvest the bees got ahead of me, and (stimulated by heavy supplies of white bloodwood pollen), ran mainly to swarming. Most of the stocks are now strong and a good proportion of the blanks caused by the drought are now filled up. The bees are now storing freely on maize which promises to yield very well this year.

I am not at all satisfied with present marketing arrangements. I think beekeepers should combine to support the firms that would accept supplies for sale with a reserve fixed according to quality. I saw the choicest of white box honey being offered by a Sydney firm at 2d. This ought not to be, as I think the market is weak only because at this time of the year there are practically no sales.

W. HESSELL HALL.

ENGLAND.

We have received the following communication from a prominent beekeeper in Essex, England:—

Mr. Tipper,

Dear Sir,—I should be very much obliged to you if you could give me any

information, or put me in the way of obtaining it, as to beekeeping in Tasmania. A friend has kindly lent me a copy of your paper and this must be my excuse for troubling you. I have an idea of going out to Tasmania, if I can satisfy myself that I could make a living there at dairying, fruit-growing, or beekeeping, or the three combined. I have a good practical knowledge and fifteen years' experience of beekeeping as carried on here, and hold a British Beekeepers' Association's Expert Certificate. The only information I have at present been able to obtain is from the Emigrant's Information Office here, which is very scanty and is as follows:—"A swarm can be obtained in October for from 10s to 15s, and from 30lbs. to 80lbs of honey can be obtained from a hive in a season, worth in the towns from 3d to 5d per lb. The total value of the honey and beeswax produced in Tasmania in 1901 was estimated at £4000." You will, I have no doubt, be able to tell me what the bee flora of the country consists of, and the best part to establish an apiary, also what kind of hive and size of frame would be most suitable, and if all the appliances necessary can be obtained on the spot. Do you think all the honey and wax produced could be sold in the country or would it be necessary to find other outlets. Which variety of bee would be the best to keep? Here we think that for all-round purposes there is nothing to beat the ordinary blacks. They excel as producers of comb honey. Needless to say that any advice you can give me I shall be most grateful for, and if I can do you any service in any way I shall be very pleased.

To which we replied:—Dear Sir,—In reply to your enquiries I do not know much of the Tasmanian flora for bees, though I believe what is termed blue gum forms a great part of it. Are you going to put too many irons in the fire? To go in properly for dairying you will not be able to give much attention to bees. Dairying is the best of the three industries, as there is a more certain English market. Fruit from Tasmania (being a colder climate than Australia) has a fair market in Australia. Beekeeping on a large scale has many drawbacks in Australia. The different and uncertain times the various trees bloom, weather influences, ringbarking and destruction of the forests—for our forests are the main sources of honey, and the limited market (for, with all the efforts made for years past, it has not got on the English market). The most popular sized hive in Australia is the 10-frame Langstroth—frame 18 6-8 x 9 inches. Mr. L. T. Chambers, of Melbourne, is a large dealer in bee goods. The Italian bee is the most popular, and in my experience the best bee for Australia. I am not a supply dealer, but have about 190 hives in three apiaries. In 11 years I have had several seasons without getting a pound of honey. In the best seasons, which comes perhaps once in ten years, an average of a ton for every eight hives has been produced. In the bad seasons you perhaps have to feed. The bees require attention just the same all the while. Here is where many give up.

R. S. G., Bishopsgate Street Within, E.C., London, England, Dec. 18—The best English honey is miles ahead of any other in flavour, and brings here 1s. per lb. Next comes New Zealand honey, about 45s. per cwt., retail 9d. to 10d. per lb., frequently sold as English. N.Z. honey is similar in colour to English, but not quite so good in flavour. The largest supply of honey comes from the West Indies—ranging up to 30s. per cwt. for best white—retailed at 7d. to 8d. per lb. Australian honey is very superior to this honey. The reason Australian honey does not sell is because it is dumped into the auction mart and sold by the ton. When the beekeepers combine and send their honey to England to some retailer as an agent, properly grading the honey out there, and getting it put into suitable jars here; then, and not till then, will decent prices be obtained. Put on the

market to be retailed at 6d per lb. Australian honey will sell like hot cakes—at present it is not on the market—when it was, it was bought by the retailer at 2d. per lb., put into a pot and sold at 10d. per lb.

PRICES OF HONEY.

Garden & Field, S. A.—Prime clear garden from 3d to 3½d, congealed and inferior at lower prices. Beeswax, 1/- to 1/0½.

Tamworth News.—60lb tins 15/-, 7lb tins, 2/3.

Maitland Mercury.—Honey, 2d to 3d lb.; small tins 2/3 to 2/6.

Melbourne Leader.—Best qualities of honey are offered in plenty at 3d., from 2d. upwards being asked for cloudy and congealed. Beeswax, sales are slow from 1/- to 1/1, according to quality.

Melbourne Australasian.—Choice honey is quoted at 3d., but the lower grades are practically unsaleable. Beeswax, is unaltered at 1/0½ to 1/1.

S. M. Herald.—Choice 2½d to 3d, good 2d to 2¼d. Beeswax, 1/- to 1/1.

VICTORIAN APIARISTS' ASSOCIATION.

Having been nominated at the last annual meeting, for the Council of the Chamber of Agriculture and Rural Producers' Association, I received notice from the Secretary that I had been duly elected at the quarterly meeting of the Council in October last as representative of the Victorian Apiarists' Association. I attended the following meeting on Dec. 8.

In accordance with our efforts to preserve our natural honey resources it is desirable to bring before the Council of the Chamber of Agriculture the desirability of preserving the native trees on road sides and commons, and of giving honey or pollen producing trees and plants the preference in planting on roads, reserves, or parks, when equally effective for the purposes of shade, ornaments or shelter.

I intend to bring this matter before the Council at the next meeting which takes place early in March for the purpose of having it referred to all affiliated Agricultural and other Societies, which in turn may bring the suggestion to the notice of Municipal Councils. Will members of this Association kindly communicate with me and forward any suggestions and opinions on the subjects of preservation of timber on roads and commons and the planting of honey and pollen producing trees and shrubs. Also the names of varieties of such plants which are effective for shade or ornament and useful to apiculture.

R. BEUHNE,
Hon. Correspondent.

Jan. 15, 1904.

CONSERVATION OF FORESTS.

The Forest Commission sat at Bendigo Town Hall on January 20th. As the preservation of forests is of vital importance to our industry, and a good opportunity here presented itself of furthering our interests in that direction, I thought it advisable to attend and give evidence on behalf of this Association, although not specially deputed by the executive to do so. The evidence being taken on oath is of course confined to facts, but a request from the chairman of the commission to make a general statement of the relation of forestry to apiculture gave me an opportunity to present the requirements of our industry and the views of our Association, as well as the importance of apiculture, to the commission. A full report I shall submit at the annual meeting.

Address of A Prominent American Attorney.

The "Progressive Beekeeper" owned by the Leahy Manufacturing Co., though a bee-paper, has an excellent address delivered by Benjamin J. Phillips, at a late Jewish celebration in Missouri, from which we make the following notes:—

I do not believe that one belief is right and all others are wrong. I cannot think

that a loving and merciful God would implant in the brain of millions of His children the little flame called reason, inspire them with feelings of love, of sympathy and of tenderness, make them to know and to do what is noble and beautiful, to slip the hand of charity into the lap of poverty, to succor the helpless child in dire distress, to bring the sunshine, if but for an hour into the darkened home, to aid the sick and affiicted brother, to break the shackles of superstition and prejudice, to teach the ignorant the glory and power of knowledge, yet damn them for ever, if in their limited wisdom they observe not the ceremonies of one certain faith.

I would rather believe that the truly good man, the sincere man, the man who observes the ceremonies of religion, not for form's sake or because of fear or superstition, but because it incites him to a better appreciation of h's duties towards his Creator and his fellow man, the man who tries to do what is right and honorable at all times and under all circumstances, is favoured in the sight of God, no matter what his religious creed.

To-day you fast and pray and humbly beseech your Maker to forgive your sins. What should your prayers avail, if to-morrow you repeat your transgressions and are no better than you were yesterday! Pray and fast for forgiveness, that is right. But, my friends, do not stop there. Do not simply go through the ceremony. Be sincere. Determine to do right to-morrow, and the next day, and for all time to come.

In my opinion, it is not the man who opens the church in the morning and sings and fasts and prays on the Day of Atonement, and robs his neighbor on the following day, who is religious. The righteous man is he who whatever his religion or his creed, tries to do right; whose thoughts are pure and noble; who regards honor above life, integrity above riches; who feels the thrill of greatest joy in the sweet companionship of his wife and babes; who honors his father and mother; who shares his mite with poverty and want; and feels repaid a thousand-fold by the smile of a helpless child; who loves his neighbour and seeks not vengeance on his greatest foe; who holds as sacred his civil liberty, his rights and duties as a member of the body politic and accords to others the right to think and worship as his conscience dictates; who sees in every leaf and shrub and flower, in the boundless firmament, and the countless stars, the beautiful and divine handwork of omnipotous God.

No man can be perfect. It is human to err. But every man can be better to-morrow than he is to-day. All that you can do, all that you are asked to do, is to try to be better men and women. Do something. Do your duty. Do right, and when it is done and the end has come, as it must come to us all, when the sun has set in the late evening of your lives, and husband and wife sit side by side, hand in hand in the deep gloaming, and watch the dying embers turn to ashes, one sacred, solemn thought will lighten the path that leads to Eternity: I have done my duty, have done what is right.

COVERS.

[F. W. PENBERTHY.]

In answer to H. A. G. I would advise him to try a few covers same as mine, made from packing cases from ¾in. to 1in. thick; each cover must be the one thickness or the bottom side will not be true, nail down two cleats 2in. x 1in. across the ends, cut a sheet of galvanised flat iron 26 guage to project 1½in. all-round, that is 3in. longer and wider than your hive; punch four holes so that the nails drive in the cleats. Now bulge the iron around the hole with the centre punch, turn the sheet over and nail down with spring head nails or wire nails with a bit of sheet lead for washer, bend the side lap down a little. Now, tack tarred felt or double bagging on the underside aud use a one ply ruberoid quilt.

This cover will last a life-time, and in the seven years I have used them, I have not had one comb melt down. The

temperature last season during the honey flow was 100 to 108 degrees in the shade nearly every day. I have no rim around the cover to jam or jar the hive as the weight is sufficient to keep it on here, except in strong whirlwinds. Being flat they are very handy to put on the ground to put the super on while examining the hive.

Ruberoid is the best for quilts I ever tried, water-tight under leaky covers if you have any, and don't rot. Bees don't nibble it, and is only about half the price of oilcloth. One ply is plenty thick enough. Don't use ruberoid paper as the bees will nibble at it.

CURE FOR FOUL BROOD.

In the evening after the bees of a diseased colony are all in the hive, shake them into an empty box. Be sure and get every bee. Have the box ventilated with a piece of wire cloth. Remove the box to a cool place and leave undisturbed until the morning of the second day, or until some of the bees begin to drop to the bottom of the box on account of starvation. Then prepare a syrup of sugar and water, half and half, stirred up cold. Into every teacup full of syrup put four drops of carbolic acid and feed with a pepper box feeder. Leave them in the box until the evening of the next day after beginning to feed. To prevent swarming out and to give them a start, put a frame of brood taken from a colony you are sure is healthy into a hive and fill balance of hive with empty combs.

I do not like the use of foundation in such cases. Use combs that never had any brood in and you know are clean. Empty the bees into this hive and feed a few days with the medicated syrup and they are cured to stay cured. I burnt out the hives of the diseased colonies with coal oil. I do not believe it is safe to use them otherwise. The combs I melted into wax, and the frames were dipped into boiling water and used again. By this plan all the bees can be saved, no matter how badly they are diseased.—*Exchange.*

PICKLED BROOD.

"The larval bees (in spring) show light-brown spots; a little later the cappings have small holes, they are not sunken or dark-colored as in foul brood. The dead bee will be at first swollen, with a black head, dried to a hard bunch, and often turned up Chinaman-shoe like. The skin of the dead bee is quite tough, and, if punctured, the thin, watery fluid of the body will flow as freely as water, often a little yellow or brownish colored from the dissolved pollen from the abdomen of the bee. It has very little or no smell, does not at any time stick to the walls of the comb, is easily pulled out of the cell, is never ropy or sticky, and, if the colony is properly cared for, the bees will take care of themselves. Plenty of liquid unsealed honey and pollen near the brood, and hives so protected as to keep bees and brood comfortable on cold days and nights."

So much for pickled brood. Now what causes it? Cold, backward spring weather, when the bees can not get out and fly, causing a shortage of food, is the cause of nine-tenths of it. For instance, last spring, you probably had some cold, backward weather. Then came on beautiful weather, and brood-rearing commenced, the honey-flow came on about the time of the honey-flow, and pickled brood would appear. That pickled brood may have started before you saw it. It is lack of nourishment and care of the larval bees. Just as we people first look out for our own stomachs, then those of our neighbors', so these bees, if they can not get out to work, will subsist upon the honey in the hive. There may be lots of solid honey in the hive, but the brood may be starved or chilled, and these conditions may produce a case of foul brood, or, under these circumstances, pickled brood. I do not believe a case of pickled brood ever produced a case of foul brood, any more than diphtheria produces small-pox.

What shall we do to get rid of it?

Strengthen the bee so that they will

have an abundance of honey. That is all there is to it. In one apiary where there were 80 colonies, and they had foul brood in a colony, I took every other hive, and simply gave those colonies abundance of feed, and let the others go as they were. In ten days time, the colonies that were given the extra honey had carried out the dead, but the others were dwindling down, and there was more and more pickled brood. Then, in the same yard, I cautioned the owner, just during the time between fruit-bloom and clover, about ten days there that the bees do not get any honey; I said, "Don't you let them know anything about that famine time.

You feed them those ten days, so that from the time there is no fruit-bloom there is something for them until the clover comes on." What was the result in that apiary? There is not a case of pickled brood there.

I don't believe foul brood and pickled brood are alike. Nor do I believe that black brood and pickled are one and the same. But there is another condition of affairs that seems to corroborate it. There is a condition that is rather serious, and it has a similar appearance to foul brood at some stage, but, owing to climatic conditions, or something, I have been unable to have an analysis that is to my satisfaction, to know what you would call it. We must take these conditions locally, and I would want to understand your conditions here before I could do it satisfactorily, but I believe you Western people will go after it and correct it.

How does it differ? Not so much brown, but more nearly black. It bears down loosely, and you can touch the comb up with a little pair of tweezers without any trouble.—N. S. France in *American Bee Journal*.

ATTENTION TO QUEENS.

A. C. Miller says is "American Bee Journal":—I assert that bees never *offer* food to the queen. The bees that show their tongues are *seeking* food, not offering it.

1. Caressing.—I interpret it as curiosity and searching for food. I also surmise the odor of a pregnant female, or in the case of a queen-bee, whose structure is peculiar, we may have an odor comparable to that of animals "in heat," may be accountable for some of the attention the queen receives. Certainly, virgin queens, "exhausted" queens, and queens not laying, attract far less attention than does a queen in the full tide of laying.

"Grooming" is the only thing approaching "respect," and I should be pleased for an explanation of its purpose.

2. Tongue Poked from Cells.—I don't know what for. It may be for food, but I've never seen a queen get any then. And—

3. How Does a Queen Ask for Food?—With her antennæ. That is to say, they are always active when she is seeking food, and often a deal of "talk" takes place between the queen and the bee from which she is soon to obtain food.

If you will watch a queen-cell you will seldom see the antennæ put through the cut except for an instant now and then. Cut them from a bee of any kind and note the result. Immediately the poor creature seems to become deaf, dumb and blind. Lubbock made extensive experiments in that line.

The management of queens in nurseries, in introducing, theories of stimulating, etc., are all based on the assumption that bees offer food, "holding out their tongues to the queen, offering her food." I believe the individual bees to be utterly selfish. I think we must (for many purposes) regard the colony merely as an aggregation of individuals, each possessing many of the characteristics of "solitary" bees, which, I believe, is considered the original type from which the honey-bee sprung.

FORMALIN GAS

The idea seems to prevail that anything strong enough to kill bacilli would kill all animal life, but such is not the case. All bacilli are of vegetable life, and entirely different from animal life. You may disinfect a sick room to a certain extent by merely sprinkling carbolic acid about on the floor, which will actually kill many bacilli and prevent propagation to a certain extent, and not result injuriously to even a weak patient. If you burn sulphur in a beehive containing both foul brood germs and live bees you will kill both bees and germs—in fact, the bees will die much sooner than the germs, but not from the same cause. The bees would die of suffocation, while the germs would die of formic acid, and it would require at least 30 to 60 minutes to kill even non-sporing bacteria. The formaline does not kill germs by the odor or suffocation, but because, when in the air, it oxidizes into formic acid. The bacilli are not so hard to kill, except for the resistance of the capsule or shell. Moisture is very necessary to enable either gas or heat to penetrate through this shell; but with sufficient moisture, and at a temperature of about 98 degrees F., formalin would soon kill all bacilli. But right here is the important question. The spores when dry are almost indestructible, except by fire.

Koch, who is often quoted as authority on bacteria, gives figures thus: Moist heat at 212 degrees F. for 15 minutes would equal dry heat at 284 degrees for three hours in killing bacilli or spores.

Now honey is very dense and I doubt very much if this gas would penetrate through even a thin layer of honey and kill either bacilli or their spores in the bottom of a cell containing honey, but the capping over brood is porous and I feel certain the formalin will penetrate all through brood comb filled with brood but containing no honey.

Furthermore I think I am safe in saying that combs that are thoroughly rotten with foul brood, if empty of honey, would be easier disinfected than dry combs full of dried-up scales and dormant spores, unless the gas is moist enough to soften the shell. One thing more. It is very necessary to have combs warm, about 98 degrees F. Also it is necessary to continue this gas for some time in order to, as it were, manufacture this formic acid by oxidation and so that same acid may have time to penetrate the capsule or shell of the bacillus and spore.

Another plan is this: By keeping combs moist and in right temperature (about 98 degrees F) the spores would be in active reproduction, hence easier killed. The question is not that the life of either bacilli or spores can stand the gas treatment, but the shell must be penetrated and moisture is the agent necessary. A very weak solution would kill both bacilli and spores if it were not for the resistance of the capsule. Sunlight is one of the best bactericides known and if a foul brood infected comb be fully exposed to direct sun rays for a few days millions of germs would be destroyed, but not the spores.

There has been considerable confusion in regard to the terms formalin and formaldehyde. Following is what Prof. George Newman, of Kings College, London, says of it: "Formalin is a 40 per cent, solution of formaldehyde in water, a gas discovered by Hofmann in 1869. This gas is produced by imperfect oxidation of methyl alcohol and may be obtained by passing vapor of methyl alcohol mixed with air over a glowing platinum wire or other heated metals, such as copper and silver. It is the simplest of a series of aldehydes, the highest of which is palmitic aldehyde. Its formula is C H 2 O. It is readily soluble in water, and in the air oxidizes into formic acid (C H 2 O 2). This latter substance occurs in the stings of bees, wasps, nettles and various poisonous animal secretions. Formalin is a strong bactericide even in diluted solutions, and is, of course, volatile. A solution of one to ten thousand is said to be able to destroy the bacilli of typhoid, cholera and

anthrax. When formalin is evaporated down, a white residue is left known as paraform. In lozenge form this latter body is used by combustion of methyl spirit to produce gas. Hence we have three common forms of the same thing, formalin, formic aldehyde and paraform, each of which yields formic acid and thus disinfects. The vapor cannot in practice be generated from the formalin as readily as from the paraform.

Now as to its penetrating power. Professor Delepine recommends formaldehyde as being more penetrating than any other gas disinfectant. Both honey and pollen contain air, and it is possible the gas might penetrate to the bottom of a cell of honey if given time, but spores either in this honey or in dry, empty comb that requires 248 degrees F. dry heat for three hours to kill, would hardly, I think be destroyed by a few hours' treatment of formalin. But if combs are moist and of right temperature so that active reproduction is in progress, there is no doubt whatever that formalin would be a sure and positive disinfectant ; and that it would kill all bacilli and spores if the gas was retained for say, 24 hours.—M. F. Reeve, in *American Beekeeper*.

THE DEATH OF THE DRONES.

The workers in the fall keep marching and driving out the drones, so as to have them die on the outside of the hive and away from the colony. A dead drone in the hive in winter is very objectionable to the workers. A whole colony of workers frequently die in the hive, but I never detected any unpleasant odour from dead worker bees, while a dozen or two of dead drones will give off a very disagreeable odour of putrefaction. The poison in the worker bee becomes disseminated through the body after death, and arrests decomposition. It is a curious provision of nature that the poison of the worker bee should act as a disinfectant in the dead bee for the protection of the living, but all the facts indisputably lead to that conclusion.

It is known that the bodies of animals and men fatally poisoned with the salts of arsenic or of antimony resist decompositiom for some time; and long ago it was thought that the occupation of individuals had something to do with preserving their bodies after death. Shakespeare expresses this idea when he makes the grave-maker say to Hamlet that "a tanner will last you nine year." The application to the tanner is, as intended, ludicrously absurd; but in the idea there may be a modicum of truth.

In Shakespear's time the microbes were not known, and water was considered the great cause of decay. We know now that water alone, without the microbes, cannot decompose organic matter, and that, as the microbes are composed of fifty per cent of water, water for this reason, is necessary to decomposition.

The process of getting rid of the drones before winter stops all active work in the hive, is a sanitary or hygienic measure taken by the workers to protect the colony from disease which might arise from dead drones in the hive. It is often said that queenless colonies do not discard the drones. For a good reason the workers delay the sanitary measure, which may sometimes be neglected altogether, but I have seen queenless colonies driving out the drones. Fortunately for the beekeepers' interests the worker bees do not study economic measures as closely as they do hygienic measures, and if our hives were constructed without floor-boards, so that the drones excluded from the hibernating clusters would fall to the ground when chilled by the winter cold, the workers would not eject the drones from the hive.

A strictly hygienic hive would probably be a hive without a floor-board. Langstroth and Cowan have stated that they knew bees to winter safely in hives without floor-boards, and Langstroth states in the first edition of his book that the only colony he had to survive an unusually cold winter in the State of New York was in a single-walled hive without any floor board—the colonies in hives with floor-

boards having all perished. Langstroth mentions, however, having given some upward ventilation to these hives in which the colonies perished. The top of hives for wintering colonies safely in snow should be hermetically tight.

Doctor Draper said that man would yet learn sociology from the bees, and hygiene might be added. The bees will teach more than the "act of order to a peopled kingdom," but only when the people of the kingdom are ready and willing to learn.

In our climate the drones do not die of old age, and their death and life-work are by nature inseparably united. The life of the drones, soon to end from the winter cold, is shortened by the worker bees in order to protect the colony from disease, the preservation of the colony requiring that the drones should not die in the hive in the winter when the workers are unable to do any sanitary work, or to carry out the dead.—Dr. A. W. Smith in *Irish Bee Journal*.

MODERATE INCREASE.

Adrian Getaz gives the following plans for moderate increase in *American Bee Jonrnal*:—

REMOVING THE BROOD.

The prevention of swarming thus understood, is what gave me the most trouble. I spent some five or six years in experiments. One of those consisted in taking out all the brood, putting it in another hive, and returning it after five or six days (cutting out the queen-cells, of course.) The process was a success as far as swarming was concerned, but was objectionable, chiefly, by requiring an extra set of hives to hold the brood, and from the fact that the bees, during these few days, worked too much in the brood-nest and too little in the sections. What I wanted was, as stated in the beginning of this article, prevention of increase; keeping bees and brood together.

As to the building of too much comb in the brood-nest while the brood was out, another critic said I ought to have put on a super from another hive where bees were already at work. That's all right as far as it goes. But as a matter of fact all the colonies thus treated were already well at work in the sections.

MODERATE INCREASE.

Another plan is to take out a comb every week or so and replace it with a comb of foundation. The combs taken out can be used to form new colonies, or reinforce whatever weak ones may be in the apiary. The object is to provide room for the queen to lay. As long as there is plenty of young brood to feed, the nurse bees will not undertake to rear queens.

The advisability of putting in a comb of foundation rather than an all-ready-built comb has been questioned. Let me say here, that I am writing exclusively from the comb-honey producer's standpoint. For an extracted-honey producer the problem is an easy one. All he has to do is to give enough empty combs to accommodate the brood and all honey brought in. If he gets in a pinch, he can extract some of the combs already full.

But the comb-honey producer is confronted by entirely different conditions. The empty combs are, by no means, plentiful. I have but six now, and would not have a single one if one of my colonies had not died last winter.

But a built comb will not do, anyway. Let us study the "conditions." When the flow comes the brood-nest is already full, or will be in a very few days. The secretion of wax and the building of comb in the sections are not started yet, so there is no room, or but very little, to put the honey in. Yet it is coming all the day. Having no other place the bees put it in the brood-nest as fast as the matured brood emerges, and crowd the queen out. Eventually, swarming follows if the apiarist does not remedy that state of affairs.

Now, suppose we give an empty comb. There is only one queen to lay eggs. There are thousands of bees ready to fill that comb with honey, and they will do it.

But give a frame of foundation and the "conditions" will be different. In the first place, it will take the bees some time to draw the foundation. Then, as soon as the cells are drawn, the queen can lay in them, while they can not hold honey until they are about an eighth of an inch longer. These two conditions enable the queen to follow the workers and lay as fast as the cells are ready. Result: a solid comb of brood.

Somebody said that a frame of foundation, or a fresh comb, prevents the queen from laying further, acting as a division-board. There is nothing in it. Queens are constantly passing from one comb to another, and when they do stop at a fresh comb it is because they have all the room they need on the side where they are.

One of the critics says that that plan involves too much work, and he prefers "shaking." Perhaps it does; I don't know. But, by the above plan, 2 or 3 combs are usually all that it would be necessary to take out. That is less work than shaking 8 or 10. It may be objected to, that these 2 or 3 combs are to be taken out at different times, and would necessitate opening the hives 2 or 3 times instead of once. That is true, but it is to be done at a time of the year when the hives have to be opened to see if the bees are ready for the supers; put on the first super, and later on the second. So, after all, the plan can be carried out with but little extra work.

One important point in the construction of a hive for comb honey where Italian bees are used should not be overlooked; and that is, the brood-chamber should not be too large. Had you used only seven combs in your hive after the honey-flow had begun, and your sections were put on, you might have secured a yield from that colony of Italians that would have eclipsed any thing done by any of your colonies of black bees, the same as you did with the other that you worked for extracted honey. Italians are more prone to store honey in the brood-chamber than the blacks. Especially do they show a preference toward storing in the brood-chamber rather than in the sections, if the queen does not have the combs occupied with brood when the honey season commences and if they have room to store from 30 to 40 lbs. of honey in the combs below, they will very likely not go into the sections at all."—*Doolittle* in *Gleanings*.

The Value of Sweet Clover.

While there are many who unqualifiedly condemn sweet clover (melilotus alba), also known as Bokhara clover, as a noxious weed that is not to be tolerated under any circumstances, there are others who claim for it some good points. Without doubt the conditions have much to do with the attitude of the observers. It is a very rapid and vigorous grower, produces an enormous quantity of seed, and is in other ways fitted to thrive under adverse circumstances. For these reasons it is quite persistent in remaining where it is not wanted when once it has maintained a foothold. This feature is, however, a strong point in its favor under certain conditions. It enables this plant to thrive where it is impossible to supply the conditions of soil and treatment necessary to the successful growing of other crops. As its name indicates, it is a legume, and like the other members of that family, it is a great improver of the soil. Prof. Duggar, of Alabama, says: —Fields that for two years have borne sweet clover have been known to produce the next year nearly twice as much corn as before being sown to this leguminous plant. At the Ohio Experiment Station at Uniontown, Ala., has demonstrated not only the power of this plant to add nitrogen and vegetable matter, but also to assist in the drainage of the heavy calcareous clay soils of that part of the State, through the channels made when the large roots decay.

It should not be grown as a crop on soils where the other more common legumes will thrive; for while this plant is very easily grown, and an enormous yielder

it is not relished by stock either as pasture or hay. It is nutritious when properly handled, and stock will do fairly well on it when they can get no other roughage, and become accustomed to it.

Its value as a honey-plant is quite generally recognized. Its chief redeeming feature, however, is its ability to flourish on soils that are in their present state almost barren. Where it once gets a start it will crowd out almost any other kind of vegetation.—*American Bee Journal.*

MAKING HONEY VINEGAR.

I will tell what I do with the water used for washing the cappings. As this sweetened water will make excellent vinegar it would certainly be a great waste to throw it away. I therefore put it in a barrel or keg having the head removed and also add to it the water that is used for washing or rinsing the extractor and other utensils that have become daubed with honey. At times we also have small quantities of honey that are off in color or for some reason not fit to offer for sale and if not needed to feed to the bees, this is used by mixing it with the proper proportion of clean water. All odds and ends of honey are used in this way. The barrel is placed in an out of the way position in the honey house and a piece of chese cloth thrown over it and a board laid over this to keep it in place, or else the cloth is tied in place. We should aim to exclude flies and all insects and yet expose it to the air as much as possible.

If the weather is warm, fermentation will set in in a few days and in a week or two we will find a thick scum on the surface of the liquid. This I remove about every week or ten days, or as often as it accumulates to a considerable extent. Each time after removing the scum I take a dipper or cup and dip out a cup full and pour it back from a heighth of two or three feet. This I repeat some ten or twelve times. It also hastens fermentation if a quantity of mother from old vinegar is added. Some may claim that it is not necessary to remove the scum as it will finally settle to the bottom of the barrel and do no harm, but I once made a lot and neglected to remove the scum and this was so bitter that it was not fit for use and I see no use in having it in the vinegar when it can be so easily removed. If the barrel or keg is removed to a warm room on the approach of cool or cold weather the vinegar should be fit for use within six months after the time it was made. When it is finished it should be carefully dipped or poured off into a clean receptacle, or what is better, draw it off with a hose, being careful not to disturb the sediment at the bottom of the barrel. When you have this you have an article that you know is pure and good and do not have to go to your grocer and purchase so-called "pure cider vinegar" that is more than likely made of water and poisonous acids that are not fit to be taken into the stomach.—*Progressive Beekeeper.*

PUBLICATION RECEIVED.

DR. FITCHETT'S NEW MAGAZINE.

The title of the new Australasian magazine Dr. Fitchett, the author of "Deeds That Won the Empire," is to edit, in place of the "Review of Reviews for Australasia," from January 1, is announced. "Life": A Record for Busy Folk, is to be substituted for "The Busy Man," the title first chosen. The outline of contents of the new magazine is particularly attractive. Eighty pages, devoted to special departments, are to be supplemented by a stirring sea-yarn from Dr. Fitchett's pen, entitled "The Captain of the 'Hirondelle." Readers of "Deeds That Won the Empire" will be keenly interested in seeing how Dr. Fitchett handles fiction. As a second serial, the Editor has been fortunate in securing a new series of "A Self-Made Merchant's Letters," to appear exclusively in "Life." Each month will also appear sixteen well illustrated pages of special original articles. Those announced for January are "How I Prepare My Speeches," by the Hon. G. H. Reid; "The Untold Story of Robbery Under Arms," by Rolf Boldre-

wood; "A Governor-General's Day": Lord Tennyson—being the first of a series of very human and unusual articles to appear under the head of "The Day's Work." The eighty pages of departments will cover the best that is appearing in the world's magazines, classified under such headings as "Notes on Affairs," "What the Man in the Street Wants to Know," "Imported Fun," "Home-Grown Humour," "The Jests for the month," "Books and Their Writers," "Literary Judgments," "Purple Patches from New Books," "Good Stories from the Magazines," "Imperial Affairs," "What the World is Thinking About," "New Things in Science," "Up-to-date Business," "Fresh-Air Topics," "In Graver Mood," "Travel and Sport," 'Men and Women Who are Talked About,' "Short Stories," "The Art of Health," "How to Get On," etc. The price of the new magazine is 6d. monthly, or 6s. 6d. per annum, posted to any address. It is published by T. Shaw Fitchett, 169 Queen Street, Melbourne.

CAPPINGS.

From American and other Bee Journals.

The Irish Bee Journal says: Bad as 1902 was for beekeepers in Ireland 1903 has been worse.

The *Dublin Mail* on Bee-Keeping.—The *Daily Mail* of September 3rd, published an illustrated, unsigned article on "Bee-Keeping in Towns," from which many wonderful things may be learned! The beginner is advised to purchase his "swarm" either in early autumn or not until May or June. His hive should be painted with several coats of cream paint. The operation of taking out honey must be performed about an hour before sunset. It is the fact of pressing the poison bag which adheres to the sting that causes poison to be injected into the flesh. At the foot of the hive should be a little bed of moss. Among the number of useful articles the bee-keeping beginner should provide himself with is—"a comb foundation." Verily, the *Daily Mail* is coming.—*Irish Bee Journal.*

"Great size of queen bee," says Fitzke in Centralblatt, "is not an indication of prolificness." One of his colonies after proving itself a "number one" for three successive years, being very populous all the time and paying well for its keeping, in honey, was found to possess a real dwarf queen. After substituting a large, handsome queen the colony kept running down.

Nevada, U.S.A., produces many carloads of fine alfalfa honey. So much of it is shipped out of the State that the alfalfa-growers and cattle-men are getting their heads together, arguing that all this sweetness is just so much saccharine matter taken out of their hay. One of the largest ranchers is a representative in the legislature of Nevada, and it appears that efforts are on foot to get a law passed at the next session of the legislature, prohibiting bee-keepers from locating bee-yards within flight of the alfalfa-fields.—*Gleanings.*

I would strongly recommend oil of eucalyptus for any diseased brood, where well-known symptons of foul brood are not positive. I am of the opinion that if we could eliminate all the minor brood diseases, we could find the cases of actual foul brood less numerous than generally believed.—C P. Dadant in *American Bee Journal.*

Select two large, very ripe bananas, peel and slice very thin and evenly. Sprinkle with two tablespoonfuls of lemon juice. Add a little honey to white cream cheese and spread on dainty rounds of bread instead of butter; place a layer of the sliced bananas between the two slices. Nutmeats chopped fine, and maraschino, or any fine conserved cherries cut in halves, may be used for filling. Also preserved ginger and orange peel minced fine and mixed with a little thick, sweet cream.—Herald and Presbyter.

The New Zealand Farmer says: New Zealand, from the State Point, is doing,

more than any one of the other colonies, in the matter of forestry, by sending out the year before last 1,311,000 trees for planting.

Mr. Pratt of Swarthmore, U.S.A., is convinced that within a short time he will have conquered the problem on which he has been at work for many months of securing the fertilization of queens under restraint, and that he has succeeded in discovering that the true fabric for making the tents or shelters is close cotton cloth and not wire cloth. He says he finds his queens used in his experiments take kindly and naturally to such quarters and that it is only a question of erecting one of a suitable height to secure perfect results and in that way attain the desired point of breeding from choice selected drones. —M F Reeve in *American Beekeeper.*

On our way out, friend Hawley said I must stop long enough to see a neighbor of his, a woman who for several years worked in his father's family as a hired girl. When pretty well along in life she took a notion to grow strawberries; and right out in the desert, on a little piece of ground in a locality where nobody else thought of growing strawberries, she had one of the finest strawberry-ranches I ever saw anywhere. It looked funny to see a little woman, well along in life, directing a lot of men how to do their work. The berries were the variety called the Arizona Everbearing. You may remember this berry was distributed quite extensively here in the States, but never made very much of a mark here in the East. With the mild climate of Southern California, and plenty of water for irrigation, it was just doing wonders. Perhaps not as many berries lay ripening around the hills as we often see here in Ohio; but this woman picks berries, and carries them to market every day in the year from *February till November.* For size, perfect color all over, and beauty of shape, I think I never saw any finer ones. I was invited to help myself freely, and I can certify that they are not lacking in quality. Friend Hawley informed me that she had probably lost quite a little money by agreeing to let a certain man in San Diego have the whole crop at a uniform price of ten cents a box. This box holds something between a pint and a quart. The reason why she lost money is that she succeeded in growing larger and finer berries than anybody expected to get. Yes, they were larger and finer than even *she* expected to get. By constant application she had learned the trick, and had become an expert; and she could beat anybody else in that region in growing strawberries. The men who work for her saw exactly how she did it; but I very much doubt whether those same men could start a strawberry-patch of their own, and manage it as she does. This woman is, perhaps, uneducated, and she does not speak our language very well; but it was as much of a pleasure to take her by the hand, and raise my hat to her as I spoke as to meet and talk with some of the greatest and most accomplished ladies of our land. In middle life by some misfortune, if I am correct, she was obliged to shoulder a considerable debt. This she had paid all off honourably; had paid for her land, and is now getting in comfortable circumstances financially.— A. I. Root, in California.

COMPLAINT is made of a falling off in bee culture in Germany, France, and Italy, the number of colonies having greatly diminished. But A. Alberti says in *Bienen Zuechter* that in his locality the falling-off is more apparent than real; for, notwithstanding the smaller number of colonies now kept, ten times as much honey is poduced as 25 years ago, thanks to advanced methods, and especially to movable-comb hives.— *Gleanings.*

It is usual to figure, in queen-rearing practice, on about 10 days for a young hatched virgin to begin laying. They often lay in less time; but a nine or ten day limit is the rule. It is now known that virgin queens are often confined in the cells until the bees are ready to release them. Some just-hatched virgins are much older in point of development and maturity than others. One ready to hatch may be confined to her cell, and fed regu-

larly by the workers for several days. Such queens will sometimes fly immediately on emerging from the cell. How soon one such may take a wedding-flight after hatching I do not know. I have had one queen, to my own personal knowledge, take her wedding-flight when three days old from the time of hatching. I once conducted a series of observations to find when the first evidences of fertilisation appear after hatching. It was from three to seven days.—"Gleanings"

Mr. F. J. Bingham, the inventor of the uncapping knife that bears his name thus writes in the *American Bee Journal*:—I have often seen accounts of how to use an uncapping-knife, and while I don't know how they should be used, I will state briefly how I use mine. I have a pail (wooden) so as not to dull the knife, or a shallow pan, filled with ordinarily cool water, into which I drop the knife whenever time will permit. The water removes the honey from the sharp edge, and is a great aid in starting the knife under the caps. It is at the starting point that the trouble begins. If it gets a clean start all goes well. Never use hot water; the wax will stick to the knife, and, when it does, the knife might as well be iron as steel, as the edge will be thick with wax and will not cut—merely melt its way through the combs. On this water question, I would just say that soap and cold water will remove bee-glue from your hands better than hot water; and if water and soap won't do it, a tablespoonful of clear alcohol will soften the wax, after which soap and water will do the rest. Some might suppose that the water would rust and spoil the knife, but honey-sweetened water does not, It may lie in such water days without injury.

Some time ago a German bee-keeper wrote to the Leipziger Lienen-Zeitung of a way, called by him the "water cure' of introducing queens. As described, his method was simplicity itself, and consisted merely in plunging the queen, held by her wings, into a cup of clear water, hold her there for about five seconds and then put her between the frames of the new colony, and shut the hive. The thing was so enticing that I tried it the first chance I had, and in two days after I opened the hive and found—nearly a frame full of eggs and the queen walking about as if she had been there for years.—*American Beekeeper.* Another German says a queen well dabbed with honey will be introduced with the same success.

A strictly hygienic hive would probably be a hive without a floor-board, Langstroth and Cowan have stated that they knew bees to winter safely in hives without floor-boards and Langstroth states in the first edition of his book that the only colony he had to survive an unusually cold winter in the State of New York was in a single-walled hive without any floor-boards—the colonies in hives with floor-boards all having perished. Langstroth mentions however, having given some upward ventilation to these hives in which the colonies perished. The top of hives for wintering colonies safely in snow should be hermetically tight.—*American Beekeeper.* [In a warm climate there should always be a certain amount of top ventilation.]

Try and Realize Your Happiness.—Many men are working hard and practicing economy, making the old overcoat do one more winter, looking forward hopefully to the time when fortune may smile on them and they will be happy. No matter how rich they may become, such men will never be any happier than they are right now. The man who is working and saving to buy a home, who has a loving wife by his side and little children clambering over his knees, is drinking the wine of life.—*Beekeeper's Review.*

In spite of all our care bees will rear some drone comb.

A German writer says it has been observed that colonies remaining in the heath districts for three seasons usually show foul brood, the reason assigned being there is no pollen produced in these colonies and the bees actually starve.

CORRESPONDENCE.

Mr. J. A., Hexham, writes Dec 22nd: I have not extracted yet, but my bees are all in good order.

D. G. T., Murrurundi, Jan 4th.—Matters in the bee line are not at all hopeful. I have not taken any honey this year so far; there will be some of the apple-trees out in blossom soon, which may give us a little dark honey. We had plenty of flowers all the spring but they did not have much honey in them. Perhaps the wet weather washed all the honey out of them. There are plenty of Century plants in full bloom, but I am not sure whether the bees get much honey from them. One of the Doctors said it was a most valuable honey and worth a good deal for medicinal purposes.

H.M. Merimbula, January 8.—My bees are doing well; all hives well stocked with a very good quality honey, and I trust yours are the same. Hoping you will have a prosperous season, and wishing the "Bee Bulletin" (which, by the way, well sustains its name as a very readable journal) every success.

T. E. W., Moruya, Jan. 5.—No bee news. Plenty of bees but no honey.

R. L., Taree, Jan. 4.—While there is little in the way of departure from the regular order of things to report here, there is a comparative want of that "something" in the honey trade which might induce one to go into a fit of hysterics. Again, we have a very great deal on the other hand to feel grateful for, and I think all should unite in thanking the Father of our being, for the good gifts he has everywhere provided for his creatures. This has been a record season in coastal districts. Never before was there such prospects in crops, in grass, and in cattle. It is to be hoped the same conditions exist everywhere, that all may have abundance of the good things of the earth. The bees that survived the winter have done exceedingly well, and swarming has been the rule and not the exception this year. The honey obtained is of best quality—all round. I have heard no complaints about any diseases. I have 100 stocks now, and I feel sure they are all healthy, furthermore, I trust they may evermore keep so. Honey has gone down in price lateiy, but that must be expected, at least we have got to suppose that, and wait a turn. I shall be leaving here shortly, having taken a H.S. Selection on the Comboyne, but intend removing bees thitherward. It is about 20 miles from the coast, and has an elevation of between 2000ft. and 3000ft. There is an area of some 70,000 acres, all covered with heavy dense brush. The soil is chocolate and highly suitable for agriculture or dairying. Should any of our beekeepers need a good place I would with pleasure give such any information they may desire. There are about 30 settlers there at present, but there will be many hundreds ere long. The soil is similar to Richmond River, but the climate is much better. Bees should do well while the brush stands, and after that the clover will most likely be the principal honey. I will now conclude by wishing all a happy and prosperous 1904.

W. H., Tarcutta.—Bees not making much honey, no bloom on the trees; all making wood instead of bloom.

Mr. R. Beuhne, Tooborac, Vic., writes:—How did your phacelia get on? Mine did splendid for honey but it died away so quickly that I did not get a single seed. That was owing to having sown it too thickly. The season here so far is a failure and this appears to be pretty general. I have heard lots about starving and feeding but nothing about a flow.

[We put in several places—a specially prepared place in the cultivation, also in stumps in the mountain side, but all alike died off after attaining a height of about 8 or 10 inches. The climate here is too dry.]

Mr. F. W. Penberthy writes:—I have been very busy this season, first preventing swarms and requeening to a great extent, getting them ready for the honey flow that did not come, at least before

the middle of December, and now the flow is coming in at a great rate from thistle mostly, the first flow from that source here, and have no idea how long it will last. I have taken off about six tons so far of very good quality honey. I must look around when I have time to see what chance we have of getting a white box flow this autumn.

G. F., Warwick, Queensland, Jan. 4: Season only now taken a turn for the better, and honey rolling in. Hope to make up to some extent for last years losses. Am running 200 colonies now.

G. W. R., Narre Warren, Vic., Jan. 14: I cannot make anything out of my bees, the honey is so dark I cannot get more than 2d a lb., and my bees have dwindled down from 30 to 4 hives now, so that I am quite disgusted with results. 5 cwt. of honey last season from 30 hives, hived one swarm to date. Box trees bloomed, nearly over now, and hives are quite light yet.

H. W., Laurieton, Jan. 15:—I have received the A.B.B. and I find it full of valuable information to beekeepers, and I herewith enclose one years subscription in advance, 5/-.

A. P., Mast Gully, Victoria, Jan. 15:—Experiencing a very wet season, very small yield expected. My bees are just beginning to store, but not enough to begin extracting. There is about 3 fair and one extra good season in seven. My largest yield of extracted honey from one colony was 120 lbs. I have been obliged to feed my bees during the past month, and starved out swarms are becoming numerous, several have swarmed around the apiary during past week.

CAPPINGS.

From American and other Bee Journals.

There are hundreds of thousands of people who do not use or purchase honey simply because it is not offered to them by some reliable person whom they know will furnish them with the genuine article. Why do we not reach them? The main reason is because the average bee-keeper is not educated as a salesman and rather than set a price on his honey and go out and sell it at that price, he ships it in bulk to large cities and allows the commission man to set the price for him. Educate the beekeeper. Make a salesman of him. Teach him to keep his product away from the large markets instead of teaching him how to produce more of it and the price of honey will advance.—"Exchange."

Brace combs behind the ends of the frames are not the fault of the frame. Their presence indicates that the hive is too long for the frames, so that the remedy lies in so reducing the inside length of the hive that the space between the ends of the hive and the ends of the frames shall not exceed one-fourth to three-eighths of an inch. If there is much space to fill up, a thin board may be nailed in at each end. If not very much, a little separator stuff tacked in will do, and this may also be used for greater spaces, if thin boards are not available, by putting cleats behind it. Burr combs on top of the frames, are somewhat due to an improper interval between the bottom of the super and the top of the frames, and may be reduced by reducing that interval to one-fourth of an inch, by applying a draw-knife or a plane to the top edges of the hive. But if there is nothing between the brood-frames and the super, this will not eradicate them by any means. The bottoms of the supers generally have to be scraped when removed or tiered up, first smoking the bees out of the way (but they don't all go) and the dripping stuff put in a special vessel carried along from hive to hive for the purpose.—*Progressive Beekeeper.*

A great deal of beeswax imported into Britain does not find its way into Mincing Lane, but is shipped direct to the manufacturers or wholesale dealers from Jamaica, Zanzibar, Madagascar, New Zealand, Australia, Spain, India, and Morocco. A certain proportion of the

wax that is offered for sale in the drug market is grossly adulterated; not artistically, so as to require the services of an analyst to detect the adulteration; but with such things as stones, earth and dead leaves, and some of it is very wormy. Like honey the imported wax varies greatly in colour and quality, ranging from white through all the shades of yellow and brown to black. Perhaps the article for which there is the greatest demand in the open market is Jamaica wax, which is shipped in barrels, casks and cases weighing from 2 to 4 cwt., and always finds an unlimited sale in London on account of its undoubted purity. The prices range from £7 10s to £8 15s per cwt., and occasionally there is very active competition for it. Its principal uses are for boot and furniture polishes, heel-ball, tailors' wax, photographic compositions, etc. The total exports from Jamaica in 1898 were valued at £10,294, against £4,823 in 1888; while the value of the honey exported from Jamaica during the same years was £2,103 against £1,341. The United States has increased her imports of wax from Jamaica while the amount coming to the United Kingdom has decreased.—*Jamaica Times.*

Every beekeeper is interested in the marketing of honey, but not every beekeeper studies market conditions closely enough to market his honey intelligently. There is a large class of beekeepers (they evidently do not read the bee journals) who pay absolutely no attention to the relative conditions of supply and demand, but dump their honey on the market at "any old time" and are, seemingly satisfied with "any old price they can get." Such suckers are not only fat picking for the dealers, but they keep the market unsettled, and the price down below the level of legitimate profit to the honey producer. — "Rocky Mountain Bee Journal."

BOATS WITH GLASS BOTTOMS.—Boats with heavy and slightly magnifying glass bottoms are constantly used by tourists in the lovely Santa Catalina Island to visit the famous "blue cavern." The passengers sit round the sides of the boat and can see as they pass or linger over them the brilliant sea-weeds, glinting fish and natural wonders of the deep, a veritable fairyland of glow and colour, in transparent waters beneath. Some of the pleasure boats at Nassau, in the Bahamas, are built with similar glass bottoms—that is to say, large pieces of plate glass are let into the lower part of the framework. The water is beautifully transparent, and thus those who glide in them over the surface have full opportunity to enjoy a continuous and enchanting sight through the bottom of the boat of various kinds of coral, sea anemones and sea plants which gem and enrich the ocean floor.—*Exchange.*

It is a gratifying sign of the times to see the responsibilities of our associations passing into the hands of the man with the smoker—the man whose personal experiences have deeply impressed him with the importance of action upon urgent and practical questions, as well as familiarized him with the details and intricacies involved in surmounting the problems which loom up before him as a menace to his means of livelihood."—"Progressive Beekeeper."

Of all the bacteria that inhabit the soil and cause the clover to live from nitrogen of the air, sweet clover is probably the most powerful of all, which shows plainly for itself, as it will thrive and produce both seed and honey in abundance on soil so poor that the worst weeds will not grow at all, and even on alfalfa land that is poison to nearly all other vegetation. Why is this? Simply that sweet clover when added by its own bacteria lives almost entirely from the nitrogen of the air, (of course, getting a small amount of phosphates, etc., from the soil). Not only so but these nitrogen-gathering bacteria are constantly and silently gathering nitrogen—the most precious element to plant life—and placing it in the soil.—"Progressive Beekeeper."

In some recent experiments, brood-comb two years old was found to contain 47.2 per cent of wax, 21.1 per cent soluble matter, and 31.6 per cent solids. One year old brood-comb contained 57.8 per

cent wax, 22.1 per cent soluble matter, and 20 per cent solids. "Slum-glum" refuse from solar wax-extractor (containing 24 per cent wax, 40 per cent soluble matter, and 36 per cent insoluble matter. New comb, built upon full sheets of thin super foundation the present season and which had never contained brood, contained 86 per cent wax, slightly over 11 per cent solids, and less than 1 per cent soluble matter.—*Exchange.*

The bee-keeping industry is peculiar in that the greater part of its development has been due to private enterprise and experimentation, rather than to scientific study by government experts or others employed especially for that purpose.—*Progressive Beekeeper.*

In South Texas several beekeepers tried to raise the price of their honey, with the result other honey came into their market, bringing the price down lower than they anticipated. The Southland Queen in commenting on above says: —Once foreign honey begins to come in it may never stop, but finally absorb our markets. This is no blind assertion, as the same holds good and has been proven by all farm products, and we must watch our P's and Q's, or soon we will be out of business. Let each and every beekeeper sell his product, as far as possible, and let supply and demand rule prices which will keep the pursuit healthy, and of course fair prices will be the result.

You can not see the honey as the bees bring it in, as it is hidden from view, being in a sac inside the body of the bee. There is a small clear bladder or sac situated in the body of the bee in that portion known as the " hinder part, " which has a connection with the long tongue of the bee. There is no outlet backward to this honey bladder, but the honey water, or whatever is carried in it, must be drawn out through the same orifice as it passed in, and consequently the honey gathered by bees is just as clean and free from any kind of dirt or unclean thing as clear spring water. The honey eaten by bees and taken into the intestines is gone, and is used the same as food of other living things, and never deposited in the cells.—*Exchange.*

The average process of balling the queen results in stifling or suffocating more than in stinging.

Filling honey cans too full. – Cans designed to hold extracted honey should never be filled quite full. When honey candies it expands; and if the receptacles be filled level full there is quite a liability of leakage, due to the cans bursting from the expansion of the honey when candying. Your honey is doubtless just as good as it ever was. The same can be restored to its original condition by putting the cans in warm water, or a temperature not higher than 160. Better empty out some of the honey from each can.—*Gleanings*

A "Dirt-Cheap" Bottom Board.—Mr. E. B. Tyrrell, of Davison, Michigan, has been using a bottom-board this year that is literally and figuratively "dirt-cheap," in fact, *is* dirt or earth. First, the hive-stand is made of rough, inch lumber sawed into strips about three inches wide, and nailed up so that the stand is the same size as the bottom of the hive. In fact, it is a shallow box, three inches deep, without top or bottom, but the same size as the hive. I said it was three inches deep, but the front piece, the one that comes below the entrance of the hive, is only two inches wide. The stand is placed in position, leveled up, and then filled with earth or sawdust, to within an inch of the top—just level with the top of the piece forming the front. When the hive is set upon the hive-stand the bottoms of the frames come about an inch, or a little more, from the earth below. At first thought this seems like a very rough, primitive affair, as though simply using the earth for a bottom-board would not answer, but it is difficult to say *why*. Mr Tyrrell has used this kind of bottom-board in one apiary all of the past summer, and he says that he has been unable to discover any objection. If it is desired to move a colony, simply turn the hive-stand bottom side up, lay

a piece of burlap, or wire cloth, over the hive-stand, set the hive upon it and fasten it there, and the hive is ready for moving. The narrow front piece to the stand allows of ventilation, even if several hives are stacked up one above the other. —*Beekeepers Review.*

Failing competition is the worst competition that a man can have. A merchant may be able to withstand the competition of a successful competitor, but the competitor who fails in business, and his goods are sold at a sheriff's sale—that is the kind of competition that cuts the ground from under a competitor. Beekeepers have that kind of competition to contend with in the shape of the farmer with a few hives of bees who takes his honey to market and sells it for what he can get. Some have said: "You must be a poor bee-keeper if you can't raise honey as cheaply as the farmer bee-keeper." Let the farmer bee-keeper try to make his living raising honey in this way and marketing it in this manner, and see how he will come out. The facts of the case are that his honey costs him more than he sells it for, only he doesn't know it. It is competition of the failing kind. —*Beekeepers' Review.*

All grass and weeds can be exterminated in driveways, walks, etc., by a very strong solution of blue vitriol. I prefer to dissolve one pound of the bluestone to each one gallon of water, and enough of the solution is used to wet the surface of the ground slightly. It is far superior to salt. To dissolve as many pounds of the bluestone as there are gallons of water, it is necessary to suspend it in a bag at the surface of the water, as the strongest solution sinks to the bottom of the barrel. The solution eats through tin quickly. Why would this not be a fine thing to use in the apiary to keep down the grass and weeds around the hives?—"Progressive Beekeeper."

See that your neighbouring beekeeper takes the "A.B.B."

N. S. W.

BEE-FARMERS' ASSOCIATION.

The Annual Meeting

Will be held in

Easter Week

The Annual Meeting of the above will be held in **Easter week** it is important that all intended business should be forwarded to the Secretary AT ONCE, in order to be submitted to members in the February [end of month] number of the *A.B.B.* Also nomination of officers and members of Committee, at the same time, and so as to allow the proposed business and ballot papers for office-bearers to be in the hands of members early in March.

E. TIPPER,

Hon. Secretary.