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West Maitland, N.S.W.: E. Tipper, January 29, 1903

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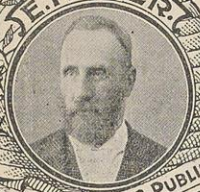

E. TIPPER.

EDITOR & PUBLISHER, WEST MAITLAND & WILLOW TREE.

THE AUSTRALIAN BEE BULLETIN.

A MONTHLY JOURNAL

Devoted to Beekeeping —

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

MAITLAND, N.S.W.—JANUARY 29, 1903.

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.
R. Beuhne, Tooborac, Victoria.

Queen Raisers.

W. Abram, Beecroft.
Jas. McFarlane, Lyndhurst Victoria.
J. W. Miner, Ronda, N.C., U.S.A
R. H. Jervis, Moss Vale, N.S.W.

Honey Tins.

Chown Bros. and Mullholland, Ltd., Thomas St., Ultimo, Sydney.
W. L Davey, Plenty Rd, South Preston Victoria.

Miscellaneous.

A. Hordern & Sons, Haymarket only, Sydney.
Allen & Co, 242 Sussex street, Sydney
P. J. Moy & Co., 161 Sussex St, Sydney

Foundation.

R. Beuhne, Tooborac, Victoria.

MARKETING OF HONEY.

As by this time the main honey flow of the year has been gathered—in the majority of cases not much, in a few cases fair—the great question is, how to dispose of it to the best advantage. The English market for Australian honey so far has only been touched with losses. Till we have a few Sir Alfred Jones' it apparently must remain so. We are further away from the centres of civilisation than other places that can supply those markets. It is not alone in honey Australia finds herself at a disadvantage. We clip the following from the *Australasian* :—

"California wines, according to American claims, are more than holding their own in Great Britain against the efforts being made to displace them with Australian wines, which are largely advertised, and for which one firm alone receives a subsidy from the Australian Government for that purpose, have fallen back 100,000 gallons in the year."

And Russian and Siberian butter bids fair to become a very great rival to Australian butter. Surely Imperial Federation should be urged on by all Australians.

And now to our local markets. We have only 4½ millions of people in Australia to an area of 2,970,000 square miles. North America has a population of 100,000,000 to an area of 8,657,500 square miles. That is, North America has a population 20 times larger than Australia to an area not three times larger. And there is a duty of 2d. per lb. on all honey imported into North America. There are those who would

say, what vast quantities of honey can be therefore raised in Australia. We would reply, Australians are a civilised race of people, and will not live on nothing, and when an industry has only a very limited market, and consequently only a small remuneration, as over production must cause, people soon forsake it, as has been done during the past year or two with beekeeping.

Now to our Metropolitan markets. Sydney and Melbourne are our greatest markets, containing one fourth of the population of Australia. Commission agents receive the honey from the country and distribute it - to the various industries that use it, to the grocers who sell it, and to the many who hawk it from house to house among their streets and suburbs. It would not pay individual beekeepers to go to Melbourne or Sydney to do the distributing. The commission agents have their customers — business connections perhaps of years. There are many of them in both cities, and herein lies the beekeepers' safety. If one does not act "straight," or you think he does not, you have your remedy by going to another. Also the advantage of such institutions as the N.S.W. Bee Farmers' Association, or the Apiarists' Association of Victoria, which every beefarmer should support. If there is a defaulting commission man the secretaries of each of these societies should be made acquainted with the particulars, so he may warn, if necessary, intending consignors.

And now to the local markets, the country townships. Some beekeepers like to hawk their honey from place to place, a few others to deal with storekeepers only. If the former keep the price up. If the latter do the same, but do it so the storekeeper can make a profit, and thus be induced to sell. We asked a storekeeper why he sold more treacle than honey. He replied he made more per tin on the treacle.

Watch the papers and look for the sales of honey. If your honey is a good article keep to one label, and size, and so as it stands on the shelves, the customer will always recognise it, and call again and again for that brand.

In the November number of the *American Beekeepers' Review* a writer says :— "*One good crop of honey throughout the whole country (North America) would almost ruin beekeepers.*"

And the North American honey market is at least eight times better than the Australian one ; there being 25 times more population, and only three times as much land.

Since writing the above, an old friend, who at our instigation, visited several commission agents in Sussex-street, Sydney, writes us : "There is a perfect glut of honey there, some of the commission houses having as much as 20 tons on hand, and 150 tons in Sussex-street, and it is not possible to sell at the present time. Butter is cheap, jam and fruit plentiful, and honey is not called for in hot summer weather."

A glut of honey in Sydney.

In clipping your queen's wings don't clip her legs as well,

Bees have been proved to gather honey at eight days and pollen at ten.

ANOTHER ANT ENEMY.— Common mint spread about is said to be effective against them.

A queen, after introduction, may not lay eggs for a week, and yet do good work afterwards.

For feeding sugar syrup, a teaspoonful of tartaric acid to every 20lbs. of sugar will prevent its granulating.

In Switzerland there are 17,000 colonies of bees, producing about 360,000 lbs. of honey or 160 tons.

Europe produces annually $18,000,000 (£3,750,000) worth of honey and wax.— *Pacific Bee Journal.*

The *Irish Bee Journal* says that "Jamaica honey agents in the English markets are taking the bread out of our mouths."

FIVE REQUISITES FOR A GOOD HONEY-YIELD.—1. Colonies strong in time. 2.

Limiting the brood during harvest. 3. Repressing drone-brood as much as possible. 4. Giving sufficient room. 5. Having a good strain of bees.

In the future: Out apiaries worked by motors, the power used for working the motor being also used to work the extractor.

For robbing, saturate a cotton rag with a dilute solution of carbolic acid, and lay it at the entrance of the being-robbed hive.

In some of the Northern States of U.S.A., honey cannot be sold at four cents a pound, because of the great amount of Jamaican honey in stock.

An old apiarian proverb:—"Year rich in honey, poor in swarms; year poor in honey, rich in swarms." We cannot quite agree with it.

We should ask our friends when getting supplies, queens, &c., or any matters for their apiaries to look at our list of advertisements on our first page.

One way of preventing swarming—take away frames of sealed brood, and give empty combs, starters, or frames filled with eggs, or very young brood.

If you are not certain of a fall honey flow, be careful not to take too much honey off now. Be sure they have enough stores to last till next spring.

Germany has 1,900,000 hives, Spain 1,690,000, Austria 1,550,000, France 950, 000, Holland 240,000, Russia 110,000, Denmark 99,000, Belgium 200,000, Greece 30,000.—*Pacific Bee Journal.*

Does your neighbouring beekeeper take the "A. Bee Bulletin?" If not it will pay you to get him to do so, if only for the interest it will create in him of the true state of the industry.

Thanks, friend Boyd of *Home and Farm*, for your kindly notice. We wish you a very prosperous New Year too. Your monthly giving of a Weather map of the colony will be of great service, and add much to the usefulness of your excellent journal.

The "ringer" queen, or best honey producer of all our apiaries this past season was one who would have stood no show whatever at any of our N. S. W. shows, while among those who for their poor record, we felt bound to supersede, were some who would have won prizes times over.

We read nothing now of Belgian hares in American bee journals. One writer in answer to the question why the growing of Belgian hares was unprofitable, and had been so generally abandoned, said the business had been fearfully overdone, and that too much attention had been given to the growing of blooded stock.

The question of solar extractors has been settled by us in favor of the solar, at any rate in summer weather. Hitherto in all solars that we have tried, the glass has been too small, and the wax or cappings to be melted too far from the glass. We are using one now with a glass surface three feet by two feet, and a depth to the surface on which the wax is placed of five inches. The receptacle for the melted wax is at the lower end. The body is of galvanised iron and answers splendidly.

VICTORIAN NOTES.

R. BEUHNE.

THAT SIMPLE WAY OF QUEEN REARING.

The editor in his reply to my comment has overlooked a little word I used: "*If*" you select larvæ of the *right* age, and put it into the right *place* and *position* at the *right time*, the bees will prefer them to larvæ of their own combs. I did not think bees knew all their larvæ personally, but supposed that they selected for queen's larvæ of just the right age, and in the (for their purpose) most convenient position.

Is your system of extracting a remedy for spring dwindling? You never extract from a frame with brood in it, nor do I, but that did not prevent the bees disappearing.

According to what Mr. Tipper says, page 170 (November), a choked up brood nest is the cause of dwindling, and at the same time (page 194 December issue) a

remedy for it. A most convenient theory this, for if you begrudge your bees a box full, and want so many more tins yourself, just extract some of it and that will prevent dwindling as per page 170, but if you cannot be bothered taking a frame here, and there leave the brood chamber as it is, and it will prevent dwindling as per page 194.

The idea that bees have too much honey in the hive (in winter) reminds me of that of the chick which smothered because the egg was too full.

Superseding Queens.—Page 200, the *A. B. B.* says: "go to your hives and kill the queens you wish to supersede." I say "dont kill them, but put each one into an open cage (open to worker bees I mean) and hang the cages into the super of a strong colony till your young queens are all laying, for some may be lost in mating, or mauled by the bees, and you can then release the old queen, at any rate till you have more cells ready. I sometimes have a colony minding and keeping in perfect condition 6 to 12 old queens in cages ⅛ of an inch thick, wire cloth on both sides, and a queen excluding entrance of one perforation by which the workers enter and leave while attending the queen. A queen shut up altogether with ever so many workers is not worth much after a while. I am of opinion that the bees which attend the queen of their own choice and can leave and re-enter, are better than a "pressed gang." I adopt this plan to get an escort for a queen which is to be mailed. I cage the queen in one of these cages in her nucleus or hive for half an hour, by which time a volunteer escort has entered the cage, and this escort I consider preferable to a conscript one.

Virgin Queens, any number, may be kept for a week or so in the same manner excepting that the colony in which they are kept should be queenless, or else have a laying queen at least two years old, but I do not allow a virgin queen at liberty in such a hive, for then the caged ones will be neglected by the bees, and there is too much challenging to fight.

Virgin Queens received by mail may be hung into the hive they are to be introduced to for a day in such a cage before being liberated.

Losses of Queens in Mating.—I have repeatedly heard complaints of losing queens in mating lately. In the majority of cases they entered the wrong hive when returning. To prevent this different beekeepers employ different plans, marking the hive (as they think) for the queen. Now, I have found by experience, that anything of the kind is almost useless, unless the marking is right at or about the entrance of the hive. I usually place a stone or piece of wood etc. on or near the alighting board. But where the immediate surroundings of hives vary as they do in my apiary it is hardly necessary.

The Disappearing Trick.—Mr. T. H. Bradley, on page 207, attributes dwindling to want of pollen. Well, that might be so in some cases, but it was not so here, for the combs of the extinct colonies contained a profusion of pollen, so much that I hardly knew what to do with it. Some of the colonies disappeared before ever they wanted pollen, nor does anything appear to be wrong with the quality of pollen, for I have given solid sheets of it from colonies which had dwindled to normal ones and none but good results followed. Nor had the old bees any need to gather pollen for there it was in a half circle in each comb. As to J. F's (page 209) opinion that *old* honey is not suitable food for larvæ or bees, I don't think the age of the honey makes any difference. It was the colonies with the older honey (gathered December and January) that pulled through best. Not age, quality or quantity, but chemical composition or presence of unusual elements or fungoids. I am trying hard to get this point settled, but must content myself till the expert investigator who is at present engaged in other important work takes the matter in hand.

PHACELIA.—A plant of this name is much thought of as a honey producer in Germany, acres of it having been sown in some instances. It is an annual, flowering profusely from at six to seven weeks after sowing onwards. I have tried a little of it this season, and have been quite surprised to see it rushed by bees. The variety I have is Phacelia Campana Laris (bell-shaped), it grows to 12 inches in height and the blossoms are bright blue. Those who would like to add it to their experimental honey plantation, may obtain it from the larger seedsmen, failing that, from yours truly, but not just at present.

[That "if" don't often occur. It may be all right where it does, but as a general rule, bees prefer their own larvæ to others. If they dont know their own larvæ personally, how is it they know so well the bees of their own hive?

Yes, Friend Beuhne, a choked up brood nest *may* be a cause of spring dwindling. That statement was made in answer to one, that the queens would always find room to lay in. We would not accuse you or any careful beekeeper of allowing such a state, as you say the remedy is easy in such a case.

Superseding queens. Yes, you may be quite right, and your idea is very useful, but to those who do not go in for queen-rearing and selling the fewer old queens in the apiary the better, and in the swarming time generally such have more queen cells than they want. Am very glad to hear there is some *Phacelia Campana* seed to be had in Australia, as we have read much about it. Can you tell us more about it, what time it should be sown, &c.

The following from the Melbourne *Leader* is interesting, read also with the article headed "Jamaica" in last issue: The Victorian beekeepers, according to Mr. Sinclair, place a much too high estimate upon the opportunities offered by the English market to their honey exports. Apropos of a letter that recently appeared in *The Leader* from Mr. R. Beuhne, of the Victorian Apiarists' Association, I asked Mr. Sinclair to state the results of inquiries made by him within the last few months in several parts of the country, and as to the market demand for honey and the general prospects of the trade. "To begin with," he replied, "it is a mistake to suppose, as some of the Victorian growers evidently do, that there is a 'ring' in the trade. Honey is imported into England from several countries, and landed at several ports. There is no scarcity; on the contrary, the tendency is always towards a glut. No combination has ever been attempted in my experience, or thought of. There is no incentive to it, nor would it be practicable. All that was made clear to me in the course of my numerous provincial visits. There is very little opening in this country for Victorian honey—at all events, for anything like a large trade—for the simple reason that the people do not care much for honey. They do not absorb even their own honey, though they hold it superior to any other. And then the prices which it is necessary to charge are against the development of the trade. People, especially the working classes, will not pay 4d. to 8d. per lb. for honey when they can get a large variety of jams and marmalades for much lower prices, and the finest cane syrup for 2d. per lb.

The Disappearing Trick, or, Teach your Grand Mother how to Suck Eggs.

J. J. PARRY.

Nevertheless Mr. Editor, how illogical my statements were to some, about the loss of friend Beuhne's bees, it seems that my theory has panned out the best according to his own account, as the weaker colonies turned out the best.

Before proceeding further, permit me to review Mr. Beuhne's own account: "When I shut the colonies down for the winter, they varied greatly in strength, while some were very strong and others of average strength, there were some very weak ones. All however, had their brood combs heavy, with well sealed honey. Under ordinary circumstances, I should have expected that the strong ones would come out well in spring, and that if any

succumbed it would be the weaker ones, but a comparison of the records of June 14th. and Sept. 15th. shows that not one of those strong in bees, in June has sufficient bees left to be able to recover, several succumbing altogether. On the other hand, the weaker colonies have lost very little in bees, and are in much better condition. This seems at first sight to upset the old golden rule to have your colonies strong for winter."

He goes on further and says: "I have my own idea as to the reason of this reversal of the usual order of things, but to get as many different views and aspects of the question as possible, I refrain from giving my opinion at present, and invite others to give their views."

What deductions can we make from this account. I can't see how a colony can be very weak if the brood combs are heavy with well sealed honey without weak in numbers. Friend Beuhne refrained giving his opinion till we all had written on the subject, but I must say his attempted answer (the reason for the reversed order of things) did not betray any conception of a relevant cause. He takes the cue from others, then says I did this, or did not do that.

I will next deal with Mr. Davey's notes, let us see what sort of an idea we get from him. He first opens fire at me, in telling me I had better take a running jump at myself. Then he says I should use that logic which I advise others to use. – If reasoning is the only faculty we have to judge concerning anything, well I don't think he has got much. He next quotes nature as the best guide dealing with bees, and says a hive that is full of honey should come out the best. To bear him out, he quotes the cutting out honey from bee trees, in the fall of the year and found colonies too big to tackle. That is no argument; we are keeping bees in bar frame hives where we can get it out at will. I don't question his statement for one moment, but is this not conflicting account to Bro. Beuhne's practical experience, where he says, the weaker ones came out the best. He also puts a different face on my note, and would make one believe that the only conditions that would cause loss would be solid with honey in the fall. He next states that he has had colonies that stopped breeding in March, and yet the first round of brood were not hatched until Sept., five clear months. I dont suppose it would not be anyways startling if I had known the conditions they were under for that time; they may have been snowed up for all I know.

Then at last he gets in quite a fever-heat of anxiety about one questioning friend Beuhne's method of handling his bees, and finishes up by mentioning these facts to prevent those who may try to teach their Grand Mother how to suck eggs.

Nature can in some cases immensely exceed man, but that does not prove that man's methods have not exceeded hers in others. Have bees in the bush, in their wild or native state, got the fitness to produce a result the same as domesticated bees have? If they have, well don't talk about your proficient bee masters and your experienced queen breeders. Are we to let them take their chance, as they do in their natural state? I should say not. When our bees have reached such a state of perfection by selective breeding and domestication, we can treat them by a different method without disobeying any of nature's laws.

We hand feed our horses, put iron shoes on them, clip off their winter coats. Why? because they are not running wild in nature. These are examples to illustrate between nature and nature's laws.

Will he say that the early conceptions of our fore-fathers were of the best? Methods of the past are not likely to be of any real benefit when we have reached such a state of advancement. The *Alchemist* was a man of science in his day; he was a painstaking and observant man, but was only interested in the properties of water and vapour, he only worked in a certain groove. Steam was for ages chiefly known by its power to explode and des-

troy, but the same law that used to destroy his glass retorts, enables the scientific engineer of to-day to travel in a loaded car at the rate of sixty miles an hour. What we want to do you see is to harness nature up to suit our own purpose. If you want your bees for colour, you must use a method to further that end—if for utility, you must use another to gain that result. Nature's laws in all cases must be obeyed, otherwise disappointment and trouble. I admit there is often a blind spot in the keenest eye, but that is a defect more often found in the aged than youth. In conclusion I think I have proved that my reasoning is just as logical as his Just compare the rationalism of the two systems. And so you will find, Mr. Editor, that in these days of advancement and science, that elders can often learn from their children, and in many cases youngsters returning from their schools of learning can teach their grandmothers how to suck eggs.

PRICES OF HONEY.

Melbourne Leader.—Prime 3½d., medium 3d. Beeswax, 1s to 1s 1½d.

Adelaide Garden and Field, S.A.—Honey, 2½d.; beeswax, 1s.

Queensland Country Life.—Honey, 2½d to 3d.

Farmer's Co-operative News.—Supplies having come to hand very much more freely during the last week, and sales being very dull, stocks have commenced to accumulate, with a consequent reduction of price. We quote prime, 3½d per lb.; medium, 3d; dark and inferior qualities, 2d to 2½d.

Allan & Co., Sussex Street, Sydney.—The market is now dull and heavy. Supplies have been arriving during the last two weeks and the demand is very small. Prime box honey is to-day worth 3d.; good light honey is plentiful at 2½d and 2¾d. The demand is generally slack during this time of the year. We would advise you to hold any honey you may have on hand, as no doubt that during the coming winter honey will again increase in value, and good prices will be obtainable. From reports we have on hand, the crop so far has been a failure in the western district, though they are getting a fair quantity on the northern rivers.

Hawken & Vance's weekly report, Jan. 12.—This market is now completelv glutted with honey. No buyers—and with present hot weather the retailers positively refuse to handle. The stocks held on the street are very heavy, and top offers on the basis of 2d. per lb. We do not care to lower values yet, and hope to shortly furnish more favorable report.

Irish Bee Journal.—I.B.K. Federation, 44 Temple Bar, Dublin, Sections, 1st quality (16oz.) 7s. 6d.; 2nds, 6s. 6d.; 3rds, 5d. to 5½d. per lb. Run Honey—1sts, 5½d.; 2nds, 5d., per lb. All prices net.

Maitland Mercury.—Honey, 2s. 4d. to 2s. 6d. per 7lb. tin.

The Fertility of Drones.

DRONES FROM VIRGIN QUEENS AND FERTILE WORKERS AS GOOD AS ANY.

The sexual organs of the drone consist of a pair of testes, each communicating with a *versicular seminalis* by a tube, and these two vesiculæ discharge their contents by another pair of tubes into the part of the copulating organ that Cheshire calls the "bean."

When the drone emerges from the cell the testes are already full of the "cells." The spermatozoa emerge or hatch from these cells, or, rather, the cells develop into spermatozoa. Gradually the spermatozoa descend into the *vercisular seminalis*. There they receive a mucous secretion from two glands. That secretion holds them together. They gradually continue their course down, and finally accumulate in the "bean," where they remain until copulation or death of the drone.

The cells from which the spermatozoa develop are formed in the testes before

the drone emerges from the cell—that is, during the nymph life—at least nearly all.

The drone is not fit for business until the spermatozoa are in the bean, as that is the only place from which they can be transferred to the body of the female. At that time the testes are already nearly empty, and are completely empty a week or two later.

Drones from virgin queens and fertile workers have been examined time and again by expert microscopists (Cheshire, Leuckart, Siebold, etc.), and found invariably as perfect in every respect as those from fecundated queens. The only difference was in their size, and that only when grown in worker-cells.

Their length does not exceed one hundredth of an inch. In the most powerful microscope they appear like a very fine thread, and all that we know about their thickness is that it must be less than one three-hundreth of their length.

Their number in a single queen has been estimated all the way from four to twelve millions, and a possibility of reaching perhaps twenty-five millions.—Adrian Getaz, in *Gleanings.*

Alfalfa In Illinois.

An interesting article in the Orange Judd Farmer is in part as follows: Farmers who have tried to grow alfalfa (lucerne) in Illinois have met with somewhat indifferent success. Theoretically, the soil ought to produce large crops. The Illinois Experiment Station, several years ago, began a series of experiments to determine what was lacking. Alfalfa was grown in pots and treated in various ways. A little later field experiments in 25 different sections of the State were inaugurated. The results of these tests, published in Bulletin 76, indicate that alfalfa can be successfully grown if the soil is infected with the bacteria which are found in tubercles on the roots of the alfalfa. If these are not present the soil must be exceedingly rich, and receive a liberal application of barnyard manure or nitrogenous fertilizers. Even the rich, black soil of Illinois does not furnish sufficient available nitrogen to produce profitable crops of alfalfa lucerne. In some sections of the State alfalfa has been grown successfully for some years. The soil from these fields is thoroughly infected with the alfalfa bacteria, and can be used for inocculating new areas. In the experiments conducted by the station, this infected soil was applied at the rate of from 320 to 1920 pounds per acre, the heavier applications being the most effective. Prof. C. G. Hopkins states in the bulletin that where lime is applied at the rate of 400 pounds per acre in connection with 100 pounds of infected soil, the inoculation will be very satisfactory in a year or two. The infected soil can be secured from Kansas or Nebraska, if it does not seem desirable to get it from Illinois. The Experiment Station advises farmers to try a few acres of alfalfa, and to apply infected soil to at least a small plot. The infection enables the alfalfa to feed upon the supply of free nitrogen in the air, greatly enriching the land on which it grows, as well as producing heavy crops of forage. On the limestone soils of the State it will not be necessary to add lime.—*American Bee Journal.*

Our friends can, without injuring themselves, afford us very real and practical assistance by making their purchases, as far as possible, with the firms whose advertisements appears in our columns, *and by naming the* Australian Bee Bulletin *when doing so.*

Mr. McEvoy: I was once so strongly in favor of sweet clover that I would like to have had bushels of it sown through the country, and the wooded land seeded down with it. I am thankful I didn't get an ounce of it. Sweet clover in it's purity I don't like, and I don't want it mixed with any other, because after all it has a little of the "weedy" taste. It will yield in certain seasons well but it has the taste.—*Canadian Bee Journal.*

CORRESPONDENCE.

D. G. T., Murrurundi, Jan. 5th.—Honey is very plentiful in the bee line; what we have taken is of the best quality, but as the apple trees are out in all their glory there will not be such good quality in the latter part of the season. I have found that when the apple trees bloom during a very wet time there seems to be an extra amount of tannin in the honey, but when the weather is dry the honey is of fairly good quality. I have just been informed by a large buyer of Murrurundi honey that one of the Sydney doctors stated to him that we did not know the value of honey, especially a class made from the century plant, which is of a very high medical order. The century plant grows very freely around here during the summer months, and is used as an excellent tonic. I don't know if the honey contains any of the good qualities of the plant. There has been very little swarming this year; I have not seen one from my hives, and very few for the last few years. I must have the non-swarming variety. Trusting you are doing well with your apiaries this year.

P. J. C., Wirrabara Forest, S.A.—The honey season here, which opened on the red gums (E. rostrata) three weeks ago is so far a failure. Though my bees are in excellent trim they are gathering no honey, though they are very busy raising large quantities of brood. Owing to long dry summer the last year the gum trees seem to have got a severe check. No rain fell from Oct. 1901 until June this year, to do any good. I notice the gum saplings are dropping their leaves, which fact proves there is something wrong at bottom. The trees are now white with flowers, but the bees work very indifferently. Last Tuesday good rain set in and up till Friday 5¼ inches fell. This is the best soaking the ground has had since 1893, when a few points within 15 inches fell in three days. This brings our rain total to date up just over 20 inches. Winter's rain was very light, and no good soaking rain fell. We are hoping for at least a little honey now ere the trees go out of flower. The sugar gums promise to flower a little next month, but as has been the case for some years past (during the drought) no honey will be secreted unless fairly cool weather supervenes. Wishing you a successful season.

J. B. B., Camerons Creek, Armidale, Dec. 19.—We have had about 6 inches of rain this month. I am going to shift my bees as they are in danger of being flooded; I wish to shift them on to higher ground, a distance of 70 yards, how had I best do it?

[Shift your hives late in the evening, simply using carrying irons if you have them If not, rope the hives up tight. By next morning make the place you took the hives from, look as much unlike its former self as possible, and place something before each hive so when the bees go out they are forced to mark their new location. There will be bees about the old place for a time, but they will all gradually become accustomed to the new place]

W. H., Clear Creek, Via Bathurst, Jan. 16.—Honey crop is a blank with me this season, hope it is better with you.

H.H., Waitahuna Gully, Otago, N.Z.—Honey season is spoilt. As a rule swarming is done by Christmas or New Year, but now I have not a swarm as yet. Rain and nothing but rain, the week before Christmas I had to feed them to keep them alive.

[I Wish we had some of the rain in New South Wales.]

Is there to be another disillusion that black bees gave beautiful white capping to the combs, while Italians gave comb of a watery look. A neighbouring bee-keeper tells us his Italians had given beautiful white combs this season. In the Spring, during white box flow, ours gave the same watery looking capping. But presto! an apple tree flow is now on, and with dark honey the cappings are beautifully white?

QUEEN REARING.

In 1860 I commenced to rear queens in 3-frame nuclei. This is how it was done: One of the 3 frames contained brood in all stages, from the eggs just laid to capped brood. The three combs were removed from a strong colony and all the bees adhering to the combs, minus the queen, were placed in the hive. The bees were then confined to the hive from 12 to 24 hours, and water was supplied. Bees thus prepared would commence to build from three to eight or more queen-cells. As some of the bees would return to the parent hive, when released, other bees were given the nucleus each night for three or four days. By this operation I at once saw how bees could be induced to rear quite a number of queens on one comb, as I found that each fresh lot of bees given the nuclei would commence a new lot of cells. The bees built the queen-cells in positions of their own choice, and selected either eggs or larvæ for the coming queen.

Queens reared by the above method were in all respects equal to any swarm-reared queen ever produced. For rearing queens on a small scale there is no better method known than the nucleus system, as above described. In those days no one ever heard of short-lived queens; all queens, as above reared, were first-class.

Now, can anyone give a method so simple, and perhaps so scientific, for rearing a few queens? Does it not come as near Nature's way as it is possible to reach? So far, so good.

But right here comes the trouble in rearing queens on a large scale by the above plan. When the time comes for the queens to hatch, then the trouble begins. It will be seen that if bees are constructing new cells for 4 days continuously, it will be 4 days before all the queens will hatch out. It will be impossible to cut out and save all the cells, if one desires to transfer them to other nuclei, or to the nursery, as the cells are built on both sides of the comb, and many of them are very near each other. So it will be seen that there is a disadvantage in this last method for rearing queens. For the above reasons I had to abandon that method, and adopt the strip-of-comb plan, and have used this latter method many years.

In the days of 1859 to 1870 we knew little or nothing about the "missing link;" more in fact, there was no "missing link." All we then lacked was a way to rear queens so that all the cells could be preserved, and the strip-of-comb method does it. All went well in those days; everybody seemed pleased with the queens they purchased, yet knew nothing about science as applied to queen rearing; nor did we care to know the scientific part, beyond adopting Nature's way, and by so doing only the most perfect queens were produced.

Since 1870 advancement has been made in many respects in queen-rearing, but when it comes down to the quality of queens no advance has been made. In fact, many queen-breeders are not up-to-date.—Henry Alley, in *American Bee Journal.*

Western Australian Beekeepers' Association.

The annual general meeting of this Association was held in the Museum of the Department of Agriculture, Perth, Tuesday, 4th November, 1902. There were present Messrs. J. B. Kline (in the chair), C. Smith, R. Taylor, W. O. Hipewell, W. K. Potter, and the hon. secretary, J. Sutton.

The minutes of the previous meeting were read and confirmed.

The financial statement for the past year, which was read and received, showed a credit balance, and was considered satisfactory.

Correspondence was read *re* export of honey to England, but owing to the sparse attendance of members discussion on the subject was held over. Com-

munications were also read with regard to foul brood, which was reported to be very prevalent in and around Perth, but which is now, happily, on the decrease. Correspondence was also read which had passed between the Department of Agriculture and Mr. J. Sutton with regard to the appointment of an inspector under the Foul-brood Act. Mr. Sutton was finally appointed to act as consulting inspector to the Department of Agriculture. The appointment was endorsed by the Beekeepers' Association.

The election of officers for the year ending June, 1903, in accordance with rule 6, was then proceeded with, and resulted as follows:—President, Mr. J. Shipton; vice-presidents, Messrs. A. H. Smith, A. Cook, and J. B. Kline; hon. secretary and treasurer, W. K. Potter, jun., Claremont; committee: Messrs. R. Taylor, C. Smith, J. Sutton, R. Wolfe, W. O. Hipewell, W. Masterton, and W. K. Potter A resolution was passed that the committee communicate with the Royal Agricultural Society with reference to suitable space being set apart on their new grounds, so that all exhibits relating to agriculture may be shown together, with a view of creating more interest in this industry. It was also considered necessary that some alterations should be made with regard to the entrance fees and prizes, which were considered to be out of proportion, and thereby caused a lack of interest amongst producers.

The secretary was instructed to call a meeting of the committee early in December to dicuss the various motions passed by the annual general meeting.

No further business being brought forward, a vote of thanks was passed to the retiring officers for their services during the past year.

Messrs. Kline and Sutton replied on behalf of themselves and other officers.—Journal Department of Agriculture, W.A.

We must congratulate the *Australian Hen* on its beautiful new cover. It is a true work of art.

MEAD MAKING.

The following recipe is from the "Beekeepers' Record":—"Cut the comb up in pieces about the size of a walnut. Place in a clean washing-pan; cover with warm water no hotter than you can bear your hand in comfortably. Let it soak half an hour, then add a little more water, and then squeeze the comb up with your hand. It will break all to pieces. Next tie a cheese cloth over another pan, and pour the contents of the first pan on the cloth. When the liquid portion has run through, pour it back again into the empty pan, and add more warm water, and squeeze the whole again well. Next add as much water as will make up the quantity of mead required. Strain again through the cloth, and when all has drained through the cloth, squeeze the latter to get the whole out, and pour into a clean boiler. It does not matter whether it is a galvanised boiler or not, just for the boiling, but the liquor must not stand in a galvanised vessel for any length of time. While in the boiler drop a fresh egg in, and if the egg shows itself nearly half its size above the top of the liquor, you will have some real strong mead by the time it has been kept about twelve months. If the egg goes to the bottom your liquor will be small beer. In the latter case, to make it the desired strength more honey or sugar must be added till the egg will rise to the proper height. It is, however, no use adding honey or sugar unless you have the liquor warm enough to melt it. When made right let it boil half an hour steadily. While boiling put ½ lb. hard ginger, tied up in thin rag, also ¼ lb. cloves, to each nine gallons. When taken from the fire put it outside to cool, but before quite cold toast a bit of bread, and put a small quantity of yeast on it to start it fermenting. Next day put it in your barrel, but do not cork it up tight for some time, and put the ginger and cloves in the barrel with the mead.

When the water has drained from the combs the second time put them into an

empty vessel. The wax should be dealt with the same day or the next, and it will be good if properly extracted."

The Disappearing Trick Again.

S. B., BRIDGETOWN, W.A.

I see by the last "Bee Bulletin" many beekeepers have had the spring dwindleing bad, so I thought I would let you know my experience of it. I think the cause is want of proper ventilation in the hive. During last summer I put a small plug of wood under one corner of the lid of all my hives and I found the bees did not lay out on hot days as they did before. Then I thought I would leave them in all the winter. When I looked the hives over in the spring, they were in first class order, strong, and I had no spring dwindling. Other years I have had it bad when I opened the hives in spring, there would be a close stuffy smell, and there would be water on top of bars, the sides of boxes would be quite wet, and the comb mouldy and a lot of dead bees in front of hives, and it would be nearly Christmas before they were strong again. I was getting disgusted with beekeeping, but if they do as well in the future as this spring I shall be satisfied. I believe in Mr. Doolittle's idea of the bees having plenty of good honey for the winter. I think the hives being so close makes the honey unwholesome, and that affects the bees. Unless there is ventilation at top of hives I don't see how the moisture from the bees and the evaporation from the honey can escape. Of course during summer the lids are often taken off when taking honey. I have heard that bees kept in straw skeps or old cases do not have spring dwindling, as they are more porous than the painted hives. My experience has been the same as others, the strongest hives were the worst. I suppose the more bees in the hive the more foul the air. I would like to know if any other beekeeper has tried this plan, as it is the first winter I tried it.

TINS FREE PER RAIL.

In the October issue, page 150, we gave an account of a little trouble we had in getting honey tins from Sydney, and its solution by declaration that the empty tins would be sent full afterwards to any railway station in N.S.W. Since then we ordered a number of tins from Sydney. The consignors on taking them to Darling Harbour were told freight must be paid there in advance. They therefore sent them per steamer to Morpeth, causing an extra expense to us of some 17s. We made a complaint to Mr. Corns, the Goods Manager at Darling Harbour. The following is his reply:—

N.S.W. Government Railways,
Goods Manager's Office,
Sydney, Dec. 30, 1902.

Sir,—In further reply to your letter of the 15th instant, respecting a consignment of honey tins tendered at Darling Harbour for Willow Tree. I beg to inform you that the necessary declaration was not made on the consignment note to the effect that the tins were to be filled and returned by rail, and in the absence of this it was required that the freight either be paid at Darling Harbour or Willow Tree, which was in accordance with the tariff. The staff do not appear to have acted incorrectly in this matter, as the senders certainly expected the tins to be carried free irrespective of them giving the declaration referred to.—I am, sir,

Your obedient servant,
J. G. S. CORNS,
Goods Manager.

Mr. E. Tipper.
Willow Tree.

Tins ordered since have come alright.

DON'T WASTE POLLEN.

It is not an uncommon thing to see combs of pollen going to waste in the hands of those who are careful to save the smallest quantity of honey. Indeed, there are probably many who attach no money value whatever to pollen. The bees, however, set a high value upon it. Without pollen, no brood-rearing. "But the bees gather more than they need, and there is no possible good to come from having a store of pollen in the hive when the bees can get plenty of it in the fields." Are you so sure of that? Do you know

to a dead certainty that a colony which has a good store of pollen in its combs will bring in just as much pollen from the fields as it would with no pollen at all in the hive ?

Probably few have made sufficiently careful observations to realise the great amount of pollen used by a colony of bees in the course of a year. During the great brood-rearing period, early in the season, a close observing will show that the store of pollen left over from the preceding year becomes gradually less until the beginning of the harvest, when it becomes very low.

So if, in your preparations for winter, you have thrown out some frames well filled with pollen, see that they are carefully saved for the needs of the following spring.—*American Bee Journal.*

PUBLICATIONS RECEIVED.

"The Union Signal and World's White Ribbon," a publication in the interests of Temperance and against Tobacco Smoking, published at Chicago, U.S.A.

Circular from the Promotors of the Louisville (U.S.A.) Purchase Exposition to be opened 1904 to celebrate the centennial of the organisation of the Louisiana Territory. They say it will be by far the greatest international event of this character within the world's history. It will cover 1200 acres of land, have 300 acres of exhibit space, and will cost approximately $40,000,000,000.

CAPPINGS.

From American and other Bee Journals.

Mr. Langstroth notes an observation made while transferring bees by counting the eggs dropped on a black cloth in forty minutes by the queens of four different colonies. The first queen dropped but one egg, the second twelve, the third eighteen and the fourth 20 eggs in the stated time. This observation was made in the middle of April and on the 15th of July the colony of the first queen was very poor, the second was of average strength, and both the others were very strong. Now let us apply the result of this observation to practice and see how it would figure out:—Take for instance an apiary of one hundred colonies, the average annual yield of which is, say eighty pounds of extracted honey per colony: now let us suppose that twenty-five of the one hundred colonies are poor, fifty average and twenty-five strong, and then try and solve the problem as to how the average yield of eighty pounds per colony is obtained. The poor colonies will gather about half as much surplus honey as the fifty of average strength, or say forty pounds each, then in order to get the average of eighty pounds per colony for the whole apiary, the twenty-five strong colonies must gather one hundred and twenty pounds of surplus honey each. Now, if in accordance with the observation and deduction of Mr. Langstroth as already noted, the difference between the poor, average and strong colonies is attributable solely to the difference of queens, then we are forced to admit that the mere act of tolerating the twenty-five poor queens has incurred an expense of one thousand pounds of honey when compared with the average colonies, and three thousand pounds short when compared with the strong colonies, either of the items being sufficient to pay for all the good queens required and have a considerable balance to the good. You may change the figures as you desire and the result will always show that the poor queens are heavy debtors with no prospect of paying and should under no circumstances be tolerated. Keep the best and only the best; the very best are the cheapest in the end, and an economy that prohibits the employing of the best queens is certainly a false economy. The owners of Ayrshire, Jersey, Holstein or other stock do not stop at merely knowing that their animals are thoroughbred; their ambition is that each individual member

of their herd shall be the very best of its kind, and should not beekeepers study their own interests by copying the example of the stockmen in this regard? —Holmes in *Canadian Bee Journal.*

To avoid having the bees build the comb of sections to the separators, he advises having the hives carefully levelled with a spirit-level, at least in the direction in which the combs run in the sections; see that the starters are thoroughly fastened so that one of the corners can not drop down; make sure that the starters are true in the sections, preferably using full sheets as starters; avoid giving sections to colonies too weak to occupy them fully; and avoid putting sections on too early, or leaving them on too long at any time when the bees are not storing.—G. M. Doolittle, in *Gleanings.*

Anyone can ascertain with very little trouble, that bees get so accustomed to their location that if the hive is moved but two inches, the bees when they alight will almost invariably notice that two inches of difference. If you move the hive forward, they will of course alight as usual at the entrance, but if the removal is two inches to the right or to the left you will see them alight to the side formerly occupied. If the hive is moved back that distance, they will, fall short of the entrance about the distance moved. As one might easily conceive, they will soon become used to so small a difference in the distance, and not all the bees will notice it, but enough of them will be annoyed by it more or less to show the practical apiarist the danger of moving bees without notice. If you have the patience and the opportunity of moving your hives from two to six inches every day to get them together, the inconvenience to the bees will be less than the advantage gained from their being brought together for shelter. But so very few people have the time and the opportunity of doing this that one can hardly advise it as a practical thing. If you move them two or three feet, especially when many hives are in the same spot, there will be much confusion, a great deal of fighting, and, if you are a practical beekeeper, you will regret it. When bees are moved a great distance, say beyond their usual field range, they easily recognise the spot at their first flight and remember it, especially if the apiarist has taken care to place in front of the alighting-hole some sort of obstruction that will show them that something is changed in their whereabouts. The old, experienced bee, that usually flies out of its hive in a "bee-line," will then face about and reconnoiter before going away. But if it has left the hive in the usual bee-line, there are many chances that it will get disconcerted in coming home. Although some reliance may be placed on the "home" call, many bees will have alighted in the wrong place, and perhaps have been destroyed. Bees may be changed from one spot to another within a short distance, if they are given a very decided notice of the change, by disturbance of alighting-spot in the placing of an obstruction as stated, but it is not advisable to try these things when they need their whole force in the hive to keep warm during cold weather.—C. P. Dadant, in "Canadian Bee Journal."

There are many advantages in having a deep bottom-board. Especially is this true in regard to wintering. It allows the bees to cluster below the frames; and what beekeeper does not enjoy peeping into the hives and seeing a large cluster of contented bees hanging in plain sight, apparently saying all is well. It gives them plenty of air, and there is no danger of the entrance being clogged with dead bees as with a shallow bottom-board. It is an easy matter to clean out all dead bees if you wish, the space (2 inches) being ample to allow their being raked out without disturbing the bees, unless they are clustered below the frames, in which case there is seldom any cleaning out necessary, for when you find a cluster so large as to extend down through the 2-inch space and rest on the bottom-

board, you will generally—perhaps always—find that the bees themselves keep their floor swept up clean. During the honey-harvest 2 inches is too much space to allow under the brood-frames, for the bees will build down and fill it solid with honey and brood—a thing that is not desirable. The bottom-board can be reversed, but that means a good deal of heavy lifting—a thing to be avoided as much as possible—so a false bottom-board can be slipped in under the brood combs, leaving just the right space. It is taken out in the fall as soon as the bees quit storing, and left out until near the time for the next harvest.—Exchange.

Let me inform you that, for many eggs, for many bees, for much honey, and for little swarming, you must have big hives Big houses, I say, hold many goods; and those bipeds who expect to get a ton of honey from a thimble will fail to realise on the theory. Queens lay their eggs in cells. Many cells are necessary for many bees. The biped who expects to get 75,000 bees from 20,000 cells is miscalculating conditions. Where there is no place for the rearing of many bees, there will not be many bees, regardless of the theoretical manufactory notions of many bee experts. The secret, Mr. Biped, of much honey is —*many bees*. The condition for many bees is—*cells*. The conditions necessary for many cells are—*large hives*. Unless they are to be glued on the outside, which would be very doubtful doings, get the large hives. A few years and the eight-frame common-depth hive will be relegated to the *gone* or to the apiaries of biped owners whose bees are expected to appear spiritualistically, and not from the common every-day method of eggs and brood-chamber.—Big Hum Bee in *Gleanings*.

I say again that it is *not* a fact that alfalfa cut before it comes into bloom makes the best hay; and I know of many careful, thoughtful farmers who were once led into that practice who are now letting their alfalfa stand until it reaches that certain stage when it contains and will retain, the most food value. Who cannot remember when this same fallacy was taught by some, and imitated by others, in regard to cutting wheat and corn, and even the digging of potatoes, while in an immature state? Some years ago the Experiment Station of New Mexico carried on a series of experiments to find out at what stage of development the alfalfa plant would make the most pounds of the best hay. As I understand it, they made four cuttings of the first crop. First, when about half-grown; again just before it came into bloom; then while in full bloom; and again after it had gone to seed. They then took four bunches of steers and fed them the same number of pounds from the four different cuttings, and weighed each bunch of steers every five days during the experiment, which lasted some 60 days. The result was that five steers *died* during the experiment from the first cutting, while the best results were from the cutting made in *full bloom*; and that cutting made 500lbs. more hay per acre than any other. Much good could be done by the hundreds of beekeepers in the West who buy hay if they would bring this matter before the farmers, not arbitrarily, but candidly, and insist that the hay they buy shall have been cut when in full bloom, and offer to pay a dollar per ton nore for it. They can afford to do this. because it is *worth it* for feeding purposes.—M. A. Gill, in *Beekeepers' Review*.

ANTS.—Although no one will deny that our Australian ants are ingenious and at times troublesome cusses, the American ant is more up-to-date than his Australian brother if a statement by the "Chicago Chronicle" is worth anything They know all about hypnotism, magnetism, while the English variety, it would seem, has scarcely advanced beyond the alphabet of Christian Science. The "Chicago Chronicle" stumbled upon an ant-doctor's consulting-room, and so is able to tell us how it is done. Our enterprising name-

sake watched some ants come out of a hill. Some of them "were weak and emaciated—invalids, in fact." They were accompanied by healthy members of the community, and all made their way to a distant ground. There "a big and sturdy ant" was stationed. He waved his feelers towards the approaching invalids. They came up to him one by one, and "submitted themselves to treatment." The physician ant made passes over the head and body of the patient "in a manner distinctly suggestive of the hypnotising of nerves and muscles practised by human doctors." When the seance was over, the patients went back, and the doctor "marched off in the opposite direction." This is very interesting—but would the "Chronicle" mind changing its name?—*American Exchange.*

The well-known Professor Benton was lately fined $10 by Police Judge Scott for his inhuman treatment of Frederick Hahne, an eight-year-old. For some time past Prof. Benton, who is in charge of the apiary at the Department of Agriculture, has been annoyed by boys throwing sticks and stones at the bee-hives. He made a raid on the boys and caught young Hahne. Taking him by one arm and one leg, the Professor carried and dragged the struggling, screaming child to the hives. "I'll give you enough bees," said the Professor, as he held the boy in front of one of the hives. The angry bees settled on the boy, stinging him severely about the face and on the legs. As soon as he could get away the boy ran home, where he was treated by Dr. Nicholson. John Hahne, the boy's father, procured a warrant for the arrest of Prof. Benton, charging him with assault.

I would dispose of my honey at 9 cents. per lb. This price, after deducting the price of tin and crating, would leave me 8 cents. for my honey. It is my opinion honey cannot be produced at a fair profit for less than 8 cts. per lb.--*Exchange.*

Several American queen raisers have quitted selling queens on account of the fact that too many bee keepers were already engaged in it, and at the low prices it is impossible to raise first-class queens and make a reasonable profit.

The *Preussische Bztg* says.—The display of electricity in the skies diminishes the secretion of nectar in the blossoms, sometimes entirely stops it. It also affects the temper of the bees, causing them to be ll natured.

A very nice preparation for whitening the skin, is made of oatmeal, honey and lemon-juice. Mix oatmeal and honey together until you have a thick paste, then add enough lemon-juice to make the paste of the right consistency to spread on easily.—Exchange.

We keep a bag of quick-lime near the back door. If a hive is seen to be pestered with ants, a shovel full of lime is thrown down in front. It quickly separates the combatants, and destroys any dead matter that may have tempted the ants to the neighbouroood.

To Destroy Ants.—With a pointed stick make a hole a foot deep through the centre of the nest and two or three similar holes round it, pour ½oz. of bisulphide of carbon into each hole and stop up each hole with clay. That will finish them, eggs and all. Remember that bisulphide of carbon is highly explosive and must not be brought near fire or lamp.

Workingmen, who were engaged in the construction of the Trafalla railroad, Spain, while cutting a large elm tree found a cavity inside of the body of the tree. It had no exit. The wood and bark around the cavity were perfectly sound. Fifty rings of wood-growth could be counted, each representing a year's time. In the cavity was found a squirrel's skull and otherwise it was well filled with combs full of honey in a fair state of preservation.—*Exchange.*

Bad honey season in Great Britain Austria and United States the past year.

The most objectionable article of clothing to a bee is one made of dark woollen.

QUESTIONS NEXT MONTH.

20. Do bees at times prefer other larvæ to their own to raise queens from?

21. Do queens prefer old black combs to new ones to first lay in.?

22. Instead of 8 Hoffman frames in ½ super, (10 frame), I propose to get made frames self spacing and following size—top bar, 19 in. x ⅞ x 1⅜ in including spacing shoulder, end pieces similar to Hoffman ends with space, bottom bar 1 in. x ⅜; how do you think they will answer?

CORRESPONDENCE.

H. B., Wilmington, S.A., Jan. 4.—I have hived 40 young swarms this season, having eighty swarms altogether. The red gums are out in bloom, but not much honey in them. Wishing you a Happy New Year.

J. S. C., Corowa, Jan. 19.—The season here seems to promise better than last, but I do not think there will be much honey stored. The bees in this district did not swarm at all, except in a very few cases.

J. K., Lyndock, S.A., December 18.—Please find enclosed 7s in payment for one year's subscription to the A.B.B. starting with the January number, the extra 1/6 is for the October, November and December numbers you have already sent me for which I thank you. I like it very much, as I find that I can learn a great deal from it, and I think no bee-keeper should be without it. Can you inform me through the "A.B.B." 1. If rendering wax out of old brood combs in tin or copper vessels when using sulphuric acid, will discolour the wax. What metal would be best. 2. What is the best treatment for foul brood? I lost very heavy with it last season, and I have also had the disappearing trick as you call it this last spring, and had one hive the spring before last die out with it. I do not think that it can be the cold weather, but I do think that it is the food. This swarm was very strong in the end of June 1901, having wintered splendidly, and filled a three-storey 10-frame hive, but soon after they crawled out to the entrance and died with a bloated appearance; so I took two storeys off but they still kept dwindling. A new swarm came out of another hive, so I brushed those bees out of the diseased colony into a clean new hive with foundation only to see whether that would cure them, Then I took the diseased hive, brood, honey, and all, and dumped the new swarm into it, and all the brood hatched and the new swarm went on splendidly, but in February 1902 they started to dwindle, and soon died out. My opinion is that when first put in this hive, they got new honey for feeding the young bees, hence no dwindling till the drought came, and they had to use all the honey the other bees had stored. As for the diseased swarm, I put them in the new hive with foundation. They soon disappeared altogether, queen being the last to die. This last season I had a good few die out with a hive full of honey, queen mostly lasting till the very last.

[No 1. One is as good as the other. 2. Hive in fresh hives with starters only, closing the entrance for a few days, destroying all brood comb and scorch the old hives.]

J.W.R., Custom House, Fremantle, W.A. Dec. 10.—Would you kindly tell me through your monthly paper, the reasons for the following.—I have a few hives of bees, and once a week regularly I have a good look through them. Now the trouble is I can get very little honey from them owing to the quantity of brood there is always in the frames. The bees begin the frame alright with honey an inch or two from the top, and then the whole of the frame from that to the bottom on both sides is filled with worker and drone brood mixed. Every frame in all the hives is treated in the same way. You see at that rate I have very little chance of getting much honey. I have tried to alter the condition of affairs, by allowing the bees to get over their brood raising business, but there

seems to be no finality to it, they are still going strong; again I tried another experiment, I cut out every bit of comb from the frames in all the hives, reserving a little honey comb in each hive for food, but the little beggars are still "*broody*," and as far as I can see likely to remain so. There is plenty of honey coming in now if I may judge from what I see for sale, but I am getting very little. Perhaps all this is the bees propensity to strengthen the hives. Will you tell me why there are so many drones in the hives now; are they any use, if not can I get rid of them? I forgot to say the bees will insist on building comb from top of frames to roof of cover. Hoping I have not wearied you with so many questions, but I am groping in the dark, and would be thankful for some advice.

[You should have put on a super, or if they needed it, two. Cut out drone larvæ or brood, your fowls will think it a feast. Pinch with your thumb and finger the edges from which you have cut. There will be greater chance then of their making worker brood, instead of replacing with drone brood. In the added super put alternate frames with starters, between full sheets.]

J. W. S., Condobolin, Jan. 20th.—I read your article, "A warning! or are our bees in danger re the grasshopper plague and the locust fungus." I might inform you, that in my last note to you, I mentioned there that two years ago, my bees were struck down with paralysis, some 40 hives within one week dying and dead choking up the entrance of the hives. At this very time there was experiments going on half a mile from my apiary with the locust fungus and spraying with poison liquids to destroy the plague of grasshoppers which was then flying like a swarm of bees, only thicker, for instead of covering a quarter of an acre of ground, they were covering the whole country side in a moving mass. This operation took a little effect, for you could find the grasshoppers dead and dying, laying and crawling all about my garden, for at that time I kept a fruit and vegetable garden as well as bees. I had kept bees in this district some four years before this, and I never saw amongst them either before or since, anything like that experienced while that experiment was going on and for about a week afterwards. I was talking to my brother who was then editor of the *Lachlander*, and is now in Grafton. He said I had nothing to fear from this experiment that was going on, and that my bees must be troubled with paralysis. I doubted it and went to work, cleaned every bottom board and kerosened them, burning all the dead and dying bees that were thereon. The fresh buds that were bursting on the gums at the time seemed to give the remaining bees fresh life, and so my trouble disappeared. Now could this trouble with my bees that I speak about have been caused by that experiment, or was it paralysis. I would like other brethren to give their experience, if any, where this locust fungus and spraying has been carried out. I have succeeded in getting a very fair honey return this season of some six tons, all through giving my bees plenty of scope to work on, and the good fortune of getting two inches of rain at the proper time.

J. F. B., Dungowan.—The bees in this part have been doing very well since the middle of last winter. First, white box, followed by yellow box and red gum, and now a splendid flow from apple tree. The honey from the latter is a nice light colour and good flavour, quite unlike what it usually is. My bees have about doubled this summer by natural swarming. I have over 70 hives at present. I suppose I ought, according to your Goulburn correspondent in last issue, and some other writers, turn them adrift, as I do not depend wholly on them for a living. However, I cannot see my way clear to do so at present. According to their reasoning, mixed farming should not be allowed, but the wheat grower should depend altogether on wheat, the orchardist on fruit, the stock raisers on stock, and so on. We are having very dry, hot

weather here at present, but we are better off than the farmers in some parts of the State, as we had a half crop of wheat and fruit fairly good.

Sending Queens Long Distances.

Use a large Benton cage, and it may contain three, four, or six holes. We have also had good results with the three-hole cage with holes about an inch in diameter and ¾ deep. We have also had good results with a larger cage having six to eight holes, the holes being about ½ to ¾in. deep. There should be provision made for ventilation, and the candy should be just right. It is impossible to describe just how this should be made; but a few general directions may be helpful. In the first place, a pure pulverized sugar should be used. Be careful not to make the mistake of getting confectioners' sugar, as that has a large percentage of starch mixed with it. Such sugar will be death to the bees. If you cannot get pure sugar, take ordinary granulated sugar, and powder it up in a mortar. Next select the nicest, thickest, and whitest honey you have. Mix enough of this honey with sugar to make a stiff dough. Let it stand a few days; and if it begins to run—that is, if the dough begins to flatten out like a pancake—knead in more sugar. Let it stand a few days more in a warm place. If the dough flattens out again, put in a little more sugar, but be careful not to overdo it. A candy that is too dry is almost as bad as candy that is too soft. The point to be observed is ventilation, and a candy that is just moist and just soft enough.—*Gleanings.*

CAPPINGS.

I find there is a growing interest and demand for large hives. The reason why it was thought wise by me to adopt a large hive was that from twenty years' experience with bees and information gleaned from experts all over the country, including conventions, I came to the conclusion that large strong colonies gave the best honey yield. Keep bees together and make them comfortable by giving plenty of room, shading and ventilation, and the large colonies give the best results. I find this season that an average queen is perfectly well able to utilize a 12-frame Langstroth hive, and where the honey flow is of a short duration the best financial results can be obtained by a system as nearly non-swarming as possible.—R. F. Holtermann in *Canadian Bee Journal.*

Jamaica honey agents on the English market are taking the bread out of our mouths.—*Irish Bee Journal.*

Rum honey is being freely offered in England at 56/- per cwt.—*Irish Bee Journal.*

At a recent meeting of the Irish Bee-keepers' Association, it was reported that Mr. Chevenix had written resigning his position as a Vice President, and stating that he did so not on any personal grounds, but because the Association's policy was to increase the number of bee-keepers in Ireland, to which he objected, thinking that there are enough already.

The possibilities of honey production in Australia are almost unlimited, but so much honey is already raised, and the outlet through export so unremunerative that as a means of making a living, bee-keeping is, perhaps, better left alone. Still the bee is an interesting little creature, and good honey is very nice, and the country would never lack some who would like to learn enough about the industry to enable them to keep a few hives.—*Australian Agriculturalist.*

Great care should be exercised now when the different flows are easing off. The trouble is from robber bees. We find it especially so at our out apiaries, where during a flow, we have found it always best to extract in the open, and while the flow is on, never had trouble with too many bees about us. When the flow is ceasing the hives must be kept open as short a time as possible, and if

the bees were very troublesome where we are extracting—70 or 80 yards away—find it best to leave off for the day.

I have sometimes heard people say that matter of absorbents above the bees was nonsense. It is not to me, because I have seen the matter tried on hundreds of colonies, and I will here say what the experience was. We used to put leaves in the caps of our hives, not to absorb the moisture but to keep the heat from escaping, just to help keep the bees warm. When we did this, we used an enamel cloth over the bees and placed the leaves on top of this enamel cloth. During a very hard winter, many of our bees died, the hive apparently wet from one end to the other, in the brood-chamber from the moisture that had escaped from the bees. Nearly every colony found in that condition was dead. But we had a number of colonies in which the oil-cloth was partly gnawed away by the bees, large holes having been cut into it by them. These colonies almost invariably wintered safely, but the leaves in the upper story were soaked with moisture, and in some instances mouldy. The larger holes were in the enamel cloth the better the condition of the bees. This was an eye-opener to us, and from that time on we have uniformly removed the enamel cloth for winter.—Professor Benton.

C. P. Dadant, who uses large hives, says:—It is out of the question to find an infallible preventive for swarming. With the very best management, we must expect from 5 to 10 per cent. of swarming each year. But the number of swarms harvested by us in 30 years or more of this practice has not been sufficient to keep up the number of colonies in an apiary at the same point, and we have had to resort to artificial increase or by division. There are then three or four absolute requirements for the prevention or diminution of natural swarming, viz.: A large hive capable of accommodating the most prolific queen. Enough surplus combs to receive the crop of the workers as they bring honey home from the field. Plenty of ventilation, enabling the bees to work comfortably inside the hive at all hours. Shelter against the rays of the sun during the hot hours of the day. Lastly, a removal of the drone-combs, replacing them with worker-combs in the brood-chamber, early in the season. *Exc.*

I have used every conceivable size of frame. A frame 10½ by 16 inches would suit me best. But because the Langstroth frame is almost the standard, I prefer it. The twelve frame hive is good for both comb and extracted, but I prefer the thirteen frame. The shallow Danzenbaker hive is the worst of all in my experience. We don't want baby beekeeping. I consider the three important requirements to be these: first race. We cannot have too prolific queens all the year round. Second, select queens and breed with care. I do not advocate any particular strain, but you must know how to select. Third, filling the gaps in our honey flows with forage. I have a great deal of faith in that. I have had experience both with small and large frames in very poor localities, and in all my experience I never knew a colony which had bred up well in the spring that failed to get its winter stores in the following season, and I doubt if there is any ordinary locality in which that rule does not hold good.—Mr. Benton, in *Rocky Mountain Bee Journal.*

Recently I received a long-tongued queen, and introduced her as follows: I brought a comb into the house for the purpose of getting young bees to place in the cage with the queen. The bees on the comb began to cry for a queen, and I turned her loose among them. They met her in a friendly manner, shook hands, then treated her to white honey and escorted her over the comb; crossed to the other side. Then I placed the comb back in the hive, queen next to the wall, with the division-board on the inside of the frame, and left a space of one frame; next day I shoved the other frames up, removed division-board, and the queen

was all right. My introduction of virgin queens is to pick them off the comb as soon as hatched and let them run in at the entrance ; or lift back the corner of the blanket and let them run down from the top. Very often a very young virgin will supersede an old queen, if given in this way, without destroying the old queen yourself.—*Exchange.*

Of course, there are, and probably always will be, people whose tastes impel them to keep a few bees, but the great mass of people have found it more profitable to buy their honey, the same as they have learned that it does not pay them to make their own cheese.—W. Z. Hutchinsen.

Bees dislike sections for the simple reason that it disturbs the temperature of the hive beyond the conditions in extracting frames to furnish enough bees to cover the wooden partitions (which are greatly in their way), in order to get together in sufficient cluster to produce and maintain comb-building heat; and in most instances, if not in all, a separate detachment of bees for each section is necessary before they can do much work in them; and, too, the weather must be warm before these little "squads" of bees can produce enough heat to build comb in the sections.—*Gleanings.*

POLLEN.

Under this heading a very interesting paper by Mr. C. T. Druery, F.L.S., V.M.H., appears in the "Journal of Horticulture." This gentleman says :—

"With very few exceptions, if we examine the flowers in our gardens, we shall find in their centres a number of slender projections, upon the tops of which there is a mass of powdered material, which is the pollen or fertilising element of the flower. Having found some of this, it would well repay the observer, if he or she has a microscope of even low power, to scatter a little of this powder over the field of view and study it. Treated thus we shall find that every different species of flower has a differently-shaped pollen grain, and that one and all are beautifully fashioned, and often beautifully coloured, dispelling entirely the first idea of its being mere dust of no particular structure.

"In point of fact, the pollen grain is one of the greatest wonders of nature, for within its tiny compass there are enshrined all the potencies of the plant species from which it sprang. We may, however, if we are clever enough, magnify it enormously, and dissect it to the utmost, and yet find nothing but a little gummy matter contained in a sort of husk, and with perhaps just a perceptible dot of nucleus floating within it ; and yet it is within that infinitesimal dot that, in some occult fashion, lie the future capabilities of a plant to produce exactly all the manifold characteristics of its parents, or, it may be, the combined characters of several progenitors; or going even further, it may, in some mysterious way, adopt original plans of its own.

"The pollen grains may vary as they will in shape and size and colour, and be gathered from plants as different from one another as the oak and a tuft of grass, and yet in every case the vital principal within it will be found to be outwardly and inwardly identical— i.e., be a simple cell, despite its difference of origin and the consequent difference in the results it may produce. Although in itself neither a seed nor a spore, we have but to place a grain of it upon the stigma of the flower whence it was taken to see it presently apparently germinate seed fashion, for under such circumstances it will burst its husk and protrude a root-like tube, which will burrow into the stigma like a root into the soil, traverse it from end to end, and, finally, always carry the little dot of matter aforesaid with it, combine with the embryo seed near the base of the stigma, and so fertilise and fit it for subsequent growth and development.

"The stigma varies very much in length in various plants, and hence the pollen grain varies in size, because it needs a greater or less reserve of material to form a longer or shorter tube. Lily pollen, therefore, is large grained, and there are few more beautiful objects than the pollen of Lilium candidum or auratum, or any of the larger lilies, it being more or less intensely coloured crimson or orange, beautifully long, oval-shaped, and pitted all over with exquisite delicacy. Having grasped the wonderful vital complexity which must exist in the pollen grain to enable it to fulfil its task of transmitting specific or varietal characters, both of form and constitution, we shall be the more astonished at Nature's lavish profusion in some cases in the supply of these tiny bodies.

"Even in our ordinary garden flowers, which are fertilised by the bee or other insects, the pollen grains enormously outnumber the possible seeds, and every beekeeper knows that the bee appropriates a very liberal percentage in return for the service rendered in carrying the balance from bloom to bloom, and thus involuntarily mating them. Many trees and other plants, in addition to the grasses, trust entirely to the wind to carry the pollen to the female flowers, which are frequently borne on trees or smaller plants than those which bear the pollen flowers. In these cases Nature, in order to secure the continuance of the species, despite the enormous waste involved by such a mode of distribution, fashions a far greater quantity. At the right period the stroller through pine forests may now and again see or be enveloped in what appear to be clouds of mist or smoke when a passing breeze shakes the foliage and liberates the pollen of the flowers associated with it. Countless millions—numbers, indeed, are mocked at in such connections—must miss their goal for every one which attains it, and yet in every one the race potencies are complete, despite the minuteness of the chance afforded them for development. The human workman who was employed to make, say, a million delicate machines, knowing that only one would ever be used, would, we fear, be tempted to scamp a good many, but Nature scamps nothing, and perfection is her maxim throughout."

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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.

NOTICE.

MR. R. BEUHNE, Tooborac, is appointed Agent for Victoria for the AUSTRALIAN BEE BULLETIN, and is authorised to receive subscriptions and advertisements for same.

E. TIPPER.