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West Maitland, N.S.W.: E. Tipper, December 28, 1899

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A JOURNAL DEVOTED TO BEEKEEPING

MAITLAND, N.S.W.—DEC. 28, 1899.

THE COMPLIMENTS OF THE SEASON.

With this issue we wish all our readers the usual compliments of the season. What a blessing it is to poor struggling humanity that such times come around, no matter what clouds have been passed through, when we try to forget the clouds behind and those ahead, and have a cheery happy time. It is like a rest on the road, and enables us to face what is before us with better and brighter hope. To all our readers we wish a bright and merry 'Xmas and a happy New Year with prospects realised beyond our and their brightest anticipations.

THE SEASON.

In our locality, and we believe to the westward of the Dividing Range, right from north to south of N.S. Wales, honey prospects this year are very poor indeed. A good proportion of the hives have died out, and the trees are not blooming. In our own case last June we numbered 180 swarms, now they have dwindled, or been united down, to 148. And we believe, with the care we have taken, we have done very much better than the bulk of our fellow beekeepers. Not only so, but while in some years at this time, four, five, and even six 10-frame boxes would scarcely contain the bees and honey of each; this year, now (December), we have not one that cannot be contained in a 10-frame box. Not a parrot is to be seen in the neighbourhood, and practical beekeepers know what that means. Only very slight budding on a few yellow box and apple trees. And we see no hope of any practical flow till next spring, so should summer turn out better than we anticipate, what honey is gathered will need to be left on to keep the bees through the winter, if we should not have to feed. Practically we have no income from our bees this year, if we do not even have expense to keep them alive. What the coast districts may do will depend largely on the lucerne flats. One thing is certain, there will not be the glut of last year. Prices must go up. Last year was a failure in America, the result being the price of honey has doubled there, it being now seven cents (3½d) per lb. wholesale in California. One thing must be well watched. Should a scarcity arise, the adulterator will be at work. Should any beekeeper have an idea of such trade being carried on it will be his duty to send samples of such to the Chairman, Board of Health, Sydney, who is well empowered to act in such matters.

The duty on honey into South Africa is 2½d per lb.

The *Home and Farm* of December looks very nice in its new sea green cover.

Mr. Doolittle says it is very often the queen's fault when she is not successfully introduced.

In refining wax a very small quantity of sulphuric acid is necessary to give it a nice lemon colour.

A Dutchman secured 87 colonies of apis dorsata in Japan, but they all took French leave, deserting brood and honey.

The Government of Holland have ordered a number of hives of bees to its East Indian possessions, to fertilise coffee and cocoa.

Two or three lumps of chloride of calcium renewed every two weeks is recommended as a remedy for dampness in hives.

The Austrian Government gives 12,000dols. a year, and the Bavarian Government 8000dols. towards the promotion of scientific beekeeping.

A lot of good copy unavoidably left over.

Grecian honey is said to realise in Athens 37 to 45 cents a pound, and wax in Constantinople 37 to 45½ cents a pound.

It is "Honey Shows" in England, not "Bees and Honey." Note Mr. Gale. At one such at Manchester only British honey was allowed.

A writer from Cuba says he has known 100,000 dols. worth of bees to dwindle out of existence from the ravages of foul brood in one province alone.

Mr. R. F. Holterman, the editor of the *Canadian Bee Journal*, has gone into church work.

Mr. and Mrs. Maynard, of Singleton, are spending their annual holiday with Mr. H. L. Jones of Goodna, Queensland, the well known queen-breeder.

The Queensland post cards are very unique. Each one has a pretty view illustrative of some industry of the colony.

A Mr. Frank Ranchfuss has improved on the Doolittle wax press by having three receptacles in which the melted wax runs. The first gets all the sediment. The other two the clean overflow.

It is estimated there are 500,000 beekeepers in the United States, who produce between 50,000,000 and 60,000,000 sections, and 100,000,000lbs. extracted honey—evidently 1½lb. a piece for each of the population.

When Mr. Taverner's scheme for colonial produce is accomplished by the united colonies, surplus colonial honey will get its proper recognition in the only market it can go to free of duty, England.

Mr. Trahair, secretary National Beekeepers' Association invites opinions as soon as possible from beekeepers as to the holding of Convention next year, whether Easter or Mid-winter would be more suitable.

Our old correspondent, Mr. G. Colbourne, Cave Creek, we are pleased to announce was married in the Church of England, Orange, by Rev. Mr. Taylor on Dec. 13th, to Miss Lily Hill. Our best wishes for their future happiness and prosperity go out to them.

Have received copy of circular from Mr. J. Trahair, secretary National Beekeepers' Association, urging beekeepers to become members, and forward their 5/- subscription towards expenses, also giving account of work done in the past by the Association. Also schedule of Bee matters for the next R. A. Association Show in Sydney. See our next issue.

There are some 10,000,000 sections manufactured annually in the United States. But what a big population of well-to-do people there are there—80,000,000. Yet it is only one for every 10 persons per annum. There are only 4,000,000 people in Australia.

A German newspaper speaks in the highest terms of burying bees in winter, instead of cellaring them. No disturbance through frequent changes of tempeture, no seductive sunbeam entices the bees forth to their ruin, no disturbance from rats, mice, &c., quietly they sleep away their winter rest, leaving the beekeeper free from all care regarding them. Query—How do they breathe?

Honey ought to rise in price from this time out. One of the reasons the price is so low, there are so many beekeepers who do not depend on beekeeping for a living, and sell their honey at any price; it is only pocket money to them. The man who has to get his living by his bees suffers from this. And when the price of anything is brought down, how difficult it is to rise it again.

There is talk in America as well as in Australia of altering the standard size of frames to a deeper size other than the Langstroth. We are not sure that manufacturers are not at the bottom of it, for the purposes of making trade. But, in view of the uncertainty of honey crops and still greater uncertainty of the much-talked of foreign market at a profitable return, we would remind beekeepers that every general makes sure

of his way of retreat in case of defeat. And one good way of a beekeeper's retreat is to have hives and fixings of a standard size, so that they can realise somewhat at sale if needed. Odd sizes would always be at a discount.

Some say that a virgin queen may stay in the hive through the winter and be fertilised in the spring. Mr. Simmons, the editor of *Bee-Chat*, says in the most positive manner that such a thing never takes place; that in the supposed cases the young queens were fertilised in the fall, but did not begin laying till spring. If you have a young queen that does not lay in the fall, it might be worth while to wait in spring till you see the raised cappings of drone-brood in worker-cells before you decide to kill her.—*American Bee Journal.*

Through the kindness of a subscriber in Port Elizabeth, we acknowledge receipt of copy of a pamphlet, which he says is having a great circulation at the Cape at present. It is entitled "A Brief History of the Transvaal Secret Service System, from its inception to the present time, its objects, agents, the disposal of its funds, and the result as seen to-day, War against Great Britain." Our readers will doubtless recollect the queer part played by some Germans in the late Somoan troubles, also with the Americans at the Phillipines. Such will readily understand what work must have been carried on for years in South Africa. The writer has been in a position to show how sums up to £80,000 a year have been spent secretly among Parliamentary candidates, newspapers, etc., to undermine British supremacy. It is very interesting reading.

A swarm! A swarm! Where from? They are flying all about the place. Quietly wait. Look at the entrance of each hive and around same. Now where are they issuing from? We are too late to see. Perhaps it might be here. See those newly born bees outside. They are too young to follow the rest of the swarm, and are about the front of the hive. But look, what is that cluster on the ground about two feet away? Yes, sure enough it is the queen, she was clipped and couldn't fly, and a few faithful attendants are sticking to her. We pick her up carefully, put her in a cage, then open the hive. Yes, only a few bees are left. What is the matter. See here are queen cells. Cut them out, then liberate the queen on the combs. See, the swarm is coming back. Just watch them running in. What a hurry they are in.

BIG YIELDS OF HONEY.

Some seven or eight years ago Mr. Vogel, of the Paterson, reported that one hive with its swarms had produced 1000 lbs of honey.

Mr. Peterson, late of Wattle Flat, asserted that one year his hives averaged 750 lbs apiece. It was not, however, satisfactorily proved. The year previous he had no honey and had to feed.

Mr. Maxwell, of Albury, informed us that one year he had an average of 500 lbs per hive.

Mr. Kelly last year had 17 tons from 70 hives. These big returns as far as we can learn, are never followed up. The following year or the previous one, are, in most cases poor ones.

Most of our forest trees have different habits. Ssme will bloom, every year; some every second; some every third or fourth year. The apple tree has a big bloom about every eighth or ninth year. When it happens, as it sometimes does, that they are all due to bloom in one year, a big crop may be expected. We recollect on one occasion, a beekeeper pointing this out to us, and saying the next year would be a grand one for the above reasons. Strange to say that year was one of the worst droughts for many years, and the crop was almost a total failure in consequence. We have learnt to wait for the crop, and be thankful whatever it is.

HERE AND THERE.

W. L. DAVEY.

So friend Beuhne has "put in his thumb and pulled out a plum" has he? That's what we are all trying to do, but some of us cannot get anything but *the pips* out of our plum duff. I wonder where the plums got to? Probably the following might explain:—

Little Jack Horner,
From Melbourne corner,
Cries, why can't you see
The plums are for me,
The pips are for thee.

Mr. Chambers says there is nothing which a market respects more than volume; increase the production and the price will increase. Will he please explain how it was that the past season honey fell in price fully 50 per cent. to what it was worth 12 months before, last season's product of honey being much higher than the off year's yield, Honey was not respected by the market on this occasion, and records show the more the volume, the less the price, which is only natural.

He says again, "to work that the local market may be upheld, is a petty-fogging way, etc." What on earth is the use of all this twaddle, the local market is our only known and proved market, and unless the price is upheld, beekeeping becomes a dead failure, seeing our honey has not as yet proved saleable at a payable price in foreign markets, but rather the reverse What value does Mr. Chambers place on our honey? £15 to £20 a ton is his value, yet he held his last season's extract for £40 per ton, and I suppose he's holding yet. *What a different value we place on our honey*, as against the other fellow's honey, eh?

A letter from the Secretary of the S.C. & R.I. Association has attracted my attention, and I wish to comment slightly thereon. I was present at the meeting when the "rumpus" was at its height, and I don't remember anyone regarding Mr. Beuhue's action as a threat (barring Mr. Chambers), nor do I think he intended to tie the Council's hands. He said, in effect, we are willing to join if you'll represent us; but if you do not wish to represent us, then we cannot join, and I who have joined must resign. This is what was really the state of things. Both the Secretary and Mr. Beuhne are wrong, in that they both refer to different clauses, neither clause being the one. The clause as worded by the National Beekeepers Committee was as follows:—"That encouragement to the public to begin beekeeping is inopportune at present, until the world's markets are opened and assured to the present beekeepers." Now the Council, instead of confirming our action, passed a want of confidence in its committee by confirming all clauses but the last, which was struck out, on the motion of Mr Chambers. What conclusions must we arrive at then? Why this: *That it is opportune to advise the public to commence beekeeping.* I think somebody will get a warm time of it at next May's convention, as I intend to settle this little war with the Boers as soon as the Army Corps arrive to reinforce us in May next. Will the *experts* please note to bring a Lyddite shell with them, so that we can shift Oom Paul sky high (or, failing that, shift ourselves).

Your remarks on page 162 on an honest man. Do you mean thin sided hives cause foul brood? or chilled brood? I can't believe the former, and don't believe the latter. That foul brood article on page 158 is the best on the subject for a long while; but that article on the "Dickel Theory" is too thin and won't go down in Australia, I'm afraid. For instance, he does not say that the final bee that hatched from those worker drone cells was male or female, etc. I am of the opinion that they would hatch queens. I have often seen what was apparently drones being raised from worker larvæ; but generally destroy anything in this line, fearing an inferior queen might be the result. I would not like these supposed drones for mating queens to. But I forgot—there's no need to mate the

queens now, since the professor tells us that the quality of food given decides the sex. Perhaps our farmers might turn their heifer calves into buck goats by putting them on a diet of goat's milk, eh? Here is a question for the professor: A queen not being mated within a certain time, will commence laying in worker comb, seeing the bees now would not desire drones, how is it that *they change these eggs into drones?* I would stick to the theory we have all proved, and say the queen was a drone layer. This same queen, if properly mated, would lay her eggs in worker comb, which would hatch out worker bees (and no drones). They must therefore be decided in and by the queen. Why should she not lay in drone comb if her eggs are all the same and the food decides the sex? But she will skip a drone comb very often, having preference for a worker comb next to it. Why is this if her eggs are all of the same sex?

The Season.—Spring was three weeks late with us, consequently no bees hatched until all old bees were about saying good-bye; but we were fortunate enough to pull them all through, safe and sound. Then for November we experienced cold showery weather, and our strongest hives and best honey gatherers hung listlessly on the half-drawn combs, and would not build an inch more comb. This was just a fortnight ago, and a wet week would have very near starved them; but we've had two warm weeks (which have burst the yellow box buds), and by 'Xmas we won't be able to recognise them as the same colonies, as they are pushing things along in great style.

Well, Mr. Editor, I must stop, or you'll object. I have a wish that goes a long way, to many lands, and many apiarists. To all beekeeping friends I wish a Merry 'Xmas and a Happy New Year.

[Send that promised photo along.]

HONEY EXHIBITING.

The first point to consider is "How are we to set about preparing our honey for the show bench?" Suppose we begin with *Extracted Honey*. For exhibition we must use new combs, entirely free from pollen, and if we extract from sections we shall probably obtain lighter coloured honey. The honey must have been gathered in the full flow of the season, continuously without break, and when there is a probability of its all coming from the same source. Presupposing, too, that we all use shallow frames, the first super of these must almost always of necessity be rejected, as being gathered from mixed sources—probably sycamore, hawthorn, fruit and clover. When the combs in our super are fully sealed over and ready for removal, it must be taken from the hive and extracted. If this be not convenient, it must be kept in as warm a place as possible till the time for extracting arrives. When all is ready, the operator holds up all the combs to the light, in order to see if there is uniformity of colour. Any cells at all suspected of honey dew should be noted, and those combs rejected for this purpose. Pollen combs should also be noted and put aside. You extract your honey, you strain it. You fill a bottle and are delighted with its colour. You taste it; it is delicious! If you are inexperienced, you think you have nothing else to do but send it to the show and secure a prize. But no, honey for prize winning is not so easily produced, or prepared for the show bench in such a rough and ready manner. No matter how well "capped-over" the combs may be, there are a few necessary tedious operations to perform before we may say our honey is "in condition." Even if, as I said, your honey is thoroughly sealed, a few days standing in a warm place—by the kitchen grate for instance—in the "ripener" has a wonderful effect, enhancing not only its flavour, but principally its consistency. And where

partly unsealed combs have been extracted, it is doubly important that this ripening process have due attention. In such cases a week at least ought to be given to ripening. Having now your bottles thoroughly clean, inside as well as out, seeing that they are free from cloudiness, specks, bubbles in the glass, and have a nice hard metal cap fitted with a cork wad, you proceed to "jar off" the honey from the ripener. Having filled all your jars and placed them in the order in which they were filled, bear in mind that your best honey will be run off first from the bottom of the ripener, while that at the top is more likely to be thinner and less ripe. Throw over the jars a piece of muslin to keep out the dust. Next day take off the air bubbles from the top with a bone, ivory, or silver spoon. Put on the caps and keep the jars well exposed to the sun and light for a week. This will bleach the honey, if I may use the term, and further eradicate air-bubbles. Now place them in a cool cellar for a day or two to thicken the honey, and if possible, on the show day, stage the exhibit yourself. You can then remove any further air-bubbles and give the jars a final polishing up before the arrival of the judges. At one time it was customary to fill the jars to the very top of the glass—presumably with the idea of cheating the judge with regard to the "density" or specific gravity of the honey. The higher the bottle is filled the smaller the bubble, and consequently the slower it will travel to the top. But a competent, present day judge, is not so easily gulled. He tests the consistency by means of his "taster" or "diber," and the bubble test does not delude him in the slightest degree. The principal points may be enumerated as follows:—1. *Flavour.* Not too sweet nor too pungent, but mild and delicate honey-flavour. 2. *Colour.*—A clear bright pale golden. 3. *Consistency.*—A most important feature. The honey should leave the tasting spoon very slowly. Thin honey is either poor or unripe, and especially liable to fermentation. 4. *Aroma.*—A pleasant fragrance, not too pronounced. 5. *Condition.*—That is, the state in which it is shown. Honey is not "in condition" when it is thin and full of air bubbles. It is "out of condition" when it is cloudy and has commenced to crystallise. Of course, all genuine honey will eventually crystallise; but a judge cannot properly arrive at any approximation of its quality when in such condition. Therefore, granulated honey is shown in a separate class, when shown at all. 6. *Uniformity.*—No "half and half" exhibit must be staged. All the samples in an exhibit must "match," so to speak. They must be uniform. Perhaps I ought to have placed this before the last two points. How is a judge to adjudicate on a mixed lot, and determine whether the six, or four, or eight good examples are to outweigh the remainder in different ones? 7. "*Finish*" or "*get up.*"—Cleanliness, pure glass bottles free from defects. A neat screw cap and wad.—*Beekeepers' Record.*

HINTS ON SOLDERING.

HOME WORK FOR BEEKEEPERS.

It has often struck me that with the many metal appliances in use by beekeepers a few hints on soldering would not be out of place. The art of soldering consists in joining metals by means of "hard" or "soft" solders. But I intend here to deal only with soft soldering or sweating. The tools, &c., required are for this few and cheap, consisting of a small "copper bit," an old pot, a ditto knife, a piece of emery cloth. The materials are equally cheap, consisting of, say, half a pound of "blow-pipe solder" (this kind melts readily and contains more tin than other kinds, and is therefore not so likely to be harmful to honey) (cost 4d.), one pennyworth of spirits of salts, one pennyworth of resin. To get the spirits of salts go to an oilshop; for a penny you get half a pint; go to a chemist and ask for muriatic acid—you get half an oz., both being exactly the same thing. Now, suppose we have a

hole in a honey tin, well scrape round the same or rub with a small piece of emery cloth, as perfect cleanliness is necessary. To solder tin we require our spirits of salts "killed." To do this put a small quantity in a jar, put in some scraps of zinc, and stand in the open air for half an hour. Now put, by means of a stick (it would burn a brush) a small drop on hole. Put "copper bit" in a gas or fire, and get same hot (not red hot), hold a stick of solder and "copper bit" to hole, when the solder will melt, run over the hole, and the job is done! Having cleared the ground in this way, perhaps some of the conditions which go to make a success should be enumerated. To begin with the "copper bit." If we buy this new we shall find that the tip is bright like silver, this is the "tinning." This will wear off in time, so to renew, put "bit" in fire, get hot, file all round with an *old* file, dip in the "killed" spirit, and rub on a brick with a little solder, when if the heat is right the solder will flow all over the tip and the bit be again ready for use. If the copper bit gets red-hot, it will burn the "tinning" off, and it must be renewed before an effective job can be done with it. In soldering brass or copper, use a small portion of powdered resin instead of "killed spirits." All articles to be joined or mended must be cleaned and "tinned." In the case of so-called tin, this is iron plates covered with tin, so no further preparation is required, but if we want to solder, say, an iron tap to a tin extractor, we must first tin the tap. To do so, first clean it by means of a file or emery cloth, then cover with "killed spirit," heat by means of copper bit, or by holding in flame of gas, again rub with killed spirit, and melt solder over same by means of copper bit; this will "tin" the tap, and it may then be soldered to extractor in usual way. If brass or copper, "tin" by the same method, using resin instead of "killed spirits." To solder zinc—say a hive roof—first clean the place to be joined as before, then put on a little "raw spirit"—i.e., as bought from shop—the solder will then flow freely over the place required, but the "bit" must not be quite so hot as for other soldering. The bit must be cleaned every time as taken from fire. To do this dip in the killed spirit jar, and also all work, as soon as finished, must be washed with cold water, to stop action of acid. There are several preparations sold to use in lieu of spirits of salts, but in nearly all cases this will prove the best preparation to use. The action of all such is to prevent oxidisation of the metal while the heat is being applied. Some "kill" the spirit by adding water, but the handiest method will be found to be as I have described. —WILL HAMPTON, in *Beekeeper's Record.*

VICTORIAN NOTES.

BY THE DRONE IN THE "AUSTRALASIAN."

Mr. Taverner's reports are short and thus readable, contrary to the majority of official communications of the nature. His proposal for establishing central depots where Australian goods can be obtained in England interests us only so far as how it will benefit the trade yet to be built up in honey. The beekeepers' committee seem to think that all that is necessary to place our honey on the English market is to send samples to Mr. Sinclair and ask him to sell the bulk which those samples represent. If we were selling red-gum blocks this might do, because all that Mr. Sinclair would have to do would be to order again the same sample of blocks, and they would be easily obtainable. With honey the position is quite different. We want an organised trade, not a haphazard here-to-day-and-gone-to-morrow sale of odd lots of honey. The only way to obtain organisation is to start at this end, obtain a quantity of honey of the various flavours and colours produced in Australia, and then send a man home to England with samples to test the market. No ordinary agent will do. Mr. Sinclair is an agent of proved ability, but he will be of no use unless he knows how to

distinguish each quality of honey, and say from its flavour and colour whence it comes. No agent will be of any use to Australia except a man who can do this. Suppose a sample of red-gum honey be sent to Mr. Sinclair this year and the flavour be approved, and the purchaser after selling out sends back to apiary whence that honey came, expecting a supply of the same flavoured honey to come from the same apiary, he would in all probability be disappointed by getting another flavoured honey the following year, because the red-gum only flowers once every other year. The purchaser would be disgusted and cease dealing in an article he could not obtain regular supplies of. This is the secret of our failure to capture the English market. We have dumped tons of honey on the English wharves, spilt it into the holds of English ships, let it leak out of weakly-made tins on to English roads, and had our best honey sold to make blacking of, at a penny a pound, in London. Then we say the English market is a failure. There is no failure in the English market; the failure lies at the door of the beekeepers themselves, who will not gain knowledge from experience. If a competent man were sent home, and kept in communication with an organised depot in Australia, he would sell the honey, knowing what he was disposing of; and when the buyer returned and said—"I have sold out; I want more," he would reply, "Yes," and requisition for another ten tons of red-gum honey from the central depot in Australia. Confidence would be gained by the buyer, and a steady market by the seller. And in no other way can this result be obtained. We, as sellers, must conform to the wishes of the buyers, and not expect them to study our interests. If we cannot organise at the Australian end just now, at all events let us not injure our prospects any further by wrecking our reputation as honey-producers, and sending samples home to Mr. Sinclair in the same ignorant manner previously adopted.

Beekeepers will learn with regret that Mr. Arthur Hind, of the Mooroopna apiary, is dead. Mr. Hind, by his quiet, gentlemanly demeanour, endeared himself to all who knew him, and his knowledge of apiarian matters was equalled by few, while the information at his command was available to all. Well read, sociable, and a musician of no mean order, the Mooroopna church circles will find it hard to repair his loss.

CHILLED BROOD AND FOUL BROOD.

Chilled brood, produced by a heavy frost or spell of cold weather. The larvæ dead in cells; but can be clearly picked out with a pin. If the hive is strong, and not much brood affected, the bees will themselves clean it out, particularly if honey is coming in. A weak hive and much dead brood, better cut all dead brood out, and give a frame with healthy larvæ. Also put same disinfectant, such as phenol, or camphor, in the hive.

Foul brood is known by its bad gluey smell, and the ropy coffee colored state of the larvæ. Put swarm in new hive with starters only, closing the entrance for a couple of days, burning all affected comb.

A question is unsettled to our mind—Does dead or chilled brood develope into foul brood?

SUMMER.

Birds, and butterflies, and Bees,
Mossy nooks and leafy trees,
Babbling streams and wilding flowers,
Lingering days, and golden hours.
Merry maids and happy swains,
Children making daisy-chains.
Lambkins frisking in the meads,
Old Pan piping on his reeds.

Apple, pear, and peach and grape,
Growing, swelling into shape,
Meadow grass, and waving corn,
Poppies, all in beauty born.
Hedgerows sweet with scent and song,
Idle breezes lingering long,
Silvery seas, and sunny skies,
Summer nothing fair denies.

THE EXPORT MARKET.

A Gippsland farmer writes to the *Leader* as follows :—

Sir,—The scheme set forth in *The Leader* of the 7th inst. presents itself to the farming community as a long step in advance of the present system. Nothing could be more faulty than the present multiplicity of agents, both here and at the exporting end. Granted that increased shipping facilities are a small step in the right direction, still it will not regulate the supplies or prevent gluts, because it is impossible to regulate the arrivals of the different lines of steamers Retaining the produce in the hands of the exporters till purchased by the legitimate distributors in England will prevent the irregular market prices that act so detrimentally to the interests of all concerned. To bring about a thorough success the financial institutions must co-operate, and as they do with other produce, such as wheat and wool, make the advances direct. At the present time the local agents obtain these advances, which are paid to the producers here by the factories or individuals on the actual security of the produce. There should be no more difficulty in obtaining advances on bills of lading on these lines than on any other, seeing that in every instance the articles are covered by insurance. On the lines outlined in Mr. Taverner's report, the federated colonies could easily agree as to the relative amounts to be contributed by each towards running the central depot. The cost would soon be wiped out by the savings effected at both ends, which, if they amount to 0½d. per lb. on butter, and that is a very low estimate, would mean £42,000, on the basis of last season's exports from Victoria alone. This also is only one article, because there are the frozen meats, rabbits and fruit in addition.

One important feature of the scheme is that it does not in any way interfere with the distributors at the other end. The more the scheme is looked into from a practical farmer's standpoint the better it seems. The great trouble hitherto has been that in each scheme set forth one of the conditions was that we should act as distributors. As for the obtaining the right officer to place in charge that can be guaranteed now with certainty. Look, for example, at the proposed butter adjustment and control of the exports, and is not Mr. Potts the very man for the purpose. In this case the thorn and the man may be said to have come together. It may be safely affirmed that in this central depot scheme lies the solution of our difficulties as producers in placing our products to the best advantage on the markets of the world. What is required now is energetic action to carry the scheme into effect.

SOME EXPERIMENTS WITH FOUL BROOD GERMS.

F. C. HARRISON, IN *Canadian Bee Journal.*

A number of correspondents of the *American Bee Journal* and other periodicals have lately given their opinion that the spores of Bacillus Alveii were destroyed in a very short time in boiling honey. In order to ascertain if this belief was conjecture or otherwise a number of experiments were tried and with the following results :—

HONEY USED IN THE EXPERIMENTS.

The honey 20lbs. of clover and 20lbs. of buckwheat, was furnished by Mr. R. F. Holtermann, of Brantford. The clover honey had a specific gravity of 1.042 and the per cent of formic acid in it was .057. The buckwheat honey had a specific gravity of 1.042, and the per cent of formic in it was .170, that is about three times more acid than was in the clover sample. (This result was in accord with a number of other experiments made on this subject two years ago, and reported in the Agricultural College report for 1896.)

The formic acid determination of the two samples is given because this substance is used in Europe as a curative or preventative of foul brood. Bertrand in

the Conduite du Rucher, 8th Ed. Nyon, Switzerland, gives the following directions for the use of this substance:—

A solution of acid in water in the following proportions is made: Acid 10, water 90, and this solution is poured into the cells, the frame having been taken out of the hive. In addition, to hasten the cure, a tablespoonful of the solution to a litre of syrup may be fed to the bees.

This last quantity, a tablespoonful of a 10 per cent solution of formic acid to a litre of syrup, is exactly equivalent to a 15 per cent solution of formic acid, or a little less than is normally found in samples of buckwheat honey. This small amount, however, is sufficient to inhibit the growth of Bacillus Alveii, or in other words it acts as an antiseptic.

In a number of experiments the writer has found that nutrient media made up with .15 per cent of formic acid was sufficient to prevent the growth of this germ, even when the cultures were placed uuder the most favourable conditions for their growth, except of course the presence of the acid. This strength of acid has no effect on the spores. Spores kept in .15 per cent formic acid beef broth for six months retained their germinating powers unimpaired.

DEATH POINT OF THE SPORES OF BACILLUS ALVEII IN HONEY.

In these experiments the spores were treated in three different ways:—

A. Silk threads were dipped into water containing spores of B. Alveii about three weeks old, and allowed to dry.

B. A large test tube was half filled with honey, and spores were thoroughly mixed into it.

C. Small capillary tubes were filled with water and spores and then sealed.

These three lots were then suspended in 20lbs. of boiling honey. At the end of every fifteen minutes, a silk thread, a portion of the honey and spores from the test tube, and two capillary tubes, were withdrawn from the boiling honey, immediately inoculated into nutrient media, and placed in the incubator at a temperature of 37degs. C. By the growth or absence of growth in the media one could ascertain if the spores had been killed or not.

The results of this experiment was as follows:—Clover Honey.

A. SILK THREAD.

TIME.	TEMPT.	RESULT.
15 min	115degs. C	Growth.
30	113degs. C	"
45	115degs. C	"
60	113degs. C	"
1.15	114degs. C	"
1.30	115degs. C	"
1.45	115degs. C	"
2 hrs.	114degs. C	"
2.15 min.	116degs. C	"
2.30	115degs. C	"
2.45	115degs. C	no growth.
3 hrs.	115degs. C	" "

B. TUBE CONT. HONEY.

TIME.	TEMPT.	RESULT.
30 min.	113degs, C	Growth.
45	115degs. C	"
60	113degs. C	"
1.15	114degs. C	"
1.30	115degs. C	"
1.45	115degs. C	"
2 hrs.	114degs. C	"
2.15 min.	116degs. C	"
2.30	115degs. C	no growth.
2.45	115degs. C	" "

C. CAPILLARY TUBE.

TIME.	TEMPT.	RESULT.
30 min.	113degs. C	Growth.
1 hr.	113degs. C	"
1.30 min.	115degs. C	"
2 hrs.	114degs. C	"
2.15 min.	116degs. C	"
2.30	115degs. C	"
2.45	115degs. C	no growth.
3 hrs.	115degs. C	" "

From these experiments it is evident that to kill the spores of this bacillus a temperature of 113degs. to 116degs. C for two and a half to two and three-quarters of an hour was necessary. MacKenzie in his experiment on the thermal death point of the spores in wax, found that they were killed by a temperature of 100degs. C. for two and a half hours.

The above experiments were again repeated with both clover and buckwheat honey and with the same results as above.

The vitality of the spores taken from dead larvæ is as a rule somewhat less than that of spores taken from comparatively young cultures.—*Canadian Bee Journal.*

INTRODUCING QUEENS.

G M. DOOLITTLE, IN *American Beekeeper.*

In a practice of thirty years, many things have come under my observation which have been interesting, and have thrown light on an operation which has many times proven, not only myself but to multitudes of others, to be not always a successful one. Some seem to think that the bees are all to blame when a queen is killed in introducing, but many facts in my experience go to prove that the queen has more to do with the loss sustained in introducing, than the bees. Let me give some experience in the matter. In receiving some queens from abroad at one time, I tried to introduce them by the direct plan, by way of daubing them with honey. This is done by dropping the queen in honey, and rolling her over in the same till she is thoroughly covered with it, when she is dipped up with a spoon and dropped in at the top of the hive, the old or reigning queen having been first removed. These queens were treated by the bees the same as they did their old queens, but they would not stay in the hive at all. They would run out of the entrances, often followed by a few anxious bees, which fed them and kept them alive. In one instance I had one out thus till I had put in another queen, and she had begun to lay, when I found the first under the bottom board with a little cluster of bees which were feeding her and keeping her alive, clustering about her cool nights. Again at one time I had a queen which began failing the latter part of June. Wishing to replace her I went to a nucleus and took out their queen, which had been laying about a week; then going to the colony having the failing queen I removed her and placed this young queen on the comb right where the old one was when I picked her off. She immediately commenced to peep, just like a virigin queen does when there are rivals in the cells in a hive calculating to send out an after-swarm. To this the bees paid little or no attention, but came up to her, evidently with the intention of feeding her, but instead of taking the food offered her, she struck at them or laid hold of their heads with her feet, and continued peeping. She passed around among the bees, peeping at intervals, for about five minutes I watching her all the while, when she came to a young bee which had just emerged from its cell, too white and downy to make any resistance. Uttering a short peep she immediately grabbed this bee, and stung it so it curled up and died in an instant. At this the bees became exasperated, and showed signs of hostility for the first, they now beginning to cluster the queen. With a little smoke I dispersed them, and still continued to watch. In about fifteen minutes she stung and killed about half a dozen of these young bees and was clustered each time by the bees. I as often dispersing them with smoke. At all other times the bees were ready to feed her and treat her as they did their own queen. Once or twice she took food of the bees which offered it, but as a rule she would strike at them with her feet when food was offered. I now closed the hive and left them. Upon looking two days later I found queen-cells started, and supposed her dead; but in twelve days they cast a swarm, and lo, there was my queen running around in front of the hive, for I had clipped her wings when taking her from the nucleus. I opened the hive, but found no eggs or brood, except sealed brood, cut off the queen-cell and returned the bees upon which the queen went to laying and made a fine mother for this colony for three years. I have had other cases quite similar since, but none quite so persistent.

Many queens would never be molested by the bees if they would behave themselves as they did in the hive they were formerly in, and yet parties have often been so rash as to crush a ball of bees (which had enclosed or hugged a queen) under their feet, supposing they only were to blame, when in reality the queen was the one which caused the trouble.

Now if some method could be devised which would always place the queen when introduced to a strange colony in the same condition as to quietude which she enjoyed when in her own home, queen introduction might be a success with the masses, who now so often fail in the undertaking. This was the conclusion I came to after witnessing the above and very many more cases which I will not give, as it would be very nearly a repetition of what is given above. So looking toward this end, I adopted the following during the early eighties:

I made a cage out of wire cloth, so as to form an open box as it were, three inches wide by six long and an inch deep. This was done by cutting inch squares out of each corner, and bending up the sides at right angles. Having the sides turned up, I next unravelled the wires down a little more than half-way, or about five-eighths of an inch, so that this unravelled part could easily be pushed into the combs. Having the cage ready, I removed the queen I wished to supersede, shook the bees from the comb which the old queen was on, and placed the new queen on it where there was some honey and emerging brood, and then placed the cage over her, pressing the unravelled edges of the cage into the comb until the cage proper struck the surface of the comb, which would put the points of the wire through the mid-rib so that the bees will not gnaw under the cage and liberate the queen before we wish her released. I now placed the

comb in the hives, leaving three-fourths of an inch between it and its fellows, so the bees could go all round the cage. In a day or two I opened the hive and found many young bees hatched out in the cage with the queen, and she had laid several eggs in the cells under the cage; the bees seemed all quiet and peaceable, so I carefully lifted the cage and she walked out on the comb just the same as if she were walking on the comb when I took her from the nucleus. I have used this plan more or less ever since with entire success, except in one or two cases where I lifted the cage when the bees were clustered on it quite thickly. It is always best to wait until the queen has laid in the cells under the cage, and the bees of the hive pay no more attention to the cage than they do to the rest of the surrounding combs.

DO BEES SELECT A HOME BEFORE SWARMING.

In regard to bees selecting a home before they swarm, there seems to be a difference of opinion, some claiming that they do select it, while others are equally sure that they swarm without any knowledge of where they are going. In most cases, probably, the latter view is correct; for swarms have been known to come out, cluster, hang all day and over night, travel a few miles, then cluster again, and so on for a week or more before they found a home anywhere; yet I am positive that some swarms do select their future abode some days before they swarm. When but a boy I many times saw bees searching the body of large trees, about every knot-hole or crack, which stood on the edge of the woods near where I was at work, as if looking for some place to enter; and at that time I remember wondering what they were doing. Later on the same thing was witnessed, only at this time the bees were actually going in and out of a hole in a very large tree, as well as looking over the trunk of the same. In this latter case the bees were seen for several days at work during the middle of the day, the bees going and coming from the hole about as bees would work from a weakly nucleus; while in the morning, and after five in the afternoon, no bees would be seen about this or any of the trees. A few days after that, a swarm came out from one of the few hives which father kept at that time, and went straight to this tree without clustering at all. From this I felt sure that in some instances bees did select a tree to go to before they left the parent hive; but after having bees of my own, and seeing them cluster soon after they had come out, for hours, and in one instance stay till they had built considerable comb, I did not know what to think in the matter. At about this time a party living about four miles from me purchased the Italian bee, and with him I went into partnership in queen-rearing, in my early beekeeping life, so was with him considerable of the time. He told me, one day, that at an out-apiary which he was working, which contained only black bees, he had noticed in the forenoon Italian bees at work cleaning out an empty hive which stood near one side of the yard. This was something new to him, he being considerably excited about it. He said he should keep watch of the matter and see what became of it. I was also much interested, and told him what I had seen, as related above. The next time I went there he told me that the bees which he saw cleaning the hive were his own, as he had surmised after I told him what I knew in the matter a few days before; for at that time his bees were the only Italians within four or five miles of his residence. He said that a swarm came out from one of his hives, and, after circling around a few times, started off in the direction of this out apiary. Having a fleet horse near at hand, and being a fearless rider, he jumped upon it, and in a moment was going at railroad speed for this out-apiary, arriving there in time to see his swarm of Italian bees rushing pellmell into the hive that the bees had been cleaning out. As he kept the wings of all his queens clipped, he knew that he could soon tell for a certainty whether these were his bees or not, although he had no reason to doubt the matter now; for if they were he had their queen at home in a cage, and sooner or later they must return to her unless they had come

across some queen in their flight. In about half an hour they became uneasy and began to leave the hive, seeing which he returned home only to find them coming back and running into the hive from which they went, and clustering about the cage containing the queen which he had left at the entrance of the old hive. He now liberated their queen, and the next day they swarmed again, and again went to this hive at the outapiary as before.

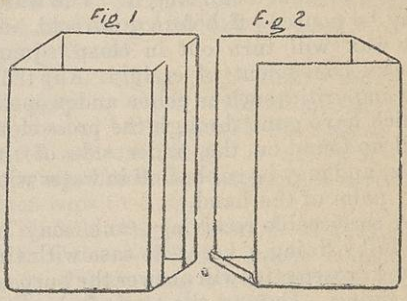
This was kept up for four or five days, when he became tired of it, and then he divided the colony, thus putting a stop to their swarming. The above instance cannot be accounted for in any other way than that the bees had selected their future home before leaving the parent hive; but that they always do thus is by no means proved by these incidents.

My opinion is that where one swarm thus selects its future home before leaving the parent hive, ten do not thus select, but go out without any idea of where they are going, and, after clustering, send out scouts in search of some suitable place for a home. If the scouts fail in finding such a place, the swarm unclusters and moves off from three to ten miles, when they cluster again, and again send out scouts, thus clustering and sending out scouts until a suitable place is found. If a rainy day or two come on while they are clustered out on a limb, they build some comb; and if the weather is warm, and plenty of honey is to be found near, when the weather clears up again they may cease to look further for a home, and may make a home of the limb, rearing brood and storing honey the same as if in a hollow tree, a cleft in the rocks, or a hive; for the cases are by no means isolated where colonies have been found with plenty of combs, brood, and honey, for wintering, with nothing to shield them from the elements save the twigs and a few leaves above them. I have a queen in my yard now whose mother's colony thus made a home in a grape vine, secured by a beekeeping friend in New Jersey.—*Gleanings.*

WAX AND HONEY PRESS.

BY R. BEEHNE, TOOBORAC

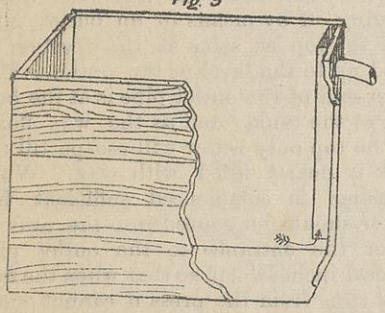
Where any quantity of old combs, cappings or wax scraps are to be treated it will be found best to have a receiving tin or tank, as it may be called, into which both the liquid wax, and hot water run from the press. This receiver separates the surplus water from the wax, the water running off by means of an outlet pipe over the top as soon as the receiver is filled up to the level of the outlet. The inner end of the outlet pipe is at the bottom of the tank, and as the wax floats on the top only water will escape till the tank is nearly filled with wax. When pressing is commenced sufficient hot water should be poured into the tank to cover the entrance to the outlet pipe several inches deep, so that when the first wax runs from the press it cannot enter the pipe. The pipe is best carried up inside the tank, passing out through the side about 4 inches from the top. Being



inside it is kept hot during any interval in pressing, and therefore not liable to get choked should a little wax by some mistake get into it. I have given 4 inches as the distance of the level of the outlet pipe, that is, for a depth of tank of about 14 inches. Water alone would of course only rise in the tank to the level of the outlet spout, but wax, owing to its lighter weight, will rise higher when floating on water, and if the outlet spout is too near the top the wax will run over at the top, although the outlet for the water is lower than the top of the tank. When pressing is finished some boiling hot water

should be poured through the press to wash out any wax which may have congealed above the woodwork of the grating. The wax in the receiving tank may be covered and left to set, or it may be ladled off into moulds or cooling tins. I find it convenient to ladle it into tins one-

Fig. 3



third filled with hot water, stand two tins in a case, cover up, and allow to cool slowly, without disturbing it. The water may be poured off before quite cold, and the wax will turn out in clean square blocks, convenient of casing. Any trifling impurities such as pollen and propolis which have gone through the press cloth will be found on the under side of the wax, and may be rubbed off in water with the palm of the hand.

A serviceable receiving tank may be made by lining a kerosene case with tin. Two kerosene tins will answer the purpose for lining. Cut out the tops of the tins close to the rim, and hammer back the cut edge. Then cut a side out of one, as shown in Fig. 1, and the other as in Fig. 2; put them into the case and solder together, straightening out those parts of the cut side left for lapping over from one tin into the other, at the sides of one tin and at the bottom of the other. Then withdraw the lining from the case, and near one corner, and about 4 inches from the top, cut a 1 inch hole, and solder a spout over it about 3 inches long inclining downwards. Out of the longest piece cut out of the tins, cut a strip 3 inches wide, bend it to a right angle 2 by 1, and solder it into the corner of the tank having the spout, soldering it tightly all the way down, but leaving the lower end open, and ½ inch from the bottom of the tank. as shown in Fig. 3. Then remove one board of the side of the case, and cut a hole in it for the spout; put the lining into the case, and replace the board.—*Leader.*

LOCALITIES FOR APIARIES IN VICTORIA.

In reply to questions as to above *The Leader* gives the following replies :—

Ti-tree honey is rather inferior, and as your red gums bloom only every third year, the locality cannot be considered very suitable. Orchards and gardens cannot be taken into account, as the bloom comes too early in the season for anything but stimulation to breeding. A limited number of hives may give a moderate yield in a red-gum year, and hold their own in the off season.

"The timber close at hand is mostly grey box. There is plenty within a two mile radius. Inside of three miles there is a large red gum swamp. Bordering a river, about five miles distant, there is any quantity of red gum, yellow box, wattles, &c., while I have twenty acres under vines and five acres of fruit trees, mostly apples. Is the site suitable for an apiary?" Answer—From your description the locality appears to be very suitable. Red gum does not bloom every season, and grey box blooms late; yellow box blooms from November till January, but the distance of five miles is rather too great for your bees to work on it profitably. You would probably get a good yield from red gum occasionally, and one from grey box more regularly, providing you can keep your bees strong till February, which is rather difficult when there is no honey bearing bloom from November; till then wattles and scrub afford but little honey, but are useful in encouraging breeding, as much pollen is gathered from them. Vineyards and orchards cannot be seriously

considered. In your circumstances it would be wise to leave your colonies heavy supplies of sealed honey at the end of the season, on which they may exist and breed up, not in winter, but the following November and December.

T. O'D., Belgravia, Oct 14:—Your most valuable and interesting little journal arrives safely each month. I wish to have the following questions brought before notice of some of your readers. I intend to start an out apiary in a certain locality, and wish to know how many colonies it will support, without overstocking. For some three or four miles all round, it is heavily timbered with white and yellow box, gum, apple, stringy bark, wattle and heather of every kind in abundance. The average yield per hive in my home apiary was 240 lbs per hive. At present one colony of goldens, the queen of which was bred by Mr. Jervis of Moss Vale, are rolling in something like 10 lbs a day, when the weather is favourable. Rather a curious incident occurred in my apiary a few days ago. Having superseded a queen, the old one was for a time, placed in a cage on top of a neighbouring hive. On passing the hive a few hours later, I noticed a swarm of bees had lodged on the cage. A queenless swarm in the next row, rather than waiting for a cell to mature, swarmed out and had taken up with the caged queen. On releasing, I was surprised to find that the bees made no attempt to ball her.

P. H. L. T., Roma:—I should have written to you before had there been any good news to send, but unfortunately the protracted drought has been so severe in this district (South West) that beekeepers have had, the past season, no crop. Many have lost all or most of their bees. I have been more fortunate, having extracted about 25lbs a hive. But I have to feed some weak hives. A plague of caterpillars having stripped all the leaves in my neighbourhood, the sandalwoods failed entirely to give the nice crop they generally give late in autumn, to the detriment of winter stores. I have, however, great faith in this interesting pursuit, and will (D. V.) largely increase my apiary this coming spring. Could you through your columns, kindly recommend a book on Queensland or Australian flora as pertaining to beekeeping. Living in a thick scrub, I am ignorant of the names of many interesting and honey producing plants. Trusting your coming season will be a good one, and wishing luck to your lively little paper.

The best we know of is Maiden's "Flowering Plants and Ferns of N S.W." published by the N.S.W. Government Printers, in seven parts 3/6 each, postage 1d. Perhaps some of our readers can tell us a better.

CAPPINGS.

From American and other Bee Journas.

Straw for Smoker-Fuel.—A good fire is started in the smoker, and then the straw is jammed in. It burns a long time, and is not so hot as wood.—*Beekeeper's Review.*

W. H. Pridgen, in the *Review* says:—The slats to which artificial queen-cells are to be built should be soaked in melted wax until there is no bubbling or frying, before any attempt is made to fasten cups to them.

The following is the mode of beekeeping in Cuba:—When a swarm is placed in one of these long boxes, the bees take up their abode in the spot most suited to their fancy, generally near the middle, leaving a vacant space at each end. As the honey-flow commences the bees naturally build comb and store the honey in the closed end where it is better protected from outsiders. The first extracting takes place during the latter part of December, when the board is knocked off the rear end, and the honey cut and pulled out with long hooks. After this operation, the hives can be turned around and the other end closed up, the extraction of the other end taking place during the latter part of January. Two, and sometimes three, extractions are

made during the season, besides a "l'impieza," or cleaning up, given the bees in August or September, when some honey and considerable wax is taken from them, thus reducing the opportunity for the moth-worm to get a hold on them. At least 90 per cent of all the bees on the island have disappeared.—*A. Bee Journal.*

My plan has been to place any crooked combs I may chance to have—brood combs or otherwise—at the top of a warm room, on a piece of canvas, until thoroughly warmed through, when the combs can be bent and straightened to the perfect satisfaction of the operator. In this way I have a perfect thing of it; and as the work is performed in the winter it is much more cheaply done than in having the bees make a "botch job" of it in the summer.—G. M. Doolittle in *A. B. Journal.*

I have often noticed that a colony which winters extremely well, and goes to breeding rapidly in early spring, is generally sure to produce less honey than the colony that begins to breed rapidly from 40 to 50 days previous to the honey harvest. The reason sems to be, that the queen in such a colony breeds rapidly very early, ceases her prolificness to a very great extent, this allowing the bees to put the first honey coming in into the brood-combs, rather than forcing it into the sections, as does the queen which arrives at her maximum egg-laying at this time. If this is not the case, the colony becomes demoralized by becoming too strong at this time, and so goes to loafing around, or, what is worse still, contracts the swarming-mania—either of which is against a large yield of section honey. If the bees become overanxious to swarm, or the queen ceases to be prolific, so that the bees get the start of her and store honey to any great extent in the brood-chamber during the first of the honey harvest, that colony will not do nearly as well as will one which does nothing of the kind.—G. M. Doolittle in *A. B. J.*

R. Wilkins says in *Gleanings*:—I kept a hive on scales all the season, and observed that, when the thermometer rose from 80 to 100degs., bees collected most honey; above that, the amount diminished, so that at 110 to 116degs. almost nothing was gained, and in some cases the sealed brood was killed, remaining in the cells the rest of the season, seriously damaging the hives. Younger brood may have been killed and cleaned out without my noticing it. Heavy combs of honey in hives without bees, but in the shade, began to melt down.

Harry Howe says in *Gleanings*:—I am feeding considerable here now to stimulate the bees for the honey harvest in November. It is a sticky, mussy job at the best to feed each colony separately in an apiary of 200, so I have tried the plan of taking a hive-body, with enough combs to keep a Miller feeder from dropping through; set it up a few inches from the ground, with a feeder full of honey, and water on top. A row of them are set in some bushes in one corner of the apiary; and as fast as they are emptied by the bees they are filled up again. When the feeders are on the hives there are always robbers hanging around trying to get at the honey, which they smell. By this method they seem to act about as they would if the honey came in from the fields.

QUESTIONS.

254.—Queens raised under swarming or non-swarming conditions. Some say the former is best. Others try to raise under latter conditions. We want opinions?

255.—There are a number of bees working on thistles in our neighbourhood. They are nearly as long as the ordinary Italian bee, about one fourth of its bulk, and with several yellow bands on the abdomen. Can any of our readers give any information respecting them?

256.—Do bees work as well in old combs as new ones?

257.—Do bees ever stop out all night?

R. H. JERVIS.

254.—Queens raised under non-swarming conditions are as good as any, providing there is a fair amount of honey coming in.

256.—I take the question is meant if one hives a swarm, if so I think on new combs.

E. T. PENGLASE.

254.—I like to get all the cells I can from the best colonies during the swarming season, because I believe they are the best. After 7 years experience in queen rearing, I don't see there is any difference as to being swarmers or non-swarmers. They all swarm if they are any good. Give me a queen that can bring out a good swarm once a year.

255.—I can't give any information.

256.—Some of our combs are six years old, and I don't see that they have any preference. Work as well in old as new I think.

257.—I have seen them coming home at dusk. I think a few may stay out.

ALBERT GALE.

254.—Swarming conditions. There are too many contingencies to work against under the non-swarming.

255.—Is it a *bee*? The description is so vague that without seeing the insect, who can tell. Is it not the common garden *bee-fly* (*Eristalis tenax*) that is here mistaken for the Italian bee, the yellow bands on the abdomen are very similar. Will your enquirer kindly note, the bee has *four* wings and the bee-fly only *two*.

256.—A new swarm will work as vigorously on the one as on the other. A deal will depend on the flow, if old combs are given to an old swarm.

257.—I have both here and in the Old Land seen bees asleep after sun down on flower heads, but it has only been in a very few instances.

G H. ARKINSTALL.

254.—To my mind there should be no two opinions, 99 out of 100 admit that swarming is greatest nuisance that we have to contend with in the apiary. The conditions under which the queens are raised is as nothing in comparison to the selection of the queen you breed from. This is the key to the whole question, breed from a queen that is not given to swarming, not losing sight of other and equally good qualities as well, and you will be improving your stock in the right direction.

AUSTRALIAN YANKEE.

254.—Practically there is no difference. I now rear my queens by the Doolittle method. I find that queens so reared are far superior to those reared in any other way.

255.—There is plenty of them around here, they build or rather dig their nest in the ground. From a beekeeper's point of view they are no good.

256.—Yes, Sir. If friend Packham would run fewer colonies, I think he would see what was wrong with his bees.

257.—Yes.

QUESTIONS NEXT MONTH.

258.—Did you ever try to ascertain the quantity of honey obtained in a single day by one hive? Mr. Atchley has stated, on one occasion 25lbs. per day was gathered from Alsike.

259.—Can you give average per hive gathered for several years in succession?

REMOVING HIVES.

Cut pieces of tin—two pieces three or four inches wide, length of hive; one piece same width length of back. With clout headed one inch tacks, fasten hive and bottom board together by these.

Cut piece of wire cloth exact size of inside of top of hive. Fasten this on top of frames by four strips size of ordinary bottom bar of frame, and length of sides and end of hive, tacking through strips and wire on to frames, using 1 inch wire nails. Should the frames not be all self-spacing, this tacking should secure them at same time.

At evening or night time, when all the bees are in, close the entrance with closely folded calico or other material well jammed in. It should be so folded as to fill the space up nicely and tightly. A stick, size of entrance with nails loosely in, put to the entrance, a hammer tap on each nail, closes entrance quickly and effectively. This time of year bees travel best with nothing over wire cloth. If cover should be put on, a space between cover and hive should be manœuvered so as to leave ventilation. We have

never had any trouble with hives we have so sent.

If going by train let the frames be parallel with the rails, if by coach parallel with axles.

As a rule we find railway officials are very careful and obliging in matters of this kind. Still accidents sometimes happen. On one occasion a railway guard put two hives of bees on a shelf, end of break van. A heavy shunt upset both. The poor guard had a picnic till next station. If many hives have to be shifted, what is termed a louvred truck should be secured. A vehicle with good springs should be used when conveying on roads or otherwise.

In removing swarms in box hives turn them upside down, putting wire cloth in place of bottom board, now the top.

ALSIKE CLOVER FOR BEES AND STOCK.

F. A. SNELL, in *Gleanings*.

There is no crop I think that will in the Northern States, pay the bee-keeper or farmer better to raise than does alsike clover. It blooms profusely, and the blossoms are rich in the secretion of honey—just what the apiarist most desires. The period for the building up of colonies and their increase in numbers also comes at the time this plant blooms. With frequent rains this bloom will yield honey for six weeks, and a heavy flow for a full month when all conditions are favorable. It is a heavy bloom of honey-yielding plants that gives a big crop of surplus. It matters not if there is a good deal of white clover growing. The farmer beekeeper should grow this clover so far as he can reasonably do so. More surplus honey will be secured in one month with a heavy bloom than in three or four months with only a fair bloom, other things being equal. I have many times found this proven true as stated above. There is never too good a bloom when we do our best to secure it by generous sowing of seeds producing honey; hence we should sow the alsike, and then with white clover we may have a generous honey harvest from the clovers, which is of finest quality. As a crop for stock, after an experience of over thirty years I can say that the hay from alsike is much superior to that from any other clover I know of, and, of course, is far ahead of timothy hay. The quality is very high. Stock prefer the alsike for pasture or hay to any thing else in the line of hay. The stalks are fine, and the hay is all eaten—no woody stubs left, as with the coarser clovers. If not wanted for seed it is well to sow a little timothy with it, as it then stands up better. Under favorable conditions, with rich land I have had it grow four feet in length of stalk—usually two to three feet. Its hardiness is a strong feature in its favour. It has with me repeatedly wintered well, when red clover has been killed out almost entirely. I have never known it to winter kill. It has proven to be entirely reliable. This clover seeds at the first blooming. It may be cut when just nicely in bloom, and then it will bloom later on in the season, giving nice fall feed for stock and bees.

Alsike will thrive on land quite moist, and give good crops, where the red clovers will not grow. If this clover is cut and cured a little early, or when nicely out in bloom, it is much relished by hogs; and when fed in winter, in addition to other foods, it contributes materially to the health of the animals, which is a matter that receives far too little attention from farmers in general. The farmer who keeps both bees and stock has a double interest in the matter of growing alsike clover—for the honey and for good feed for the stock upon his farm.

I have secured a good stand of this clover by sowing the seed on the grain stubble soon after harvest, when we had seasonable rains that would start its growing. A few acres should be at least tried on every farm. I do not know how far south it will do well; but in Northern Illinois, and north of that, it does well, and is much grown in some sections.

QUEEN'S DOUBLING UP WHILE CLIPPING.

Some years back I noticed articles appearing in your columns *re* doubling up of queen when clipping wing. About the same time I lost an imported queen in the same way. My method since then has invariably been to hold her majesty by the shoulders, and then use a fine scissors. A week ago, during the presence of visitors to my apiary, I lifted a queen by the wings for the purpose of clipping her flight powers, when she doubled up and appeared dead. You can guess my discomfort, as she was the finest of last year's rearing. After a minute or two she gave faint signs of life, and being busy I placed her in the hive and left, intending to come back later. However, I was unable to do so till a week had passed. Yesterday's examination showed her apparently her usual self. No doubt the bees have a way of restoring animation, and I would suggest to others in a similar predicament to try similar means before throwing queen away.—W. J. M., Parawai.

[We had a similar case recently, the queen doubling herself right up as if stung. She was straightened out by a pin held in the hand for a short time, when showing signs of life was placed back in the hive. Next day she was all right.]

CORRESPONDENCE.

R. H. J., Moss Vale:—Bees are storing a little honey, have extracted a nice bit, but on the whole I do not think it will be a good season.

B. H. F., Port Adelaide, November 27, 1899.—I am well pleased with your paper, and thank you for forwarding the first number. Hoping the interesting and instructive articles in the paper will be continued, and wishing you every success.

J. J. D., Bellinger River, November 20, 1899.—I have received the labels safely and in good order. They are all that could be desired. Those that see them say they are excellently got up. I am of opinion that they will help me to dispose of a larger quantity of my honey locally.

G. H. A., Inverell, Dec. 18:—Present out-look for a crop of honey is gloomy, a short flow from variegated thistle, and prospect of little apple tree, is all that is in view at present writing. Have sold all last year's crop, excepting one ton, locally, mostly in 4 and 7lb tins.

E. E. B., Gulargambone, 11th December, 1899.—The country around here is altogether unlike the coast district. I think bees will do fairly well here; at all events I am going to try and keep a few swarms—or get them to keep me in honey. There are no bee-keepers around this district, except a few "gin-case" men.

E. T. P., Fernbank, December 11.—In this part of Gippsland the season has been only fair up to the present. There is a good flow on now from redgum and peppermint, if the weather keeps fair. We have had all sorts of weather this spring—one day hot and then a week or so of cold wintry weather, with the wind roaring and the lids flying from the boxes. Very few swarms and no disease up to the present. Bees are in good order, full up, and I have them all strong, working 153 at the home apiary. Started an out-apiary four miles away.

J. W. D., North Killarney, 2nd December, 1899.—Please find cheque for 18s. 6d. due for subscription *A. B. Bulletin* and *Martin's Home and Farm*, which I find both valuable papers. I have had a very bad season last year on account of so much dry weather. The bees seem to have had a mania for swarming. Nearly the whole of my apiary, containing 300 colonies, cast swarms. They had just enough honey coming in for brood rearing, and they took the advantage of increasing. I am pleased to say the winter was very mild, and the bees came out in splendid condition, in fact, I never saw bees come through the winter so well. I hope to have a good season this year, as I have every prospect so far.

Hoping you will have a prosperous year, and wishing you a Merry Xmas and a Happy New Year.

"Alvei," Auckland, N. Z., writes:—I have read in your valuable journal of the Naphthol Beta cure for foul brood. Now, while it is very nice to read of a cure for this fell disease, it is very irritating not to be able to apply the remedy to your own bees. Your correspondent omits to mention quantities. If you would kindly name the correct quantity of the drug to be used with each quart of syrup and the best method of dissolving the Napthol, I am sure you would confer an obligation on many, besides yours truly.

We are sorry we cannot give the information ourselves. Can any of our readers oblige us with it?

H. R., Wartook, Victoria, Sept. 14.—We, here in the Wimmera, have had a very bountiful harvest last summer. I took something over 13 tons from between 60 and 70 hives. In several cases the yields from individual hives averaged close on half ton per hive. All through last January, February, March and April I was taking, by actual weight on the scales, from 120 to 130 lbs. per fortnight from my strongest hives. These were four story Langstroth hives, with unlimited room for the queens. Previous years I have confined the queens to a great extent to the lower story. In future they shall have all the room they want. At present the bees are very strong, and rearing brood very fast, and I expect swarming will be the order of the day in a fortnight or three weeks, but as for a yield of honey, I am afraid we shall have to wait until March, as usual in our off years. The price is still at a fair figure in Melbourne, and I think in view of the small quantity likely to be taken this season, that it will rise considerably.

A. H. M., Port Elizabeth, Cape Colony, November 13th, 1899.—I do not claim to understand much about the practical management of bees. I have introduced queens once or twice successfully, but I must acknowledge most times have been failures. I once imported a swarm of Ligurians on eight large frames from W. B. Webster, Benfield, England. They arrived in good condition, but in six months they all died. I would like to know if any of your readers could explain the reason. The only thing I noticed about them was that on very hot days they came out, fly a few feet from the entrance of the hive, drop on the ground, then spin round like a top on their heads, and in two or three minutes they would die. When all the swarm died off I sent for a queen, which also arrived in good condition. I introduced her into one of my good swarms. She at once began to lay well, but as soon as she had all her own bees they went off the same way. So I got tired of imported bees; but I think the Australian climate is very much the same as in South Africa. I am sending you a little book by this mail, which is causing great excitement in the colony—not about bees, but about the war. Business all over the country is simply dead. Many people are starving. We have about 4000 people from the Transvaal in town, about 1700 living on charity.

ONLY A WORKER.

I am a bee, only an ordinary working bee, but of mature age and some experience, in fact middle-aged, as it is three weeks since I left my cell. I well remember that day, how I felt I must get out, and I broke the capping. I thrust my head out and hundreds of bees seemed to rush over me. I thought some might have helped me out, but none did; and after a long struggle I was free. Oh what a scene of confusion I thought it, the air was hot and stifling, and there did not seem room to move: I wondered what they were all doing, for all were evidently busy. I was jostled about and seemed in everybody's way. I was all limp, too, but that soon passed off, and I made my way to a cell and

helped myself to honey. Presently a bee said: "What are you doing? You must work, we don't want idlers here; we only put up with drones for a short time." So I meekly asked what I could do, and my sister said, "Go and ask the forewoman." So I asked, "Which is she?" "There she is," was the reply. So I went and asked what I could do, and was instructed how to feed the larvæ. Well this went on for some days, but I wanted to go afield in the outside world. At length my wish was granted, and for the first time I used my wings. Oh it was so delightful to see the fields and suck the nectar from the flowers. Soon I had my honey bag full and away I flew home. Answering the challenge of the sentries I was allowed to pass in, but now my troubles began. All is ordered in a hive, no chance work; there are overlookers in every comb, and all the cells are numbered. Now I had been directed to collect honey, and was told to take it to cell number 50,491 in section H.

But how was I to find it. I had never been in the sections, so asking my way I climbed up and found my passage nearly barred by a nasty grating and with difficulty got through; it was like a man with a big sack tryiug to get through a very narrow doorway. But how was I to find the cell No. 50,491 in section H? So I asked an overseer. "Oh," said she, "you are at the wrong end"; then she gave me a lot of puzzling directions such as, first to the right, second to the left, &c., and sixth row from the bottom. On all sides I heard grumbling, and every bee wished the man who invented sections had to work in them: some called them a nasty Yankee invention. At last I found the cell No. 50, 491 and deposited my load. Things went on so for a week or so, grumbling and discontent continuing, as the sections got fuller the difficulty increased, less room to work, less room to move. At length the murmurs grew so loud it was evident something must be done so the "Elders and Councillors of the hive" called a meeting. Many stroug speeches were made, all agreed that there was never such an abominable invention thrust upon the bees as the Yankee sections, and at length the cry arose, "Let us swarm, let us swarm." Order having been secured, the Queen, who presided, spoke and said, as they knew she had not been in the sections, she could not get in; it was a shame; but she had heard enough and consented to swarm, the proposal being carried unanimously. Then there was a partial cessation from work, the sections were to be left unfinished, royal cells were commenced with due ceremony; tomorrow or the next day we shall swarm, our owner will be dismayed to see us in the air, but he can't catch all; the laugh will be on our side then and the growl on his, and he will blame *us*. But how could he expect us to work in Japanese puzzle boxes? Give us Conqueror hives and shallow or full sized frames, and we shall have ventilation and elbow room, enough and to spare.--*Bee Chat.*

DRONE CELLS VERSUS DOOLITTLE CUPS.

W. C. GATHRIGHT, IN *Gleanings.*

I have been raising cells by the Doolittle plan for three years, in upper and lower stories, with the laying queen in the hive all the time. I have not made an artificial cell for two years, and would not think of going back to that plan. I use strips of drone comb with the cells cut down half depth, and place a larva in every other cell. This gives room to cut them apart. I often get every cell accepted, and as many as 22, though I destroy all but 12 or 15. I make a frame with top bar and ends only ½inch wide, and do not put on a bottom bar, but put in a bar about ⅜ square, half way between the bottom and top. This middle bar is to fasten the strips of drone comb to.

I next cut my drone comb in strips about ⅜ wide and 4 inches long. I use three pieces for each frame. To fasten them to the bar I use melted wax. I

dip each piece into the wax, first letting the edge of one side touch the wax, when it is placed on the bar, and it is fixed perfectly solid in a moment. I can fasten a strip of drone comb in the same time it would take to fasten one artificial cup. This, I believe is the same plan given by H. L. Jones, of Australia, some time ago in "GLEANINGS."

As stated above, I have used this plan for two years, and with perfect success at all times, from early spring till late in the fall. Before I began using the strips of drone comb I used the artificial cups; but I have been much more successful with the drone comb than with the cups, and it is so much less trouble to prepare the strips of comb that I would not think of fussing with cell cups.

The Editor says:—If you have a method by which you are getting drone cells, as you describe, started into *queen*-cells, in a single story colony having a good fertile queen, you have done what no other queen breeder has accomplished heretofore. H. L. Jones, J. D. Foosche, and others who use drone cells in lieu of queen cups, are obliged to put these strips of drone comb *first* into a *queenless* colony to get them *started*; then when "once started" they can be transferred to colonies having fertile queens.

Well, now, *if* you are obliged to put these drone cells into queenless colonies to get them started, I do not see how you save any labour over the method that makes use of Doclittle cell cups, the same being placed directly in a hive having a queen.

By the Doolittle method of using cell cups, it is not necessary to have a queenless colony in the apiary, except during the time the ordinary virgin queen takes to become fertilized, and even then, under some circumstances, these young queens wil sometimes take their wedding flight from an upper story of a colony having a good queen below.

But there are several points in favour of the Doolittle cells cups: The cells are more regular, easier to put into queen-cell protectors, and they are less liable to be damaged in handling.

PHASES OF THE MOON.

JANUARY.

New Moon, 1st, 11.52 p.m. Perigee, 4th 3 a.m.
First Quarter, 8th, 3.40 p.m.
Full Moon, 16th, 5.8 a.m. Apogee, 20th 3 a.m.
Last Quarter, 24th, 9.53 a.m.

CAPPINGS.

From American and other Bee Journas.

1¼in. spacing is not to be depended on to produce all worker comb. So says A. Norton in *Gleantngs.*

F. L. Thompson says in *Progressive Beekeeper* he cleaned 700 sections in a day with a knife. Owing to the speed attainable by a knife if properly worked many of the section cleaners described in the journals are undoubtedly a waste of energy

Mr. A. Gale is desirous some fancy work by bees shall be exhibited at the next R.A. Show in Sydney, so he has got six models of letters N.S.W.N.B.K. carved at the Technical College, Ultimo, size of top of hive, to be worked out in wax. In a private communication he says his bees had worked the letter "O" out in three days.

Mr Hatch says in a paper on "Why Beekeepers' Exchanges Fail," the reason is—"trying to cover too much territory is one of the most common in organising beekeepers' exchanges; trying to do too much business, as, for instance, buying, selling and manufacturing, when, perhaps, the whole membership are entirely without experience in any of these lines."

Dead brood is not at all like foul brood and any one who attends to the following description carefully will have no difficulty in distinguishing the one from the other: in this case the characteristic, most disagreeable *odor* of foul brood is wholly wanting; the sunken cell-cap, with its frequent perforation, is also absent. The dead brood is always in the form of larvæ, and never in the sticky, pasty, unctuous mass so characteristic of

foul brood. We insert a pin and draw a decaying larva from the cell, and it is not e stringy or ropy substance that springs back when it lets go the pinhead, as is true of foul brood, on the whole, yet it often appears coffee-coloured or a rich, dark brown, as does foul brood. The surest way to tell is in the character of the decaying substance in the cell. If the larva is always found, showing the form even in its decay, instead of the stringy, elastic, pasty mass, then it is not foul brood.—Professor Cook in *A.B.J.*

Dr. Mason said at the Philadelphia Convention: "The secret of success is to manage the honey market. This is far more important than to successfully manage the apiaries, much as that is to be desired. To sell the product—to secure the highest cash price, and to be sure of the proceeds of the crop when sold—these are essential, and tower above all other considerations. They are, in fact, the key to success.

E. Hasty gives in *American Bee Journal* record of 299 recorded intervals of swarming, viz.:—

At 6 days.....	3	At 12 days....	39
7	6	13	34
8	32	14	24
9	48	15	6
10	46	16	9
11	48	17	4

Mrs. Hutchinson, wife of the talented editor of the *Beekeepers' Review*, with whose domestic calamity the beekeeping world so deeply sympathised several years back, is again able to reside at her home. May years of happiness yet be before them.

Rietsche's uncapping-fork is highly spoken of in the German bee-journals as a better tool than a knife for uncapping. A writer in Elsass-Lothringisher Bienen-Zuechter says the needles of the fork slip more easily under the cappings than the knife blade; there is no tearing; uneven and tender combs are easily and quickly operated on; the fork works more easily and rapidly than the knife and it costs less.—*A. B. J.*

When it came time to pack the bees for winter I found that the closed end frames were the only ones that contained brood in every case where I had put both kinds of frames in one hive, with two or more closed-end frames together. If there were two or three closed-end frames on the north side of the brood-chamber, there is where I would surely find the queen and brood, while the other part of the brood chamber, filled with open end or Hoffman frames, would be filled with honey.—E. W. Brown in *Gleanings.*

The observation-car on American railways has a rear platform with seats. Here the view is unobstructed. Then there are arrangements to protect the passengers from dust so far as possible. Perhaps I may add that, inside of the car, a stenographer and typewriter are at the service of all the passengers, *free of charge*; and when it gets to be dark, the latest and most improved system of electric lighting makes it easy to see to read or write, or do whatever you chose. Besides this, the car runs so still that one can write without a bit of trouble. I tell you, it is worth paying a little extra to see what is possible in the way of modern conveniences and inventions to make travel easy and delightful.—A. I Root in *Gleanings.*

The Rambler in *Gleanings* describes a solar extractor he has made:—As the wax runs down from the melting-pan it is concentrated into the moulding-pan at the smaller end. To operate this machine I place the sash and glass in positon over the cappings, which nearly fill the melting-tray. I place over the sash the protecting cover, but draw it down so as to expose only about three inches of the upper portion of the cappings. By gradually pulling the cover down, the honey is nearly all driven out into the long round-bottomed tin tray below. A little hooked wire will be noticed in the end of this pan. This connects with a cork and an orifice by which the honey can be drawn off into a pan below. This first honey that is drawn off is not discolored nor in any way injured by the sun's heat. Now take the shade off and set it aside; cork the orifice and let the

remaining honey and wax go into the long pan It will soon overflow into the caking-pan below. This pan will hold about 15 lbs. of wax. Wax taken out of the upper pan will have more or less dross on the bottom ; but when run into this caking-pan the bottom of the cake is as clean as the top. While rendering old combs I nearly fill the first long pan with water. The wax soon overflows, and I find it necessary to allow it to run through a small supplementary tray which I hang to the upper portion of the caking-pan. There is a sort of black gummy substance that escapes the first pan, and is caught in this one, leaving the wax, even from old comb, clean from dross. The caking-pan is supported from the top, and it always retains its level when the body of the extractor is tilted at different levels. Although I have rendered out only about 30 lbs. of wax in this extractor, it works equal to my expectations. The honey and wax are run off into separate pans, which I think is a new feature in sun extractors.

AT THE OHIO STATE FAIR.—As there was to be a display of fireworks in the evening, and a mock battle concluding with a bombardment, Huber and I decided to stay until next day. As we were pretty well tired out with running about so much we decided to take a seat in the grandstand, even if it did cost 25 cts. each, so we could rest during the the fireworks. A new grandstand has just been erected, which somebody told me would seat comfortably ten thousand people. It did not seem to me possibe that there were ten thousand people willing to pay 25 cts. each for a seat ; but before the ticket offices were open (for there were several of them) there was a perfect jam about the windows. Not only men but women and children seemed almost frantic to get up to the office and get a ticket. After they secured their tickets the entrances were blocked even worse, and the crowd against the turnstiles with such vehemence that three policemen were called near our own entrance to drive the crowd back. Well, the ten thousand seats were all filled, and a thousand or more were driven by the police out of the grandstand, and down on the grass by the race-track. They had all paid their 25 cts. each for a seat ; but they simply got a place inside of the inclosure, right on the ground, not a whit better than the crowd occupied on the right and on the left, that had not paid a cent. Furthermore, said crowd on the right and left, before the fireworks began, tore away the fence, and surged around in front of those who had paid, so they were really worse off than those who had not paid any thing. The whole trouble seems to be, that just at the present time excursions, shows, and exhibitions of almost every kind seem to be on a boom. Everybody has work, therefore everybody has money ; and the general tendency seems to be to use this money to rush in mad crowds into every thing, and wherever people are invited to go.—A. I. Root in *Gleanings*.

Mr. W. Loveday, in *Beekeepers' Record*, says :—I do not use the solar extractor, because, though there is some saving in labour, wax so rendered is robbed of one of the—in my opinion—chief characteristics of a good sample of wax, *viz*—*Aroma*.

Much of the honey liable to candy should be put up in small parcels for grocers' selling. The wholesale produce man naturally objects to candied honey, in 60lb tins, as it has to be rendered liquid before it can be retailed. But candied in small grocers' quantities—2lb, 4lb or 7lb tins—the private consumer gradually comes to like it as much if not better than in liquid form—in fact a great many people prefer it so, it is less messy on the table.
