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THE AUSTRALIAN BEE BULLETIN.

— A MONTHLY JOURNAL —
Devoted to Beekeeping
Circulated throughout the Commonwealth of Australia — New Zealand & Cape of Good Hope

MAITLAND, N.S.W.—OCTOBER 29, 1902.

The following is a list of advertisers in our present issue :—

Supply Dealers.

R. K. Allport, Chuter St., North Sydney.
A. Hordern & Sons, Haymarket, Sydney.
The W. T. Falconer Manufacturing Co., Jamestown, N.Y., U.S.A.
Chown Bros. and Mullholland, Ltd., Thomas St., Ultimo, Sydney.
R. Beuhne, Tooborac, Victoria.

Queen Raisers.

W. Abram, Beecroft.
H. L. Jones, Goodna, Queensland.
Jas. McFarlane, Lyndhurst, Victoria.
Mrs. Jennie Atchley, Beeville Bee Co., Texas, U.S.A.
J. W. Miner, Ronda, N.C., U.S.A.
R. H. Jervis, Moss Vale, N.S.W.

Miscellaneous.

A. Hordern & Sons, Haymarket only, Sydney.
Allen & Co, 242 Sussex street, Sydney
P. J. Moy & Co., 161 Sussex St, Sydney
W. L. Davey, Plenty Rd, South Preston Victoria.

Foundation.

R. Beuhne, Tooborac, Victoria.

The average life of a queen bee does not exceed three years. As a rule they are best the second year, after which the apiarist should supersede her.

WE read somewhere that selfishness is bound up in the heart of everybody, and that universal law of *Force* seems to create perpetual war throughout everything in creation, the most minute creatures, the most magnificent, and the most intelligent, even man. There is more cruel war than that of blood-shed in the battle field. The wars of business and competition are such. So the beekeeping industry is not exempt. The interests of the producer and the man who lives by the producer are different. Their occupations are both legitimate and right, but each has to watch the other, or loss is bound to follow. And yet things are so ordained that the serious injury of one is the serious loss of the other. Take some ten years ago, when beekeeping first became prominent in Australia. What were the stories told about it by persons who wished to avail themselves of a good opportunity to make money by selling supplies:—The honey industry was going to excel the butter industry; there was to be more money in beekeeping than in gold mining; a square mile of forest and a hundred hives was an assured income of £200 a year; a hive of bees in the bush would average 250lbs of honey a year; in the town 150lbs.; it would add so much to the income of public servants, and occupy but little of their time, and that would be *all pleasure*. Had there been less "blow" then the

industry would have been in a better condition now. How have these beautiful pictures been realised? Not long since hundreds of empty hives could have been purchased all over the colony of New South Wales for next to nothing; almost given away. Bad seasons, decrease of forests, a limited market, lost hope in foreign markets. What is to be done? For those producers who have survived, no matter in a small or large way—to maintain and help the Bee Farmers' Association—to *work together* honestly and sincerely *for their own good.* Supply dealers, commission men may be all very estimable individuals—may be honest, straight-forward men. But business in these times is business, and their interests are naturally against those of the producer, whether it be by increasing the number of beekeepers and thus decreasing the value of honey; by putting out false statements of its value to enable to purchase below value; by selling hives and fixings to those who will never reap profit from same, but work and undersell the struggling man who is compelled to stick to the industry on account of the money and time he has launched in it. Producers should work, and at least once a year do their best to meet too, if nothing more, talk over the things concerning their welfare, and develop as much as possible a spirit of union and friendship. The next meeting of the N.S.W. Bee Farmers' Association takes place in April next. Let every intelligent honey farmer try to roll up. In the mean time let them think out practical suggestions and read the rules in another page of this issue.

MR. W. L. DAVEY writes:—"These are bad times for beemen and all rural industries, terrible does not describe the chaos that is in the Commonwealth, in all the different phases of country life. I can picture the deserted homestead, the skeletons of thousands of valuable stock, the empty beehive, grassless fields, watercourses without water, and probably a lifeless forestry. How sad one feels to realise the awful blow that has fallen, 'as a bolt from the blue' upon our fair country."

Yes, Mr. Davey, but is there not a bright side to every dark one? When we read that honey raising can be made profitable by selling at 1½d per lb.! (such statements are made in N. S. Wales, by interested persons) steam power and heated rollers for crushing cappings! is it not enough to frighten a poor man from going into beekeeping, and for a rich man to ask himself what percentage of profit would he be likely to reap? We have read in American and European bee papers that honey-raising cannot be done profitably under 3d. per lb. And we *read* again that the Australian working man requires higher wages than the English man! How do all these things tally? Wonderful tales are told by those who do not live by honey-raising. Is it not well such bad seasons come occasionally to let the world know what beekeeping really is?

Don't spare the queen-raiser. Look at our advertising list.

This season our bees are not building up much. Scarcely a swarm.

If your queens are over two years old don't depend on them for a good honey flow.

Prevention of swarming—Give plenty of room. Keep down drones by cutting out drone cells.

The *Rocky Mountain Bee Journal* predicts that in fifty years hence a hive larger than the 10-frame Langstroth will be the standard.

For relief of bee stings vinegar is recommended by some, whisky by others. The best remedies are care in prevention, and getting accustomed to them.

The wise man profits by experience, while the otherwise spend their time in experimenting. What the foolish man does in the end the wise man should do in the beginning.

The *Irish Bee Journal* says:—The necessity of using force to remove sections may be largely done away with by rubbing over the runners in the racks with vaseline before putting the sections in. The same may be carefully done to the dividers, just where the sections come in contact with them, using the vaseline sparingly.

The Jamaica beekeepers are waking up, and looking forward to great things in the English market. Sending a man to Bristol with a salary and commission to push their honey. There is nothing new under the sun. If they knew all the efforts made by Australians in the same direction during the last ten years might it not be instructive to them.

Mr. Isaac Hopkins, the well-known beekeeper and supply dealer, at Auckland, New Zealand, has disposed of his business to Messrs. Bagnall & Co., Ltd., who have, however, retained the services of Mr. Hopkins as expert, and all orders in the beehive department will be despatched under his personal supervision. We wish the new firm every success.

It does not pay to keep queens two years old as a rule. They gradually cease to lay and the hive dwindles. If a daughter supersedes she may be lost in her wedding flight. As the hive dwindles the nurse bees decrease to become honey gatherers. The brood is neglected. Honey may be gathered, but the last honey gatherer at last dies. The queen may even survive all, or the old queen may die, and a young one come out and not sufficient bees to attend to her, she herself dying for want of food and attention.

If you do not wish to increase more than one swarm, when the prime swarm issues hive it and put it on the old stand, put the old colony close as possible beside it. A week later remove the old colony to a new location at least six feet away. That will weaken it down at about the time the young queens will be emerging, and that weakening, together with the fact that no honey will be coming in (because the field bees have all joined the swarm) will so discourage the old colony that there will be small chance for further swarming.

A New Zealand beekeeper has a great idea of the value of white box for honey. It is a good honey producer when it blossoms, which it does two years in succession, then ceasing for three years altogether. It is a query whether it would thrive in New Zealand. The favourite haunt in Australia is on dry mountain ranges. On the flats it gives place to yellow and other boxes, and apple trees. As to getting it to grow, we take it it requires a regular forrester to grow it from seed, as the trees naturally re-forest themselves from the roots, which run a long way under the ground. A forest of white box once destroyed is very difficult of renewal.

We said in our last issue we would speak further on Mr. Anderson's solar extractor. Well, when the temperature in the shade stood at 80 degrees the temperature in the interior of the solar was at 210 degrees. So what it will be when the outside temperature rises to 100 or 110 degrees we can form some idea. The great faults of the solar extractor are the dull days that will come, and the extractors have always hitherto been made too small. In a large apiary several, and those of large size, should be kept. Again, with wax boiled, much of the pollen is too well boiled, and so mingles with the wax, interfering with the colour of the wax. The wax from the solar extractor is beautiful and clear. We have ordered a second and larger one from Mr. Anderson. Of course, at end of season, all the wax produced by the solar should be boiled down, strained again, and placed in moulds by dipping.

A globe trotter that spends a few days in Sydney gives advice in a contemporary about the English market. Among other things he attributes the excellent quality of English honey to the untiring efforts of the British associations. Evidently the quality of the honey is due to their efforts,

not the natural flow of the islands, the clover, the heather, etc. He says in good years the "honey seems easily obtainable on the Sydney market at about 1½d per lb." We wonder what kind of honey is, in any year, to be had at that price, and what honest man would embark in honey raising, or continue in it at such a price? He says the rectangular tin is more economical to manufacture than the round tin. We have asked that question of large tin factories, and have always been told the round is the cheaper, and with less trouble to make.

PRICES OF HONEY.

Sydney Daily Telegraph.—Honey, sixty-pound tins of prime extracted, 4d.; medium quality, 3¼d. to 3½d. per lb. Beeswax, discoloured, 1s per lb.; prime 1/1.

Melbourne Leader.—Sales were somewhat slack; buyers secured prime clear garden lots at from 3½d to 4d., cloudy samples being offered at from 2½d upwards, according to quality. Beeswax.—Prime sold at 1/1 to 1/2, inferior returning 1s.

Tamworth, N.S.W.—7lb. tins, 2s 9d.

Garden and Field, S.A.—Clear extracted honey, 2½d., dark and candied, 2d. Beeswax, 1/2.

Maitland, N.S.W.—7lb. tins 2s 6d.

PUBLICATIONS RECEIVED.

We acknowledge receipt of the first copy of a new Sydney publication called *The Boomerang*, to be issued weekly. It is intended to be profusely illustrated, and the most up-to-date paper in Australia." Protectionists are especially urged to support it. The copy to hand contains the prospectus of a new daily Sydney paper, *The Australian Times*, which will advocate the Federal policy of conservation of Australian industry. "At the present time," it says, "we have no channel for the expression of our policy in the Sydney daily morning press. As a matter of fact the news of the Federal Parliament, and of the ever-increasing numbers of our party are subject to unpardonable compression by one of the morning papers, and to constant misrepresentation by the other which is most prejudicial to our cause and the growth of an Australian national sentiment." The capital is to be 125,000 shares of £1 each. The Hon. Secretary is Mr. Austin Chapman, Tattersall's Chambers, corner of Hunter and Castlereagh-streets, Sydney. Both ventures have our heartiest good wishes.

VICTORIAN NOTES.

R. BEUHNE.

THE DISAPPEARING TRICK.—I have had a number of reports lately which shew that the mortality has been very general in the north-eastern district. In none of these letters appears anything to cause me to alter the opinion expressed previously, that the food stored in autumn is the cause of the trouble.

One of my correspondents says:

16. I have been studying this tronble for the past thirteen months, and have books full of notes, but I always seem to get back to where I began, and agree with most of what you say about it. My colonies are still dying down, excepting two colonies that survived it all last year, and increased and stored honey well. 23rd September.—I looked through my colonies to-day, and found more than half the bees gone during the last two-weeks. I found bees on blossom to-day as if they were cold although the day was warm. I extract the following from my notes:—

1. The bees seemed to die out, or get something into their hives when the weather was at the same temperature (slightly frosty at night and up to 70 deg. in the day time) in spring and autumn.

2. Some colonies resisted it, or were hardy and energetic enough to withstand it.

3. The losses occurred all over the North-Eastern district at the same time last spring, no matter what sort of trees the honey was gathered from.

4. The cause may have passed over long before bees ceased to die from it, as the hives were full of that honey and pollen.

5. Would it be possible that there is some sort of pest that would attack the bee when it got out to work? I have seen bloom crowded with all sorts of very small insects in different places at different times.

6. Last year I lost all the bees in good ⅝-inch walled hives first, and the bees in the ½-inch walled hives were the last to go, and it is almost the same this year.

7. The disease (or whatever it is) is very light in some places and very severe in others; losses seem to be from 1 to 96 per cent.

8. Just before my bees began to disappear they were gathering the finest lots of pollen that I have ever seen. At the time I was going to make a collection of it there were so many colours so it cannot be scarcity through drought.

9. Apiaries of two or three colonies lost the same as places with over 400 colonies within a circle of one mile and a half in as poor a locality.

10. One thing I am sure of is, that it is not the grey box alone that causes it. At Albury and Wodonga, where the heaviest losses occurred, there is no grey box nearer than ten miles.

11. Does the disease attack the bee while out? They all die away from home, and I find them benumbed as if they were cold on blossom up to one mile and three-quarters away.

12. When we were losing last year about 70 horses died round about, especially in one place. We lost one, and another one nearly died on two different occasions. They would get scurvied when on a journey, or as soon as they began to work, and if they were not let go at once they would be dead in a few hours.

13. About one-third of my colonies spotted their hives with excrement, the color of the pollen they were getting, almost the same as dysentery, as explained by Root in A.B.C. of Bee Culture. But instead of the weak colonies and those in poor hives getting it, it is the reverse, for the strong colonies died first and the weak ones survived; also two which had foul brood.

14. Hybrids seem to come through best.

15. The idle bees and the brood and young bees seem to be alright. It is those who go to work outside that disappear.

Another correspondent reports that he has lost 30 colonies out of 40. Nearly all the letters state that the colonies went into winter in good order, and in some cases very strong, also that the best colonies suffered most, and that small or lazy colonies fared much better.

A well-known beekeeper of N.S.W. writes stating that in his opinion candied honey is the cause of the mortality.

So far as my experience goes I cannot agree with him. I have brought the out apiary home since writing last, and extract the combs of the defunct colonies, and there were not six square inches of candied honey in the whole lot, while in the home apiary, which came through alright there is rather more.

Two years ago, when I lost 200 colonies the colony which came through best had more candied honey in their combs than any other. Of course I do not mean to say that candied honey is better than liquid, but it appears to have nothing to do with the mortality. Since bringing the out-apiary home I have taken the combs from about half the surviving colonies, and replaced it with combs of honey and pollen from the home apiary. The remaining survivors I left as they were. Again, in some of those the stores of which I changed, I left the brood and honey surrounding it, and in some I replaced even the brood with an equivalent of brood of the home apiary. To most very weak ones I gave a comb of bees to save the queens from perishing for want of workers. To see whether they might have pulled through without this addition of bees I gave black bees to yellow stocks and yellow bees to dark stocks.

The overhaul just completed shows that those from which I took stores and brood both, have gone ahead splendidly. Where I left the brood, but changed the spare stores, there is a moderate improvement, and those I left as they were have remained stationary, and almost none of the original bees remain as evidence by the colour except some young bees hatched recently. This shows that without the addition of bees they could not have survived. I am aware that this is almost equal to making a new colony, for I had to deplete others of bees and brood to pull these small survivors through, but I

have saved those queens which I knew from last year's performances to be good ones.

All I have said here refers to the smaller survivers, the twelve I spoke of in last issue as likely to pull through are doing so, but have not progressed as well as colonies of the home apiary, which were of equal strength five weeks ago.

I have just made another discovery. There were six strong colonies in the home apiary which worked later into the winter than any others and which for this reason I used for finishing comb-honey. They were amongst the strongest of the apiary. I find now that they are very poor, having evidently declined since first examined in September.

The distance between home and out apiary was only 4½ miles in an air line, the country similar at both places, yet the honey where the bees dwindled is of finer quality and the combs capped white, the honey of the home apiary is not quite so marketable, and the combs capped yellow.

See pages 161, 163.

N.S.W. Bee-Farmers' Association.

NEW HONEY TINS.

At the annual meeting of the N.S.W. Bee Farmers' Association last April, one important item was the calling of a deputation on the Railway Commissioners, asking that new honey tins should be conveyed free to their destination. The request was granted. Subsequently, the Secretary wrote the Commissioners asking if it was necessary that tins sent from Sydney, must be sent full back to Sydney, to receive the benefit of this concession. The reply was that it was not necessary such should be sent back to Sydney, but it was sufficient if they were sent full to any railway station in New South Wales. We had got up three lots when a bill came from Mr. Corns, the manager at Darling Harbour, for carriage for the whole three lots, and stating there was no authority for them coming free. We immediately sent a copy of last April "A.B.B." containing report of Deputation to Commissioners, also letter stating that being sent full to any railway station would be sufficient. Ultimately we received a notice that if a statutory declaration was made as to the tins being sent away full the charge would be withdrawn.

CAPPINGS.

No bee coming from the fields ever goes straight to the super to deposit its load, but leaves it always in the brood-nest. Afterwards it is carried by younger bees into the super, providing there is not room for it in the brood-chamber. If, however, there is room for it in the brood-chamber, in the brood-chamber it will be left, no matter how strong may have grown the habit of storing in supers. *Progressive Beekeeper.*

It is a fact that when I was a boy my grandpa kept bees in the log-gum; they had their own sweet will about breeding, and there was no diseases in those days. The modern diseases have come trooping along, one after another, and the end is not yet, and all since the breeding of queens commenced. Has not the breeding for certain qualities, or the mixing of races, weakened the bee in certain qualities, or torn down its defence to diseases? —Old Grimes, in *American Bee Journal.*

Regarding the development of queens J. M. Davis, says in *Beekeepers Review*, "They need "mothering" in good strong nuclei, even after the cells are sealed, and until they begin laying. Dr. Gallup says I have cells built in extra strong colonies, *a la* Doolittle, then placed in strong nuclei on the 10th or 11th day. When from carelessness any of the nuclei become weak, I have found that the queens are from 24 to 36 hours longer in beginning to deposit eggs; especially so if the weather is cool.

I practice what is known as the Heddon method of preventing after-swarming. Instead of immediately placing the old hive upon a new stand, it is set by the side of the newly hived swarm, with its entrance turned to one side, and nearly

at right angles to the new hive. Gradually, each day, the entrance of the old hive is turned a few inches towards that of the new one, when, by the seventh day, the two hives stand side by side. If either is carried away, all of the flying bees will return and enter the one that is left. On that day, the old hive is carried to a new stand. The bees that have flown from that hive during the seven days that it has stood there, now return and enter the hive on the old stand—the swarm that has the sections. It gives the colony a boom, and so depletes the old colony just at the time that the young queens are hatching, that an after-swarm seldom issues, but the colony builds up and is a prime one for wintering.—Mr Morgan in *Beekeeper's Review*.

How to rear long-lived queens and bees. My 14-year-old-son takes quite an interest in bees, and he has made two 9-frame Langstroth hives all under the same roof, side by side, so that all can be turned into one hive. Now when all are full, and if the two queens do not fill to suit with brood, we will fill with hatching brood from other hives, so as to have an immense quantity of nursing bees, and bees of all ages. Now in a hive of that capacity, and filled in that manner, we expect to rear long-lived queens and long-lived workers, and we shall not be disappointed. I know positively, by actual experience, that the lifetime of the bees from queens reared under the best possible conditions is fully three times as long as those reared under the opposite extreme.—Dr Gallup in *A Bee Journal*.

A beekeeper living in a district of Bulgaria between the Danube and the railroad Rustschuk-Varna has this to say about his bee business: "Our hives are made of willow, basket fashion. When the swarming season is over we have from five to six hundred colonies in two yards. Little attention is paid them after swarming time. About twice each week we visit them, passing through between the long rows of hives and where we notice any bees dancing around the entrance of a hive, the bees letting their legs dangle down, that hive is doomed and we brimstone it at our earliest convenience. It is queenless and would be ruined by robbers and waxmoth long before we would get around to take up the others. We have no other way of ascertaining queenlessness. Of the five or six hundred colonies all but one hundred or one hundred and ten are brimstoned.—*American Beekeeper*.

Neatness in The Apiary.—I love neatness in the apiary. I love to see the grass well-kept as on the lawn. I love to see the hives clean and white with paint, standing in military order throughout the yard. I love to see every stone and chip in its place beyonds the bounds of the apiary. In short I love to see the apiary in apple-pie order and at all times. But does it pay in dollars and cents; Nay, verily! I am sorry to admit this, but in the flurry and bustle of "the funny" season, when one has to get his dish right side up and get it that way quickly, then it is seen that the stone and the chip are conveniently arranged when lying promiscously about the yard. A hive-stand needs to be levelled up; a coverboard weighted down and—well isn't it annoying to be compelled to run to the woodyard for every little piece that is needed? Then again how nice it is to always have your bee brush right at hand in the shape of a tall bunch of grass. What is more suitable for brushing bees than a handful of these grassy tender shoots? Bees show as little resentment when using such a brush as it is possible to receive from them at any time. But in brushing bees off their combs it is the best to give the combs a gentle tremulous twirling or shaking before the brush is applied. Dipping the brush in water adds much towards the prevention of stings; but the real beauty of a brush of grass and of having the grass right at your feet is that so soon as it begins to smell of poison from the bees it can be thrown away and replaced with another. Then we find that the practical and ornamental effects

do not readily combine in the bee, nor apiary either.—Exchange.

Queen introduction, once the great worry to the bee-fancier, is fast losing its terrors, and soon will have none at all except, perhaps, for the veriest tyro. Among all the systems I have found the "direct" method of introduction to be the safest as well as the most expeditious and economical. It matters not to me whether the old queen has just been removed or has been out several days provided they have no sealed cells), nor whether the queen to be introduced came by mail or was taken from a neighbouring colony. Nor does it make difference whether or not the honey flow is good or bad. The new queen is caged alone in any convenient receptacle and kept warm for twenty or thirty minutes. Then a few puffs of smoke blown well into the entrance of the hive, and a few more puffs over the frames when the cover is removed, and the queen is allowed to run down on the combs and it is done. I often pick out a comb and let the queen out onto it, watching her ask first one bee and then another for food until one is found who will give her the desired luncheon. I never hesitate to look into such a colony thereafter, and I have yet to lose a queen so introduced. Several times recently, when hurried, I have kept the queens in "solitary" but ten minutes, and yet was successful. I put in virgins in the same way and with equal success. For smoke I generally use pine planer-shavings, sometimes tobacco. I can see no difference in results, and under some circumstances I am equally successful where no smoke at all was used.—A C Miller, in *American Beekeeper*.

Alfalfa (lucerne) Cut Before it Blossoms Makes a Poorer Quality of Hay.—I say again that it is *not* a fact that alfalfa cut before it comes into bloom makes the best hay; and I know of many careful, thoughtful farmers who were once led into that practice but who are now letting their alfalfa stand until it reaches that certain stage when it contains and will retain, the most food value. Who cannot remember when this same fallacy was taught by some, and imitated by others, in regard to cutting wheat and corn, and even the digging of potatoes, while in an immature state. Some years ago the Experiment Station of New Mexico carried on a series of experiments to find out at what stage of development the alfalfa plant would make the most pounds of best hay. As I understand it, they made four cuttings of the first crop. First when about half grown; again just before it came into bloom; them while in full bloom; and again after it had gone to seed. They then took four bunches of steers and fed them the same number of pounds from the four different cuttings, and weighed each bunch of steers every five days during the experiment, which lasted some 60 days. The result was that five steers *died* during the experiment from the first cutting, while the best results were from the cuttings made in *full bloom*; and that cutting made 500lbs. more hay per acre than any other. Are not these results exactly what any sober minded person would expect? Is there not a time in the development of any plant when there would be the least amount of evaporation during the curing process, and when there would be the greatest amount of nutritive properties contained in the plant, and would not common sense teach that these conditions could only take place just at maturity, and before the consuming process of nature had set in?—*Beekeepers' Review*.

MR. PEMBERTHY'S APIARY.

We have much pleasure in printing a picture of Mr. Pemberthy's apiary at Elsmore. He is one of the most practical and thoughtful apiarists in Australia. In sending the photo he writes:

I am sending you a photo of my home bee yard of 140 colonies. I have 60 at the out yard, which makes 200 hives of two-story each, made up from case boards obtained from the stores. I have 100 extra bodies to put on as a third story where needed, which were made from new wood. The same wide streets runs east and west, the same as north and south, which leaves four hives in a group. This reduces the number of positions for the bees to find to 25 per 100 hives. It is a rare thing to find a hopelessly queenless hive in summer.

About four years ago I put in 44 cells in 44 hives, and obtained 42 laying queens, which shows that there are very few mistakes made by bees or queens in going into the wrong hive. Workers going in the wrong hive is a great cause of loss of virgin queens.

100 hives take 90 feet square. There are 10 hives across from right to left, which make it so easy to find any hive needed. The large building is the honey house, the other one is the carpenter's shop. The residence is further to the right, not seen in the photo. This yard was laid out about five years ago, and to my mind it cannot be bettered at present. I used to have them laid out in regular distances apart, same as was shown in the A. Beekeeper some time ago, but that style is a fool to this, as the bees were not considered in the least. It is very important to have a few trees or saplings in the yard in either style, as they make splendid land marks for the bees. The failure of House apiaries is due to the failure of the bees to supersede a failing queen, the entrances being too close together and too much alike.

HONEY TANKS.

I also send you a photo of the four three ton tanks in the honey house at the home yard. Those tanks are made of galvanised iron as you see, and no man need fear galvanised iron for honey tanks,

unless he has open top tanks, or extracts his honey unripe. I can melt the honey in those tanks if it candies with very little labour. The rope and ladder leads up to a loft, and those square lumps in the foreground are wax, the cases in the right hand corner contain honey waiting for team.

DR. GANDY'S SYSTEM OF MANAGEMENT.

The first eleven years I used small hives of various patterns: but for six years I have used nothing smaller than a ten-frame plain hive. For surplus I use one hive above another with empty combs, for extracted honey. For chunk honey I use a thin brood foundation wired. I use no honey-board, queen-excluders, nor separators, but allow the queen to breed wherever she desires, and in that way get four times as many bees as you get in the eight-frame hive where a queen-excluder is used. Bees, even in an eight-frame hive, generally use the two outside frames on each side of the hive for honey and pollen, and this leaves but four frames for brood-rearing. This I claim will not produce one-sixth as many bees as the colony should contain. I went through a colony having on six ten-frame hives last summer, and it had brood in 32 frames. That hive produced over 500 lbs. of surplus, while the same colony in an eight-frame, with a queen-excluder used, would not have produced to exceed 100lbs. of surplus. A queen-excluder will exclude the queen, and will also to some extent bar or greatly hinder a well-filled bee. By using drawn combs we have very little use for separators. I don't use them; and when I occasionally run out of drawn combs I resort to foundation; with drawn combs bees will make about twice as much honey as with foundation. I was induced to use large hives by some circumstances which I will relate.

I helped a man cut two bee-trees seven years ago, where the bees had been occupying the trees for four years. He was certain when they went into the trees, for both stood in his yard. Both had the space in the trees full of honey, giving us 517 and 73 lbs. respectively; and the same year I had a man (who was running an out-apiary for me while running a store) put up 50 boxes in trees to catch absconding swarms. Among them he put up several sugar barrels, some cracker boxes, and some nail kegs. We noticed that the barrels and large boxes were first occupied. One colony in a barrel we left on the ground in the woods until the close of the season, and it gave us 300lbs. of fine honey. Eight years ago I had 56 swarms come out in one day; and although I had four assistants helping to hive them, seven or eight swarms clustered together and resisted all efforts to separate them, so I had two ten-frame hives and two supers made, and placed them one above the other, leaving the two openings. Now, this colony finished up 365 sections of honey after filling the 2 hives, while none of the other colonies hived that day gave a single pound of surplus. If I put half a dozen hives on a colony I leave an opening for each hive so that the bees will usually work from each hive, and I seldom have a swarm from colonies thus treated. With those I want to swarm I use the common super on with sections for surplus honey. I had a colony last summer that had five twelve-frame hives on full of honey. It commenced to swarm, and I immediately set two of them off and put on another hive with empty combs, also taking out a few frames of honey from one of the hives. I had set off and put in frames of foundation, and they immediately quit coming out, and those who were out came back and went to work as though nothing had happened. For section honey I use the wide frame holding eight frames. In a heavy flow a ten or twelve frame hive will be filled in a remarkably short time; and then if another is not added they will swarm, no difference how many hives of honey they

have on. In a heavy flow I have known them to bring in 20 to 30 pounds in a single day, while those in an eight frame hive were bringing 7 to 10 pounds per day. I have eight-frame hives continually in my apiary for experimental purposes to show the great difference to other beekeepers.

I had two last year, one with a queen-excluder and another without in the same yard. Where others made 400lbs., this one with an excluder gave me 60lbs. of chunk honey; and the one without, produced 110lb. I had another that did not give a single pound of surplus, although they had a fine queen; but they were weak in the spring, and had very poor combs in the brood nest, which I did not discover until the heavy flow was over.

Now, of course, you will ask about the disadvantages of my system, and I will tell you. In breeding queens their full capacity they sometimes fail the second year, and are usually not good after two years, although I have had some very good at three years of age. I always change them by inserting a new queen whenever they begin to fail, without regard to age.—*Gleanings.*

HOW TO REAR THE BEST QUEEN BEES.

BY HENRY ALLEY.

I have read the articles of Dr. Gallup on queen-rearing with a good deal of interest. In the main the doctor is about right.

I do believe that fully 90 per cent. of all the queens reared are as worthless as so many house-flies. Such queens are not reared by Nature's plans; in fact, the means used by many queen-breeders are just the opposite to those ways suggested by Nature and used by the bees themselves. Did you ever know bees to use sticks to form cell-cups first? Do bees ever go into the chamber above the brood nest to build queen-cells unless about to supersede an old queen, or to prepare to swarm?

Now, what are the conditions under which bees usually rear queens? Natural swarming, superseding an old queen, and when a queen is killed by accident. Of course this last condition comes more properly under a forced condition. Nearly all queens are reared under a forced condition, but bees even then comply with natural laws in producing another queen, or others. What do the bees do under these last conditions? Do they loaf about the hive, waiting until some one has furnished them artificial cell-cups? By no means; they just select an egg, or several eggs, in some convenient place, and at once commence to construct a cell-cup; in due time a lot of fine queens are reared and appear. As a rule, a queen-bee so reared is in any way the equal, and often the superior, of any queens reared under the swarming impulse. I say superior. And why are such queens superior? Now, this question brings me to a point I wish to dwell upon:

I have always claimed, and still claim, that I can rear better queens by the forced method than can be produced under the swarming impulse. I have the queens in my apiary to-day to prove this assertion. And, by the way, let me say here, that I am using an entirely new method for rearing queens. Although good queens can be reared by methods I have given, I can rear much better queens by the method now being used in my apiary.

I have found by actual experiments that a colony of bees will not rear good queens while there is a fertile queen present. I don't want any one to tell me it can be done, for I assert that it cannot be done by any person. 'Tis contrary to Nature's laws. Even at swarming-time the bees do not rear as good queens as they will under queenless conditions, and this is why I claim that I can beat Nature in the way of rearing queens. I have thought that queens from cells made at swarming time were superior to any I could produce by the forced method. They are not and I do not now save such cells.

As queens are now reared they are short-lived and unprolific. *All* queens reared in hives while a fertile queen is present are short lived. The bees appear to understand, when they are given cell-cups over their brood nest, that they are not in want of another queen. But this is not the case with queenless bees. Bees in a queenless condition feel the need of a queen, and they will bend all their energies to produce one or more. Does the reader see the point?

Again, queens reared while a fertile queen is present are not nearly as large as those reared by queenless bees. I can show larger and better developed queens than any ever reared under the swarming influence.

Now, let any one come forward and dispute the statements here made. I stand ready to back them up. One may "beat around the bush" forever in trying to prove that the artificial methods employed now will produce first-class queens, but the fact remains, all the same, that it cannot be done.

There is quite a difference between artificial and forced method for rearing queens. In the artificial method it is, "Do it as you please;" in the forced plan it is a case of, "We must have a queen or the colony is destroyed." Isn't this so?—*American Bee Journal.*

THE EDITOR AND THE BIRD.

The Gainesville Sun states a fact and asks a question thus: As a newspaper representative and three candidates were entering about dusk, on Thursday evening, the great plain known as Payne's Prairie, a chicken hawk shot past the carriage seemingly in great terror. Strange to say, perched on the back of the hawk was a bird about the size of a canary, pecking the hawk's head with all the power he had in his little bill. Who knows the name of this brave little bird? Can any reason be given why the hawk did not turn and rend it?

In the days that have passed and gone the chicken yards of the South usually contained poles from which gourds were hung, on one side of which an opening had been made for the entrance of a little bird that guarded the vicinity from birds of prey in return for a home and shelter. The boys of the family were rigidly enjoined against disturbing these friends, and strenuous application of the paddle was the certain punishment exacted when the amateur marksman sought practice or fun at the expense of this most effectual protector of the barnyard. He was called the kingbird or the bee martin, and he never shirked battle with any antagonist—he would attack a soaring hawk or eagle as quickly and fiercely as a noisy crow, but never molested the songsters or the grain-eating members of the family.

Lately a farmer, mourning the lack of profits from grove and garden, was asked why he did not try chickens, and made answer that the wood were full of hawks; he did not have time to hunt them like a little boy! Half-science has clearly convicted our little friend of eating bees, and he is denounced by those who never gather a pound of honey except from the market in all their lives. It has been also proved that the kingbird is a friend as well as enemy to the bee, since he catches also the moth that enters their homes to destroy the young, but the one sin seems strong enough to beat down a thousand virtues, and the little king has been driven to wage warfare on his enemies and ours in the wastes and wilds like Payne's Prairie, while a paper that is a friend and advocate of the farmer has forgotten his name and existence. It is to our shame that this is so.

What was the name of the little fellow that sat on the hawk and "pecked and pecked?" Kingbird, Bee Martin, Tyrannus carolinensis, a flycatcher. "Why did not the hawk turn and rend him?" Just then because the hawk could not shake him off and the dwarf warrior was striking for his eyes and he was keeping

his head down to save that organ. When the hawk appears the king calls to his mate and the two rush to the attack with the directness of Schley's ships and almost with the swiftness of a shell from the Brooklyn. They attack on opposite sides and each tries to rise above the other—the female distracts the attention of the enemy while eluding blows from beak and talons by sudden turns and quick rushes to get in. But woe to the hawk that delays to strike at her—her mate has rushed above and then down—he clutches the feathers at the base of the skull and strikes straight for the eyes while beating with his wings to confuse and distract. Then the hawk takes to headlong flight and will dive through thick trees to free himself, or, blinded by the wings, will sometimes kill himself by striking against an object in the way.

Let the farmer recognise the kingbird as his friend and give him the toll of a few bees gladly—he has earned them. We heard lately of a farmer, not considered penurious by his neighbours, complain of the protection our law gives to mocking birds, "because they ate his grapes and seeds!" Shall we take all and give nothing? Why not adopt Burns's feeling for the mouse that took a little of his grain:

> "I'll get a blessin' with the lave,
> And never miss it."

—Florida Times-Union and Citizen.

Sell Honey Through Commission Men.

Editor York:—I have sold honey extensively for the past 30 years on commission. From my knowledge of the business, and observation of the marketing of honey, if I were a beekeeper I would place my product in the hands of a commission merchant to sell in preference to trying to sell to the "bargain hunters."

First, I would find a responsible commission merchant in a city of not less than 100,000 inhabitants—one who understood the grading and handling of honey, and had been engaged in it for a number of years, thereby having worked up a trade of regular customers that relied upon him for their yearly supplies.

Commission merchants in general lines of produce generally include honey in their price quotations, not so much expecting consignments of honey as to give market quotations on all kinds of country produce, which are not specific enough.

In every large city there are at least one or two commission merchants that make a specialty of honey-selling, who have a honey-trade, and know how to handle, who know what grades their customers want, and can generally place honey at good prices; while some dealer next door, not generally known as a honey dealer, can't sell unless at a slaughter price.

Commission merchants in honey are as indispensable to the honey-producer as commission merchants are to the manufacturer of cotton or woollen, and about all manufacturing industries. For their goods are nearly all sold by commission merchants that know the trade and the wants of it better than the manufacturers do.

As in all lines of business, there are irresponsible commission merchants that should be avoided, but it is a very easy matter to find out the responsibility after you have found a practical honey commission merchant. Go to any bank and ask them to give you the financial rating, which they can do in the mercantile agency book. There is no excuse in these days for shipping to irresponsible commission merchants.

It behoves a responsible commission merchant to do his best for a consignment, for it is on his consignments he has to depend for his supply of honey. It is quite impracticable for the commission merchant to-day to buy his needed supply of honey. He cannot afford to spend his time travelling the country over to buy, and to buy by sample is generally unsatisfactory.

The honey-producer should not begrudge the commission merchant his small commission of 5 per cent. which is usually well-earned by the risk of credit the commission merchant has to give; the risk of delivery to his trade safely; the risk of turning out as represented or shown, and coming back after he has made account of sale to the owner, etc.—Writer in *American Bee Journal.*

QUEEN-REARING.

There is no need of artificial queen-cells, transfer of larvæ etc., for one who rears queens only for his own use. Besides that, the one who is not experienced in the business may fail. He may injure the larvæ during the "transfer," or choose some too old, or do it so awkwardly that the bees will have to remove the jelly and replace it. This will necessarily check, to some extent, the growth of the larvæ. Whether the delay is injurious or not, I don't know. Better to avoid it.

We will simply take a comb of eggs and very young larvæ, cut under the eggs and larvæ holes wide enough to accommodate good cells, and as long as convenient, and put the comb thus prepared in the nursing colony. As soon as the cells are started an examination is made, and if some are built too close together, a few are destroyed so as to give sufficient room to the others. We want none but good big cells, they give the best queens. Exactly why, I don't know. Perhaps big cells and plenty of room go together.

As soon as these cells are capped, or thereabout, we can give another comb and start the next batch of cells.

Two or three days after the cells are capped they are put in cages. The cages are either left in the nursing hive or put where the queens are to be introduced. In that last case the queen must be removed.

I make my own queen cages for sake of cheapness. I make them of wire-cloth; the two edges are sewn together with foundation wire. They are made over a round stick of wood. A few small saw-cuts across one side of the stick helps to pass the wire under. At the top end I put a ring of thick wire, one end of it projecting as a handle to fasten the cage to the comb. The wire cloth is simply turned over the ring. The other end is closed permanently, by pinching the sides together. The top end can be closed by any kind of suitable stopper.

The queen-cells are cut with a small piece of comb forming a tail piece. They are introduced in the cage at the top, and the tail-piece pressed into the wire-cloth so as to hold the cell, and the stopper put in.

Care must be taken in constructing the cage that no wire should protrude inside so as to injure the queen.

As far as I know, it will not do to cage queen-cells just after they are sealed. At that time the end is very thick. As soon as the queen has spun her cocoon, the bees remove the surplus wax; the end of the cell is then smoother, somewhat darker, and of a leathery appearance. If the surplus wax is not removed, the queen cannot cut her way through, and dies in the cell.—*Exchange.*

CORRESPONDENCE.

J. A. B., Dilga, Sept. 12th, 1902.—It is nothing but drought up here; we had only 136 points in August. Half of the sheep are dead, and all this season's lambs. We have had to feed our large stock for nine months, and I assure you the outlook at the present time is very gloomy. The wheat crops are a failure. I don't think we will get even a crop of hay, and I don't think there will be a chance of a few corn stalks. The bees have done better than all. I got about 40lbs. per hive, and they had plenty for winter. I have not lost a swarm, but I am afraid it will be a tough time for them next summer if we don't get a good fall

of rain. I sold out all my honey locally at 15s per tin, excepting the three last for which I got 17s 6d, and 4d per lb. for all small quantities, and I could have sold three times as much. I never had so much enquiry for honey. I wish I had the tons I sent to Sydney now, I could get 4d per lb. for it instead of 2½d. However, it is another lesson taught by the drought. Keep the surplus of the good years for the lean years. No more at present, but hope I have better news next time.

B. G., Rushworth, Aug. 29th, 1902.—I have shifted all my bees to Rushworth in the following way. I thought it might be of use to someone as I found it acted very well:—I simply tacked the wire screen over the entrances and then bored holes at the end of the box and morticed it out to about two inches square and the tacked wire screen over that; nailed the end frames down in the hive, that is the eight frame, which held them firm. I then screwed the covers and bottom board down which made them secure. I then loaded them up, four in a row across a big van, and four in length along the van. I put four tiers high which amounted to 64, then I was seven days on the road which was a distance of 172 miles. I had them landed safely home with about a double handful of dead bees which had been killed out of the lot. I have carefully examined every colony and they were in the very best form that could be wished for, all containing laying queens, and the journey did not seem to affect their laying in any way. That is all I have to say about the trip, wishing us all a good season.

[We heartily compliment our correspondent on the success of his removal such a long distance, and such a number of hives, and trust he will get his reward in good seasons, plenty of honey and good prices.]

B. H. F., Port Adelaide, S.A., Sept. 8th, 1902.—I regret to close an acquaintanceship that has been of so much help and interest to me, but with last month my subscription to your paper run out, and as I am obliged to dispose of my bees, I shall not require the "A.B.B." for the coming year. The reason I am parting with the bees is primarily, the densening of population in this district. During the last two years the increase has been quite remarkable, necessitating the enclosing and building upon of much of the vacant land around me. This fact alone, however, would not have induced me to part with a hobby which is at once so interesting and profitable. But along with other improvements, the Corporation has been obliged to open up and form an old disused street running past my back yard, and, whilst standing with 150 yards of my bee-hives, a butcher's horse attached to the cart, was attacked by a swarm of bees and severely stung. Of course the animal bolted and a general 'smash up' ensued. I have little reason to doubt the swarm was one of my own, though that could not be definitely proved in a court of law. However, I have been notified that the bees must be removed from the district, or I shall be held responsible for any further damage of that character happening in the vicinity of my apiary. You may be sure I am giving up both bees and paper with much regret, but not without the hope I shall some day renew my connection with both. However, that day is not just yet, and until it comes I must say good-bye. Wishing you every success with your paper and your bees, and our mutual friends equal blessing in the calling they have chosen.

CAPPINGS.

From American and other Bee Journals.

In the handling of bees one may not at all times need to smoke them. But I would rather start out hunting without a gun than go among my bees without a cloud of smoke around, and within quick and easy reach. If it was well understood by everybody that bees would not sting or proffer an attack away from their near-by home, or unless pinched, one

senseless superstition would have disappeared, and happiness not common with inexperienced people would be realized. Bees that are to be moved will fill their sacks without smoke just as if smoked. One has to consult his own convenience. He will find smoke, reasonably used, will save the lives of individual bees and be of great convenience. Men have shown their vanity and ego in words like this: "My bees never sting me; I can take them by the double handful. Bees are alright, they need to know their master." The safety of the community lies in knowing that the bees do not know anybody or anything, and that if proper care is taken of them, and you have no superstitious neighbours, you will also have no trouble.—T. F. Bingham, in *American Bee Journal.*

Did I ever have a colony thrive in a hive in which the colony had allowed the moth to get the upperhand so that most of the combs were filled with webs and cocoons, I must answer no. If you mean did I ever have a colony thrive in a hive that was given to them in that condition, yes. Take a very bad case, only that some parts of the comb are still left, dig out the worst bunches of webs, place the hive under or over a strong colony, and see how nicely they will clean it out so as to be habitable. Even a swarm put upon wormy combs, if the case is not too bad, will make things all right. If the moth has made too much headway the swarm will be likely to evacuate.—Dr. Miller.

Ebb and Tide in Beekeeping.—Some 15 to 20 years ago a man in this country and about 10 miles north-east of here, made in one season $1,000 with 100 colonies, at least so it was reported. Of course it was not long until nearly all his neighbours were keeping bees, and at one time there must have been something near 300 colonies in that neighbourhood. In enumerating that section in June, 1900, if my memory serves me correctly, I did not find 10 colonies all together. This is one straw that points toward a decrease in the number of colonies kept in Missouri. Is it not probable that there are many similar cases?—S. E. Miller, in the *Progressive Beekeeper.*

In rendering wax in water containing lime or acids, either the cerotic acid or the myricine is dissolved out, and its composition becomes changed and forms a secondary product, as may be seen by the dirty-gray, spongy residue on the underside of a cake of wax after cooling. This residue has to be scraped away and wasted. Rain or distilled water should be used in the operation.—*Beekeepers' Record.*

A main queen-introduction point is not by any means universally familiar. Introduce in a bran new cage, and first scent it by keeping the old queen in it for an hour. To add to the scent, and also to secure other good ends, put in a new escort of her future subjects. Very likely we do not consider enough the provocative scents bees get in the mails. Rules ought to work both ways. Bees are undeniably liable to kill their own queen if caged an hour where she gets a provocative scent; why should they not then accept an alien when she comes with the right scent? The main rub is, she has an individual scent which, while it may be overlaid somewhat, cannot be entirely gotten rid of. Colony must take her scent, she cannot take theirs, except partially and temporarily.—*American Bee Journal.*

Most queens are at their best the first and second seasons, growing less vigorous the third, and very feeble the fourth. I once considered it important to supersede all queens after the second year, but after having in June, one season, marked 25 for supersedure in September, I found that 19 of them had been superseded by the bees themselves and the remaining six were doing so well that I let them go another year, thus proving to me their ability to do such work better than their keeper.—Mr Morgan in *Beekeeper's Review.*

QUESTIONS.

14. What is the best Colonial timber for making hives and frames?

15. At different times we have come across cases in which the bees have disappeared from the hive, though the latter was full of honey. Would the amount of honey have restricted the room for the queen to lay in, and thus caused the extinction of the swarm?

16. Mr. Beuhne's disappearing trick, page 126

A. P. HABERECHT.

16. I looked through all my bees on Saturday and find over half of them have played the disappearing trick, exactly as Mr. Beuhne writes in *A.B.B.* page 126. I wrote to you last week, but at that time I had only seen two or three, and it just happened to be those that had revived. I cannot account for them as they went into winter with plenty of honey, and they left five to six combs of beautiful honey, no sign of impurity in some instances. They left eggs and brood (not dried up) which at times makes me think they quitted (flew away). Out of 50 hives only about 15 revive. I wrote to you in last letter that one of my swarms came out with seven queens, and I now think if I had not seen them and killed all the other queens but one young one, they would have played the same act as some of the others. But others again dwindled away; some have plenty dead bees at front of hive, others have none. I think the cause to be in my case too much work in late Autumn, (had a late flow), no young bees, and old bees too worn out to hatch spring stock, my late flow was from grey box, but real good sample. I have heard that all the bees in this neighbourhood are the same as mine. If I come to any other conclusion I will let you know.

E. TIPPER.

15 and 16. Have had experience of same since last issue, but not so great as Mr. Beuhne. Have made the following notes:—1. The flow from white box, the first for four years, commenced in June last, and is now scarcely over. Would this unusual wear and tear on the bees in winter and early spring have been a cause? 2. The bees affected are under the shade of large trees, preventing them getting morning sunshine. same as other hives in the apiary. This in two apiaries. Would that be a cause? 3. Would the scarcity of water and the occasional showers mixing with sheep dip or other poison be a cause? Bees from different hives in an apiary go to different places to get water? 4. Is there any fruit spraying in the neighbourhood? 5. The bees of 1900 queens suffered less than the bees of 1901 queens? 6. There is no attempt at swarming in either of the apiaries? 7. Are there any trees being sprayed in Mr. Beuhne's neighbourhood

T. H. MORLEY.

15 and 16. We have not got at the bottom of this yet. In similar cases I have noticed that the queen disappears and then the hive, nothwithstanding the fact that there is plenty of honey in it, gradually becomes beeless. In these cases there is neither eggs or young brood when the queen goes, clearly proving to me that the trouble arises from the failure of the queen. Have other beekeepers noticed this? If men of experience will watch, note, and report, we may be able to solve the question and set the matter right. I have my own ideas.

F. W. PEMBERTHY.

15 and 16. I believe that candied honey causes costiveness, the bees failing to return to the hive after their cleansing flight. My bees have suffered most from dwindling when I have found the most candied honey in the combs in spring. I had a hive some years ago where the bees and brood was reduced through being crowded out with honey, they having brood in one comb only about the size of the palm of my hand, which was caused by neglect in not taking off the honey in time. In Mr. Beuhne's case, I cannot see how the life of the bee was shortened by improper food in the brood stage, as the weak and the strong, fed on the same food at the same time, did not suffer in the same proportion. If their food deteriorated it must be due to the conditions of the hive. If it is a disease, then the warmest hives are the most favourable for the disease. I find the black bees are less subject to spring dwindling with plenty of pollen than the Italian.

R. HELMS.

16. I cannot form a definite theory of the cause of the occurrences. They may not be all analogous, and consequently the apparent similar effect can be due to different causes. As regards the amount of honey present causing the extinction of the swarm I think this to be the most unlikely reason, knowing that a plentiful supply of stores is under normal conditions productive of the greatest happiness in the hive. Presuming that the room for laying should suddenly become restricted through an extraordinary honey flow, the queen at first probably would drop her eggs promiscuously, and soon after would be restricted in her laying power by the withholding of food. However, I can scarcely imagine such a condition, because the laying

power of the queen is regulated by the supply of food and a very sudden honey flow does not occur, although it may reach the maximum very rapidly. Under normally healthy circumstances the egg-production progresses generally at an increasing ratio, so to say in anticipation of the increased food supply the season is likely to bring, and consequently the consumption of honey, etc., would be in proportion to the increase of supply. There would be always sufficient empty cells for the queen to lay in and sooner than to unduly infringe upon the broodnests, the bees, if no other room were available, would, I think, build comb on the outside of the hives, than to curb their natural propensity to increase, which they can accomplish only when well provided. Excess of honey is certainly not the solution of this riddle.

W. AGER.

16. I have not yet had serious losses with the dwindle, and fortunately have yet to lose a colony wintering, but how far off is my turn of the epidemic? In the spring of 1900 I had three colonies affected with that class of disease which causes the bees to crawl out about the front of their hives shaking their wings as though they had the St. Vitus dance, and having a swelled, glossy appearance. Two I requeened, and they recovered when the young bees from these queens got possession. One I left to watch the results. Although this colony kept fairly strong considering, it never got over the paralysis till autumn and contracted foul brood the following spring. Last season I had four hybrid colonies; the queens were in their second year. They built up well in the spring, showing no sign of the dwindle. In January they were very strong, populating well a three-story hive, and doing remarkably well. On the 24th I extracted from each of them about 50lbs. of honey, they having then about five frames of brood, very little of it unsealed. On Feb. 10th, while extracting again, I came to the first of these particular colonies, and on taking off the cover my first thought was they had swarmed. I started taking out the frames; the eight in the top super were filled and capped; the first super was filled just the same, and the bees were filling up the brood box. There was not a frame of brood in it. The old queen was there with her wing clipped, making a fresh start laying, but where were the bees? There were enough to populate a single-story hive fairly. The other three were much the same. My other colonies, among which were other hybrids, were of much the same strength in January, and kept their strength right through, but did not store near the quantity of honey for the same period, these four being the only ones whose queen stopped laying. I introduced a young laying queen to the weakest one, and left the other three to see how they got on. They all built up, and went into winter fairly strong. This spring two of the colonies having the old queens have come out fair, and have built up well. One was rather backward brood-rearing, while the hive I requeened has kept dwindling, a few bees being dead at the entrance every morning. This and another are the only ones that were affected with the early dwindle. I have given each a young laying queen, and have since had to run some bees in at the entrance of one to keep it going till the young bees from the first queen hatch. My bees are very forward this season; most of them had three frames of brood the middle of August, and they have had abundance of pollen right from July. They began to store a little about the 7th of this month; the 9th ten colonies were affected, one in particular dead bees were in front of the hive in hundreds. The bees would crawl out of the entrance and run round twisting their swelled abdomen, and running their hind legs over it as though they were griped. On breaking them open their abdomens were chocked with excrement. A few drones were affected, and also some young bees with down yet on them. On the 11th it came over cloudy, and began to rain, preventing the bees from flying; 13th, the rain cleared off; 14th, the bees were flying strong again, showing little sign of the dwindle; 16th, the bees began again storing a little, and on the morning of the 17th nine of the colonies had the front of their hives covered with dead bees. Three of these hives were ones that had it before, and six were fresh ones. It is my opinion there are different causes for the spring trouble. The length of a bee's life seems to depend on the constitution of the queen from which it comes, the conditions under which it has been reared, and the work it does. In a heavy flow a bee lives say six weeks, while in the winter months if the conditions are favorable, it lives about six months. If a beekeeper gets a heavy flow wearing out the vitality of his bees when the weather is too cold to prevent brood-rearing, is it surprising that those bees die off before the first batch of brood hatches in the spring. Paralysis may be caused by a germ or something gathered by the bees affecting the constitution of both the bees and queen. The dwindling with my bees was caused in my opinion by something injurious the bees have gathered, or probably overgorging with new honey. I quite agree with Mr. Beuhne in seeking state assistance. Beekeepers in general have not the time nor facilities for making a thorough practical investigation. I consider our industry worthy of as

much assistance as any, and if the state would help us it should not be backward in appointing a qualified scientist to make a thorough investigation, find out the cause, and give us a chance to nip the evil in the bud. I am patiently waiting Mr. Beuhne's reserved opinion.

ROBT. LATIMORE.

14. Port Macquarie beech is undoubtedly one of the best timbers we have for hive-making—throughout.

15. No, unless through their eating it. Having observed during the last few years the advent of a tiny black ant, which if crushed do not emit any smell. These fellows first attacked fruit trees, and afterwards anything that came in the way, and wherever they are found are other insects about the size of the grain of a pea split in two; these fasten themselves to the tender branches of the tree, and arrest the sap. A tree may flower that is infected, but I don't think there would be any honey from it. Now, at times, a tree that is infested with these insects will appear as if the whole head had been drenched with oil, and the bees are apparently very fond of this oily substance. Now the question is, what is the cause and origin of these new arrivals, and what have they, or have they anything at all to do with the disappearing trick? The insects above referred to when squeezed between the fingers resemble blood.

J. J. PARRY.

16. Well, Bro. Beuhne's loss I think could have been lessened if he had taken more time examining them, and taken a more common sense view in their management. "No room for the queen to lay, no young bees." When we come to consider the time that intervenes between autumn and spring, and the death-rate increasing every week, and the birth rate at a standstill, no wonder they dwindle and the boxes left empty in spring Bro Beuhne is like Bro. Gale, believes that whatever the bees put in the brood chamber is the property of the worker bee, and that stored in the super is the property of the beekeeper. That's all very well in theory, but in practice its not always advisable. A beekeeper may be intelligent, but he must be observant and use judgment in the management of his stocks. One can easily see that if the brood chamber is filled in nearly every cell with honey when the season closes you must go into winter quarters with partly worn out bees During the cold weather there is very little strain on the bees which prolongs the lives, but when spring comes in and everything is budding into life, your bees start to dwindle, and the rapidity in which they diminish is in proportion to their labour and age. You can easily see. Bees hatched late in the season have done no work, then you have in spring a colony with sufficient bees in condition to save the colony from extermination, and disappointment to the beekeeper.

J. BASSETT.

16. We all will feel sorry for our old friend Mr. Beuhne and his losses in the bees He invites beekeepers to give their experiences on same. I will give you, and all beekeepers my experiences. Last year I lost about 20 swarms right out, and nearly every swarm (150), the old bees disappeared, leaving only the young bees to cover the brood. Consequently, a considerable quantity of the brood died I had also a disease amongst the queens, having to requeen sixty hives. This year I have had the same disease, known as the disappearing trick, about 20 altogether died right out or so few bees left in the box that the queen and remaining bees would crawl out of the hive. Now, Sir, for my opinion and experience. The sixty young queens that I reared nearly all came out fairly well, not without losses, for I believe every swarm lost to some extent. Some very large swarms for this time of the year, and others fair. The old queens, although some looked well, went out altogether. My opinion is this, that it is our fault, keeping our queens too old. They stop laying earlier and start later, leaving only old bees to start in the spring. And then when they make a good start, and before they have strong young bees enough to take their place, a cold week, and the disappearing trick, a disease that threatens to wipe us all out. I do not believe a word of it. It is all in my opinion not paying enough attention to young queens. Re-queen late in the fall, say February or March, take out the old queen and make a nucleus, place her close or fairly close to the hive, and have a young queen to introduce in three or four days. Feed for a week or so, not allowing too much honey and then you will have a chance to have a swarm of vigorous young bees. The young queen will start earlier in the spring, and we would not hear so often of the disappearing trick. I don't think this is a cure all; we would have to breed good healthy queens, and change our breed often. There is another advantage in young queens, you never see their stock spring dwindle the first year. Re the nucleus made, if you do not want to increase put them together. I thought last year it was possible that spraying the trees with Paris green etc, had something to do with it, and wrote to Mr. Beuhne on the subject. We had a white box flow out or coming out, about 100 60lb. tins in sight, and that the fresh honey was the cause. Mr. Beuhne thought it was something they gathered. Mr. Frost came over 100 miles to tell me it was the yellow box that wiped him out altogether. How strange we do not hear of any of this disease later on in the season. Reason, plenty young bees. Don't think for a moment that I am a queen breeder, and wrote this for an advertisement.

W. E. BAGOT.

14. Well, Mr. Editor, I have written a little in past Bulletins on this theme, so your old subscribers know my experience in this matter. But for the benefit of those bee men who think every thing must be imported (bar honey) to be any good, my little experience with frame hives for something over 20 years, may save them a large quantity of time and expense in the future. The first hives were made out of various timbers, bits of American pine, Australian R. R. pine, Australian white beech and late American redwood, also a couple of A. I. Root's white pine hives, and the following Australian timbers, rosewood, cedar, sycamore, long Jack, cudgera, teak, mahogany and numbers of others. All the hives made out of American timber are gone long ago, rotted clean away. I petted them for a bit by using good paint, but the corners got sick and shaky, first by the use of strips of galvanised iron. It kept them together a little longer, meantime dodging white ants and using plenty of nails. Strange how nails draw out and get loose in American timbers, but as I said before they are all gone, and good riddance to bad rubbish. Well, you may ask how about your Australian woods. In a start we will put white beech first. The old hives are still with me, this splendid easily worked soft timber has a long life, it shrinks, warps and twists but very little, and white ants do not touch it. The worst thing our unpatriotic bee men can say about it is that it will not hold nails. With such people I have no patience. A man came into my apiary once with that yarn, and I bet him he could not kick an empty beech hive to pieces in ten minutes. He went away convinced, and a sadder (his toes were sore) but a wiser man. The hives are half-cornered and nailed both ways, and the older they get the better the nails hold. Lock corners would be better still, and if you do not think that's safe enough put screws in as well. Red cedar is good but too expensive. Rosewood.—This excellent timber is very nearly as good as white beech. It is very durable, easy worked etc.; have made for our own use 130 hives this season. Teak and mahogany are good timbers to last, but rather hard and heavy. Sycamore and blue fig are nice light timbers, and will see any pine out, but they are not nearly ae durable as beech and rosewood. There is no severer climate in the world than the Richmond River. The rainfall is over seven feet per annum. The sun bursts out after a heavy fall. The thermometer runs up over 100 degrees in the shade, everything steams. It takes good timber to stand it, American soft timbers split and crack and open, nails drop out, mould sets in and they are soon rotten. If the Yanks only had our timber for hives wouldn't they boom it.

QUESTIONS NEXT MONTH.

17. This being a season in which the bees do not swarm, are queens raised in it equal to those raised in a swarming season?

18. How would you grow white or yellow box from seed?

19. Reviews of replies to No. 16.

CORRESPONDENCE.

Mr. H. L. Jones, writes:—The drought is fearful here, trees, cattle, and everything dying.

H. C. C., Braidwood, September 12.—Bees did not do well here last season as it was too dry, but have good prospects this year, as there has been good rain and trees are budding well. Wishing you a good year.

W. A., Beecroft, October 14th.—We had a fine flow of honey last week, and a splendid rain on Sunday. It looks as if it is going to be a good season—but we must not count the chickens before they are hatched.

W. Abram, Beecroft, October 1st.—The season started later than usual, but it has been splendid weather of late and the bees are breeding well, so that perhaps this season will be good; it will be if rain and weather conditions are just right. Queen trade is starting A1. Old customers that have tried other sellers offer me high prices for good queens, stating they had done better to have paid for queens they received and then killed them straight out.

G. F. F., Queensland, September 24.—Bee prospects not very brilliant at present owing to the drought. No rain worth mentioning for nearly twelve months. Bees have come through the winter well and are building up, only one queenless out of 170. Weather too dry even for the fruit trees to bloom, but a little pollen and a sprinkling of honey from blue gum and yellow box sufficient to prevent starvation. Hoping you can see better prospects in your locality.

J. C., Bulli, October 13.—Last season was only a very moderate one in this district, I had two tons from seventy

colonies. My bees are very backward this spring, they have not started to whiten their combs yet. They have had plenty of stores through the winter, and most of them have got sealed honey in their hives from last year. Everything promises for a good flow this year from Blackbutt, which blooms in January, so there is plenty of time yet for them to breed up for the honey flow.

W. N., Eugowra.—Just a few lines to let you know how things are getting on about here. The drought has been the cause of the loss of a good many bees. We have had about 250 points of rain here during the past two months. Things are looking dry and serious again. I think there will be no trouble to control swarming this season. Most of our bees are in a weak state, the crop of honey must be a light one. Beekeepers should keep the price of honey up this season.

J. F. J., Waverley, N.Z., September 11.—Please find enclosed 5s. 6d. for next year's A.B.B. which I find cannot be done without. Our spring is starting now and the bees are in a very good condition, having come out from winter without any foul brood. The bees are at present at work on the blue gum, which is full of honey and very beneficial to them at this time of the year. I use eight-frame Langstroth hives which I find are best for the district. So soon as the bottom box is full of brood, I put on another, and when that is full I put on a third, from which I do my extracting. I am expecting to have a good season this time, as everything is looking so well. I hope that our Australian brother beekeepers are in for good times, as they have suffered greatly during the past season.

W. B., Dulwich Hill, October 16.—I am sending a couple of questions to be answered in your book. (1) Which is the quickest and easiest way to make vinegar, and will it do to make it in kerosene tins, and for household use only could it be made in four weeks fit for use? No. 2. How would it answer to put the queen-cage in front of the hives to stop them from swarming, as I have a few hives and cannot be there to watch them when they swarm? I live 12 miles away from them and no one there to look after them.

1. It would not do to make it in kerosene tins, as the acid would eat the tin. You require a barrel with the top covered with wire cloth, and it takes at least three or four months. Some say it requires 12 months to make good vinegar.

2. You possibly mean a drone trap. But it is not always reliable, as should the swarm issue with a young queen she might manage to get through. Your better plan is to overlook and destroy all queen cells every seven or eight days.

A. P. H., Henty, September, 26th.—Bees this year are out of question here, as we have had next to no rain this winter. Yellow box is out now and no bees to attend to them, as the stocks are very weak, hardly covering 2 to 3 frames with plenty of stores left from last season. They are only starting to breed this last two weeks; other years by this time expecting swarms. Red gum has little or no buds, expect them out beginning November. This is altogether a bad locality, but a first-class quality, never candies and is as stiff as taffy and clear as pale brandy. I had a swarm come out last Sunday with seven queens, and after I got all bees back in box there was only a small hive, and plenty of honey, I think it only being a false alarm. I had a ton of honey last season and sold at 3½d, and I think all good honey should be worth that. My grocer sent two tins of my honey to Germany last season. It landed in good condition, the flavour being very much appreciated, the price there being 11d per lb. The honey was only sent there for a present. If ever I have more honey than I can dispose of locally I shall try a small consignment.

W. F., Bungowannah, September 18.—I beg to differ from you re the price of honey and a protective tariff. I quite agree with you when you say that we would get a better price if we could increase our population and so our markets, but I maintain that a protective tariff

will not tend to increase our population, as was amply demonstrated by the progress of New South Wales and Victoria under different policies. The one progressing by leaps and bounds under free-trade, the other remaining nearly stationary under protection. Manufacturers in protected trades instead of competing with each other, always combine and only sell at a fraction less than the cost of the imported article with the freight and duty added, so that instead of making the articles cheaper to the extent of the shipping charges and profits in other countries they make them dearer to the extent of the duty. As an instance I may mention that previous to federation, when starch was free in New South Wales and subject to a duty of 2d per lb. in Victoria, starch manufactured in Victoria was retailed in Albury, N.S.W., at 4d per lb., whilst in Wodonga, Vic., three miles nearer the place of manufacture it was retailed at 6d per lb. I could quote similar instances in regard to other articles, but this will suffice.

[As a journal devoted to beekeeping, we do not wish to maintain a controversial discussion on political matters. But we would remind our correspondent £100 spent in the colonies, by the time it has gone through several hands, represents three times that amount, or at least £300. While the £100 seut out of the colonies is lost to the colonies or a difference of £400 lost to the colonies by the money being sent out. No wonder America has so many millionaires.]

J. P., Inverell, September 20.—It is a long time since I sent you any bee news, the reason being I had no good news to send you, and did not like to send bad news. But I noticed Mr. Beuhne does not fail to report when things are not going right with his bees, and I think all beekeepers should do likewise. I have to report very heavy losses by spring dwindling; everyone about here has suffered heavy loss, I have lost 80 per cent. of my colonies. Last summer was the driest summer ever known here, there was little or no honey gathered and scarcely any pollen. I made a start to feed my bees on 1st February last, and continued feeding to the end of March. Previous to feeding the queens had ceased laying for some time past, they then started laying and appeared to be doing very well. I fed them with the best of honey mixed with a small quantity of warm water. I fed the syrup in a large trough about 100 yards from the apiary. I supplied them with pollen in the shape of wheat flour and smut dust from the local flour mills. In April the ironbark blossomed, they worked well on it and stored a nice lot of honey in the brood chambers. Then cold weather came on, the bees kept on flying all winter, but did not appear to store any honey. I examined several hives in August; they appeared fairly strong in bees, the queens were laying slowly. I examined hives 15th of September and found that the bees were dwindling at an alarming rate, in some instances the queen and a handful of bees were all that remained of strong colonies of a few weeks before. They had disappeared, but where I could not say, as I could not find them dead about the hive. I am at a loss to solve the strange disappearance of bees, but think the dwindling is caused by the shorter average life of bees raised on food deficient in some respect or they were more eagerly sought after by birds during the past season.

I notice that, as bees start out in the morning, they will crawl up on the hive-front, then drop off backward, and fly for the fields. I think this habit is due largely to the fact that sometimes they start out so early in the morning they can not see till they get above surrounding objects like weeds and grasses. They will crawl up four or five inches, and then fly, and the habit continues with them, even though old Sol has got pretty well up.—E R Root.

NOTICE.

MR. R. BEUHNE, Tooborac, is appointed Agent for Victoria for the AUSTRALIAN BEE BULLETIN, and is authorised to receive subscriptions and advertisements for same.

E. TIPPER.