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THE AUSTRALIAN Bee Bulletin.

A MONTHLY JOURNAL, DEVOTED TO BEE-KEEPING.

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Circulated in all the Australian Colonies, New Zealand, & Cape of Good Hope.

Vol. 14. No. 10

JANUARY 30, 1906.

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E. TIPPER
EDITOR & PUBLISHER.
WEST MAITLAND & WILLOW TREE.

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EDITORIAL.

The winter months are the best for removing bees to fresh locations.

Mr. R. Helms, of the N.S.W. Agricultural Department, has kindly supplied us with two very interesting articles in this issue.

Bees do not puncture grapes or fruit, but simply follow up the mischief done by other insects or birds.

Some years ago we had what was said to be a pure Cyprian queen. The bees looked very pretty, but we could not see they were better or worse than others.

We acknowledge first copy of a new publication, "Commonwealth." It is edited by Mr. James, of Drake. Mr. G. H. Reid's portrait forms a conspicuous picture in one of its pages.

There are beekeepers who pride themselves on being able to handle bees without smoke or protection. It is all very well in its way, but better left alone. If done at shows it may induce amateurs or beginners to try it, to their bitter sorrow.

There are several ways of managing weak colonies. Unite two or more, and make one good one, being sure to provide them with a good queen. Or help the weaker colony along and use them for artificial increase later, while the strong colonies are used for honey-production exclusively.

We have at different times had bee paralysis. One remedy is to sprinkle sulphur on top of the hive, taking care it does not touch the larvæ or brood. The other is to change the queen.

An American bee-paper says:—"Lectures on bees and honey, before day and Sunday schools, might be made to do much good." We presume it means to supply-dealers. It cannot mean to the poor man trying to live by keeping bees.

We acknowledge receipt from Mr. Taylor, of Bright, Victoria, of what is termed a sample of foul brood. It had the colour, the smell and the stringiness. The remedy for foul brood is simple. Place the bees in empty hives with starters. Close entrance for a couple of days. Then place in fresh hive again, with foundation, on old stand. We would like to know the weather conditions in the neighbourhood at the time.

EXPORT OF HONEY.

The Acting Agent-General for New South Wales in London has forwarded a report with regard to the market for honey. He states that the principal sources of supply for imported honey into the British market are Jamaica, California and Chili. The average importations annually amount to about 1000 tons, of which about 530 tons come from Chili, and the rest in small lots from various sources. A few years back Chili used to contribute a very much greater proportion of the trade, and in 1901, which was marked by the greatest importation of honey for many years, Chili supplied 586 tons out of the total of 1535 tons, Jamaica being next with 350 tons. London is the principal distributing centre for Great Britain, the bulk of imports being consumed at home, though shipments are also made to all parts of the continent.

The chief characteristics necessary to render honey suitable for the British market are flavour, colour and clearness, flavour being the most important. The

best honey should be sweet and clear in flavour, and "pale set clear" in appearance. Amber honey is the next in grade, and brown honey is regarded as inferior.

Honey is used in England both for manufacturing purposes and as a table delicacy. California is the chief source of supply (outside of Great Britain itself) for table honey, and it comes packed in cases, which are considered more suitable for this class of trade. Jamaica honey is chiefly used for manufacturing purposes, and for this branch the most suitable packages are kegs and barrels containing 2 or 3 cwt. each. A certain proportion of Jamaica honey also comes packed in cases for table use. Australian is only used, generally speaking, for certain manufacturing purposes, on account of the peculiarity of flavour.

The present prices of honey are: Finest, 30s to 25s per cwt.; ordinary, 14s to 18s. The higher range of prices would be for the finest table honey, and the lower range would represent the price of the ordinary commercial article. The prices are considered moderate and somewhat below the average. Much of the Jamaica honey is sold at 17s to 18s per cwt. Australian is regarded by the principal dealers here as being worth 5s less per cwt. than Jamaican, and under these circumstances there does not appear to be much scope for our honey in Great Britain unless it can be sent over at a cost of not more than 12s per cwt., including all charges.

Regarding the prejudice against Australian honey, it is stated that this feeling is a deep-rooted one, and it is quite possible that it is based on the experience of mixed or inferior samples which have reached England. If some of the excellent "box" honey produced in many parts of New South Wales could be sent over the bad impression might be removed.

THE PRODUCER.

Early in the year the question of testing the British market for honey was

discussed by the council of Agriculture and as a result four samples of honey were obtained and forwarded to the Agent General with a request that they should be submitted to the dealers in Great Britain with a view to obtaining information as to the value and probable market. The Hon L. O'Loughlin, Minister of Agriculture, has now furnished us with the following extracts from a report by the secretary to the Agent General:—

The four tins of honey referred to arrived per steamer *Marmora* and arrangements were made to place it in 1-lb. clear glass, screw-topped bottles. In accordance with instructions, the honey was not liquefied; the opinion of interested persons being that from a commercial point of view the honey should be submitted to business people in condition in which honey would arrive in this country. The honey when opened was in good condition, and with one exception was not candied. The four bottles (one of each sample) were in corrugated cardboard boxes and sent to 22 different firms throughout London and the provinces; only eleven of these sent reports. Practically all the firms condemn the honey for table use, on account of its flavour, which is generally referred to as eucalyptus, though some merely describe it as peculiar or most extraordinary, while one firm says it resembles tallow. The value of the honey is variously given at from 10/ to 25/ per cwt.; the maximum value given being about the wholesale market price in Adelaide. The general opinion is against the possibility of a market for honey of this description, even at the unremunerative values given. At the grocers' and dairy farm shows samples of British honey were exhibited, and the following types were noticed:—(1) Clear and liquid (varying in color from that of light hock to dark burgundy); (2) granulated (3) white (not unlike lard). The flavor of all British honeys is much the same in character, though it is easy to distinguish between "heather" and "clover," West Indian, and Californian and South Amer-

ican honeys (though each possesses its characteristic flavor), are not unlike English honey, and all obtain a ready market in Great Britain. The British public is very conservative in its tastes, and it is extremely difficult to introduce to its notice anything new. It may be taken for granted that the opinion of the firms to whom the samples were submitted as to the dislike of the British consumer for the characteristic flavor of Australian honey is correct; though London residents who tasted some Australian honey, which was obtained through Mr. A. W. Sandford, expressed themselves as delighted with it. There is no doubt however, that the prejudice exists, and until it is removed the prospect of a market is small. The first step would be to induce the retailers to stock the honey. This might be done by shipping a quantity to a London agent who should have it put up in attractive 1-lb. jars and sell it or consign it to some of the large retail dealers. It would of course be necessary to sell at a loss, or without profit, for some time, because, while English honey is sold retail at from 8d. to 10d. per lb. (jar included), and even New Zealand "clover" honey at 10d per lb., good honey is offered by Messrs. J. Lyons & Co. at 6d. per lb., put up in screw-topped bottles similar to those in which our samples were placed, which cost wholesale 27/3 per gross. The price of a bottle, plus labels and handling would be, say 3d. so that the actual retail price of honey would only be 3d. per lb. South Australian honey would, of course, have to compete with lines such as this, and, until its characteristic flavor had forced its way into favor with the consumer, the producer would have to be prepared to accept a very low price.

"Since writing the above the report from Messrs. P. O'Hare & Co. has come to hand. This report speaks very favorably of the honey, and places it in a comparatively high value—so high, indeed, that it seems most probable the value is based upon the retail selling price."

It will be seen that the above bears out the report submitted at a recent meeting of the Advisory Board of Agriculture by Mr. A. W. Sandford, and there appears little prospect for our honey in England. Most South Australians will find it difficult to reconcile with their own tastes the remarks as to the flavor of our honey. Any beekeepers interested in this question can inspect at the office of the Department of Agriculture samples of honey from various parts of the world which were obtained by Mr. A. W. Sandford, a few months ago.

The Control of Increase.

A very few of us can remember when the control of increase was almost unknown, and seldom practiced. A colony swarmed when it got ready, and there was no attempt to foretell, forstall or prevent the act. It was necessary to watch the bees almost constantly during the swarming season; and when a swarm issued it was hived upon a new stand, and, in due time, the parent colony sent out one, two, or three after-swarms. With the advent of movable combs came artificial swarming, but this was often so poorly managed that after we had had our turn at it the bees took theirs. Queen traps, the clipping of queens' wings, non-swarming hives, queen cell detectors, shook swarming, the removing of queens, the prevention of after-swarming, etc., were all unknown. The management of an out-apiary without some one in constant attendance would have been impossible. Gradually we learned to control after swarming, or eliminate it entirely if so desired. We could open the hive and cut out all the queen cells except one; or we could hive the swarm upon the old stand, brush the bees from the combs into the hive containing the swarm and divide up the brood among weak colonies; or those that we were building up from nuclei into full colonies; or we could hive the swarm upon the old stand and set the old colony by the side of the newly-hived swarm for one week, then

move it to a new location, when all of the flying bees, or those that had flown and marked the old location, would return and join the swarm, thus weakening the old colony to such an extent, just as the young queens were hatching, that all thoughts of further swarming were abandoned. Sometimes, instead of giving the old colony a permanent new stand, it was simply shifted to the opposite side of the newly hived swarm, then, in a week or so, returned to its former location, this shifting process being continued until the old hive was practically drained of its bees' and the combs left free from brood. Again, the old hive was placed upon the top of the new one, its entrance closed, and a spout or channel of lath extended from its entrance down to the entrance of the lower hive. The bees could leave their hives only by means of this channel, and, upon their return, instead of seeking the entrance to the channel from which they had issued, they joined the forces in the lower hive. In this manner the old hive was gradually drained of its bees, and they hatched and became old enough to fly. Sometimes the old hive is set on top of the new, with a queen-excluder between them, and the young bees, as they hatch, are able to join the throng below. With this latter plan the bees are given an opportunity to fill the combs in the upper hive with honey, as the young bees hatch out.

It will be seen that, even though natural swarming is allowed, it is an easy matter to prevent after-swarming in an apiary having constant attendance. To prevent the issuing of first swarms is a more difficult proceeding, but it *can* be done. In some parts of the country, notably in the South and West, there is practically no swarming after the beginning of the main honey-flow; and this is the case, to a large extent, in all parts of the country. A light flow is conducive to swarming, but, with the advent of a heavy flow, the bees seem so carried away as to forget swarming. If swarming can be discouraged until the main flow, all

goes well in some localities. The taking away of more or less brood will usually accomplish the desired result. This is about the only reason that justifies the taking of brood from strong colonies and giving it to the weak. If there are no weak colonies, and it is desired to make a little increase and thereby prevent swarming, it can often be accomplished by taking two combs of sealed brood from each strong colony, shaking off the bees, filling hives with these combs of brood, setting each hive over a populous colony, with a queen-excluder between the added hive of combs and the colony below, and allowing the hive to wait a few hours until the young queens have come up and occupied the combs, when the upper stories of brood and young bees may be placed upon new stands, and each given a laying queen, or, if this isn't possible, a queen-cell. The places in the old colonies left vacant by the removal of combs of brood must be filled with sheets of foundation. This removal of brood will retard swarming, and may tide over the swarming until the advent of the main honey-flow puts upon it a still further check. By the way, the plan just mentioned is an excellent one at any time for the making of increase, and does away with all hunting for queens.

The making of a moderate increase, in the right manner, in the early part of the season, will often practically prevent swarming. There are several methods. What is called the Doolittle plan is a very good one. This consists of making one new colony from two old ones, and is managed as follows: Shake all the bees and the queen off the combs of the colony, letting them run into a new hive with either starters or full sheets of foundation in the frames. Move another strong colony to a new stand, and place the hive of beeless brood upon the stand of the removed colony. The colony thus formed, is, of course, furnished with a queen or queen-cell.

As a rule, there is less swarming from large hives. If to this we add the production of extracted honey, which allows

the giving of abundance of drawn combs there will not, as a rule, be very much swarming. Mr. E. D. Townsend, by the use of ten-frame Langstroth hives, putting on two upper stories of combs at the beginning of the main flow, and not using any queen excluder, was able to manage an apiary with only four visits a year—once to unpack the bees in the spring, once to put on the upper stories of combs, once to extract, and again to pack up the bees for winter. There was an occasional swarm, but not enough of them to warrant the expense of constant attendance.

Of course, it is possible to prevent swarming, both by dividing the colonies, either permanently or temporarily, or by removing the queens. If the beekeeper wishes, he can examine each colony as often as once a week. When he finds a colony starting queen cells, there are two courses open; that of dividing the colony or destroying the queen cells that have been started, and removing, or caging the queen. If the queen is removed, a comb of brood and bees is taken with her, and all kept in another hive until it is time to return the queen. Eight or nine days later, the queen cells should be again broken out in the old colony, leaving the colony hopelessly queenless. A week later, the old queen can be returned. Another plan is that of removing the old queen, killing her if there is no use for her, allowing a batch of queen cells to nearly mature then removing all of them except one, which is allowed to hatch, and the queen to become the head of the colony. While this plan of removing the queens during the swarming season is very effectual, it has not for some reason, ever become popular perhaps it is because of the work that it entails. The other plan, that of dividing a colony showing signs of swarming, has sprung very rapidly into quite general use; "shook-swarming" being the usual method of division. In making a "shook swarm," the bees are disturbed, the hive drummed upon, or something of this sort, and thus they are induced to fill themselves with honey. This filling of their

sacs seems to be a very important part of the programme. The queen and most of the bees are then shaken and brushed into a new hive set upon the old stand, the frames being furnished with either starters or full sheets of foundation, and the supers, if any there are, being transferred to the new hive; and the old hive placed upon a new stand. Sometimes the bees from two colonies are shaken together into one hive, thus making a very strong swarm. The old colony is placed by the side of the new one, or upon top of it, and the bees, as they hatch and fly are gradually enticed into the new hive, as was explained when describing natural swarming methods. This method not only prevents swarming, but increase as well. It results in the building of an extra set of brood combs, but I think they are built at a profit.

Then there is the plan of making a temporary division of a colony, leaving a comb of brood and some frames with starters on the old stand, with the supers over them, and setting the old hive aside for a few days, (from four to six) until the bees have destroyed the queen cells that have been started, when the two portions are again united upon the old stand. This plan has been called the Sibbald plan. It has not been used very extensively, and has been quite severely criticised, but there have been some very satisfactory reports from the use of this plan.

Of course, colonies can be divided just the same if they are not making preparations for swarming, but, as a rule, the beekeeper would rather not disturb a colony that is working well, and will not swarm, hence, the general practice is to examine colonies once a week, and manipulate those that are starting queen cells. The examination of colonies to see if they are building cells is really the great objection to this system of controlling increase, but there are methods whereby even this difficulty may be greatly lessened. For instance, one man has a simple clamp by means of which the supers may be very quickly and securely fastened to

the hive so that it may be tipped over backwards, and the lower parts of the brood combs examined for queen cells. Another also, has a cell detector, a hole in the back of the hive whereby a view may be gained of the edge of the comb in the centre of the brood nest—a most enticing place for the building of queen cells when all of the combs are smooth and perfect. Another prominent Canadian beekeeper has an arrangement whereby the supers and upper section of a Heddon hive can be tipped back, exposing that portion of the brood nest (the space between the two sets of combs) where the queen cells are nearly always built. This man manages several apiaries, and he told me recently that this device, that allows of this quick, easy examination of the brood nests; saves him one man's wages during the swarming season.

The tendency of the times is towards specialty, towards the keeping of more bees and the establishing of out-apiaries. With this system of management, the prevention or control of increase is the leading feature of the problem. Of course it *has* been managed, and *can* be managed, but the question that the Review now proposes to discuss, from the ground up, is, how can it be managed to the best advantage? In this editorial I have gone briefly over the leading features of the different methods, and now I wish for a most thorough discussion, and am willing to pay liberally for article on the subject.—“Beekeeper's Review.”

SCOTLAND.

John F. Meiklejohn.

I see from papers I get how things move or don't sufficiently move in Australia. It appears to be a badly-used country, and by a short-sighted lot of parasites. Labour Unions, Socialism, and paid members of Parliament appear to drag its progress in every way. Corruption in manipulating the land is scandalous. Willis, Close and Crick have been like Tom Slattery—doing splendidly of late. Scoundrels all I fear.

Perhaps the "good time" may come yet. I get the A.B.B. you kindly send me. I am sorry to see that all the beekeepers have not made the fortunes they were to make yet. I think you could do better growing maize and selling at 5/6 a bushel, as per last accounts. I have seen them growing honey at 1½d or 2d per lb. I can't understand that trade at all, as to why honey brings a lower price in this London market than treacle. Something must be wrong. We did not get a great deal out of our hives last season. One hive produced about 50lbs. clover honey, and we had about 20lbs. out of the other two, which were weak. We did not sell any, but if we had wished to sell we would have had no difficulty in getting 1s. for pound sections, or 1½ for heather honey. The heather in this quarter was a failure for much rain. My companion (an ex-teacher) in beekeeping died in October, so I don't know how I may proceed now. In was in his large garden we kept them, my garden being rather small, but we will see after a bit. I don't know very well how all other hives about this quarter panned out last season. I am afraid not too well. I don't know that I can say much more at this time.

Distance that Bees Generally Fly.

Writing to "Gleanings in Bee Culture," H. W. Lewis, on the above subject, says that some time ago, when feeding his bees with a Miller feeder and thin syrup placed about 50 yards from the hives, he noticed that bees were coming to feed from the bush. He then took the feeder and followed them up, covering the feeder up and moving as far as he could follow the line, and then opened it for the bees to locate it and get another start, thus moving the feeder about 100 yards and waiting until a great many bees both from his own hives and from the bush came to the feed. He observed that on getting about one half-mile from his apiary that his own bees were getting scarcer and that the bees from the bush were most plentiful, and as he neared the

bee tree, about one mile from his own apiary by the section hives, very few bees from his own colonies came to the feed, while those in the tree appeared in swarms. He then took the feeder and returned to his own apiary in the same manner as he came, and the nearer he got home he found more of his own bees at the feeder and less from the tree, until nearly all were from his own colonies, as at the start. He also noticed that about midway the bees appeared in about equal quantities from each place. Mr. Lewis states that his own bees are all pure Italians, and those in the bush are hybrids. In conclusion, Mr. Lewis asks: "What will those who claim that bees will fly five miles to gather surplus say about this?" He expresses his doubts as to bees flying above a mile to any extent.

[Our own impression is that bees will travel five to seven miles, but not gather honey at such distances.—Ed.]

A History of a Drone-Laying Queen.

Wm. M. Whitney in "Gleanings."

Some time ago I promised to tell you something about that queen I got of you, so here it is. In June, 1903, when she was received, I made a colony by division and introduced her on two frames of brood and bees—the rest, frames of foundation. The colony built up strong for winter, though the latter part of the season was not favourable. June 24, the following year, division was made by removing the queen and three frames of brood. The season was very unfavourable, yet the colony built up strong, but I was obliged to feed for winter stores. I fed granulated sugar syrup. Last spring I found the colony weak, the queen looking slim and poorly nourished; in fact, she was "spring poor."

A large proportion of the worker cells used contained drone-brood, and, of course, I naturally concluded that the queen had passed her days of usefulness, but, disliking to supersede her if I could avoid it (as I wished to secure more of

her stock) I commenced feeding the colony sparingly, each night, good extracted honey. In the course of ten days there was a marked improvement in the appearance of the queen. She assumed the bright orange colour, and looked as fresh and plump as the year before; and in a short time the drone brood disappeared from the worker cells entirely, and soon seven frames of a nine-frame hive were largely filled with worker-brood. On the 20th of June she was again removed to an observatory hive, in which I wished to exhibit her at our midsummer fair. By the way, I took a first prize. On the 27th I made four nuclei from the frames left with the queen-cells, which are now strong colonies.

BEE STING REMEDY.

A THRIVING INDUSTRY.

Since the discovery that formic acid from bee's stingers is a sure cure for rheumatism and lumbago, the demand for the stingers has leaped far in advance of the supply. Chemists and wholesale druggists are placing orders for all of them that can be had, and apiarists are doing their utmost to supply the demand.

Experiments made by the H. K. Mulford laboratories, near Glenolden, proved the efficiency of the bees' stingers as a cure for rheumatism and lumbago.

On the end of the stinger, which is about one-sixteenth of an inch long, is a tiny sac, containing a drop of formic acid. This sac the bee detaches with the stinger after the latter has been deposited in human flesh.

Formic acid neutralizes uric acid, the presence of which in the system produces rheumatism and lumbago. Science has found a way to convert the stingers, with their supply of formic acid, into a serum, which, used as antitoxine or vaccine virus is used, effects a cure. The stingers bring 8 or 9 dollars a thousand.

Mr. Selser, who has one of the largest apiaries about Philadelphia, finds himself quite busy at certain seasons of the year filling orders for these stingers. At this

apiary there are more than 1,000,000 bees under cultivation.

Mr. Selser has devised a regular system for extracting their stingers for market. Bees, he has discovered, do not like the odor of rubber, and when they detect it will often attack the rubber in a frenzied manner. He is experimenting with a soft rubber blanket or mat, which he places near the hives. The bees smell the rubber, and, attacking the mat, deposit their stingers, pumping into the small sac more formic acid than they are want to do when attacking a person, or when not generally excited. After the bees have vented their fury on the mat it is removed and the stingers are extracted by means of small tweezers, care being taken not to destroy the formic acid pouch. As the stings are removed they are placed in small bottles containing pulverized sugar. These in turn are sent to chemical laboratories, where the formic acid is extracted and reduced to serum.—*Exchange*.

Mr. J. M. Burtch, of Whiteside Co., Ill., sends us the following somewhat flowery quotation from a recent novel, which will be quite amusing to beekeepers:—"The king sat in his private garden in the shade of a potted orange-tree, the leaves of which were splashed with brilliant yellow. The velvet hush of the midday hour had fallen. There was an endless horizon of torquoise blue, a zenith pellucid as glass. The trees stood motionless; not a shadow stirred, save that which was cast by the tremulous wings of a black-and-purple butterfly, which, near to his majesty, fell, rose and sank again. From a drove of wild bees swimming hither and thither in quest of the final sweets of the year, came a low, murmurous hum, such as a man sometimes fancies he hears while standing alone in the vast auditorium of a cathedral." Surely, a "drove of wild bees swimming" would be quite a "novel" sight—seen only in a novel.—*American Bee Journal*.

SOCIAL.

On Saturday night last, January 6th, a social gathering was arranged in honour of Mr. and Mrs. E. Tipper and family, who for over nine years past have been prominent in many ways in advancing the best interests of Willow Tree, but who have recently decided to remove a few miles along the road towards Wallabadah. Mr. Tipper is a retired printer and journalist, for many years an old identity at West Maitland. For some years he has rented a slice of land from the Warrah Company and established an apiary and conducted that popular publication known as the *Bee Bulletin*. Recently, he disposed of his interests in the various printing plants and journals to his sons, who have been continuing his business for some years past; and now he has severed his connection with the printing business, he decided to start a dairy farm, his youngest son having developed a liking for that kind of life. For some time past Mr. Tipper has been on the look out for a site that would suit the purpose. He has travelled north as far as Lismore and along the north-western line; also south for a considerable distance. Just recently the farm of Mr. Cullen, senr., was offered, and Mr. Tipper believing this district was one of the best he has yet seen, determined to rent Mr. Cullen's farm and start dairying on an extensive scale. His son is already at work, milking twenty-four cows daily, and further 21 will shortly be added to the herd, and further additions will be made as soon as opportunity allows. Mr. E. Tipper, senr., gave £6 per head for his recent purchases. We wish him every possible success in his new venture.

When it became known that Mr. Tipper and family were about to leave "The Willow," the residents set about devising some means by which they might show their appreciation of Mr. Tipper's many acts of kindness, and his many efforts to improve the condition of things in that small community. Though Mr. Tipper

and his family had practically isolated themselves in the bush, they were always on hand when necessity arose, and as one kind turn deserves another, it came to Mr. and Mrs. Tipper's turn to receive some tangible proof of the affection of the Willow Tree people for them at a social held in their honor on Saturday night last. As I have already said, there was a large gathering of friends, and it was said that almost every family of that community for miles around was present on that occasion. In the case of the Hall family, the four generations were to be seen taking an active part in the proceedings. After all had been welcomed in one way and another, the real business of the evening began.

Mr. Henry Hall, senr., who was received with applause, said he had a few words of importance for them that evening. Having heard that their friend—Mr. and Mrs. Tipper and family—were about to leave them, a few persons decided that the event should be marked in some manner. The residents had responded freely, the result being that they had decided to make Mr. Tipper a present as a token of the esteem in which he was held. Mr. Tipper had been one of the prime movers in the erection of that hall, and was respected and honored by everyone in the community. On behalf of the people of Willow Tree, he had very much pleasure in asking Mr. Tipper to accept a silver inkstand from his friends at Willow Tree. (Applause.) He also wished Mr. Tipper and his family much prosperity in their new home and business. (Great applause.) He asked them to charge their glasses and drink to health and happiness of Mr. and Mrs. Tipper and family. (Applause.)

The toast was drunk with musical honors, the singing of "He's a jolly good fellow," winding up with deafening cheers and shouts that must have been heard a mile away.

Mr. Tipper rose to respond. He was again greeted with applause. He said

he had been completely taken by surprise and hardly knew what to do or say. He thanked them most sincerely for the kind expressions of their esteem and regard for him and his family. As the gift was looked upon in the future, it would remind them of their many kind friends at Willow Tree. It had been a source of pleasure to do what little he could for them during his stay amongst them. It had also been a source of pleasure to see that hall erected and almost completed. Only the previous evening, he had thought how much better it would have been to have had Mr. Roberts' lantern lecture in the hall, instead of in the church. He congratulated them on the success of the new building. He also said that the nine years spent in Willow Tree had been as happy a nine years as ever he had spent anywhere in his life. The little present would be appreciated as long as he lived, and it would remind him of the friends he had left there. As he was not going very far away, he hoped to be able to come and see them occasionally, and he would endeavour to be present at the official opening of their new hall (applause). He referred at some length to the necessity for a 'Mechanics' Institute, and quoted instances where young men had so improved themselves as to become useful and prominent members of society. He did not like the name School of Arts, for in very many instances they were not what they are called, but merely places for games of billiards, etc. He would like to see a good library established at Willow Tree and advised the young men to go in for good literature, none of the Deadwood Dick kind. He believed that Mr. Robson of Quirindi would supply a good book. Get good books and good newspapers, and referred to the papers that had been a help to him. He touched upon the local papers, and paid a high compliment to the Quirindi *Herald*, and its proprietor. He also referred to the young ladies of Willow Tree in very flattering terms, and said they were as fine a lot as were

to be found in any part of Australia (Applause.) He again thanked them and said he would appreciate their present.

The company again joined in singing "For he's a jolly good fellow," which was followed by more cheering.

The Chairman (Mr. H. Hall) said he had yet another present. It was for Mrs. Tipper. It was a handsome silver Biscuit Barrel, and he hoped it would never be empty. (Applause.)

Mrs. Tipper replied briefly. She thanked them most sincerely. She said she would always be ready to make a cup of tea for her friends, and they would always be able to get a biscuit from the barrel. (Applause.)

The company shouted and sang, "For she's a jolly good lady" and cheered for a considerable time.

Mr. Hall said he had yet another present. (Applause.) That was a bangle presented to Miss. E. Tipper, by the members of her class at the Sunday School. (Applause.) He trusted she would be spared for very many years to continue her good work, and wear the bangle as a token of the love of her class.

More singing followed, also more cheering.

Mr., Mrs. and Miss Tipper then received, the congratulations and good wishes of all present. The presents were shown and the recipients were introduced to their friends.

Mr. Tipper proposed the health of the contractor—Mr. Chas. E. Hall—and also that of Mr. Henry Hall and his family.

TWO MORE BEE ADVENTURES.

R. HELMS.

The Bee Yarn, in No. 9 of A.B.B., brings to my mind a story told to me by a gentleman in Western Australia, which is as follows:—Whilst engaged on an engineering survey in India connected with some irrigation works, he and friends frequently occupied their Saturday afternoons by shooting, as the

country abounded in all manner of small game. In connection with one of such excursions an episode occurred that was followed by sad and tragic consequences. Allowing themselves to drift slowly down a river, by lying on dipped oars, for the purpose of shooting pigeons feeding in trees by its side, the party observed two large combs of a *dorsata* suspended from a stout limb well overhanging the river, and at a considerable height. One of the party who had a barrel charged with large-shot, in view of probably meeting bigger game than pigeons, discharged this at one of these combs, and successfully detached it almost completely. The mass, more than two feet wide, dropped close to the stern of the boat. But the splash and the rising of an infuriated host of bees was simultaneous, and before the smoke of the powder had vanished the occupants of the boat were surrounded by the ferocious stingers. The two practically quite naked native rowers — having merely their loins covered—suffered most severely from the onslaught, and immediately plunged into the river, thereby almost upsetting the boat and overbalancing one of the white occupants. The other two soon also considered it expedient to take to the water, leaving boat and oars guideless drifting down stream. Luckily, all three whites were good swimmers, and managed soon to gain the shore, in spite of the encumbrance of clothes. The natives fared not so well, and, although naked, found it difficult to get out of the current into slower running water near shore. One of them, however, managed with difficulty to extricate himself from the danger, but the other struggled in vain, and by degrees was drawn more swiftly down stream towards some rapids dashing violently over rocks scarcely more than a mile from the place of accident. His sad fate of being swept over these rapids and drowned can scarcely be doubted, although his body was not recovered. After the party had gained a safe footing they saw him

drifting out of sight, and when, by pushing through the jungle, they gained another open view of the reach, they saw their boat whirling near the end of the rapids and then dashing over it. The man must have gone over some time before this happened.

Another bee adventure of my own experience was not followed by a sad sequence. On the contrary, it was rather laughable, at least to me, the onlooker, and occurred in Australia. Some years ago, a friend who thought shooting things fine amusement, as most townfolk do when they chance to get into the country, proposed to me an afternoon with the gun. I consented although I did not anticipate much sport, and made up my mind to be careful and not serve as an unforeseen target. We were then engaged somewhere near Queenbeyan, and soon found ourselves climbing the hills on the appointed day. There was no sport, and my gun was an encumbrance to me, as I devoted my time principally to insect collecting. It was getting late in the afternoon when my mate called out that he was spying a swarm of bees in a tree, and thought of "having a go" at them. He fired almost immediately after, and the next thing I saw was a man and his gun rolling down hill at a considerable rate. There was no accident about this roll over; the manoeuvre was entirely voluntary and a process of expediency. I took in the situation at a glance, and was elated by it to such a boisterous smile no inconsiderate indiscretion could possibly be more guilty of. As my friend told me on reaching him: "the darned lump came down with a flop, and at once dissolved itself into units who assailed him from all sides without giving him time to explain." He therefore did not wait to demonstrate his harmless intention to them, but took straightway to his expedient roll valleywards. It proved certainly a more efficacious, though equally inglorious retreat than merely running away, for he escaped with comparatively few stings,

The name of my friend does not need to be recorded, but the bees, I may mention, belonged to the domesticated brown type.

GLUCOSE.

Tooborac,
Dec. 30, 1905.

Mr. E. Tipper,

Dear Sir,—In reference to the subject of duty on Glucose, I think the Tariff Commission is the proper body to approach in the matter. I have been endeavouring to get into touch with the Commission, but owing to the holidays there is some delay in getting answers.

In your letter to the Select Committee of the Senate, you committed, in my opinion, a tactical error, in referring to the production of Glucose necessitating the use of Arsenic and Sulphuric Acid. As a matter of fact, it doesn't. Glucose is now made by treating starch with Hydrochloric Acid, any access of which in the Glucose is neutralised by the addition of a minute quantity of Soda Carbonate, which, with the traces of Hydrochloric Acid, forms a harmless, much-used compound, namely, Sodid Chloride, or common table salt.

Formerly, and in some cases perhaps now, Sulphuric Acid was employed, and the Arsenic duly appeared in traces at times, owing to the fact that common Sulphuric Acid is made from crude sulphur containing traces of arsenic.

Sincerely yours,
R. BEUHNE.

KERRY SENTINEL.

A good hive consists of from 30,000 to 60,000 workers and 300 to 400 drones.

The queen, our author says, is neither wife nor daughter, nor widow of a king. At her nuptials death is always present—the ceremony is scarcely over when the drone dies. This queen may deposit some times 3,000 eggs per day, and until the fertilized matter in her spermatheca is exhausted, which may occupy three or

more years, this astonishing number of ova is given forth, each germ capable of producing a busy worker or "lazy yawning drone," or if needs be a royal princess living in a pale gold palace, and awaiting the auspicious moment to indulge in the brief intoxication of the matrimonial tour, and then assume the sovereign rule over a kingdom of devoted subjects. The drone is a mystery in the concatenation of mysteries connected with the hive. He has no organs capable of gathering honey. He is not armed with a barbed poisoned lance like his more energetic sister workers. Preserved to perpetuate the species, and sacrificed on the altar of expediency, his is a brief, joyous existence, and his end a death of torture and starvation. And yet nature, apparently in a capricious mood, has lavished on this creature, foredoomed to be mercilessly guillotined by his own sisters, some rare and choice beauties denied to the other denizens of the golden city.

A most interesting feature is that describing the bee during the march of the four children of the year—from the time Spring walks ankle deep on the beds of primrose, till winter overcome with torpor falls asleep in his snow encircled shroud. The signs of life in the hive after months of apparent death; the indications of breeding; outdoor work embodying "a spirit of resurrection"; the manufacture of wax and the building of the wondrous hexagonal cells; the cleaning of the home; the setting of guards at the entrance; the mysterious influence which prompts, and the "indomitable spirits" which prevail; with the "deliberated sacrifice of the swarm"; the delirious joy of the queen's wedding; the wholesale massacre of the inoffensive drones; and the solemn silence setting over the hive when the Frost King thunders from his storm-driven chariot—all are so beautifully and graphically described that one seems reading rather an enthralling tale of old romance than a short sketch of the bees eventful history.

Though the practical beekeeper, as a good general rule, does not care much

about the internal structure of these amazingly developed creatures, still even an elementary acquaintance with the anatomy of the producers of the delectable, nectareous essence cannot fail to make one more interested in the lives of his labourers, and convey to the mind a salutary lesson: how the great Creator has lavished on such small creatures rare and bountiful gifts, over whose contemplation science stands with an eye of amazed reverence, and the philosophic soul pauses with an overpouring awe. The chapter devoted to the Anatomy of the Bee is most instructive. Technical terms are as far as is consistent with the elucidation of the subject, avoided and a profuse wealth of illustration serves to make the writer's meaning intelligible to the ordinary common place reader. Under the microscopic eye undreamt-of wonders are clearly displayed. Thus, the sting, which we were long ago informed was perfectly smooth, is seen, when magnified thirty times, to consist of an envenomed, barbed lance. This is the reason when a bee inserts its sting into a person's hand that it dies in a few hours afterwards: in the effort to pull out the tiny arrow the insect is disembowelled. More marvellous still, the queen has a curved sting, which she never uses, save on a rival for imperial honours. The desire to propagate the species—the inexplicable instinct—deters her from committing an act which would tend to her own ruin and the extinction of her own subjects.

CONTROL OF SWARMING.

Control of swarming is the greatest problem, or possibly, I may say is *one* of the greatest. While swarming is a large matter, to know how to get the best work and the most of it is big also; to succeed in both, means that we must know bee nature. To attempt to control swarming by giving room when producing extracted will not be a success, and to use the same plan when running for comb gets the best results in neither quantity or finish, and *will not control*. I know of

one or two methods that are practical. Unqueening will surely control; but, some seasons, and in some localities, such as have a second or later flow, it damages the crop from the late flow too seriously. The best plan I know of is to *give big room at all times outside the flow*, and if you have conditions that cause swarming *before* the flow comes, take away brood, or, in some other way, keep the conditions such that swarming *will not* occur, and then when the flow arrives shake out and mass the bees, as swarms, hiving on starters. This way make our swarms when we are ready, and what is also of equal importance *when the flow is ready*. When you have swarmed the bees, have queens for such increase as you may make that not any one is left queenless, and the oldest and poorest queens had best be left with the swarm on the old stand. Put the old hive on a new stand, and let it have a vigorous queen that will fill her hive with brood while there is not enough fielders to clog the combs with honey; this will insure a rousing colony for a later flow if there is one. So handled there is no question about results, if there is the nectar to be gathered; you master the swarming so that you can go when you please, and it will get the honey if it is to be had. Haul in your crop as it is finished, as you make trips from week to week, and after the gathering is over, scrape, extract, case, and market.—*Beekeeper's Review*.

Luther Burbank and Better Honey Plants and Bees.

By Prof. A. J. Cook.

In the Popular Science Monthly for August is a very interesting article on this great savant, by one of the most distinguished scientists of the world, Prof. De Fries, of Europe. It will be wise for all to read it, as it is full of valuable suggestion.

Burbank has originated more valuable varieties of plants than any other man in the world. The traits which have made Burbank so phenomenal in his line of experimentation are—

1st. Vision. He has a quick eye to see valuable characteristics in plant or in flower.

2d. He has a great range of experience, which assures him that with enough labor and patience he can emphasize any desirable trait and build up around it other traits which can be introduced by discriminating crossings with other closely allied varieties, or possibly species, and thus may hope to originate almost any ideal, providing this ideal has a basis of fact in existing varieties or species.

3rd. He has unlimited patience, and is quite willing to work and to wait. He is said in one case to have destroyed a half million plants, but secured one that he had wished for and planned to secure. Often he destroys hundreds of thousands. Burbank believes that hereditary hangs upon all the environments of all the ancestors. The more varied the ancestors the more diverse the environments; the more probable the extremes of variations the greater possibility of desirable varieties. One who has vision to see what is valuable and desirable, to note germs of such in existing individuals, and possessed of infinite energy and patience, may hope and expect a success equal to anything that Burbank has attained. There are realms yet to conquer in these directions.

BETTER HONEY-PLANTS.

To the beekeeper this line of research possesses practical importance in two directions. We need better honey-plants and better bees.

What a reputation Wisconsin and portions of New York have attained for their excellence as honey-localities. The basswood that has given this enviable fame is rapidly going. What is to take its place? No doubt red clover is rich with delicious nectar, but is for the most part too deep in the long flower-tubes to make this a good or desirable honey-plant. Some Burbank will yet see some plant like flgwort or poinsettia rich with finest nectar, which he will build up into

plants excellent for forage.

We must have plants equal to white clover, linden or sage, for honey, and to red clover and alfalfa for hay or pasture. Alfalfa is not perfect as a honey-plant, though it is very superior as a forage plant. No doubt a Burbank could secure a variety that would yield nectar in all places and under most trying conditions of drouth and climate.

A SUPERIOR HONEY-BEE.

A few days ago it was my great pleasure to examine the bees on the grounds of the Department of Agriculture, with Dr. Phillips, who has them in charge. I was specially interested in a Caucasian queen. She was large and fine in form and shiny black in color. Her bees were much like the common black bees, yet were exceedingly amiable. We opened the hive with no use of smoke. It had rained hard nearly every day for a week—and we know such weather is not conducive to storing, and so usually makes cross bees. We knocked against the hive and brushed the bees rudely, even pressing against them with the flat of the hand, yet they made no sign of anger, nor gave any irritation or wish to sting.

Dr. Phillips is planning to work for better bees. He has in these Caucasian bees all that we can wish for temper; and as they are of the black type, they will doubtless give a very white grade of honey. We will hope and believe that Dr. Phillips will be able to unite with these peculiarities such other desirable traits as the long tongue, activity and industry of the best yellow races. Burbank would affirm that we had in these bees every requisite to success. That it will be possible to keep all the good now found, and even to emphasize this, and by wise crossing and innumerable trials, we may brace these characteristics with others that will fashion the ideal—the perfect bee.

There is one feature of these experiments that it is worthy of mention: One reason that Burbank has won his phenomenal laurels in plant-breeding comes

from the fact that after crossing he can plant thousands of seeds, and thus try almost infinite experiments, and get results in a very short period. In most cases of breeding in animals the work is slow and results tardy of appearance. With bees the case is different; we can get results with great promptness, and each year may get valuable returns, or at least may push work to completion. *American Bee Journal.*

CAPPINGS

Nothing surpasses the old standby method of introducing queens which is to put the queen in a wire cage between the combs. In twenty four hours examine to see if the bees are friendly enough to pass food into the cage. If they are, let the queen run out of the cage on to a comb brood amongst the bees. If she moves off regardless of the bees and the bees pay no attention to her she is accepted all right; but if she stops as if caressed by the bees, or if she remains still for some other cause she should be returned to the cage for another twenty-four hours.

Where wax is being striven for, it is well to allow the combs to be completely sealed over, also not to allow the bees to build thick combs. The honey ripens faster, and there is proportionately more wax in thin combs. If the combs are cut out and put in muslin bags to drain out the honey, one man may manage a great many hives (say 500). There is not the mussy, tiresome job of uncapping and the still more tiresome task of turning the handle of an extractor. Some may say, "But what about the diminished yield?" How do they know that the yield is less. As a matter of actual experience it does not appear to alter the yield of honey.—*Exchange.*

Comb foundation in section honey is accountable for much of the distrust of

its purity. The public know some such thing exists and when they cut through a tough strip along the top of the box or get their teeth into the tough substance they are not slow in thinking, "artificial product." It may be quite true that foundation can be made as thin or thinner than the base of natural comb, but it is not friable like that. It will mean more or less of a revolution in methods of comb honey production to dispense with foundation, etc., and the big manufacturers of it may do some vigorous fighting against its abandonment for that purpose. The objection to its use is no new thing but the leading papers have certainly not fostered the opposition. In plain English, the bee-keepers have had preached to them a lot of things which have been to their injury and they are now feeling the evil results of following the advice. Let us see if the purveyors of these harmful doctrines now have the courage to openly acknowledge their mistakes—if that is all they are, as we hope—and strife to correct the evils. It may cost them some prestige—which means money—and it may curtail the sale of some goods, but they cannot serve mankind and Mammon at the same time.—*American Beekeeper.*

The oldest records we have of the use of honey as food come from Palestine, the land of the Bible. It was a staple article when Joseph was sold into Egypt, and references to it in the Bible are numerous. Even to-day the sales of honey are noticeably greater in our large cities during Hebrew holidays, as the chosen people use large quantities of it. Its keeping qualities suggest the manna of old, and many other ideas combine to make it an object of special regard to devout Jews. The following lines, copied from the *British Bee Journal*, may prove to be interesting in this connection, although the matter first appeared in a French journal, the *Bee-keepers' Bulletin of the Somme*, to put it in English. It will be noticed that the Arabs have made no improvement in the handling of bees since the year 1.—Up to 1875, bees were

in a wild state in Palestine, as swarms settled in cavities of rocks and hollow trees. The natives used to look for them and destroy them for the honey, which has always been a staple article of food among the Arabs. A few of the more intelligent had hives in the form of cylinders made of clay fine cut straw, and the bees in these were destroyed to obtain the honey. Things changed in 1857 when a European family (the Baldenspergers, of Alsace, commenced bee-keeping in movable-comb hives. Many of the natives have adopted this system but have not yet obtained as good results as the Europeans, either in quantity or in quality.—*Gleanings*.

Extracted honey, just as it is taken from the comb at the height of the season, does have a peculiar aroma that one does not ordinarily find after it has stood for a time in open cans; possibly this aroma is due to the unripeness. There are many who prefer comb honey to extracted, urging that the former is sweeter, or has some quality about it that makes it taste better than the latter. Assuming for argument's sake that honey fresh from the comb has a certain aroma that honey long from the comb does not have, there is just one difficulty; and that is, how to get rid of the scum and dirt. So far straining does not seem to accomplish the result satisfactorily. For that reason large settling-tanks have been almost universally regarded as a necessity by extracted-honey producers. Now, then, if the honey be sealed in cans immediately, it appears to me that the scum and settlings would be more objectionable than the loss of a small amount of aroma. In other words, the looks or appearance would be a much stronger factor in selling or not selling the article than the flavor.—*Exchange*.

The following sensible remarks are from the "Progressive Beekeeper," U.S.A.:—"Advertisements in some of the farm papers and general newspapers urge upon city people, villagers, farmers,—especially women folk—to go into bee-keeping. They tell how profitable, fas-

cinating and healthful it is, and how easily it is learned. I suppose it may be "business" for the manufacturers of supplies and the publishers of bee-journals, to thus help to make additions to our ranks, but if this thing is carried too far we will soon have to start another League. Seriously, it seems to me that it would be better if the publishers of bee-journals devote all their energies to the betterment of existing beekeepers, instead of trying to augment their numbers. It does not seem like a kindness to either the new recruits or to old hands when we urge people to enter beekeeping at the same time that we are donating hundreds of dollars to try and lift the honey-market even to a normal plane."

According to the "Bulletin de la Chambre de Commerce de Smyrna" beeswax is produced in considerable quantities in Asia Minor, and exported from Smyrna to different parts of France, Italy, Austria and particularly Russia. Many bees are kept in the calm valley of the interior, and a sort of bee fever is raging among the natives. According to statistics of the last five years, over 400,000 pounds of honey is exported yearly from Smyrna. It is said that the wax produced is of the very best quality, the beekeepers taking great pains to purify it. It is exported packed in double sacks of 200 pounds each.

We examined and priced sections in London last month—sections from one half to two-thirds filled, weeping sections, unglazed and unattractive, being offered to the public at 1s. 3d. each. In Ireland where the supply is greater and the demand less, the Irish Bee-keepers' Federation, Ltd., are paying 6½d. wholesale for first quality sections, and are marketing them across Channel with a small margin of profit. In Dublin, we understand, the market is at present impossible, the unwise having rushed their honey for sale there at ridiculous prices.—*Irish Bee Journal*.

Heather honey has been a total failure in most parts of Scotland this year.

PRICES OF HONEY.

Maitland Mercury.—Honey, $1\frac{1}{2}$ d to 2d. per lb. Small tins $1\frac{1}{9}$ to $2\frac{1}{-}$.

Melbourne Australasian.—Honey.—The market continues unchanged. Prime honey is worth 3d.; choice lots fetching $3\frac{1}{2}$ d. Cloudy and dark lots are quoted at 2d to $2\frac{3}{4}$ d. Beeswax is worth $1\frac{1}{10}$ to $1\frac{1}{1}$.

Melbourne Leader.—Honey.—High class garden honey is sold at 3d., while the finest commands a shade more; $2\frac{1}{2}$ d to $2\frac{3}{4}$ d is offered for congealed varieties. Beeswax.—Prime is quoted at from $1\frac{1}{10}$ to $1\frac{1}{1}$, and medium at $1\frac{1}{-}$.

S. M. Herald.—Honey, 60lb tins, choice extracted $2\frac{3}{4}$ d to 3d., good $2\frac{1}{2}$ d, inferior 2d per lb. Beeswax—Dark $1\frac{1}{10}$, prime $1\frac{1}{2}$.

HONEY.—

With shorter supplies the market has improved, and 3d per lb. is now obtainable for really choice quality. Medium and inferior lots are still dull of sale from $1\frac{3}{4}$ d to $2\frac{1}{4}$ d per lb.

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BEES IN A RAILWAY CARRIAGE.

AMUSING INCIDENT.

The "Globe" correspondent at Berlin says that a delightful comical episode has taken place on the railway between Papenburg and Meppen in Hanover. An enthusiastic beekeeper set out with a basket containing some of his choicest bees, which were to be shown at a bee show. On taking his place in the train, the bee fancier put the basket under the seat and wrapped his legs around it. During the journey the bees began to be active, probably due to the warmth of the encircling legs, and finding their way out they crawled under the ends of their master's trousers. The man became uneasy, and his twitchings and the way he scratched his legs aroused the suspicions of two female fellow-passengers, who withdrew gradually into the furthest corners of the carriage.

At last the man saw that the vagaries of his bees must cease; so he set to work to try to get them back into the basket. The bees refused to listen to all the coaxings of their master—they were enjoying liberty and, wearied at last by their master's insistence, they boldly stung him, and then attacked the two ladies, who, in despair, pulled the communication cord. The train was stopped at once. The guard soon appeared, and on learning of the busy bees undesirable activity, in fact, they were showing signs of wishing to swarm in their owners' trousers, advised the bee-fancier to betake himself to an empty compartment, so that he could "have it out with the bees all to himself."

No sooner was the man alone in the compartment than he tore off his trousers turned them inside out, and began to shake them violently inside out, and began to shake them violently out of the window. Unluckily, a telegraph pole caught the garments, and snatched them out of the man's hands, and away went bees and money. At the next station the stationmaster asked for the passenger who had caused all the trouble, and found

him trying to hide himself, and refusing to leave the carriage. At last the unfortunate man was provided with a rug and, wrapping it around him, he followed the stationmaster to the latter's office. As he had no money, he was compelled to pawn his watch and new umbrella so that he could buy a new pair of trousers: and then he started to walk along the line homewards, in search of his trousers. The joke of the countryside is to ask the bee-exhibitor for advice as to the really right way to carry bees by train.

HAULING BEES WITHOUT CLOSING THE ENTRANCES.

The matter of hauling bees without closing the entrances has been mentioned once or twice in *Gleanings*. I once bought a lot of bees sixteen miles from home. When two or three miles on the way back with them, after having passed over some pretty rough roads I noticed that some of the old hives had come open to such an extent that the bees were beginning to come out and cluster on the outside of the hives. I was alone, the team was full of life, and entirely unused to bees; and for the time I thought I had a large sized piece of trouble on my hands. After a little deliberation I concluded to let them alone, and I drove all the way home without a particle of trouble from them. They were black bees. Hybrids might have behaved differently. Probably, though, any bees that had been confined for a time while being jounced over rough roads would be perfectly gentle thereafter. I should not consider it safe though to start out with open entrances, though a thorough smoking might make it all right.—*Writer in Gleanings.*

Honey-dew is produced late in summer, and on fruit-trees its production depends on the success of the fruit crop. With an abundant crop, no honey-dew; with a total or partial failure of the fruit crop, honey-dew.

✻CORRESPONDENCE.✻

W. G. T., Munmundi—Bee matters are very dull. The bees have been nearly starved out. I have lost a good many hives. The apple trees are out in bloom, and will no doubt give the bees that are left a good start. Very few bees are left in this district now. Dry seasons and ringbarking are, I suppose, the reasons for the death rate being so high. We want 5 or 6 inches of rain very badly here.

J. R. C., Cairnbank, via Wolesley, S.A.—For cold and inclement weather the past winter and spring stand unbeaten in my life's experience, and it is marvellous how the bees have done so well. Every hive is strong, plenty of brood and surplus honey; have been extracting quite a little harvest, averaging about 30 lbs. per hive, which is highly satisfactory considering the wintry weather we are having this spring. I enclose another cutting from the South Australian *Advertiser*. The idea of eucalyptus flavoured honey seems to me to be a bogie story, unless the eucalyptus was added after the bees had finished with it. No doubt gum honey, as other varieties, has a flavour of its own, but I can never detect anything suggestive of eucalyptus about it. Wishing you a Happy New Year.

J. S., Townsend, Maclean, Clarence River—I am pleased to say that although the season has not been at the best, yet we finish the year better off than we commenced it. I trust the coming year may be one of happiness and prosperity to you and yours, and also to the "Bee Bulletin" and the beekeeping industry. The honey season is very late this year, but now we are having good rains and trees are blooming, especially Apple tree, Box not being out yet. I have been overhauling my hives (I only keep 20), and find that they came through the winter very well. During the 6 years I have been living here I have only lost

two colonies, and these were for want of attention as they became queenless. I knew it but was too busy to attend to it at the time, but I do not think many beekeepers can beat that. As I mentioned before, my hives are constructed on a different principle than most hives in New South Wales. Here is something which may be useful to some other beekeepers. I have made stands for my hives (which stand on legs, each separately), out of Acetylene Gas waste. I made a frame of boards 5 inches deep, and larger than the hive, and smaller at top than bottom. I mixed the waste with sand same as for ordinary lime mortar. It wants clean, sharp sand, and with stones and mortar I filled the frame same as in rubble masonry, and levelled the top with a staff like plasterers use. When it had set a little, I lift the frame up, and when dry I plastered with plaster made of the waste mixed with very fine washed sand and hair, and smoothed with a trowel; the result is a slab like a slab of concrete, level and smooth, at a very little cost. I thought others may be glad to know of it.

BEES IMMUNE FROM DISEASE.—When a fatal disease has had wide range and long prevalence, and individuals never exposed are few or none, nature gradually builds up an immunized strain. Thus, Prof. Harrison says, the sheep of Algiers have become partly immune to the disease called anthrax. He also thinks the bees of Europe have become partly immune to foul brood, on the same principle.—*Exchange*.

Honey imported into the United Kingdom:—1901, £42,837; 1902, £27,26; 1903, £30,349; 1904, £29,127.

THE PAID-IN ADVANCE SUBSCRIBER.—A country newspaper speaks of a man who always paid for his paper a year in advance. As a reward, he was never sick in his life, never had a corn on his toes, or the toothache; his potatoes never rot, the frost never kills his pears, and his wife never scolds.

It has sometimes happened that soldiers have been put to flight by bees. Lord Roberts, in his 'Forty-one years in India,' tells the following amusing story: "A curious incident happened at the Alumbagh. I was employed inside the enclosure, when all at once I heard a noise and commotion some little distance off. Getting on to the roof, I looked over the plain, and saw our troops flying in every direction. There was no firing, no enemy in sight, but evidently something was wrong, so I mounted my horse and rode to the scene of confusion, where I found that the ignominious flight of our troops was caused by infuriated bees, which had been disturbed by an officer of the 9th Lancers thoughtlessly thrusting a lance into their nest. There were no serious consequences; but the Highlanders were heard to remark on the unsuitability of their dress for an encounter with an enemy of that description."

I am keeping bees now mainly for revenue. But just as I have gotten the business up where there ought to be considerable revenue in it, the revenue has fallen out of the business. The bee supply makers and dealers, the commission men and the railroads, get the revenue. I work for nothing and board myself. What am I going to do about it?—*Progressive Beekeeper*.

Beeswax is quoted in the apicultural press at from 25c to 30c per lb., and yet there is a market in cities and most large towns for pure wax at 50c a pound and upwards. Many diversified industries use it, such as manufacturing jewellers, leather workers, tailors, etc. It seems a greivous loss for the producers to sell their wax for 30c, and pay the freight on it at that, when a little effort will make a market yielding from 64 to 100 per cent. more. For twenty and more years I have sold all the wax I could produce at 50c a pound, and never had to seek a customer, they seeking me. Many industries using wax cannot use a substitute, nor an adulterated article, and they are

often seriously hampered by the difficulty of securing pure wax.—Writer in *Beekeepers' Review*.

Very often extracting has to be deferred until after the honey-flow, or during an absolute dearth of honey. It is then that robbing will go on at a furious rate, for it is simply impossible, in opening the hives, shaking and brushing the combs, to prevent robbers from getting a sip of honey now and then—just enough to put the whole apiary in an uproar. I feel confident that this robbing nuisance can be entirely overcome. Take ordinary cheap honey, and dilute it considerably with water. Put it into two square tin cans two days before extracting is to be done. I recommend in this case the use of honey rather than syrup, so if some of some of the fed product goes into the combs that are extracted it will do no harm, because it will be honey just the same. In the two days intervening the bees will have found the feeders and will get nicely started. Probably the two cans of feed will last them for the two days. Two cans more, at least, will enable the apiarist to extract all of his honey; for the would-bee robbers have become accustomed-to the feeder; and if some few bees should steal a little honey from the combs it will not cause a *furure*, because other bees will naturally suppose it comes from the feeders. The net result of this is, that 100 or 150 lbs. of honey borrowed from the bees enables one to take from them several tons of extracted honey in a dearth.—*Exchange*.

Never stand in front of a hive or in the way of the flying bees; perform all operations quietly and without haste; do not approach the bees when sweaty; select a time to work with bees when the weather is fair and the bees freely at work; use smoke moderately, but always use it. Wear a light bee-veil but no gloves; have clean hands; brush no bees; when stung, brush away the bee and remove the sting; do not breathe on the bee; especially vicious colonies feed before and after any operation. When

these rules are followed and a colony can not be controlled easily, supplant the queen with a better one.

To keep down grass in bee-yards and walks use calcium carbide.

Concerning the theory that the formic acid of honey is deposited in the cells by the bees stinging through the cappings, the analysis and experiments of Von Planta are recalled. The amount of formic acid deposited, or rather ejected, when a bee stings, is about 200 times greater than what is found in one cell of honey. Sugar syrup, suspended in a wire cage placed in a strong colony, acquired a distinct taste of formic acid, but far less than the honey found in the cells. Sugar syrup fed to a colony of young bees that did not fly for eight days was found to contain, when capped, as much formic acid as sealed honey.

Not being what is commonly called a "freetrader," may I be allowed to express my views on the ideas set forth by "Desunt Cetera." I very much doubt if 2s 6d a hive per annum will cover the cost of feeding bees, new frames, foundation, etc., and in the case of comb honey, sections; but even supposing it will, surely the profit per cent. cannot be reckoned without taking into account the initial outlay, and if the cost of a good stock of bees with hive is 30s., and a beekeeper is fortunate enough to get 50 lbs. of honey per hive, taking one with another, and bad seasons with good, and to sell this at 6d per lb., not 5d., making 25s., then I take it the profit on his 30s. invested would be nearer 80 per cent. than 800. It must be remembered that the beekeeper only gets any return at all for his labours once a year, and this is not like the shopkeeper, who is continually turning his money over.

Honey-salve for sores on horses and other animals:—One part each of rosin, honey and wax; 18 parts fresh lard; melt all together slowly over a moderate fire.

All humble bees that hibernate are queens; the workers and drones do not live through the winter. Humble bees are easily distinguishable from all other kinds of bees, except the closely allied genus *Psithyrus*, by their general appearance. The characters by which the British *Psithyri* may be most easily distinguished from the British *Bombi* by those who are not entomologists are (1) the slightly smoky (not clear) wings; and (2) fewer hairs on the abdomen. I have found that the best place to search for the hibernating queens is on the outskirts of wood, or in banks covered with short grass, where the ground has been uncultivated for years.

SAINFOIN HONEY.—Has been boomed for honey. An American paper speaking of it says:—Our hope of honey from sainfoin in this country is not very good. Plant itself a failure, for one thing—all except the try, try again. Even in Europe much the greater proportion of territory, if I get the idea correctly, yields scant nectar or none. Just one small province of the numerous provinces of France is greatly noted for its sainfoin honey.

The State of Texas, in America, has over 400,000 colonies of bees. The amount of honey produced by these is only about 5,000,000 pounds, that is, the average per colony is only about twelve pounds, due to the fact that they have so many little one-horse beekeepers and box-hive keepers, although they have some of the very best you can find anywhere, and some of them with large apiaries and producing lots of honey. Now, figuring on these colonies at that low average, they have an output of more honey than any other state, and they claim that Texas is in the lead in the output of its honey product. If that is the case with such a low average, where would Texas be with the average raise, which can be done because they have the country down there.

Bran is the very best substitute for pollen for bees.

The Texas Agricultural College has about four acres of land, in two fields, put into cultivation for the testing of honey-plants, and have planted a good many different honey-plants that have been written about, and that they have run across, to see as to their value and whether it will pay or be profitable to plant trees. They have tried as many as forty different kinds for the last two years—forty-one different kinds this year—and have found only a very few adapted to the conditions of Texas that will be profitable to plant for honey; these at the same time are planted for forage. Besides, many of the experiments that have been carried on show that it would not pay to raise any of these others for honey alone. Further experiments will be carried on along these lines. They have been looking around also for honey-plants or shrubs from further west, from the more arid regions, with the view of planting these in localities where the natural honey-flow is scarce. If we could propagate plants from other localities, in other words, put up an artificial yield of honey, it would increase apiculture, and we could have honey-producing localities where no honey is produced now. This will take a good deal of work and time.

Of West India and tropical honey much is dark and inferior. Two years ago I was at the office of the National Biscuit Co., Chicago, and was there shown samples of honey from a number of tropical countries. There was not a sample in the lot that a northern honey-buyer would call first class. The reason for this is that the honey was stored in brood combs. I know it is true that old brood combs will darken the honey; but I also know it is true that a smaller per cent. of Cuban honey is produced in old combs than that of the North. For instance, the honey produced from the "cajas creolla" by the native Cuban is produced as it is cut from the hive, combs and all. But I should like to have someone prove that this honey ranks any better than

that produced by American methods. The bellflower and a very few other plants produce beautiful white honey. The wax produced when the bees are working on the bellflower is as white as tallow: but later, when the bees are working on mango and romerilla bloom, not only is the honey dark when gathered, but the comb built at that time is yellow. I have seen combs built on the south coast that were a bright red colour (as was the honey that was being gathered at that time). As to queen-excluders, when the extra-fine honey of Cuba is being gathered (from the bellflower) there is no need of an excluder to keep the queen from laying in the supers. The trouble is to get any brood at all. I have gone through colony after colony, and found only three or four frames to the hive that had eggs in them.—*Gleanings*.

I find that the honey-bee has a great many enemies. I met an old lady on our streets a week or two ago who told me that my bees were eating up her peaches. I told her I was sorry for it. She said the bees eat a hole in a large peach and filled up the hole with honey. I thought she ought not to complain, for she then surely had peaches and honey, which is said to be good for cramping colic! The next thing we hear will be that the bees are destroying the potato crop.—*Exchange*.

We have been told for years to cage a queen for several hours, or days, in the colony to which we wish to introduce her, and the reason given is that the queen may acquire the same *scent* as the colony. It would seem that there is some odour about a queen, as, if a cage is left in the open air, after it has contained a laying queen for some length of time, flying bees will gather about and cluster upon it, the same as they will upon a queen, but whether this odour is different in different colonies, or with different queens is an open question.—*Exchange*.

Please send us the names of beekeepers who do not take the A.B.B.

One of the principal reasons that the more colonies you have in a location, the less honey you get per colony, is not because there is not enough honey within range, but because many bees visit the same blossoms, only to find that some bee just preceding it has sucked all the honey, and still there is just enough scent of honey to attract them, and thus thousands of bees visit flowers one after another, only to be disappointed; whereas, if there were few bees in the same field, each bee would have to stop on only a few flowers when it would have a load, without having exhausted either strength or time, and both time and strength count heavily during a flow of honey. Beekeepers are beginning to realize the importance of smaller apiaries and more of them.

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