The Australian bee bulletin. Vol. 16, no. 9 December 28, 1907

West Maitland, N.S.W.: E. Tipper, December 28, 1907

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THE AUSTRALIAN Bee Bulletin.

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

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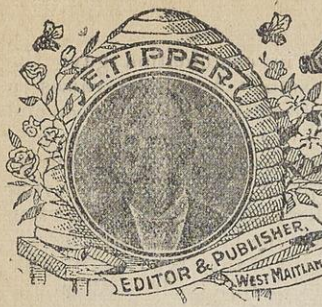

THE AUSTRALIAN BEE BULLETIN.

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Devoted to Beekeeping —

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

MAITLAND, N.S.W.—DEC. 28, 1907.

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WITH this issue we wish all our many friends and subscribers all the happiness this festive season gives. To those who have had fair honey seasons may they be able to dispose of same at fair prices, and without lowering the price of honey on their fellow beekeepers. To those who are looking forward for such may they get their best wishes fully realised.

WORK in the apiary for the past month has been very trying. The great heat, and honey coming in freely, the necessity to keep at it to get the good yellow box honey extracted before the the dark bad-flavoured apple tree came to spoil the same. In our neighbourhood the fruit crop has been near a failure, so we look forward hopefully to getting better prices than has been realised for some time. We find on that account several large storekeepers are stocking honey to avoid running short when the winter comes.

IN-BREEDING,

Its Advantages and its Dangers.

Among the especially good addresses at the recent Worcester meeting, U.S.A., was that of Mr. Jeffrey, on "Inbreeding, its Advantages and its Dangers."

The breeding together of closely related animals is good or bad in accordance with the proportions of good or bad in the individuals used. If weak, sickly, or degenerate stock is used, the result will be degenerate offspring, but if the parent stock is strong the offspring will be also. In support of this contention he cites the Devon cattle and the American Merino sheep. Then he told how he had followed the plan with his bees for over seventeen years, resulting in the constant improvement of his stock. Then having imbibed the notion that close breeding was unsafe he introduced new blood and upset the result of all his labours. Not that the resulting offspring were not strong, but that the individuals varied so there was no uniformity in the colonies or in the work they did. Next, he proceeded to show how to select and breed bees. A colony, the offspring of some certain queen, show more desirable traits than do other colonies, hence we would perpetuate it if possible. But how? The work, the results, are produced by the workers, who are the result of their mothers' and fathers' blood. A queen reared from their mother, being a full sister, possesses latent within herself the same traits So far it is easy, but with what blood shall she be mated? Brothers of the drone with which the original queen mated carry only one part of the combination which produced the desirable traits. A drone from the mother of the young queens carries only the blood of his mother, the other half of the original combination. What is needed is a drone possessing blood of both the parents of the workers, and such a drone can only be obtained from queen sisters of the workers. Therefore, Mr. Jeffrey lets this first lot of young queens mate as they choose, and then from them raises as many drones as he possibly can. When his drones are almost ready he raises another lot of queens from the original queen and mates these to the drones above produced. Now he has queens whose drones and workers possess the bloods which in combination gave the first good results. Again he raises a lot of queens from the original queen and mates them to drones from the last previous lot of queens, and so on as long as the original queen lives. By destroying all queens whose offspring show variation from his ideal type he is steadily increasing the strength of that type as regards its power to reproduce itself. When the old queen dies he selects from the next to the last generation a new queen for a queen-mother, and mates her offspring to drones from the generation following hers. With such breeding goes hand in hand a careful and constant watchfulness, alert always for tendencies either upward or downward, saving one, destroying the other. He illustrated his points and backed up his arguments by an almost bewildering array of facts. He said that with controlled mating it would be necessary to use but one drone mother, and that progress would be more rapid, but that where mating was permitted in the open it was often best to use several queens for drone rearing, so as to have a vast host of drones of the desired blood, and thus lessen the chances of mismating.

Mr. Latham, in speaking of "Farmer Beekeepers, their Needs and their Troubles," condemned in no measured terms, the urging of their adopting frame hives, as is so persistently done by the supply interests, and by well-meaning but unthinking persons. He was strongly sustained by many present both as regards the farmers and in condemning the propaganda carried on by the supply men, urging everyone to keep bees, branding it as harmful to those now engaged in honey production and misleading and hurtful to most who are induced to enter the pursuit.

Dr. Wm. P. Brooks, director of the Agricultural College at Amherst, Mass., told of means for increasing or improving the pasturage for bees at once both feasible and successful. Being quite in keeping with the aims and efforts of farmers,

whether they are beekeepers or not, and being of special interest to dairymen and poultry raisers, it received careful consideration and hearty praise. In old fields, which had not been ploughed for over 20 years, experiments were conducted to ascertain what might be done towards making such profitable for hay or pasturage without the expense in labour and time incident to the customary method of ploughing, cultivating, and re-seeding. The treatment which he endorsed, and which is of such promise to beekeepers was to top dress the fields with 500 lbs. of basic slag meal and 150 pounds of high grade sulphate of potash per acre. The cost of this is between six and seven dollars per acre, and fields thus treated yielded a most luxuriant growth of white clover, making two and one half tons of hay. The soil is a good, strong, retentive soil. Dr. Brooks said that his bees fairly revelled in vast billowy masses of bloom afforded by the luxuriant growth. —"American Beekeeper."

GERMAN EAST-AFRICA

Native Methods.

Bee-keeping as carried on in this tropical colony has been mentioned in these columns several times before. The practices differ in different localities, but all reports agree in as much as beekeeping is very profitable in all parts. The natives of the Wadjagga tribe along the Kilimandscharo take cuts of suitable logs, hollow them out and hang them to the limbs of the forest trees. It does not take long before they are inhabited by bees. As there is no winter to hinder the work of the insects, the contents of these rude hives are cut out about every three months and carried to the doors of the white farmers who usually give about 35 cents for the contents of a hive which yields in the neighbourhood of 25 pounds of honey and one pound of wax. The white farmers, in a measure, have adopted some practices of the natives. They fix up the cases in which kerosene cans are shipped them; one case is used as the brood chamber, another one as a super. The last-named only is fitted up with movable frames and an extractor is used to obtain the honey. To establish an apiary all that is necessary is to set up the hives in some convenient spot. They will soon be inhabited. The African honey bee Apis mellifica Adonsoni is smaller than the German bee, and the thorax is of a reddish color.

The honey these bees gather is darker than the good grades of Europe, very sweet, but not equal to clover honey in flavour. Not a great deal of honey is so far exported, but quite a little of the wax, which is said to melt at a higher heat, and is therefore excellent for comb foundation.

Generally speaking, the prospects of beekeeping in East-Africa are flattering. The old saying, "Bees and sheep support a lazy man while he is asleep," is as true here as it is anywhere on the globe. —"American Beekeeper."

QUEEN-REARING.

By. W. Reid, sen.

We are all looking for the best method, as there are so many different ways of producing queen bees that it is hard to say which is the best, or as good as the best. I have tried, perhaps, nearly all the best methods. I like Doolittle's plan, but it requires a person with good eyes to transfer the tiny creature at bottom of the cell. I think it better to describe a sure plan and conditions required to raise the best of queens. To begin, I think some places are very much better for queen-raising than others. At any rate, the weather must be warm, plenty of honey coming in, and pollen in abundance. About the simplest way is to choose a very strong hive, with bees boiling over, abundance of bees in all stages, eggs, and uncapped brood.

Remove the queen from this very strong colony. In six or seven days re-visit the hive, and find that the bees have queen cells well advanced. It is best to visit when the bees are flying freely. There are not so many bees to cover up the new queen cells, which are likely to be along all edges. They are sometimes buried in the brood comb, but are easily noticeable. Great care should be taken to remove each and every queen cell. If one cell containing a queen is missed the whole thing is likely to be a failure. After every cell containing a queen has been removed take out one brood frame containing the least brood. Suppose there are nine frames in the bottom story of the hive, crowd four frames slightly on each side, so as to allow plenty of room in the centre for a ninth frame. Now take the frame just removed from the strong hive, brush off all bees, then take on to your best hive (your breeding queen.) Look over the frames, and if you have not a prepared frame choose a frame with plenty of eggs along the bottom of the frame ends of frames, or any likely place for queen cells to be placed. See that your best queen is not present on this frame; if so, remove her with care, for queens when laying are easily hurt. Remove all clinging bees, place the frame in a nucleus box, convey to the hive where you wish to raise young queens, and place the other spare frame in your breeder's hive. The hive where the young queens are to be, should have a good cover. I usually remove a frame from my best queen some three days before I require the eggs to set, and place a frame with only a starter. When the comb is built about half down and charged with fresh eggs, take this frame on to where the prepared hive is, as stated above. After nine days from the day the queen was removed from the hive where the eggs have been set, now three or four days, go to the hive and again look over the frames. A queen cell may have been left. It is much easier to find queen cells now. Take care not to touch or remove the centre frame containing eggs from the best queen. Thirteen or fourteen days after the eggs from the best queen have been set the young queens will hatch out, so the cells must be cut out on the twelfth day and given to any hives made queenless 24 hours. I rarely ever see a poor queen raised in this way. If such should be, my advice is to destroy all faulty queens. Do I hear someone say, 'Are queens so produced equal to natural swarming?' I would sooner have them. Yes, every time. Some beemen remove alternate eggs when placing for queen cells. This makes the queen cells stand out better. Did someone suggest, 'Place another frame in some hive for queens.' I say do not. Leave a cell; be content with one batch until the hive has fully built up. If more queens are wanted, try a fresh hive. Doolittle mentions on page 25 in his excellent book how he rose a fine lot of young queens from an old, failing queen. I have seen some good queens made up in this way. In the spring of 1898 I noticed a queen cell started in one of my hives. I hunted up the queen. She had the appearance of one soon to be no more. I watched her and the few queen cells, and just before they were due to be cut out they were cut out by the bees or the queen. Several batches were treated in this way. One day I found my queen O.K., plenty of eggs, and no new queen cell. She had fully recovered. I had another raise a young queen with her. I removed the old queen. She was only six months old. I call her old because she was older than her daughter. Well, I took the old lady, leaving the young one, to Cooma show and carried off first prize against a showman who had taken over 50 prizes for choice queens. I then brought her back, and she served well for four summers. I may mention she was of the Golden Italian race.

A few weeks ago, on one very windy day, when I was away at one of my out bee-farms, a hive containing my best

queen was blown over. My youngest son and his mother righted the hive and gathered up the frames. A few hours later I returned, passed the hive, and noticed that my better half had missed my precious queen. She was doing her best to crawl into the hive. I assisted her. A few days after I looked into the hive, and found three cells started, which were capped. I cut them out batch after batch. I noticed my old queen improving. At last I saw her looking as well as ever. I turned to the queen cells that I came to cut out. They were stumped right off, and my old breeder was as well as ever. (Excuse me, Mr. Editor, for making such a ramble with my experiences with hurt or sick queens. I thought it might interest some reader, as Mr. Doolittle's similar case did me.)

We will return to the queen cell referred to in the first part of my letter, which hatched out in from 13 to 16 days. Note right here the bees choose eggs, or rather brood, just hatched, also eggs laid just before being placed in the hive. This proves that queens so obtained have every chance of being the very best. In about nine days the young queens mate. If they mate with good drones the workers will be good also, or otherwise. Queens, if pure, produce pure drones. It is well to look at young queens in about 14 days. They sometimes start to lay in seven days. If no queen is present the bees will start a lonely hum. Sometimes queens are hard to find. If a frame contains eggs or young brood the queen will be found on this frame in a few hours.—"Western Post."

HONEY BEER.

Sir,—I have been asked several times for a recipe for a good, wholesome summer drink made from honey. To those who do not object to a fermented beverage I can strongly recommend the recipe for honey beer, published many years ago. I can personally answer for the fine quality and wholesomeness of this drink, having made a great deal of it at different times. I would advise using good corks, and avoid the use of tapered one, as the strong effervescing qualities of the beer will force the corks out a little, even when well wired, and the slightest move outwards of tapered ones will allow the beer to leak out. I lost a great deal in this manner at first. When stored away in a cool place, the bottles should be laid on their sides, and stood on end again some little time before decanting.—I Hopkins in "New Zealand Farmer."

HONEY BEER.

By the late T. J. Mulvany in "New Zealand Farmer."

We all know that from a very early period honey has been used in the preparation of some sorts of fermented liquors, especially in the northern countries of Europe, where the grape does not flourish in such perfection as to admit of wine becoming an ordinary drink for the people. This was particularly the case in the British Isles, where metheglin or mead of some sort or other was the favourite beverage before the introduction of beer made from malt or hops. The use of the latter ingredient appears not to have been known in England until the beginning of the sixteenth century. Hume, in his History of England, says: "The use of hops and the planting of them was introduced from Flanders about the beginning of this reign (Henry VIII.), or end of the preceding." It is to be supposed that after that date the use of liquors made from malt and hops would become general, and no doubt they gradually did so; but still honey drinks remained in favour, so we find that special attention was paid to the preparation of mead for Queen Elizabeth's household, at least up to the end of the same century. In our present time it is not unusual to make a home-brewed drink (of a rather poor and frothy character) out of sugar, ginger and hops, set into a state of fermentation

by the addition of yeast. This is called hop beer, and made, as we are aware, in many New Zealand households, with more or less success—generally, I should say, with *less*, as regards the refreshing and healthy character of the beverage. But it does not seem to be generally knows that a really good and wholesome drink with some body in it, something like bottled ale, may be easily made in any ordinary household, without any complicated or expensive brewing utensils, and at a very small cost, with *honey and hops alone* (or with the addition of ginger or other spices if desired), subjected to a natural process of gradual fermentation, without the help of yeast. That this may be done, and how, is what I wish at present to urge upon the attention of our bee-keepers, with the hope of inducing them to make trial and satisfy themselves in the first instance, and thereafter their neighbours and friends, that they may supply themselves with a pleasant, refreshing and wholesome Honey Beer, at a cost of only about three halfpence per bottle (six to the gallon), even assuming that they pay threepence per pound for the honey. To the beekeeper who provides his own honey, the extra cost is only about one halfpenny per bottle, for hops, ginger, corks. etc.

It is now more than a year since I commenced to make trials, with different proportions of honey and of hops to a given quantity of water, and different ways of preparing the brew, etc. I commenced with one of the many somewhat conflicting recipes sometimes given for the making of hop beer, merely substituting honey for the sugar or treacle therein specified, and trusting to spontaneous fermentation instead of using yeast. I gradually increased the quantities of both honey and hops, and adopted some hints from a friend who had been a brewer by profession, and at last arrived at the results given below, which have proved so satisfactory that I have worked in the same way now for more than six months, and have never had an unsuccessful brew, nor found any marked irregularity in the product. I have abstained from recommending the recipe until I could safely do so after sufficiently long experience. I by no means wish it to be understood that I now give it as a thing that may not be improved upon, indeed, I feel convinced that a superior article for long keeping can be made with much larger proportions of both honey and hops to the same quantity of water, and also that some malt might be added in the brewing with great advantage if easily attainable, but at the same time I feel assured that anyone who will work exactly according to the recipe now given will be highly pleased with the the result.

RECIPE FOR HONEY BEER.

In five gallons of cold water mix half a pound of hops and two ounces of ginger, the latter well bruised with a hammer; add twelve of good extracted honey already melted with as much much boiling as is requisite for that purpose; stir well with a stick and put the boiler or boilers on a good fire, stirring occasionally till the liquor boils; let it boil briskly for about any hour, or until the hops cease to swim on the surface; take the vessel off the fire and let it stand for about six hours until nearly cold, when the hops and sediment will have settled near the bottom. Strain the liquor through some good straining material (so-called "butter-muslin" folded in four thicknesses answers well) into glazed earthenware vessels, and let these stand near the kitchen fireplace during the process of fermentation, which will commence within twenty-four to forty-eight hours, according to the ruling temperature, and continue for ten to twelve days, or longer, according to the season of the year. The vessels should be secured from dust by means of tin covers pierced with holes to admit free access of air. Skim off the frothy scum and stir the contents with a stick once a day, to promote the powers of active fermentation, and when this has

nearly ceased, *i.e.*, when the liquor, after being stirred, forms only a light froth on the surface which soon subsides of itself, it will be fit for bottling. Strain carefully into perfectly clean bottles, by means of a tin dish in which is placed a fresh straining cloth (four folds of butter-muslin); cork securely with sound corks well driven in and tied down with twine or bottling wire. Keep the bottles in a a dry, cool place. The beer may be used three or four days after bottling, but better if kept standing for a week or two, and, if the corking has been properly attended to, will only improve by several weeks' keeping.

The foregoing might, of course, be given in much fewer words, and more general terms, but I find vague directions to be occasionally very unsatisfactory, and as my present object is to induce as many possible of the readers of this *Journal* to try the recipe for their own satisfaction and to report the results for our mutual benefit, I would wish the process to be conducted uniformly, knowing how much success depends upon the observance of apparently trifling details. The process is simple enough—requires only care and attention, but no great labour or sacrifice of time—so that even a hard-worked man can very well do all that is requisite in bottling one brew and making another during after-hours, especially if assisted by his wife or children in washing the bottles and making everything ready for the brew. This is a point I lay some stress upon, because I am frequently told, "The beer is certainly excellent, but you will not get the people to take all the trouble you do to make it so." I can only answer that anything which is worth doing at all is worth doing well. With proper arrangements no more time or trouble is requisite for the latter than for a careless and ineffective mode of proceeding, and anyone who grudges the little extra trouble necessary to ensure success had better not undertake the certain trouble and expense which is only likely to lead to failure.

I may add that the quantities specified in the recipe should give about 5½ gallons, or 33 wine bottles of beer, allowing for the additional three quarts of honey (12lbs.) and the boiling water requisite to melt it; and, on the other hand, for loss in boiling, straining, etc. Of course, a trial can be as well made with any smaller quantity, everything being in proportion. Two kerosene tins when well scalded, or two sixty-pound honey-tins, with one end cut out and iron wire handles added serve very conveniently as boilers for the quantity above given. I would recommend particular attention to the cleansing of the bottles, and to the mode of corking. The beer, even when most carefully strained and clear in appearance, deposits, while standing and "ripening," a small quantity of yeasty sediment in the bottom of the bottle, which is best removed with a bottle brush when washing. None but the best sound corks should be used, which can be had for 5/6 per gross at the cork cutter's. A good cork may be used three or four times on the average, but must be rejected if once pierced by a screw or otherwise damaged. The most effective and neatest way of fastening down is with bottling wire, which is also sold at the cork cutter's in prepared lengths of about 14 inches It is sold by the pound, and comes to about a penny for fifteen or sixteen pieces, so that, assuming a cork and wire to do duty three or four times, the entire cost of perfect corking is about *twopence* per dozen bottles. In attempting to effect a *saving* in this respect, as I have known many to do with their hop beer, by using old damaged corks, or by the want of ordinary care in corking and fastening down, the contents of the bottle may be completely lost, or so deteriorated as to be neither agreeable nor wholesome to drink.

There are thirty bee journals published in Germany.

WHY BEES SWELL.

In a conversation with Doolittle in "Gleanings," he replies:—"The answer to that comes with the answer to why the bees swell when a flow of nectar comes on. The reason for the bees swelling lies in this fact: Before the honey-flow there was no nectar in the honey-sacs of any of the bees in the hive, hence the segments of the abdomen telescoped over each other, thus contracting the abdomen to the smallest possible space, thus allowing thousands of bees to mass themselves in the smallest possible space. When the honey-flow comes on, the field bees give their loads of nectar to the hive bees, which causes their abdomens to be drawn out, as it were, the same as a telescope is drawn out, in order that the now filled honey-sacs may find room for the necessary expansion. And thus it comes about that two bees now occupy the place of that occupied by three or four before the flow of nectar was on, and only as room is given can they be kept from crowding out on the outside of the hive, providing the hive was filled with bees before the nectar yield came on."

"But you are simply giving the bees *empty* space. Just fill that space with empty comb and you will find that the bees will not swarm. Listen to what that veteran bee-keeper, Moses Quinby, wrote: A large amount of room filled with empty comb will entirely prevent swarming; and years of experience and experimenting has proven that Mr. Quinby was right. Let me illustrate this thing for you a little further: Let a strong colony occupy a drygoods box, the same being four feet square on the inside, they having a space of only about 2000 cubic inches occupied with comb, and that colony will swarm, notwithstanding all the room there is in the box. But if the whole box is filled with comb, no swarm will issue under the conditions described. Later on in the season, should there ever come a time, through a continuous honey-flow, for months, when the combs in the whole box are fully occupied with bees, brood, and honey, there might be a possibility of a swarm issuing, but not a probability."

PRICES OF HONEY.

Melbourne Australasian.—Honey and Beeswax.—Honey is quiet at 2½d. to 2¾d. for good to prime quality. Beeswax is quoted at 1/2 to 1/3.

Melbourne Leader.—Honey: Prime clear extracted in fair demand, 2½d. to 2¾d; congealed and inferior dull of sale at lower figures.

S. M. Herald.—Honey.—60lb. tins extra choice extracted, 3d; prime, 2½d. to 2¾; good, 2¼; inferior and candied, 2d. Beeswax.—Bright 1/3½ to 1/5; dark, 1/2 to 1/3 lb.

Ripening and Maturing of Honey.

To Editor,

Sir,—I notice in your Oct. issue that the address I gave on the above subject, and which you thought worthy of reprinting, has come under the castigating pen of Mr. Abram – so be it. I have no desire to enter into a controversy with this gentleman on this or on any other subject, unless he brings forward practical proofs for or against the matter I am investigating for the benefit of bee culture generally. The object I have in view, and which is given in plain language in my address, is, as I have said, in the experimental stage at present, and I shall be very pleased indeed to listen to Mr. Abram or anyone else who can help toward attaining the desired end. Carping criticism does no good whatever, and can only bring the critic into ill-favour.

Yours truly,
I. HOPKINS.

Auckland, N.Z.

Mr. Abram's Claim.

To the Editor, A.B.B.,

Dear Sir,—I am travelling a great deal of my time, hence it is, as a rule, only at long intervals that I see your "Bulletin."

I am very much surprised that Mr. Abram should adhere to his claim so tenaciously as being the pioneer of modern bee-farming in this part of the world, when the evidence is so overwhelmingly against him. I haven't a copy of your August number at hand, but I think it was in that issue where Mr. Abram in reply to Mr. Jones, said that I started by supplying bee material, and also said, or inferred, that I had no claim to have started bee-farming before he came to Australia. Mr. Abram is wrong in both statements, or inferences, and I will now give him a little history in order to point out his mistakes.

In 1874 I took up bee culture in earnest, and at once commenced experimenting with different kinds of hives, from bar hives to movable bar-frame hives, including the "Stewarton," "Carr-Stewarton," and "Woodbury," all of which I made myself from descriptions taken from English magazines. The "Woodbury," being the best of the three, I decided to adopt that, and was using it up to 1877, when my sister fortunately sent me a copy of Langstroth's work from London, and about the same time I received my first copies of "Gleanings," when the "A B C in Bee Culture" was running through it as a serial. Shortly after, I received my first comb-foundation machine from Root (which, I believe, was the second machine to leave America, the first going to Mr. Raitt, Scotland), and a Novice Extractor with other appliances. I had enlarged my apiary, and in 1878 was in full swing as a modern bee-farmer at Parawai, Thames, where I ran as many as 80 colonies, and in the season of 1880, imported my first Italian bees from America. In 1879-80 I wrote a series of articles on modern bee-culture for the Auckland "Herald" and the Thames "Advertiser," extending weekly for six months. Copies of these articles reached Australia, many of which were reprinted or quoted by Australian papers, through which I was flooded with letters from all parts of Australia and New Zealand, asking me to supply Langstroth hives, &c. The desire to assist others induced me to supply material, but my bee-farm was my love, and this I ran all the time, and ran it for all it was worth. My sympathy was with my bees, and not with a supply business, as witness my giving it up at a loss of thousands of pounds, to start more extensive bee farms at Matamata, in 1882. Thousands and thousands of Langstroth hives were sent afterwards to Australia by my successors, Baynall Bros. & Co., and many tons of comb-foundation was sent by myself while bee-farming.

The first edition of my book was circulating largely in Australia at the latter part of 1881. I mention all this, Mr. Editor, to convince Mr. Abram that I started as a bee-farmer, and, though I have supplied material, I have always been a bee-farmer at heart, and I can say this without egotism, that many thousands benefited by my consenting to supply them with hives, &c. To condense the whole matter, I started commercial bee-farming on the most modern methods in 1878, although in a smaller way I had been beekeeping in frame hives for several years.

Probably Mr. Abram will remember the long controversy that took place in the "N.Z. Farmer," on the comparative merits of the Langstroth and Berlepsch hives, between himself and one "Apis," commencing in 1885. "Apis" was the present writer, I. Hopkins. I will give Mr. Abram the credit of a very forceful endeavour to influence the adoption of the Berlepsch as the standard hives for Australia. But being convinced that the Langstroth was the best, I fought for it all I knew how, and with what has since been proved a successful result. The first Langstroth hives used in Australia were sent by myself.

I think after what has passed through your "Bulletin" on this question Mr. Abram would be wise to admit that he was mistaken in his claim.

I am, etc.,
I. HOPKINS.

SELECTION.

BY T. J. CROWE.

Remarkable results have been achieved in modern farming by means of selection. Live Stock and farm and garden products have all shared in these results. Horses, cattle, sheep, and pigs have had their desirable characteristics developed to a high degree, and their undesirable ones eliminated. Cereals, roots, vegetables, fruits and flowers have been likewise improved. Fowls in all their multitudinous varieties have been evolved —some for flesh, some for eggs, and some for beauty, from a few ancestral types. Every improvement has resulted in the object endowed with is becoming more profitable to the producer.

To what extent have bees been improved by selection? It is to be feared that no very definite information is available on this point. Certainly no efforts in this direction, commensurate with the value of bees from an industrial standpoint, have been made. Bees are of more intrinsic importance than guinea pigs, yet it would be safe to say that more time and energy have been given to perfecting fancy points in the latter, than to improving the honey-producing capacities of the former.

In setting out to improve bees, the first requirement of the breeder is a clear and well-defined idea of the end to be attained. He must keep in his mind's eye the ideal stock, and a little reflection will make clear that this is one that must possess a combination of characteristics, any of which singly might be developed to a high degree with comparatively little trouble. But to develop all in combination to a high state of excellence is a feat requiring the exercise of skill and perseverance far above the ordinary. The characteristics most to be desired are working qualities, vigour of constitution and resistance to disease, prolificness, absence of swarming tendency, gentleness and rapidity of flight, abdominal development, and beauty.

Every beekeeper is well aware of the immense importance of good working qualities. Even in small apiaries the careful observer can note marked differences in this respect. Stocks of apparently equal strength give, with similar treatment, very different results, and the differences can be attributed to no other cause than unequal endowments of the the will to work.

The importance of the power of resisting disease can hardly be over-rated. If this could be developed to a high degree, one of the chief terrors of beekeepers would be scotched. That some stocks possess greater resistance than others, and that the quality can be transmitted and perpetuated, can easily be established.

The value of prolificness is evident to even the novice, and it is a quality in which stocks show perhaps the most marked differences. The yield from the "best" hive—from the hive boiling over with bees—and that from a poor or moderate one, mostly, if not always, shows a wide margin for improvement.

If working qualities and prolificness met with the attention from breeders and beekeepers generally that they deserve, there would be less said about "best" hives, and the attainment of the ideal of a hundredweight from every hive would be brought appreciably nearer.

The elimination, or considerable reduction of the swarming tendency would add much to the beekeeper's comfort and peace of mind, and to his profits. It may be argued that it is impossible to breed away a natural instinct. But those who would so argue have only to study what has been done by selection. Unquestionably the reproductive instinct is strong in all animate nature, but if swarming is the result of this instinct in bees, "broodiness" is the result of it in poultry, yet "broodiness" in many breeds has been almost entirely bred away.

Gentleness adds much to the comfort of the manipulator, and saves much valuable time that would otherwise have to be spent in subduing where markedly vicious qualities asserted themselves. If the development of it went hand in hand with the elimination of the robbing tendency much good would be done.

Rapidity of flight is a quality that cannot be overlooked, as there is no doubt that it tends to increase the yield to an extent worthy of recognition. This is specially the case where any considerable distance has to be traversed to the source of supply.

The abdomen contains the honey sac, and, in the case of the queen, the ovaries; consequently, that it should be well developed is a matter of importance.

Beauty is not in itself a valuable characteristic, but every beekeeper is, or ought to be, a lover of the beautiful, and if his bees can be made more pleasing to the eye, as well as better honey producers, he ought to strive after the more perfect combination.—"Irish Bee Journal."

A Plurality of Queens in a Colony, without Perforated Zink.

How the Queens are Introduced; the Advantage of the Plural-Queen System.

Great credit is given to a plan of Mr. E. W. Alexander's for raising several queens in one hive. The following is his letter to Gleanings:—

It is with much satisfaction that I can say that success has at last crowned our efforts. We can now safely introduce any number of queens to a colony that has a laying queen and is in a normal condition. Waiving all other preliminary remarks I will now describe this new method of introducing several laying queens without the use of queen excluders to keep the queens separate.

First, prepare a small box, about five or six inches square, by boring a one-half-inch hole in one end. This you will for the present close, then remove a part of its two sides and cover with wire cloth so as to ventilate it well. This we call our introducing-box. Take this box and a common queen-cage to the colony to which you wish to introduce your choice queen, or several of them, in fact;

remove its comb and put its queen, without any bees, into the queen-cage you have. While doing this shake about a pint of bees of the colony into the introducing-box. Close it and take all their combs from the colony. These can be placed on top of almost any hive until next day. The hive now made broodless, fill about half full of combs containing some honey, *but no brood.* Leave the colony alone until about sundown, after which it will show distress over the loss of its queen and brood. Now take the box of bees to the honey-house, and at the same time the queen, but don't set them near each other. The bees in the little box will soon miss their queen and have lots of trouble.

After they have been confined about five hours prepare some warm thin honey, placing it in a dish so that, by laying the box on one side, the bees can easily reach the honey through the wire cloth, but can not daub themselves with it. Leave them this way until you are sure that every bee in the box is as full of honey as it can be, then give them a little shake and remove the cover from the hole in the end of the box (remember it is about five hours since they were confined in the box), and let run in any number of queens you wish, including their own mother. Now return them to their dish of honey so they can help themselves to all they can eat until about sundown; then take this introducing-box with its bees and queens to the hive from which you took the bees and their queen in the morning; set them to one side and feed the colony all you can induce it to eat. Remove some of its combs and pour in some of the honey you have been feeding to the bees in the box. Shake some of this honey out of its combs on these bees, so every one will soon be full. Now remove the cover of the introducing-box and set the box in the hive alongside the combs. Close up the top of the hive, and in the morning all the bees and queens will be clustered on the combs, and some of the queens will have commenced to lay. You can now give them the brood you took away from them the day before, or let them fill their combs with eggs, which five queens will do in three or four days. That is all there is of it.

You now have the colony all together with their brood and their mother-queen and as many other queens as you care to have in one colony. There has not been a queen balled or injured in any way.

We all know that many things along the line of introducing queens can be done with weak colonies during a good flow of nectar that can not be done with a strong colony in a honey-dearth; and for that reason we tried nearly all our experiments on the strongest colonies we had during a scant flow of nectar, and usually with colonies that had stung several queens during our experiments. There seems to have been almost no end to the number of queens we sacrificed in perfecting this undertaking—more so because we picked out the crossest and worst-dispositioned bees we had, to experiment on. But as these queens died to save the rest, their lives were not lost in vain.

Now why is this method a success? First, because the bees have been a few hours without their queen and brood; next, a small part of their colony was confined in a box and filled with honey for several hours before the strange queens were given them: then those bees and these queens were shut up long enough together to become all of the same odor before they were given to the colony.

There are some things in this method that must not be overlooked. You first confine enough bees in the introducing-box to give to the queens you introduce the same scent as the colony is, to which you intend to put them; then the whole colony has been queenless and broodless for a few hours, and you have fed them in the box all they could hold before

giving them these queens, and you have also fed the colony all they could eat before they received the queens and their bees. I find bees, like men, are better-natured when their stomachs are full.

If these instructions are carried out carefully you will never lose a queen in introducing, and the colony will be queenless less than twelve hours. Certainly this is a quicker and safer way than the candy method, which takes three or four days, and is often followed by a loss of ten per cent or more.

When we take queens from our nuclei or full colonies to introduce in this way we put several into a large cage, and have never had one stung by another. We are careful not to put any worker bees in with them. You may think that, to remove the plug from the hole in the and let the bees leave it during the night would be better than to remove the top of the box; but don't do it Some of the bees and queens will stay in the box until the next day; then when they come out and join the colony the bees are all empty of the honey you fed them, and they have some queens that joined them at first and these additional queens might make trouble.

Be careful in following these instructions, and you will not lose one queen in a hundred; but it will not do to omit any part.

Now as to the advantages derived from this plurality of queens in a hive. First, we soon have a hive packed with brood; next, we have never had a colony with two or more laying queens prepare to swarm. Then it is the nicest way imaginable to supersede inferior queens. You can have the choice queen you wish to keep in the colony some time before removing the old queen, and both will be laying in harmony together. Sometimes we find a colony that has lost its queen, and its combs are so full of pollen that they appear almost worthless. When this is the case, just run in at the top of the hive, after a few puffs of smoke, two or three laying queens and you will be surprised to see how soon these combs will be filled with larvæ and capped brood; and shortly after its brood begins to hatch, these colonies will be the strongest in the apiary, and I can not see any reason why you could not winter a large number of queens that were reared late in the fall, and have them ready for your early increase; or for sale much earlier than they could possibly be reared in the spring. If surplus queens can be kept in full colonies during the winter season as safely as during the summer, then certainly another great forward step will have been taken in modern bee-keeping.

I expect to try wintering some surplus queens in full colonies this coming winter. In fact, I can already see many advantages that this new departure from the old methods will give us. We should naturally think that, with several queens in a colony, they would separate to different parts of the hive, and start a brood-nest alone by themselves; but not so. They all seem to act together, commencing in the central part of the hive, and spread their eggs naturally toward the outside. A short time ago I opened a hive containing five queens. Four were on one comb, three on one side and two in the act of laying. Again, I opened another hive containing four queens, the fourth day after they were introduced, and 7 of the 9 combs in the hive were filled with eggs as full as I ever saw combs filled.

EUCALYPTUS.

Professor Cook, speaking of Eucalyptus in America, says:—I am pleased to report that there is an increasingly large number of the various species of eucalyptus-trees being planted in our region from year to year. It is being found that there is good money in a good plantation of this kind. I saw the statement the other day in one of our reliable papers that it was thought it paid as well to grow eucalypts as to grow oranges.

This is, indeed high praise, as the orange has been surprisingly profitable the last few years. The bee-keeper may well rejoice at this favorable consideration of the eucalypts in our rural economy. We are more and more impressed with these trees for honey. It is well known that we get all of our gums from Australia. They bloom there, of course, in summer, which comes in December, January, and February. When we bring them here, north of the equator, they are sorely perplexed, and hardly know how to behave. Their hereditary instincts say blossom in winter, but their feelings are favorable to pushing out the bloom in the warm days of early spring. The result is we find them blooming at all times of the year. There is hardly a month when we may not find these trees (some species) in blossom. The honey from these trees is of good quality; and, coming at such varied times, it is splendid for stimulation, as our bees can fly at all seasons, and they are likely to find a banquet spread in the eucalyptus groves at any and all seasons. As we are likely to have good warm and even hot days in midwinter we see that all conspires to help the bee-keeper. I am led to this expression from seeing bees swarming on eucalyptus bloom the last few days.

CAPPINGS.

FROM DIFFERENT SOURCES.

Alsike clover is growing in popularity in the U.S.A. They say that it lasts longer, is hardier, standing more adverse conditions of weather than ordinary clovers, and is better adapted to grazing purposes, and that it should be a constituent part of all grazing mixtures. This is in line with experience elsewhere. But alsike is most popular as a combination with timothy, in which case it furnishes very fine hay. In this connection "The Farmer," of St. Paul, Minn., comes to the defence of alsike clover against its detractors in other journals, claiming it will grow for a number of years without reseeding, and that it thrives on poorly drained, unprepared soils in the newer sections of the country. It also says:—Then, too, in the timber districts where red clover grows, extremely rank and coarse, the alsike variety has an advantage in that it has a finer stem, and consequently turns out a better quality of hay.—Gleanings.

Over the whole of Europe there is an idea that honey is very useful in the treatment of consumption; and recent discoveries tend to confirm this, for it is clear that a food which so quickly enters the blood and repairs the working tissues may be useful in warding off or dispelling the germ of consumption.—Exchange.

When your swarm issues, proceed to secure the clipped queen in your wire-cloth cage, the same as you do in having swarms on the returning plan, when you will put the cage containing her in the swarm-catcher, leaving the lid or cover to the catcher open. Now raise the catcher by the pole in the air, and keep it where the bees are the thickest, when, with about two swarms out of three, they will scent the queen and alight right in or on the catcher. When they have begun to alight about the queen, set the pole up according to directions and go about what you wish until you are ready to hive them." "Where they begin to alight before they find out that their queen is in the catcher I carefully push the catcher up under the limb they are alighting on, holding it there for a minute or two, till quite a cluster has collected on and in the catcher, when it is lowered a little and swung one side so that none of the limbs or leaves of the tree will be clustered upon when the swarm has all gotten together, when the pole is fixed according to directions, and left till I get ready to hive the swarm."—Doolittle in "Gleanings."

Dr. Miller says in Gleanings :—One year, I gave a colony entirely drone comb, and they swarmed out. Joseph Trojan reports, in *Bienen Vater*, better success. June 8, 1306, he threw an after-swarm on drone comb. No drone brood appeared—all worker. The workers reared in drone cells were easily distinguished from the older workers. They were not longer, but thicker. In Spring, 1907, a frightful quantity of drone brood appeared until the end of May, when worker brood returned. Trojan argues from this that all eggs are fertilized, and that the workers remove the spermatoza when they wish the eggs to produce drones. But he says nothing about the mouth of the drone-cells being narrowed. By the way, I found this week in a weak nucleus, with a queen that had laid not more than three days. eggs in a patch of drone-cells. The mouths of the cells were properly narrowed.

Gleanings says :—We have introduced a good many queens, and are doing it to-day, without caging; but our own experience has shown us that, for the beginner at least, it is better to cage, keeping the queen confined at least three days. The scheme of delaying the passage of the bees to her majesty is a good one.

A pure food bill has passed both the House of Commons and the House of Lords in Great Britain.

In the Nashville "Evening Banner," U.S.A. for June 20 it is stated that a J. U. Phelan was fined by the court in that city $25.00 for selling adulterated honey, and that he was arrested by Meat and Food Inspector Blaine Danley, who had received complaints from two ladies about honey being bad. On investigation he decided to arrest Phelan. The latter, so it is said, stated that he had sold such "honey" for a number of years, and never had a complaint before. Judge Baker, who heard the case, decided that a fine would meet the ends of justice.

Bees in too dense a shade are always behind. They are not only late in the spring, but come out later in the day, and turn in earlier in the evening.

If you want to keep sections, a good place is where salt will keep dry.

"Gleanings" says there has been a marked advance in all products except honey.

DAIRYING.

Visit to a Model New Zealand Dairy Farm.

The problem of providing a pure milk supply (says the "Waikato Times") is one that for many years has engaged the attention of sanitarians, health officers, medical men, and advanced thinkers generally. It is now known with a tolerable degree of certainty that tuberculosis is communicable from cows to human beings, and the terrible scourge of consumption takes on a more sinister aspect when we reflect that carelessness on the part of a milk producer may lead to death amongst those most dear to us. Milk, too, is the readiest medium for conveying disease, and whatever typhoid fevor is, there the milk supply is suspect. One of the first things a doctor requires is "where do you get your milk?" and in an outbreak of typhoid a health officer would be doing less than his duty if he did not vigorously investigate the conditions under which the milk supply was served. It will be readily seen that unless absolute cleanliness is observed in the milking shed, the after-treatment of the milk will not save us from risks of danger. So on a recent visit to Mr. W. Ranstead's farm at Matangi, the question arose: Would not a useful purpose be served by describing what a progressive farmer is doing to provide a pure milk supply? And the following description is the outcome of that question. Mr. Ranstead's dairy stands in a central position on his farm of 460 acres. Time is thus saved in gettting

the cows in and out. The cows for milking are a herd of about 80, and at six o'clock each morning and 3.30 o'clock each afternoon, they are drafted into the concreted yard preparatory to entering the milking shed. The shed itself is a long, airy building, with concrete floor, capable of holding 24 cows at a time, and by an ingenious arrangement of a swinging gate, when one-half of the shed is filled, and its cows are being bailed and leg-roped, the gate is closed on that side, and opens on the other half to enable its cows to go out. Down the centre you notice cords hanging over each cow, and as the cow enters the stall, the cord is pulled, and the head lock drops into position. There is no necessity to go to the cow's head to fix it. A dozen cows indeed, are put into the stalls and locked in a shorter time than it takes to write these lines. Mr. Ranstead has adapted the L.K.G. milking machine, and posseses three of those marvellously ingenious labour savers, by means of which six cows are milked at once. The latest models are practically perfect and to take one of the teat cups in your hand and insert a finger or thumb in the rubber is to experience what, with nature-like fidelity, imitates the sucking of a calf. Every part of the machinery is scrupulously clean. It is upon this rigid system that Mr. Ranstead relies for a pure milk supply. After every milking, the various parts of the machines are taken to pieces and washed in cold water, after which, by the aid of a steam jet under pressure, they are thoroughly sterilised inside and out. They are then immersed in clean, cold water, slightly tinctured with Wyandotte, and left until the next milking commences. On the afternoon the writer visited the shed an entirely new cow was milked by the machine, and it was interesting to notice the placid way in which the animal received the attention of the mechanism. Nearly all the cows, indeed, were perfectly quiet, much more so than under the old hand labour system. One here and there would attempt to kick, but both legs and tails are securely fastened, and no damage can result. The milking of about 68 cows took about an hour and a-half, each couple of cows occupying eight minutes. So disappears the old, arduous drudgery which is still necessary in those farms where hand labour is retained. The "stripping" of the cows by hand occupies half a minute, but even this will ultimately be done by the machines, when sufficient skill in applying the little extra final pressure is acquired. The washing of the cow's teats before using the machines is regularly and systematically done, and when the milk is received it is at once taken outside the shed to the stand on which the milk cans are kept. The milk descends through aerated strainers into the cans, thus reducing the temperature. Where the milking machines are properly handled, no splashing or hairs, or shakings from the cows udder can possibly get into the milk, as it is conveyed by rubber tubes from the teat cups into a sealed milk pail. With hand milking, where an open bucket is held under the cow, unless the udder has been carefully groomed, particles of foreign matter drop into the bucket.

We sometimes read of the "child slaves of Taranaki" and other places. Compare the conditions on a farm such as this; an hour and a-half of pleasant light occupation, morning and evening, for the three or four young sons engaged with their father on the farm; under the old regime, rising perhaps at three o'clock in the morning, and working until seven, and the same monotonous round repeated in the afternoon. It was slavery under such conditions. As we strolled over the fields the voices of the young helpers came floating across the distance in chorus. "The child slaves of Waikato," said our host, satirically. "Could they sink like that if they were over-taxed?" — "New Zealand Farmer."

CORRESPONDENCE.

Dear Mr. Tipper—So far there has not been any full report in any of the papers of the addresses given at the beekeepers' convention at Frankfort-on-the-Main, therefore I cannot translate them. All the papers contain a lot of beekeepers' union matters of more local than general interest. A movement is now on foot to obtain the passing of a law for the protection of pure honey, it having come to pass that invert sugar is now largely used and disposed of as honey; Some beekeepers even feed their bees largely on it and then sell the crop as honey. In various large cities there are honey depots selling only honey with the union lable. But the price is considerably higher than for the made-up stuff and the cheaper article finds a readier sale. Some go even as far as to discourage the importation of honey from other countries, who, with a duty of 20/- per cwt. to pay, still can undersell local production. This honey is called an inferior product to the home-made—why I do not quite see, though if Cuba, perhaps the biggest exporter, still carries on on lines of 25 to 30 years ago, then I quite agree that it is inferior.

What chance has Australia got under the circumstances to get footing there. Even if the honey is excellent as far as purity, etc., goes, its flavour, etc., would go against it.

Wishing you a merry Xmas and a happy new year,

Yours truly,
W. ABRAM.

P.S.—I am glad to say the season has lately wonderfully improved, and thus the bees are helping themselves nicely.

To Mr. W. Reid, sen.

My Dear,—You have as much right as anyone to call me to account, and to correct me if I am wrong, but have you done so? You say you have had three imported queens from an apiary of 200, and that they are true to colour and marks. Now, my dear, if that is all the knowledge you have of Cyprians, I am thinking your decision is premature, as your description of them does not tally with the true Cyprian, and thus I still question their purity. You ask me to answer: Is it necessary for American beekeepers to keep 200 Cyprian bee hives for the sake of selling queens? I reply: Certainly it is, if the queen trade is of any importance at all. As an example, where I learnt beekeeping we had over 400 hives of bees and on 300 nuclei, all for the purpose of selling queens, swarms and full hives, sending out over 2000 queens in a season; the honey crop being quite a secondary matter.

The several trails of the Cyprians make them objectionable to almost every beekeeper; if these trials do not show they are not true. Faith, my dear, is not a guidance in trade, it requires experience, and very few Australians know the characteristics of Cyprians, thus I alluded to the matter for the benefit of the industry. Mr. Reid has not disproved my doubt as to their purity, thus we remain as before.

I am, yours truly,
W. ABRAM.

Beecroft.

Dear Mr. Tipper,—Mankind comprises three classes, some that are a little ahead of their time, others that are abreast of it, and a number who are woefully behind it. To the latter class belongs one of your correspondents in your November issue. Of course, bees have swarmed ever since Noah took his Berlepsch hive out of the ark, and, according to him, they must continue forever. A hundred years ago the man who should have

spoken of hens that would never sit, but lay up to 200 eggs a year would have been called a crank or a faddist by the practical (so-called) men of his day. Just as Luther Burbank was called a faddist in our own time when he overtook to evolve the new fruits and plants which he has given to the world in such numbers. Your correspondent says it is a dangerous task to prevent nature in its design. If that be so then it is dangerous to eat eggs, drink milk, or eat honey, all of which nature designed for a different purpose than their use by man. Then again he assumes that because a thing has been attempted and proved a failure, is cannot be done. Well, all our most useful inventions and discoveries are the results of many attempts which first resulted in failures, and the man who reasons as correspondent does, was born generations too late. He would probably have been one of those who denied that the earth moves, had he lived at the time of Galaleo, even as it is he does not seem to be aware that "the world moves," but thinks things are as they were 40 years ago.

It is often said that every human being is a crank in something or other. My fad is, perhaps, non-swarming and disease-proof bees, but I have the consolation that for company I have such other craks as Dr. C. C. Miller, Mr. Alexander, and many other contributors to "Gleanings."

Your correspondent's fad is to find fault with everything not emanating from Beecroft, and to suspect all other writers of attempts to injure his queen trade, or to rob him of what he calls his "deserves," whrtever that may be.

He credits me, however, with for more influence than I possess, for he thinks it necessary to warn beekeepers now and again. So far as I know them they are quite able to judge for themselves, and they *do* judge for themselves, and any attempt to rouse interstate jealousies are futile.

The rest of the letter is merely childish twaddle showing how hastily drawn conclusions lead a man astray. Now I have unwittingly given Bill Adams another opportunity to pour out the vials of his wrath or treat us to a fresh recital of how he won Waterloo.

R. BEUHNE.

J. P., Ernie, Gosford, writes:—The bees round here are at present doing very well. The black butt is full out, and the peppermint will soon be coming on, trusting you will have a good season yourself, and the fraternity in general. I wish you a merry Xmas and a prosperous New Year.

J. S. C., Corowa:—My bees have had better spring than usual. The yellow box blossomed well but did not seem to carry much honey. It is never very rich in honey in this district. There is a disease in the Red Gum, more or less in places. I hear it is very bad in the Ovens Valley. It attacks the buds and they swell to the size of large peas or small marbles. I hope it will not get worse.

A correspondent asks:—I have about ½ doz. kerosene tins of honey taken two years ago at the end of the serson in wet weather it was very thin at the time and I had no chance to evaporate it. It consequently fermented, not bad, most of it candied. It is the only lot I ever saw fermented so I cannot say how bad it is from experience. Can you tell me if there would be any sale for it for any purpose at any price in Sydney or Melbourne? Do you think it would do for feeding with?

[The candied honey should be all right for sale. The fermented would be better if boiled, for feeding bees.—Ed.]

SCOTLAND.

We have received the following interesting communication from our dear old friend Mr. J. F. Meiklejohn:—We have had a very wet autumn here, and I am

afraid it has been a very hard time for many of the farmers. Much of the crops of cereals in many places have been ruined. The bees are past speaking about. It has been a failure all round. The cold wet summer completely deprived us of clover, and the wet weather in Aug. and Sept. washed all the nectar out of the heather. I had six hives in hand, one is dead and the others are nearly so, I am certain we won't be able to bring them through the winter; I am feeding them at present. If they die out I will break up the boxes for firewood, and bother no more with bees. I did not get an ounce of honey this season, it has been a complete failure all about this quarter, so honey is scarce. A grocer told me the other day that he had been enquiring for and got an offer of heather honey at 1/6 per lb., he to pay carriage, and to allow him a profit he could not sell it for much less than 2/-, per lb., rather sweet stuff, you will say; he did not buy it. Pound sections, I see in some of the shops, are marked from 1/4 to 1/6, but I don't know what sort of stuff it is; very likely it may be the product of candy or syrups. Beekeepers have got a decided setback this season; There has been no season like it since 1884.

How do you like your new tariff? You seem to have got Protection now with a vengeance. Well, you know I always was an advocate of Freetrade in the Empire, but protect ourselves against the foreigner. I am of the same opinion now, but with your new tariff you make little, if any, difference between imports from Britain and America and Germany. I don't lay all the blame on your side. The mongrel lot we have in power seem to be blind to the interests of the Empire. We were to get everything cheaply when they got into power; it has been the very reverse, markets are going up in nearly everything. Let them go! The folks that put them in power deserve to be pinched. Amen! We trust you are all well, as I am happy to say we are.

SUNDAY SWARMING.

The following from County Dorset, is given in the "British Bee Journal":—

"I have several stocks of bees located in the garden at the back of my house in the centre of the town of Wimborne. Sometimes, when I have not sufficient leisure to give my bees proper attention, they swarm and settle in the gardens of neighbours. In order to give some encouragement to those who will inform me where any swarm has clustered, I affixed a notice to the back gates of my stable-yard, as follows:—'The first boy or girl who gives information where a swarm of my bees have settled shall receive one shilling.' This had the desired effect. One Sunday I was present at the morning service in Wimborne Minster. During the service a loud rapping was heard at the church doors. One of the sidesmen on opening the door found a little boy who had discovered a swarm in his mother's garden and was determined to be first to give information, so as to secure the shilling. A splendid swarm was secured, and the little chap had his shilling, and when a section of honey also was given for tea to him and his brothers, they all expressed a hope that my bees would swarm every Sunday all the year round."

Searching for Land in New South Wales.

We took train at 1.30 a.m. at Quirindi. Every carriage was crowded. We walked up to the engine and back to the break-van twice, and then had to jump in where we could. Several of the passengers in the carriage, to make way for us, had to stand till the next station, 15 miles away. We presume the railway authorities know their own business, but they might not hear of the language uttered in that carriage. Arrived at our destination 10.30 a.m. Having made previous arrangements, our arrival was not unexpected. but after nine hours

riding in a railway carriage at night was glad to rest for the rest of the day. The local land agents we saw next morning. We were told some 100 applicants had been to them, and they were busy providing vehicles to carry different parties round the estate. We were supplied with a fairly comfortable vehicle, and a well-informed courteous jehu. Were shown one allotment, which, we were told, had been bought, without competition, by a Richmond River man for £10 an acre. Another allotment one man had told his neighbours he was determined to get, no matter how much an acre. But at the sale his name did not appear. We got a a comfortable lunch at the residence of a farmer just off the estate, spending a most agreeable hour. All enquiries were respecting sheep land, but the answers were not satisfactory. Returning to town, at the place we were boarding were several gentlemen from South Australia, one from Queensland. They said that the former place had been well advertised in every town. Were looking for fruit land. What they had seen here didn't satisfy. Expenses great, £10 or £12. Would go back and report. Could buy land better in Adelaide than here. Also write to Adelaide press. Next day saw another a batch of visitors sent out, but 9 or 10 of the station horses were placed at their disposal. One stout gentleman, who had not been on horseback for 10 or 12 years, picked an animal for its apparent strength, but it was not a saddle horse, and next morning he did not care to do any more riding. We joined another batch of anticipated buyers on the third day. Our driver on this occasion was one who came to buy, but, knowing the estate, he'd been impressed as a driver. Another gentleman from Qucensland bought 1000 acres and resold it at a profit of £4 per acre. *So he told us.* He pointed out to us the poor and better quality of land. The grass that grew on poor country, and the shallow soil with white sand underneath that was no good. He went back to Queensland next day without buying. Had a good look at the Bluff Rock, I had full accounts of the great tragedy enacted there. How the blacks had been stealing and secreting sheep. The station man, going to his tent, found they had speared his brother. He got the police to help him revenge him driving the blacks to the edge of the big rock, when the only thing they could do was to jump over a cliff of 700 or 800 feet. At the sale the large hall was full of apparent buyers. The auctioneer, a gentleman named Welch, also possesses a strong voice capable of lasting at full pressure for 7 or 8 hours, read the conditions of sale, and then went into business. He said £3000 had been spent in advertising the sale. Of the sale the land went from £1 2s. 6d. per acre to £7 in one instance, the purchaser, we were told, being a local squatter and a relative of the selling family. At the boarding house we were staying at matters had been discussed for several days, and we were anxious to see how the various parties who had such strong notions would act at the sale. They did not disappoint us. Not one was a purchaser, such being all local residents. And when we left after the sale by rail, some of them went to Inverell, some to Tamworth, but all with a decreased opinion of auctioneers' statements and advertisments.

CAPPINGS.

FROM DIFFERENT SOURCES.

The "American Bee Journal," after 35 years' existence as a weekly, is now a monthly journal. It has, however, increased its reading matter to 32 pages.

Slaked lime dusted on robbers or flour, will show what hives they come from. Then exchange the robbed hive with that of the robbers.

Through the efforts of Mr. A. Norton, South Australian Commercial Agent in London, a profitable market for Australian honey, has been developed in the United Kingdon. A trial shipment, the purity of which was guarnteed by the South Australian Government, was very favourably received, and many hundreds of sample jars were distributed among retailers. Analysis showed that the honey, which was chiefly gathered by the bees from the flowers of the blue gum, contained 75 per cent, of natural sugar, which gave it a very high food value. The net return of several consignments has averaged 2½d per lb. on board ship at Adelaide, and this season upwards of 30 tons have been placed with London brokers. Last week Mr. Norton sent a cable message for a minimum monthly shipment of seven tons, and there is every prospect of a permanent trade being established.—"Newcastle Herald."

It it not generally known by the consuming public that there are as many honey flavors, and just as distinct, as flavors to apples and pears, grapes, and other kinds of fruit —Extract.

Poor Consolation.

Aunt Lucindy was in deep distress over the loss of her son Jim, and a neighbour sought to consol her, saying:

"Don't grieve for him, Aunt Lucindy. He has gone to a land flowing with milk and honey."

With a dismal countenance, the old darky replied:

"Jim never did like milk, an' honey always made him sick."—Exchange.

"Gleanings" says:—Not six weeks ago we found in one hive nearly a dozen virgins on one frame, living peaceably together. It was a case where a lot of cells had been given to the colony to complete, and they had hatched before the apiarist got around to them. Some of the queens were from two to three days old, and yet there they were all together like a happy family. Not wishing to take any chances on them we caged them.

We take the following very sensible remarks from "Gleanings" copied from "Farm and Ranch": —Labor is cheap if it holds itself cheap. The spirit of democracy looks higher constantly. The laborer of the cotton-field can never secure more than a bare existence for himself and family until he holds his labor at a premium. This he may do in pricing his cotton. His decision may determine the plane of his living. Our great trouble in the South is to get people, white people, to put a proper value on their labor, and demand a fair daily and yearly wage as represented in the price for raw cotton... ..This journal has, therefore, cast in its lot with the man and against the dollar, and will use its influence against the breaking down of the higher prices for farm labor now obtaining, and will continue the fight for higher prices of farm products. Along this road lies the future greatness of the South and America. Higher living and nobler thinking are not possible for those who are dumb brothers to the ox. Let us uphold the American standard of living, and continue to be the worlds greatest civilizing power.

E. E. Hasty gives in the American Bee Journal a table showing the number of swarms that issued during each hour of the day for a period of seven years, as follows:—

Between	5 and 6	a.m.	..	...	... 1
,,	6 and 7	,,	..	...	... 2
,,	7 and 8	,,	..	..	.. 45
,,	8 and 9	,,	...	..	... 75
,,	9 and 10	,,	...	...	... 129
,,	10 and 11	,,	..	..	.. 99
,,	11 and 12	m.	..	...	... 76
,,	12 and 1	p.m.	..	...	.. 81
,,	1 and 2	,,	..	...	... 63
,,	2 and 3	,,	...	...	... 45
,,	3 and 4	,,	...	...	... 36
,,	4 and 5	,,	..	...	... 12
,,	5 and 6	,,	..	...	... 2
Total	...	...	...	...	... 666

Tobacco mixed in brown paper is recommended by some for smoke fuel. Others recommend a carbolised cloth.

Funny! A German says planting tomatoes before his bee house keeps ants away.

Imports and Exports of Honey and Wax into Ireland.—The Department of Agriculture, in their report for the year ending December 31st, 1905, show the quantity of honey imported into Ireland in that year as 237 cwts., estimated at the value of £326—of which Belfast imported 159 cwts., Dublin 72 cwts., and other ports., 6 cwts. The exports of honey amounted to 296 cwts., estimated at £1,021—of which Belfast sent out 2 cwts., Dublin 87 cwts., 207 cwts. went mostly from Waterford. 270 cwts. of beeswax, valued at £1,215, are said to have been imported, Dublin taking 217 cwts.; and the exports are set down as nil. Paraffin wax is said to have come into Ireland to the extent of 26,489 cwts., valued at £32,449, and to have gone out to the extent of 694 cwts, valued at £850. Assuming the figures to be correct, Ireland's exports of honey exceeded her imports by only 59 cwts.; the honey coming in cost 2¾d. per lb., and the home produce going out brought 7¼d. per lb. We appear to have paid only 9½d. per lb. for our imported beeswax, which is somewhat astonishing. But all the other calculations are thrown into the shade by our importation of £32,449 worth of paraffin wax, at under 2½d. per lb.—"Irish Bee Journal.'

Size of Frame.—The "Standard" frame is 14 inches long, and 8½ inches deep, with a top bar 17 inches long. There are a great many different sizes used in America, chief among which, in length and breadth are the following:—"Gallup," 11¼in. by 11¼in., "American," 12in. by 12in., "Adair," 13⅜in. by 11¼in., "Heddon," 18 1-16in. by 5⅜in. "Danzenbaker," 17in. by 7½in., "Langstroth," 17⅜in. by 9⅛in., "Jumbo," 17⅜in. by 11¼in., "Quinby," 18⅛in by 11¼in., "Quinby closed-end," 19⅛in. by 11in.

Good smoker fuel:—Rags soaked in saltpetre.

Robber bees object to crawl through wet grass.

A. Harris, in "British Bee Journal," says:—Up to a few years ago I used to suffer from rheumatism in my knees, making it difficult for me to get upstairs; and although I was often stung by my bees, I had to take to bed at mid-day on one occasion, and got myself into a most profuse perspiration. *That* profuse perspiration has apparently perfectly cured me of rheumatism in my knees. Occasionally I have it in my arms and other parts, but can always cure it by massage. These remedies are, in my opinion, far preferable to 200 to 300 bee-stings.

Wooden toothpicks are recommended for sampling honey.

Sulphuric acid is a good purifier in melting wax, or even vinegar if a small quantity is to be melted.

"Gleanings," speaking of the past season's American honey crop:—Taking the country over, the crop has been light, and, moreover, the heavy losses of bees during the late winter and unfavourable spring have put many bee-keepers out of business, or so crippled them that they will have no honey for sale. Another thing to remember is that fruit is scarce, and this fact always favors an advance in honey.

[Is it not much the same this season in Australia.—Ed.]

Robbers generally will be found to come from one or two colonies only.

Some year or so ago we were visiting a family well to do, and where the daughters had taken a great interest in beekeeping. One of them passed the remark about a neighbouring farmer who had done well in beekeeping, and suggested what a good thing it would be if all farmers would do as well by also going into beekeeping. Calling on that same farmer a little later on he complained bitterly about a neighbour, whom he had helped much in his beekeeping, his reward being that same neighbour had been watching carefully where he sold his honey, and then going round and underselling him.