The Australian bee bulletin. Vol. 16, no. 1 April 30, 1907

West Maitland, N.S.W.: E. Tipper, April 30, 1907

Registered at the General Post Office Sydney for transmission by post as a Newspaper

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.

VOL. 16. No. 1. APRIL 30, 1907. PER COPY, 6D.
Per Annum 5s, booked 6s 6d, in Australasia, outside N.S.W., add 6d. postage

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

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EDITOR & PUBLISHER, West Maitland & Willow Tree.

MAITLAND, N.S.W.—APR. 30, 1907.

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

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With this issue the "Australian Bee Bulletin" enters on its 16th year of publication. Index to the volume ended accompanies it. Get your volumes bound.

Aromatic spirits of ammonia is said to be the best stimulant to administer in case of bee stings.

Cold favours granulation; so you may hasten it by keeping in a cool place. Occasional stirring also helps.

Beeswax is much more useful than parafine. It gives a dry gloss, where parafine would make a greasy daub.

The tariff in both U.S., and Cuban honey going into Canada is 3 cents a lb. That from Jamacia 2 cents. And yet Cuban honey sells in Canada at 7 cents.

Before starting an apiary get some idea how many hives the neighbourhood will support, and also find out how many hives are in that neighbourhood now.

The word "honey" occurs in 22 of the books of the Bible. "Honey" occurs in the authorised version 52 times, and "honey-comb" 9 times.

Mr. Isaac Hopkins estimate that in ten years' time there will be 100,000 profitable bee hives in New Zealand, giving, in a poor season, over 20,000 tons of honey.

Last year an American beekeeper produced and sold 7000dol. worth of alfalfa or lucerne honey, but he had to feed 4000dol. worth of sugar, so that, with

his labour, his 2000 colonies did not net him so large a sum after all.

People in the United States, while ardent protectionists, are willing that timber should be admitted free of duty, as there should be less run in the timber of the States.

We have a friend who has a garden at Quirindi. He asked us to look at a peach tree which had some splendid fruit on it. On some of the fruit were clusters of three or four bees. Looking further we found there was a breakage; the bees were sucking a juice from same, but inside was a species of black beetle, half an inch long, which had evidently been the cause of the puncture, and was feeding on the food itself.

D.B., Cooktown, Queensland:—Enclosed you will find an order for 11s. for *Bulletin*, trusting it will come to hand all right. You might like to know how things are looking in this part. We had a splendid season for stock, I mean cattle and horses, but not too good for bees, as it rained for about four months almost every day. Just now the weather is very hot, with rather cool nights. Our honey season won't start for a couple of months yet. We had a good season last year. There is no cultivation or ringbarking in this part of the country, and won't be in our time. I am living 30 miles north of Cooktown. There are no bees further north.

PUBLICATIONS RECEIVED.

"The Native Companion," an Australian monthly magazine of literature and life, very neatly got up, published by T. C. Arthur, 49 Elizabeth-st., Melbourne.

"Bulletin No. 18," of the New Zealand Department of Agriculture. The subject is—Bee Culture—1. Advice to Beginners; 2. Bees in relation to flowers and bee culture, by Isaac Hopkins, apiarian.

IN REPLY TO MR. GARRETT.

When I read his question in a previous issue, I at once guessed that he had something else upon his mind, and as I did not give him a chance, thus his reply, page 272, which is no reply at all, but a series of accusations irrespective to his question. Fortunately, for me, these can be easily disposed of—to his disadvantage.

Mr. Garrett says he is not personally acquainted with me, nor a customer of mine. Good. Then he goes on to relate an episode in the history of my early domicile in Australia, namely, my visit to his father's place at Glenbrook; but does not relate the full facts, perhaps because he does not know them, as he was not there, or else he thinks I have forgotten them after these many years. The facts are:—On arrival at their place I was met by two ladies, who told me that Mr. Garrett was not at home, but that they knew all about bees and would show me them, which they did. In looking at the bees they told me that a German had started some time ago with bees in Parramatta, but that he knew nothing about bees, and so forth. I confess it took me all my time to avoid bursting out in merriment when I heard all they knew about me, but I kept serious. When I wanted to go away, after being offered a cup of tea, etc., they asked me my name. Now, dear readers, which of you would have had check enough to reply: My name is W. Abram, manager of the Italian Bee Farm, the same you have so generously brushed down just now! Thus I said I lived near Sydney, but that they would soon hear from me again, and went away, glad of a whole skin. Then, having to wait at the station, and the stationmaster, commencing to talk to me, I could not refrain from mentioning some of my visit's experience. And now, whenever I think of it, I cannot help smiling a smile.

I have hundreds of visitors each season, but I never ask any their names if they do not give it. Why should I? or why should they give their name? But

my case was different at Glenbrook. Had these dames not given that German such a character, there would have been no difficulty to obtain my name, of which I have no reason to be ashamed of.

The next point is where is Mr. Garrett's first small bee farm now, and where is his second? Gone out of existence, like others. And what an apiary that was at the time my visit at Glenbrook! No wonder the German at Parramatta got the reputation he did in spite of Garrett's.

Another serious mistake of Mr. Garrett's is when he states that two of the "syndicate" were "Alfred Bennett, of the Sydney 'Evening News,' and Mr. McDonald, jeweller, of Sydney." Now, I would have had no hesitation whatsoever to be associated with the gentlemen he names, as they both have earned and enjoy the highest esteem as citizens; but as a matter of fact neither of them had any interests in the establishment of the bee farm in question. Surely, one would expect that anyone before writing publicly would ascertain positively what he is writing about, especially when assailing such true gentlemen as he names.

It is not now my duty or business to assist Mr. Garrett in his errors. As for myself, neither Mr. Garrett nor any of his ilk can now rob me of my deserves, no matter how they twist and turn themselves. At the same time I regret to have to put Mr. Garrett into the unenvious position he now stands in.

Mr. Peterson, an old friend of mine, had ample opportunity to speak for himself, if he so desired, and it does not speak well for Mr. Garrett's argument in any case; but all the same he cannot trifle with me, as he now finds to his regret.

In conclusion, I may state that I have no time to take further notice of personalities.

Mr. H. L. Jones, of Goodna, Queensland, has now set matters at rest as far as he is concerned, only he cannot show us the satisfactory results. Mr. Carroll has achieved that the first modern bee farm in Australia did. Of course, Mr. Jones being small, can hide his lights under a bushel better than I can, and does it, the more so as his bees are the ones that gather honey by the tons, and, when that do not wash, well he has got the long tongue bees to fall back upon; but Mr. Jones is most unassuming, I admit.

W. ABRAM.

Beecroft.

AGRICULTURAL SHOWS.

The following were the apicultural prize-winners at the Mudgee Show, held on March 22:—Best exhibit in bee culture, W. Shaw; best honey, 3 bottles or jars, pupils Burrundulla School 1, H. Cox, 2; best honey, 3 frames, any size, J. Shaw 1, W. Shaw, 2; best beeswax, 5lbs., R. H. Taylor 1, H. Cox, 2; best beehive, locally made, W. Shaw. Special Prize for the best exhibit in bee culture, W. Shaw.

Quirindi Agricultural Show.—E. Tipper, 6 2lb. glass bottles, 1; honey display, E. Tipper, 1.

The following honey exhibits were at the Royal Agricultural Show in Sydney in the District Societies' Competition:—

Tumut, Grenfell, Wagga.—Magnificent trophies were shown by Messrs. Thos. Halloran and W. T. Annison, of Wagga, Thos. Murphy, of Koorawatha, and Davis, of Tumut. Full points were scored in honey.

Illawarra.—Some very attractive samples were contributed by the Bacchus Marsh Company; also by Mr. King, of Broughton Vale.

A splendid show of well-selected samples was made by Mr. J. J. Callaghan, North Yass.

The exhibits in the Bee and Honey Pavilion were less numerous than on previous occasions, and especially noticeable was the scarcity of comb honey. Another matter of striking notice was the absence of Mr. W. Abram's trophy, which for so many years was the feature of the pavi-

lion in the past. To patch up the square Mr. Trahair not only occupied his usual non-competitive stand, but he also made a small stand in the vacant place. Messrs. Seabrook and Roberts, being the only competitors for trophy, the former got first, and the latter second prize, and the judges, Messrs. A. Gale, J. E. Taylor, and W. Shaw, awarded a special prize to Mr. Trahair, as also to Messrs. A. Hordern & Sons, for their large display of bee goods, etc. Mr. Trahair acted as sole steward, and also had charge of the pavilion. Liquid honey had the keenest competition, but two exhibits, one water white, the other in golden, were disqualified because these bottles had glass screw tops instead of metal screw tops, as per schedule, but the glass screw tops appeared decidedly superior to the tin tops.

Will Bee-Keeping Cease to Pay?

Whatever may be the immediate circumstances of bee-keeping as an industry, there are not wanting indications that a time may arrive when it will cease to be remunerative. The prices have declined considerably of late, and many bee-keepers have a difficulty in finding a market. The fact seems to be that there is but a strictly limited market for honey. The people do not regard it as a necessary article of food, and even at a low price consumption does not appear to be stimulated in proportion to the increased production. If the number of bee-keepers were multiplied by three, with a corresponding increase in the production of honey, it looks as if the market would be entirely flooded. It is clear that something should be done to induce the people to partake of honey more largely, otherwise in the near future there will be little or no profit in bee-keeping, though as a hobby it will be always enjoyable.—W. J. Farmer, in "British Bee Journal."

A lot of valuable matter unavoidably held over.

SOME NOTES ON QUEEN-MATING.

The mating of young queens in large nuclei, or stocks, cannot be held under such close observation as in small hives. Therefore, until last season, I knew practically nothing of many interesting points that must be familiar to all observant queen-raisers. And, being desirous of learning all I could on the subject, I may say that curiosity, coupled with some feverish anxiety for success, induced me to examine my little mating-boxes at regular intervals after being stocked. In three or four days the queen was generally to be found on the third front frame; but on the fifth or sixth day and onwards she was invariably found on the second frame, which latter was found to be carefully prepared for breeding by the workers. Stores of pollen and honey were arranged round the top and corners, leaving the centre clean and empty. Previous to being mated, the young queens were perfect "She-Mercuries" in their movements during observations. After mating a more matronly gait was, however, adopted by the young queen, and a marked distension of the abdomen was noticeable, but the behaviour of the workers was chiefly remarkable for their great desire to hide her from all observation. When there happened to be a day suitable for mating it was a matter of much interest to observe that the queens were politely invited by the bees to "go forth"; indeed, in some instances they were literally pushed off the flight-board. The "home-coming" of the absent queen was apparently awaited by the workers with an anxiety that seemed to find a parallel only in some ducal return from the honey-moon. The general joy at the outgoing of the royal virgin on her marital flight soon gave place to an expectant calmness worthy of a philosopher who views an impending crisis of his affairs with stoical indifference. I have seen three varieties of the issue:—(a) If the young queen returned ready to fulfil her maternal duties, her arrival on the flight-board was the

signal for a buzz of excitement that seemed to give relief to the pent-up feelings of the watchers, who soon re-enter the hive, when the taste of industry begins. (b) If the queen returned unmated she did so timidly, as if afraid to enter the hive. She would dart here and there, eager to escape the searching attentions of her future colony, some members of which would resolutely bar her way and seek to drive her off again. At last she would alight at some unguarded spot and make her way within to await some more favourable opportunity. (c) I have seen a promising young queen come forth and take flight, effulgent in the light of youth, with no hesitancy in her movements, and after making a few majestic circles in the air around her little homestead vanish in the azure blue of heaven. The same general joy was there, followed by the confident calm, but as the minutes passed quickly away, and there was no sign of the absent one's return, a kind of subdued alarm was distinctly noticeable. The panic that ensued was plainly accompanied by the most frantic expressions of woe as a determined search was made around the front of the hive.

Nature is said to repair her ravages, but not all. In this case the sequel can only be contemplated as a lingering death without hope or joy.—Writer in British Bee Journal.

VICTORIAN APIARISTS' ASSOCIATION.

Annual Conference.

I beg to draw the attention of all beekeepers to the 8th annual gathering of our Association. We have met regularly during each year since May 1900, and each Conference grows in interest and importance.

The Conference to be held this year will be held on June 5th, 6th, 7th, and days following, at the Federal Coffee Palace, Melbourne.

All beekeepers should make an effort to be present at this gathering, which promises to be something of universal interest. I am endeavouring to work up practical demonstrations on beekeeping subjects.

The programme is now being put together, and contains some of the finest subjects ever put on paper, all of practical benefit to Australian beekeepers. The following few items will give a general idea :—

Subject 18. Review of the position of the Beekeeping Industry.

(a) Increased Consumption.

(b) Cheaper Production.

(c) Systematic Select Breeding.

20. How to obtain good combs. Combs will be shown.

9. A proposal to hold a Honey Fair and Beekeepers' Field Day in 1908.

10. Breeding non-swarming strain of bees.

17. Honey evaporated versus honey untreated.

And various other items, many of them to be given by ocular demonstrations.

Beekeepers having any original appliance should communicate with the Secretary, as it is desired that a collection of new ideas and designs should be shown at the Conference.

Look out for next issue, and do not forget to write for cheap railway fares voucher (giving name of station that it is intended to start from) to the Secretary—

W. L. DAVEY.

Thoresby Grove,
Ivanhoe.

What Repeated Melting Will Do.

I had almost finished rendering my own wax, consisting of cappings, old combs and a quantity of old slum gum, and there were 240 gallons, or about 1,200 pounds. There were about 70 gallons of honey that was in it that had been too dry and hard to drain out. When I got out all the clear yellow wax there were about 20 gallons of slum-gum. It showed no wax until it was dry. Then it showed wax by rubbing on a board

with a knife. I put it to melt again, and got about 10 pounds of darker wax. It would answer very well for brood foundation. Then there were about eight gallons of slum-gum; still it showed wax. So I melted it up and got out six pounds more of wax that would do for fastening foundation to top bars. There were about 6 or 7 gallons of slum-gum and it still showed wax. Another melting turned out 3 pounds of very dark wax. There were at this time, about 6 gallons of slum-gum which weighed 8 lbs when dry. Well that is now. It is not quite dry yet or it would weigh less. I expect to get more wax at the next melting. Possibly a pound or more. *I have not used any sort of pressure at any time.*

When I first melt up the comb and honey I pour it out together in a dish. The honey goes to the bottom and the wax stays on the top. I get lumps of wax weighing from 5 to 7 pounds out of a 5-gal can of comb and cappings; when there is enough of these to make a cake the size of a 5-gal can, or near by, I melt them all together.

CAPPINGS.

"Fust thing ye know," said Deacon Hardshell, solemnly, "we'll have to be tryin' this new minister for heresy. He's been sayin' all Christians should take pattern o' the bee as a model of industry."

"My land!" exclaimed his wife, "whut's wrong o' thet?"

"Why, the bee works on the Sabbath same's any other day."

The American Bee Journal, speaking of a trip to California, says:—We pass through the Carpentaria Valley, one of great richness. Here we saw the largest grape-vine in the world, and we saw the largest eucalyptus tree we had ever seen. One measured 15 feet in circumference 3 feet above the ground. These trees are natives of Australia, and are planted for shade and wind-brakes around orange orchards. They grow very tall, and do not send out long side-branches as do most other trees. They blossom in December and January, and the bees fill up the hives nicely when there is a sufficient number of trees, but the honey is dark and not saleable, but it comes in a good time for bees to breed up on it. [This last may apply to some species of the eucalyptus trees. But there is a vast difference between them. Some of them, such as the yellow box, give a splendid honey; others, such as the coastal red gum of New South Wales, gives the contrary.—Ed.]

Honey poured upon cooked bacon, sausage and some other meats, is really very palatable, and much relished by many persons, strange as the combination may sound.—American Beekeeper.

Bees gather honey, not make it, and the eggs laid by the queen produce bees; consequently the more eggs the queen lays, the more bees we get, and the more bees we have, the more honey they gather. To gather honey to the best advantage, these bees must be on the stage of action just when the flowers are secreting the most nectar. To have a multitude of bees in the hives when there is no honey or nectar in the flowers amounts to nothing. So we must time our work so as to have the queens laying the most prolifically at the suitable time before the honey flow. Another factor: We must know our locality, so that we are conversant with the time of blooming of all our honey-producing flora; then bring our maximum strength of bees to meet the flow, and in this way we are sure of success, providing the weather is favourable for the secretion of nectar. A queen will lay from 700,000 to 1,000,000 eggs during her lifetime, if she is a good one, and lives from 3 to 5 years; but under the present system of management, the queen is generally coaxed to lay all these eggs in 2 to 3 years.—*Exchange.*

A Beeswax Candle.—Take a piece of sheet wax, or even a piece of foundation. Lay on one edge of it some candle wicking; then roll up the wax and the wicking as one would roll up a cigar. Fit this into a suitable candlestick. Light it, and see what a beautiful light you get. Of course, such a candle would not equal by a long way a good kerosene lamp or any of our modern lights, but for a candle it surpasses any other substance; and after it has burned awhile you will notice a pleasant odour pervading the room.—Gleanings.

It is variously estimated that from 400 to 700 thousand people in the United States are to some extent engaged in bee-keeping. Of that vast army scarcely 2000 can be coaxed, entreated or bribed to join a beekeepers' association of any kind.

Says Mr. Strong: I have had experience along the line of sending bees, and I wanted to test this matter of the danger of smothering in the mail. I took a queen I didn't care to keep, and placed her in an ordinary mailing cage. I got a strip of pliable paper about an inch long and wider than the length of the cage, and wrapped it not less than a dozen times around, and folded it down at the ends as tight as I could wrap it, and I threw it into the mail box on the east side of my shop where the sun would strike it. I left it 24 hours, and I then opened it and I expected the queen would be smothered, but to my surprise, there was a lively buzz in the attempt to ventilate—that was all there was. I tried it again and left it 2 days in the same condition, and the sun shone on it all the time; I continued that for a week, and the queen was still in good condition. This shows to me that it is almost impossible to smother a queen in the mail.

The following yarn is from a Yankee newspaper:—Wall Lake, Iowa,—O. J. Seers, a pioneer bee-man died suddenly. It has been his custom to move among his bees without covering his hands or face. The bees followed him about the house and yard. In the winter when their supplies ran low, he fed them with sugar syrup and rye-flour. He covered their hives with blankets to keep out the cold. He never lost an opportunity to minister to their wants, and he believed the insects had a real attachment to him. From the day of Seer's death there was unrest in the colony of bees. On the day of his funeral they swarmed about the hearse, and thousands followed it to the cemetary. The following day it was discovered that the hives were deserted. Several swarms of bees were found in the trees near the grave of their former owner. The others had mysteriously disappeared.

A reader of the "American Bee Journal" asks for particulars regarding the taking of bees on shares—wants to know if the owner should give one-half the surplus and one-half the increase, each furnishing half the supplies. In replying to the inquiry Dr. C. C. Miller says that this division is quite in fashion, and not far out of the way.

The Bee Keepers Review says:—I believe that the *increase* should remain with the apiary, that is remain the property of the owner. The increase is often needed to make up the winter losses. The doctor says that it is well to have a very definite agreement, and put it in writing, which advice I can endorse most heartily, as that very precaution saved us a world of trouble the past season.

Young larvæ on the *outside* of the brood-nest are more repressive of the swarming impulse than when in the centre. More nurses have a chance to take a hand. There is another forceful factor in the matter. It gives more room for the queen, and relieves the congested condition of the centre, by distributing the nurse-bees to the outside of the brood-nest. Another thing: This new condition of the brood-nest has a healthy influence upon the super, or supers. First, by the distributed condition of the bees, and second, by forcing the honey above,

PRICES OF HONEY.

Melbourne Australasian.—Honey and Beeswax: Supplies of honey are rather large, and the demand is quiet. Choice is worth 2¾d., small lots fetching up to 3d. Cloudy and dark is slow of sale at down to 2d. Beeswax is unaltered at 1/2½ to 1/3.

Melbourne Leader.—Honey.—For prime clear garden lots there is fairly good inquiry at from 2½d to 3d; medium to good descriptions are somewhat excessively supplied, and are on offer at from 2d to 2½d. Beeswax—There is full outlet for prime clear wax at 1/3; medium to good samples, more or less discoloured, realising from 1/1 upwards.

S. M. Herald.—Honey, 60lb tins extra choice extracted 3d, choice 2½d, prime 2d, medium 1¼d. Beeswax.—Dark 1/1 to 1/2, bright 1/3 to 1/4 per lb.

Maitland Mercury.—Honey, 2d to 2½d. per lb. Small tins 2/3 to 2/6.

HONEY.—

There is a much brisker demand for choice quality, and it is moving freely at 2¾d to 3d per lb. Dark coloured, and strong flavored lots are difficult to sell from 1½d to 2d per lb.

BEESWAX.—

There is an excellent demand for this line at 1/4 for specially clear lots, medium lines from 1/3 per lb.

USES OF HONEY IN FOODS AND REMEDIES.

TRANSLATED BY C. P. DADANT,

The Paris bee-paper, "L'apiculture Nouvelle," quotes the following from a small pamplet by a French author, Mr. C. Moulin:—The scientific men tell us that honey is an almost complete ailment, very beneficial to man's body, and very easy to digest, because contrary to sugar, it does not need to be transformed in order to be assimilated; because like sugar, and without having any of the disadvantage of sugar, and under a small volume, it restores the strength of a fatigued man who still has to perform muscular labor before being able to take food and rest; because being slightly laxative and diuretic, it helps the functions of the intestines, and of the kidneys, and through this the elimination of used-up substances which are in the organs. This is important with sick people, in whom these functions are often inactive and are yet needed to eliminate the cause of disease.

So honey is much preferable to sugar to sweeten the herb-teas; a single spoonful of honey diluted in a cup of hot water constitutes what might be called a "tea-of-a thousand-bloom," for the bees have visited even a greater number of them to harvest it. It is an excellent excipient for all medicines, and for this reason is much employed in pharmacy, especially for veterinary medicines.

It contains formic acid—a very antiseptic substance; that is to say, a substance which destroys many ferments and several sorts of microbes; for that reason it was formerly employed a great deal to cure eye-soreness, cuts, scratches, burns and small wounds, and the Romans employed it to embalm the dead, by putting in honey the bodies they wished to transport to a distance.

For the eyes I have devised a mixture of equal parts of rose-water and choice honey, which cured many persons suffering from cold draughts, bruises, irritation of the eye-lids or benign opthalmy; for recent wounds, scratches, cuts and burns of a light form. I have manufactured an ointment which I call the "apiarist's salve by mixing thoroughly, over a *bain-marie*, one part of fresh propolis, 2 parts of white beeswax, and 7 parts of honey. Applied with carbolated cotton wadding; this runs less than pure honey, covers the sore better, and better prevents the access of ferments, of microbes suspended in the air, or of the air itself, of which the oxygen is the great disentegrating agent in nature.

A physician of my friends, has stated to me that he has cured stubborn cases of constipation upon several of his clients by making them take, every evening, a large spoonful of honey, when going to bed, sometimes for several months together; that this has succeeded fully as well as sending them to Switzerland, to be cured with buttermilk, or to the South or to Italy to be cured by eating grapes and figs, and that this honey-cure may be practiced in any season of the year.

Doctor Pauchet, of Arcachon, substitutes, to cod liver oil, the "butiromiel" composed of two parts of fresh butter and one part of honey, mixed and whipped together, which makes a sort of cream and is used without repugnance by his patients, and produces upon them the same results, approximately, he says.

Doctor Boudard, physician in the Navy, at Marseilles, has stated to me that he and several of his colleagues have relieved many persons afflicted with nervous debility, neurasthenia and other nervous affections that prevented them from sleeping, by advising them to eat but little at their evening meal, and take two or three tablespoonfuls of honey when retiring.

I must stop, for it would take two more pages to give briefly all that I have been told by doctors, or that I have read in scientific works on the benefits of honey for the health.

The most satisfactory and most useful preparation I have devised are syrup of honey, which are not so limpid as those found in commerce, but are much more

salubrious. I make these by mixing a quart of water to 8 lbs of honey, which I heat *au bain-marie* (over hot water) and skim. If I incorporate in the syrup from 50 to 100 drops of essence of eucalyptus per quart, it gives me a eucalyptus syrup with which I cured rapidly a great number of persons suffering from colds, hoarseness, sore throat and slight attacks of bronchitis by directing them to use half a pint of this syrup, which they must take in tablespoonful doses with a tea made of basswood blossoms or orange leaves, according to the case; and I have relieved a number of others having chronic affections of the respiratory organs such as catarrh or asthma.

If instead of essence of eucalyptus I use in the syrup of honey the same quantity of essence of mint, it becomes suitable, in doses of a tablespoonful in a cup of hot water to help weak stomachs, or prevent indigestion in persons whose digestion is accidently bad; If I use essence of aniseseed it becomes antiflatulent. If I use essence of pine-apple or of raspberries, etc., or, better yet if I use, instead of water to make the syrup, the same proportion of well filtered juice of currants, raspberries, cherries, etc., I have a syrup which in hot weather makes a splendid preparation for seltzer or soda-water, or other mineral water.

I manufacture pastes similar to ju-jube-paste, which I also cut into small squares or lozenges. Melt in an enameled skillet over a *bain-marie*, 2 ounces of gelatin with 3 ounces of water. When by stirring you have brought the gelatin to the consistency of a soft dough, still stirring briskly pour into it slowly about 14 ounces of honey which has been previously heated also *au bain-marie*; when the parts are thoroughly mixed, pour it into a paste mould, or into a flat dish which has been lubricated with choice olive-oil. It before pouring out we incorporate, into the paste, essences of either eucalyptus, mint or anise-seed in the proportion of 50 drops per two lbs, it requires the same properties as the syrups, according to the essence used, and I sometimes colour diversely both paste and syrups for the trade of confectioners and dealers.

If I incorporate into the paste from 8 to 12 ounces of cocoa, and a little vanilla, I call it "cocoa honey" and I pour it into chocolate moulds. It then resembles chocolate, by taste, appearance, and preserving qualities, and may be used in the same way, either as a dainty or with milk or water at the breakfast table. By simply mixing one part of the cocoa with 2 parts of honey and a little vanilla, we secure a paste which may be preserved for several months, in a jar, and may be used in a similar way. A mixture of one part of sweet almonds, and a few bitter almonds crushed, with two parts of honey, makes a delicate almond-cake paste.

I have succeeded, but moderately, in making honey-pastry, but I have secured some delicious dishes, such as chestnuts and honey. I first remove the outer shell then bake them with steam or very little water, then removing the second peel and the diaphragm, I roll them in honey scented with vanilla, while hot, and then in this way I have a dish much resembling the highly-prized iced-chestnuts.

I dedicate this little essay to the kind and lovely women who are the natural nurses and usual housekeepers of the homes, and are very much more intelligent and much more expert than ourselves in the preparation of all these little dainties.

SUCCESSFUL EXPERIENCE IN THE MAKING OF HONEY VINEGAR.

Vinegar is produced by the action of oxygen on alcoholic fluids, under the influence of ferments of which the active constituent is acetic acid.

Honey-vinegar is usually made by the old, long process, which takes about one year; but it can also be made in about 5 weeks, by the quick process by means of generators. In either process, honey-water must ferment, to produce alcoholic

fluid, which can be converted into vinegar only by powerful oxidizing agents.

I will speak briefly on the old way as it is familiar to most of you. You can utilize the washings of honey-cappings, the rinsing of cans, barrels, or waste honey in any form, for the sweetened water. This is put into barrels, with one head out, the wider the barrel the better, as the more air-space the better chance the bacteria have to work, as they need air. You can hasten the fermentation by adding yeast or by acetic-acid bacteria, commonly "mother of vinegar," and let it go through about the same process as you would for for cider-vinegar. Always keep in a warm place, and covered with a thin cloth to exclude the dust. In about a year the alcohol will be almost worked out, and the oxidation will stop. You will then have honey-vinegar, of grain strength in comparison with the strength of the sweetened water. It is then ready to be barrelled and put into the cellar for future use.

The quick process, with which I am more familiar, is one that is hard to explain, on account of the many details and chemical changes that one must understand in order to use the process successfully.

To be a first-class, practical vinegar-maker, one should be somewhat of a chemist.

What first induced us to make honey vinegar was to utilize all waste honey, such as inferior honey, the washings of barrels, tanks and empty cans,—in fact, all honey that would otherwise be wasted in the warerooms of an up to date bottler and dealer in honey.

In the first place, I took a course of instruction in vinegar-making, under a first class instructor, standing at the head of my class, also at the foot, as I was the only pupil.

We secured two generators, casks for fermentation, a complete cooper's outfit; a saccharometer, a vinegar-tester—in short everything necessary to carry on vinegar making successfully.

A generator such as we used, is a large open-top, round tank, carefully filled and packed with long, curly beechwood shavings, to within a foot of the top. On top of these shavings is a close-fitting, round distributing-board, filled with many small holes equal distances apart. There are several vent-holes about 18 inches from the bottom. and also a large faucet within a few inches of the bottom. There is a hole about 2 inches below the distributing board, so the temperature in the generator can at all times be observed. In addition to this, there is a close-fitting cover on top of the tank to prevent the aldehyde from escaping too freely.

The fermenting casks are nothing more than large, open-top, wine casks.

It takes about 50 pounds of honey to run a generator properly for 12 hours, so we decided to start only one. It takes 1½ pounds of honey to each gallon of water to make a 40-grain vinegar The proper proportion can be had either by measure or by testing the mixture with a saccharometer.

Forty-grain vinegar means 4 percent of pure acetic acid in the vinegar, or 40 grains of acetic acid to every 1,000 grains of vinegar. Stock tested by the saccharometer, for every percent shown by this instrument you will get a 4 or 5 grain vinegar. It varies according to the completeness of the oxidation. Stock testing 10 percent should give at least a 40-grain. Having everything in shape, we will proceed to turn the sweetest of sweets into vinegar.

To make stock, the fermenting tanks are nearly filled with water and honey, in the proportion of 1 gallon of water to 1½ pounds of honey. Add to this mixture a specially prepared malt yeast to start a rapid fermentation. (The temperature of the room should be at all times about 70 degrees.) In about a week this will be almost worked out, and fermentation nearly stopped. To hasten the oxidation, the shavings in the generator are soured with vinegar, so when the stock is poured in at the top it trickles over the soured shaving.

Charge the generator every 1½ hours with 6 gallons of stock, having all the vent holes open, and soon the oxidation will start.

The oxidation in a generator creates a damp heat, but it is as true a fire as there is in a stove, and if you keep a stove as a model, and think of the alcohol as your fuel, and the vents or air-holes as the dampers, you will not go far wrong.

Keep charging from the stock in the fermenting tanks every 90 minutes until the shavings are well saturated, and the fluid runs out of the faucet at the bottom. Then let it stand until the generator draws, and warms up. You can tell whether or not it is drawing by putting a candle in front of an air hole; if it blows out, it shows that the temperature is greater outside than in the generator; if the light is stationary, it shows that the bacteria have begun to propagate and have raised the temperature equal to the outside, and in a few hours you will find that the light is drawn in. Then the oxidation is in full operation, and the temperature inside excees that outside. You must then begin to watch the thermometer hole, near the top of the generator. and when the temperature gets above 85, charge with 6 gallons taken out of the bottom. If there is not that amount, add enough stock to make up the full 6 gallons In about 2 hours examine the drafts and insert in the air-holes plugs having ¼-inch holes, to decrease the size of the air-holes.

During the day take 6 gallons from the bottom and put in the top every 90 minutes. If the charge is short of six gallons add enough stock to make up the shortage. Charge 12 gallons at night; and close the draft ; in short, "bank your fire" for the night.

The large vinegar-makers have automatic chargers, and keep it up all night.

Aldehyde is the intermediate composition between alcohol and vinegar; it is a very volatile liquid, and if you are not careful it will nearly all escape. The weak alcohol is converted into aldehyde by the bacteria, before it becomes vinegar. If you give the generator too much draft the aldehyde will be lost, so you can see the drafts are as important in a generator as in a stove.

The charging from bottom to top is continued until the vinegar does not gain any in strength; then every other time 6 gallons of vinegar are taken from the generator, and stored in casks for the market.

For every gallon you take from the generator an equal amount must be added at the top, from the stock.

The most profitable and best way is to run the generators in sets of 3, one above another.

Start the stock at the top of the generator, and by the time it trickles through the three generators it comes out vinegar.

It is very essential that the generators should be correctly packed with shavings kept perfectly level, and charged with the greatest regularity, so that the stock will be equally and regularly distributed. One of the most important things is to keep it drawing, for if the fire gets low, the bacteria, after they have no more alcohol to work on, will turn around and destroy all the acidity in the generator; in the course of a few days putrefaction will set in, and the generator will be dead.

It will then take weeks to restore it to its former condition.

Vinegar can also be made by the quick process, in small quantities, by using rolling vinegar generators.

The chemical changes in the manufacture of vinegar are alike in both processes, but in the quick method advantage is taken by the oxidizing action of the vinegar fungus. By vastly enlarging the surface of the liquid exposed to the air, at the proper temperature, we can reduce the time occupied from about one year to 4 or 5 weeks.

At the present price of honey, pure honey-vinegar can be manufactured on a large scale for about 15 cents per gallon

and perhaps cheaper. I have sold honey-vinegar for 40 cents per gallon.—*American Bee Journal.*

THE BARONESS BURDETT-COUTTS.

We take the following account of this interesting lady from the *British Bee Journal*:—

The Right Honourable Angela Georgina, Baroness Burdett-Coutts, was born on April 21, 1814. She was the youngest daughter of the late Sir Francis Burdett, Bart., and granddaughter of Mr. Thomas Coutts, founder of the well-known banking house in the Strand. In 1837 she succeeded to the bulk of the property of Mr. Coutts through his widow, once the fascinating Miss Mellon, who died Duchess of St. Albans In many cases the possessor of such boundless wealth would have been turned by its hardening influences into a cold and worldly woman, but fortunately the predominating trait in the character of the Baroness was a charitable sympathy with those into whose lives little of brightness entered. The power and responsibility of benefiting her fellow-creatures, thus conferred on her, the Baroness wisely and conscientiously exercised in carrying out in a multitude of projects which have had for their aim the welfare of the world at large.

As a consistent member of the Church of England her liberality has been on an almost unparalleled scale. Beside her contributions towards building new schools and churches in various parts of the country, Miss Coutts erected and endowed, at a cost of £90,000, the handsome church of St. Stephen's, Westminster, with its three schools and parsonage, and another church at Carlisle. Through her energetic munificence the three Colonial Bishoprics of Adelaide, Cape Town, and British Columbia have been endowed, besides promoting an establishment in South Australia for the benefit of the aborigines. She also supplied the funds for Sir Henry James's Topographical Survey of Jerusalem; secured numerous Greek MSS. from the East for the verification of the Sacred Scriptures; and offered to restore, at her own charge, the ancient aqueducts of Solomon to supply Jerusalem with water —a work, however, which the apathetic Government of the Sultan failed to undertake.

At home drinking-fountains have been provided by her in various parts. The most striking ornament in North-eastern London is a beautiful temple in Victoria Park enclosing a public fountain. A similar work of art adorns one of the entrances to the Zoological Gardens in Regent's Park; one was erected at Manchester, where, on the occasion of its opening, she received a most enthusiastic reception; and another in the neighbourhood of Columbia Market; and the numerous cattle-troughs to be seen in the roadsides about London bear evidence of her thoughtful agency. In the desire to provide and increase the supply of wholesome meat she purchased one of the blackest spots in North-eastern London, called Nova Scotia Gardens, and there erected the model dwellings called Colombia Square; and close to it Columbia Market, one of the handsomest architectural ornaments in that part of London. Columbia Market was opened to the public in 1869, and a few years later the Baroness made over the vast buildings to the Corporation of London as a free gift. Unfortunately the scheme did not prove a success, and the market was reconveyed to the Baroness in 1874.

As one of the great means of benefiting her fellow-countrymen the Baroness paid great attention to judicious emigration. When some years ago it was found necessary that the starving families of Girvan, Scotland, should seek the means of existence in another country, she advanced large sums for their transmission to Australia. Again, when the famine was raging in the neighbourhood of Skibbereen, Ireland, relief from the same open-handed source was forth-

coming: some of the families were assisted in emigration, others were helped by the establishment of a store for food and clothing, and others, by giving them a vessel and a fishing-tackle, were enabled to prosecute fishing as a means of livelihood. It would be impossible in a sketch like this to follow the Baroness in all the undertakings that her means permitted her to carry out. They were of the most diversified nature. We find her assisting Rajah Brooke in improving the condition of the Dyaks in Borneo, and establishing a model farm, by which the riches of that country and the productiveness of the soil have been developed. Again, we find her laying out the churchyard of Old St. Pancras as a garden for the surrounding poor, and erecting a sundial as a memorial to those who had formerly been buried there. The Baroness took great interest in the Whitelands Training School for Female Teachers; her annual addresses to the young women at the annual distribution of prizes were mostly of practical advice. She did much good service in promoting higher education, having endowed a professorship at Cambridge for teaching an important branch of physical science. The Baroness was the means of instituting the Turkish Compassionate Fund, by which thousands of the Turkish and Bulgarian peasants were saved from starvation and death. For her services in this matter the Order of the Medjidje was conferred on her by the Sultan.

In June, 1871, Miss Coutts was surprised by the offer of a peerage from Her late Majesty, which honour was accepted. Her ladyship received the freedom of the City of London on July 11, 1872, and that of Edinburgh January 15, 1872. Several of the City Companies conferred on the Baroness their freedom and livery in recognition of her illustrious actions. When on a visit to Ireland, where she had organised a fishing fleet having its headquarters in Bantry Bay, she was received with the greatest enthusiasm.

The beautiful garden and grounds of her villa at Highgate were the frequent scene of her munificent hospitality, and were constantly thrown open to school-children in thousands. In July, 1867, she gave there the largest dinner party on record; two thousand Belgian Volunteers were invited to meet the Prince and Princess of Wales (now our King and Queen) and five hundred other noble and distinguished guests. The large and verdant lawns were made picturesque by gaily decorated tents, in which the whole party dined with comfort and convenience. The Baroness was a distinguished patroness of artists and literary men, and her hand was ever ready to assist any institution which had for its object the elevation of her sex and the protection of children. Whilst Miss Coutts she established and supported a reformatory whence a large number of degraded women have passed to the Colonies, where they have had an opportunity of leading a new life. Her attention was directed to the claims of dumb creatures, and the interest she took in them was abundantly shown by her exertions on their behalf, in the energy and constancy of which no one has surpassed her. Nowhere was the Baroness more conspicuous than when presiding at the various institutions which are held in the rooms of the Royal Society for the Prevention of Cruelty to Animals. We believe that the Baroness laid the foundation-stone of these useful buildings.

The Baroness was married on February 12, 1881, to Mr. William Lehman Ashmead Bartlett, who obtained the royal licence to use the surname of Burdett-Coutts.

The Baroness Burdett-Coutts proved a faithful friend to bee-keepers, and at all times entered with zeal into anything the Chairman of the Council brought before her. When the Rev. H. R. Peel, in 1878, volunteered to undertake the duties of secretary to the B.B.K.A., his first care was to prevail on her ladyship to accept the Presidentship of the Associa-

tion. To this she kindly gave her consent, and was elected on April 20, 1878. It is interesting to note that at this extraordinary meeting of the members the present Bishop of Lichfield presided. On many occasions, by her well-timed liberality, has she removed obstacles to the progress of our bee-keeping industry. We are indebted to her for valuable assistance at the Kilburn Show, the first great show held in connection with the Royal Agricultural Society, which proved such a success that the "Royal" have entrusted the management of the Bee Department to the B.B.K.A. ever since. Her ladyship also helped in acquiring for the Association the library collected by Mr. Desborough, which formed the nucleus of the present library; and in assisting the B.B.K.A. in defraying the expense of the mission of Messrs. Abbott and Carr to spread abroad a knowledge of bee-keeping in Ireland, which led to the formation of the Irish Beekeepers' Association.

The Baroness presided for many years with great regularity at the annual meetings of the Association, until her age and state of health prevented her from attending. But even then the Association was not forgotten, and she usually, through the medium of the Chairman, sent some kind message. We are indebted to her for many wise counsels and practical suggestions when she came amongst us. She had a clear judgment, a large heart, great facility in speaking in public, and a strong mental constitution which enabled her to overtake a large amount of solid work.

It is impossible in a brief sketch of this sort to enumerate all the good works she initiated, but all the schemes connected with her name were marked by a certain individuality, and whether successful o not, every project she originated was touched and moulded by her own practical insight and guidance.

From the moment the funeral procession entered the Abbey, and, headed by the choir and clergy, the body was slowly borne through the cloisters to the bier prepared for it in the choir, the intense silence was broken only by the mournful and beautiful music of Dr. Croft's setting to the words of the liturgy of the Church appointed for use on such occasions. One cannot imagine a spot in the whole world so hallowed in its memories as the venerable Abbey of Westminster, or where a scene so solemn and impressive as that recently could be enacted. And when, at last, the coffin was reverently carried from its temporary resting-place to the graveside, not a sound save that of uncontrollable emotion could be heard amid the vast silence while the organ pealed forth Handel's wonderfully pathetic Dead March; and so passed out of sight all that remains of a noble woman, of whom it has been truly written:

Long with us, now she leaves us; she has rest
Beneath our sacred sod;
A woman vowed to Good, whom all attest,
The daylight gift of God.

Lapse of Memory—Was Its Cause Mental or from a Bee-Sting?

A rather peculiar thing happened here a few days ago. A young man was working in the hay-field, and just about noon he was stung on the lobe of the left ear by a bumble-bee. He says that hurt him more than a honey-bee sting usually does, and that it felt as if it had pierced him through from ear to ear. His ear swelled some, but after a short time felt easier. He ate his dinner and went back to the field, where he drove a team hitched to a buck-rake. At 6 o'clock p.m. he unhitched his team and started to the house, riding one of the horses, and at this time his memory ceased to work. He rode to the house and put his team in the usual place and went into the house, of which he remembers nothing. He would ask questions and when answered would ask the same question over again a number of times, and from this time until 12 o'clock noon the next day he remained in this condi-

tion. He says "he was a walking, unconscious man." His people tried in every way by questions and other conversation to get him to remember, but without avail."

Just about 24 hours after he was stung his memory returned. Those 24 hours of his life to him are blank. Did the sting cause the trouble? or what, in your opinion, was the cause?

Diligent inquiry has been made as to whether he could have been stunned or bruised in any way. There were no signs on the body of having been hurt in any way. A slight soreness was felt in the back of the neck and shoulders. He went to sleep in the afternoon, and when he awoke he was himself.

The *American Bee Journal* says:—The case is a remarkable one, but by no means without a parrallel. Every now and then we hear of some one who seems to lose his identity, perhaps wandering away from home and friends, then after a time resuming his former identity, but with no recollection of what transpired during the time when he was not his usual self. Sometimes a person of that kind may be lost for years, and sometimes the mental machinery may be out of running order for only 2 or 3 hours. It is not impossible that in the present case there might have been the same lapse if the patient had not been stung at all. He was stung before noon, suffered from the pain, but recovered from it and did a half-day's work before the mental trouble occurred. If the trouble came on 5 or 6 hours after the sting occurred, might it not have been just the same if it came on 24 hours, a week, or a year after the sting, and had the sting anything to do with it? Yet it may not be wise to say the sting had nothing to do with the mental difficuly; while not being responsible for the trouble it may have been the "last straw that broke the camel's back," in which case it might be called the exciting cause, although a dozen such stings at another time might have no effect of the kind whatever.

The World's Supply of Honey.

The following paragraph is going the rounds of the Press. The figures given so far as the countries quoted are concerned, may be approximately correct, but how the writer arrives at 80,000 tons as the world's yield of honey it is difficult to imagine. Adding together the yields as given, which, by the way, only concerns most of the European countries, they make a total of 60,500 tons, leaving only 19,500 tons for the rest of the world. America alone, including North and South, would probably yield in excess of the figures given for Europe. Then there is Australasia, Africa, and Asia to be reckoned with. At a rough guess I should think the world's supply of honey would approach nearer 200,000 tons than a paltry 80,000.

A Consular report from Seville, dealing with the world's production of honey places Spain second in the list of sources of supply, the total number of her beehives being 1,600,000, contributing 19,000 tons out of the 80,000 tons which is the total yield. Germany with 2,000,000 bee hives produced 20,000 tons of honey. Austria comes third with 18,000 tons. France produced 10,000 tons. Holland and Belgium less than 2500, and Greece, Russia and Denmark 1000 tons each — *New Zealand Farmer.*

It is not easy to be entirely sure whether the starting of queen-cells means swarming or superseding. Generally, however, you can tell by the number of cells. If you can find no more than 2 or 3 cells, and these with eggs in them, you can't tell anything about it. But wait till the larvæ are fairly well advanced, and if only 1 to 3 cells are present, you are pretty safe in saying that superseding is intended.—*Exchange.*

Drones in the capped stage may be isolated and quite roughly treated for several days without much harm.

Fornic acid is developed the blood of the bee. It is not found in the nectar of flowers.

EDITORIAL.

With this issue we commence the 16th volume of the *Austrrlian Bee Bulletin*, the first number being issued in April, 1892. We have to again thank our many friends and subscribers for their continued support and good feeling towards us. Our idea, especially of late years, has not been to make all the beekeepers it was possible to make by false stories of the wonderful amounts of cash to be made by beekeeping, but to give both sides of the matter, especially of late years, when the boasted foreign markets were gradually found to be mythical and profitless; and the clearing of the forest timbers for dairying, wheat-growing, and other purposes had diminished the bright prospects of many a previously hopeful beekeeper. Our idea of a publication has always been that of a photograph, and such we have ever tried to make the *A. Bee Bulletin* a good photogragh of the state of the industry throughout not only Australia but the world. Again we thank our many friends and subscribers.

In making up the Index for the past year, very much pleasure was afforded us as the different items came under our notice, again refreshing our mind with forgotten matters. If our friends would get their numbers bound into volume and look over the index, we can surely promise them a similar pleasure.

Repeated Mating of Queens.

A number of observations from different sources are quoted in the *American Bee Journal*. showing that often queens mate two or three times. The cause of such repeated mating are discussed. Among the quotations there is one from Prof. Vogel, who has examined a large number of drones with a microscope and found quite a number impotent. Should a queen mate with such a drone, there is a strong presumption that her desires not being satisfied, she would mate again. Another observer, Mr. Pierrard, thinks that sometimes the male organ may be extracted from the queen too soon by the bees. He thinks that in order to allow the hundreds and thousands of spermotoza contained in the male organ to pass into the pouch of the queen, a certain length of time is necessary. His opinion is founded on the observation of a queen coming home, and finding a perforated zinc that he had placed at the entrance. The excitement caused by her movements induced the workers to extract the organ at once. The next day the queen mated again. He has seen several qneens mate three times. His method consists in placing a perforated zinc at the entrance of the hive after the time of day that the queen goes out, (about two o'clock and then observe them when trying to get in after they come back.

Mr Kalinski, of Swientana, (Poland) is of the opinion that a double fecundation is rather the rule than the exception. Two cases are quoted of Italian queens producing both pure Italian and pure black workers as far as their colour show. He thinks that such cases show a double fecundation and that an ordinary mismating would show all the bees of an intermediate colour or at least approximately so.

The opinions quoted are unanimously in saying that the queens are mated only at the beginning of their life and never later.—Le Revue Eclectique.

THE RHEUMATISM CURE.

ROBERT JONES BURDETTE.

One day, not a great while ago, Mr. Middlerib read in his favourite paper a paragraph stating that the sting of a bee was a sure cure for rheumatism, and citing several remarkable incidents in which people had been perfectly cured by the abrupt remedy. Mr. Middlerib thought of the rheumatic twinges which had grappled his knees once in a while and which had made life a burden.

He read the article several times, and pondered over it. He understood that the stinging must be done scientifically and thoroughly. The bee, as he understood the article was to be gripped by the ears and set down the rheumatic joint and held there until it had stung itself stingless. He had some misgivings about the matter. He knew that it would hurt. He hardly thought it could hurt any worse than the rheumatism, and it had been so many years since he was stung by a bee that he almost forgot what it felt like. He had, however, a general feeling that it would hurt some. But desperate diseases need desperate remedies, and Mr. Middlerib was willing to undergo any amount of suffering if it would cure his rheumatism.

He contracted with Master Middlerib for a limited supply of bees; humming and buzzing about in the summer air Mr. Middlerib did not know how to get them. He felt, however, that he could safely depend upon the instincts and methods of boyhood. He knew that if there was any way in heaven whereby the shyest bee that ever lifted a two hundred pound man off the clover, could be induced to enter a wide-mouthed glass bottle, his son knew the way.

For the small sum of one dime, Master Middlerib agreed to procure several, to wit. Six bees, sex or age not specified; but as Mr. Middlerib was left in the uncertainty as to the race, it was made obligatory upon the contractor to have three of them honey, and three of them humble, or, in the generally accepted vernacular, bumblebees. Mr. Middlerib did not tell his son what he wanted those bees for, and the boy went off on his mission so full of astonishment that his head almost whirled. Evening brings all home; the last rays of the setting sun set upon Master Middlerib with a short wide-mouthed bottle comfortably populated with hot, ill-natured bees, and Mr. Middlerib, and a dime. The dime and the bottle changed hands. Mr. Middlerib put the bottle in his coat pocket and went into the house, eyeing everybody he met very suspiciously, as though he had made up his mind to sting to death the first person who said "bee" to him. He confided his guilty secret to none of his family. He hid the bees in his bedroom, and as he looked at them just before putting them away, he half wished that the experiment was safely over. He wished that the imprisoned bees did not look so hot and cross. With exquisite care, he submerged the bottle in a basin of water and let a few drops in on the heated inmates, to cool them off.

At the tea-table he had a great fright. Miss Middlerib, in the artless simplicity of her romantic nature, said:

"I smell bees. How the odour brings up—"

But her father glared at her and said with superfluous harshness and execrable grammar:

"Hush up! You don't smell nothing."

Whereupon Mrs. Middlerib asked him if he had eaten anything that disagreed with him, and Miss Middlerib said:

"Why, pa!" and Master Middlerib smiled as he wondered.

Bedtime at last; the night was warm and sultry. Under various false pretences, Mr. Middlerib strolled about the house until everyone else was in bed; then he sought his room. He turned the lamp down until its feeble ray shone dimly as a death-light.

Mr. Middlerib disrobed slowly—very slowly. When, at last, he was ready to go lumbering into his peaceful couch, he

heaved a profound sigh, so full of apprehension and grief that Mrs. Middlerib, who was awakened by it, said that if it gave him so much pain to come to bed perhaps he had better sit up all night. Mr. Middlerib choked another sigh, but said nothing and crept into bed. After lying still a few minutes he reached out and got his bottle of bees.

It was not an easy thing to do with his fingers, to pick one bee out of a bottleful and not get into trouble. The first bee Mr. Middlerib got was a little brown honey-bee, that wouldn't weigh half an ounce if you picked him up by his ears. But, if you lifted him by the hind leg, would weigh as much as the last end of a bay mule. Mr. Middlerib could not repress a groan.

"What's the matter with yon?" sleepily asked his wife.

It was very hard for Mr. Middlerib to say that he only felt hot, but he did it. He didn't have to lie about it, either. He did feel very hot indeed—about eighty-six all over, and one hundred, ninety-seven on the end of his thumb. He reversed the bee and placed the warlike terminus of it firmly against the rheumatic knee.

It did not hurt so bad as he thought it would; it did not hurt at all.

Then Mr. Middlerib remembered that when the honey bee stabs a human foe it generally leaves its harpoon in the wound, and the invalid then realized that the only thing that this bee had to sting with was doing its work at the end of his thumb.

He reached his arm out of bed and dropped this disabled atom of rheumatism liniament on the carpet. Then after a second of blank wonder, he began to feel around for the bottle, and wished he knew what he did with it.

In the meantime, strange things had been going on. When he caught hold of the first bee, Mr. Middlerib, for reasons, drew it out with such haste that for a time he forgot all about the bottle and the remedial contents, and left it lying uncorked in the bed between himself and his innocent wife. In the darkness there had been a quiet but general emigration from the bottle. The bees, their wings clogged with the water Mr. Middlerib had poured upon them to cool and to tranquilize them, were crawling aimlessly about over the sheet. While Mr. Middlerib was feeling about for the bottle, his ears were suddenly thrilled and his heart frozen by a wild, piercing scream from his wife.

"Murder!" she screamed. "Murder! Oh! Help me, Help, Help!"

Mr. Middlerib sat bolt upright in bed. His hair stood on end. The night was warm; but it turned to ice in a minute.

"Where in thunder," he said, with pallid lips, as he felt over the bed in frenzied haste, "where in thunder are them infernal bees?"

And a large "Bumble" bee, with a sting as a pitiless as the finger of scorn, just then climbed up the inside of Mr. Midplerib's nightshirt until it got squarely between his shoulders; then it felt for his marrow and he said calmly:

"Here is one of them."

Mrs. Middlerib felt ashamed of her feeble scream, when Mr. Middlerib threw up both his arms and with a howl that made the windows rattle, roared:

"Take him off! Oh, land of Scott, somebody take him off!"

And when a little honey-bee began tickling the sole of Mrs Middlerib's foot, she so shrieked, that the house was bewitched, and immediately went into spasms.

The household was aroused by this time. Miss Middlerib and Master Middlerib and the servants were pouring into the room, adding to the general confusion by howling at intervals and asking irrelevant questions, while they gazed at the figure of a man a little on in years, arrayed in a long nightshirt, pawing fiercely at the unattainable spot in the middle of his back, while he danced an unnatural, weird, wicked-looking dance by the dim, religious light

of the night-lamp. And while he danced and howled, and while they gazed and shouted, a navy-blue wasp, which Master Middlerib had put into the bottle for good measure and variety, and to keep the menagerie stirred up, had dried its legs and wings with a corner of the sheet, and after a preliminary circle or two around the bed in order to get up his motion and settle down to working, he fired across the room; to his dying day, Mr. Middlerib will always believe that one of the servants mistook him for a burglar and shot him.

No one, not Mr. Middlerib himself, could doubt that he was, at least for the time, most thoroughly cured of rheumatism. His own boy could not have carried himself more lightly and with greater agility. But the cure was not permanent and Mr. Middlerib does not like to take about it.—"New York Weekly."

CAPPINGS.

The best success I have known in keeping laying queens outside of the nucleus hives from which they were mated, was by placing them on unfinished sections of honey, placing a solid board on one side and a wire-screen on the other, with a little wad of queenless bees to each queen. In this way I have kept them confined in a perfectly healthy condition until the brood from each queen reared in the section was hatching.

Pollen.—Recently Mr. Doolittle made a remark which I consider of the highest importance. He says that in the spring of the year, whenever a spell of bad weather occurs and lasts several days, brood-rearing ceases completely, or nearly so, even when the colony has plenty of honey available. He adds that the cause of it is a lack of pollen. We all know what a large amount of honey is consumed during the height of brood-rearing, and there is no doubt that a correspondingly large amount of pollen is also required. What is left in the hive since the preceding fall can not go very far. Giving flour outside is a very poor help, as the bad weather will interfere with its taking up, as well as with the gathering of pollen. Another inconvenience is that the bees, when they know where the flour is, will come after it when the weather is not quite warm enough, get chilled, and are lost. A large number of them are lost every spring by going after water when the weather is too cold. If some kind of arrangement could be devised by which the bees could be fed the flour and water needed during the early spring, inside of the hive, and without having to open it, it would be a considerable saving of bees, and an equally valuable increase of early brood. Very likely many unlucky queens have been decapitated on account of unprolificness, when the trouble was a lack of pollen or some other adverse conditions. A beekeeper was in the habit of replacing, every year, those of his queens that were defective in some way or other. One year, a quite inferior queen was not replaced; the following year that queen proved to be one of the best in the apiary.

Bee-keepers will be interested to know that the insect muscles, and so the muscles of our bees, are precisely the same in structure as are our own. In kinds, position, structure, and function there is a close similarity between the muscular fibres of insects, and so of bees, and of our own. There is only one apparent difference in our muscles and those of all vertebrate animals—the several fibres that go to make up a muscle are bound together by a surrounding membrane known as fascia, which is not found in insects.—Professor Cook in *Gleanings*.

The field bee on returning with a load passes over the combs until she comes to a cell to suit her, which may be anywhere from top to bottom of the comb. Whether the cell be empty or partly filled the bee enters it feet up and back down and advances until the folded

antennae reach the honey already in the cell or the cell base. The head is now tipped until the mouth is either against the upper angle of the base of the cell or until the mandibles are immersed in the honey near the upper side of the cell. The mandibles are now worked back and forth, the mouth proper being open, and the nectar from the honey sack is steadily forced out. As the nectar is discharged the bee slowly turns her head from side to side. In the case of the first load placed in a cell it is left adhering to the upper and rearmost corners but it gradually spreads over the base or a little along the floor of the cell, its movement being governed by its consistency.—A. C. Miller in *American Beekeeper*.

In a recent number of *Gleanings* there is recorded another experiment with confining drones and queens for mating. The cage was of wire cloth and was about thirty feet high by the same diameter. The result was failure, the drones and queens killing themselves by butting against the wire.

President Marks, of the New York State Association of Beekeepers' Societies, in a recently opening address of same, said:—"The fact is, it is the policy of some bee periodicals to increase the number of honey producers without limit, regardless of the effect it may have upon this industry, and to keep all the honey producers of the country in ignornorance of any popular movement that may give them relief from excessive prices on supplies in fact, to suppress all facts that will not serve their selfish schemes; and the pretension that such periodicals are devoted to the interests of the honey producer, only as it effects their own financial interests, is the rankest hypocrisy." — The *American Beekeeper*, which is the official organ of the above Association, says:—"Whereas, we believe that an over-production of amateur bee-keepers is demoralizing and injurious to the best interest of the agricultural industry, that the catchy and delusive advertisements and articles appearing in the papers asserting that there is easy money in bees is not only deceptive but designed to multiply the number of such bee-keepers for the purpose of increasing the sale of supplies and the circulation of supply periodicals claiming to be devoted to the interest of the honey producers."

The inventor of the honey-extractor, Major von Hruschka, born in Moravia, was an officer of the Austrian army at Legnano, Italy. His leisure was occupied with bee-keeping, and one day he sent his little boy to the house with a comb of honey on a plate in a hand basket. The boy whirled it about to get rid of robber bees. The lower side of the comb was emptied, and the honey-extractor was born. After the peace of 1866, von Hruschka left the army, lived a while at Dolo. and then at Venice, where he ran a big hotel. This swamped him financially, and in May, 1888, he died a poor man, forgotten by most bee-keepers.—*Extracted*.

Precisely the same condition holds true in a locality now overstocked which formerly had comparatively few bees to gather the nectar. Bee-keepers in the great West are beginning to feel the influx of Eastern bee-keepers into their territory, and the result is they have every now and then poor seasons—something they never knew of years ago. It is not that nature is less lavish than she used to be in secreting nectar, but, rather, that there are either too many bees for the pasturage, or, to put it another way, too little pasturage for the same number of bees that, twenty years ago, gathered a good crop of honey.—*Gleanings*.

Queens rared very early in the season are not so reliable as to quality as those reared during the honey-flow and the heat of summer. Of course, this has no bearing in the case of a queen reared in the summer of the preceding year; but such a queen will cost more, being a specially-tested queen.

DAIRYING.

Best prime cattle in the Melbourne market were sold at £18 10s.

Very little rain for the past month. Beyond stubble very little feed for the cattle, so the quantity of cream reduced. Millet sown. It came up, when the hot sun killed it. Several of our neighbours complained the same way. Unless rain comes soon it will be a bad winter time.

Professor Babcock, of the Wisconsin Experiment Station, says that cows should receive about 1oz. of salt each per day. Cows differ greatly in regard to their ability to live without salt. At the station mentioned, cows were kept without salt to see how soon their health would appear to be affected by the deprivation. One cow showed the effects in a month, and another in about a year. In time, however, the effect of not having enough salt is very injurious.

OLD BULLS PREFERABLE TO YOUNG.

So far, no matter how well bred an individual may be, we are unable to say how valuable he may be as a sire. In other words, the selection of such a calf does not warrant us in feeling that we have a great sire. Assurance comes only through demonstration, so that the sire with a line of large producing daughters to his credit is of vastly greater value than a young one, though the latter may have never so brilliant a pedigree. Young sires will, of necessity be used, but the preservation of the breeding powers of the old ones that have demonstrated their worth must be given attention. Breeders who are awake know this and act accordingly.—*New Zealand Farmer.*

MILKING MACHINES.

Some extensive tests have been made at the Kansas State Agricultural Experiment Station in the matter of milking machines. In this country we have from time to time seen such machines on exhibition at the shows, and some of our advanced farmers and landed proprietors have also experimented with them. We are interested, therefore, to find that the conclusions arrived at by the Station authorities referred to are:—(1) That a milking machine will milk cows as thoroughly as the average milker; (2) that some cows give more milk when milked with a machine than when milked by hand. others giving less; (3) that it is extremely necessary for the man in charge to fully understand how to operate a milking machine; and (4) that to reach the highest degree of success, cows should be selected and bred to respond to machine milking. "If," it is said, "this latter factor is taken into consideration, machine-milking will be equally successful as the best hand-milking." Theoretically, milking machines should be practicable enough, but it is rather unfortunate that the experience of those who have tried them extensively in our country is, generally speaking, adverse to them. On dairy farms it is more and more becoming difficult to obtain good milkmen or milkmaids. They find the work somewhat trying or laborious, and, of course, it does keep them very much to the farm; and if a really suitable machine could be placed upon the market, and sold at a reasonable price, nobody would be more gratified than ourselves and the dairy farmers of England.—*Exchange.*

TO TEST THE FRESHNESS OF EGGS.

The *Corse Agricole* gives the following simple, rapid, and sufficiently accurate method to test the freshness of eggs:—Put them in a glass jar filled with pure water. Eggs of the same or the previous day remain flat on the bottom, an egg five days old forms an angle of 20deg. with the horizon; an egg of eight days, 45deg.; fourteen days, 60deg.; finally, of three weeks, 75 deg. on the horizontal. The angle can easily be calculated with a knitting needle and a watch.

The needle is placed in line with the length of the egg, and the watch is held vertically, the centre of the dial on the needle. If the latter intersects the dial at the fifth minute, the angle formed is 60deg. (egg fourteen days old); tenth minute, 30deg. (six days). The positions of the needle between the second and third minute, seventh and eighth, twelfth and thirteenth, gives the angles 75deg., 45deg., and 20deg., corresponding with eggs of three weeks, eight days, and four days.

CLEAN STRIPPING.

Every dairy farmer knows (says an exchange) that the last drawn-milk of a cow is much richer than the other milk; but why this is so is often disputed. This is the reason:

A cow's udder is composed of a solid mass of glandular substance, apparently made up of very small nodules or masses through which a very membrane passes so as to separate the whole into cells or divisions.

The udder is divided into two parts by a membrane from the front to the back, making two separate and distinct halves. The halves are not divided, and yet the front and back parts are distinct from each other, each quarter being connected with the teat which belongs to it by the small cells or divisions and small pipes or ducts leading from them to the teat.

The upper part of the udder is made up wholly of fat, the lower part has very little fat in it. Consequently, with this structure, the udder cannot, as many have thought, be a simple reservoir of milk, in which the cream can rise to the top as it accumulates in the udder. The udder, in fact, can hold very little milk.

In the examination of an udder by dissection, the combined spaces or ducts in it are found to be insufficient to hold half a pint of milk, but the milk is held as by a sponge of close texture all through the glands of the udder, and in the small cells, which thus keep the milk as if thousands of small bladders, all holding milk, were gathered into another and much larger bladder.

In an examination of this kind all the milk found did not measure a pint; and this udder was taken from a cow giving several quarts at a milking just before being slaughtered.

The milk, therefore, is produced in the udder as the milking proceeds, and the cow may prevent the flow of milk by repressing this action. The giving of milk is a voluntary act of the cow, and as she lets down the milk flows from these cells into the passage leading into the teats. Necessarily the milk from the upper part of the udder can only come down last; and the glandular substance in this part of the udder being mostly fat, which is mingled wirh a serum of milky fluid that escapes from the glands by a change of the substance into milk.

Thus the richness of the strippings is accounted for, and the necessity demonstrated for every drop of milk being obtained in the strippings, because incomplete milking not only results in a loss of the richest of the milk, but also acts injuriously against the cow in subsequent milkings.

One way of introducing queens to queenless colonies, or putting two or more colonies in one, is a *sure* and *safe* way:—I have a board one inch or $\frac{7}{8}$ thick, the size of the hive, with a 6-inch piece cut out of the centre and covered with wire-cloth, so that no bee can get through. When I want to introduce a queen, I put that board with screen on the hive as a honey-board. Having placed the nucleus with the new queen over the screen for 2 or 3 days, they have now the scent, and I then put the frames with queen below, and all is well, being sure that no queen is below, but if there is they will fight it out all right. With this board I unite any kind of colonies, and no trouble comes from fighting.—*Extracted.*