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A MONTHLY JOURNAL, DEVOTED TO BEE-KEEPING.

Edited and Published by E. TIPPER, West Maitland; Apiary, Willow Tree, N.S.W.
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JUNE 28, 1906.

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EDITORIAL.

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Farmers, graziers, dairymen, &c., miss a great deal if they do not subscribe to the S. F. & D. See advertisement elsewhere.

LOCATING APIARIES IN CALIFORNIA.—The "Progressive Beekeeper" has a very interesting article under this heading. It is as things are in California, but will not much of it apply to Australia.

A good way of closing entrances is a wire cloth strip cut into sizes the length of the entrance, $1\frac{1}{2}$ inches wide, bent length-wise so as to fit in the entrance, pushed in so as to hold tight.

Martin's "Home and Farm" comes to hand regularly every month, and is always welcomed. It is always well and carefully edited, and brim full of instructive and useful information.

Among the various exchanges we are receiving is the "Export Trade," published in the interests of German foreign trade. It is very interesting, containing not only the future prospects of German trade, but giving illustrations of the latest inventions and monster accomplishments in ship-building and other departments of skilled mechanism.

In Kansas, U.S.A., there was a loss last spring of 50 to 75 per cent. of bees, the conditions being very similar to what they were in New South Wales and Queensland—a mild winter followed by a cold spring, resulting in a large amount of brood-rearing and a heavy consumption of stores and starvation. The cold snap, coming on just when brood-rearing was at its best, killed a good deal of brood as well as cause the chilling of a good many bees trying to hover over the brood.

To hand, May number of the "Fruit and Flower World and Journal of Horticulture." In the Bee Department of same, in answer to the question "Has surplus honey ever been raised in a suburb?" the editor says: "I have no desire to throw cold water on any budding young beekeeper, but I am asked a straight question and I must give a straight answer, and that is that suburban beekeeping, generally speaking, will not be profitable beekeeping."

Statistician's Office,
Sydney, 20th June, 1906.

Dear Sir,—In further reply to your letter of 21st September last re "Diseases in Bees", I have pleasure in informing you that in no instance was foul brood reported by the police collecting the Agricultural and Pastoral Statistics for 1905. Several instances were noted where slight loss occurred through paralysis and the visitation of the Bugong moth, but beyond the report that a Mr. Matheson in the Casino district lost a number of hives through some unknown cause, the

collectors had nothing to say about diseases. This confirms the opinion expressed in your letter.

Yours faithfully,
W. H. HAY,
Acting Statistician.

Cecil Sharpless, the 10-year-old son of a prominent apiarist in California, had gone to an out-apiary 16 miles from home with his sister, and while the children were playing about the honey-house a rattlesnake crawled from under the building in front of the girl. The lad quickly seized the snake to save his sister, when the reptile buried its fangs in his right hand between the thumb and first finger. The little girl ran a quarter of a mile to where the father was working screaming that her brother was being bitten by a snake. The father found the little boy in terrible agony, and sought an ammonia bottle which had been kept on hand for such emergencies, but the bottle was empty, and, tying a rope about the child's arm, he hurried with him to a neighbouring ranch, where the manager cut open the wound and, with his lips, tried to suck out the poison. The swelling of the arm continued, and the boy was hurried to town in a waggon. The horses ran away and the boy had his foot crushed. The little fellow died the same evening. His hand was as black as coal to the wrist, and the arm was swollen to twice its normal size.

At a recent Chicago Convention Dr. Bohrer said: Extracted honey will predominate in the future. It most unquestionably ought to, because more honey can be produced by that method. It can be put upon the market cheaper than in any other form, and, besides, it is a more wholesome article of food in that shape. Beeswax is no more digestible than a diamond stone, and if it has any effect at all, it is positively an irritant to the stomach. I have witnessed that in my practice of medicine. A number of cases of cancer of the stomach and other di-

gestive organs have come under my care. For those patients I have found extracted honey better than any other article of diet, while the patient could not bear at all honey containing wax. While honey is a little more enticing and attractive in the comb, I have learned not to want to eat everything that looks nice.

Professor Cook writes to "Gleanings"—I have attended this week a monster agrarian rally from all sections of the twenty-six German states. There were more than 2000 members present, and they represented 371,000 farmers, organised for business. They feel that America is crowding them to the wall, and demand of the Government a high tariff that will protect them against foreign competition. They cheered to the echo every reference to the Kaiser, whom they regard as a staunch supporter of their cause. William II. was once opposed to the so-called agrarian laws, and referred to them as "bread usury." He has now wheeled about, and says the farmers are the backbone of the country, and should be protected.

ON BEE PARALYSIS.

BY W. ABRAM.

Italian Bee Farm, Beecroft, near Sydney.

As this dreaded disease is now known all over Australia I need not describe it in detail, but it behoves every one to do his best in the matter. I have studied this disease since its inception, and spared neither time nor money to try and effect a cure, and in how far I succeeded I will relate as shortly as possible, and leave it to the readers to draw their own conclusions.

The malady appeared in Australia about 16 years ago, though before then it played havoc in America, from whence various beekeepers here imported queens at the time, bred from them extensively, and shortly after had very extensive losses in bees. I did not at first dread it as I do now, and thus it happened that in May, 1892, I bought three hives of bees from a lady in Strathfield, who had often complained to me before that lately her bees did not prosper and seemed sick, and so I bought them to relieve her of further worry.

The day after their arrival I transferred them into my hives and combs, but this transference caused many bees to scatter about and go into other hives here and there. To my horror I began to notice shortly after an unusual number of dead bees, increasing gradually, and I became aware that it was the dreaded disease. The weather used to be very mild, so I could handle the bees and spray them with disinfecting remedies, and to feed them on honey in which disinfectants had been mixed. All this seemed to do good so long as the weather remained fine, but spells of a few days cold and damp weather, when nothing could be done, generally brought the trouble into action again, and in spring the affected hives were almost deplete of bees, though the queens were still there, and brood far in excess to the few bees then remaining. I bought bees and strengthened the weakest lots, and then I tried everything I thought of as a remedy. I fed them with honey to which I added in different strengths salical acid, boracic acid, purest carbolic acid, naphthaline, phodopholium salt, caustic soda, flour of sulphur, and many other such ingredients, but it was all of no real and lasting benefit. Then I tried sulphur fumes. This killed the diseased bees before any of the healthy suffocated, and thus actually proved the more effective, but if the fumes continued a little too long then most or all of them got killed, and if not long enough then some of the affected bees remained alive. I then fed them on honey from different parts, hundreds of miles away, with no better results. I also visited other places where bees were kept, and I found the same trouble existed here and there, but not everywhere, and I found pure black bees as badly suffering as pure Italians or Hybrids, and in the most common boxes as in the best constructed hives. In my visits I also noticed that some hives seemed to thrive in the midst of others failing, just as I had observed at my own apiary. I started to breed queens extensively from my most prosperous ones, and as these proved about equal to the parents there was soon a decided improvement, and ere long a clearance of the lingering death-rate in bees, and the disease disappeared. But I also took care not to use any of the combs from affected hives, and let the bees build new combs after a good queen became established. I further sprayed the hives and hive several times with disinfectants, and gave them no more room than they just needed. The space seems to have considerable influence on bees that are in bad health.

I may cite one or two facts of interest as regards the above. A few months before I

bought the said three hives of bees, I sold some twelve hives to a party who lived only a little over a mile from me. These bees never got the disease. It stands thus clear that at the time I sold them I could not have had the disease amongst mine; nor could the food have caused the trouble in my case and not in his. Therefore I must have introduced it with the bees I bought, or else in some other way, but after I had sold the bees referred to.

Another fact is this:—Early in September, 1892, I received a consignment of queens from Italy. They arrived in splendid condition and were safely introduced, and all began to lay nicely, but to my horror I also soon noticed that they became very large and looked swollen, like some of the diseased bees, with the result that shortly I found every morning one or more of these queens in front of their hive, some dead, some still alive but unable to move about, and all were swollen, some to enormous size. Thus I lost every imported queen, and as there were no drones yet I could not even rear a single queen from their brood. Now, up till then I had not any of my own queens die that way; they were always the last to die, and when there were only a few bees left; but the hives the imported queens were introduced in were by no means weak in bees nor apparently affected by the disease. What caused the sudden death of the imported queens? They did not suffer from any ailment when they arrived, as they would not have stood their long journey so well if they did. The only explanation I can find is that the disease, like lice, preferred a new article, and attacked the new queens in force in preference to those here. I sent some of these diseased queens to Europe for investigation, as also some bees, in spirits, and it was found that their intestines were literally one mass of bacilli and riddled. Now, if my practical proof was not enough to pronounce it a disease, here was the scientific proof.

But the sudden demise of these imported queens, furthermore, clearly showed that the introduction of a few new queens by no means effects a cure. Such queens may not always succumb so soon after introduction as mine did, but they may become seriously affected and still survive till next spring, and then be the worst. That both these calamities have occurred in other apiaries I have ample proof of.

When I had got rid of the disease I by no means gave up the study of same, and plenty opportunities offered year after year to continue my observations. Thus my experience extends over the whole period, and I speak from observations in general.

When first the disease made its appearance it acted very severe and destroyed whole apiaries in a short time. Then it took another milder form, and affected bees simply disappeared without leaving an unmistakable sign, as was noticeable at first. Thus it happened that various theories were propounded, the one blaming this, the other something else, but it was not generally admitted to be a disease. As a result, quite a heated discussion had sprung up, and two years ago promises were thrown out that it would soon be proved beyond a doubt that the food was the cause of all the trouble. I have tried to point out the error of this theory, and as the promises are still such only, and my contentions have not been disproved, I may claim my views to be the farthest advanced in the right direction.

A disease is generally introduced by infection, contagion, etc., or else it arises or develops out of conditions and circumstances favourable to the disease, but whatsoever the origin may be I contend the ultimate is a disease. Very few beekeepers, however, consider it as such, nor do they know or notice its first appearance. When bees begin to disappear unduly the disease is already in full swing.

I have proof that diseased bees have died on flowers where they intended to gather food, but it would be idle to suggest that they died because the food in the blossom proved unfit for them; they died through being overtaken by the disease. This suggests a very simple way how the disease may spread, as it is quite evident that bees carry the disease with them if they enter and remain in another hive but their own diseased one, so why not if they succumb on a blossom. Besides, it is a fact that diseased bees are being hunted from their old home by their healthy sisters, and they will, and do, enter into hives some considerable distance away, thus spreading infection wherever they go. Another way of spreading the disease is by healthy bees robbing a diseased hive. Yet another is if the last few remaining bees swarm out and enter another hive or hives, as is not unusual; and what is more, it is not usually noticed. But there are yet other ways by which the disease may spread, so it will be seen how it happens that some stocks become infected and others remain immune. It must also be borne in mind that some hives are more vigorous than others. The vigorous ones will not let any intruder enter, they guard their hive entrance too well; and they are in the field for the best to be gathered, not the remnants. But healthy bees added to a diseased hive will begin to die of the disease before any brood that was reared after they were added begins to hatch. I am thus of the belief that the disease is

spread by infection more than from any other cause, though, like Foul Brood, it may be possible to produce it by other means.

That Foul Brood germs may remain dormant for a long time and then break out again has been noted by various authors, and it may be so with paralysis. It is therefore desirable to have the disease, be it Foul Brood or anything else, thoroughly stamped out. I had Foul Brood some twenty-two years ago in 80 out of 105 hives, but I cured it in a few months, and I have never had a repetition of it since.

If the disease is not fully stamped out, only checked, it will almost invariably appear again the next season, and be more or less severe according to conditions and circumstances. It is a tough customer, and it requires extraordinary care and observation to study it in all its aspects. Under these circumstances it is not surprising that one should have arrived at one conclusion, others at another, and thus some blamed the scarcity of pollen for the trouble, they having noticed its absence in the hives; but as others could show plenty in the hives and being gathered, while their bees suffered the same as in the other case, it was plain that scarcity of pollen could not be the cause. Then the honey was blamed; but here again it was found that this is not the solution of the problem, partly by feeding infected bees with honey from other parts with no better results, partly on account of the great distances to which the disease has spread, and its continuance year after year. Therefore if the destructing agent is not a disease there is yet a chance for someone to find out what it is. That food alone is not the cause is now being admitted by the erstwhile supporter of that theory. Bad or unsuitable food should cause the bees to suffer soon after they gathered it, and they should get all right again as soon as good food is gathered; but this is not the case, they continue to suffer. The greatest loss in bees occurs in early spring when but little is gathered. The food theory is, therefore, of no avail as a remedy.

As neither pollen nor honey appears to be the sole cause some shifted the blame to the management, others to the queen, and so forth. As to some of these points I have given my views in the *Bulletin*, June to Sept. 1903, and will only repeat that a vigorous strain of bees with plenty of stamina will resist and overcome the disease better than others, just as a strong individual can stand variation of food, climatic and other changes much better than the weak. At the same time, just as the weak can prolong life by careful actions, so can a beekeeper assist his bees if he knows their requirements,

and thus the management has considerable influence on the bees. But the present day aim is not so much a study as to the bees well being as how to make the most money out of them. Beekeepers are coming and going, as there is no fortune in it even at its best, but how much worse is it when a disease such as paralysis threatens to destroy ones bees and so every prospect of the future! Such is the beekeepers chance. No other disease has done so much injury to beekeeping.

When first paralysis made its first appearance here it raged rapid and in a very short time depleted whole apiaries of bees, and as most of the bees died inside the hive and in front of it, many of the bees being swollen, there could be no mistaking it. But gradually there appeared what looked like another complaint. A hive strong in bees in autumn would just before spring dwindle away to a mere handful just when bees were most needed to attend to the developing brood in the hive, and as practically none of the bees could be found about the hive, it was called spring dwindling by some, the disappearing trick by others. But as my close observation revealed the fact that in such a case bees could be found on the ground, on fences, on the leaves of trees and in the flowers, some having pollen on their legs and some dead, some still alive but their energy spent never to return home, I came to the conclusion that that originated from the same disease, only in different degrees. One is the virulent, the other the milder form. The former is the more dangerous, it depletes a hive rapidly of bees and there is less chance of recovery, even if other factors, such as climate, soon become suitable for bees. Thus it happened that not only did the theories as to the cause differ, but the applied cures differed as manyfold. You will remember having read a good many so-called cures such as salt and water solution or sulphur dusted over the combs, etc, some even pronounced it a cure by simply dusting flour of sulphur on the entrance board. Well, I have tried them all, but neither the one nor the other is a sure cure for paralysis. The fact is the disease varies under various conditions, and if under favourable conditions no remedy whatsoever had been applied, the result would have been the same. This improvement may be the result of climatic conditions, or that the number of bees increase rapidly from hatching brood, etc. In suitable weather bees become more active and also when plenty of bees are hatching. Active bees cleanse themselves of their refuse matter and produce more warmth than inactive ones, therefore they feel more comfortable, but the disease is most prevalent when bees are the least active, as is the case

in early spring. If young bees begin to hatch before the loss of old bees is very great there is a chance that such a hive will pull through, but if most bees die before others take their place and if the weather and other conditions are unsuitable the chance of saving them is less. I found it of benefit to reduce the bees to no more space than they can comfortably occupy and to feed them on lukewarm honey in which a little salt has been mixed. The warm food spurs the bees to activity and the salt acts as a gentle purgative. If they survive and increase in bees then remove their combs just when honey is coming in fairly well and give them either sound combs, or foundation or starters only and then shortly after remove their queen and give them one from a vigorous stock free from disease, and in most cases such a lot will be cured, if no further infection takes place.

Bees are provided for the purpose of gathering food and they prosper better if they can fulfil that purpose than if all their work is of no avail, as occasionally happens. To attain the purpose best requires vigorous bees and proper treatment of them according to circumstances. Therefore no hard and fast rule can be laid down, as what suits in one case would not suit in another under different conditions, etc. The disease is most pronounced in spring, but it is not exclusively confined to that period I have found, nor does it effect the bees only, as both queens and drones are subject to it and die in the same manner as do bees. But in summer the effect is not so noticeable as there are continuously bees hatching to replace the loss. In the summer a few bees may be noticed on the entrance board having a shiny appearance and they are being pulled and jostled about by their sisters as if to indicate that they want to get rid of the presence of the shiny ones, and the lot has a lazy appearance and seems to make no apparent progress. Such hives should be kept under close observation and treated ere it is too late.

That much depends upon weather and other conditions has been pointed out, but they should not be blamed for the enormous loss of bees, the bees would survive them if they were not diseased. Nevertheless there is more risk if bees leave off breeding very early in autumn, and then in spring the weather, etc., turns out unfavourable to early brood-rearing so that many bees die a natural death just before young ones hatch to take their place. All these matters should be taken into consideration and devices applied that will assist the bees in any emergency. The bees will amply repay such extra care.

If the foregoing should prove of use to some beekeepers my writing will not have been in

vain; if someone can let us have something better out with it for the benefit of bee culture in Australia.

A GOOD WAY TO INCREASE.

When your colonies are nearly full enough to swarm naturally, and you wish to divide them so as to make two from one, go to the colony you wish to divide, lift it from its stand and put in its place a hive containing frames of comb or foundation, the same as you would put the swarm in providing it had just swarmed. Now remove the centre comb from your empty hive, and put in its place a frame of brood, either from the hive you wish to divide or some other colony that can spare one, and be sure you find the queen and put her on this frame of brood in the new hive; also look it over very carefully to see that it contains no eggs or larvæ in any queen-cells. If it does, destroy them. Now put a queen-excluding honey-board on top of this new hive that contains the queen and frame of brood with their empty combs, then set your full queenless colony on top of the excluder; put in the empty comb or frame of foundation wherever you got your frame of brood, and close the upper hive except the entrance they have through the excluder into the hive below. Now leave them in this way about five days, then look over the combs carefully, and destroy any larvæ you may find in queen-cells unless they are of a good strain of bees that you care to breed from, for they frequently start the rearing of queens above the excluder very soon after their queen has been kept below by the excluder. If so, you had better separate them at once; but if they have not started any queen-cells above, then leave them together ten or eleven days, during which time the queen will get a fine lot of brood started in the lower hive, and every egg and particle of larva that was in the old hive on top will have matured, so it will be capped over and saved; then separate them, putting the old hive on a new

stand. It will then be full of young bees mostly and capped brood, and in about twenty-four hours they will accept a ripe cell, a virgin or laying queen, as they will realize that they are hopelessly queenless. I would advise you to give them a laying queen, as I never like to keep my full colonies a day longer without a laying queen than I can help. In this way you have two strong colonies from one, as you have not lost a particle of brood nor checked the laying of your queen; and with me it almost wholly prevents swarming. This is the way we have made our increase for several years, and we like it much better than any other way we have ever tried. In doing so you keep all your colonies strong during the whole summer, and it is the strong colonies that count in giving us our surplus.

In making your increase in the above way your new swarm on the old stand is in fine shape for a clamp of sections, as it has a large working force backed up by having its hive nearly full of brood, and but little honey, as the bees have been in the habit of storing their honey in the old hive that was on top, so they will soon go to work in the sections and have no notion of swarming. Then the old hive that has been set away can usually spare 15 or 20 lbs. of honey, which can be taken with the extractor, giving its new queen plenty of room to lay, and in a short time will be one of your best colonies, and also have no desire to swarm.—*Gleanings*.

MISTAKES IN BEEKEEPING.

A man who has decided to make beekeeping his life's business makes a mistake when he gets a few colonies and attempts to learn the business all by himself. A beginner is quite liable to fall into the error of increasing his colonies too rapidly. A mistake that is made by many is to look on beekeeping as a sort of royal road to wealth. Another mistake is that of choosing

hives, implements and methods that are complicated. Some beekeepers make the mistake of condemning any practice not according to nature. The whole system of modern bee-culture is largely a transgression of nature's laws—or managing differently to what the bees would manage if left to their own way of doing things. Many beekeepers make the mistake of thinking they can improve some of the standard hives and implements, and that before they have fairly learned the business. Others make the mistake of adopting new hives and implements or new varieties of bees on too large a scale. One expensive mistake easily made, and yet easily avoided, is made year after year by many beekeepers; and that is not securing hives, sections, and foundation in season. It is a mistake to suppose that a poor location can be changed to a good one by planting for honey. — W. L. Hutchison.

THE HONEY SEASON.

The honey season, which has been a very meagre one about Dunkeld, Victoria, is over. Some apiarists got a little grey box honey off the Glenelg blue blocks, others extracted off white gum and messmate, but very little honey has been taken. The Lands Department has not yet given its decision about the bee range areas applied for. It has, however, taken action re ringbarking, and one holding has been forfeited, while other holders have been fined. To judge from appearances now, the next season's honey yield promises to be a record one. Almost every variety of eucalypt is budding luxuriously; red gum and yellow box will bloom rather earlier than usual, as already the buds are almost matured — *Leader*.

Some continental beekeepers are recommending painting queens to assist in finding them. Others consider it cruel and unnecessary.

PRICES OF HONEY.

Melbourne Australasian. — Honey — Prime honey is in moderate demand at 3d., choice extracted in small lots fetching 3½d. Cloudy and dark honey is dull at down to 2d. Beeswax is quoted at 1/1 to 1/2.

Melbourne Leader. — HONEY. — Prime clear garden honey is still quoted at from 3½d to 3½d; medium to good lines are obtainable at from 2d to 3d., according to quality. Beeswax.—Prime clear wax had sale at from 1/2 to 1/3; medium grade, more or less discoloured, selling slowly at from 1/- upwards.

S. M. Herald.—Honey, 60lb tins, choice extracted 3d to 3½d, good 2½d, inferior 2d per lb. Beeswax—Dark 1/1½, prime 1/2.

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

HONEY.—

The demand has slackened off at the higher range of prices, and salss are very difficult to make. Choicest up to 3½d. Medium 3d to 3½d.

BEESWAX.—

In strong demand from 1/1 to 1/2 for clean samples.

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ANCIENT BEE KNOWLEDGE.

(Continued from last issue.)

OF THE BREEDING OF BEES.

That bees are Insects, and that the most, if not all, of Insects, are sometimes engendred by Putrefaction, is not by any denied; Bees many times being engendred in the corrupted Carcasses of Beasts, according to the Poet:

Quatnor eximios præfianti corpore Tanros, &c.
Four of his largest bullocks forth he took,

As many comly Heifers never brook:
And when the ninth day bright Aurora shew'd,
He worships Orpheus, and the wood review'd.
A Wonder not to be believed, he sees

From the dissolved Entrails Swarms of Bees.
Which from the broken ribs resounding fly,
And in a thick cloud sally to the sky.

On a tall top branch they Cluster now,
As Grapes hang dangling on the gentle bough.

To which end also the same poet directs the very method of ordering a Steer, some a Heifer, others an Ox, limiting it to that species, others producing other Insects, that out of their Carcasses multitudes of Bees may be engendred. And it is not improbable that the Carcasses of these Beasts should produce Bees, when we every Summer perceive that other Beasts that lie in the open Air to produce Insects of other species. But this of Bees may not so well succeed in these Northern, as in the more Southern parts of Europe, where our Poet lived.

It was the opinion also of the same Poet and of others that Bees gathered their seed out of certain Leaves and Flowers, and carried them to their hives, out of which their young were produced.

'Tis strange that bees such custom should maintain,

Venus to scorn, in wanton lust disdain
To waste their strength; and without throws
they breed.

But cull from Leaves and various Flowers
their Seed.

But this Opinion gains not much credit, nor is the other way practicable here. Therefore other ways for the Generation of these worthy Insects are to be discovered. Aristotle himself thought it a work of great difficulty to

discover it; and Butler in his *Feminine Monarchy* hath taken great pains about the Generation of the Queens, Princes, Drones, and Honey-Bees; only from him I shall observe that Bees begin to breed about the middle of February, if they are well provided for, and the Spring be forward, else in March, by laying their Eggs or Seed at the bottoms of their void Cells; which by the warmth of the bees sitting on them (the Season of the year concurring) are converted into Worms or Grubs, as most Insects are before they fly. Thus by the Bees sitting on, warming and feeding these Grubs, in about three weeks time are the whole set of these Insects generated. And as the Spring comes on and Food increases, so do they increase their Breed, throughout the months of March, April, May, June and July, continually feeding their young, either with their old stock of honey in bad Weather, or with new Food and Water, which they continually gather and carry to their young if the Weather permit them to fly abroad; or else in building combs, as far as their room will suffer them, and as it is for their own convenience. And thus do they build and breed until the end of July, and sometimes after. For when Bees have done Swarming, you may be confident they have done breeding, and not before.

It is most strange, yet true, that these insects, as soon as they are hived, begin their work, and the very next morning will they build a Comb; As it appeared by a Swarm that upon some dislike deserted their Hive the next day after their swarming, and left a Comb of four or five inches in length, with many deep wrought Cells in it.

However from every ingenious Bee-Master's Annual Experience, I can safely conclude that Bees do not spend their time in these Spring and Summer months (whilst they breed) in Luxury and Idleness, as by some is imagined; but to maintain and increase their colonies during that part of the year that yields them plenty of Matter out of the various

Blossoms that are abroad, for the building of their combs, and feeding their young; until not only that Matter that is fit for those uses ceaseth, but until the Leaves of the Oak and other Honey-bearing Leaves and Plants yield plenty of that Nectar or Celestial Dew that they lay up in store for their Winter and Vernal Provision, and whereof their Masters many times deprive them.

In vain therefore can it be expected that this noble (yet indocile) Insect should be either perswaded to desist from breeding sooner than the Season of the year enforceth them; or to gather honey before it is to be had, as some would insinuate into us to believe.

It is not to be fear'd (in case it were in our power to prevent them) that Bees will ever overstock themselves; for were the Hive never so full of Bees, they would the sooner fill their Cells with Honey, and the better live over the Winter. And after they have kill'd their Drones, which they usually do before the gathering of their Honey, there is not an idle Bee nor a Beggar amongst them.

Besides, there is a necessity of their continual breeding all the Summer, by reason of their continual waste; for after the breeding time they every day waste their Number; that upon an easie computation, a thousand Bees scarce supply the losses of a Week in the hot gathering time, they being subject to so many casualties; For the Swallow and many other birds daily make a Prey of many of them, besides what the extremity of the Weather destroys, and infinite of other accidents befall these innocent Creatures; That of a Swarm of Thirty-thousand Bees in June, you have scarcely left at Michaelmas above Ten Thousand, over and above what are bred in that time, the rest having lost their Lives in their Adventures abroad. It is also easie to cast up that there are about Fifty-thousand Cells in an ordinary Stall of Bees; and although the greater part of them have their Inhabitants in the Summer, yet but few of them in the Winter.

Many Opinions there are amongst Bee-Masters concerning Drone Bees, most making them to be a different species of Bees, when upon a strict view and examination they seem all to be but one sort. For you may observe that most Insects (especially such that may proceed from the Putrifaction of some Bodies, amongst which Bees may be reckoned) are of both kinds, Male and Female: and that in their declining Age they engender, and lay their Seed or Eggs, and then vary in shape and proportion from what they were before in their prime; As may be observed in Ants, who are all young, lusty, and laborious in the Spring, in the middle of Summer lay their Eggs, and soon after become aged, winged and dull; and so at a little above a years end leave their colonies to their vigorous Successors. The same may be observed in Silkworms hatched in May, flourishing and laborious in June and July, and in August engendering, growing old, winged and dying, in four Months beginning and ending their Lives. And many other Insects after the same manner, begin their lives in one form or shape, and determine them in another; begin Labourers and end Breeders. Therefore it is not difficult to convince any ingenious Scrutinist that Bees in the Spring, before breeding time, are generally all of one Species, laborious and industrious. And that the Seed left by the old decayed Bees of the precedent year, do by degrees hatch and become a new Progeny in the Spring following: And that then the old superannuated Bees become layers of Eggs, in order as they are in age, some being not so old nor decaying so soon as others, which Eggs by the warmth of the Season and plenty of nourishment, are successively hatched, and soon grow to be labourers; the aged Bees then become dull, heavy, and idle, and so like the Inhabitants of Socotora near Æthiopia, when sick and aged, are quit of the pains and fears that attend longring Diseases, by a sudden Dispatch given them by their Indulgent Children, who hate Idleness

even in their own Progenitors.

It will be very difficult to demonstrate how or after what manner the Drones (in case they are only the Male Bees) should ingender or make pregnant the Female Bees, in the Months of June or July, which are not to lay their Eggs till the following Spring. But if you say they lay their Eggs in the Summer, as the Silkworms do, for the subsequent Spring, then would they be visible; for the most curious Eye cannot discern them amongst the Virgin Combs of the most prosperous Stalls; That they are carried in the Bodies of these supposed Female Bees, all the Winter is as improbable, such hot Bodies being not so dull in procreation as Cows, Elephants, &c. Therefore I hope I may (with submission to the Judgment of the more Learned and experienced) assert that these, as well as other Insects, reciprocally ingender the one with the other, and that every one of them being naturally fruitful, and of both Sexes, do lay their Eggs in a few days after impregnation, from which a continued succession is raised during the warm breeding Season.

But the greatest Objection I now meet withal is how the King, Queen, or Master-Bee is raised, which for many Ages hath been treated of, and is yet universally affirmed to Govern the whole Colony. In answer to which I only say that there is no absolute necessity that there should be a Government amongst irrational Creatures; especially amongst Ants, Bees, Wasps, Etc.

Yet it is not to be denied, but that there is an Order amongst them. The like you will find in Birds, that unite in Flights; in several sorts of Beasts, that gather in Herds; and in Fish that swim in Shoals in far greater number than either Beasts or Fowls. These also know their Seasons move far, especially Birds, as the Swallow, Fieldfare, &c., and in great order, have their Leaders whom they follow. The same order doubtless is amongst Fish: As Herrings, Salmon, Mackarel, &c. Yet could I never learn

that there was a different Species among them that commanded the rest, as hath been long discoursed of to be amongst the Bees; For the most Curious Eye cannot discern those Majestick Cells, nor those stately Bees in the Virgin stock, taken in the first Winter after their Hiving; which if they had so great understanding and reason as is required in so grand an affair as Government, especially Monarchy, the best of all Governments, and proper only to the most excellent of all Living Creatures, Man; surely they would take care to erect a Court for such their Prince, for his preservation; whose care they depend on to preserve them.

This concerning their Government I only add that opinion that is so rivitted in most Bee-Masters, that they do believe that a Swarm of Bees cannot prosper without a Leader; and that the reason of their not swarming sometimes is because they want a King, Queen, or such like to lead them forth. To the end that my design of multiplying Swarms and Colonies may be the better thought of, which otherwise must be blasted in the very Bud, it being irrational to think or imagine to increase them this new proposed way, in case the other received opinion is true.

(To be continued.)

LOCATING APIARIES IN CALIFORNIA.

The ordinary mortal coming from the east out here to keep bees in California would be considerably disappointed at the difficulties in obtaining an apiary location. And the more so when he sees the miles and miles of road and brush covered mountains, much of which brush is first-class honey-yielding plants. Since residing here twelve years I am in a position to inform the prospector in a short space of what might require many years to find out, and maybe end in a failure or loss of means already possessed. Our ranch, or tract of mountain land consists of about 60 acres taking it as

though it was level, but on account of the up and down lay of the land there may be 80 or 90. At our east line begins a grain and stock farm, or ranch, comprising 120,000 acres. Across the section line on the north side is another of very nearly the same size. When we go to the city we traverse this farm, and it is ten miles to the first house and four miles further to the second house. Northwest we are joined by a 9000 acre farm, and south-west is a farm of 15,000 acres first, and extending around this in the form of a horseshoe is a larger one of 105,000 acres. None of these large farms will sell off a small slice, and besides, it is held at very exorbitant prices even in very large slices. In this locality, 20 or 30 miles from the market city, it could not be bought for less than 100 dollars per acre. Some of these large farms contain one farm house, and others several farm houses, according to the size of the farm and the devotion of the land to grain or stock raising. A farm or ranch usually occupies a valley between the ranges of mountains all around, so far as there is any tillable or grazable land. Where it is so far back and rocky as to be considered worthless for any purpose it remains in the possession of the government. This sometimes leaves a more or less narrow strip in the centre of the mountain ranges that can be taken by homesteaders, but is usually a lifelong job, and sometimes more, to make a road to such homesteads. It is not only a lonesome life fraught with privations, but the scarcity of water often forbids the enterprise altogether. For several years we hauled water during the dry part of the season, about eight miles. In the rainy season it could be obtained at one and a half miles. But this would contain either sulphur or alkali, so that we occasionally went the longer distance to obtain the better water.

The strip in which our land is situated is about 15 miles long, half a mile wide at one end and $1\frac{1}{2}$ miles wide at the other. The canyons which run up into

the mountains cut this strip at right angles. These canyons are the only points where the mountains can be entered on account of their abrupt contour and are from a half to three miles apart. Some contain springs of water, and others no water at all. Wherever there is a spring it has been secured many years ago and held as securely as a gold mine. Not only would it have been secured by settlers, but it would have been included in some large farm, because it is very favourable to stock to get water without travelling several miles for it, and then perhaps it would have to be drawn by artificial contrivance. In earlier times, if it had been known that these rock precipitous mountains contained such fruitful bee pastures, no doubt they would have been included in the large farms or ranches. But the usefulness of sage brush is a comparatively recent discovery. On the first discovery that there was profit in bees and sage brush, as well, or even better, than grain and cattle, many of these large farmers engaged in extensive bee culture. Lower prices came on, more dry seasons and bee disease crept in, which shut out these unscientific producers. The large ranchman managed bees about the same as stock, which consisted of buying a few cattle for a start, branding, then turning them loose to choose their own pastures, and increase. Persons born and brought up scarcely outside the saddle, roping steers and lassoing wild horses, could not be expected to tone down, in the course of a few years, to the careful, painstaking methods necessary to its management.

Extensive (the opposite to intensive) farming eventually brought the land to near sterility. Less bushels per acre produced, and grain not so high in quality as formerly. The mountains are also affording less and less pasture. The large farms are, in consequence, becoming less remunerative in other lines, so that the owners are turning their attention towards honey production, employing

men with more or less bee knowledge as managers of their apiaries.

A great difficulty to the small capital beekeepers is to get assistance in the rushing part of the season. Waggon and teams to haul supplies and honey to and from the distant market, besides the capital for the operation of business until the disposal of the crop. Men dislike to leave the city to work in such isolated localities, and so demand higher wages. Since the large farms comprise all the grazing land it is expensive to keep horses since their feed must be obtained from the city, not only in the year of a good crop of honey, but during the passing of the poor seasons, which are more numerous than the good. With several shipping bills and middlemen's profits added to a high first cost, the last cost is very high. —Extract.

WAX PREPARATION.

To prepare the wax, the combs are usually melted with some water; the wax rises to the top, and most of the impurities, brood cocoons and brood-excrements, also rise to the top. Usually a layer of pure wax is found first, then a layer of impurities mixed with wax, then some impurities in the water, and finally pure water strongly coloured by the combs, if they are old and dark. In that last case the wax will also be very dark.

Cheshire says that water containing lime or other alkaline substances damage the wax. Some European writers claim that water containing iron will colour the wax. In either case, the trouble can be avoided by adding a little sulphuric acid—one teaspoonful for a gallon of water would be sufficient for the worst cases.

The trouble comes when an attempt is made to separate the wax from the impurities that are below the layer of pure wax. With very old combs, or combs containing pollen, dead brood, etc., there is no layer of pure wax—the whole top

is a mixture of wax and impurities. It is claimed that the press alone can separate the wax from the impurities—the slumgum, as they are called. I have not had sufficient experience with the press to be positive in my assertions, but I do not think that the wax can all be pressed out of the pores of the slumgum, unless water is made to take its place. And if such is really the case, it is better to dispense with the press altogether.

Several processes and apparatus to extract the wax from the slumgum with the aid of boiling water have been described. The cheapest is to use a wash-boiler with a partition of fine wire-cloth placed at five or six inches from one end. The combs to melt and the water are put into the large compartment. Of course the water goes also into the other through the wire-cloth. So does the melted wax. In fact, this small compartment is for the purpose of dipping out the wax without being bothered by the slumgum. As the large compartment is open, the slumgum can easily be stirred, punched, and mashed, until every particle of wax is out.

It is best to have the fire rather low, until the wax is all melted and dipped out. That is, as much as possible, for it takes quite a boiling to get it all. The reason for it is because the wax just melted is of a much brighter colour, not being yet tainted by the excrements of the brood and other colouring substances that may be in the combs. In fact, these colouring substances are first dissolved by the water and then absorbed from the water by the wax. For that reason the wax should be dipped out as fast as it melts. While the first dipped is quite bright, the last may be almost black through long contact with the water.

As much salt as the water can dissolve should be added to it. It helps the separation of the wax considerably, partly by raising the heat to the boiling point, partly by increasing the density of the water, and, therefore, the tendency of the wax to rise above it. The wash-

boiler, or any vessel in which the operation is done, should be tinned. Galvanized iron and copper may give the wax a kind of green colour.

REFINING WAX.

The wax thus prepared is often too dark for commercial purposes. But it can be brought to a bright colour by treating it with sulphuric acid. The best way to do it on a small scale is to melt the wax with about the same quantity of water in a tin vessel. A tin bucket will do. It should not be quite full, as there will be some foaming. When the water is boiling, or nearly so, and the wax quite warm, the vessel is taken from the fire. The acid is then poured in very slowly, the wax being stirred well all the time. As the acid does not act at once, it is well, when a spoonful or so has been poured in, to wait a minute or two before pouring more. The action of the acid causes a foaming, and if it was poured in too fast the wax might run over. Be sure not to drop any acid on your hands or clothes, and to pour it in the mixture very slowly, otherwise there will be serious trouble.

Keep stirring the wax all the time. When the foam is white, and the wax under appears of an orange colour, the operation is done. The vessel is put back on the fire: the wax, or rather the water, brought to a boil, and then the vessel is taken out and left to cool. The slower it cools the better. I usually put it on several thicknesses of old newspapers; put over and around quite a number; tie them with a string so that no portion of the vessel is exposed, and when thus fixed the wax does not get completely cold in less than 36 hours.

COMPOSITION OF WAX.

Just now the question of adulteration threatens to become very serious, and the tests that can be used to detect the adulterating substances may well be examined. Unfortunately the determination of the purity of a sample of beeswax is quite difficult, nearly as much so as that of

honey adulterated with glucose.

To begin with, the wax is not, as is generally supposed, a single substance, but a mixture of three different ones, which do not respond alike to the tests that may be applied.

The first one is the cerine, sometimes called cerotic acid. It dissolves easily in boiling alcohol, and melts at 172 deg. F. It crystallizes from its dissolution in delicate needles.

The second is the myricine. This dissolves in boiling alcohol with much difficulty; it takes at least 200 times its weight of alcohol and a prolonged boiling. Boiled with a potash lye, it is transformed into a kind of soap. It melts at 127 degrees. It is of a greyish white colour, and does not crystallize.

The third substance is the ceroleine. It is quite soft, very soluble in alcohol, and melts at about 60 degrees. There is only 4 or 5 per cent. of it in the wax.

One of the text books I have before me gives the proportion of cerine in the wax at 14½ per cent., and another at 22 per cent. A third one merely states that the proportion is quite variable.

While the myricine is easily transformed into a soap, the other two substances are transformed only with a very strong lye in large quantities, and with a prolonged boiling. Eventually the whole wax is transformed into a soap, or rather a mixture of several kinds of soap. These differ from the soaps formed with vegetable oils and animal fats, in that they do not contain any glycerine.

It has been said that this transformation of the wax into soap might be used to detect the presence of any mineral wax or other similar substance mixed with the wax. I doubt it. I have not before me enough information to decide the question, but a strong, boiling potash lye will decompose almost anything in that line.—Adrian Getaz in *American Bee Journal*.

Among the Bees in the Spring.

BY G. M. DOOLITTLE.

The warmth of spring will soon be here, which brings life and activity to the bees. This condition of things will arouse us to action, and a feeling will steal over us to see how great the amount of fun and cash can be gotten out of our bees by dint of hard work and untiring energy, which feeling, if rightly used, will tend greatly to make the days in heat and sun more easily endured, and such as will be looked back upon as days of pleasure. As a little help along the line of the right use of our energies, I thought a few words under the above heading, would not be amiss with many of the readers.

The first thing to be done in the spring is to get each hive or colony in as good shape as possible for the comfort and prosperity of the bees. As soon as spring fairly opens I go over all the hives in the apiary, and to do this intelligently, I begin on one side of the yard and open the first hive. If the bees have wintered well I may find that the colony has brood in three or four combs, while the sealed honey along the top-bars of the frames, and more still in the combs next the outside of the hive, tells me that they have an abundance of stores, so that all this colony needs is to see that the hive is made as tight and comfortable as possible, except the entrance, which should be about 3 inches long by $\frac{3}{4}$ deep. When thus fixed a little stone is placed on top in the centre of the cover, which tells me that the colony is a good one and needs no further looking after till the fruit-trees bloom.

The next 2 or 3 colonies prove about the same as the first, so are fixed and marked the same. The fourth or fifth colony may prove to be only a fair one, with some dead bees on the bottom-board, which are either removed or a clean board substituted. As they have brood in 2 or 3 combs, they are treated similarly to the first, except that a frame of honey is placed on either side of

the brood, as such colonies are apt to get short of stores, or a cold snap may come to keep them from going to the outside of the hive where their honey is the most liable to be. Then, such a colony does not have the number of bees to go to the fields to secure the little early honey there may be, as do the stronger ones in bees, so it is always best to make sure that all will have honey enough, and that close to the brood, to last till the bloom from fruit-trees opens. The stone to mark this one is placed on front side of the cover, which says "fair"

As I pass along I find more good colonies, with now and then a fair one; or a poor colony may be found. When such a one appears on opening a hive I will find it has brood in only 1 or 2 frames, and only small patches at that, while the little honey there is is scattered throughout the hive. To fix such a colony best, I take the two frames having the brood in and set them near one side of the hive, and then take all the other combs, after brushing the bees off which may be straggling on them, to the bee-house. After getting 2 combs quite well filled with honey, which were left over from the previous season, I return with them, and place one each side of the 2 combs of brood, drawing all as near the side of the hive as is consistent with the necessary bee-space, after which a division-board is nicely adjusted to suit the requirements of the little colony, with a quilt carefully tucked about them on top, under the cover and down the side of the division-board. The entrance of the hive is now regulated so that but one or two bees can pass at a time, and is so fixed that it comes beyond the division-board, thus shutting off the cool outside air, coming directly upon the bees, as well as enabling the little colony to protect itself much better from robber-bees. The stone to tell the condition of this colony is placed on back side of cover telling that the colony in the hive is weak.

In this way I go over all the colonies in each row of hives in the apiary, putting each colony in the best possible con-

dition, when they are left undisturbed till the opening of the fruit-bloom.

When the fruit-trees bloom, I again go over the bee-yard as before, so we will again commence with colony No. 1. After opening the hive, the first thing to do is to look for the queen to see if her wing is clipped. If I find her wing not clipped, the clipping is now done, as it is much easier to find queens for this purpose now than it will be later when the hive is more populous in bees.

Having clipped the queen, I now observe the brood, and if the colony has gotten along as it should, there will be brood in 7 or 8 combs, the centre ones being nearly or quite full, while those on the outside are from half to two-thirds full. I now change this brood right around, that is, I place the outside frames of brood in the centre, and the centre frames on the outside. This causes the queen soon to fill those part filled outside combs completely full of brood, while the combs filled full of brood, next the frames partly filled with honey, near the side walls to the hive, cause her to put eggs in them or in every cell not occupied with honey, so that in a week or so every available cell is occupied with brood, and this in just the right time to produce the maximum amount of bees in time for the white clover honey harvest.

By this time the fair colonies may have nearly or quite caught up with the good ones, and if so they are treated the same. If not, the brood-nest is reversed the same as with the good ones, while a frame of honey is brought up on either side of the brood so as to make them feel "rich" in stores. This will cause them to remove this honey, feed the queen more abundantly, and she in turn fill the combs to completion with brood; and by the time the harvest arrives, such colonies will be not far behind the very best.

The brood in the weak ones is looked after, and if it is found all in one end of the frames, one or two are changed ends with, so as to cause the frames to be filled with brood, which have any in, and coax

the queens to greater egg-laying. Two more frames of honey are put in, one on either side of the brood, which also adds "zest" to this little colony, which will soon be on the road to prosperity, so that all will be as nearly ready for the harvest as possible when it arrives.

This getting of the bees in the *right time* for the honey harvest counts more toward cash and fun in the apiary than all else, unless I have made a great mistake during the 38 years of my bee-keeping life. — *American Bee Journal*.

GOD AND THE CHILDREN.

Last night, through bitter tears he cried,

And, hating me, he fled;

Then turning, full of wounded pride

And childish anger, said

He'd ne'er again come back to me,

I'd lost his love for aye,

And, meaning all he threatened, he

Poor baby! ran away.

This morning in my arms he lies,

His face upon my breast,

And, looking up with honest eyes,

He says he loves me best.

The punishment I gave last night

Has long since ceased to smart,

The hate he had has taken flight,

And joy is in his heart.

I think the good, kind God above

Keeps children in His care,

And gives them of His deepest love,

The greater, freer share.

Because their tears soon dry away

Before the smiles that wait

To glow again—because that they

So soon forget to hate.

Ever since I commenced reading bee literature the divisible brood chamber has from time to time been lauded by some of its champions. That was about twenty or more years ago, and yet to-day those using the divisible brood chamber are very few when compared to the number that use the Langstroth hive.—*Progressive Beekeeper*.

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Honey Tins at 20 per cent, to 30 per cent. below Tinsmith's prices, and 50 per cent. stronger.

We also test our 1, 2, 4, 5, 6, 7, & 14 Pound Lever Top Tins with a pressure of 150 lbs. to the square inch. Book early and avoid the crush.

Beeswax Bought.

A 2,000 order in 60lb. tins now being made up for October delivery.

J. Bassett, says—"The best tins I have ever seen."

J. Conway, says—"A really splendid tin."

And others in large numbers say the same.

W. L. DAVEY.

Agent for the Manufacturers, **FAIRFIELD, Vic.**

A SERIOUS MATTER.

Poisoned wild Honey.

I note on page 46 of your May number of A. B. B. an article under the above heading. The honey was supposed to have been taken up by bees in treacle in rabbit poison. I knew a case of this kind more than 40 years ago, 1862. Quite likely the honey was new, or Mr Clarke eat too freely. Very little will upset some folks, how many have been killed from eating new potatoes, peaches, plums, &c. I might have been able to eat a quart of that honey and no bad result. To test take a quantity of treacle, place it in a hive or outside. Black treacle such as are used for mixing rabbit poison, and see how the bees won't eat it. If our horses, sheep and cattle were as safe as our bees from using black treacle with rabbit poison we would not need to fear.

Rabbit poison mixed with treacle is blamed for clearing out bees in many districts when the true cause has been starvation, moth, foul brood, or paralysis.

For the first, feed the bees with white sugar syrup, second, keep good bees; black are behind the times, for the third, clear it out: for the last the doctors do not agree. We may have a cure in the sweet bye and bye.

Propolis, is there a use for it? My assistant accidentally knocked the corner off a brick wall; having a ball of propolis in his hand he just stuck the large piece of

brick in; this is about six months ago, the brick is still quite firm. My assistant says that brick is firmer than before. It often gets a bump.—W. Reid.

ROMANIA.

The hive used largely in Romania is similar to the old straw-skep, has the shape of a bell and is made of willow twigs, basket fashion. To give greater warmth and protect against the sun the structure is coated with a mixture of clay. These hives are made very small and it is difficult to obtain any honey from them except by resorting to brimstone. The bees, perhaps on account of the smallness of their hives are given much to swarming, but the swarms are small, seldom weighing over two pounds. A very few of the more enlightened people in Romania have of late taken movable-comb hives of German pattern into use. The main honey season commences about May 15, and lasts a month, usually there is a short flow in August and September. On account of the severity of the winters and the poor management of the beekeepers bees are said to winter badly, even strong colonies often suffer greatly.—*Seipz Bztg.*

COMBINATION.

At a meeting of the New York State Association Beekeepers Societies, the following remarks were made by the President. Profiting by experience we as

honey-producers should see that in this organization the honey-producers' interests be paramount, now and forever. We must keep the organization from all "entangling alliances," we should beware of those "allied interests" who would blind you by flattery and profession of undying esteem, while they "combine" to advance the cost of their wares, your supplies, in order that they may reap an unreasonable profit at your expense. Do any of you believe, for a moment, that it was necessary for our "allied interests" to "combine" in order to secure a reasonable profit? Stop, put on your thinking cap, and for a moment turn back the pages of time. Only a few years ago we find our "allied interests" working on a small capital, with hand and foot-power machinery. Where do we find them five, ten, fifteen twenty and twenty-five years later? With immense factories, the most modern machinery, agencies in nearly every country on the globe, a paid up capital of a million dollars or more, we know not just how much, but one company alone with an invested capital of three hundred thousand dollars. Does not that look as though there had been profit enough? all made before the "combine," yet they were not satisfied—they tell us to buy of them or go without.

Are you going to put up longer with this imposition? Need we ask "upon what meat does this our Cæsar feed?" Will you permit the supply manufacturer and their close ally, the bee-periodicals, to be our "masters"? or will you stand together, and meet combination?

I number many personal friends among the "allied interests" but I have spoken no less plainly on that account as I believe they are imposing on the honey-producer. It is not time to call a halt? Recognising and respecting the rights of others as you do they also must be made to realize that the honey-producers have rights, which must be respected and which you will defend at any sacrifice. Our "allies" by their own free action, raised this issue, they have no one to blame but themselves;

"having raised the wind, let then reap the whirlwind." Do what you may you cannot avoid the issue, with honor to yourselves, or to posterity. Sooner or later it must be met in a vigorous manner, that will leave no doubt of your intentions and ability to cope with it. I present the subject for your consideration. All, or nearly all, of our auxiliary societies have made it a practice to join the National Bee-keepers' Association in a body, as provided in the constitution of said association. There is no question but that such affiliation strengthens the National Association but at the expense of our local societies and ultimately of this Association. There is a question whether the practice should be longer continued. I had hoped that the National Bee-keepers' Association could be made what its name implies. I worked earnestly and faithfully to bring this about, but I am convinced by actual experience that there are too many "other interests" represented in that organization to ever make it a true honey-producers' organization without a disagreeable and continual contest. This must be evident to you who are conversant with the situation.

The question, then, is, should the honey producers fight for the control of that organization, or should they abandon it, and in due time organize a National Honey-Producers' Society, in which from the start "other interests" are excluded? I have no personal grievance with the National Association. My personal and official relations with that organization, and with its board of directors, of which I was a member, were pleasant, but as soon as I became convinced that "other interests" were dominant and that the honey-producers' interest could not be promoted nor maintained in that organization when the several interests clashed, without a perpetual fight, I determined to resign my position in that organization, which I did at the first opportune time. Our "allied interests," through correspondence schools and every other conceivable way, are trying to increase the number of honey pro-

ducers without limit. Give them a dose of their own medicine. If independent manufacturers or capital does come to your aid, stand by them as long as they stand by you, let come what will.—*American Beekeeper.*

VICTORIAN APIARISTS' ASSOCIATION.

Owing to the unanimous resolution of the Stawell Branch that it is desirable to hold the Annual Conference during Show Week, and also owing to the shortage in the honey crop, I have not yet arranged a time, but it is my intention to call the Executive together early in June to decide the matter as to time and place of the Annual Conference for 1906. Will the members please communicate their opinion by letter at once, on the following:—

1. Will the Royal Agricultural Show be an opportune time for holding the Annual Conference?

2. What other time would be most suitable?

3. What subjects should be discussed?

W. L. DAVEY, Secretary.

The Editor, *Australian Bee Bulletin.*

West Maitland.

The members of the Association will be pleased to read the following letter from the Railways, also copy of letter to Minister of Lands. From it you will notice that we have still many battles to fight before the axe is laid low, and in spite of legislation in our interest it seems that unless we keep to the front and push all the time, things will be treated in the same old way until the honey industry is a thing of the past.

W. L. DAVEY, Secretary.

The Secretary,

Victorian Apiarists' Association,
Melbourne.

Sir,—I am in receipt of your letter of the 7th, instant and note that the sheep truck is considered the most suitable vehicle for the transport of bees in hives.

You will note on reference to the letter of 29th March sent you by the Secretary for Railways that an intimation is contained therein to the effect that "the truckload rate for bees is now reduced from 1/3 to 1/- per mile," which is considered a reasonable concession.

I am,

Your obedient servant,

E. B. JONES,

General Passenger and Freight Agent,
Victorian Railways.

Department of Lands and Survey,

Melbourne 9th June, 1906.

Sir,—In reply to the joint letter of yourself and the President of your Association on the subject of ringbarking timber, I have the honor to inform you that the Honorable the Minister has agreed to receive a deputation from settlers on Wednesday the 4th proximo at 11 a. m. and will be pleased if representatives of your Association will be present on the occasion to put your side of the question.

I have the honor to be,

Sir,

Your obedient servant,

JNO MACGIBBO.

Acting Secretary for Lands,
Secretary Victorian Apiarists' Association,
Melbourne.

The Hon The Minister of Lands,
Lands Department,
Melbourne.

RE BLUE BLOCKS.

Dear Sir,—We beg to draw your attention to the above as regards the Beekeepers of this state and honey production.

The enclosed cutting will no doubt have been brought under your notice before this. With reference thereto this Association most respectfully requests that permits to ringbark the timber should not be granted, and we also further request that we may be accorded the opportunity of being heard at the proposed deputation, or subsequent thereto and prior to any concession in this connection. Thanking you for past considerations and the unbiassed judgement meted out to our previous representations on this subject and likewise thanking you in anticipation of future justice.

Yours faithfully,

R. BEUHNE, President,

W. L. DAVEY, Secretary,

The following are our reasons for asking that the timber be reserved:—

1. The value of the timber to the State.
2. The value of honey that is gathered from the blossom.
3. The small increase of product by the settlers if the timber is rung does not warrant the destruction of the timber at a sacrifice of a greater value in honey to say nothing of the Commercial value of the timber.

4. The ruination of those who have purchased hives, bees and plant and laid out money in buildings, is certain to follow.
5. The Act relating to beekeepers, granting bee range Areas at $\frac{1}{2}$ d per acre in a two mile radius, has resulted in a large number of them proving by application that they are willing to pay for the reservation of the timber.

RABBIT POISONING AND BEE-FARMING.

Mr. S. G. Theumack, Binnaway, bee-farmer, writes pointing out the great havoc wrought among his bees by rabbit poisoning in his district. Mr. Theumack lost the greater portion of his hives last year, and as proof that the poison laid for rabbits was the cause, he states that he found the bees dead in hundreds on the trail of the cart, besides many dead in the hives. In all, he lost twenty-six colonies, while his returns fell from £90 to nil. Nor was his case an isolated one, there being many other mixed farmers who can, he says, tell the same sorry story. Not only are bees being destroyed, but the native birds are being completely killed out in some districts, with the inevitable result that blowflies and other noxious insects have become serious pests, and it is hard to say where the matter will end. The complaint is against phosphorus and polard mainly. This is distributed along a mere scratch in the ground instead of being covered with a layer of soil. If this were done it would be equally good as rabbit poison, less likely to start fires, and certainly less likely to poison bees and small birds.—*N S W Agricultural Gazette*.

Mr. Cowan says he had imported a large number of foreign bees for his own apiary, and for experiment. The reason why there was so much variation in the results of Italian queen introduction was that every queen imported was given to a colony, whether she was worth anything or not. Instead of discarding inferior ones, they were all retained. His ex-

perience was that only one out of every ten imported direct from Italy was good for anything. The latter also reared brood much earlier than English bees, and therefore they consumed more honey at a time when that commodity was unobtainable in the fields. That was the reason why English bees were the best honey producers. No doubt a cross between the Italian and our native bee was a good all-round serviceable worker and a good honey-gatherer; and if a selection could be made of the best queens and drones from the best stocks an improvement would be effected in any apiary. He used to select the very best queens and drones, and by that combination secured a strain of bees that gathered large quantities of honey; but there was another factor, those that suited one locality would often not suit another. He found that hybrids when acclimatised would do better here than in Italy. Carniolans were more satisfactory in England, than any other foreign bee. Italian bees in Switzerland were useless. They did not succeed in mountainous regions at all. He believed that if apiculturists would devote more attention to the selection of different breeds, and use only the very best, they would improve their strain of bees very much. With regard to the "golden" strain, he looked upon them as a fancy bee; they had not proved themselves to be good honey gatherers. A number of breeders in America, desiring to obtain a highly ornamental insect, had crossed Italians, Carniolans, and others, selecting those with the most pronounced yellow bands, thus producing gradually the brilliant specimens now called "golden bees" but there was very little Italian blood in them.—*British Bee Journal*.

COCOAMEL.

This is a sort of chocolate with honey, made somewhat after the manner of honey and lozenges. After melting 1 part gelatine in 1 part water, add 10 parts warmed honey. When thoroughly mixed incorporate little by little 4 parts powdered

cocoa. Take from the fire and flavor with vanilla, stirring thoroughly; then pour into oiled dishes. After 24 hours cut into tablets, and let dry in the shade 8 days. May be eaten as candy or used to make a hot drink.—*Exchange*.

CORRESPONDENCE.

C. G. R., Harvey, S. W. Railway, W. A.—Have you noticed how a rain will affect a honey-flow? Last season, 1904-5, blossom came out splendid on Christmas Tree, I have not seen it better, but the honey-flow from it only averaged 40 pounds per hive. The present season it came out very poorly, but the honey-flow from it averaged 70 lbs. I account for the difference by the rainfall. In the first case it was drizzling during most of the honey season, and last year it was comparatively dry. How can you account for a case like this:—A beekeeper told me one of his hives went over five cwt., yet the average for lot was one cwt. Is not this unusual, for in my case my average for 1904-5 was 2 cwt., but the best hive only went 3 cwt. The present season, 1905-6, has been a rather poor one to me, for although I did very well for the first flow, the second, redgum, was very poor. The price, too, is keeping low. Will bees rob one another during a honey-flow? My reason for asking is I have a hive which has had the same queen for two honey-flows, and each honey-flow it has returned the most honey. Naturally, I was going to breed from her, but being troubled with robbers while at work lately, since the flow is over I dusted them with flour, I found the bulk of them went to my best hive. The question then arises whether the hive collected this honey themselves from trees during the honey-flow or robbed other hives for it.

[These experiences are very interesting, and show how carefully you watch things. We

would be glad if others will kindly give others of a similar nature.—*Ed.*]

A. J. M., Sydenham, Vic.—Re Royal Jelly. Suppose I was going to breed queens where should I get the Royal Jelly from? Will you kindly answer the above question, and you will greatly oblige.

[From queen-cells in hives of inferior queens, which have been dequeened in order to induce them to start such cells.—*Ed.*]

J. C., Birralong.—I sold a quantity of honey last spring to a Sydney buyer, and all of the tins were candied except one. He stopped the payment to me for about forty pounds of honey in one of the tins, the one not candied, saying that it was useless and had to be thrown away, as it was heated and could not be used, although I sold a tin in the same state locally a few weeks before, and the buyer was highly pleased with it. Send me your opinion on the above matter.

[The unfortunate honey raiser or producer in the country is entirely at the mercy of the dishonest Sydney trader. The latter receives the honey or produce. He sends a statement to the producer that his produce is in such and such a condition. The expense of a journey to Sydney prevents any inquiry into the truth of such statement, and in nearly every case the loss is quietly submitted to.—*Ed.*]

A correspondent writes to us from Merimbula, Queensland:—Am sorry to see by the last issue of the A. B. B. that the industry has not been flourishing with you, but hope that the coming season will compensate. The same doleful tale from here, hardly sufficient honey during the summer to supply the winter wants of the bees. I am thinking of getting rid of all but a few hives, with a view to getting sufficient honey in a honey season for home consumption.

CAPPINGS.

In straining honey through a cloth a good plan is to hold the sides of the cloth on the pan by means of clothes pegs.

BLACK OR WHITE FOR PAINTING HIVES.
—A Mr. Latham in the United States maintains that while black is warmer than white in the sun, because of its radiating power, it is cooler than white in the shade. From that it would appear that black hives are cooler in winter than white, because there is more dark than sunshine during the 24 hours of each winter day. But there is another important item: When the sun shines brightly on a winters day when bees can fly, it is of the utmost importance that the hive should have all the benefit of that heat, this importance being so great that the benefit of the black on these few occasions overbalances all the harm it does during the rest of the winter. The conclusion is that hives should be black in the shade during summer and in the sun in winter, this to be obtained by the use of deciduous trees.—*American Bee Journal*.

HONEY FOR FRECKLES AND LIVER SPOTS.
—For freckles and liver spots: Eight ounces of pure extracted honey, 2 ounces of glycerine, 2 ounces of alcohol, 6 drams of citric acid, 15 drops of essence of ambergris. Apply night and morning. If this does not remove them you will probably be obliged to use some good proprietary bleach. There are bleaches that are perfectly harmless. Lest the supply of honey should not suffice for all the freckles in existence, it may be well to add that in the same column Mue. Qui Vive says: "Genuine beauty is never shadowed by a freckle any more than the sun is eclipsed by a candle."

In the glucose factories of the United States 35,000,000 bushels of corn are used, and the output, as estimated by Rolfe & Dufren a few years ago, amounted to a thousand million pounds. Fifteen to twenty per cent. is exported, about as much is used by brewers as a substitute for barley malt, and the remainder finds a ready market with the canners, the confectioners, and the mixers of table syrups, mollasses and extracted honey.

W. Z. Hutchinson, editor of "The Review," says that "in reply to the query, what will best mix with beekeeping? I have always replied 'some more bees.' When conditions are favourable I am decidedly in favour of beekeeping as a specialty of dropping all other pursuits and turning the whole capital, time and energies into beekeeping. If beekeeping can not be made profitable as a specialty then it is unprofitable as a subsidiary pursuit. If beekeeping must be propped up by some other pursuits, then we had better throw away beekeeping and keep the prop."

The advice usually given is to locate near water, but experience has taught me that judgment should be exercised in this matter. I have at the present time two apiaries located on the banks of the Wisconsin River, one at Portage, which is about 20 rods, and the other 8 miles south and 10 rods distant from the river, which is quite wide at both places, and I am sure that many times when the bees have been crossing the river on windy days large numbers of them have been blown into the water and lost. Fishermen have told me that a mile below one of these yards they have seen hundreds of dead bees floating on the water, and if such numbers are observed at such a distance from the yard, there is no telling what the loss may be. So it is best not to locate too near a body of water.

In reference to the report from Narrabri stating that a young man named Clarke was reasonably supposed to have been poisoned, suffering very seriously for three days, by eating honey from a bees' nest near poisoned baits laid for rabbits, a sample of the honey was sent to an analyst for report. The latter states that he found no traces of poison, but is very much interested. He doubts however, whether a bee which had taken up enough poison to make the honey poisonous would be likely to reach the hive and deposit the honey before dying. He asks that a number of dead bees, especially if found near some baits, be forwarded.—*Maitland Mercury*.

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