The Australian bee bulletin. Vol. 13, no. 11 February 28, 1905

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

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THE AUSTRALIAN Bee Bulletin.

A MONTHLY JOURNAL, DEVOTED TO BEE-KEEPING.
Edited and Published by E. TIPPER, West Maitland; Apiary, Willow Tree, N.S.W.
Circulated in all the Australian Colonies, New Zealand, & Cape of Good Hope.

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Per Annum 5s, booked 6s 6d, in Australasia, outside N.S.W., add 6d. postage

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

The Annual Meeting

OF ABOVE WILL TAKE PLACE AT THE

CRESCENT COFFEE PALACE,

(OPPOSITE HORDERN'S NEW PLACE,)

GEORGE-STREET, SYDNEY.

APRIL 26TH, 1905.

Members can obtain Ticket for Railway Concessions (not less than 25 miles) at single fare for the double journey from the Hon. Secretary

E. TIPPER,

WILLOW TREE, N.S.W.

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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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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.—FEBRUARY 28, 1905.

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

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

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W. L. Davey, Station-St., Fairfield, Vic.

Read Mr. Davey's letter, page 239.

The well-known New Zealand beekeeper, Mr. I. Hopkins, has been appointed Government Apiarist by the New Zealand Government.

A brave beekeeper writes us :—I and my brother have taken twenty-one tons betwen us, but, we will hold it for six or seven years or longer if we cannot get our price for it.

Honey is now plentiful and cheap in Sydney, and no doubt some commission agents will make capital out of it; but the high price of sugar, the general failure of the fruit crop, and consequent less jam being made, might make a big difference as the winter comes on.

There are some people who have an impression that the getting out of a publication costs nothing—nothing to pay for paper, presswork, composition, machinery, etc., etc. We can assure them seriously all those things cost money that have to be paid for in hard cash, and we cannot afford to do this for amusement only. We have even to pay postage for sending them. Remember, also, we are doing our best in the interests of beekeepers.

H. M. Merimbula writes :—Not a successful honey harvest here this season, although a light flow of white box nectar is the present order of things. I was pleased to note the attitude you took up in your leading article of last month's "A.B.B.," and think that some further

straight-out talk, in the same direction would be beneficial to strengthen your position in the editorial line.

[Shall be very pleased to see you at N.S.W. Bee Farmers' Association in Sydney, April 26.]

No one would be more pleased than ourselves if there was such good English or foreign markets, as is so much talked about by interested persons, but knowing for certain the falsity of such statements, it is our duty to speak out.

QUESTION.

I have a 100-gallon galvanised iron tank. Would that be a good thing to store honey in, or would it spoil the flavour?

[Have had no experience, but if the inside is well rubbed with melted wax it ought to be all right.]

TROPICAL NOTES.

In many parts of the West Indies the honey season can be lengthened out by carrying the bees to the mountains. The time to carry them is when the lowlands have become parched during the dry season. It rains more in the mountains.

Alfalfa has been grown in the island of Grenada as an experiment for several years; and Mr. Jordan, the present agricultural instructor, has succeeded in growing it at Montserrat. There is a dry arid portion of Jamaica where it would probably grow well if irrigated. Alfalfa grows in immense fields around Bogota, the capital of Colombia.

In the southern parts of South America are immense areas covered with the cardoon, a giant thistle which is a great bee plant. It grows as tall as a man on horseback, and it is a difficult proposition to ride through.

There are some ideal locations for bees in the Bahamas; but life on a coral island is "awfully" lonely, and yet it was there that Columbus first set his foot in the new world. Probably the islands were more populous then than now. *Lippia*, *lantana*, century plant, and mangrove are some of the leading honey-plants.

Panama is all right for American bee-keepers, provided they don't like whisky, gin, or schnapps. The best place is the city of Panama. It is not much of a place for ladies.

The chief competitors of logwood honey are alfalfa honey from Chili, and sage honey from California. The latter can get a dollar more.

Barbados may yet become a honey country, as the cultivation of cotton is rapidly extending. Barbados is probably the cleanest-cultivated country on the whole globe. Even on the roadside not a weed is to be seen. Anybody trying to introduce sweet clover into Barbados would fail. It would be pulled out by the roots at once and fed to the goats.

Increase is easy in warm latitudes—feed sugar syrup, and the bees will swarm right along; the same if you want queens—just feed—they'll come.

There are no tame bees in Cayenne, French Guiana, as yet. It is a grand country; and surely if the French are worth their salt they ought to see about this at once. If they didn't pull the buds of the clove trees they could have clove honey. An American beekeeper would believe himself in heaven if he were suddenly transported to the banks of the Oyapok. It is beautiful beyond compare, and no priority rights to be considered either.

Beekeeping is admirably suited to white-skinned folks in the tropics for several reasons.

There are small apiaries on nearly all of the Grenadine islands, though some are no larger than a common American farm. The largest is 3,000 acres small. They would be grand places to breed queens if there were a way to ship them when bred. The inhabitants also hunt whales and breed ponies. The Virgin Islets also have some bee-keepers, so also have the Caicos Islands, where mangrove cuts a figure. The Turks Islands have no bees, for there are no flowers there except in flower pots.

The fine little island of Curacoa has some beekeepers. Uncle Sam may yet own that little island, as the Dutch are talking about selling out some of their tropical possessions. It is Dutch from the ground up. It would suit the United States admirably, as it is a healthy little country.—W. K. MORRISON, in *Gleanings*.

VICTORIAN APIARISTS' ASSOCIATION.

Will beekeepers who intend sending pollen to Dr. Cherry, c/o Mr. R. Beuhne, our President, please do so at once as the doctor says he would like them without further delay.

One of our members is supplying Dr. Cherry with a dozen bees from a hive suffering from the "summer paralysis" no doubt the result of his investigation will be eagerly looked for by those who suffer loss from this disease.

Will members who have not sent in their votes kindly do so at once, as they will be counted at next Executive meeting. When posting the vote those who are in arrears with subscription will much oblige by making their name good at the same time.

I must ask all our friends and sympathizers to look facts square in the face and ask themselves, what is to become of our future as an industry, and our prospects individually, with honey at 2d a pound? where does the beekeeper come in? The following is a startling statement to make, but I am not afraid to assert that he stands a good chance of "coming in" at the insolvency court.

The average beekeeper will come under the following compilation: –

8 Tons honey at 2d lb, say	£160	0	0
Less 5 p. cent commission } 5 p. c. Railway fght. } 5 p. c. cartage & tins }	24	0	0
	£136	0	0

Thus we have at best £136 for a years work or about 52/- a week, and he will be a very smart man who can get honey carted, tinned and sold, etc. for £3 a ton, but supposing he could, what can a man with a family do in the country with 52/- a week, especially when he cannot get more than one decent crop in two years? Why simply starve!

One swallow does not make a summer, and its all very well for those highly successful beemen who are so fortunate as to be in a locality where they can secure 20 tons or more, to say its a good paying industry.

I say its about time we had a little plain talking, and I'm going to do my share to start with.

Honey has now come below the level of a payable price to the man who produces. Why is this? simply because we have produced an article of consumption more quickly than the public can consume it. In Australia at present we have a supply about 18 months ahead of the consumption. To raise the price is impossible, what are we going to do? We have had the advice of some short-sighted beemen, "make a greater production." We have also had the advice, "get more beekeepers," from others who have not one jot of sympathy with the genuine beekeeper, apart from a sympathetic fellow feeling for his cash, and a good supply of apiary requisites, live bees, queens, etc., to exchange for his ready money.

The argument has by these people always been Greater Production, Lower Prices, then comes Export. Now, I suppose they will come along a step further and help us secure this export trade, seeing they have had their way in the first two points, great production, lower prices. We all look forward to their announcement "great export trade" do we? Not a bit of it, nor for a moment do I believe that those men who advocated more production, will pilot the way for export. The beekeeper is in the mire, let him get out as best he can, its no concern of theirs. Get more producers is the sole remedy, they know no other. I say, let's know them and spurn these "hangers on" of the beekeeping industry. They

come as advisers only to secure cash for themselves.

The sincere supply dealer, who sells his goods on their merits and takes the industry as he finds it, is worthy of all support, but the man who endeavours to boom the business for his own gain, is unworthy to rank as a member of any British country, much more so as an Australian beekeeper.

Beekeepers! low unpayable prices are here, we are face to face with the most serious problem in our history, and that is, "how can we dispose of our product at a payable price?" Let everyone of us take the position in all seriousness, and at the next Conference, if there's a way of exporting at a payable price, we should know it. If there is no possible chance of exporting we should know it. Now is the time, we as an industry, cannot stay where we are—from 1905 are we to decline or advance?

With an export trade we can advance, without it we are doomed. Write to the Secretary, give him your plan of working up an export trade, say what amount of honey you would export if an opening of a promising nature can be formed, and do not forget that an ounce of something practical is worth a cwt. of theory. Think this out, make your plans now, and then at the annual gathering something will surely be done to prevent the decline of our honey industry.

I wish also to draw the attention of all beekeepers to the letter in this issue from the Lands Department, and I am very sorry that friend Penglase is going to probably lose his bee country, but it shows how carefully we should act in securing concessions to ringbark, "what is sauce for the goose is also sauce for the gander," according to the Lands Department.

W. L. DAVEY,
Secretary.

Department of Lands & Survey,
Melbourne, 24 Jan., 1905.

Sir.—Adverting to your letter of 17th inst., on Mr. Penglase's behalf, I have the honor by direction of the Hon. the Minister to inform you that Mr. Penglase availed of the concession to ring the useless timber on his 35th Section holding, and this Department considers his attempt to debar another Lessee from obtaining the same concession as out of the question.

A permit to ring the useless timber on his block will issue to Ragee Fakhey on the same terms as granted to Mr. Penglase.

I have the honor to be, Sir,

J. W. SKENE,
Secty for Lands.

W. L. Davey, Esq.,
Sec. Victorian Aparists' Assn.

How is the Nectar Evaporated.

When bees are gathering nectar from the fields they give the same, on entering the hive, to the young or nurse-bees,. If no more is gathered than these nurse-bees can hold in their sacs, none is put into the cell. If more is gathered in any one day than their sacs will hold, the surplus nectar is put into the cells by these nurse-bees until evening, and then evaporated down, although this evaporation is going on to some extent during the day. At night all hands join—from the outside labourer with well-worn-out wings, down to bees but a day or two old--when the nectar or thin sweet is taken into the honey-sac, thrown out on the partly-doubled tongue, drawn back in again, thrown out and drawn in again, and so on, until by this stirring-up process and the heat of the hive, these small particles of honey are brought to the right consistency, when it is deposited in the cells preparatory to being sealed up in due time.

In order thus to evaporate the nectar, the bees hang loosely or in festoons, so that when the drop of nectar goes out on the partially thrown-out tongue, it shall not hit another bee, the combs, or the hive.

Now, by their great roaring, humming, or whatever we have a mind to call it,

the heat is increased in the hive till the nectar is thickened very fast by this stirring up process which is being gone through, as spoken of above. Take a short straw or goose-quill in your mouth and blow a drop of water gently through it out to the end, and then draw it in again, once more out and in again, thus continuing for some time, and you will have an idea of the process, all but the stirring up. This the bees can do better than we can, as it is a part of their trade, and they have the tools to do it with, made on purpose for that very business.

All bee-keepers of any experience can tell whether the bees have been getting nectar of any amount during the day by the roaring they make at night, as bees make this roaring only while reducing their nectar. Let two or three days of rain succeed a plentiful honey harvest, and all roaring will cease with the night of the third day.

Many a night have I watched this process of the reducing of thin nectar to honey, and by the light of a lamp one can see the tiny drops of nectar sparkle as it is thrown out on the tongue and drawn in again. When nectar is coming in slowly you will not be likely to see this process, as it goes on so slow at such times.

All doubtless have observed that when bees are getting honey plentifully, it shakes out of the combs easily, or falls out of its own accord when the combs are turned partly over sidewise, during the afternoon and at night; while in the morning, before the bees go to the fields, not a particle can be shaken from the combs, this going to show that the most of the evaporating of the nectar is done at night. — *Am. Bee Journal.*

LIZARDS.

To show how the lizard may be a friend to the apiarist I will describe a few instances. For two or three months last summer there was a lizard which came into the house regularly between noon and one o'clock to catch flies and ants from the floor. There was a very industrious nest of ants located about thirty feet from the house, which formed a black line of foragers to the porch, and went up one of the porch-posts and down a wire into our wire-screened safe for fruit. I put tar on the wire, and then they marched in across the kitchen floor to a can of honey that was there for use on the table. Whenever honey was drawn into a dish a little would stick to the cap, and thus attract the ants. I noticed that when the lizard caught a fly, it always turned and picked up from two to four ants, so I made him welcome. At the end of five or six weeks the ants seemed to be entirely cleaned out.

At another time an open five-gallon can of granulated honey was set on the stove to melt. A coarse cloth was thrown over it to keep robber bees out. The honey boiled up suddenly on one side and oozed through the meshes of the cloth. As I was at the dinner-table the honey was set off the stove on the floor a few feet from my chair, and about a dozen flies and five or six robber bees pounced upon the oozed honey at once. The lizard came in as usual, and immediately hopped up on the cloth among the bees and flies, and, after catching a dozen flies and not molesting a single bee, it climbed down as quietly as it came in, and disappeared out the door.

Although these lizards eat house-flies and ants, yet they prefer the larger flies, spiders, cockroaches, crickets, moths, canker and cut worms, and grasshoppers, all of which I have often seen them catch. — *Writer in Gleanings.*

EYES OF INSECTS.

All imago or mature insects have compound eyes. These consist of many, often thousands, of simple eyes. Besides these there are often one, two, or three simple eyes. The honey-bee shows three of these ocelli or simple eyes. I do not think that the difference of function of these two kinds of eyes, whether of distance or acuteness, is known. I have reason to think that the bee does not see

very well anyway. That is, were the bee a person we would not pronounce it a very close observer. We would not say that it used its eyes to a very good purpose. I certainly have detected bees making some very curious mistakes, where we would think that accurate observation would have brought different results.

The structure of each simple eye, whether one of the ocelli or the parts of the compound eye, is much the same, and suggests the structure of our own eyes and the eyes of the higher animals. We find the form, however, quite different from the eye of vertebrates. Instead of being subspherical it is cylindrical. In front we have the window, so to speak, the clear transparent cornea. Some distance back as we should expect, comes the crystalline lens, and farther back we find, as we should also expect, the retina. The humors also remind us of the same in the eyes of the higher animals, as is general in the eyes of invertebrate animals, we find the retina quite different from the same in the vertebrate eye. True, we find something like the rods and cones, but they point forward instead of back, and so the image is front instead of back

The most interesting thing is to find how these many small eyes act. We know, positively, that our eyes act as one, and the loss of one does not seriously impair vision, except to make it more difficult perhaps to determine perspective. It seems now pretty well established that the eyes of insects, that is, the separate eyes of the compound eyes, act each separately, each seeing a part of the object, and thus the object may be said to form a mosaic, or, to put it differently, each little eye or facet sees its own part of the object. Each is guarded by a sort of a diaphragm so that it images only its own part of the thing mirrored in the eye. We see, then, that if this view is the correct one, the destruction of any of these simple eyes or facets would by just so much impair the vision, or cut off so much of the object looked at. Each of the simple eyes sees part of the object, and that is imaged in none of the other facets.

That the compound eyes are used for long range, and the ocelli for near vision, or *vice versa*, is, I think, more than we surely know. I think that the compound eyes are the more important, as they are always present, while the ocelli are frequently wanting altogether. The greater development of the compound eyes would lead to the same conclusion.—Professor Cook in *American Bee Journal.*

Queens Mating More Than Once.

On the 25th of last September I sold a friend a very fine and promising young Carniolan breeder—such a queen as I had never seen before, and bees the gentlest I had never known. Being desirous of saving some of her stock I fed her colony very liberally during the time of cell-building; and when the cells were ready to hatch I distributed them among nuclei except one left in the parent hive. Drones being scarce in my home yard, I secured about 100 big fellows, all handpicked from an outyard. These I gave to queenless bees that were being fed nightly. I now fully expected to secure a good number of choice matings; but if any mated except the queen in the old hive I am sure I never knew it; yet my observations were very close. However, on the fifth day after hatching, this queen flew out, and, on returning, brought the drone organ with her. When she had gone into the hive, and the bees were somewhat quieted, I opened the hive and found the male organ still remaining, but protruding considerably from the vagina, which convinced me that it was no false contact, but a true connection. I now felt that I had one of those choice queens safely mated; but imagine my surprise the next day, when standing by this same hive, quite by accident as it were, to see this identical queen emerge from the hive and fly directly away, returning in about ten minutes, with no signs of having met a drone. I now had my curiosity fully aroused, and proceeded to watch for her on the succeeding day,

and lo! she appeared again and flew out, but returned the same as before. After that she flew no more, though a strict watch was kept for some days in order to determine this fact. I fully expected to see her deposit a few eggs in the centre of the brood-nest, especially as the bees seemed to have prepared quite a large space for her, polishing the cells and refusing to store any honey in them; but up to the present time, seven days after mating, there is no sign of eggs in any part of the combs, and the queen has shown no increase in size; she also maintains all the excitable shy appearance common to virgins. I fully believe this mating failed to do the work of fecundation, and, while still under the unsatisfied sexual impulse, she flew out a second and a third time, failing to meet a drone on these trips solely on account of their great scarcity; but after the second failure the impulse to mate wore off, and of course she did not go out after that. This colony is in good condition, and will winter, I am sure, and will be under the closest observation next spring in order to see what the final result will be. If she should fail to lay in the spring, which I fully expect, or if she should prove to be a drone layer, it would confirm my belief that, in order to be fully effective, the sexual organ of the drone must be absorbed into the body of the queen. On the other hand, if she should prove to be all right it would go far to establish the belief that a queen might mate several times, either of which matings might or might not be effective.—Writer in *Gleanings*.

Experiment with Wasps' Eggs.

In the Rheinische Bienenzeitung, M. Dickel describes a curious experiment. He cut a hole in one of the combs of a hive and inserted a piece of comb with the eggs it contained, taken from a wasps nest. The experiment was repeated thrice and every time it produced a curious commotion among the bees. In approaching it the bees stopped dead, as if fascinated by the strange substance. Their antennae were extended forward with feverish movements. They then dash upwards and spun round madly. This was soon followed by others who joined in the unrestrained dance. By degrees some of them got over their fear of this strange object and approached it with their trembling antennae extended and flapping their wings, and still continuing their comical dance. At length they decided to risk an attack, and tore the nest into shreds, evidently with repugnance. They were more undecided about touching the eggs, but these they also attacked at last, crushing them with their mandibles. They seemed thoroughly disgusted, and showed it by getting rid of the egg shell as quickly as possible with their front legs.—*British Bee Journal*.

PARAGUAY.

To make a comparison between Paraguay and Australia, another part of the world where many large apiaries exist, Paraguay is exempt both from the extreme droughts and the extreme heats of Australia. In the latter colony the thermometer frequently rises to 120 degrees in the interior; in Paraguay a reading of 100 degrees is rare. Australia is just recovering from a drought of seven years duration; In Paraguay if a whole month passes without rain it is called a drought. Owing to the cheapness of living and of labor, working expenses are much less in Paraguay than in Australia, while the prices obtained for honey are also in favour of the South American country.—*Canadian Bee Journal*.

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

WILL Members of the N.S.W. Bee-Farmers' Association notify me AT ONCE OF THEIR INTENTION TO ATTEND THE ANNUAL MEETING, IN SYDNEY, ON APRIL 26TH, in order to secure the Railway Concessions, as unless a certain number are applied for no concessions will be granted.

E. TIPPER,
HON. SEC.
WILLOW TREE, N.S.W.

PRICES OF HONEY.

Maitland Mercury.—Honey, 1d. to 1½d. per lb. Small tins 1s 6d to 1s 9d.

Melbourne Leader.—Honey.—Values are stationary in a dull market; prime clear garden lots selling at from 2d. to 2½d., and a fraction more for extra prime cloudy and congealed samples were slow of sale at from 2d. Beeswax.—Really prime lots are easily saleable at from 1/3, but inferior grades are offering at lower prices, being on offer at down to 1/.

Melbourne Australasian.—Honey—Demand dull, and values lower, even prime lines slow of sale, at from 2d. to 2½d., cloudy and inferior lots difficult to quit at lower rates. Beeswax from 1/2 to 1/3.

Garden & Field, S. A.—Honey, slow of sale, 1½d to 2d per lb.

Tamworth News.—Honey, 60lb. tins 8s 6d to 9s; 7lb. tins, 1s. 6d.; bottles 4d to 5d.

S. M. Herald.—Choice liquid 2½d per lb., candied and good liquid 2d to 2¼d., inferior 1d to 1¾d.

Beekeeping in Germany.

There are few countries in which the taste for apiculture is more generally spread among the people, or in which the beekeepers as a class are more intelligent, enthusiastic, and energetic in co-operating for the promotion of their mutual interests, than in Germany. As compared with the United States of America, there is not perhaps, the same amount of go-ahead enterprise exhibited, and consequently the number of large apiaries kept by people who adopt that as their exclusive calling is comparatively few. There are, however, a great many people who keep a moderate number of hives, partly for their own use and gratification, and partly as a means of increasing modest incomes.

In Germany bee culture was in a flourishing condition in the middle ages, and the beekeepers were held in high estimation. Those who bred and kept bees were then named 'Zeidlers,' and possessed many and great privileges. They were, for instance, exempt from tolls in the imperial cities; they had also under the Golden Bull of 1350, a separate jurisdiction of their own, under their 'Zeidelmasters,' from which only the most serious crimes were excepted.

In Prussia, specially, bee culture enjoyed a wise and large degree of legal protection. Thus, for instance, the paragraph 29 of the "Official Gazette," for the police districts in Prussia for the year 1642, ordered, amongst other things:—

'And because the moors and forests are becoming few, the villages, however, God be praised, always more numerous, therefore shall the people be called upon to establish bee gardens, and to pay particular attention to them, so that the wild honey, which would otherwise go to waste on the open fields, may be brought into the gardens.'

Again, in the village regulations of 1702, the peasant farmers and cottiers are specially bound to keep a fixed number of bee-hives. Frederick the Great issued, under date of 27th June, 1778, a regulation, to be read yearly from the pulpits of the churches, according to which those who should lay down poisonous matter mixed with honey, and thereby cause bees belonging to other people to be poisoned, should be punished, without respect of persons, with imprisonment, with or without hard labour, up to six years. (!)

This last instance shows that there must have been, at that time, a sort of crusade carried on by the misguided enemies of the bees, which called forth such vigorous action on the part of the great Frederick. Or can it be that the Prussians had then a "small bird nuisance" of their own, and that "the poisonous matter mixed with honey" was laid down for the same purpose as the poisoned wheat of our time which by the way, requires to be well sweetened to be effective, and which, in the case mentioned at the last meeting of the Otago Beekeepers' Association, caused the loss of whole stocks of bees this winter? What would the farmers of Otago say if the Government were to follow the example of Frederick the Great? In any case it must be admitted that the punishment awarded was out of proportion to the crime, even if we assume that the poison was intended for the bees only.

"Most of the townspeople, and even many of our great landed proprietors, know nothing of bee culture but the name; but they look upon the bee as a sort of savage reptile because it can sting, and because it occasionally finds its way into sugar factories and confectioners' shops, they believe they have a right to exterminate it by means of fire, poison, or with steam and water. The common land-law, indeed, expressly acknowledges the property of the bee-owner in his hives, and also in the swarms which issue from them. These provisions of the law, however, are only too often paralysed by one-sided regulations which the police authorities, ignoring the essential nature of the bee, believe themselves called upon to issue in the interests of the public, and in consideration of a stinging mania in the bees."

Here follow instances of such local regulations issued by the police authorities. For example, in Cologne, in December, 1858, a police order, whereby it was decreed, under penalties, that "within the city of Cologne not more than five stocks of bees should be kept in one house and the grounds belonging thereto, and then so that they cannot fly upon strange property." (From this wise regulation it would almost seem as if the learned authorities thought that bees were kept in cages, like canary birds!) Then, in Worms, in July, 1879, a local regulation prohibits the keeping of bees or erections of bee-hives "in the southern and south-western portion of the zemarkung Worms," and in Bremen, a single regulation forbids the keeping of bees "in a portion of the city and the adjoining zemarkung." But this is not all. Herr Letocha very justly remarks as follows:

"But under the existing laws, even in places where such special regulations have not been issued, the keeping of bees is more or less dependent upon the goodwill of one's neighbours. There are, however, such things as malicious neighbours, and under some circumstances even good neighbours will quarrel, so that mutual chicane is brought into play. Now, should a neighbour, out of chicane or malice, complain that he is troubled by his neighbours' bees, the local authorities, as a rule, order, under penalties, the removal of the apiary, even in cases where, owing to the local circumstances, any real damage to the neighbour is clearly out of the question."

A school teacher who kept a single hive in his garden was ordered to do away with it, because his neighbour complained that the bees flew upon his crocus flowers (!), and another person, a professional apiarist in Brunswick, who had made his living thereby "for decades of years," was, after lengthened legal proceedings and appeal to the highest court, compelled to give up his business and to sacrifice his property, because his neighbours, succeeded in proving, in court that, occasionally, swarms had settled on his grounds, and that one or two children had been once stung by a bee.

According to the farm-stock census for Prussia in the year 1873, there were then, 1,459,415 stocks of bees counted, which, taking the stock at 15 marks, represents a total value of 21,891,225 marks. By the census of 1883 there were only 1,238,040 stocks, or nearly a quarter of a million less. The national wealth invested in these stocks of bees, had therefore been reduced in these ten years by nearly three and a quarter million of marks. In the statistics for 1888 I find the bees were not included at all, and also in the report of the Minister to His Majesty, upon the agricultural matters in Prussia, beekeeping is not mentioned.—*New Zealand Farmer.*

BEEKEEPING IN RUSSIA.

There are about 98,379 tons of honey produced throughout Russia, the value being 4,250,000 dollars. The consumption of honey inland is distributed as follows: As a table delicacy 23,604 tons, or 89.3 per cent of the whole production. About 596 tons are used in manufacturing—2 per cent.; 725 tons or 2.7 per cent are used in the production of honey cake. In the production of honey beverages, such as fruit waters, lemonades, preserved fruits, condiments, syrups, about 1,851 tons, or 5.5 per cent. is used. There are finally consumed 18 tons, or 0.3 per cent. for medical purposes in pharmacies.

With regard to the export trade in honey products, it appears that during the five years 1890-95 there were exported from Russia 826 tons of honey, and from 1895-99 only 344 tons. This export business is rapidly decreasing. In 1901 only 29 tons, of the value of 5,766 dollars were exported. The imports of honey into Russia during 1895-99 amounted to 1,291 tons, to the value of 184,500 dollars, or on an average per year 36,900 dollars. In 1901, 91 tons, to

the value of 10,306 dollars were imported from abroad.

The annual production of wax in Russia amounts to 8,676 tons. The production of beeswax is a little more than one fifth that of honey. Twenty-two tons of wax were exported from Russia in 1895-1899, but in 1901 only three tons to the value of 2,185 dollars. The imports were as follows: 1897-1900, 9,001 tons, to the value of 4,685,500 Dols., or in other words the average annual imports for that period amounted to more than 2,258 tons, to the value of 1,221,000 dollars. In 1901, 2,872 tons of wax were imported, the value being 1,574,536 dollars. In 1902, 3,561 tons, to the value of 1,997, 500 dollars.

It is thus seen that Russia pays to foreigners for the products of apiculture more than 2,000,000 dollars annually. The task of Russian apiarists is how to retain this sum paid to foreigners, in their own hands, for which reason they have to increase the production of wax 2,258 tons, or about 1.1 lb. per hive. Or they must increase the number of hives by 3,466,960, in other words, bring up the entire number of hives to 7,573,000. —ABRAHAM TITOFF.

AMONG THE BEES.

SOME OLD-WORLD BEE-LORE.

The Roman augurs predicted well or ill by their observation of the flight of bees and birds. The ancients believed greatly in the wisdom of these little creatures, and credited them with bringing good or bad luck to persons or to places in which they might happen to alight. They were brave as well as wise, for they have "great souls," and are "valiant warriors," led on to warfare by their captains of fifty and captains of one hundred as if they were thoroughly organized battalions. They had regular guards, like the *corps de garde* in a military camp. They carry in wormwood to keep intruders out. They had two rooms, one wherein to rest and another for work. They ate only the grosser gathering in summer, such as came from sundew, so that the finer might be stored for winter use. In the early morning one Master-Bee gave two or three great "buzzes," when all at once go actively to work. All start work and leave off when ordered. Workers have porters to unload what they carried home. They have taskmasters to correct the drones and all such as are slow to work. A trumpet bee takes a circuit round, and everything is hushed at their call. Large black bees carry the dead out, and, I suppose, play mourners at their tombs. Their water bees suck up water like a sponge, and so are able to drink enough for forty bees, which suck it dry. In addition to the king bee which lived in a more magnificent palace, they have princes in authority. When a bee is sick the others carry him out to the sun, and when one dies they mourn in a "dismal ditty." When the king dies they mourn in an extra manner, and the loss generally proves the destruction of the colony. At times a usurper divides them into two parties, and this leads to war; but the chief cause for battle is when honey is exhausted, as this always "breeds war." A mess of milk or honeyed water near the hive "calms their souls to peace, and so prevents the slaughter. Even when it has been begun catch up dust, and throw it over them, and they will cease the strife."

Best bees are short and "much painted, and none known are so gentle as English bees. The curate was called in at swarming time with his fiddle to play the bees to their new home, and he received a groat for his tune." Bees make their exit in about seven years; "if they live till eight they are very grey and bald-pated." In Italy some say they live ten years. They can be bred from maggots, but that is nothing strange, says the writer, for there are "maggots" in many a man's head. They are harmless these, unless provoked, when they are at times very touchy. When it is windy bees fly

near the ground, and get a gravel stone in their mouths as large as they can well manage to prevent the wind driving them away.

All the foregoing *must* be quite true, for it is taken from the works of a very learned doctor with any number of letters after his name. Should any of my readers assert that he filched some of it from Virgil, Pliny, etc., and perhaps imagined the rest, they need not fear that I will contradict them.

Are your bees supposed to be sick? If so, here are some signs to make you certain and some cures to make them well. When sick (1) bees scatter much in swarming, (2) they lose colour, (3) they turn over-lean, (4) they become dustie and hairy, (5) the dead are cast out in large numbers from their cottages. Now for their cure: (1) Kernals of pomegranates bruised and mixed with sweet and pleasant wine, (2) or honey with rose leaves well beaten, (3) or, for lack of these, a "smoke of cow dung much delighteth and comforteth them." If "moathes" trouble them, as they then too frequently did, "set a burning candle inside the hive!" Aristomachus went to the root of the matter, for he recommended to clear out all the old comb and let them renew with feeding. Here is an ancient McEvoy!

That the bees may not sting their owners (I deserve thanks from all novices for unearthing this ancient sting-preventer take the herb sperage, bruised and mixed with oyle, and anoint hands and face with it." Juice of mallows is also a "sovereign remedy"; also "wine boiled with bay leaves and drunk, or placing a decoction of marsh mallow with vinegar or wine on the stinged place, is a perfect remedy."

Honey is a "sweat from Heaven" or "spittle of the starres." Democritus lived for 109 years "from the use of honey." Honey is an excellent medicine. It expels humours, cureth filthy ulcers, closeth wounds, ringworm, corns, and (almost) all the thousand-and-one other ailments that human flesh is heir to.—D. M. M., Banff. in *Beekeepers Review*.

HONEY VINEGAR.

If you simply mix the honey and water so that an egg will fairly float at the top showing about the size of a dime out of water, it may be sufficient or it may not, according to the amount of ferment contained in the honey, and also according to the temperature after the mixture is made. To make vinegar there must be an alcoholic fermentation previous to the acetic, and the more thorough the first fermentation is, the better the acetic fermentation will be.

In order to hasten the fermentation, it is best to add some fresh fruit-juice to your honey water. Then, if the liquid is cold, or if the temperature is low, it is best to heat the liquid till it reaches about 90 or 100 degrees. If it is kept warm, the fermentation will soon begin, and if it remains exposed to the air, it will be but a short time till the sour taste begins to show.

We never allow any honey to go to waste. The washing of the cappings in a well-regulated apiary will furnish enough vinegar for two or three families, even if only a few hundred pounds of honey have been uncapped. In a large apiary, the cappings are first drained through the uncapping-can in a warm room until they seem perfectly dry, and even then several barrels of sweet liquid can be secured from the washings of the cappings of fifteen or twenty thousand pounds of honey. We figure that each thousands pounds of honey extracted gives us about 15 pounds of beeswax from the cappings, and, perhaps, five gallons of sweet water, fit to make good vinegar. So the apiarist should never render his beeswax till it has been thoroughly washed.

Vinegar which will not sour may lack two or three things which are all needed. Sufficient warmth, as stated above. If all other requirements are right, it will still be impossible for vinegar to sour if

the weather is cool. A good place to keep a gallon of vinegar is right behind the kitchen stove. In a few days a jug full of mild vinegar will become very sour. Do not cork it tight, but cover the mouth with a cork. A wide-mouthed jar covered with a cloth is still better.

Air, that is, oxygen, is needed. The making of vinegar is simply the oxidizing of the sugar contained in the liquid. No change may take place unless the air is, or has been, supplied. For that reason the vineyardist keeps his barrels of wine full, and bunged tightly so that no air may reach the wine. If, perchance, a barrel remains open, he soon has a barrel of vinegar, instead of a barrel of wine, and the better the wine has been, the better the vinegar will be. Sufficient sweetness is needed. If the directions I give are followed, a good article of vinegar will be produced. If you want to put the honey by weight, put not less than two pounds of honey for each gallon of water. A less quantity may make fair vinegar, but it is much easier to weaken your vinegar if too strong, by the addition of a little water when you wish to use it, than to strengthen it by adding more honey after it is partly made.

A very good inducement for any sweet or alcoholic liquid to turn to vinegar is the addition to the liquid of what is called "vinegar-mother," the viscous, ropy matter which is usually found in a barrel of good vinegar. This "vinegar-mother" contains the principal ingredients that go to make vinegar, and although it is practically degenerated vinegar, yet it will add strength to the vinegar very promptly.

So, if you happen to have some old vinegar that has been long standing, you soon strengthen your new vinegar by adding a little of this "mother." Do not listen to those who say that this is a disgusting looking residue. It looks no worse than an oyster does. Vinegar containing this residue is sure to be pure and wholesome. Vinegar made from chemicals does not contain any "mother," neither does it contain any living organism.

The more air the vinegar gets at the proper temperatures the quicker the vinegar is made.

Manufacturers of first-class wine vinegar in Europe often drain their vinegar through a barrel full of shavings slowly, drop by drop, so as to give it a good chance to air. In this way the best vinegar is made.

If you have no fruit juices to add to your vinegar, a little cider will help to give it a start.—C P. Dadant in *American Bee Journal.*

METHOD OF TREATING ROBBING.

In treating cases of robbing, I found long ago the following procedure the most effective, and as I have tried it frequently, and always found it satisfactory, and far ahead of the advice generally given in the bee-papers, I will give my way of doing here:

Unless general robbing is going on throughout the apiary, such as I had two years ago, when returning home after being away some three weeks, copious feeding outdoors, and right in front of the apiary is, as far as I have tried it, and know, the only sure and quick way to stop it.

But when robbing has just begun, and but two colonies are affected, the one doing the robbing, and the other being assailed, robbing must be treated accordingly. Almost always the robbing bees come from a strong and populous colony, while the robbed colony almost always, unless it is queenless, is weak in bees, and not able to withstand the attacks of its assailants.

In such a case I close the entrance of the hive of the assailed colony, with a wire-screen covered frame, of which I have always several ready for immediate use. Even if thousands of robber-bees have taken full possession, it takes but a little while until I have the last robber out.

When the surface cage thus applied is filled with home-hurrying robbers, I dash

a handful of flour through the wire-cloth on to the bees, and at once release them; but fasten the screened frame again, thus keeping out all would-be intruders. At the same time the robber colony is located by the returning flour-marked bees.

It takes but a little while when the last robber bee has filled up and is allowed to return home, and the assailed colony is cleared from intruders.

Next, the screened frame is fastened for the day, and shaded by a board large enough to cover the front of the hive. At night, when all bees have returned to their hives, I slice an onion and push three or four slices well into the entrance of each hive (of the robbers as well as of the robbed), thus making them all smell alike, and exchange the location of the two hives, opening at the same time the hive-entrance of the colony assailed, full width.

On the following morning it is amusing to watch and see the actions of the robbers. They will carry quite a lot of honey, and more than the previous stolen booty, out of their own home into the hive they have robbed. Thus stores as well as bees of both colonies affected are equalized, and very soon quiet and peace will be re-established.

But few bees are killed by this method, and those that have to suffer the penalty of death are largely the most greedy and guilty robbers.

I wish we could find a way as effective and applicable for the treatment of all monopolists and legally privileged robbers in the human bee-hives of the world. Wouldn't that be a God-send? —*Am. Bee Journal.*

WARMTH OF HIVES.

The divisible brood chamber must have outside protection to make it as warm as a large single-story hive of the same capacity would be without outside packing. And it was this matter of greater warmth of single-story hives that caused me to change from the shallow frames to those that were 11 inches deep for the brood-chamber. When a colony of bees has weathered the bitter cold of winter and its vitality is far spent, the arrangement of the combs for warmth and protection is of the greatest importance when breeding is begun in early spring. We all know that brood cannot be reared profitably where chilling drafts of air circulate. The brood-chamber that is made up of two cases of shallow frames cannot save the energy of the bees as it should, owing to a great amount of cold air passing around the combs and through the very heart of the brood-nest.

One case of combs, containing as it must the necessary stores, is inadequate to the purposes and requirements of early brood-rearing, and when another case of combs is added the conditions become such, that if they are not bad they are simply worse. The combs in the lower case that come directly under those containing brood in upper one, cannot be warmed as economically as the lower half of combs in a large single story hive. That must be evident to one and all for it is simply a physical impossibility for the bees to do it when the heat generated can so easily escape through that horizontal air space between the two sets of combs. The bees must be enabled to confine the heat of the cluster at the point of operations in brood-rearing or there will be a wanton waste of vitality in an effort to meet the growing demand for brood in the lower case. There must be corresponding means for maintaining the same degree of warmth in that position of the lower case of combs which the bees desire to use for breeding purposes, and if the arrangement of the combs does not allow of this, then the expence of additional outside protection must be carried to get the benefits of a double case of combs, in numerical strength, whatever may become of heat after it escapes from the cluster we may be assured that it does not return. The accumulation of frost and ice on the outer combs and upon the walls of the hive would seem to be sufficient to dispel any doubts on that score. Imag-

ine, if you please, a person trying to keep warm and healthy during the long, cold winter in an eight or a ten-room house with no ceiling to any of the rooms. Then let your fancy picture a midway opening in the walls of the rooms extending their full length, and you will have conceived a first-rate kind of an idea of a frame corncrib, but a poor one for a nursery."—*Somnalist in Progressive Bee-keeper.*

Natural Disinfectants

In "Le Rucher Belge" M. Reidenbach propounds new ideas with respect to disinfection of hives. He says it is well known that bacteria are the cause of a great deal of mischief in hives, but these are in a measure protected from the depredations of these microbes by the formic acid, tartaric acid, and ethereal oils in the nectar. Formic acid in small quantity, is found in the poison of bees, but exists in much larger quantities in the larvæ, and in combs that have been bred in. He was able to extract from a piece of comb weighing 41 grammes about 36 milligrammes of formic acid. He found none in virgin comb. He concludes that the object of this acid is to preserve the nitrogenous food of the larvæ, and consequently, to prevent fermentation and resulting disease. Damp prevents the evaporation of this disinfectant, and predisposes colonies to disease; therefore it is important to secure good ventilation so as not to deprive the hive of its weapon against bacilli. Another means of disinfection is in the tartaric acid found in the headglands, which for a long time were supposed to contain formic acid. M. Reidenbach's research has shown this to be so, for formic acid is very volatile, and is rapidly dissipated in the air, but he found appreciable quantities of acid in the dry royal-jelly several years old, which showed it to be not formic but tartaric acid. This not only inverts cane sugar, but is of greater importance in the food of larvæ, as it changes by oxidation into formic acid. A third means of disinfection is in the etherreal oils found in honey. It is these that produce the aroma that escapes from a hive during a rapid ingathering, or that attract the bees to the flowers, and give to the plants like fennel, mint, and thyms, their healing virtues. Their action in a colony is inestimable, and they assist in preparing a healthy food, and while arresting the development of bacilli, give vigor to the colony. An active and vigorous colony produces a large quantity of formic and tartaric acid, and with a rapid flow of nectar, the etherreal oils increase, and the bees are in good condition to defend themselves against foul brood. He concludes by advising the beekeeper to look after the sanitary conditions of his hives, to be sure that they have proper ventilation and good food—in fact, that they should be in a state to always produce the natural disinfectants to maintain the colony in a healthy condition. —"British Bee Journal."

Sainfoin or Esparcet as a honey-plant—Other Plants.

Sainfoin, otherwise called esparcet —the scientific name of which is Onobrychis sativa—is widely cultivated in Europe especially in France. Its name, "sainfoin," is French, and literally means "healthy hay"—sain-foin — and I see by the Century Dictionary that in some parts of the United States it has been introduced under the name of "French grass." It is a perennial, gives a splendid hay crop, and in some sections of the European continent it is a first class honey-producer.

The small province of France, formerly called "Gatinais," is the leading producer of sainfoin honey. According to the best authorities the honey of Gatinais has the reputation of being of the whitest color and sweetest taste, and is said to be in no way surpassed by white clover honey. Gaston Bonnier, the eminent professor who was president of the International congress of bee-keepers at

Paris in 1900, says in his book, the "Cours Complet d' Apiculture," that sainfoin honey is one of the best appreciated grades. He ranks it next only to the honey of the Alpine hills of eastern France and Switzerland.

From immemorial times the honey crops of Gatinais have been considered as leading in the amount of production, and this was all credited to the sainfoin, which is grown there in immense quantities, somewhat as alfalfa is grown in the irrigated plains of the West. It was in Gatinais that the custom of inverting hives began, in order to secure the largest possible quantity of honey from the bees, regardless of future consequences. For that reason the bee-keepers of Gatinais were compelled to replenish their apairies every season with bees brought from away as their only aim was to secure the largest possible quantity of sainfoin honey during the short period of its bloom, and many of their bees perished during the following winter.

Although sainfoin has already been tried in the United States with unfavorable results, I believe it is worth while to try it again, especially in the countries where the alfalfa succeeds well. It might prove a useful honey-plant.

We must, however, not close our eyes to the fact that honey-plants do not yield honey in the same proportion in all localities. White clover which is the source of so large a crop of white honey in this country, is absolutely useless as a honey-producer in some other countries. Edouard Bertrand, the editor of the Revue Internationale, told me positively that there never had been any white clover honey harvested in Switzerland by any of his friends, although it is quite common in the Swiss meadows.—C. P. Dadant in *American Bee Journal.*

ROBBING.

The first four or five weeks after the honey flow ceases is the worst time for robbing, and every precaution should be taken against robber bees getting any encouragement on their pilfering raids. Pieces of comb containing honey lying about within reach of the bees, for instance, or opening hives while robbers are flying about will often start fighting and robbing generally throughout the apiary, and when once the bees get fairly excited over it, it usually ends in the loss of the weakest colonies and the thinning of the others. It is best at this time, if you really wish to examine, or clip queens, see there are no queen cells started, for swarming purposes, to do it early in the day. For a time you get on well, but, if a sign of robbing appears, shown by the noise the bees make, leave off at once and close the hives.—*Exchange.*

Deleterious Honey—A Warning.

Mr. I. Hopkins, Government Apiarist, asks us to warn all people living in or near, or travelling in or near swampy districts in the northern half of the North Island, not to eat any wild honey they may come across during the next four months. The "waoriki" or "whauriki" which yields a poisonous honey, and which grows in swampy places, blossoms during the autumn and several fatal accidents have occurred through eating such honey. Mr. Hopkins states that no one need be afraid of this particular honey getting on to the market, as the season for taking surplus honey for market has closed long before the "waoriki" blossoms. There does not seem to be sufficiently known about this matter at present, but no doubt Mr. Hopkins will make it his business to find out everything there is to be known concerning it, and make it public.—*New Zealand Farmer.*

The South Australian *Garden & Field* for January has an excellent supplement, "Garden & Field Cooking Recipes and Home Hints." It consists of 48 pages of closely printed information.

Honey dew has spoilt much of the English crop.

CORRESPONDENCE.

J.B., Cameron's Creek, Feb. 16—The honey harvest for 1904 –4 extractings. No. 1—1st February, 1904; this honey was gathered from sunflowers, black thistle; honey light in colour, not granulated at present, a few grains at bottom of jar. No. 2—March 14, 1904; gathered from sunflower, white box, and a little peppermint; this honey is of a light colour, and has no sign of granulating. No. 3—April 7, 1904—Gathered from white box and peppermint; this honey soon granulated after extracting, and is a solid mass in the jar. No. 4—December 1st, 1904—This honey was a mixed lot of honey left from the winter stores, and new yellow box and red gum. This honey is also granulating. I am sending you this report on honey to show you that it is what the honey is gathered from, and that cause alone, that causes honey to granulate, and not the conditions in which the honey is kept. Now, to prove this, one of the tanks was about half full of the honey extracted in March, and I put in April extracting on top of it. The March extracting at the bottom of the tank did not granulate, and the April extracting granulated.

W. R. C., Brisbane, Queensland.—Will you kindly let me know why dealers are not allowed to join your Association. And are people who have an apiarian supply business, and who keeps bees as well, are they classed as dealers with your Association?

[1. Because certain supply dealers have been so pushing in making fresh beekeepers for the sake of increasing their trade, and so bringing on the glut and low prices all over the world. The N.S.W. Beefarmers' Association was formed for the protection of beekeepers only. Some supply dealers, both in America and Australia, have proved themselves bitterly the foe of the struggling beekeeper. To the second question yes.]

W. H. P., Condoblin.—In reply to yours of January 1905, I have much pleasure in sending you my name, as I intend being a delegate to the Beefarmers Conference in April next, and my wife will also accompany me to Sydney, and as we are a class that are struggling to make a success at beekeeping, and at the same time keep ourselves off the labour market, I think the railway commissioners should give us all the opportunities they can to get together once a year to discuss our troubles.

[I shall be glad to get more correspondence like this at once, otherwise, if not sufficient are sent the concessions will not be granted.—E. Tipper.]

W. A., Kilcoy, Hexham.—We are getting very dry weather. Have not had rain for nearly six months got no honey this year, or anybody about here. Am enclosing 2/6 annual subscription to N.S.W. Bee Farmers' Association.

A. P., Bobadah.—We have had a splendid time here with the bees for the last 18 months, but I think the good time has come to standstill owing to the very dry weather, as there has been no rain to speak of for the last five months. It has been wonderful how the bees have done as well as they did.

F. W. S., Kinchel Creek.—I have got together 8 swarms, which I think are doing splendidly considering the unfavourable weather we have had of late.

A. S. B., Molong.—We are having another awful season. The early season gave every promise, but the heat wave destroyed the whole scene in one act. The trees shed their flowers and buds as in a snow storm. The worst of it is, it destroys the outlook for next year, for there is such a little new growth. You cannot look at the bees at present, for they will follow you into the house to get the honey on the table. A little rain is falling, but we want inches. Hope you are better favoured.

Mr. H. L. Jones, Goodna, Queensland, writes:—Am pleased to say that I have had a very good season here, but unfortunately honey is rather a drug on the market.

E. J. R., Wyee.—I will try and go to next meeting of Association, but do not know if I can manage it, but I hope to

anyway. Things are very bad here with dry weather, bush fires, etc. The fire was amongst my bees but I got off with little loss. I am glad to see Mr. Colbourne has seen his error, and is man enough to acknowledge it. It's about time those who have the industry at heart awakened.

F. G., Stroud.—The past season was not much good, and this one little better. It is terrible dry up here, rain is badly wanted and no honey coming in. I have 56 hives, and all in good order as far as the bees are concerned. The boxes are not much good. My bees are all in ten frame hives just put down anywhere, and are nearly all Italians. This season was the worst for swarms. It was no use, I had to let them swarm, if I did not they would go out with the old queen, and if I put them back out they would come next day, perhaps kill the queen, so I let them swarm. Christmas time was the hottest for bees I ever knew. I lost six hives, the wax melted down and smothered them.

An Important Suggestion

[G. S., Broadwater.]

Can you collect accounts of the doings of beekeepers in the principal honey producing localities. If such information is available it would be a guide to help the producer to form an idea of the best method of placing his honey. At the present most of us are working in the dark on this point, the result being that Sussex-street is supplied at times with a big glut and buyers have the advantage. Whereas, if, say, we Northern River beekeepers knew the Western men were having a good time it would enable us or give us the chance of placing our honey early instead of waiting till later when the bulk of the crops would be arriving together, or again, in the event of failures it would guide us whether advisable to hang on for a rising market.

The men who say the industry is not overdone must evidently be overcharged with gas, and must "blow off" or "bust," but it would be preferable if some of them did "bust." Well, here's a start for your information column, this is as far as I know of the river this season, and represents only the lower river, the upper river, Casino and Lismore ends, generally producing the greater quantities. Woodburn district, representing about 2400 hives, I estimate at 100 tons up to the present, *i.e.*, end of January, and if weather permits that quantity will be doubled before the season ends.

Lower down, Dungarubba, Broadwater, and Wardell, representing 1100 hives, the takings so far, do not exceed 10 tons, this is by far the poorest season this end for a long time up to the present date. However, peppermint coming in bloom now may swell the total, weather permitting.

[We shall be very pleased to get such information from the different centres. As regards our own and New England districts there are many tons of honey being held in reserve, the owners thinking it useless to send to Sydney to further glut the market there. All the local markets here are glutted. In one town of 150 inhabitants there are three beekeepers hawking honey around from house to house, and all the stores are glutted. One of the storekeepers told us he would not invest in the best about for 1½d per pound. We only wish we knew where there was a likely market.]

Candy for Winter Feeding.

Heat extracted honey—be sure you don't burn it—stir into it best granulated sugar as long as it will stir in; then put it on a board or table and knead into it all you can, so as to make a stiff dough. After it stands awhile, if it seems too thin, knead in some more. It will take about four times as much sugar as honey. That's called Scholz or Good candy, the same they use for queen-cages, only they use powdered sugar for queens. If it is dry enough you can lay flat cakes of it on top of the frames, or you can first lay on the frames some kind of open cloth like cheese-cloth. Or you can put a slice of it in cloth between the frames.

You can also make candy without the honey, just common candy. The process is simple, but great care must be taken not to burn the candy, for burnt candy in winter is death to bees. In a vessel of

hot water on the stove stir slowly granulated sugar, and keep stirring it to prevent burning until a little of it dropped into cold water is brittle to the teeth. Then pour out into pans slightly greased, making cakes an inch thick or less. These cakes can be laid over the frames and covered up —*American Bee Journal.*

A PRACTICAL LETTER.

You must excuse me for not writing to you before, as I have been away on holiday. My health has not been of the best lately. I wish I could see my way clear to earn enough on the land for the wife and family. I have lately bought 20 acres of rich land, 14 acres are cleared and grassed. I have a couple of cows, and a pair of pigs, the best that money can buy. My family are only young, so I am waiting till I can get some help. I am going in for pigs on the paddock system. I am getting a lot of post and rail cut for the fencing, so what with the bees, a few cows, pigs, etc., I intend to stop at home. The outside work is better for my health.

JAPAN.

The native honey-bee of Japan is grayish-yellow of color. It is perhaps the most docile bee known and may be handled without any protection on the part of the keeper. It is also claimed that these bees are more industrious than other races, going out in search of food in rainy weather. The Japs have adopted the most rational methods of handling bees, and to keep them at a profit. —*American Beekeeper.*

SERVIA.

It is stated in the Ill. Bztg. by S. Gawrilowitsch that in Servia along the shores of the Danube fried fish and boiled chicken, all of which are cheaper than sugar, are used as substitutes for bee food; this wonderfuf news S. G. obtained from a Servian bee journal. (What next?) —*American Beekeeper.*

CAPPINGS.

The little four-year old boy was the other day in the garden with his mother, and she was showing him the honey bees. The boy said: "If these is honey bees, mummy, which is jam bees?"

I have tried both hard and soft wood. The latter ignites more readily, and is a little handier for us to get, for we have carloads of it right handy. But lately we have been using the Coggshall smoker-rolls. They are nothing more nor less than old phosphate-sacks rolled up in rolls of suitable size, and tied with strings. They are then cut to the proper length with a hatchet. One end is then dipped in a solution of saltpeter. When dry, the cartridge is ready for use. We find this very ignitible, and ready to give off a good smoke in ten or fifteen seconds after a match has been applied. They are lasting; and when prepared in advance on a rainy day, they save a lot of time in the height of the season.

Feeding sugar syrup may be a useful thing, says Herr Reidenbach, in *Pfaelzer Bztg.*, when it replaces for winter feed objectionable honey-dew or something of the sort, but is in general to be condemned. Honey contains from one to three per cent. of nitrogenous matter; sugar, only a trace. This is absolutely essential for brood-rearing, and in general for replacing worn-out tissues. Sugar will keep up the heat in winter, but even in winter there is some wear and tear of tissue, which needs the nitrogenous matter of honey and pollen to replace; and a colony wintered entirely on sugar is to some extent lacking in vitality in spring. A case in point is cited. In 1894 two powerful late swarms were installed on account of their young queens, and were wintered on sugar. They wintered well, but the cold of February was of unparallelled intensity. When they flew in March they were rapidly decimated, and

Beekeepers, show those who do not take the *A. Bee Bulletin* your copies. Let them learn the true state of the industry.

in two weeks every bee was dead, only a handful of dead bees remaining on the floor of each hive, with food left in the hive. Colonies wintered on honey were all right; but these two, exhausted for lack of proper nourishment during the intense cold, were not fit for labour, and when they flew out of the hive they were not able to return. I strongly suspect Herr Reidenbach is correct, and I don't believe I can afford to replace good honey in the fall with sugar, even if I can get for the honey three times the price of sugar. To be sure, bees have been successfully wintered on sugar year after year, but is it certain that they are just as vigorous as if wintered on honey? —*Gleanings.*

A knotty problem which has bothered me, and others, also. That is, stocks that have been queenless sometime. If we try to give such a stock a laying queen by the ordinary method, she is almost sure to be killed. I struck on a plan this summer that has not failed me yet. If it can be spared I like to have a frame of hatching brood to give the queenless stock, at the same time putting in the laying queen, but have the queen cage fixed so the bees cannot release the queen. I leave thus for a week, and then the bees get so they will beg for her. Then I allow them to release her, which method has been successful so far. If more increase is desired, the most populous colonies can be divided, having extra queens to give the queenless parts at the time, or soon after the operation.

The advantages of a house apiary are that it allows of the use of cheap and thin lumber for hives and supers, and does away with the necessity for painting. The bees and the beekeeper, as well as tools and hives, are sheltered from the sun and storms, while the house can be locked against thieves. Work can be carried on, even in rainy weather, while the trouble from robbers is practically nothing.

A confectioner in Colorado, so writes J. A. Green in Gleanings, is using comb honey as an ingredient in the manufacture of a high grade candy. The comb makes the candy "stand up" better.

The establishment and management of out-apiaries calls for a conveyance of some kind, and when automobiles are cheaper and more simple in construction they will be the ideal conveyance for the man with out-apiaries. They can go fast, will not tire, balk, nor run away, and the bees will not sting them. Perhaps the power may be utilised to run the extractor.

Lord Cecil is a lover of bees, but his pet pursuit gave quite a little trouble to the folks in his city. It appears that he had a queenless colony and telegraphed to a neighboring city for a queen from a breeder there. As he was to be away, he asked to be informed in proper time of the arrival of the little insect. To satisfy him, the shipper wired, 'the queen will reach your station at 3.40 p.m.' On his arrival at the station, at the indicated hour, he was much astonished to see a crowd of people in their best clothes. The mayor was there in a frock-coat, and a band was playing its finest tunes. Upon enquiry, he ascertained that one of the telegraph operators had been indiscreet enough to give out the announcement of the arrival of the Queen at that hour. A few words of explanation dispersed the disappointed crowd.

A beekeeper cannot know his locality too thoroughly. Some men succeed in localities where the majority fail, and one reason is because of their more thorough knowledge of the locality enables them to adopt methods more perfectly adapted to the peculiarities of that location. Above all things *know your locality.* —W. Z. Hutchinson, in *Beekeepers' Review.*

The honey harvest was a poor one in the South of Ireland this year, and unless we have a good harvest next year you will have many giving up the industry. There is no honey to be got to purchase in Cork now. It commanded a good price—from 8s to 9s. per dozen sections. In Dublin, Abbott Bros. have been selling for customers at 10d. per section.

Producers are therefore receiving 9½d. nett here.—*Irish Beekeeper.*

The membership of the Irish Beekeepers' Association, for fourteen years, ranged from sixty to one hundred and twenty. It reached 334 after the remarkable season of 1897, but after the bad season of 1898 it fell to about what, following three successive unfavorable years, it stands at now. A large number abandoned beekeeping altogether last year.—*Irish Bee Journal.*

I want to tell the sisters how I melt combs. I take a two-bushel sack, fill it with old combs, and place it in a large kettle of boiling water. With a strong paddle prepared for that purpose, I begin mashing it, holding the mouth of the sack in my hand. When the wax begins to rise pretty freely I begin dipping it off pouring it into a gallon vessel of cold water before it gets too hot to handle. I then pour the cooled wax, water and all, into a sack, and the water runs out, leaving the wax. I keep stirring the old combs till all the wax is out. I then dip it all off as well as I can. If the sack is dipped up and down in the hot water several times the wax will run off next to the kettle as the sack is raised. Then raise it quickly (if you have melted and stirred it well the refuse will be so clean that it will not stick together when cool), pour the wax back into the kettle and melt it thoroughly, so you will have a nice cake. If left crumbled it will mold and make the wax dark.—MRS QUEEN B. HALL. in *American Bee Journal.*

"Country Life" tells us:—"It is a foolish notion to suppose that the ringing of bells or "tanging" of tin pans will cause a swarm of bees to settle. The real origin of this custom dates back to the reign of Alfred the Great, who in order to prevent disputes regarding the ownership of a swarm, ordered that the owner should always ring a bell when his bees swarmed; and, ever since then, the good farmer's wife has been rushing out with ringing bells whenever the bees swarmed, and the fact that they settled, verified, in her own mind, the belief that the bell did it.

UNFINISHED SECTIONS FOR STARTERS.—Regardless of what some good authorities claim about being able to have bees start as readily on comb foundations as in unfinished sections that have been nicely cleaned up and carefully stored away, my own experience teaches me that the unfinished sections are away ahead in inducing the bees to enter the sections early and commence storing honey therein, and while I am unfortunate in not having had each section completely filled out the past season I feel somewhat fortunate in having on hand a good supply of these unfinished sections ready for use when the honey flow comes next season. Young man, take good care of the unfinished sections. Have them nicely cleaned up by the bees and store them away carefully for next season's use. They are good stock in trade; and whenever anybody tells you otherwise don't you believe it.—*Progressive Beekeeper.*

A colony that has been queenless some two or three weeks may or not have laying workers. It may possibly be hopelessly queenless, in which case it would accept any queen that you give them without the formality of caging. First look through the hive very carefully and see if there are any evidences of laying workers—two or more eggs in a queen-cell, or several eggs in worker-cells, the laying more or less patchy comb, in some cells no eggs, in others one or more. It may be a little late to find any eggs, even if the laying workers are present. If there are no indications of such laying worker, let a virgin or laying queen run in among them. If they treat her kindly, show a hum of rejoicing, you will have no trouble. If the queen is balled it may be advisable to unite this colony with some other strong colony, or treat the hive as if it had laying workers.—*Gleanings.*

There are 10,000 beekeepers in Ireland, but the I.B.K.A. has only 100 members.

A Johannesburg correspondent of the "Beekeepers' Record" says: I have read with interest the reports from various localities in England during your comparatively short season just ended, and cannot but be struck with the vast difference in the results obtained. The same conditions apply in the Transvaal. Previous to the discovery of gold in the Transvaal, where Johannesburg now stands, I learn from the Boers that bees could not be kept, as it was such a poor, neglected district; but since the Golden City came into existence, more especially during the last five years, many beekeepers have secured excellent results, due solely to the millions of gums planted in the early days, and increased cultivation. The north side of the town is far better for the production of honey than the south side. Bees located only three miles away on the south side have to be fed during the winter months, whereas takes of forty sections, 85lb. in shallow-frames, and 190lb., chiefly in sections, have been secured in the winter, the principal source being the gums. The prices realised are 1s 6d to 2s 6d per section. "G.H." is quite right surmising that the dry climate is not conducive to the spread of foul brood. I may mention that a beekeeper who has kept these interesting insects for over thirty years in Pretoria has never seen the slightest indication of this pest.—F. Sworder, Johannesburg.

To find a prolific queen the time to look for her is on a nice day when the bees are at work in the fields, or between the hours of 9 a.m. and 3 p.m. If you look at such time you will find her, more often than otherwise, on one of the two outside combs which have brood in them.—"Exchange."

The Use of Smoke in Handling Bees.—In passing from apiary to apiary, I am surprised to see how differently men use, or misuse smoke, when handling bees. Some men even ask me if I ever "smoke in the entrances?" As a rule, such men will jar the hives in taking off the cover, then pry or pull off the super with a snap. About this time the bees, angry bees, begin pouring out at the entrance, and from the top of the hive, and *then* the beekeeper begins to use the smoker; but the bees are mad now, and no amount of smoke will pacify them. The most important place to use use smoke, is at the entrance, and it should be used there as the *first step* in opening a hive. Subdue the bees *first*, then all of the jarring will only make their subjection the more complete. So many times has some man cautioned me about attempting to examine some colony, saying the bees were perfect tigers, and that I would be stung terribly. I always say: "Give me the smoker." I give them a good thorough smoking before attempting to open the hive. I then open the hive carefully, using a little smoke if there is any sign of obstreperousness. As a rule I pass the ordeal without a sting, while the owner looks on with amazement. The whole secret lies in subduing the bees before opening the hive. Smoke the bees *first*, and then you can usually handle them in peace and comfort.—"Exchange."

In the "Beekeepers' Review" E. D. Townsend tells how, by a single stroke of the knife, he uncaps the entire comb on one side. With spacing $1\frac{3}{4}$ inches there is chance for so deep a cut that no second motion is needed, but special care is taken that the comb be not held at such an angle that the cappings can fall back from the knife upon the comb. This last point is the secret of rapid work.

When any colony is so weak that it has no desire to swarm, during or preceding the swarming or honey-flow, such a colony will invariably build worker comb, so that worker brood may be reared till the colony comes into a prosperous condition, providing they do not have sufficient comb already built.—Exchange.

Drinking of milk is recommended as a remedy for excessive bee stings.

Send us names of your neighbouring beekeepers.