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THE AUSTRALIAN Bee Bulletin.

A MONTHLY JOURNAL, DEVOTED TO BEE-KEEPING.

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

Circulated in all the Australian Colonies, New Zealand, & Cape of Good Hope.

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A MONTHLY JOURNAL
Devoted to Beekeeping —
*Circulated throughout the Commonwealth of
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MAITLAND, N.S.W.—FEBRUARY 28, 1906.

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EDITORIALS.

The Dadants are said to manufacture 75½ tons of foundation per annum.

In October last year £495 worth of honey was imported into Great Britain.

PASTE FOR LABELS. — Wheat flour blended in cold water, then boiled. Have labels long enough for round tins, so they lap over.

A good many think it is as well to leave the matter of renewing queens entirely to the bees. Others prefer to take the matter into their own hands and replace each queen when she has done two seasons work.

There is a great advantage of strips of wood, say similar to the bottom bar, placed horizontally across the centre of frame. There is no trouble with boring holes and stretching wires, which stretch again when honey is being extracted. Get them cut the size required, and a pinch of beeswax will fasten them in.

EUROPEAN HONEY MARKET.

BY PROF. A. J. COOK.

Since coming to Europe I have been surprised at two things ; First, the apparent scarcity of honey as an article of food and, second, at the high price which it brings in the market.

As to the first point, let me say that I have been in all the British Isles—England, Ireland, and Scotland—in France, Belgium, Holland, and now in Germany

yet not in a single case, either at hotel or pension, has honey been put before us. Several times I have called for it, only to be told that there was none at hand. I had been told that in Europe honey was invariably a table article as is butter in America. True, this was said of Switzerland, and as yet we have not feasted at the boards of the Swiss. But so far as I have seen and tasted this incomparable sweet, the best of all the carbohydrate foods is most marked by its scarcity in all European hostelries. I would that honey might be known and tasted, yea, freely eaten by all who crave this delectable food.

Again, honey is very high in all the countries where I have visited. I ask for it at the groceries, only to be told, in case it is to be had at all, which very often it is not, that it is, in Britain, from $\frac{3}{4}$ to 1 shilling—that is, 18 to 25 cents per lb; in France and Belgium, a franc or more, which is 20 cents; in Holland about the same, while here in Berlin it takes a mark (about 25 cents) to get a pound of comb honey.

It is unfortunate that our splendid comb honey cannot reach the consumer at a price that he can afford to pay, even though he be a labouring man, earning his daily bread by the sweat of his brow. Such men are often—very often—God's best servants, and so most deserving His best bounties. Surely, it ought to be the good work of our associations so to plan that such wholesome food as honey shall reach the eater at a price that he can afford to pay, even though he be an humble member of society.

If our associations could so plan that enough of the middle men would be eliminated so that prices would remain within the reach of the day-labourer, a great blessing would be wrought. I believe that the American beekeeper could live and thrive if extracted honey could always be sold at 6 cents per lb., and comb honey at 10 cents per lb. Can we not fashion machinery that will carry this to the table at a 50 per cent. advance, say 9 cents for extracted and 15 cents for

comb? What a boon it would be could the world's poor get these, and even better rates on second-grade honey! I hope our Associations, such as have been organized in some of the States, as well as the National Association, will hammer away on this proposition till results come that will bless the producer and the consumer alike.

I am also rather surprised to learn how away behind the European honey-producer is in the way he puts his honey into the market. The rank and file of those who hold the plough—all those who work in manual labour pursuits—read and study far less than do our farmers, orchardists, and beekeepers. Their ways are away behind ours, and their methods are surprisingly not up-to-date.

BEES AND POLLINATION.

I am surprised to find how few in Europe, especially in Britain, depend solely upon bees for their support. I am told, by reliable authority, that only one person in all the British Isles is exclusively a beekeeper. It is said that he is constantly facing the "wolf at the door," yet there are hosts of small beekeepers, who keep a few bees. Thus the number of bees is greater than in many sections of our own country.—*American Bee Journal*.

EXTRACTING BEESWAX.

A NEW AND THOROUGH SYSTEM DEVISED.

By A. C. MILLER.

BEESWAX, not old Old Beeswax. the butt of the village jokes, but the real article is my theme, the jokes will be on the jokers who have been loudly urging the production of wax, but ignoring the pains and pleasures of the producer and the cost of production.

Wax produced from cappings and sold at 26 cents to 28 cents per pound less freight charges may be profitable in a measure, but producing it from old combs by the common methods of melting and skimming, or by pressure, spells loss in big letters. Let us see how this occurs.

First we get a roaring fire in the kitchen stove, get a wax press in running order and charged with a mile or so of cheese cloth. Next we begin to load it with comb. Oh, dear, there goes a piece on the stove and burns, and complaints are heard as to the smell. At last it is loaded and pressure applied. Thunder! the water is out. Saw it just in time. Now we're off again. Phew! but it is hot over this stove. Crash, slam, bang—! Oh, dear, I believe I have broken my arm. No, I guess its all right. I didn't think that box was so weak. Well here goes again. Now let's open up and claw over the slumgum. Great Scot, how the stuff scalds. After three or four hours of such troubles we find we have five to ten pounds of wax, which after remelting and running into cakes will be worth from 1.50dol. to 3dol.

Incidentally we have filled the house with the steamy odor of dirty old combs, have bedaubed the stove and kitchen with wax and dirt, scalded our fingers, used up a lot of fuel and upset the whole family. Does it pay? When one realizes that despite all this fuss, labor and discomfort only about half of the contained wax is recovered, a feeling of disgust is apt to find such secure lodgment that thereafter wax production will be neglected altogether. All of this is unnecessary; for the production of beeswax may be made both easy and profitable if right methods and implements are used. If we can produce more wax from the same quantity of raw material, with the same labor and in the same time, we make a gain, or if we produce no more than before but with less expenditure of time and labour we gain. If, however, we can double the present production and halve the time and labour, we make a gain which expressed in figures is equal to getting 75 cents to 1.00dol. a pound for the present wax output of our apiary. These results are accomplished by the use of a wax extractor recently put upon the market. The device works on principles different from those embodied in

any other machine heretofore employed. In presses and similar contrivances the comb mass is compressed, and hence holds a large amount of wax despite the pressure. In mere submergence or submergence with agitation only a small portion of the wax is released, but with submergence and simultaneous disintegration, agitation and pressure, all of the wax will be separated from the waste and secured.

The new devise accomplishes all this. It consists of two cans, one within the other. The outer can, has a conical cover with an outlet pipe for the wax, a faucet for the withdrawal of water and an inlet for water. Through the top of the conical cover passes the shaft which moves the inner mechanism. The inner can has a perforated bottom and top, the latter being removable. Within this can and attached to it are parts of the grinding apparatus and attached to the shaft which passes through the middle of the can are corresponding parts.

The method of operation is simple in the extreme. After removing both covers hot water is poured in until the can is one-half to two-thirds full. Then comb is put in until the mass is up to the top of the can, then the covers are replaced, hot water added through the funnel on the cover, and as soon as the fluids reach the apex of the cone the wax begins to flow out. The crank is then turned for a few minutes, more water is added and more wax escapes. Where the water appliances are convenient a small but steady steam of hot water may be allowed to flow in and the wax will flow as steadily out. When all of the wax has escaped, the faucet is opened, some of the water drawn off, covers removed, the inner can (which contains all the refuse) is taken out, emptied and returned to its place, and the process repeated. It will be observed that it is thus necessary to use but a little fresh water with each change. Furthermore it is not necessary to have the extractor on a stove. When it is used in the open air or in a cool or unheated

room it is advantageous to have the extractor protected with a jacket or wrapping of cloth or paper to conserve the heat.

The operation is rapid, there is no heavy lifting, no working over a hot stove no clawing over of scalding slumgum, no danger of fire from spilt wax, no boiling out of water and consequent melting out of the can and no straining at a press. The slop and dirt in the kitchen is dispensed with, much to the gratification of the good wife and to the ensuing peace and comfort of the home.

The invention of this wax extractor marks a new era in wax production, and its extended use should greatly increase the wax output of the country.—*American Beekeeper*.

Providence, R. I., Nov. 6, 1905.

HONEY-DEW.

In a recent foreign journal I find this statement: Honey-dew is abundant when the fruit is scarce, and the tree on the decline. This would lead one to believe there is still need of more knowledge regarding honey-dew. While honey-dew may be occasionally a secretion from the plant itself, and possibly an exudation, yet practically it is always a secretion from insects, either plant-lice or scale insects. It no doubt serves them a good purpose. They secrete this to attract wasps and bees, which insects are fond of the honey-dew, and are quick to appropriate it, as the insects scatter it upon leaf or twig. The presence of the wasps and bees serves to repel the birds, for birds do not work with pleasure where wasps and bees abound. Unless they were thus kept away they would feed upon the aphids, or scale-insects.

The honey-dew from scale-insects is almost always dark in color and rank in flavor; therefore it can never make good honey. On the other hand, that secreted by aphids, or plant-lice, is often very delicious, and honey from the same would be pronounced by the epicure as of best quality. I have never known better honey than that secured from this source. Thus while the former honey-dew honey

could never be used as a table article there would be no objection to the latter for such purposes. I once had a large quantity of the dark rank honey, which I sold to a baker who used it to make honey-cakes, and raised no objection to it. Indeed, I ate of the cakes myself, and found them excellent.

While it is true that the insects which secrete honey-dew are a great pest to vegetation, yet they are often too few in numbers to affect seriously the plant or fruitfulness of the trees and vines. Yet it must be said that both families of these insects multiply with great rapidity and thus their presence is usually a menace to the plants that harbor them. I have seen, however, evergreen trees covered with honey-dew, and thus thick with plant-lice, and yet the trees were in the best of vigor, and were well loaded with magnificent cones.

In almost all cases of honey-dew the leaves and twigs become very black. This black substance is usually referred to as smut. It is really a fungus that attacks and feeds upon, if we may use that term, the honey-dew. In California it is often necessary to wash oranges and lemons because of the presence of this smut. In fact, the worst insect-pests in California are scale-insects. A great many thousands of dollars have been expended in fighting them.

There is one more thing that will interest all our readers. It is this, that we have found insects in several cases that feed upon these scale-pests, and by importing them into our orchards, we have been saved the further expense of fighting the scale-pests. In two cases such importation of such beneficial insects to feed upon and destroy our insect enemies has been of tremendous importance. I refer to the vedalia, a lady bird beetle from Australia, which has entirely overcome the white or cottony cushion scale, an insect that seemed destined to wipe profitable orange culture from our State; and the other is the scutellista, a chalcid fly imported from South Africa, which, though very tiny, is fast exterminating the terrible black scale which has robbed

our orchardists of thousands of dollars to hold it in check and save their trees and fruit.—Professor Cook in *Gleanings*.

DO BEES STORE WATER.

I was interested in a suggestion by the editor in the last *GLEANINGS*, that bees store water in the hive. I greatly doubt if this is true. I think the bees take the water to use at once. In our own case, and with all animals, water remains but a very brief time in the alimentary canal. Almost as soon as quaffed, it passes through the walls of the alimentary tube to mingle with the blood. Who of us has not proved this in his own experience? We are very thirsty, and feel that we can hardly drink too much water at the instant; yet if we drink but little, and wait a moment the desire for more is gone. This brief time measures the passage of the water to the blood. How often is the same true of horses! They come to the drinking-trough very thirsty. Given an opportunity, they will drink enough to injure them, perhaps enough to prove fatal. If, on the other hand, we give them a little and then in a few minutes we offer them more, they refuse to take it. Next, to oxygen, water is the greatest requisite of all the food elements. In bees, it is the medium, so to speak, that carries all the others. No wonder that the ever active industrious bee needs water, and so hies to pool or spring. They sip the water, and it passes at once to the blood. Our knowledge of the way water acts with higher animals will convince us of this fact. It would also prove poor economy for the bees to put this into the cells where it would at once mix with the honey, only to be evaporated later. *Gleanings*.

Strength of Colonies and Queens' Capacity.

Ph. Baldensperger thinks that but few queens ever lay three thousand eggs a day, and then only occasionally. The average daily number laid during the

whole year was eight hundred and seventy six. The average during the best laying season, one thousand seven hundred and sixty daily. As at the beginning and end of the season the colony contained ten thousand bees; three hundred thousand bees must have died during the year, and of course as many were born. That colony yielded one hundred and seventy-eight pounds of extracted honey from April 10 to August 8th. He thinks that in a larger hive the results both in egg-laying and surplus honey would have been better. This was in Palestine.

A colony observed at Nice gave during the heavy egg-laying term one thousand seven hundred and ninety eggs, but the surplus was less than half that of the Palestine colony.

Commenting on the above, the editor says that he has often had reports of greater egg-laying than that, and thinks that the mortality in bees is greater in warm countries than farther north, and for that reason the egg-laying or rather, brood-rearing, cannot reach as great a development. He says that in Switzerland colonies can be found having a population of seventy thousand to eighty thousand bees and even more. A queenless swarm belonging to him hived the 24th of July had eight thousand bees on the 22nd of November. In his locality (the editor's) the main crop lasts from two to four weeks, more or less interrupted by rains, yet one hundred pounds of surplus are frequently obtained. With a honey season as long as that of Palestine, one hundred and seventy-eight pounds does not seem to be so very big after all. *La Revue Internationale*.—*American Beekeeper*.

SCENT IN BEES.

A beekeeper over two hundred years ago wrote—"Those who make use of pomatum and other scents, whether of hair powder or any other volatile perfume would perhaps do well not to make too free with bees." Butler, one hundred years earlier, wrote "Thou must not be unchaste, unclean, smelling of sweat, have

a stinking breath, not given to drunkenness, not puffing or blowing, and not acting violently." The first of these requirements is curiously supported by the Koran, wherein we read, "No guilty hand should be allowed to touch a hive." M. Maeterlinck draws attention to the common belief that they "cannot endure the approach of the unchaste," but attributes these antipathies to the fact that "Don Juan uses these perfumes more than does the virtuous man, and hence the rancour of the jealous bees and the legend that avenges virtues as jealous as they." It is a fact that many ancient writers endow these vestal virgins with an instinct capable of detecting and venting their wrath on the unchaste!

An old Bee Calendar.—January: Turn up your hives and sprinkle them with a little warm sugar and sweet wort. Do it dexterously;

February.—Half open your passages for the bees now, or a little before (if weather invite), but continue to feed weak stocks.

March.—By this time your bees *sit*. Keep them close night and morning, if the weather prove unkind.

April.—Open your bee-hives, for now they hatch. Look carefully to them, and prepare your hives, etc.

May.—Now set your bees at full liberty; look out often and expect swarms.

June.—Look to your bees for swarms and casts, and begin to destroy insects with hoops (?), canes, and tempting baits.

July.—Now begin to straiten the entrances of your bees, and help them to kill the drones if you observe too many, setting the new invented glasses of beer mingled with honey to entice the flies, wasps, etc., which want your stores.

August.—Now *vendimiate* and take your bees towards the end of this month, unless you see cause, by reason of the weather, or season, to defer it until mid-September: if your stock be very light and weak, begin the earlier.

September.—No longer defer now the taking of your bees, straitening the entrances to such hives as you leave to a

small passage, and continuing your hostility against wasps and other robbing insects.

October and November.—Blank.

December.—Now feed your weak stocks. *Evelyn's Diary*, about 1650.

(Reverse these months for Australia.)

A BLIND MAN'S PETS.

Three miles from Farmington, Mich, lives Henry Wixom, 70 years old, one of the most remarkable blind men in the United States. He lives all alone, with the exception of a cat, rats, and bees, in what 75 years ago was known as Wixom's Inn, the first inn built in Michigan outside of Detroit. Although unable to tell the brightest day from the darkest night, Henry Wixom owns 50 hives of bees, and supports himself by the industry.

The old blind man is always accompanied by a great tom cat, that is as remarkable as its master. This cat has been trained like a dog, and is always at Wixom's heels. At times the old man goes astray, and when he does the cat finds the path and sets up a peculiar yowling, which brings its master to his bearings again. If it were not for this faithful cat, Wixom would not be able to hive half of his "swarming" bees.

Whenever the cat finds a swarm it will go to the blind man and run to and fro, mewing. This summer a young hive went nearly a quarter of a mile from the inn before swarming, but the cat heard the bees, and led its master to them. When Wixom locates a swarm he hives it *with his naked hands*.

Wixom has bees, rats, mice, and his cat for companions at his dinner table. During the months of summer he has a platter filled with syrup in the centre of his table, and through the open windows and doors come bees to dine with him. The big cat sits on the edge of the table near him. This animal has been taught to leave rats and mice alone, and so overrun is the old inn with these creatures that the blind man is compelled to keep all of his possessions, even to clothing, in tin-lined closets. Big rats will come and

nibble out of the old man's hands, and often while dozing before the fire he holds a mouse or two snuggled in his hands. Wixom devotes much of his time to the training of his pets. He has two red squirrels, that turn a wheel he has made for them, and who visit him every day. from their home in a big oak near the house. He has trained a number of mice to do little tricks, but has never succeeded in accomplishing anything with his rat friends. But the blind man's greatest success has been with his cat. At a certain word from its master this big Tom will straighten up its head and sing in the most doleful tones imaginable, and sometimes so loudly that it can be heard by passers-by in the road eight or 10 rods from the inn. While "singing" the cat lashes its tail.

POETRY.

The following beautiful poetry was written by the Rev. L. L. Langstroth just before his death, and sent by him to *Gleanings*.

TO MY WIFE IN HEAVEN.

Wife of my youth—I dream of thee,
 Arrayed in bridal form;
 I hold in mine thy trusting hand—
 Hail! happy marriage morn.
 To God we vow our glad "I will"—
 Thy soft, responsive voice—
 Of twain made one by wedded bands—
 And I, with thee, rejoice.
 Sweet, loving wife—God's gracious gift—
 And art thou all my own?
 This plighted hand I'll closer clasp—
 Dear Lord! I wake alone.
 Ah! silent lips, whose law of love
 So gently swayed my will,
 When trusting in thee, heart to heart,
 We were united still.
 Weeping lasts but a night, dear wife;
 Joy cometh with the light:
 But for a moment darkened days,
 Then where there is no night.
 Both shall be present with the Lord,
 Griefings and partings past;
 Soul knit to soul by Heavenly hands
 While lengthening ages last.

BLESSED ARE YE THAT FAIL.

Sometimes I've wished we might these words enroll,
 Upon the pages of God's Holy Book,
 Then, kneeling down by each discouraged soul,
 Could simply point to them and whisper "Look,
 'Blessed are ye that fail.'"

For none fail unless they first have striven;
 'Tis he who toils all night, and naught doth take,

Whose heart with dark despair is keenly riven;
 And so I wish 'twas written for his sake—
 'Blessed are ye that fail.'"

Is it not written? Not these words we find,
 But surely in God's Book we read the thought—
 He treasures up the motive of the mind,
 And blesses as the will within us wrought
 Tho' outwardly we fail.

Christ came to heal our broken-heartedness;
 And who so sore as he who toils in vain?
 Whose best endeavors seldom meet success,
 E'en tho' he try, and try, and try again?
 Then blessed yet that fail.

Aye, blessed, for the very thriving leads
 The zealous soul into the realm of loss,
 Made holy by the One whose loving deeds
 Seemed to have ended on the cruel cross.

Aye, blessed ye that fail!

God is too wise to let us oft succeed,
 For then we would not keep our lowly place,
 And so He lets us feel our constant need
 Of his supplies of patience and of grace—
 Thus blessing those who fail.

Then, weary one, look not upon the main,
 And mourn the wreck of all your toil and care
 If yet upon some broken piece you gain
 The haven safely, and are welcomed there,
 Blessed are ye that fail.

SISTER RUTH.

American Bee Journal.

There is, in *Gleanings*, a method of hiving bees with a looking-glass. A Mr. Suppe says his folks can, by reflecting the light on the swarming bees, lead the bees to a particular spot, either to the entrance of the hive they wish them to go into, or on to a low bush, or even weeds, so that the swarm can be easily hived. He says the reflected light from the glass (12 in. by 12 in., or 24 in. by 20 in. sized mirrors are the sizes he uses), should have a slow but constant motion on the swarming bees to lead them to the desired spot.

PRICES OF HONEY.

Maitland Mercury.—Honey, 1½d to 2d. per lb. Small tins 1/9 to 2/.

Melbourne Australasian.—Honey. — The market continues unchanged. Prime honey is worth 3d.; choice lots fetching 3½d. Cloudy and dark lots are quoted at 2d. Beeswax is unaltered 1/1½ to 1/2.

Melbourne Leader.—Prime honey seems to be still very much sought after. Prices for these lots continue at from 2¾d to 3d., and for medium to good at from 2d to 2½d. Beeswax.—There is no fluctuation noticeable in the beeswax market, and buyers' offers kept to the same groove. Prime clear realised 1/2; and medium to good, a little discoloured, from 1/- to 1/1½d.

S. M. Herald.—Honey, 60lb tins, choice extracted 2¾d to 3d, good 2½d, inferior 2d per lb. Beeswax—Dark 1/1½, prime 1/2.

HONEY.—

With shorter supplies the market has improved, and 3d per lb. is now obtainable for really choice quality. Medium and inferior lots are still dull of sale from 1¾d to 2¾d per lb.

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VICTORIAN APIARISTS' ASSOCIATION.

BEE FARM REGULATIONS.

Regulations for the conduct of bee farms under the provisions of the Victorian Land Act Amendment Bill passed last session, have been approved by the Minister for Lands (Mr. Murray). These farms consist for the most part of excisions from areas held under lease from the Crown, and the regulations are, therefore, in the main directed to defining the rights of the lessee and the bee farmer. The licence is issued for a period of seven years, and no right of renewal is guaranteed. The bee farmer may make improvements, but he does so at his own risk, and is not entitled to compensation. Stringent provisions are made against the careless use of fire, and the licensee is not allowed to keep a dog. The licensee is given the right of access to his holding over the original lessee's property, but he is prohibited under penalties from leaving gates open after passing through them. No individual, company, or corporation is allowed to have more than three bee-farms or bee ranges. The aggregate area of the bee farm licences must not exceed ten acres, whilst a bee range consists of all the land within one mile of the apiary site. The licensee has, however, no right of entry to the one mile radius, which refers only to the area over which the bees could have the use of the trees. Owners of apiaries on private lands adjoining Crown lands may apply for bee range licences, the rent of which is fixed by the Act at a halfpenny per acre within the mile radius. Areas included in the licences can be transferred or sublet only on the approval of the Minister on a payment of a fee of 10/-. Speaking generally, the rent for a bee farm license will be 1/- per acre. All applications lodged on or before March 31st will be deemed to have been simultaneously made. Forms of application will be available at the Lands Department. Applicants are requested to furnish full particulars of the

site in respect to which the application is made. Where there is no opposition permits will be given for immediate occupation. Licensees are not allowed to cultivate, except with the consent in writing of the Minister.—*Leader*.

The Regulations governing the Bee-Sections of the New Land Act as now published, although they may not be exactly what we desired, are a compromise of the demands of beekeepers and the contentions of occupiers of Crown Lands, and are the best this Association could obtain after a protracted struggle against opposing influences. Every opportunity of pressing the demands of our industry was availed of, and by judicious and persistent effort, even up to the point of risking the withdrawal of all the bee clauses of the Land Act, a fairly satisfactory settlement of the question has been arrived at. The amount of labour, worry and time involved is known only to those on whom fell the task of piloting the negotiations, and reconciling the often conflicting requests of various sections of beekeepers, requests, in some instances, made direct to the Department of Lands without the knowledge of the officers of this Association.

I have personally been confronted on several occasions with communications to the Department of which I had no previous knowledge, and which, to say the least, were at variance with what the Central Association was asking.

At this point I may be permitted to remind beekeepers that although this is a democratic community, and humility is not expected, no wise want of ordinary politeness or expression prejudices the cause of the letter-writer.

Will members please note that all applications for bee-sites made up to March 31st next will be considered as made simultaneously. After that date priority will go with date when application was received. In undisputed cases permits for immediate occupation will be issued, and applicants may therefore avoid much delay by agreeing first amongst themselves.

I would also point out that although the charge for a Bee Range license is $\frac{1}{2}$ d. per acre, it is not obligatory for the holder of a Bee Farm license to take out a Bee Range license if he cares to take the risk of getting a competitor for his pasture within two miles of his apiary. On the other hand, an apiarist on private land may take out a Bee Range license, securing to him the exclusive use for a distance of a mile of the bee pasture on adjoining Crown lands, although he himself does not require a Bee Farm License. The number of Sites and Bee Range licenses any one person may hold is three. The amount payable as royalty for a radius of one mile at $\frac{1}{2}$ d per acre is about £4 3s. 9d. Application forms were not yet available at time of writing this.

Any further information required will be supplied to members on application to me, and if not on hand will be obtained for them from the Department of Lands.

R. BEUHNE.

Jan. 31st, 1906.

THE QUEEN BEE AND POISON.

AN INTERNATIONAL DISCUSSION.

The following appeared in the *Scientific American*:—

"The safeguards provided against the administration of poison to the Empress of China are rudimentary, compared with those which stand between queens of the honey bee and such a risk. Curiously enough, this is a phase of the internal economy of the bee hive which appears to have escaped observation.

"In a wasp's nest, each forager on returning proceeds directly to the queen and offers refreshments, consequently the queen is sometimes destroyed by slowly acting poison. Further as regards wasps, it is observant that when any larvæ not recently fed perceive the queen receiving food, they become restless. If nearly grown, they wag their heads in a suggestive way which plainly conveys a demand for a share. Each forager, after feeding the queen, gives the balance of her load direct to the nurses.

"In the case of the honey-bee, one possible reason why no virulently poisonous honey reaches the hive may be that the insect foolish enough to collect any would probably die, as the so-called honey sack is really a stomach in which a preliminary digestive process proceeds.

"This is proved by the polariscope, which shows that while the substance collected by bees is cane sugar, that stored in the hive cells is sacrometrically half dextrose and half cane-sugar. Dextrose is invert sugar, a coarse variety of which is the glucose of commerce.

"Forager bees returning to the beehive place the half-digested product known as honey in their store-room with other honey. This mixing would have the effect of attenuating a poisoned load should such be brought in.

"Foraging bees never feed the queen or young larvæ, but they give a mouthful or two to drones in passing.

"It is the business of a gang, distinct for the time being, to cater for the food from the stores, submit it to the digestive process referred to, after which it is regurgitated to supply the needs of the queen and young larvæ. The attendants on the queen are numerous, and each supplies only a minute quantity.

"The queen bee is so constituted that her digestive system is capable of assimilating only the prepared food or chyle. She will die in a few hours on a comb containing honey, although kept at the temperature of the hive."

This produced the following comments in *The Modern Farmer and Busy Bee*:—

"The 'pre-digestes' theory is beginning to bear fruit, and we would think that a little more of this so-called scientific nonsense would practically annihilate the honey market. People are not apt to take kindly to 'pre-digested food' or eat it with a great deal of gusto. 'The honey sack is really a stomach in which a preliminary digestive process proceeds.' This is surely positive enough to satisfy the most enthusiastic advocate of the 'pre-digested theory,' and coming from

such a source, will, no doubt, be widely quoted, but it is none the less nonsense, and is far from being in harmony with the real facts of the case. If one wants evidence of the lack of scientific accuracy in this article he will find it in the statement that 'the queen bee is so constituted that her digestive system is capable of assimilating only the prepared food or chyle,' and that 'she will die in a few hours on a comb containing honey only.' If we had not kept them on honey and seen them lap it up of their own accord this might go, but if the other statements are not any more accurate than this they are not worth the paper they are written on. We are also told that there is a constant struggle to feed her majesty. We wonder where he learned this. The editor of the *Scientific American* must have been reading Maeterlinek, or worse yet, Virgil. All of this reminds us of that old saying—'Better not know so much than to know so much that is not so.' "

A reply appeared in the *Scientific American* as follows:—

To the Editor of the *Scientific American*.

The article entitled "Precautions against Poisoning the Queen Bee" which I wrote for the *Scientific American* has called forth a reply from the editor of an agricultural paper, in which the accuracy of my statements is questioned. The article in question summarizes the results of many experiments conducted by myself.

I do not profess to be superior to mistake, but I certainly took much care and sacrificed eleven queens in making my observations to ascertain how long they live on plain honey. In common with others, I long considered the evidence that queens were frequently seen lapping honey as conclusive. I determined, however, to test the matter, and conducted a series of experiments, the deduction from which must "hold the field" until something superior is provided. Not one of the queens experimented with survived 12 hours on unsealed honey-comb kept at a

temperature of 65 to 70 deg. F. The unmated queens made the record of nearly 12 hours; none of the laying queens survived two-thirds of that time, some expiring in less than 4 hours.

Now if a queen bee has been kept out of the reach of any attendant bee for 24 hours, alive on honey, my observations would be upset, but until some specific statement on these lines be made, I hold to the accuracy of my investigations on this point, and shall await with interest information as to the exact character of other experiments.

Inasmuch as everything stated in my note is impliedly challenged, I may add that the description of what goes on in a wasp's nest is another piece of independent observation. For years I have made a practice of securing several tree-wasp's nests, removing the outer covering and placing the comb in a glass case, where the wasps could fly freely out-doors, and their movements could conveniently be watched.

J. M. GILLIES.

Drumcondra, Ireland, October 18, 1905.

This publication led to the following correspondence:—

Providence, R.I., U.S.A.,

November 6th, 1905.

Mr. J. M. Gillies,

Drumcondra, Ireland.

DEAR SIR,—My attention has just been called to your letter in a recent number of the *Scientific American* on the impossibility of a queen bee living for any great length of time on honey alone, I noticed that you kept her at a temperature of 65 to 70 deg. F. If you will try the same experiments in a temperate of 90 to 98 deg. I think you will meet with different results. That temperature is nearer the normal temperature of the brood-nest in summer, and if I mistake not the winter temperature of the cluster never drops as low as 65 deg.

A queen in the full tide of her laying, if suddenly deprived of all proteids, is sure to suffer, and usually to such an

extent as to cause her death within a few days. You are, doubtless, aware of the trouble queen-breeders often have when sending fine "tested" queens, and that despite the attendant bees. Perhaps you also know that if such a queen is first put into a small colony, or has the comb she is on with the adhering bees put into a hive by themselves for a couple of days, that then such queen may be shipped as safely as one that has just begun to lay. Another point which may bear on your experiments is that queens kept alone seem to worry themselves greatly, and that if they are not chilled they keep a constant movement quite contrary to their habit in the hive.

If these remarks are of any service to you I shall be glad. I trust you will pardon a stranger thus opening correspondence, but I believe brother students of a science are permitted a few liberties in that way. Very respectfully yours,

ARTHUR C. MILLER.

Drumcondra, 25th November, 1905.

Dear Sir,—Yours of the 6th duly reached me. I shall be happy should opportunity offer to repeat experiments at higher temperature.

Cowan says winter temperature in centre of cluster is 70 deg. F., and I supposed the point being merely to obtain animation, the minimum temperature would be sufficient. I have seen signs of exhaustion in a fertile (but not laying) queen when left without attendants for two hours, although kept quite warm. She came from a "petered out" hive and I was preparing her for direct introduction to a queenless stock on Christmas Eve. I found her all right, however, on examination in the middle of February following.

J. M. GILLIES.

Arthur C. Miller, Esq.

AN UNRELIABLE YARN.

A river, Double Mountain River, flows through a canyon for 30 miles, according

to the story, and . . . "the entire canyon was one vast apiary, where wild bees have existed and gathered sweets for centuries. They are in such numbers as sometimes on certain bright days to resemble clouds high up the crags, and they fill the canyon with a voluminous hum. There are hundreds of these wild bee colonies, whose enormous masses of comb and honey were adhering in sheltered chasms and beneath overhangs of the rock. A number of caverns, too, extending far back into the cliff, have been utilized as great store-houses of comb by the bees. Not one swarm alone occupies such a cave, but 50 perhaps, or 100 swarms, each having its own queen, but all using the mouth of the cavern as a common entrance. Two men made a business for years of harvesting the product, and it was their custom to send a waggon-load of honey and wax down to the railroad station, 30 miles distant, once a fortnight, and sometimes in good weather once a week." The place existed only in the writer's imagination.

QUEENSLAND BEEKEEPERS' ASSOCIATION.

A general meeting of the Queensland Beekeepers' Association was held on Friday evening, 19th instant, at the National Association's rooms. The attendance was not so good as it ought to have been, seeing what an interesting subject was to be dealt with, viz., a paper by Dr. R. Hamlyn-Harris entitled "Honey and honey products as food and medicine for the use of man." The paper produced a good amount of discussion. It was finally decided to call for tenders for printing a number of copies. The paper suggested many side issues, such as the preservation of fruit in honey. Mr. D. Jones, of the Agricultural Department, related his experience of fruit thus preserved. He said that when it was a success the fruit was the best preserved that he ever saw, but occasionally it was a failure.

The doctor stated that to prevent fermentation it was necessary to sterilise both the bottles and fruit. The best way of sterilising the bottles is to turn them upside down over burning sulphur. He suggested that the Association arrange for lectures on beekeeping, and that at the end of the course an examination be held and certificates issued to the successful candidates, similar to those issued by the British Beekeepers' Association. He did not think it was worth waiting for Technical Colleges to take up the subject, for they did not seem inclined to provide the necessary appliances for giving the instruction. A vote of thanks was passed to Dr. Hamlyn-Harris for his paper. Several new members were elected.

Notes by "The Drone."

A Committee meeting of the Queensland Beekeepers' Association was held on Friday, 12th instant, when the following members attended:—Messrs. H. L. Jones (president), J. C. Brunnich (V.P.), T. M. Mitchell, M. Peake, R. J. Cribb, and A. H. W. Clarkson (hon. sec.) The principal business was the consideration of the revised rules as drafted by the sub-committee appointed for that purpose. I am familiar with the rules of all the beekeepers' associations in Australia, and have no hesitation in saying that these new rules, which will be submitted to a general meeting for adoption, are the most complete that I have yet seen. Several important alterations are suggested, including the enlarging of the objects of the Association, which will enable it to run on much broader lines than heretofore. Membership is thrown open to all persons interested in apiculture. It is proposed to raise the subscriptions of members to 7s. 6d. per annum. The voting is to be reduced to "one man, one vote." But the most important alteration is that which provides for the formation of local branches, practically managed by local secretaries, who shall be ex-officio members of the committees. The additional rules relating to the suggested alteration in the constitution of the

Association read as follows:—(a) In any locality members may unite in forming a local branch of this Association, which shall be under the management of a local secretary, elected by such members. (b) The local secretary shall collect the subscriptions from the members of his branch, giving them a pro forma receipt. The subscriptions shall be forwarded to the general secretary, who shall issue to each member an official receipt. (c) The local secretary may arrange for local meetings of his branch, and shall forward reports and resolutions to the Committee of the Association. (d) Local branches shall be entitled to retain up to 25 per cent. of their annual subscriptions towards defraying expenses of carrying on the work of the branch. (e) Each local branch may elect a delegate to attend and represent the branch at the general annual meeting, or at any other general or committee meeting, to bring forward or discuss important business.

WHICH WAY SHOULD COMBS RUN IN THE HIVES.

"But which way to the combs run in the hives you are using?"

"They run toward the entrance."

"Very good. And is not that the way they should run?"

"I had supposed so till lately. The past fall I cut several bee-trees and found that the combs almost universally ran crosswise of the entrance, while a day or two ago I examined some old box hives I had stored away, from which I had transferred bees a few years ago; and to my surprise I found that the most of the attachments where the combs had been were on the sides of the hives, or to that part of the hive each side of the entrance, rather than to the front and back part of the hives. Since I have seen these things I have been wondering if we were not making a mistake in having the combs run toward the entrance, as we do. It would seem that, if the bees place their combs crosswise the entrance while in a natural state, it would be right for us to

do the same. Would it not?"

"Your experience has been different from mine in this matter, for in the cutting of a dozen or more bee-trees, and in transferring bees from box hives by the score, I have found that the bees build their combs at any and all angles to the entrance, where there was nothing in the tree or hive in the way of little projections to start them building their combs in a certain direction. Where there is some little projection of wood downward from the top of the hive or tree, having a knife-like edge, the first comb is almost sure to be started on that; and as runs the first comb, all the rest are likely to follow, unless, perchance, there are some other like projections running angling, or in an opposite direction to the first started on, in which case the combs are likely to run in any and all directions throughout the tree or hive."

"That part of the matter is something I had not thought of, and, come to think of it, the box hives I examined had strips across the top, with opening between these strips, so that the bees could more easily enter the supers when they were put on."

"Exactly. And thus you have only the trees to hold up your ideas, for the bees would built on the strips with a hive fixed at the top, as you say; and as I have found the combs in trees running in all directions, it would seem that nature has no choice in the matter, and, if so, then we are at liberty to do as we please, unless we have better reasons for running the combs one certain way of the hive instead of any other."

"You may be right. If so, why do most of the apiarists have the frames in their hives run lengthwise to the entrance?"

"I think this matter has been discussed during the past to some extent; but I do not now recall just what the reasons were that were given for having the entrances at the ends of the frames."

"But you must have some reasons for having yours run that way."

"Yes."

"What are they?"

"First of all, if our bees are to thrive,

the water from rains and snows should not be allowed to go inside of the hive any more than they should be allowed to run all over the floors of our houses in which we live. Our houses are provided with doors and thresholds, but this can not well be provided for in a bee-hive; hence to overcome this water matter we set the hive on an incline, or give it a pitch toward the entrance, so that, should any water beat in there, it would immediately run out and away from the habitation of our pets."

"Well, what has that to do with the matter of which way the combs run?"

"Very much, for nature has so ordained that the bees always build their combs perpendicular, or 'plumb,' as we generally speak of this matter; and so if we have the hive tip or slant toward the entrance, in order that the water may run out, and at the same time have the frames run crosswise of the entrance, the bees, in building their combs, will start right at the top; but in going downward in a perpendicular direction the bottom of the first comb next the entrance will strike the side of the hive before it comes to the bottom of the frame, and all the others will have their bottoms over in the next frame, thus making the combs not interchangeable even should they be considered movable. But where the frames run with the entrance, the hives can be leveled crosswise of the entrance, no matter how great the pitch the other way, and all combs will be built true in the frames."

"I can see that part now you speak of it. But the hive could be set level while the combs were building, could it not?"

"Yes. But if the hive is tipped toward the entrance, even after the combs are built, the bottom of the first frame is liable to be glued to the end of the hive, from its swinging against it, and other frames will be glued to the bottoms of others on account of their not swinging equally in accord to the tip of the hive. And, even did they not do this, there are other things to be considered."

"What are they?"

"Most beekeepers prefer to have their

sections run the same way that the combs in the hives do; and, if so, the bottom of the foundation in the sections is swung to one side, where the hive is inclined toward the entrance, which causes bulged and irregular combs in the sections, with the prospect of their being fastened to the separators, so that they are torn in taking out in a way that much of the honey is rendered unsalable. And where only starters are used in the sections, matters are still worse, as then we have the same trouble to contend with that we did in the filling of the frames in the hive."

"Well, surely there is more to this thing than I had thought about. Have you any other reasons for having the combs run toward the entrance?"

"Yes. Where the combs run lengthwise of the entrance the bees returning from the fields can run up between any range of comb they like; while where they go crosswise it tends toward the massing of many bees on the first one or two combs, so that the nurse-bees have more trouble in taking the loads of nectar from these field-bees as they come in, thus massing a lot of bees right at a spot where it is necessary to have the passage way clear, not only that the going and coming bees may have plenty of room, but that sufficient room be given for ample ventilation of the hive. I have noticed that, where the combs run crosswise of the entrance, there were many more fanning bees at the entrance trying to keep up a proper circulation of air (and that even on moderately warm days) than there would be with those hives which had the combs running the way they usually do; and when it came so warm that the bees were crowded out, these cross-wise-frame hives were the first to show bees on the outside."

"Well, I guess I will not make my hives for the crosswise frames this winter as I was intending to do before we had this talk."—M. DOOLITTLE in *Gleanings*.

ANOTHER SYSTEM OF FEEDING.

We have overcome to a great extent the difficulty of wearing out bees experienced with the outdoor feeding. We use 60-pound cans with small holes punched in the top as before. These are *now* filled with syrup of the consistency of two parts of water to one of sugar. The weaker syrup has less of a tendency to make the bees scramble against each other. Then, to mitigate further the damage to the bees by reason of their struggling against each other, the 60-pound cans are elevated *some ten feet above the ground*. The wire bail or handle that is in the top is unsoldered. The can is then turned upside down, and the handle is soldered to the bottom. The other end of the can is perforated with small holes. A rope is passed over a limb of a tree, 12 feet or more above the ground. When the can is filled with the two-to-one syrup, the rope is tied to the ball (now on the bottom of the can) when the can is hauled up to the height of about 10 feet. It may take several hours for the bees to find it; but when they do they will begin in earnest. The bees will form in bunches at the perforations, and drop down; but instead of dropping with a thud or a jar to the ground or in the grass, sustaining more or less of a shock, and wearing out their wings in the scramble to take wing in the grass, they catch wing *before* they actually strike the ground, and fly up again. They no more than get a little sip of syrup than down they go again, catch wing, fly up, take a sip and down again, and so on.

The under side of the tin is so smooth that there is nothing for the bees to cling to, and they can not do very much scrambling. But just a minute two or three get to tugging at the same hole, down they go. The result is, we have produced almost all the conditions of an artificial honey-flow. It takes the bees so long to get a load of syrup that they fly back and forth to the hives quietly, and without excitement.

Two 60-pound cans of dilute syrup will keep a yard of some 300 colonies during

an absolute dearth of honey quiet for a couple of days, so that the hives can be opened indiscriminately, and combs exposed without any robbing. It begins to develop now that the bees that do most of the robbing represent but a very small portion of the whole yard. It is these that we keep busy by outdoor feeding. As they can not do any scrambling to any extent, there is not the same wear and tear that we experienced in our early experiments. We fed up for winter all of our 300 colonies at the home-yard by this outdoor feeding. What is more, this syrup is ripened in Nature's way, and therefore must make an ideal winter food. *Exchange.*



CAPPINGS

The principal things to produce candied honey are change of temperature and agitation.

If you mean whether one can make more money by producing honey or wax, you ought to be able to satisfy yourself easily. You probably never saw a bee-keeper who made as much money from his wax as from his honey. The fact that there are a few places where wax is more profitable cuts like figure in the case I think. I believe it is not because wax is so profitable, but because honey is so unprofitable, the expense of getting to market eating up all the profit on honey. If it costs 6 cts. per lb. to reach the market, and on that market brings 6 cts. and wax 30, the honey will be practically worthless, while the wax will bring a paying price.—*Gleanings.*

BEES AND WASPS.—I have come to the conclusion that wasps are worse toppers than bees. The alcohol in medicated syrup makes it irresistible to wasps; but bees prefer plain syrup. At the same time wasps carry their liquor better. A

wasp is always able to fly home if it escapes drowning; but expose honey, and you will soon see hundreds of bees utterly incapable. Wasps may be numb with severe cold, but return of genial warmth makes them quite gay again. Bees cannot survive long exposure to cold except in sufficient clusters. Bees that come into the house will often worry themselves to death in vain attempts to get through the first pane they fly against. Wasps soon see the difference, and try somewhere else. But wasps are too improvident to multiply like bees, living, as they do, from hand to mouth. Hard times have not long continued when they die off, except the few hibernating queens. It is, however, wonderful how much work can be done by one of these queens before she receives any help from her children.—*Irish Bee Journal.*

SIAM.—As reported in the *Lahrer Missionen*, Siam abounds with honey and bees (*apis dorsata*). The huge combs are seen hanging from the huge forest trees. We counted forty of such on one single tree. The native bee-hunters secure the honey by setting up bamboo poles reaching to the nests. With a lighted torch in hand, they climb up, drive the bees away, and secure the honey. We bought one of the combs, which was half-moon shaped, three feet long, and one foot wide. We also bought some small pieces of comb for our attendants, who were very anxious for them. These combs contained some young larvae, and were greatly relished. The natives immersed them in the liquid honey and thus ate them.—*Leipz. Bztg.*

In Nevada, U.S.A., the agitation of the question between the cattle-men and the apiarist, whether bees do injure the alfalfa hay or not, still goes on. Attempts were made at the last session of the legislature to pass a law compelling every bee man to own one hundred and sixty acres of improved farming land or cease handling bees. It did not leave the Committee room, however. It will be brought up again at the next session, when they tell us "something will be doing."

HUSBAND AND WIFE.

She came to the room where her husband
seemed taking peaceful rest,
With his thin hands clasped together, like a
childs upon his breast,
As she shut the door behind her, then came
and laid her head

Close down by his on the pillow, and she
whispered to the dead :

"Its only a little while, Stephen, since you
died, but dear, to me,
It seems like years since you told me it had
grown too dark to see,
And asked me to come and kiss you and hold
you by the hand,
As you started out on your journey to the
Better Land.

"Have you found it? Tell me Stephen, speak
to your poor old wife,
Why need we too be parted in the last days
of our life?
But you have gone on before me to find out
what heaven is,
And, I, O my heart is breaking, for there'll be
so much to miss.

"You do not answer me, Stephen, it can't be
that you know
That poor old wife's talking to you, dying has
changed you so.
There seems such a distance between us!
Stephen, it wrings my heart
To think of the grave they'll make you that
will keep us so far apart.

"I brought the old Bible, Stephen, the one
that you gave me when we wed,
Never a day since our marriage but there's
been a chapter read.
In times of peace and gladness and times of
tears and pain
We've read it together, Stephen, as we never
shall read it again.

"You've no need of it now, Stephen, but
where else can I find
The comfort and health that's needed, now
that I'm left behind?
Do you remember, Stephen, when our first
little baby died,
How you read it after the funeral, and I sat
at your feet and cried?

"I remember the chapter, Stephen, it was
where the Saviour said,
Blessed are those that sorrow for they shall
be comforted.
O, my arms and my heart were empty, I
missed my baby so!
Have you found the little one, Stephen tell
me—I want to know.

"O go to the dear Lord, Stephen—ask him to
let me come,
Tell Him your old wife's lonely, and wants to
follow you home.
I want to be with you, Stephen—I want to
hold fast to your hand,
Tell the dear Lord about it and he will under-
stand."—*Selected.*

"BUSINESS" IN NATURE.

It is strange that the study of botany
should be carried on year after year
with practically no reference to the special
insects attending to each bloom. Almost
every flower not only lays itself out to at-
tract some particular insect to its service,
but it takes precautions against the inter-
ference of others. The appliances
used to accomplish these purposes, to-
gether with their "why and where-fore"
form a most fascinating study. The subject
has been touched on *en passant* by several
authors, but nothing like a close inves-
tigation has been made. Not one in a
hundred writers about flowers mentions
their "ministers," and when they do, we
get some absurd combination, such as the
honey-suckle and the bee. The honey-
suckle sends forth its perfume in the
evening, and it might have occurred to
the "tyro" that was the behaviour of a
moth fertilised blossom. "A thousand
thoughts by a thousand authors" does not
contain a caption referring to the bee, the
hive nor to honey. The extracts relating
to flowers contain a reference to flies, but
none to the wonderful echoes which are
wafted to and fro between the insect
creation and the plant world. There
is a rhythm in this which puts to shame
the afaltus of the poet, and the measures
of the musician.

The botanist will tell you these are the
pistils, those are the stamens, that the
nectary, and this the pollen, and he knows
that some insect or another seeks the
nectaries and fertilises the ovaries, but if
he did his work thoroughly by careful
examination and accurate measurements
and knew the native insects, he could tell
precisely which could and which could
not, fertilise the particular flowers under
survey at the moment.

Beekeepers know in a general way similarly from what plants their honey comes, but they cannot say why when luscious lime is in bloom bees will at one time rifle its treasure, and at another absolutely neglect it for some insignificant flower more remote from their hive. Why does the bee neglect the heather for 'the devil's bit' (*Scabiosa Succisa*)? Whence comes its passion for the giant passion balsam, which sends it home disguised as a miller, covering its whole body with a white flower which it takes many days to clear off, or for the little orchards which glue a horn to its head, giving it the appearance of an insect unicorn, an incumbrance which must, on account of its comparative size, be exceedingly troublesome to carry? Yet, with all this disregard of inconvenience, one never finds a bee in any of the flowers which trap winged insects under pretence of giving them sweets, and rarely in a spider's web. Under the poisonous privet dead bees are, however, frequently seen.

All the disinterested behaviour is not on the side of the insect. There are flowers which, when an attempt to loot them is made by certain insects, detach themselves from the parent stem and fall to the ground, apparently choosing to sacrifice life rather than submit to indignity.

The nectar produced by a flower is of no direct use to it. The secretion is simply a coinage minted to pay for services rendered. Insects demand payment "on the nail" for the fertilising work they perform. Here we have quite a characteristic commercial transaction.

The insect, like the artisan, is paid at once, while the plant, like the capitalist, must wait months, often years, and sometimes centuries for its return. Sometimes it gets none. Plants like *Limnanthus Douglasii* may be sown in February, bloom in June, and seed from this sown in July, again up and in flower by September, but this is exceptional. As a rule the seed of one year does not germinate until the next. White clover takes two years to come into bloom and complete its cycle. In the case of some pines the seed does

not germinate until years after it is grown.

Then there are plants like the *Yucca Gloriosa* which does not bloom until it is about one hundred years old, and so, is popularly called the century plant. Money making, under proper conditions, simply a means to an end, becomes with some persons a passion, so with some flowers, they produce nectar in absurd quantities, some acacias when not much larger than a full-size gooseberry bush, yielding a hundred pounds of honey annually. The honey bee itself is a perfect miser about honey. It will store up as much as its own and twenty following generations can consume. Its attention, no matter what dangers surround it, can instantly be arrested by exposing honey or sugar and water, and, filled with honey, it never stings, apparently afraid of losing its precious load by exposing itself to any danger, for the same bee five minutes later, having deposited its load, will sting without hesitation, and so sacrifice its life for the benefit of its community.—*Irish Beekeeper*.

VICTORIAN APIARISTS' ASSOCIATION.

[COPY]

Tooborac Feb. 2, 1906

The Hon. Sir John Quick,
Chairman Tariff Commission,
Federal Parliament House,
Melbourne.

Sir,—This Association desires to bring before your Commission the detrimental influence upon the Bee-keeping Industry or Australia, of cheap imported Glucose as a substitute for honey in the manufacture of tobacco, confectionery and articles of food.

On behalf of this Association and the Bee Farmers Association of New South Wales, I respectfully ask whether an opportunity will be given our Industry to give evidence and if so, when?

Respectfully yours,

R. BEUHNE,

President V. A. A.

COMMONWEALTH OF AUSTRALIA.

Royal Commission and the
Commonwealth Tariff
Customs House,

Melbourne 7th. Feb 1906.

Sir, --I have the honour by direction to acknowledge receipt of your letter of 2nd inst. in which on behalf of your Association and the Bee Farmers' Association of New South Wales, you desire to bring before the Commission the detrimental influence upon the Bee-keeping Industry of Australia of the use of cheap imported Glucose as a substitute for honey in the manufacture of tobacco, confectionery and articles of food.

Your request to be afforded an opportunity was placed before the Commissioners, who decided to give the matter consideration at a later date. The result of their decision will then be communicated to you.

I have the honor to be, etc,
O. T. ORR, Secretary.

R. Beuhne, Esq.

President Victorian Apiarist's Association

ROBBING.

Robbing is sometimes caused by untimely manipulations, and then when much smoke is used, colonies are in the very worst form for withstanding any combined or persistent attack. Avoid the use of much smoke, do not leave tempting sweets about, do not have weak colonies, and do not manipulate unseasonably, because prevention is better than cure. Here is the newest tip I have seen in the way of curing. It sounds as if there was something in it, so some of those afflicted with the robbing mania might give it a fair trial:—

“As a means to prevent robbing use cheese cloth. It is very cheap and durable. Envelop the hive with it, and in ten or fifteen minutes open the cloth at the top to allow the robbers within to escape, and then close it again, repeating the operation about every ten minutes

until all have escaped. The home bees are allowed to enter at sundown, though it is better to leave the cloth on for twenty-four hours, if robbing has been persistent. If, however, the cloth was put on when robbing first began it may be removed within an hour, as the colony will then have recovered from their disorganisation.”—*British Bee Journal*.

Odors Among Bees—Some Experiments.

Translated from “*The Bulletin de la Societe Romande D'Apiculture*”

BY C. P. DADANT.

On April 25, my colony, No. 11, had already a number of hatched drones, and it was this one which I selected for the first experiment. After having carefully washed my hands two or three times over, so as to remove odor entirely, I caught about 10 drones at the time of their return to the hive. The pulp I made out of them by crushing them was used in rubbing my hands and wrists; then, immediately afterwards, I proceeded to open the hive without smoke and without jar, doing nothing that might stir the bees to an investigation. The result was beyond my expectations; not only I was not stung, but the bees ran over my hands as on the combs, without any hostile demonstrations. The visit lasted half an hour and it was only towards the end of this time that the bees began to show signs of disquiet and intentions of stinging. I had found there a very good apifuge, and at low cost.

The same experiment, repeated the following day with colony No. 5 gave the same results, only this visit was shorter, for I had another project to put into action. After having closed the hive, and revived the smell of its drones on my hands by crushing a few more, I immediately opened another hive No 7—a colony of common bees of remarkable gentleness. What I had foreseen happened as soon as the hive was opened, and my hands came

in contact with insects I was assailed and stung about 20 times in the space of a few seconds.

April 29, No. 12 was again visited without stings; then doing as I had done three days previously I opened No. 17 but even though I used a little smoke as usually done, I was copiously treated with venom by the irritated insects.

These experiments were repeated the following days on other colonies, and the results, although not always as conclusive, were nevertheless satisfactory. Some trails were however completely negative—a fact which I believed must be attributed to causes which I will mention further.

At several times after having visited a colony with the greatest success I moistened my hands (but without having previously washed them) with juice of drones from some other colony which I intended to examine also. But whether it was the first odor which irritated the bees, whether it was the mixture of the 2 odors or some thing else still, I do not know, the stings were always numerous. It was only by washing my hands carefully between the visits to each hive then giving them the odor of the colony to be visited that I could manipulate the insects without being rewarded by a number of stings.

We must conclude from this that the bees like ants have a perspiration of a particular nature, also similar to that of ants differing in odor from one colony to another, and that it is this odor which guides them, especially when they try to recognise one another.

When bees are taken from any hive, washed with greatly diluted alcohol (which may be done easily by taking them by the wings), and returned to the alighting board of their own hive, they are not accepted; several have even been killed under my eyes. If after having washed them with alcohol they are washed with the juice of drones from another hive, and presented to the bees of that other hive, they are always welcomed there.

I had gone this far with my trials, when an absence of 10 days caused me to interrupt them. It is useless to tell you that during that time I was constantly thinking about the experiments made, and the fruits that might be reaped from them. It came to my mind to try whether, in proceeding thus, it would not be possible to introduce into the colonies some fertile queens.

So, May 20, I began again with the determination to sacrifice a few queens, if necessary, in case my trials were unsuccessful.

Those queens would after all, be easily replaced, for in my absence colony No 2 had swarmed unexpectedly, and had supplied us with three young and beautiful queens, lodged in nuclei while waiting for something better.

Towards 2 p.m I removed without trouble the 2 year old queens of Nos. 19 and 25. Then after having washed the queen of 19, and having covered her copiously with drone-juice from No 25, she was placed at the entrance of hive. At sight of her, the bees made neither happy nor hostile demonstrations, and she passed among them and entered the hive.

The same operation was made with the other queen, and scarcely any bees noticed her entrance. These 2 queen changes had lasted only about an hour, and the bees did not seem to notice that they had been at any time queenless.

Until then all was well, but what was to be the fate of those 2 queens? I could not make sure of this until the following day. That day as well as several following days the weather was bad, so my visit had to be put off till the 25th that is five days after the exchange. But in visiting these 2 hives at that time, I had the satisfaction of noting, *de visu*, the presence of the two queens in the hive. They had therefore been accepted without any difficulty—nay, the bees had not noticed substitution.

The laying was not interrupted, for there were eggs in both hives which could only have been laid by the new queens.

At the time of putting into winter quarters of those 2 colonies, the populations were vigorous, and I have no doubt that they fared well through the winter.

My exchanges of queens were limited to this trial, in spite of my intention of continuing them, for I still had many points to examine. How did the queens and the bees disport themselves, an hour or a few hours after introduction?

I have said that it happened to me to be stung in spite of the drone-juice with which my hands had been rubbed. This happened first on a day when the wind was blowing violently, probably rapidly removing the smell from my hands. The same thing happened in very hot days, when the bees were naturally ill-disposed. There is therefore room for more experiments on this point.—*American Bee Journal*.

CORRESPONDENCE.

S. T. M., Burril Creek, Manning River

This has turned out to be the worst season for honey that I have ever known; simply for want of rain. The bees came through the winter well, and bred up fairly well on old honey and pollen in the spring. As rain kept off, and no new honey or pollen coming in, the bees commenced to go down in November, the weather continuing very hot and dry. They got very weak, and some died out. We had a good fall of rain the last two days in November, which brightened things up considerably. and if it had been followed by another 4 or 5 inches after Christmas the bees would have done fairly well, but the weather from that time has continued hot and dry, and what bloom came out was of little benefit to the bees, just enough to gradually work them up strong again. About the 20th of January the Brush Myrtle came into bloom; the bees made a stir, when four

days later an extra hot day, 108 deg. it the shade, cut off the blossoms. The stoppage of the honey-flow was so sudden that next day robbers were flying round. Blood-wood is in full bud, and will soon be out, but a poor prospect of surplus honey for the beekeeper unless a good fall of rain takes place in the meantime. The Lower Manning has been more fortunate in regard to rain, having received from 16 to 20 inches in places since Nov. 30th last. The dairy-farmers are also having a bad time of it at Burril Creek and Upper Manning for want of the rain that is more precious than gold.

P. F. O., Norval, via Ararat, Victoria.
—Would you be so kind as to answer the following questions in the columns of your interesting journal: — 1. I have noticed that bee paralysis seems to be more prevalent when Cape Weed is in bloom. Do you consider that the plant referred to has anything to do with the disease mentioned?

[Can any of our readers have a say on this? We had Cape Weed near one of our apiaries, but have had no paralysis for some seven or eight years.—Ed.]

J. B. B., Cameron's Creek, near Armidale.—We have had a very hard time with the bees this last winter, they are only just making poor headway now. The honey flow will be light this year, but it promises well for about next Nov. or Dec. The buds of most of our fruit trees are on the trees for at least 8 or 9 months before coming into bloom.

MICE IN THE APIARY.

How to Destroy Them Easily.

In the thirty years that I have been in the bee business mice have been a great nuisance, besides causing a good deal of destruction; and in all this time I have never been able to find a remedy that was just satisfactory until about two years ago. I have tried bee-tight houses, and prisons of different kinds, and even the faithful old cat. They all had their merits in checking the nuisance, but still I was always suffering more or less with

their destructiveness. I have made several bee and mouse tight buildings, and would, though not knowing it, carry the mice in hives where the bees had died out. After they get into the building they will gnaw out, and ever afterward have a free passage in and out. When the next summer came I usually found both combs and supers much damaged. I have tried to poison them by putting strychnine in meal; and while it would kill some it never completely routed them. I have also soaked wheat in strychnine, with the same failure. Two years ago I hit upon a formula that was effectual.

I have been preparing a batch of poison to-day. The formula is, take $\frac{1}{2}$ gallon of wheat. To this I add $\frac{1}{2}$ ounce of strychnine, 2 pints of water, and a pint of honey. I first pound the crystals of strychnine on a flat iron, then put it in the water and bring to a boil; then add the honey. Pour the solution over the wheat and stir well. Boil the mixture for thirty minutes. To this I add two large teaspoonfuls of flour made into a paste before putting it into the wheat. I put in the paste so the wheat will adhere. I then put the mass in pans, smoothed out so it will be about half an inch thick. When it dries it will be in a hard cake. The honey and paste make it so the mice are very fond of it.

I find by keeping a piece of this poison in the store buildings which I have at my apiaries I can keep combs and sections without being disturbed, and a piece of poison in an empty hive will do away with those that might disturb the hives in cold weather.

We have a species of wild mice in Colorado which are very peculiar in their habits. They garner the same as the squirrel. Several times I found as much as a gallon of sweet-clover seed, with all the hulls taken off, stored in an empty hive. I have found a number of cases where the same mother had two broods in the same nest, one fairly matured, and the other very young. If the poison is used judiciously there is no more trouble from mice. Of course, great care should be taken to keep it away from children

and also domestic animals. It is also very effective in the home where mice are troublesome. Last September we found our house overrun; and in a week after putting out the poison, the mice were all gone, and we have not heard one since. W. L. Porter, in *Gleanings*.

It is very common to hear some one say—"Oh, I am going to do so and so." Then, without further ado, straightway set about the business, whatever it may be. They never think of weighing the pros and cons in connection with the subject with which it is proposed to deal. One is "going in" for poultry; another intends to start some phase of gardening as a special pursuit; tomato-growing, for instance, is a favourite notion. Not long ago carnation culture became almost a mania with many well intentioned enthusiasts imbued with these various rural pastimes or hobbies. Looking back, and remembering the number I can call to mind who have tried various schemes having for their object the attainment of surplus wealth, the question is forced on one's mind: Where are they now? Where are the fortunes sure to be made from the new methods hitherto hidden in obscurity, and which were to fill the pockets of the fortunate discoverers? Where? I know not; but it is very plain that the majority began at the wrong end. They began business first, and then found out how small was their knowledge of the trade in which they had embarked. It is one thing to keep a few fowls in our house garden, or to grow a few plants especially well in our miniature greenhouse, but it is an entirely different concern when these matters are taken in hand on a larger scale, for the express purpose of profit and profit only. Then the burden of the work is felt, and must be charged for as labour; and thus the pleasure goes, while profit is tardy in putting in an appearance. Eventually the thing is thrown up because "it doesn't pay."—*Exchange*.

A STEADY, RESPECTABLE MAN, known to us as a beekeeper, would be glad to hear of employment as caretaker on a dairy or poultry farm, etc. Particulars from

"BEEKEEPER,"

C/o Bulletin Office,

West Maitland.

The following note has been received from Mr. S. T. Main:—In a letter from a beekeeper in the Dungog district recently, I hear that things in bee matters are quite as bad there as they are on the Manning. Some of the large beekeepers there, who usually have 10 to 15 tons of honey to put on the market, will have very little honey this season to dispose of. Some have lost quite a number of their colonies, in consequence of the prolonged drought.

THE BUILDING OF DRONE COMB.—The following is translated from *Field and Flur*, of Dallas, Texas:—Many wrong views exist among beekeepers in regard to the building of drone comb. Heretofore the view has been held that the drones, during the time of their development in the cell, require a far greater amount of honey and pollen than later as the fully developed insect, and that their breeding is, consequently, in a great measure detrimental to the beekeeper. Through Planta's investigations, it has been determined that the drone food contains only 1.17 per cent. of sugar content, while that of the queen-food contains 17.9 per cent., and that of the worker food not much less. The drone-food is, therefore, in no way as great as is generally supposed, and the removal of the drone comb is absolutely without grounds. Under certain conditions the same is even most necessary and essential, not only for the breeding of the necessary drones for the mating of the queens, but also because the whim of bees is increased, for the simple reason that, through instinct, they desire drone comb. A total

suppression of drone comb is, therefore, very harmful, and a reasonable amount should at least be allowed them, especially before swarming, and at the end of the honey season.—*Gleanings*.

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
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