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West Maitland, N.S.W.: E. Tipper, December 27, 1897

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PENDER BROS., West Maitland, N.S.W.

R. K. ALLPORT,
CHURCH STREET NORTH SHORE.

DECEMBER 27, 1897.]

The Australian Bee Bulletin.

"The American Beekeeper"

A Monthly, 36 pages, post paid for
60 Cents. a Year. Now in 7th year.

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Catalogue for this Season Now Ready, with Revised Price List,
CONTAINING THE FOLLOWING RECENT ADDITIONS—

THE LONGITUDINAL HIVE of 20 frames, with contracting boards, is specially a labor
aver. It may be readily expanded or contracted to meet the necessity of the season.
Two or more queens may be kept in one hive, and the stock amalgamated under one queen at any
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BEEKEEPERS In Victoria or Anywhere,
I can supply you with

QUEENS that are unsurpassed in Quality

And Guarantee Safe Arrival and Satisfaction at the following Prices—

Untested—	One, 5/- ; Three, 13/- ; Five, 21/-
Tested—	„ 8/- ; „ 22/6 ; „ 35/-
Select Tested—	„ 15/ ; „ 40/0 ; „ 60/-
Extra Select Tested, the very best, 25/- each.	

I procure Fresh Breeding Stock EVERY SEASON, so as not to in-breed (a great factor I think in preventing Foul Brood). I had two from America lately, and expect half-a-dozen from Italy shortly. My colonies have averaged me the past ten years low, each—SUMMER COUNT.

JAS. MCFARLANE.

LYNDHURST, VICTORIA.

Australia's Largest, Most Reliable and Most Liberal Queen Breeder.

QUEENS 3s. EACH.

One, Untested, any Strain, 3/- Three for 7/6
Tested, Golden or Ligurian, 6/- Tested, 13/6. Three, 36/

I have just received per "Alameda" some splendid Cyprian Queen.

— TESTIMONIALS —

Mr. J. Pennington, Beeville Apiary, Inverell, writes:—
I am pleased to say that the Queens are laying splendidly and their bees the best honey gatherers I ever had. I have extracted 90lb of honey from March to August from the five I introduced the first Cyprian Italian I received from you. My best Leather-Coloured Italian Queen only gave 30lb. of surplus. I have over 100 Colonies

Mr. W. Smith, Bacchus Marsh, Victoria, writes:—The queens I got from you were a good investment for me. I was a bit dubious at first on account of the price being so small (only 2/6) but when I got the queens and they turned out so well I was obliged to confess that my fears were groundless.

R. H. JERVIS,

WREKIN APIARY, MOSS VALE.

Queensland Agent for the "Australian Bee Bulletin."

The Australian Bee Bulletin.

A JOURNAL DEVOTED TO BEEKEEPING.

MAITLAND, N.S.W.—DEC. 27, 1897.

WITH this issue we wish our many readers a Merry Christmas and a Happy New Year. Let us hope that the good feelings and sentiments so much expressed at this festive time will bear fruit in the coming year in the increased union and fellowship among beekeepers, and the bettering of the beekeeping industry, by the raising of prices, and the decrease of adulteration in our large cities.

California honey is said not to granulate until three years old.

Roosting may be stopped by rubbing a rag or feather dipped in kerosene or carbolic about the entrances of the hives attacked.

A New South Wales queen raiser writes that this year he has supplied 87 queens to one customer and 56 to another besides smaller orders.

We are sure our readers fully appreciate the several articles that have appeared in our pages by Mr. H. H. Davey of Melbourne. They have cost him labour and research. We trust we have not had the last of them.

Why don't supply dealers, in sending hives in flat, send nails to put them together with? Fancy being away in the bush and waiting days for the team to come with the hives, to have to wait again to get the nails! Charge additional if you like, but send them with the hives.

Among the additions to our exchange list is "The Busy Bee," a bee journal published at St. Joseph, Mo., U.S.A., a journal devoted to farm beekeeping and the other minor interests of up-to-date and progressive apiculture. The number

before us is nearly filled up with correspondence and information on the value of sweet clover both as a fodder and honey plant.

We acknowledge receipt of Part III of the West Australian Settlers' Guide and Farmers' Handbook. This issue treats of native grasses, and salt bushes, fodder and forage plants, special products of the farm, tobacco, sugar beet, rape, potatoes, laying land to grass, noxious weeds, and native poison plants. The information it contains is both extensive and valuable.

BEEKEEPERS'! READ.

From S. M. Herald, Dec. 4th

The Steamer Alameda brought forward from San Francisco 289 cases of honey.

HIVE COVERS.

Many beekeepers go to expense and trouble in covering the tops of their hives. Several in Lake Macquarie district have sheets of corrugated iron, a little larger than top of hive so as to throw shade around, the corrugations giving ventilation. Bagging underneath such helps to keep top of hive cool. Mr. Peek, of Tamworth, has a similar arrangement. Mr. Dumigan, of Killarney, Q., has large size wooden gable covers, on top of regular covers. As it is pretty hot in Queensland they ought to be very effective in hot weather, in keeping the hive temperature down. But the majority of Australian beekeepers have simply the regular gin. cover painted. We ourselves have many of such, also a number of gable covers—Simplicity. Those are very nice, the spare space in summer keeping the hive below cool; in winter affording room to put packing for warmth. The Higginsville, a modification of the Simplicity, does not seem to have become a favourite. The fla

covers however want some attention. Heat will produce cracks, which may be stopped with putty. An occasional coating of paint makes a marked difference in the temperature. The cheapest way to buy paint is to get a five gallon drum of boiled oil, and a keg of white lead. Well mix up the two in a spare vessel. Put on with a "pound" brush. A cover thus treated is fit for both summer and winter, and makes the cover last much longer. We would here give a hint to manufacturers. Covers are apt to shrink and in doing so they become narrower than the top of the hive, their efficacy in resisting heat and damp is to that extent impaired. Covers should be made at least an inch wider than the top of the hive.

WORK FOR THE MONTH.

The beekeeper, if his bees are in condition, and the flora around him in any sort of bloom, ought now to be pretty busy extracting. Never on any account rob too close. Do not take from any frame that has brood in it. Some beekeepers think if brood is sealed over there is no harm done. We doubt it much. Can not a bee be injured as a future worker by being swirled around in the extractor at a time when its wings are being formed and undergoing most delicate transformations? Do not take from a frame unless it be at least two-thirds capped. Not only may the honey not be ripened and thus liable to ferment if stored, but you lose by the value of the cappings, which consist of the best wax. The great trouble arising now is the marketing of the honey. Whether in small or large tins,—try to dispose of your honey in your local markets first. Of the large centres of population we have already spoken of the amount of adulteration carried on. If beekeepers would back up their various associations and their members of Parliament to fight such, a substantial rise in the price might be attained, the effect of which could be felt in town and country alike.

NOTES.

BY GIPPSLANDER.

SWARMING.

The season in this part of Gippsland is later than usual. Swarming did not start until the middle of October, 15 days later than last season. The bees were ready but the weather was not favourable. We expected a busy time when it did commence and weren't far out. Cells had been built for several days and as soon as the swarming note was sounded they commenced to roll out six or seven at a time. Once we had five swarms clustered on a branch of a banksia that stands in the centre of our yard. Our queens were clipped and caged, new hives on the old stand ready. We waited about ten minutes and as they showed no signs of returning I just shook them down and each swarm returned to the old stand. Next day was cold and so on for several days. Young queens were hatching in the ones that had swarmed, and if it came warm enough they would start again and 2 or 3 would be out in as many minutes. We had some trouble with after swarms but when we found they were that way inclined we left the parent stand beside the new swarm for 4 days and shifted it in the afternoon, when the young bees were flying. That put a stop to that trouble.

CLIPPING THE QUEENS WINGS.

Clipping the wings of the queens saves a lot of time to the beekeeper and we look out and get them clipped as soon as they start to lay. My wife or one of my daughters always assist me while I am in the bee yard. I lift the frame off and they catch the queen and do the clipping business. It is done in about a minute then we go to the next and so on until we get them all done. They also help with the extracting and foundation making.

HIVE AND FRAME MAKING.

When we first started we did most of the hive and frame making by hand. We soon found out it was too slow so we bought a small circular saw and two cog wheels; we made the pulleys and bench

ourselves and we get on first class. We use Root-Hoffmann frames and our hives are $\frac{1}{2}$ cornered joints, the little saw divides all except the nailing together. We are building a wind mill at present for we intend to make the wind do the turning.

INBREEDING.

I hope Mr Behune will pardon me if I don't agree with him re inbreeding. I read all his notes carefully and I give him credit for writing many useful things. I am also aware that he has had more experience than I or many others, but I believe in changing my breeders. We get ours from a gentleman in Queensland and we rely on his word for sending a different strain every time. Since we have had his queens we have never seen a cell of disease of any sort. Paralysis or spring dwindling we have never seen. Foul brood I know well enough as there was plenty of it here from '91 to '94. Since that time the district has been healthy. Australian Yankee is another writer that I like to read carefully, because there is sound sense in his writings and I hope he will continue to write his crumbs even if some take exception to some of his notes. I think the Sparrow is coming in for a good many pecks lately. He may deserve it but it would be better to let it drop.

PROSPECTS FOR THE SEASON.

The red gum is in bloom, also several small species of ti tree. Bees are working well in the supers. If the stringy bark blooms later on we shall have I believe a very fair season. At Barnsdale a couple of days ago, I met two beekeepers. They say their bees are doing very well. Reports are favourable from the Briagalong district also.

NOTES.

BY LOYALSTONE.

In my notes last month I mentioned a way in which to fasten labels on honey tins without danger of their falling off in a hurry. This time I give beekeepers an account of the way I make my own gum for sticking labels. I take

about half-a-pound of wattle gum (which is to be found in many parts of New South Wales), put it in a saucepan with a pint and a half of water. Bring this to a slow boil on your stove, and when the gum is thoroughly melted, add about two pints more of hot water, and after stirring all well together, put away in a glass jar and when cold is ready for use. If the gum seems too thick add more hot water until you get it to the proper consistency.

At the present time round here yellow box and white box are in full bloom.

The yellow box trees look as if covered with a white sheet. The consequence is that the honey is rolling in, especially in strong colonies where the queen is not restricted to six or eight frames only. Some beekeepers consider that a queen should not have the run of the whole hive, but I differ with them. The more bees you have in your colonies when the honey flow sets in the greater will be your honey harvest. I have queens that will fill 20 frames with walls of brood, using the standard frame (Root-Hoffmann.) Now how would I get on with a Heddon hive with a queen like this? Look at the number of supers I would have to pile on top of one another, and should Foul Brood break out what a nice pickle I would have overhauling say a hundred such Heddon hives to find out which are diseased and which are not. No, give me the Long Idea hive for simple management of bees, any way you like to take them. I may mention that though my Long Idea hives are full of bees I have had only one swarm this season. Do you know that bees get lazy if not looked after well. Say a beekeeper has an eight frame hive which the bees fill up, then he puts another eight frame body on top to get the bees to work upstairs. He generally has to coax them by putting a frame from below into the super. If he does not do this the bees go rather slow to work upstairs; they prefer to loaf a good deal down below. Now take a long idea hive of 20 frames, put a swarm of bees in it with

12 frames and close up division board. When the bees fill up these 12 frames they start to loaf, but place an empty frame between each full one making up to 20 frames and see how quickly they get to work and fill the empty frames up either with brood or honey. Hence I say keep your bees working hard all the season if you want good honey crops. Allow no loafing. Bees looked after pay well. If not looked after they do not pay at all.

SPARROW THINKS THAT :

Your queens, Mr. Editor and Yankee's are very precocious if you have them mated at four days old. With me it is, judging by the time they commence to lay, 8, 10, and 12 days, and in one case I had a queen a month old and then pinched her head off, because she did not lay, but perhaps it is a question of climate?

That Mr. Pond's method of introducing queens reads well, but is anything gained by direct introduction? I have tried both ways and a queen introduced by the cage method seems to get to her work pretty well as soon as the queen introduced direct.

That half the failure in introducing queens is caused by the anxiety of the owner to know if she is safe or not.

That it is better not to disturb the hive for at least four clear days after introducing a queen.

That J. B. T. in October number is wrong and that that gin case man ought to be crushed out of the biz.

That scaly leg, roup, and hen conventions, etc., has nothing to do with getting rid of Foul Brood.

That J. B. T. never had a gin case neighbour who after robbing his bees would throw out a rotten mass of foul broody combs and let them stay there until they rotted away.

That the man who depends on his bees for his bread and butter should be protected against all such folks.

That according to J. B. T's logic, any

man with one or two hives in gin cases should be allowed to destroy his neighbours 100 hives and deprive him of his living.

That if J. B. T. had a neighbour who occasionally let some filth run into his well and periodically gave some member of his household typhoid, that J. B. T. would soon seek protection and perhaps take the law in his own hands.

That Friend Abram is just right that the expert (Sparrow is not one of them), did not fear the disease. It's the gin case man that he has to be afraid of.

That Friend Beuhne on page 182 is wrong and that a mass of chilled or neglected brood will develop the germs of Foul Brood.

That it is not necessary to have chilled brood in the hive. If the germs are already there it will soon spread without the chilled brood.

That Yankee says he finds an entrance $12 \times \frac{3}{8}$ the best; it might suit him, but in future in the summer, I want the full width of the hive by one inch, and reduced to $6 \times \frac{3}{8}$ in winter.

That entrances cut in the bottom boards are a nuisance.

That it is better, Mr. Editor, to have a large entrance than to raise hive cover.

That Loyalstone's idea was a good one and I was going to write and say so, but I quite forgot to do so.

That the beekeepers should guarantee a reward of £50 or £100 to anyone that discovers a cure for foul^z brood or paralysis.

That I never saw paralysis but I'll willingly give £1 towards a reward for the cure of Foul Brood.

That Mr. Reid's cage looks well on paper. I intend to make one when I get hold of a lid like he describes. Come on, Mr. R., trot out your ideas and a few more inventions if you have any.

And in conclusion, Mr. Editor, enclosed 5/- P. N. my sub. for the year, and that the *Bulletin* is good value for the money and is well worth paying for is the opinion of the SPARROW.

THE USES OF WAX.

Bees wax is useful for many purposes. Floors and stairs of ball rooms are rubbed with it and carefully scrubbed with a dry brush till they shine.

It is largely used in the manufacture of candles, one of the largest consumers of such being the Catholic Church.

Sculptors and painters use it to varnish their work, and in the making of wax figures.

It is much used by chemists and medical men. We take the following recipes from "Langstroth, revised by Dadant":—

1. *Salve or Cerate for Inflamed Wounds.*

Beeswax 1 part,
Sweet almond oil 4 parts.

Dissolve the wax in the oil and stir well till cold. Sweet almond oil can be replaced by olive, or cotton seed, or linseed oil, or even by fresh unsalted butter.

This cerate may be used as a vehicle by the endermic method—we mean by frictions on the thin parts of the skin—to introduce into the blood several substances, such as quinine, against fever; sulphur, for itches; camphor, henbane, opium, as sedatives; iodine, as depurative; and so on, the only care being to have the drugs carefully mixed.

2d. *Turpentine Balm for Atonic Wounds, (without inflammation):*

Yellow Beeswax }
Turpentine } Equal parts.
Essence of Turpentine }

Melt the wax, add the turpentine, then the essence.

3d. *Salve for the Lips:*

Wax 1 part,
Sweet Almond Oil 2 parts.

Add a small quantity of Carmine to color it, strain and add, when melted again and half cold some volatile Oil of Rose.

4th. *Adhesive Plaster for Cuts (sweet scented)*

Colophony 40 parts,
Wax 45 "
Elemi resin 25 "

Melt and add:

Oil of Bergamot 5 parts,
" Cloves 2 "
" Lemon 2 "

5th. *Green Wax for Corns:*

Yellow wax 4 parts,
White pitch 2 "
Venice Turpentine 1 "
Sub-acetate Copper
(finely powd.) 1 "

Melt the wax and the white pitch, add the acetate of copper well mixed with the turpentine

and stir till cold. If too hard to be spread on small pieces of cloth, add a little olive, or cotton seed, oil.

6th. *Balm of Lausanne, for Ulcerated Chilblains and Chaps of the Mamæ or Teats:*

Olive or Cotton seed oil 500
Rosin of Swiss Turpentine 100
Yellow wax 133
Powdered Root of Alkanet .. 25

Keep it melted *au bain-marie* for half an hour and add:

Balsamum Peruvianum 16
Gum Camphor 1

7th. *Mixture to Remove the Cracks in Horses' Hoofs:*

Melt equal parts of wax and honey on a slow fire, and mix thoroughly.

Clean carefully the hoof with tepid water and rub the mixture in with a brush. The cracks will disappear after several applications and the hoof will be softened.

8th. *To Keep the Luster of Polished Steel Tools.*

Oil of Turpentine 8
Wax 1
Boiled Linseed Oil ½

THE INFLUENCE OF BEES ON CROPS.

ALBERT GALE, in *Agricultural Gazette*.

Pollen is the vital agent in the production of all fruit crops, and also the life-cell in the reproduction and perpetuation of all phanerogamic plants, *i.e.*, plants having conspicuous flowers. Reproduction is the result of a union between ovules and pollen grains, the former being the cells of matter and the latter the life-cells. The methods or agents employed by nature to bring about this union are various. In nearly all of them, excepting that of the union that is produced by insects, it is extremely haphazard. Indeed, the union that is brought about by insects is almost as fluctuating as that of other agencies, if we except the bee family, and this family must be gradually narrowed down to the hive bee as the one *par excellence* in the art of fertilization. In the majority of entomophilous plants it is almost impossible for fructification to take place but by contact with an outside agent, and the only agents designed by nature by their construction, instinct, and domestic requirements are members of the bee

family. In all parts of the world there are many thousands of species and varieties of insects. Yet out of this vast army of unique and, in some instances, grotesque forms, having peculiarities adaptable for the life they have to lead, and for obscuring themselves from enemies by resembling the plants, &c., upon which they live, the only ones that collect and store pollen are bees. When other insects carry pollen it is entirely accidental. Bees cannot live without it. It is their bread of life. Their young cannot be nursed to perform the active duties they have to follow without it. In the insect world there are artisans in paper-making, in spinning, in weaving, in basket-making, in house-building, in masonry, in sawing, in carpentry, in upholstering, &c., each one of them having tools or instruments specially suited for carrying out the work nature has intended them to perform; but the only ones having instruments and appliances for gathering, carrying, and storing pollen are bees. Pollen is removed from the anthers and conveyed to the receptive organs of flowers by every variety of insect that alights on them during the time the pollen is distributive. By reason of the viscid nature of the pollen grains of most entomophilous flowers it adheres to the body or legs of any insect that may chance walk over it, and is conveyed by them elsewhere. If it were brought in contact with the pistil of a flower of its own variety, the act of fertilisation would be as efficacious as if it were carried by bees; but these cases are purely accidental, and the successes are only "few and far between." Not so with the bee. Every movement of a bee in the direction of fertilisation is a studied one, designed purely by Nature to accomplish the perpetuation of the plant it is at work upon. The anthers of some flowers are so situated as to discharge the pollen only on some very particular spot of the external anatomy of the bee—her head, upper surface of the thorax, chest, tongue-sheath, &c., and

the stigma is so placed in the flower that only that portion of the bee that has received the pollen would be capable to effect the purpose.

I have used the term bees (*Apidae*) frequently to indicate any member of that extensive family, but all or every variety of bee although both honey and pollen gatherers, are not capable of general fertilisation. It is only the most highly developed bees (humble bees and honey bees) that are furnished with apparatus suitable for collecting and carrying pollen from flowers of all forms or designs. Mason bees and leaf cutters (*Osmia* and *Megachile*) have the ventral surface of the abdomen furnished with long stiff retroverted hairs. These hairs by pointing the "wrong" way brush the pollen from the anthers as the insects pass in and out of the bloom. Grains of pollen become entangled among them, and by this means they are transported elsewhere; the hairs on the abdomen of such insects are beautifully adapted for the fertilisation of flowers having a broad and flat corolla, and the reproductive organs being protuberant or conspicuous. If the female organ be hidden low down in the long narrow tube that some blossoms possess, such as clover, &c., they are utterly incapable of performing the uniting ceremony required to produce a fertile seed. Figure 1 is the hinder leg of one of the hairy bees, the white specks indicating the pollen collected in the hairs afterwards to be transferred to the pollen baskets. Figure 2 is the hinder leg of one of the humble bees (*Bombus terrestris*), and it will be noted the arrangement of the pollen-gathering hairs are carried out with greater perfection, but the hairs are distributed in the same irregular manner as in the hairy bee. Figure 3 is that of the ordinary honey bee (*Apis mellifica*); the pollen collecting hairs are much better adapted to their designed use than is the case with the two former. The hairs on that section (tarsus) of the leg are arranged, not in the irregular way as is the case in that of the humble bee,

but in eight or nine regular rows. This regularity of the arrangement of the hairs of the pollen-brush enables our domesticated bee to brush the grains of pollen from the anthers far more effectively than is the case with any other member of the whole species. Whilst she is at work on the flowers she is constantly transferring these grains to the pollen baskets, but *all* are not stored therein; some escape, and it is these escapees that do the work of fertilisation.

I think I have pointed out clearly that there is no insect so highly developed for carrying the imperatively essential pollen from flower to flower as the hive bees. Their intelligence, their energy, their social habits, and the ease with which they are kept under control stamp them at once as no mean ally to the tiller of the soil. The practical beekeeper in any district is a confederate that should be welcome to all. The indiscriminate destruction of native honey-producing flora should be carefully avoided, because most of the plants that I have referred to in these articles are exotics, and these, as a rule, bloom in the early spring and the pollen and honey obtained therefrom is used in the spring and summer for the raising of young brood. The stores gathered from indigenous summer and autumn flowers are to carry them over the severity of winter. If there be not sufficient storage when the cold and wet season sets in to carry them through till spring time it will cause an insufficiency of bees to do the work nature has assigned for them, and the result will be a lesser ingathering of the fruits of the tillers' labours. Land owners and others cannot have the remotest idea of the mischief they are doing to the vegetable kingdom, and therefore to mankind, by the wholesale destruction of our native flora. If these are wholly, or nearly wholly, cleared from the land to the extent of giving insufficient winter storage for our bees so as to decimate them to the extent of their numerical inability to carry on the

necessary work of fertilisation the result will be more disastrous than droughts or floods, because our fruit trees, &c., would cease to yield their crops.

WHITEMAN CREEK.

BY T. R. O'GRADY.

Dear Sir,—If the Heddon is an effectual preventative of swarming, I feel certain every beekeeper on a large scale will want a reversible hive. Of that variety of hives the Hooker (*vide* Cheshire) presents to me insuperable advantages over the Heddon. How is it none of our supply dealers stock it? Will reversing destroy queen cells? Those of our bee men who have tried it appear to have done so in out apiaries, and the bees may have swarmed without their knowledge. Cheshire (than whom there is no higher authority, and compared with whose work all American books are mere superficialities) doubts its efficacy though he has not tested it. There is a drawback to reversing in my eyes, if as is stated the bees remove all honey from the brood chamber. I never extract from that, leaving it as a safety valve, should a sudden cessation of honey flow from wet, or other cause occur. Now the question arises (that is if reversing is deemed advisable) how can those of us who have Root's boxes make at least the brood chamber reversible? If you have seen Root's latest frames with shorter top bar and a staple in the end to keep correct distance from side of box. This staple may be used I fancy to keep the frames in place when in the reversed position, by passing say a stout skewer or wire through a hole in the side of the box through each staple and through the other side of box; then your frames could not move when reversed. But it may be necessary to provide spacers for the bottom corners of frames similar to the Hoffmann on top. If so metal corners to fit similar to the Hooker would fit the bill, and if the present division boards and wedges were not sufficient, Heddon screws might be necessary. It may be

objected that the Root brood chamber is too heavy to reverse; then I propose to use an apparatus somewhat like a wagon jack with a double or forked end to go on each end of box with a pin in each end of fork to fit a hole bored half through the ends of bee box, then lift the box with the jack and turn as on a spindle; or better though everyone might not be able to make one, a tripod made of light angle iron with a lifting screw on top. I send a rough sketch of this as it is difficult to explain. If anyone can suggest a better plan for reversing these boxes I am listening. Of course by this scheme you can only take out the frames when right side up, no more you can with the Heddon; with the Hooker whichever side is up the frames can be taken out, and his frames do not depend only on the retaining power of the screws to keep their position; they are parallel to entrance, which is an advantage in manipulation from the back, if you have your bees in a shed, and after the late melting weather I feel I want a shed, nor are they so liable to kill bees as the Heddon. Get down your Cheshire Mr. Editor, read up Hooker's and you will burn the long ones. Can you give me the address of a queen breeder in Cyprus. I have some bees of a Cyprian strain, and find them earlier in the season to business than other varieties. This suits this locality as the early honey flow is the best; mine are not any fiercer than other sorts. I have not had them very long so cannot say if they are much addicted to swarming. Will some one kindly give their experience with this variety. I made some mead last season. The recipe said it was not to be bottled for two years. It may be this warm climate matures it faster. I bottled mine at a year old, and find it excellent, the flavour something between Curacoa and Sherry. You can make ordinary thin colonial wine into excellent Port or Sherry, by mixing with varying proportions of the mead. I have no doubt it will improve still more with age. Did you ever see samples of

the P. and B. building paper? I send a small cutting of it. It is made in different thicknesses and is odourless. I fancy it would make a capital and cheap substitute for the unsatisfactory and expensive enamel sheet. Messrs E. Rich & Co., the importers, at my suggestion, have consented to have it tested for this purpose. Is the duty on honey in France 5 cents or 5 centimes per lb? I think you stated 5 cents in a recent *B.B.* As you might have derived your information from an American paper, I am in doubt which is meant.

[We do not know the name of any queen breeder in Cyprus. There are however breeders in Australia who we think could supply you with queens of Cyprian strain. We had one some four years ago, and was very pleased with it. It was not particularly addicted to swarming. Samples of the P. and B. building paper to hand. We would like much thicker samples than those you sent, as unless so the bees have a great habit of eating it through. The enamel cloth received with American hives is too thin. We are using linoleums, fairly thick and find it very satisfactory. The P. and B. building paper if thick might answer as well. The duty on honey in France is we believe 5 cents.]

FOR CHRISTMAS DAY.

One Christmas Day a little lad
Went out to the bees to watch his dad,
Who opened a hive, a queenless one
To see if the cells were well begun.
Out came a frame, ah, there's a show
Twelve fine cells all hung in a row.

The lad looked up in his eager way,
And said, "Why they know it is Xmas day
And old Santa Claus must come to them too
For they've hung up their stockings just
like we do?"

Prof. A. J. Cook, says in *A. B. J.*:—
The scent of insects is astonishing. A female moth in a room has attracted scores of males through a slight space in the window, and even down a chimney and through a stove-pipe and stove. In one case a female in a room attracted a flock of males to the outside of the room although the windows were shut. Yet to us there is no perceptible scent at all.

AN EXPERIENCE.

W. ABRAM, BEECROFT.

Some of the following remarks I intended to send you last month, but partly on account of bad health and the business of the season and partly for other reasons I delayed it.

I have read with more than ordinary interest your leader in the *A. B. B.* for September dealing with dairying production and your indicating that beekeepers can secure this and the other by combining with such a body as you referred to. I wish I could see the matter in the same light as you apparently do; or that you had given an expression as to how a body dealing in butter, can secure better prices for the beekeepers' products. Perhaps I am to a little too hasty and ought to await particulars re deputation you mention later on. All I intend to do at the present, therefore, is to relate an experience of mine. Several years ago I inquired at a co-operative place regarding the sale on commission of some honey of mine, and the information I obtained led me to send a consignment with the reserve price fixed. After a lapse of five months, having heard nothing I called and learnt the honey was sold. An account sale was then made out and my credit amounted to 17s 11d for 245 lbs of honey, which was less than a 1d per lb. irrespective of tins, cases, freight, cartage, etc. Such an experience makes me careful in the future in such matters. At the very same time, however, I also sent a consignment of exactly the same quality of honey to another place (no co-operation), and this was sold at 3½d per lb., or an advance of ½d on my reserve, with returns punctually. In what direction will the beekeeper benefit by such combination anyhow? That is what I would like to know.

Under seasonable hints you recommend a swarm catcher, and clipping a wing of the queen as means by which swarms are easily caught. Now as good as these devices may be there is another

mentioned in the bee calendar of the *A. G.* for September, to this effect. Watch the entrance of the swarming hive and pick up the queen as soon as she appears outside, and if you miss her look for her in the flying swarm. A pregnant queen never flies very high. Away then with clipping and such like cruelty to animals. Pick the queen off the entrance board, failing which look for her in the flying swarm (and if you catch her there, well you deserve a pension.) I have caught a few swarms in my time, and I often watch the entrance, to at once notice the queen falling to the ground in case she cannot fly, and I have picked a few queens off the board by chance, but somehow or other my eyesight is not good enough to catch a queen in a flying swarm. Again I find it not infrequent that a pregnant queen can fly up to the tip top of a tall gum tree and look down upon us triumphantly. Again I have followed swarms with a pregnant queen for about a mile or so, I on mother earth trying to catch the queen at least, the swarm in glorious heights, but either the bees fly away without a queen (which is against the rule) or else she could fly allright, and I fancy I saw a big tear in her other eye when she could or would not wait for me and said good bye. Well, I am not sorry to loose a swarm or two in a season that way—it may be the means to induce beekeeping by those who catch them. Not all queens are built that way, however, as one swarm had settled beyond my reach but shortly afterwards went back into their hive again, because the queen got giddy up the tree.

The October issue contains an article "Real Cause of Foul Brood" by Mr. McEvoy. I cannot agree with him that the rotting of uncared for brood is the whole, sole, real and only cause of foul brood. My reasons are many. Neither does uncared for or chilled brood advance to a brown rotten matter—it turns almost black and is not stringy. But foul brood in its first stage attacks mostly unsealed brood, which advances

to a brown rotten matter, eventually developing and attacking mostly sealed brood. I have also ample proof that a queen from a badly affected hive introduces the disease with her into a healthy hive in some instances; so do diseased queen cells. I regret that Mr. Editor neglected to publish the continuation of my article on Foul Brood in the issue for April, as it would explain a few points. The nursing or feeding theory has been thrashed out in Germany 25 years ago, and was found faulty. I disagree principally on practical grounds having proved contrary to his assertion, but also on science, and am of the belief that he cannot upset scientific established facts such as exist in regard to Foul Brood. But the latter is a matter for them to deal with, if they think it worth while to take notice.

In another part exception is taken to some remarks made regarding a Foul Brood Act for N. S. W., because experts claim that the disease is only a terror to amateurs. In my humble opinion any Act ought to be for the protection of those having a stake in the affair, be they amateurs or experts, but the expert and not the amateur, should decide the matter, and the latter supposed to reach the expert stage sooner or later, can only gain by aiding the former. Unfortunately amateurs like to be in evidence in more respects than one, where experts should decide. As for myself I do not care a rap whether we have a Foul Brood Act or not. But is Foul Brood the most dreaded disease? Certainly not. Is paralysis not much worse? Some may say, Decidedly not. Perhaps because they know no better, but the beekeeper who has to make a living by his bees and knows the effects of this latter disease, will say differently, because no remedy is yet known and the expert fares as bad as the amateur, worse in fact, as he has much more to lose. Bees belonging to the Government are not exempted from paralysis either and recent investigations have led to the discovery of a bacilli as the cause, which by the way I ascer-

tained some years ago. But now that the thin edge of the wedge is in there is a chance of driving it home, the more so after the imploring appeal from the Hon. Sec. of the N. B. K. A., though it comes on top of your assurance that the Association was never more truly representative than at present. I have devoted a great deal of time and labour to the study of paralysis and arrived at the conclusion that select breeding is the best remedy. But I do not think that an act such as the dairymen have will suit beekeepers, unless it can be proved that a two railed fence is ample security to keep the bees on the fenced off land.

Re Charges for Trespass.—This thing seems to have come upon us just as unexpectedly as the "New Woman," or the "Bike," and I enclose a newspaper report of one play in several acts. I have written to several daily papers on the subject, but assume the matter rests in the waste paper basket until proper use can be found for same in some way. It seems strange that the recovery of a swarm of bees just over the dividing fence should constitute trespass. Nevertheless such seems to be the law. When in Parramatta I had to catch most swarms in my neighbour's gardens, but before the time came for it I used to square things up in a sweet way, and it acted alright, but then all neighbours are not the same. The question is: If a beekeeper asks permission to get a swarm off his neighbour's ground and is refused same, how would he fare if he sued for the value of the swarm?

Foul Brood is greatly on the increase in New York.

Herr Gravenhorst says that, after having tried hundreds of cases year after year, with half his swarms supplied with starters at the beginning, and full sheets of foundation later, and the other half with full sheets from the start, he is thoroughly convinced that, on the average, they do better to begin with the starters.

CAPPINGS.

From American and other Bee Journals.

The French are great believers in large frames.

Honey is being shipped from California to England.

Honey—comb or otherwise—should always be stored in the warmest room in the house.

Mr. Wm. Thompson, of Honolulu, Hawaiian Islands, has 500 colonies in one apiary.

Many American scientific beekeepers believe it possible to breed bees with increased length of tongue.

Should the weather be so hot that the bees cluster out in front, raise the lid of the cover, placing a bit of stick or board under.

Larger entrances to hives are the cry now. One American manufacturer intends making them an inch deep and the full width of the hive.

General S. D. Lee, President of the Mississippi Agricultural and Mechanical College, says:—"What was the poorest part of my plantation six years ago is now the richest from the use of melilotus, and the hay is in my judgment the superior of red clover for stock."

A Mr. Aspinwall clips 1-16th of the wings of his virgin queens so as to curtail them in their flight, and secure them being purely mated. Nature's plan is the survival of the fittest. The fittest drone is the strongest and fleetest. So is not Mr. Aspinwall interfering with nature's plan and preventing his queens mating with such? Consequently is he improving his queen progeny?

Workers reared in drone-cells, is a more common occurrence than generally supposed. More than 20 years ago I saw workers hatch from drone-cells. The queen may control the sex of the egg by her will; but a case cited was proof of it, for I think you will find that, before the queen laid in the cells, the workers laid a heavy rim of wax, making the mouth of the cell as small as that of a worker-cell.—Dr. Miller, in *Gleanings*.

A writer in the Western Australia Bureau of Agriculture, urging the advance of apiculture in that colony, speaks of the Eucalyptus flavour as likely to push the sale of honey in England. He was promptly replied to by our old New South Wales friend, Mr. R. Helms, showing the effect of a fraud based on that a few years ago.

Mr. W. A. Selser, of the Division of Chemistry, Washington, D. C., says:—"I desire to make it very emphatic, that, if one to five per cent of commercial sugar be placed in honey it could be detected by analysis." He writes to *Gleanings*:—"Mail me five samples say; 3 ounces each, of honey. Let four of them be pure, and one of them be adulterated with five per cent of commercial sugar, number each one. If I do not detect the one that is adulterated I will pay the sender 10 dollars; if I do detect the 5 per cent of commercial sugar he is to pay me 5 dollars, or the price of my analysis, 1 dollar a sample."

R. C. Aikin says in *Canadian Bee Journal*:—"I have found that here in the alfalfa flows, when a colony brings in four pounds a day from morning to night, during the night it will shrink about one pound. Quite extended observations have shown me that the nectar here, gathered during the twelve working hours, will evaporate very nearly $\frac{1}{2}$ during the next twelve hours. I think it entirely safe to say that the nectar evaporates fully $\frac{1}{2}$ and I think some of it $\frac{1}{3}$, if fully ripened. The only way to get a surplus the poorer years, is by having the colonies strong. So firm am I in this belief, that instead of practising natural swarming I discourage it—or rather prevent it—and if a colony is strong enough to swarm, I keep it so, and very frequently add to it rather than divide. Such a procedure will give a surplus when ordinary methods fail, and in good years results in fine yields.

If a section, or several of them, are taken from a hive where the bees are at work nicely in them, and placed on the hive where the bees are loath to enter

the sections, carrying the bees that adhere to the sections with them, it will usually incite the non-working colony to go to work in the sections also. If this does not work, fit a piece of drone comb, containing small larvæ, into 1 or 2 sections when the bees will at once commence to work in the surrounding sections. Or you can drum or shake from the frames the larger part of the bees and the queen from such colony as will not work in sections, and put them into an empty box or hive; and when they get to building comb nicely, put them back where they came from. Where this plan has been used I never knew them to fail to work, going right to the sections, and building comb in short order. In drumming out the bees, do not drive too close, as bees enough must be left to fully protect the brood. The nice white comb that the drummed colony build while in the box should be placed in the sections for "baits," for there is no greater incentive to commence work than new white comb containing a little new honey. Of course all of this is given on the supposition that our questioner's bees were strong enough as to numbers to work in section, and still refused to do so, when the honey harvest was on. Where any hive is not filled with bees it is useless to attempt to make them work in sections.—*Doolittle.*

Professor Cook differs from Cheshire that the lower head glands secrete the nitrogenous or albuminous food that larvae are fed on. He thinks that the secretion from these lower head glands mixes with the pollen and both go together to the true stomach where the pollen is digested or changed into the royal jelly and other nitrogenous food, preparing it for the bees. I fed bees honey which was mixed with pulverized charcoal, and with the microscope found this in the royal jelly. Thus it would be seen certain that the bees regurgitated the food which is fed to the larvae. It would be impossible for this charcoal to pass through into the body cavity so as to mix with the blood, as charcoal is non-osmotic, and so cannot be absorbed,

and also equally impossible for it to be taken out by the lower head-glands, which must certainly be the case if these lower head-glands prepare directly this nitrogenous food. It would seem that the glands could hardly secrete all of the nitrogenous food, though it would seem possible that they might secrete enough ferment to digest the pollen and fit it to nourish the larvae and also the queen and drone. The fact as stated by Cheshire, that only the young workers have these lower head glands strongly developed, makes it seem more than probable that only the younger bees prepare or digest this nitrogenous food, and thus they supply this food not only to the larval bees, but also to the drones queen, and older workers.

C. P. Dadant, says, in *A.B.J.*:—Long ago, I observed there was something wrong when bees absconded, but not one swarm in 100 will leave a hive if they have a queen, the hive properly shaded and the inside of the hive polished with propolis immediately before hiving them. I save up sufficient clean propolis to always have a ball of it on hand, and by vigorously rubbing the inside of the hive for a minute, it gives it a clean home-like smell, and for many years I have not lost a swarm. When I do my work properly the bees will do theirs. I tried for some time to get along without drones, and succeeded nicely, but the bees didn't, for they never gave me as much honey as where a fair supply of drone comb was furnished them; and I have ever noticed that colonies with a liberal amount of drones worked much earlier and later than were there none and I came to the conclusion that the excess of honey so gathered would more than offset the amount needed for the drones. I am confident we can drone too little as well as too much. I am aware it will be well to regulate the amount of drone comb to be used, but I do not believe a good average colony, with a prolific queen will build much more drone comb than is really needed for the welfare of the colony.

R. C. Aiken, in *Canadian Bee Journal*, says:—It is as reasonable as can be, that comb honey colonies will pack more honey in their brood chamber than will those having unlimited store comb above. The fact that my stock run for comb invariably winter better than extracted stock, beat into my head this fact. The same writer says:—I have this year had but one swarm from 140 colonies in big brood chamber hives. At the beginning of the flow I put the chamber containing brood and stores at the top, the dry combs at the bottom. This puts the brood up near the extracting combs and a set of dry combs under. With this arrangement strong colonies will occupy the extras above about as quickly—sometimes more quickly—than the ones beneath. As the honey crowds the brood in the top of brood nest the queen occupies below, instead of swarming.

Prof. P. C. Gillette in a paper read before the Economic Entomologists' Association, California says:—One object kept in view in making the weighing was to determine, if possible, whether or not field bees gathered loads of honey and pollen at the same time, as some of the authorities tell us. An examination was made of hundreds of pollen-bearing bees at flowers that gave pollen only, many others from flowers that give both honey and pollen, and also pollen carriers taken in front of the hive. The result is that no pollen-bearing bee has ever been found that was heavily laden with honey. They usually have a little honey in their stomachs, as do most workers that are leaving for the field, whether for honey or pollen. It was shown by the table that the honey carriers return to the hive a trifle more than one-half heavier than when they leave it. On the other hand, the pollen carriers, on an average, only increase their weight about one-tenth by the loads they carry. The figures are obtained by taking the weight of the outgoing bees from that of the pollen-laden bees as they reach the hive. The honey stomachs when removed with their contents weighed a little more than the

difference between a loaded and an unloaded worker, for two reasons—in the first place the stomach weighs something, and then the bee does not entirely empty the honey stomach. It keeps a small reserve. According to the weighings of Prof. Gillette, there would be in a pound, on an average, 5578 unloaded bees; 3532 honey-laden bees; 5060 pollen-bearing bees; 5447 unloaded pollen bearers; 220 drones. It would, likewise, take 10,965 loads of honey and 40,580 loads (the amount carried on both legs) of pollen.

QUEEN REARING.

BY J. C. HOBBS, NEW ZEALAND.

I am writing you this article on queen rearing because I think a few of my experiences may be of benefit to the bee-keeping fraternity. As this is the first time I write to the *A. B. B.* I will preface my article with a brief sketch of my experience in beekeeping. Eight years ago I went into partnership with my brother who had been keeping bees on the scientific system three years before. Beekeeping has been my chief occupation ever since. The first season we extracted 9 tons clover honey from our two apiaries. The home apiary contained 60, and the out apiary some 6 miles off 120 colonies, spring count. Next season the bees gathered unextractable honey from N. Z. flax (*Phormium tenax*.) so we went in for increasing and established a third apiary, and at the end of the season extracted two tons clover honey. The following winter my brother constructed a screw press for thick or unextractable honey. The following summer we pressed 2½ tons with it, the rest of the crop, 10 tons, being extractable.

The spring before the fourth year we shifted two of our apiaries some twelve miles to a spot about four miles from our best apiary, so as to save running to and fro, as before, to visit the two out apiaries and return home made a circuit of 24 miles.

We did not benefit by this removal except by having the apiaries more con-

venient to go to, for within the range of the new locality was a swamp and a range of hills covered with scrub ti-tree which yields unextractable honey. The thick honey being of inferior quality to the clover and was very slow of sale and brought a much lower price, so after the third season my brother took 120 colonies to Wanganui some 200 miles from Waikato. He again fell in with thick honey which the bees gathered from a shrub unknown in Waikato. Last winter he moved his apiary to Palmerston North, and he secured a crop of extractable honey from clover. A great deal of the New Zealand flora yields unextractable honey; I believe most of it does.

I have two apiaries at the present time, the out apiary is the one on which I rely for clover honey, and is surrounded by pasture land, but the bees sometimes fly beyond and get undesirable honey from ti-tree and flax. The home apiary, which is near hills covered, etc. where the bees gather mostly thick honey, I use for queen-rearing, increasing and gathering honey for winter use at my out apiary.

The chief honey sources in my locality are, clover, thistle, dandelion (or hawk weed, which is plentiful in the summer,) penny royal, flax and ti-tree. I have had experience with Foul Brood ever since I started beekeeping, and have Paralysis for three seasons but shall leave these for another article.

In the following I will confine myself exclusively to queen rearing.

Having tried nearly all the methods advocated in beebooks and journals, and finding none so satisfactory or economical as Doolittle's plan of rearing queens above an excluder, I have settled down to that system. What I wish to do is to give a few conditions I have found necessary to secure good results with the Langstroth hive, which is not so well adapted for raising queens above an excluder as the hive Mr. Doolittle uses. Last Spring, being short of combs at my home apiary, I spaced the brood in

strong colonies with frames of foundation instead of worked out combs as I usually do. In one hive during cold weather I noticed that the queen laid entirely in the combs on the one side of the sheet of foundation in centre of brood, on the other side bees built an unusual number of empty queen cells. I put chyme and larvae in these cells and in two days was pleased to find them all accepted. On looking the 5th day the bees were in the act of destroying all the cells, the queen having come among them and started laying in combs that side of foundation.

This experience led me a few weeks later, when preparing a hive for queen cell building above an excluder, to arrange the combs so that the queen would have plenty of room near one side of hive, while the other side contained combs filled with brood and honey.

In the super above the excluder on the opposite side to where the queen would be laying arrange the combs thus—a comb of honey, then a comb containing unsealed brood, next the frame of queen cups, then another comb of unsealed brood. At the far side put a Doolittle feeder, and the rest of the space can be filled up with combs and foundation. With the first batch of queen cells I arrange the hive two days before hand and give the bees one or two pints of warm syrup every evening until the cells are sealed. There should be plenty of drones and drone brood in the hive. I use the colony I rear select drones in for cell building. The excluder should be arranged so as to have a bee space above and below which allows the bees to pass through freely. I would advocate using pure Italians, as I have never had satisfaction with Hybrids or Blacks for cell building. Every one who wants to rear queens should study Doolittle's queen rearing.

In one colony last season I secured over 100 cells and could easily have raised double that number had I wanted them. As soon as the cells were sealed, I would give them a fresh batch of 12 or

15 cups, and have most or all of them accepted. In four successive lots only one cup was rejected, and I never had less than 10 accepted in that hive. I always brought up two fresh combs of unsealed brood from below when I gave a fresh batch of cups. I will now close wishing your readers every success in queen rearing.

HONEY.

HARRY H. DAVEY, MELBOURNE.

Please correct in last paper:—

1. The A. B. C. of the Eucalyptus tree then is: (1) That oil is not its special property for all, &c." It instead of oil is nonsense; "it is not it."

2. Also, but is left out after "nor menthol oil of peppermint."

3. Also, "whence are these colours, flavours, &c., from?" is a question.

4. Also, "And cannot we, even by its honey, vividly identify the tree?" is a question (in last column.)

II.—ITS MARKET.

(a) To prevent adulteration.

(b) And to increase consumption.

I have spoken in a previous paper on *Its Value*. We know its value very well ourselves, yet what value are we going to put on it? That is, what price will we sell it at?

Whatever price you sell at gives the market value to you, though it ought perhaps to be twice that price; so you see that the market and the value are entirely in your own hands if you would act unitedly. If you will go everyone his own way, and against his neighbour, then you must put up with the inferior prices of competition instead of the superior prices (*your own prices*) of co-operation. A ring of beekeepers is needed (of producers) not a ring of middlemen (the parasites of producers.)

Then we must mother the market for ourselves instead of, as now, the middlemen mothering it for themselves. Producers should market to consumers and then both consumers and producers could live, and the market price of an article could be its value.

All Australia is a consumer if it could get it at its value. But they cannot. It is, taking the average, rarely used as a daily food. Middlemen, and adulteration and ignorance of quality bar the way, and beekeepers themselves are to blame, for they have the power to prevent all this.

And can there be export when there is practically no supply here?

It is as hard to get good and reasonable priced honey here as in England and we are going to run away and leave things as they are

here. Are we? No. Let us win where we stand first, the home supply, and then afterwards fight other battles.

Success and supply here first will mean *success and supply in foreign markets*, depend upon it, for success here would encourage the industry to increase a hundredfold.

For I am certain beekeepers could win the market if they went the right and honest way, make it cheaper to consumer and put more in their own pockets. Then consumption would rise and that would encourage supply, and a vigorous supply and demand would build a worthy and National Industry.

It is certain that co-operation is needed but it is hard to find a workable basis—

(1) It should fix prices and sell direct to the consumer.

(2) It should fix a commission to be paid to the agent that sells (grocer, milkman, dairy produce merchant, &c.)

(3) It should make it a rule that each quality of honey and source be plainly marked on every and any vessel in which honey may be sold to consumers, for instance—"Red gum tree Honey", "Yellow Box tree Honey", "Clover Honey", "Orange Blossom Honey" &c. Call a spade a spade. People think "Garden Honey" is from our gardens, and that tree honey is dirty and wild. But they never see which is which. Little they know that "Garden Honey" is tree honey, Let them know be honest and true, and our Red gum and yellow Box honeys will become famous here—it is the only chance—and then world famous.

(4) It should also make it advisable that each agent employed, must exhibit samples in clear cut show glasses of granulated and ungranulated honeys, and correctly named, so that our honeys might become known and sought after. Let us have the courage of our own produce and show what it is.

(5) It should also make it a rule that samples of adulterated honeys and analysis be shown, and that the public be invited to absolutely test what they purchase. That will beget confidence and prevent adulteration to a very large extent.

(6) In fixing prices it must be within the means of the general public—the average pocket-less than the present prices in stores, &c. and more than we beekeepers get at present, for one could retail at a 4d to 4½d and pay a commission of 15 per cent. to the agent that retails and makes 3d to 3½d a lb. clear of market expenses, and besides this the one who buys keeps 1½d in his pocket more than if he paid the usual price in the city of 6d and 7d. That 1d or 1½d more you make, and that 1½d the buyer saves, together are the middlemen's profit and the middlemen's living so that the middleman makes more than the producer and makes the consumer pay cost price plus his expenses and whatever profit he would like. That makes honey expensive and the consumption little or nothing.

Place it yourselves in the reach of every man and every man will buy the best of foods.

(Please read *A.B.B.* for May, page 46 "Australian Yankee".)

I speak from experience. I have seen honey sold direct from producer through a grocery store. 15 per cent was paid to grocer as agent and the honey sold in 3, 4, 8, and 10 lb. honey cans at an average of 4½d a lb. all the year round. The returns were 3d a lb. clear, and besides this the samples of honey and the new and correct method of naming increased the demand so much that it could not be supplied. People returned and re-turned and it went with a big rush, and that grocer made more in a month than he usually did in a year. Now that is the way for co-operation to take, for if an individual can succeed surely a number together can. If not I would advise individuals to get their grocery stores or dairy produce stores to act as agents on a commission. To sell at not more than 4½d, and to show samples well put up and also analysis if possible. Try it individually, for producers must come to the consumers themselves somehow, and this way is a good way indeed. And above all it would prevent adulteration, which at present has full scope to do where it will and as it pleases.

Prevention is better than trying to cure, and I would advise beekeepers to register a brand and a district so that consumers might find out the genuineness if they cared to. It would foster confidence, they would believe in some and that too would prevent adulteration.

Therefore you increase consumption. (A) By preventing adulteration. (B) By bringing it pure to the public direct from the producer. (C) By increased consumption after this method you likewise prevent adulteration.

And now friends:—

Value, Market, Adulteration are one. It rests with you to act altogether or individually. Let us see clearer and build this national industry larger and sturdier.

You see the value of honey *in itself*, that it is the only complete food sugar.

You see how its source influences,—colours, flavour, perfumes.

You see the quality of our Eucalytus, Gum, and Box tree Honies, and the different parts of the Eucalyptus tree and how that oil is not its special property, but that *Eucalyptol* is.

And also you see the law of profitable marketing and of an increasing demand.

And how that you *must sell it yourself*, by co-operation or without, and through some depot or local agent.

So please don't forget:—

"*Sell it yourself.*"

CORRESPONDENCE.

W. Abram, Beecroft:—The spring has been one of the best for bees here both as regards swarming and honey, and it will be good again after rain.

Schumack Bros., Binnaway:—We are sorry to report we are having a very poor flow of honey here this season owing to the drought in the early part of the year. Very little timber is blooming here this spring.

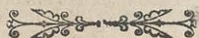
T. R. O'G., Grafton:—White clover blossom very plentiful this year and very early honey flow from (*E. Tereticornus*), Forest Red Gum and (*E. Crebra*) Iron-bark following. (*Tristania Suaveolens*), swamp mahogany and others coming in.

Sweet William, Everton, Victoria:—The bees in this direction are doing well. There were no swarms in the district till about a fortnight ago. The red box is in bloom just now; the trees are simply loaded with blossom and of course the bees are making the most of it, four cases on some of the hives, and what's more to the point the honey is good.

A. E. B., Te Aroha, New Zealand:—The *Bulletin* is of considerable interest to beekeepers, and I notice beekeepers speak very highly of white and yellow box as forage trees for bees. I don't know if these trees belong to the gum or whether they are another class of tree. I don't see it in any catalogue here; perhaps box tree is a local name and not its botanical name. I should like to get some seed to try it here. Stringy bark does very well, but the blue gum is badly eaten with a leach or slug. Some trees are quite killed by them as they attack the first leaves that come out in the spring. This has been a bad winter with our bees; have lost about three fourths.

Both gums and boxes belong to the Eucalyptus species. Am sending you a few white box seeds.

R. Colhoun, Kiama:—In reply to your letter asking me are the bees disappearing in the Illawarra district. They are certainly getting scarcer. In years gone by when the bush was only partly tum-



bled and the new ground gave an abundance of clover, bees were plentiful, but through dry summers, which stops the bloom of the clover, and negligence on part of bee owners to feed and attend to their wants they are getting fewer and fewer in the Illawarra district.

G. W. V. H., Rawden Island :—Would you kindly ask or answer through your *A. B. B.* if queens will lay more than one egg in each cell for the want of room. The hive is very strong and all the frames are full of brood and eggs, though some of the cells have two and three eggs in them.

Most decidedly. Give a super, also put an empty comb or starter in the brood nest.

J. T., South Lillimur, Victoria :—Just a few items of bee news. Began the season with about 120 swarms. Since that I have taken in a good few empty boxes. Bees died out or rather got weak and swarmed over. The weather has been so bad that I could not work among them. With swarms, &c., I have increased to 150 colonies. Very little honey coming in just now. We do not expect a big flow here; too dry. I wish to ask your readers have they ever tried queen rearing under the following conditions :—Give a very strong swarm a narrow hive and excluder over frames, second box and excluder over these, and third box to carry on the queen rearing. If they have with what results?

D. B., East Kempsey :—I have 70 swarms and intend to work up to 80 swarms as my place won't carry any more. I had 60 swarms at the beginning of Spring so they are all large swarms. I have the 8 frame hive and full sheets of comb foundation in the frames. I am thinking of working the 80 swarms in three-story boxes: As you say, giving plenty of room will prevent swarming, and the honey is all the better to be left in the box till it is properly ripe. Would you kindly give me your opinion? Where I am I will average about 1cwt. per hive (which I did last season with 60 swarms.) By giving bees plenty of room 3 stories high it seems to me that they gather less honey than if they were

made to work in the two stories; my hives are full stories and not half size.

Re making your hives into three stories, use your judgements in that matter, as you see them grow strong and can stand the additional story. Not every swarm will make itself strong enough to do so. While we have had some that we could have made strong enough for seven 10 frame L boxes, others will hardly fill two boxes, and with the larger swarms three is quite enough to handle, especially when full of honey and bees. One way recommended to prevent swarming is to place the added super below the swarm instead of on top.

W. D., South Woodburn, says :—I have 240 hives all in good working order, bringing in honey fast (the iron bark and blue gum are in full bloom.) I would like your opinion on the subject :—Do you think it would be advisable to increase number of hives up to another 50 as I am undecided what to do, as the price of honey is so low and the sale of honey is also very slow. I have some in Sydney four months and have not yet received returns. There are four bee farms about four and six miles distance from mine, and several small ones starting in the district. I would like to join the Beekeepers Association. How much would it cost, and what is the address?

We certainly should increase as little as possible. The Secretary of the N. B. K. A. is Mr. Fred Ward, Mulgoa Road, Liverpool. The subscription is 5/- per annum. We do not wonder at what you say about waiting four months for returns. If you saw the way adulteration is carried on in Sydney—nearly every grocer's is full of adulterated honey—you would not be surprised. The greatest surprise is the apathy of beekeepers in not joining the N. B. K. A. and enable them to carry out prosecutions to stop it. Honey is 1d a lb. less in Sydney than in any of the other colonies. They all have a duty of 2d a lb. each on both honey and glucose. Both come into Sydney free. You should use your influence with every beekeeper you know to join the Association.

R. W. P., Shaw :—Like other novices in the beekeeping line, I come to you with my troubles and would like to tell you of the strange ways of my just now rebellious pets. Our spring opened very early and resulted in much brood raising which gave me great delight, but it was shortlived as the winter came after it should have gone, and consequently I had chilled brood in quantity and stores

ran short just when they were most wanted. This appeared to take the heart right out of my bees and I soon found that there was considerable quiet robbing going on, such as A. I. Root describes as borrowing. I examined my hives and found the queens alright, contracted the entrances and watched carefully only to find that the trouble increased, and what vexed and troubled me worst was that there was practically no defence. I watched bees going from hive to hive until I concluded that while every one was robbing, everyone was being robbed and those hives that were giving the robbers the best opportunity were also the greatest culprits. I was at my wits end, but finally determined to risk exchanging a number, and selecting a dozen of the worst I interchanged them. Plenty of bees lay in front of the hives next day and I lost several queens which I should have caged, but that I was disgusted and reckless. However, this seemed to rouse the lot and in a week I failed to find a robber about. Still my bees seem very demoralized and are swarming continually, often without preparation, and it is only with the perforated zinc that I am able to fix some of the swarms. The hives are getting badly split up and yet uniting or returning is out of the question and the Heddon method of preventing after swarms sometimes fails. My last experience is the most puzzling. On the 15th inst. a hive sent out a large swarm which settled but rose again before I had time to secure them and on examining the hive I found embryo queen cells sealed up with nothing more than an egg in each! Isn't that a bit out of the ordinary? Every virgin queen causes her hive to swarm when she starts on her mating trip and the most of them get astray. The season is very peculiar and honey scarce here, though clover is now plentiful the bees take little notice of it where as last year they hardly touched other things. As this letter is already much too long I close with the hope that others are faring better than I.

THE RECENT SEIZURE OF RAILWAY SLEEPERS AT NARRABRI.

At the Narrabri police court recently the Inspector of Forests proceeded against one defendant, J. B. Martin, timber-getter, for cutting timber on the forest reserve without the necessary 10s license. This was a test case arising out of the action of the ranger, B. Lyne, in seizing 6000 sleepers at West Narrabri on the 2nd instant. The defendant was represented professionally. The inspector gave lengthy and careful evidence showing that this particular forest reserve had been gazetted, and its classification was also gazetted. There was no blazed line to go by, but four corners had been marked. It was admitted in Narrabri that lists and maps had not been on view at the local Crown lands office, according to the regulations, which should have been done. The main contention of the defence was that the Government had not fulfilled their duty in making the fact of this particular locality in the country being a forest reserve public information. The evidence of the defence also showed that the men had worked for two months without official interruption, by the police or Inspector of Forests. The Bench considered the case proved, but only inflicted a fine of 20s and costs of court.

A meeting of timber-cutters was held on Monday night in reference to the seizure of timber. Mr. Hodson, secretary, informed the meeting that after interviewing the Minister and the local authorities he had been informed that the Government would allow the timber cutters 75 per cent. of the sleepers cut and hold the balance. Resolutions were then passed by the cutters asking to be allowed the balance and a permit to cut on the forest reserve at a reduced royalty, viz., at one penny per sleeper, instead of threepence, as hitherto paid. The resolutions are to be forwarded to Mr. Charles Collins, M. L. A., for presentation to the authorities.

Mr. Burke, Loyalstone, reports :—We are having a splendid honey season here this year. The bush is white with blossom. Yellow box, white box, and red gum in full bloom, and I am very busy extracting at present. The weather is extremely dry. This is the third dry year we have had. Three in succession is too bad, is it not? Wishing you the compliments of the season and a big honey harvest.

QUESTIONS.

134.—Has the advantage of getting rid of drones been over-estimated?

W. NIVEN.

135.—During the last winter and at the present time, honey is plentiful and cheap in Sydney; from what part of the colony does all this honey come?

G. W. HARRIETT.

136.—In looking over my bees I found as many as four eggs in the worker cells of two frames (there are eight frames in a hive) and there are hardly any eggs in the other frames. The queen appears to be alright. What would you advise me to do?

137.—Give your opinion on Mr. Fackender's, Unanderra, account of loss of bees, page 195

138.—On Mr. Ayling's, page 194

GIFFSLANDER.

134.—Yes. I think it has.

135.—Perhaps it is made in Sydney.

136.—Re-queen.

137.—If the young bees die in the cells the smelting works can't surely affect them. Must be some kind of disease.

138.—Can't understand it if honey is coming in fast.

SOUTH COAST AND WEST CAMDEN CO.

135.—I have to inform you that during the period mentioned my Company received on consignment, 478 cases Honey, of which 329 came from the Northern Rivers, 6 only from the Southern, and 143 from Inland Districts. For the bulk of best samples we obtained 3d a lb, while for dark coloured and strong flavoured Honey we could not obtain more than 2d to 2½d per lb. To-day we quote values as under:—Primest Clear Samples 2½d per lb. Dark and Inferior 1½d per lb.—Dec. 16th.

R. H. JERVIS.

134.—I believe in a few drones in each hive.

135.—Not from this district.

136.—Not enough bees to care for all the eggs the queen can lay. Give frame of hatching brood.

137.—What the Yanks call spring dwindling. Bees have suffered somewhat the same for miles around this district.

138.—When hives are placed very close together and one takes off the cover bees go in the next hive. It may be so in this case. This is only a guess. How far are they apart?

JOHN THACKER.

127.—Have no knowledge.

128.—If you refer to the Reische Press, we have used them for three seasons and find them invaluable. Difficult to use while new, but better afterwards. Foundation thicker. We find it better for bedding the wires.

129.—We use Langstroth hive, so have no experience.

130.—Would not trust it. Think that the acid in the honey would be likely to eat away the zinc.

131.—N. S. W. beekeepers can best answer this, but should say combine. Sell nothing but a good article and each push his local market.

132.—No guarantee I have just boxed a swarm which settled about 300 yards from the tree they came out of. I believe that they always settle near the hive on coming out, but on rising may go miles.

133.—No experience.

SHUMACK BROS.

134.—No.

135.—In our opinion and what we have heard from two reliable persons that most of the honey sold in Sydney is adulterated or made up stuff. This we think is the cause of the market being glutted. We were informed by a lady resident of Sydney some few days ago, that her father was ill and was ordered by his doctor to use good honey and she informed us it was not to be got of a good quality in Sydney.

136.—Probably your queen is young. If so remove eggless frames and place her between frames containing eggs, and you will find she will be alright.

137.—In our opinion dry seasons have all to do with this question. There being not sufficient pollen to be gathered, and what is gathered is of an inferior quality to that produced in a wet season, therefore the bees cannot go in for brood rearing heavily. The same is the case with us here too, and we think there is no other cause.

138.—Don't know.

A. F. BURBANK.

134.—Yes, I think it has, as far as the honey eating idea goes, at any rate. I have always noticed that hives that have a good supply of drones, store surplus honey just as well, if not better than hives that had no drones at all

although both lots had about the same number of workers, but should you possess a queen that lays nearly as many drone eggs as worker eggs the case is different; such a queen should not be kept.

136.—This question is rather vague. G. W. H. does not say if the rest of the combs are covered with bees or not. If they are covered with workers and the hive is not too cold a new young queen should be introduced.

138.—I was bothered considerably by the bees getting the queen killing mania year before last (1895). It was almost impossible to get bees to take a virgin queen, but with care I could make them take old queens. The only reason that I see is that in certain seasons the workers themselves are more inclined to lay than at other times. I have noticed that when the bees get the above mentioned mania that the workers will start laying before the swarm has been queenless and broodless a week.

W. E. BAGOT.

134.—No and yes. Black and mongrels. No best not to rear them if you can avoid it. Pure drones. Yes. You require plenty of them. Cattle breeders say the bull is half the herd and so are the drones in the bee business. To get rid of any that you do not require, I have made an improved trap twice as high as the Alley. Cut away nearly all the cone board only leaving sufficient wood to fasten the sides etc., to. Now make and fasten a long large wire cone (as you have plenty of room) in 'o your capacious upper story, the slide and all other parts excepting the ends should be of queen excluding zinc. This trap will clear a hive of drones quicker than any thing. They just shoot up through that big cone into the trap above.

135.—A difficult question to answer. Wish I knew. Should say for Richmond River, one hundred tons annually. Say, Editor, could you not get us information from the Government Statists.

W. L. DAVEY, VICTORIA.

128.—Yes. I wasted about a week practising on a Reische Foundation Press before I got into full working order. So far I have attained a speed equal to 50 lbs a day or 6 lb an hour. Sometimes the foundation comb is a trifle thick, but I prefer the press made article, as the cells stand out *much further* and more truly than the mill made. Get a sheet of each and compare them and you'll be convinced.

129.—Depends on the man, and on the district, where it is a heavy flow I should say 100 (once fully established), and 150 in a district of only medium flows (once fully established).

135.—In Victoria we locate large supplies of "Garden Honey" (excuse the phrase) to the "Metropolitan apiary" situate somewhere near the Yarra, where bees never die, never get diseased, never fail to yield large supplies, (when a good demand exists,) work when it snows, blows, rains, hails or is sunshiny. I think there

must be some "iron" and "steam" about these "garden bees."

THOMAS R. O'GRADY.

124.—Would prefer to breed bees not inclined to raise too much drone brood, to any artificial restriction. The large number of drones minimises the risk to the young queen during marital flight, and the loss of a few young queens would be perhaps more expensive than the keep of all the drones in the apiary. Observers have noticed drones sporting with workers in a way that would lead one to imagine there may be physiological reasons besides fertilization of queens for the large number of drones. I doubt if all the functions of drones are thoroughly understood.

135.—Agents would best answer this.

136.—Most likely drone layers. Had queen similar this Spring, a late last season reared Italian, left here in thinking she would get fertilized but she did not and hive became quite weak, so I killed her. Possibly she became a drone layer by injury, paralysis, or refrigeration.

137.—Would advise getting bees and honey analysed at once. The Department would, I should think, undertake it. If the smelting works are the cause it is probably arsenic in the fumes, and the chemical tests for arsenic are so delicate that a very slight trace can be detected though it might also be due to the presence of lead or zinc.

138.—Mr. Ayling's hives are probably too close together or too much similarity. No marks to guide the bees to their correct homes, consequently there may be an amount of accidental visit ing not to say robbing and resulting irritable state of the bees. Cheshire says the trouble balling queens in their own hives is frequently commenced by one or two aliens, which causes the queen own children under a misapprehension to follow suit. If hives are too close and it cannot be avoided, recommend painting covers different colours.

QUESTIONS NEXT MONTH.

W. E. BAGOT.

139.—Have you sold all last year's crop? How did you put it up? Where did you sell it? What did you get for it?

140.—Your ideal site for an apiary.

A Mr. W. C. Macy selected a swarm of average size and sulphured them. By means of a toothpick he had the swarm scattered over the kitchen floor and counted inside of three hours. He found the number and kind to be a queen, 270 drones, and 16,480 workers.

VICTORIAN NOTES.

R. BEUHNE, TOOBORAC.

All the answers to question 127 (Is the laying power of the queen as to worker or drone eggs automatic, or can she produce either at will?) declare that the queen can lay either at will. This would be very difficult to contradict, and yet I am of the opposite opinion, without, however, endorsing the term automatic. If a queen lays either worker or drone eggs at will, why then does she not lay worker eggs into drone cells, till the mouth of the cell is contracted. At will, as I understand it, is preceded by thinking, and is rather more than a concede to a queen. The fertilisation of the egg to produce a worker is incited by the action of muscles in contact with the rim of the cell, and the production of either worker or drone brood is regulated by the supply of either kind of cells prepared (not built but trimmed) by the workers according to the requirements and condition of the colony, for a queen will not lay into cells not prepared for the purpose.

ROYAL JELLY.

The Editor and C.J. are at cross purposes. The latter wants to know where to get the royal jelly to place into artificial queen cups. The answer the editor makes is that it is produced by a certain gland in the head of the young bee. Mr Tipper is responsible for all the young bees' heads which come off in search of jelly. (For E.J.'s information I take the jelly from queen cells from a colony made queenless for the purpose, if no other queen cells are available. How would condensed milk do?)

(Read up Cheshire friend Beuhne.—Ed.)

INTRODUCING QUEENS.

Not having any of Bidwell's axle grease tin lids handy, I introduce direct by Simmins' method. Just remove the old queen at mid-day and run the new one in at dusk. 99½ per cent successful—that is I have had but one failure in 150 so introduced.

DISEASE OF WORKERS.

From Mr. Fackender's letter I should conclude that his bees are suffering from

Paralysis. Smelting works six miles away could only affect them through drinking water coming from there. The symptoms are those of Paralysis. Sometimes workers will die before hatching not perhaps from paralysis, but from want of warmth caused by the loss of adult bees from Paralysis. The same thing will happen when a colony from which a swarm has issued is removed to a new stand thus losing nearly all old bees. If cold weather follows within a few days some of the brood will die.

As to paralysis, the only thing I do now is to requeen affected hives and to dust the bottom of the hives (not the combs) with sulphur to prevent its spreading. The sulphur will be carried all through the hive without doing any harm, as is the case when sprinkled on the combs. The sulphur should be chemist's flour of sulphur, which is purer and finer than the ordinary kind.

QUILTS AND COVERS.

E. J. says, that his bees have wintered well, some with supers on, and they came out best. But weren't those with the supers on the strongest last autumn? and the supers left on because they were strong enough to store a little if there were anything late in the season. He does not use mats, they only absorb moisture. That is just about my only reason for using them. They absorb the moisture instead of allowing it to condense on the cover. A good cover should not only keep water out but should absorb the moisture from the cluster of bees during cold weather. It is more important to keep them dry from inside than to keep them warm. Another point in favour of quilts is that a hive can be opened and shut easier and quicker without crushing bees or jarring them into temper, and there is no trouble with propolis and burr combs.

FOUL BROOD.

I notice by the last A.B.B. that cremation of bees, hives and all is still in vogue in places. But it is not carried to its logical conclusion. The smoker that blew the smoke into the hive and every-

thing that was used should be burned also, and last, but not least, the bee-keeper himself, for if *he*, after handling those combs when he discovered the foul brood, is ever fit again to handle bees, why should the hive, frames and cover be burned which can be scalded, whilst the man cannot. Well, its good for the supply business, and helps to keep down increase in the apiary, as a correspondent in an agricultural paper sagely pointed out.

RENDERING WAX.

After reading Mr. Burke's Pamphlet on above, which we noticed last month, we sent him several questions, to which he has replied as follows:—

1. There is not much time and labour lost in boiling the wax. Clean comb and cappings as a rule only require three boilings. You need only bring your wax to the boil if you like and then take from the stove to cool. In my pamphlet I say boil the wax for three hours for the sake of destroying any germ of disease that may be in the comb, and explain same to every buyer of my pamphlet. You know an old washer woman if you give her very dirty clothes to wash will say, "I will give them a good boiling to get the dirt out of them," hence if wax is very dirty, the only way you will get the dirt out is by a good boiling; no other method known but mine will take the fine particles of dirt out of the wax. If you are a large producer of wax it pays you to have a ten gallon boiler, and by having a dish of the same capacity you can easily boil down 60 lbs of wax in one evening, and by boiling the same wax for two following evenings you will have the 60 lbs of wax well refined. We will say it takes you $2\frac{1}{2}$ hours each evening to boil this quantity of wax. Then by any other method known can you refine your wax as well in the same time? Of course if you want to kill any germs of disease that may be in the wax then you will have to boil for a longer period, and by any other method you will still have to heat the wax in some way to destroy the germs.

2. The great amount of 'boiling in no way injures the wax for any purpose for which it may be used. Some say it makes wax brittle, but I have yet to find a brittle cake treated by my method. I have sold my wax by auction in Sydney for the past nine years and have always received top price, and I reckon buyers are the best judges of wax. This year I received 1s 0 $\frac{1}{2}$ d per lb for 100 lb, I sold last July. I am saving up the very best for a trial shipment to England in time to come.

3. If much honey is left in the combs or cappings it renders the wax more difficult to refine. But if a little honey is left in the combs, it helps to bring the cakes of wax to a richer colour.

These are my answers to your questions and if you try a small quantity of combs by my method you will find when you get into the way of it that my method is quicker in refining wax properly than any other method known. In marketing wax buyers do not go for colour. If you have your wax of a fair colour and well refined you will get just the same price as you would if your wax was the best of colours and well refined. I have tried it and never succeeded in getting $\frac{1}{4}$ d a lb. more for the good orange colour than for the ordinary well coloured cakes of wax. I have read of the Cary wax press in the A. B. B. and think that the press would be a good idea for the first treatment of a large quantity of comb and cappings prior to treating the wax by my method, as it would take most of the refuse out of the combs and cappings.

BEES AND FIRE.

BY SKYLARK, IN *The American Beekeeper*.

There is one peculiarity in bees that I never saw mentioned in books or papers. I am the first, sole, and original inventor of it and claim precedence over all others.

About ten years ago a neighbours' horses got into my apiary and upset two hives. After securing the horses I went back to "fix" up the hives. Both of

them were lying on their sides, with the lids or covers near by. The first thing I did was to smoke both hives thoroughly. This was no funny job, as the bees were enraged to madness, and blamed the whole calamity on me! In vain I protested my innocence again and again. I tell you when a bee gets a sharp pointed idea into his head—especially a fighting idea—it sticks there and no amount of argument will do any good. The fact is I don't believe a bee, especially the worker, has any reason at all. No! No more than a mule.

Well, I placed the smoker (a Clark) on the next hive and went to work to "fix up" the fallen ones. It was in September and the grass was "high and dry" through the apiary, for there was no honey that year, and it was not trodden down as it is in good years.

All at once I heard a crackling noise behind me, and looking round me I discovered a blazing patch as big as your breakfast table—if you have any. I at once rushed to the bushes to get boughs to fight the fire, but before I got back it was entirely beyond my control. In my fight I had lost my hat, but would not stop to pick it up. Thus in my shirt sleeves and bare headed I fought the fire for two long hours, confining my efforts to saving the hives.

The fire first swept northwards and burned out the lower part of the apiary, but the wind changing, it swept back through the upper part and thus the whole apiary was ablaze. During the last hour I was assisted by a neighbour's boy. During all this time not a bee offered to sting—not one that I could discover left the hives. Those that were out hurried home—for the hills were on fire on three sides of us—and amidst the blazing grass and dense volumes of smoke entered their homes. I lost six colonies and had some fifteen hives more or less injured. Two of these last had the entire back end burned out of them, but the bees were safe! One would think that terror stricken in their blazing homes they would rush forth and

sting to death even a cast iron hay stack. But no! there they stuck all those terrible two hours! Only a few guards appeared on the alighting boards, and stood—aye, nobly stood at their post of duty—until they were literally burned into a crisp. Verily "they died with their boots on."

That taught me a lesson. Every year since that I have burned out my apiary at night, when there is no wind, and before the grass gets too dry, burning up pretty close to the hives. Not a bee has ever taken wing or attempted to sting. The hives are eight feet apart in a row, with a twelve foot street between them. Sometimes we have had a blazing fire fifty feet long in these streets, but have never been molested. Never wear veils at such times. Has any one ever had the same experience, or is this trait peculiar to my unrivalled bees?

CORRESPONDENCE.

R. H. Jervis:—Bees in the out apiary have been gathering honey for some time and doing well.

Mr Peter Riddel, Macleay River, writes:—Plenty of honey, small price and slow sales. The bush fires have done much damage round me. The heat of the fire and sun melted down several hives and many bees were burned in the flames.

R. W. P., Shaw:—Since writing last I have noticed certain points which I think are singular. The first I do not doubt points to the presence of a laying worker, it is that eggs are only to be found in drone cells in one of my hives and in one frame particular such cells have in such cases over a dozen eggs. Another that I have never seen reported is the presence of two half grown larvae in one cell (worker), and the third relates to a point often disputed that of the transmission of eggs or larvae by the bees. I had placed a frame partly drawn out from a starter and containing eggs in a super above a queen exclude and a few days later found that the comb had

been extended about two inches and then several queen cells had been started on its edge and to my surprise in one of them there was a tiny larvæ; a little later however all eggs and larvæ were destroyed in this comb, though for what reason I do not know. There has been a little improvement here during the last fortnight.

This communication is interesting can others have a say on it.

G.F.B., Wellington—Last season I bought fifteen young queens from one queen breeder and three from another, and bred a number myself. After nine to ten months I find seven out of the fifteen dwindling, and had to replace them with new queens. The three I bought elsewhere, and what I breed myself have all got strong colonies are doing well. It is my opinion that some of the 15 were old queens. Is there any way to tell an old queen as all queens are small after being posted three or four days. It is needless to say that I bought my queens elsewhere this season, and if not satisfactory will breed my own for the future. Bees are doing well this season. There has not been swarming for the last six weeks on account of the dry hot weather. But honey has been coming in very satisfactory as the spring was favourable for working up strong colonies.

Mr. T. O'Grady, Whiteman Creek, says:—I feel we must attack foreign markets or the bee industry will be overdone. The manager of a large sawmill here says they are a third time cutting bee stuff and some supplies are not to be obtained in Sydney. You were disappointed re the failure of the Co-operative Honey Co. It would never have been a success in the local market. There would have been too many outside suppliers and a number of us get our stores and bee goods where we can sell our honey, so the supply dealers would have been the mainly benefited parties. Such a company to attack a foreign market ought to be supported, if practical and experienced men are in the lead, not men who so obviously show their utter ignorance of the subject as some have

done in the *B.B.*

G.W., Telangatuk East, writes:—I am forwarding you a piece of comb in a little box. I want you to give me your opinion what you consider it to be. The hive this piece came out of was a very good one and was formerly quite healthy. It had a great quantity of brood, when all at once it ran completely out of store. All the brood seemed to be affected at once; the brood in the hive has got a very dry half starved looking condition. I had two other hives affected the same way, but not so bad, as soon as a little honey came in they seemed to get over it alright. The strange thing of it is that it does not break out until the hives run out of store and the brood have a very dry looking appearance. No doubt you will know whether it is genuine foul brood or whether it is any kind of starved or dead brood. The hives have never got wet. You will oblige by letting me know personally by letter as soon as you can.

[The little box with sample to hand. There were only two or three larvæ in it. The smell, the color, and the stringiness of Foul Brood were all present. While honey is coming in it hides the Foul Brood, or rather covers it up, so that the germs remaining dormant, but breaks out as soon as the honey is cleared off it. Destroy the combs and hive the bees in a new hive with starters, putting a queen excluder to prevent the queen going out and the bees swarming, which they will very likely be inclined to do.]

J. B., Attunga, Dear Sir,—I notice with pleasure that C. E. R., Baerami, has struck on an idea that I consider of great value to the honey trade, viz.: The publication of a pamphlet on honey as food, and am still further more pleased to hear that you intend compiling such yourself. I was intending to open the subject at some of the Tamworth beekeepers' meetings, but find the work is going on without me taking trouble. It is for the purpose of suggesting that the matter of adulterated honey be dealt upon strongly in the pamphlet that I write to you. It must be admitted that as long as glucose can be bought wholesale for £14 per ton, as long as people are contented to eat honey fabricated from it, that the pure honey trade will suffer, and in defiance of our Pure Food Act. But as soon as people are unpressed

the fact that pure honey is wholesomest and that glucose or molasses are better fit to be mixed with bran, &c., as cattle food, then we can reasonably expect that the price of honey will be higher and its consumption greater. I only wish to bring this one point under your notice, knowing that if you think it of sufficient importance you will do it justice in your pamphlet, as I know you are well able to do so. I for one will purchase a few score or hundred of them for my customers. I have had a fairly good season this year, and the yellow box honey flow is not over yet.

Many thanks for suggestion.

W. L. Davey, Melbourne, Victoria:— Just a few lines to let you know I'm alive, and that's about all. Those very interesting little creatures "Foul Brood Germs" got into the wild bees, and from these trees the germs swarmed into my hives by millions, with the result unexpected that I swarmed too. After fighting for two hard years, I came to the conclusion that discretion was the better part of valour, as far as the Wimmera was concerned. One beekeeper said it was a foul brood wave that passed over the district and its *waving* yet, and is likely to until an Act of Parliament helps us. I have not thrown up the sponge yet. friends, even though I find a beekeeper can be a worse enemy than foul brood, but I don't care two pins if all beekeepers are shams and frauds; I've yet to meet the man or foul brood that can dampen my ardour. Friend Beuhne says he got a good percentage of *Bacillus Alvei* in his early days, almost as good as a pawnbroker's. Well, I got more than that, for I'm a bee-broker now. It'll take a few years to exhaust the germs in the Wimmera. Whatever Tooborac has done, I can procure a few nice samples for friend Beuhne to enable him to prosecute scientific studies, in some of those diseaseless and disease-resisting hives of his. Wishing you and your readers a Merry Christmas and a Happy New Year. Hoping to give you better news of again being established in a healthy district next time I write.

E. G. G., Christchurch, New Zealand: My brother who lately left Australia and came to settle in Christchurch persuaded me to go in with him in a bee farm. My knowledge of bees was what you might call vague. After a deal of searching we at last found a piece of land and bought some nine hives of bees. The bees were about seven miles away and we engaged a carrier with his cart to take them to Freestone, the place we had elected to settle. It was with fear and trembling I got up that morning to assist in the removal. We started to the place about half past three in the morning. My brother did all the work with the assistance of the party we bought the bees from. The carrier looked very much afraid of those precious boxes. He rode upon the cart with my brother, and I preceded them on the bicycle. The carrier confided to me very earnestly that some of those blokes in the boxes was making a fearful row. I can assure you I was very glad when we got them upon the ground and the only mishap we had was two hives were a bit shaken going over some rough ground, causing some of the comb to fall. And now we have had them about two months and the frames are all straightened up and all the rubbish has been removed, and we are fairly settled. What we want to know if we are not trespassing too much upon your space? What the date was you published in the *Bulletin* an account of how to build a house for extracting honey on an out apiary? Of course we live some distance from Freestone and go out on our bikes. We do not think we have lost any swarms yet, as we are keeping queen excluders on till we can find the queens and clip their wings. Can you tell us what flavour is the honey from Gorse or Furze as they call it in England? and also is she a faulty queen that lays drone eggs in worker cells?

The following plan of extracting tent we take from a back number of *Gleanings*, and which we published in April number *A. B. B.*, 1895:—

We use a tent just ten feet square, outside measure. Put up a frame in each yard; get four posts, ten feet long; set them three feet

in the ground, ten feet square outside measure. Now nail on at the bottom a ten foot board on each side, a foot wide, then nail around the top four more boards a foot wide, ten feet long; that will leave a space of five feet between the upper and lower boards. Get 80 feet of thin cotton cloth, a yard wide, sew two breadths together, 40 feet long; that will just go around your house for siding, between the upper and lower boards. Sew on both upper and lower edge some strips three or four inches apart—leather—to tack through in putting on the siding. For top cover we use eight-ounce duck that will shed rain if we have a shower while we are there. Put up a gable end roof, raised three feet in the middle. To do that you want two boards a foot wide, ten feet long; set one up at each end, and nail to top and bottom board, and slant off the low corner to fit the pitch of the roof, then nail on top a 2x4 scantling, ten feet long; chamfer off top upper edges to fit the pitch. Nail on to the end boards some strips of boards to make a ladder to climb up when you put on the top cover. Make the cover to fit your frame, and sew on to the bottom edge some strips of leather to tack through when you put it up. You want a frame in every yard; but the cloth part you can take down every night and put it in a sack and take it home. One cover and siding is enough for all yards. Each yard must have a frame. With us it takes just five minutes to put on the cloth. For a door, we can leave one end of siding loose at bottom or can put in a screen door.

We don't know the flavour you ask of. The queen is faulty that lays drone eggs in worker cells. Supersede her.

CAPPINGS.

From American and other Bee Journals.

The king-bird or bee martin is said to be capital eating.

Deep, wide entrances are becoming popular among American beekeepers.

W. L. Coggs shall has a hook on the back of his smoker so that he can hang it on the edge of a hive while at work.

A Mr. Elias Fox, in the *American Bee Journal*, gives an instance of worker bees being hatched in drone cells. Dr. Miller says it is not such an uncommon thing as is generally supposed.

P. A. Sioli considers the queen has an influence on the morals and manners of workers. Vicious blacks given an Italian queen became gentle and industrious.

A queen was killed because her bees were cross, the temper of the bees seemed changed utterly by a change of queen and that too before the old bees had time to die off.

The *Pacific Bee Journal* says Mr. H. Mendleson, of Piru City, has 900 colonies of bees, and his crop of honey this season amounts to 60 tons. The same journal says that Mr. H. C. Wheeler has sold 9 tons extracted honey at three and one-half ($3\frac{1}{2}$) cents a pound ($1\frac{1}{2}$ d).

Geo. L. Vinal, in *Gleanings*:—In all the literature on bees and honey, we are urged to develop the home market. Acting on the advice, after I had travelled over my regular route this fall I went into an entirely new locality. After enjoying the scenery and the sunlight for about a five mile drive I called at a farm house and enquired of the good lady if she would like some honey. "Well, yes. I should like some, but I have no money." Seeing some ducks, I offered to trade honey for ducks; and for a pair I gave four pint jars of honey. Calling at another house, I sold 2 dollars worth for cash; and while I was talking with the man one of the ducks gave a quack, which led to an enquiry as to what I had. I told him I had traded honey for ducks. "Well, now, look here; can't I trade you some hens for some honey?" I traded for half a dozen, and made the children, I hope, happy, (I was). In this way I passed the day, and on my drive home I was trying to figure out my profits. I had disposed of two gross of pint jars, and 120 pounds of comb honey. For the pint jars I received 25 cents; also 25 cents each for the sections of comb. I had had a royal day's sport; and as I listened to the quack of the ducks and geese, the cackle of the hens, and squeal of the pigs, and looked at the large box of eggs that I had in the wagon, I thought I would have to send for some of Dr. Mason's egg-preservative. After getting home I took account of stock. I had \$54.40 cash, 108 dozen eggs, 8 ducks, 1 goose, 2 pigs, 24 hens, and 1 bullpup. (The pup is for sale.)

THE HUMBLE BEE AND THE TUI.

The humble bee has (according to the *Akaroa Mail*) a hitherto unsuspected foe, in addition to the exporters to Queensland. A short time ago the caretaker of the Akaroa Domain observed a tui in a very excited state flying after some object. The bird was successful in bringing its pray to the ground, and

after inspection revealed a humble bee deprived of its honey sac, the body of the insect being otherwise uninjured. Since then the same observer has several times noticed tuis engaged in this pursuit. That the honey birds of New Zealand should have discovered this fresh source of honey suggests a new and not insignificant danger to the useful little fertiliser of our clover fields.

ITALIAN QUEENS & BEES FROM ITALIAN DRUMFIN APIARY.

Prices of Queens—

		One	Three	Five	Ten.
Untested	..	5/-	13/6	20/-	39/-
Tested	..	8/-	22/6	35/-	69/-
Select Tested	..	15/-	42/6	70/-	

Untested Queens warranted purely mated at 1/- each extra.

Over 95 per cent. of my queens were purely mated during 1895-96-97 Nuclei at 3/- per frame to go with any queen.

Prices of Full Colonies, Bees per lb., Imported Queens, &c., on application to

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or to PENDER BROTHERS, Manufacturers, West Maitland

A Stitch in Time saves Nine.

And early orders save disappointment. If you intend to purchase Queens for the coming season, give me a trial. Book your orders now and pay on delivery. I can supply you with good prolific Queens, whose bees are good workers and gentle to handle. The very best imported mothers only are used, and for industry, gentleness and beauty, their bees are unsurpassed. Mismatched Queens are a novelty. Write for new circular and see testimonials.

PRICES—

		1	3	5	10
Untested Queens	..	5/-	13/-	20/-	39/-
Tested Queens	..	8/-	22/-	35/-	65/-
Select Tested (Breeder)	1 for	15/-	2 for	27/6	

Honey or Beeswax will be taken in payment for QUEENS (if preferred) for all orders of 10s. and upwards. Safe arrival guaranteed to any Post Office in the Australasian Colonies.

I can also supply you with anything you require in the Apiary. Write for prices.

A. A. ROBERTS,

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WANTED TO SELL three (3) Choice Cypri-Italian Breeding Queens. Safe arrival and satisfaction guaranteed. Price, 10/6
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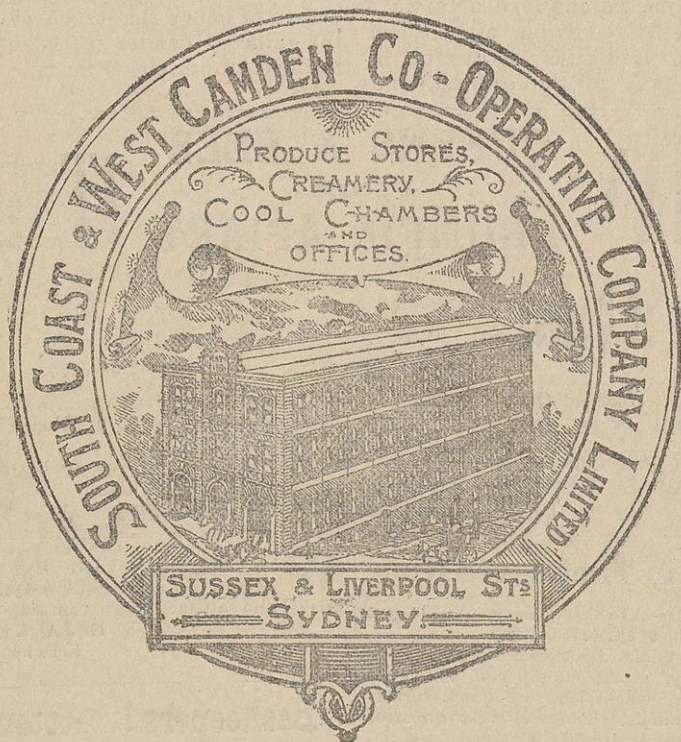
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should be a member of it.

Rules of Affiliation Country Association,
August Number *A. Bee Bulletin*.

A REAL BEAUTY!

Telangaluh East,
May 17th, 1897.

To Mr. BOLTON, Dunkeld.

Sir,—The breeder queen that I got from you last year has turned out a real beauty. Her colony swarmed last October, the swarm weighing 6lb: this swarm without any help or fussing about gave me 601lbs of extracted honey, while the parent colony gave 400lb of honey. Both colonies are now in the best of condition with plenty of stores for winter.

Yours truly,
GEORGE WILLIAMSON.

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