The Australian bee bulletin. Vol. 14, no. 9 December 28, 1905

West Maitland, N.S.W.: E. Tipper, December 28, 1905

Registered at the General Post Office Sydney for transmission by post as a N

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.

VOL. 14. No. 9. DECEMBER 28, 1905. PER COPY, 6D

Per Annum 5s, booked 6s 6d, in Australasia, outside N.S.W., add 6d. postage

Printed and Published by E. TIPPER, Proprietor, High Street, West Maitland, N.S.W.

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MAITLAND, N.S.W.—DECEMBER 28, 1905.

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EDITORIAL.

We wish our many subscribers and friends the usual Compliments of the Season and a happy and Prosperous New Year.

In Tamworth, N. S. Wales, sections are retailed at 3d each.

A young white drone larvæ makes a capital fish bate.

Honey must be extracted from new combs to be colorless.

Wetting the bee brush while extracting prevents stings.

The *British Bee Journal* says foul brood is exempt from drone brood.

A box smeared with aniseed is said to be a capital plan for catching swarms.

In uniting bees, slices of onion are good. It is a scotch idea, 200 years old.

When a smoker gets choked up with creosote, a little kerosene turns it off nicely.

The National Biscuit Company of America lately purchased 70 cartloads of honey. A cartload is 20 tons.

A few breeding queens should be procured each year to keep your bees up to a good standard.

Thin sheet zinc, large enough to turn down the sides of the wooden covers, are capital protection for hives.

There has been a slight rise in honey during the last week or so, both in the Sydney and Melbourne markets.

The A. I. Root Co. is making a strong effort to interest school teachers in bee-keeping. Good for themselves no doubt.

The United States crop of honey for the past year has been a light one, and an entire failure in many localities.

In transferring combs from box-hives or skeps, instead of using string to fasten the pieces on to frames, strong rubber bands are recommended.

Texas leads the United States in the production of honey, having nearly 400,000 colonies, and producing four million pounds of honey.

The Western Australian Government has withdrawn its support from the Bee-keepers' Association, and Mr. John Sutton has ceased to bee its bee expert.

Cakes of Wax without Cracks.—Let cool slowly. Have the sides of the tin or vessel so as they can get cool as soon or sooner than the rest of the block.

In Canada sections are cut diagonally from corner to corner, and the pieces retailed at five cents apiece, being rolled in a small piece of paper when delivered.

See that your bees have easy access to water. A vessel containing water, with a wooden float with holes through which the bees can drink, is very suitable.

Wax is one of the most valued products of the honey-bee. If we prevent the bees from making new combs they will simply drop their production of wax on the floor of the hive in a fluffy pile, and a valuable product is lost.

In removing bees without closing the entrances, first subdue them by smoking and drumming. On a hot summer day it is said bees so prepared seldom take wing after the waggon has started. For ourselves, we will hesitate before trying it.

To prevent swarming.—Remove hive to a new situation. Get fresh hive, place in it a frame of brood, and place on old stand. The working force goes into new hive. The old colony, being depleted of the worker force, lose inclination to swarm. Queen cells may be given the new hive, or a new queen.

Removing hives.—In the day time see all frames are fixed, removing all combs heavy with honey, and replacing with empty ones. Then cover the top with wire-cloth or hessian, so as no bee can escape that way. Prepare flat sticks to cross the front of hive, with tacks just driven into them. When evening comes and bees are all in, the flat sticks may be laid close up to the entrance, and the tacks driven through them into the bottom board. Remove either in the evening or early morning.

Publications Received.—Mark Meredith, a "Tale of Socialism." The author has written a very interesting tale, combined with ideas copied from Bellamy, the French Revolution, and the present state of Russia. The idea is to show that the present socialistic tendency will in time produce a state of tyranny in Australasia greater than the present autocratic tyranny in Russia. It makes good reading. It is published by Edgerton & Moore, Flinder's Lane, Melbourne. Also the 44th Annual Report of the N.S.W. Institution for the Deaf, Dumb and Blind.

TREATMENT OF ROBBING AMONG BEES.

The following methods are given in the British Bee Journal: "Remove the hive attacked to some shed or outhouse, giving the bees ample ventilation. Allow the robbers free entrance into a new hive on the old stand, supplying them with very weak syrup. When they have had some of this, dilute it until it is little more than sweetened water. They soon give up in disgust, and, next day, the colony may be safely restored to its old stand.

"As a means to prevent robbing, use cheese cloth. It is very cheap and durable. Envelop the hive with it, and in 10 or 15 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 unti

all have escaped. The home bees are allowed to enter at sundown, though it is better to leave the cloth on for 24 hours if the 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 disorganization.

If the last method proves successful, it might be made to work automatically, thus saving the trouble of attention every 10 minutes, by having the cheese-cloth finished out at the top with a Miller escape; that is, a robber-cloth with wire-cloth cone.

A plan of treatment that comes from Germany, is to cellar the victim and put in its place an empty hive of the same appearance. In this empty hive put a smoker going full blast, and before long the robbers will desist in disgust, and next day the colony can be returned.

—*American Bee Journal.*

STOMACH-MOUTH OF BEES.

I think there is no animal in the world that has such a marvellous variety of functions as has the honey-bee. This complex physiology implies an equally marvellous anatomy. Once to think what the bee can do! It can gather nectar in three ways, and digest it. It can gather in the pollen and other forms of proteid food, and convert them into assimilable aliment. It can separate the pollen from the honey in its honey-stomach. It can bear the wax scales from venter to mouth, knead them, and then fashion them into the marvellous comb. It can prepare food, and administer it to queen and larvæ. It can gather the propolis. We need not wonder, then, that the anatomy of the bee is something surprising. The wondrous tongue and other complex mouth-organs; the antennæ which answer as delicate sense-organs; ths great compound eyes and much smaller simple eyes; the colossal glands, which are surpassed only by those of the well-known silk caterpillar; the wax-glands; the varied compound hairs; the antennæ-cleaners on the front legs; the pollen-brushes on the middle-legs, and the pollen baskets and wax-jaws on the hind legs—these, together with the stomach-mouth, give us an anatomy that challenges comparison in all the realm of animal life.

The stomach-mouth is a small spherical organ situated in the hinder end of the honey-stomach. Picture, if you please, the honey-stomach as a small horizontal bag, which, as we pull the head from the thorax or the thorax from the abdomen of the bee, often comes out so that it is plainly visible. In this case it is usually full of nectar. Can we not picture a minute apple-shaped body at the very hinder end of this little bag? Imagine the apple cut into quarters, and imagine these quarters slightly reduced, and the skin not cut, except a small opening at the stem end of the apple, which is forward, and a second small opening at the blossom end, which, of course, is at the extreme hinder end of this little sac. Picture again numerous hairs on the inside of these quarters, all pointing back. It is easy to demonstrate all this if we kill a bee and at once separate the thorax and abdomen, pulling out the honey-stomach. If we put this in a warm saline solution, say of common salt, and open it under a good dissecting microscope, we shall see the four quarters of the stomach-mouth constantly open and shut, or pull apart and then close together, thus enlarging and reducing the space between the four sections. It is obvious what the effect of these motions will be. As the quarters recede, honey from the honey-stomach will push in; as they close they close first back, and the honey is again thrown back into the honey-stomach. The pollen, however, is caught by the hairs, and cannot return with the honey. Thus, all the time that the bee is gathering, this little stomach-mouth is actively engaged in straining out the pollen from the nectar. We understand, then, why the nectar goes into the cells of the comb so free of pollen. It may not, usually will not, be entirely eliminated, though we may expect very little, and will rarely be disappointed.—*Gleanings.*

CLAIMING RUNAWAY SWARMS.

The Rights of Beekeepers.

The following case is of such value to our readers as makes it worth reporting *in extenso* as it appeared in a recent issue of the *Eastern Daily Press*. It will tend to make clear the not-seldom disputed rights of beekeepers in claiming runaway swarms that settle on the premises of unfriendly and disobliging neighbours.

At Aylsham County Court yesterday Judge Willis, K.C., heard a case of interest to beekeepers. Phillip Pitts, of Cawston, gentleman, sued Major Maude, of Cawston, to recover £1 for the loss of a swarm of bees, and 5s 6d, the value of goods detained.

Plaintiff said that he and the defendant were neighbours at Cawston. On June 1 a swarm of bees left his hive, and he saw them seitle in Mr. Maude's garden. He went after them, and Miss Maude came out of the house, and said "Take them away at once." Plaintiff replied, "I must let them settle first." Then Miss Maude went away, and plaintiff got out his stool and box, and put the swarm into the box, intending to let them remain for a time, for, of course, bees could not be meddled with till they had settled. In the evening, which was the proper time to move bees, he was going after them when he found the gate locked. He looked over the wall, and, seeing Mr. Maude, he asked, "Will you undo the gate so that I can come and get my bees?" "No, I shall not," was the reply. "You have no right to let them come in here at all." Plaintiff troubled no more about the matter then. In the morning he looked over the wall, and saw the box turned upside down and the sheet underneath.

The Judge: Then you found the bees had gone away.

The Plaintiff: Yes.

The Judge (to defendant): Do you know that if a swarm of bees came on your tree you have no business to interfere with them, or to prevent your neighbour from getting them? Who turned the box over?

Defendant: I didn't, your honor.

The Judge: Somebody did, with your knowledge.

The Judge (to plaintiff): Did you see the bees in the box?

Plaintiff: Yes, I put them in.

Defendant: The bees were in the box an hour. He had an hour and twenty minutes to take the bees away, and he delined.

The Judge: Did you decline to take them away?

Plaintiff: They were not ready to take away then. I would have taken them away at the proper time.

The Judge: Whoever turned the bees over did a very wrong thing.

Defendant, in proceeding to state his case, said the plaintiff, by coming into his garden, committed a trespass.

The Judge: I am not sure that he was not entitled to come.

Defendant, continuing, said the plaintiff could easily have shifted the bees, which were only six feet away from the house. Plaintiff seemed to keep the bees in that part of the garden merely to annoy the defendant.

Tne Judge: Some one for whom you are responsible went and turned over the skep that was full of bees, and then the bees escaped, and they were destroyed as a swarm.

Defendant: We have had two more flights since then, and Mr. Pitts had never came after them.

Plaintiff: I did not see them, or I should have gone after them.

Defendant: It is not safe to have bees in your garden very near your house.

The Judge: Who turned the skep over?

Defendant: I did not.

The Judge: I shall find it was done with your authority. You seem to have taken the time, and to know all about it. I think they were turned over on purpose. Proceeding to give judgment, the Judge said that bees were the subject of private property, and a man did not cease to be the owner of his bees because they

passed off in a swarm and alighted upon some tree or house. Some said that the owner of bees was entitled to go on the land of a neighbour for the purpose of recovering them; but it was not for him to decide a point like that to-day. What he did decide was that a neighbour must not do any act to destroy the value of the bees, or to prevent the owner getting them once again into his possession as a swarm. He found that the bees alighted on the defendant's land, that the plaintiff took steps to recover them, and that if some one for whom defendant was responsible had not interfered with the swarm the bees would have been in the skep, and would have been restored to the plaintiff. He was satisfied from the knowledge of the defendent as to the time that this was an act of direct injury and not an accident.

In answer to the Judge, defendant said that the plaintiff could have back his skep and the other articles claimed.

Defendant called a witness to prove that the value of the bees was only 5s.

The Judge, after some consideration, assessed the value of the bees at 15s., and a verdict for the plaintiff was entered accordingly, with costs.—*Beekeepers' Record.*

THE MAKING OF A QUEEN.

Amongst the most marvellous features of insect existence is the fact that the egg when it leaves the ovaries of the queen may become a queen worker or a drone. The Mother bee has the power of deciding which of the last two shall evolve from the egg, for, by withholding or administering the spermatozoa as the egg passes the spermatic duct, she can determine whether it shall result in a male or female bee with the many dissimilar resultant organs. It has been proved that at her royal will and pleasure she can pass down the egg along the duct unimpregnated, and whether oviposited in a drone or worker cell, that a male bee is evolved. On the other hand a simple extension of a set of muscles enables her to convey the energising power which converts the resultant image into a worker bee. The same egg at the will of the workers is by them converted into a fully developed female.

The most incomprehensible part of the process is that increasing the orgi, and changing the direction of the cell, and feeding the larva with a more perfect food, should not only allow the sexene organs of the insect to be fully developed, but should alter the shape of her tongue, her jaws and her sting, deprive her of the power of secreting wax, and obliterate the pollen baskets, which, but for these changes, would have been formed on the thighs. This marvellous transformation has engaged the attention of many writers on bees, and several German scientists have devoted special studies to the subject, will the result that the whole process has been explained and illustrated On the loss or withdrawal of a queen the precient little workers fix on a egg or a larva less than three days old and decide that its future treatment shall result in a new mother with wonderful new powers.

It is a marvellous power. All the beekeeper sees is a simple enlargement of the cell, and a copius feeding of the young larva with this chyle food, but the transformation is so astonishing that it seems to border on the something from fairy land. A new creation has indeed been evolved. A creation with several new organs, and lacking many others now unnecessary and therefore a superfluity. An insect almost of another order has been generated capable of performing an entirely new set of duties and functions. Man lately has taken to aiding Nature and fondly conceives that the resultant product is an improvement on what has hitherto been evolved by the bees' unaided powers. I don't know, but this I can almost certify—the nearer he approaches natural laws in this delicate operation the higher he attains towards the apex of perfection in the Making of a Queen.—D. M. M. Banff in *Irish Beekeeper.*

A BEE YARN.

Sir,—In a letter I received from my daughter (aged sixteen) the other day, she sent me the enclosed bee yarn, which I thought might be of interest to your readers.—C. H. Landon, Surrey.

"One evening, after supper, a sailor who was staying with us told us the following strange but perfectly true yarn, which struck me as worth recording:—

"'We were anchored one evening in the pretty little harbour of Akyab, on the coast of Aracan (in N. latitude 20 deg. 8 min., E. longitude 92 deg. 54 min.), which is a British Province of Hindostan, on the east coast of the Bay of Bengal, all ready to put out to sea early the following morning. We had hauled up one of the anchors, leaving one only to weigh in the morning. Next morning, at about three o'clock, I had to get up to see that the anchor drawn up the previous evening was brought up to the hook and made secure, so I ordered one of the men over the ship's side to see to it

"'When about half way down, with a piercing yell he suddenly fell into the sea. Greatly startled and surprised, I quickly threw him a rope, and having heaved him on board again inquired what had happened.

"'"The devil," he said, "had whacked his bare feet," and looking, I saw indeed, that they were very red and swollen. I could not understand it, but sent another man over the side, and just the same thing happened again to him, and his feet, when we got him on board, were just in the same plight. I thought it most extraordinary, and it being still too dark to see over the side, I lowered a light and saw to my amazement a swarm of bees settled on the anchor, and to *their* kindly attentions the men owed their swelled and inflamed feet.

"'They were wild bees, and must have settled there the previous evening. They were not like our ordinary English ones, but had black bodies with red tails.

"'A little later we weighed the other anchor and steamed out to sea, carryiug our swarm with us, but hoping they would take flight when encountering the wind and waves at sea. But no; there they remained; so I procured a large tin box, and having filled it with sulphur I lighted and quickly lowered it just under the swarm. We then all fled below, having first shut up the steersman in his box. The bees were furious; they dashed against the portholes, and swarmed all over the deck, and soon we heard terrible cries from the ship's cat, who, alas! had been forgotten, and for whom, when the bees had at last left us, we sought in vain; the poor thing must have leapt overboard.' As I said before, this story is perfectly true."—Hilda Margaret Landon, in *Beekeepers' Record.*

TESTING PURITY OF BEESWAX.

To test the purity of bees-wax:—

A small piece of wax placed in the mouth and chewed should not adhere to the teeth, or become pasty, but gradually disintegrate into small fragments, and be devoid of any special savour. This test is not sufficient if the quantity of the adulterant is small, in which case the specific weight should be ascertained.

Prepare in a tumbler a mixture of alcohol and water of sufficient density to allow a flat piece of wax of known purity to float on the surface, so that the upper surface of the wax is level with the liquid. A small sample of suspected wax is then melted to get rid of all traces of air, and then placed in the liquid. If it sinks or projects above the surface it is certainly adulterated.

Sometimes adulterants heavier and lighter than pure wax are used, so that when mixed in proper proportions the density of pure wax is obtained. In such a case the following additional tests should be made:—

Put a piece of the suspected wax, the size of a small nut, into a test tube, half fill with spirits of turpentine, and carefully warm over the flame of a spirit

lamp. If the solution is cloudy, or a deposit is thrown down, the solution is not complete and the wax is adulterated, for spirits of turpentine completely dissolves pure beeswax.

After this test, a piece of the same wax is placed in a test tube half filled with alcohol and brought to the boiling point. Allow it to cool for half an hour and then filter. To the filtered liquid add an equal quantity of water and put in a piece of red litmus test paper that has previously been turned blue by dipping in liquid ammonia and dried between blotting paper. Stir well, and if at the end of a quarter of an hour the liquid remains clear or only slightly opalescent, or if the test paper has not assumed its original red tint, the wax is pure. If the contrary is the case, the wax is undoubtedly adulterated. If the wax resists these tests successfully in the order given above, its purity may be assumed almost with certainty.

—*Beekeeper's Record.*

TESTING WAX.

Three trials are to be made in the following order:

1. Specific weight. A small piece of beeswax known as pure is made into a ball and then put in a mixture of alcohol and water. About one-third alcohol and two-thirds water. Then water is added carefully until the wax barely floats and when pushed down comes up very slowly. A similar piece of the suspected wax is then tried in the same way and if pure should behave in the same way. In making the balls, care should be taken that no air remains inside, and that when in the mixture, their surfaces should be well wetted. This is not enough for the adulterant might have have added something lighter and also something heavier so as to bring the average about right.

2. A small piece of wax is placed in a glass with some essence of turpentine of first quality and purity. The glass is then heated on a small alcohol lamp until the wax is dissolved. If the solution is muddy or not complete, the wax is not pure, as the turpentine dissolves the wax completely.

3. Another piece of the wax to be tried is then placed in a glass with some concentrated pure alcohol and heated until the wax is dissolved. The glass is then set aside to cool for at least half an hour. The liquid is filtered and added to about the same volume of distilled or rain water. A small piece of tournesol paper blued by a little ammonia is then added. The whole is shaken together. After a quarter of an hour the paper should have remained blue. If it becomes red the wax is adulterated. If the color has not changed, the liquid should be filtered, and after filtration the liquid must be clear. The wax that will stand these three tests can be considered as pure as all the known possible adulterations would be revealed either by one or the other.—Le Revue Internationale.

FOUL BROOD LEGISLATION.

Governor Folk, of Missouri, U.S.A., has vetoed the proposed Foul Brood Act in that State. The following is his reply to same:—

To the Secretary of State.—Sir,—I have the honor herewith to transmit to you, without my approval, Senate Bill No. 268, entitled 'An Act to provide for the appointment of a State Inspector of Apiaries, and to regulate the duties thereof, providing a penalty for disposing of diseased honey or bees,' which reached me within the ten days next before the adjournment of the General Assembly.

This Act provides for the appointment of a Bee-Inspector to look after the apiaries of the State. On the first examination, if he thinks the bees are diseased, he is to give the person in charge instructions as to the manner of treating them. Provision is also made for a second examination, and the Inspector may then, if he sees fit, physic the bees himself, or if he thinks best he may destroy them.

This measure illustrates the fallacious idea that the Government can do more for the individual than the individual can do for himself. Anyone intelligent enough to conduct a bee-industry is certainly better qualified to attend to them and manage his own business than any State Inspector could possibly be.

There is no magic in a State Inspectorship of bees, or anything else to cure the ills that may exist. It is said this measure is asked for by the honey-raisers to suppress contagious diseases among bees. But they can, by meeting together and exchanging ideas, do for themselves what the State cannot do through this Bill. If all together they are unable to cope with the situation, how can one of them, named as Inspector, do better?

The principle of the measure is paternalistic, and not in accord with the democratic theory of government. The Inspector is authorised to go to anyone's home, and if he should not like the way the bee-hives are conducted, he could for some real or imaginary disease annihilate the whole brood, leaving the owner without remedy, but for all of which the Inspector would receive 4 dollars a day.

Any Inspector appointed would be only a man, with defects just like other men. He could not have superhuman knowledge of bees or of the bee-business, and could not be expected to accomplish more than the individual beekeeper could do himself.

My opinion is, this question would best be left to the owners of bees and to the bees themselves, who have repeatedly demonstrated their qualities of self-reliance.

Respectfully,

Joseph W. Folk, Governor.

NOT ALL THE TIME.

You can't be happy all the time,
Some gloom must blight your days,
Unhappiness assails you in
A hundred different ways,
The glory of the sunshine fades
When clouds come in between,
And dreary winter steals from earth
Her cheery garb of green.

You can't be happy all the time,
But you can always strive
To keep the tiny, glowing spark
O joyfulness alive—
The sun retains its brilliancy
Behind the screening cloud;
The blade of grass abides its time
To spring up, green and round.

You can't be happy all the time—
Some wretchedness and woe
Will bring you grief and weariness
As through this life you go—
But struggle on and do your best;
The luck will surely turn;
Then let the flame of hope and joy
In all its splendor burn.

- *Grand Rapids Herald.*

To Sharpen the Bingham Knife.—The Bingham Knife is, in my opinion, the very best. I never find it necessary to heat same. Its sharpening was for some time a serious task, but I have now hit upon a good plan. Two grades of emery paper, one coarse and one medium, are required. Sprinkle the former on an ordinary knife-board and rub the under bevel side of knife till is ground even and sharp, then use the medium powder to give a finer edge. After that rub the top side of knife around the edge with a small oil-stone. The touch must be light on the latter. This gives a fine sharp edge. There are several grades of emery powder. I was shown four, No. 1 was very coarse indeed, No. 2 was right, and so was No. 3, while No. 4 was too fine. The ordinary cutler frequently spoils a Bingham Knife, and it takes a lot of rubbing then to got the bevel true, but once it is accurate it is easily kept so. The under edge must be level right to the cutting part, not rounded.—*Irish Bee Journal.*

Please send us names of Bee-keepers who do not get the A. Bee. Bulletin, and we will send them sample copies.

CAUSE OF BEE-PARALYSIS.

Microscopic and bacteriological investigations have shown that bee-paralysis is due to the presence of a bacillus. The expression "a bacillus" does not mean that there is only a single one in each diseased bee, but it means that all are of the same kind. That kind is called *Bacillus Gaytoni*.

What is bacillus, or what are the *bacilli* of different kinds? Bacilli are classified as "plants," though they are not at all like flowers, trees, grass, etc. They are like very small rods. The kind of bacilli, or to use accepted terms, the bacillus that produces foul brood is only one-thousandth of an inch long, and one 40-thousandth of an inch thick; while that producing bee-paralysis is only one 15-thousandth long and one 35-hundredth thick.

When bacilli have attained their full size, they break into two or more pieces. Each piece grows until full size, and breaks also, and so on. This process lasts as long as there is plenty of nourishment and sufficient heat and moisture. When these conditions fail, the rods become spores of a more rounded form. These spores will resist the disinfectants, poisons, and other noxious substances; also the extremes of cold and heat, far better that the rods. They will keep alive without developing for quite a length of time, and then turn into rods when the proper conditions are met with. The body of a larva affected may contain, not thousands, but millions of these rods. When the larva dies they still consume the soft parts and multiply for a while, and then turn into spores, escape, and float in the atmosphere. Some reach the honey and remain there, and likely some are taken in by the bees or brood in the act of respiration, or otherwise.

But here comes the most remarkable part of the programme. These spores, which resist heat, cold, and chemical agents so well, require a certain amount of moisture to keep up their vitality, Dry air does not contain enough. So those of the spores that have not found a safe lodgement in the honey or in the bodies of some larvæ or bees, dry out and lose their vitality in the course of a day or two. And this is a general rule (there are a few exceptions) with all kinds of bacilli. Everyone knows how beneficial sunshine and dry climates are to the sick people.

INFECTION FROM THE QUEEN.

It is an indisputable fact that bee-paralysis may be transmitted by the queen. Probably by laying infected eggs. The malady is very contagious, anyway, and spreads very rapidly from one hive to the others.

Some writers have said that there are two stages, so to speak, of the disease. In the first the disease is about as I described at the beginning of this article. But sometimes a turn for much the worse comes all at once; the bees become shiny rapidly, the work is almost neglected, young bees just emerged, or only two or three days old, are shaking and quivering, and ere long the colony perishes.

When it comes to that point it is probable that the eggs laid by the queen are infected. I don't know whether any microscopical examination to that effect has been made or not. In fact, bee-paralysis has been studied very little yet and much remains to investigate.

I had one case like that once, upon which I tried on experiment. While the colony had reached the worst stage of the disease, it was pretty strong yet. The honey-flow was good, and the temperature sufficiently high. I removed the queen and gave the bees a young laying queen. In due time her progeny hatched out, strong and healthy, or apparently so, and soon after they cleaned out the old bees. Of course, the disease reappeared, but nothing to be compared with what it was while the old queen was there. Evidently the old queen was infected and was laying infected eggs. I did not make a microscopical investigation. I have neither the time, the means, nor the ability necessary for that kind of work.

REMEDIES.

A great many were tried during the years referred to at the beginning of this article. The most popular were re-queening, salted water, and sulphur.

Re-queening is not a cure, but always an improvement, especially if the old queen is more or less diseased already. In any case a young prolific queen would cause an increase of young, comparatively healthy bees, and that of itself would be a considerable improvement.

The other remedies are of but little account at the best. Every few days somebody reports having applied sulphur, salt, or something else, and met with complete success—the shiny bees had completely disappeared. Unfortunately the disease invariably reappeared the following spring. As the old, shiny bees would have disappeared anyway—either died out or been driven out—the conclusion forced itself upon the mind that the remedies used had but little effect at the best.

CAMPHOR.

My bees had the disease from the beginning. It kept on increasing during several years until I finally either had to do something or quit keeping bees. The bacilli are in every part of the bodies of the bees or brood, chiefly in the blood. The spores may be anywhere in the hives, and very likely, like those of the foul brood, in the honey and pollen. Feeding with carbolic or salicylic acid would fail to reach the spores, and perhaps act only in the digestive organs of the bees. Dusting with sulphur or other similar substances would certainly kill whatever spores or bacilli it would reach, but would fail to reach the honey, especially if sealed, or even the blood or other interior organs of the bees. Spraying would not be much better. Fumigating would be the thing; the vapors would penetrate everywhere in the hive, even through the cappings, and through the bodies of the bees also.

This may seem rather "off," but it is not. The bees and other insects breathe through a far more complete apparatus than the higher animals. What we might call their lungs ramify and penetrate everywhere throughout the whole body. Evidently some substance that would evaporate freely would be preferable, as then the fumigating would be done automatically. At last I decided to try my camphor and crude carbolic acid. By that time the winter was at hand. I put a piece of camphor in some hives and a very small dish of carbolic acid in the others. When the spring came a considerable improvement was noticed. The colonies were much stronger, the number of shiny bees very much smaller than ever before. There was but little difference between the two remedies, and what may have been was in favour of the camphor, so I dropped the carbolic acid. Neither one can be used during the summer. The carbolic acid, if given in anything like an effective quantity, is liable to cause the bees to abscond. As to the camphor, they enclose it in an envelope of wax and propolis in less than 24 hours after it is given.

For several years I repeated the treatment every winter with the result that the disease became less and less, and finally disappeared, as far as I could see. Then I discontinued the treatment. But last summer (1904) I saw again a few bees here and there twitching and scratching, showing that the cure had not been complete. The malady might have been re-introduced from abroad. If it was it came through some of the queens I bought, as there are no bees near enough mine to give them the disease. But I rather think that the cure was not complete.

Bee-paralysis is a very erratic disease. Sometimes it appears or disappears, or nearly so, without any cause or reason that can be assigned. And it is possible that the disease decreased of itself, and that the supposed effect of the camphor applied was a mere coincidence.—*American Bee Journal.*

BEE CULTURE IN JAPAN.

By Burton N. Gates.

Japan, of late, has shown marked interest in beekeeping. The industry as practiced formerly by the natives was not particularly profitable, but now measures are being taken to make beekeeping both pleasureable and profitable. The progress of the West is being investigated and patterned after.

In Japan, the centre of this advancement has been Tokio, where a school and association for the promotion of bee culture has been established. In the school girls chiefly are instructed, the purpose being to give to the women a light craft which they can apply while the men are busy with the more laborious work of farming. As an industry in itself, beekeeping is not especially advised.

The association mentioned (probably a part of the school) has been doing great work in promoting the art of beekeeping. A translation of an advertisement reads: "This association is trying to enlist members for the study of apicultural methods as a side business for farmers and women. The course is to be completed in three months. Membership, 1 yen and 20 sen (or 60 cents). Members can study at home; printed lectures by K. Awayagai, assisted by others of practical experience, will be sent out. Members can secure queens at half-price. (Queens kept by the association have been selected and tested for years. They are of good habit and easy to manage). Members can also dispose of their bees, wax and honey, through the association."

We have learned of two works published by this association and written by K. Awayagai. One is entitled "Evening Talks on Bee-culture." The second is "The Honey-Bee," Tokio. First edition in 1896 and third edition in 1899. It is a paper bound, illustrated booklet of 74 pages, selling at 20 sen or 10 cents. (This is quite a contrast to the price of American or English bee-literature.)

From a brief abstract of the work, the author appears well versed in Western methods. While he claims not to translate the work of Western authors, he has evidently followed closely their thought. The illustrations are also Western devices, such as extractors, honey-knives, hives, and so on. In his chapter on diseases, while he does not mention any Western author, the writer shows his familiarity with recent bacteriological and medicinal investigations.

In his preface he says that the book is the result of his personal experience of many years "based on the investigations of others, and supplemented by the theories of Western authorities." The work does not attempt to be exhaustive or technical, but to meet especially the needs of farmers.

In his introduction the writer further says, in substance, "that beekeeping is particularly profitable in Japan because of the many flowers which bloom all the year round. Anywhere ten to twenty hives may be supported; while in the mountains as many as a hundred are of profit. The honey may be used instead of sugar (all of which has to be imported at considerable expense). There need be no anxiety of an over-production of honey in Japan. The market shows considerable demand for honey at an excellent price. (What this is we have no statement). The avenues of use will increase, not decrease."

In brief, the table of contents is:

1. Introduction.
2. Nature of the Honey-bee (characteristics and natural history).
3. Growth and development of the larvæ.
4. The cells; kinds, etc.
5. The swarm.
6. The Bee-yard.
7. The hive.
8. Management.
9. (a) Taking the honey.
   (b) Rendering the wax.
10. Uniting swarms.
11. Queen breeding.

12. Methods of transportation by water and rail.

13. Diseases and enemies.

14. Bees do no harm to plants.

While this Eastern work shows nothing strikingly new, it does indicate that Japan is alert and attempting to keep abreast with the West. If she keeps on in this direction, we may well expect to soon hear of important apiaries in the East; we may expect to look there for advanced ideas.—*American Beekeeper.*

A LADY'S EXPERIENCE.

We live in the heart of the best residence district of a city of about 105,000 people. We have the largest grouuds around, with one exception, and the place has a great deal of fruit of all kinds on it, especially apples. It has been the conundrum of years to keep boys away from apple-trees in the city. Nearly every one has given up in despair, and let the boys have the apples to save the annoyance and bother of being up at 3 a.m. and keeping an uninterrupted vigil all day, only to get up the next morning and find some one has harvested your fruit before you arose by the light of the moon.

We tried keeping a bulldog and various other ways to save the fruit. But the dog was poisoned, and the other ways proved worthless after a trial. All at once one day my eye came across an article about bees in the newspaper, and being always interested in bees through being so fond of the honey, I read the article. It was on the habits of bees and other things that to a beekeeper are so common. But being an uninitiated one at the time, the article looked so wonderful that, on thinking it over, the thought occured to me, why would not the bees keep away the troublesome boys? That was the beginning. In the late summer of 1903 I sent for "A B C of Bee Culture" and studied all winter, and engaged bees for the spring. The result is we have not been bothered at all with boys since one small crowd of boys meddled with the hives by throwing apples at them, and were stung. One boy tells all the rest, and they "stay off." I wonder if anyone else has ever kept bees for this purpose, and if they have been as successful.

Only yesterday the boys were attempting to steal the ripe peaches from our finest tree. It is loaded with fine fruit and away from the bees somewhat. I had a couple of empty hives, and we set those empty hives right under the peach-tree, with harmless but good results. For our own home at least, I seemingly have solved the extremely hard boy problem to my satisfaction.

I have a colony under each tree of the choicest fruit, and the common fear and terror of bees makes other people (as well as boys) keep a safe distance away. —*Extracted.*

Honey as a Curative Agent,

Of ancient physicians who believed in honey as a medicine Æsculapeus, Hippocrates and Galen may be named. Many modern professors of the healing art have a high opinion of its curative efficacy, but its full value is not credited to it in the British Pharmacopæa. Butler (1605), and Purchas, as well as many ancient writers, extolled its virtues as a healing agency. Our modern writers too often neglect this side of the question. They deal with bees and their produce, but fail to say what should be done with honey after it has been secured. This department has been specially neglected, and I think a great deal can be done to dispose of our cheaper produce in the form of honey condiments and sweets or with other ingredients as tempting delicacies for the tea table and the nursery. Looked at as simple cures we have the highest authority for setting it down as an excellent gargle. In the case of a sore throat it has a strong curative power. Perhaps nothing cures chapped hands or chapped lips better than anointing them regularly with honey. Blotches and sores thus treated rapidly disappear. Rough hands are softened by repeated

applications. Chilblains timely treated with honey are soon cured. Only the other day a case came under my observation when an arm was badly burned. It was quickly wrapped in a cloth coated with honey and regularly dressed with the same The cure was quick and effective, and the skin made a rapid recovery. A beekeeper troubled with insomnia rises and takes a good spoonful of honey, which acts as a soothing sedative and aids him in securing the much desired sleep. This is a cure well worth trying and reporting on.

A late physician to the late queen had great faith in honey as an *emollient*, and he strongly recommended it as an application to soften and relax, also as a *demulcent* which would mollify and lessen acrimony--while as an internal application for many purposes it was, he held, the most curative agent possible. He believed in its soothing and smoothing effect on the skin of hands and face. Many ladies have a strong belief in its efficacy used in this way and make a practice of rubbing it on the skin to freshen and soften it; and thereby of course to beautify their complexion. I think if this were more widely known, it would greatly aid the honey market and at the same time prove a boon to many. Let us hear from ladies who look upon honey as a requisite on the toilet table. The ancients believed that the free use of honey tended to prolong life, and consequently they ate extensively of this delicious sweet.

Solomon strongly advised the use of honey—"My son eat thou honey because it is good," and we could produce other quotations from the same book to certify as to its goodness. Mahomet urged its use, and credited it with doing more good, and working more cures than all doctor's doings. A crusade on these lines would do good.—D. M. M., Banff, in *Beekeeper*.

[Honey cures a corpse! It was the chief ingredient in the Egyptian embalming compounds.]

APICULTURAL TERMINOLOGY.

Among European tongues there are practically only two words for "honey" one apparently derived from the old High German "honag," and the other from the Gaelic "Mil"(pron. meel). The Romans probably took their word "mel" from this, or the words had a common origin. The Norman conquest did not succeed in grafting the French word upon the English language. "Honey" did not become "miel" as "calf's flesh" became "veal" and "swine-flesh" "pork" In every tongue the sound "bee" or "pee" more or less modified, occurs in the name of the honey gathering insect. The Swedish "bi," Danish "bie," German "biene," French "abielle," Gaelic "beaca" (pron. beeacha), Spanish "abeja" (pron. abeeacha), Latin "apis" and Italian "pecchia," all contain the sound and proclaim a common origin. The addition of characteristic syllables is of no note. We see the addition of these going on under our eyes in the modification of tongues to suit modern ideas. The Gaels call a "door" "doris," and a "spoon" "spoonig."

We take the Greek "electron" and call it "electricity." Sometimes we make hybrids, going to the Latin for such a word as "typum," which we combine with the Attic "Colos" and produce the word "colotype."

It is when we come to the home of "Apis Mellifica" that we find variety and obtain abundant material for speculation. Here also we can obtain least assistance from lexicographers. Some of the names are the following.:

English	..	Hive
Gaelic	..	Sgeap or Skep
North Scottish		Ruskie
French	..	Ruche
Swedo-Gothic		Rusk
German	..	Stock or Stande
Norwegian		Bikubl

The English word hive appears to have been taken from the same source as a similar word used in Iceland. The name of this country, by the way, is spel

"Island" by the natives. There is in general use, applied to a skin eruption, the word "hives." Could it be possible that straw skeps studded over a garden suggested pimples? "Hive" is used in Scotland to indicate a harbour or sheltered bay, and there are many places whose names terminate as with "haven" which are locally referred to as "hive." For instance, Stonehaven in Kincardineshire is to the native "Steenhive." An extension of the bee-hive idea also occurs in Scotland when a man in easy circumstances is described as a "hivie" man. Skep seems originally to have been a vessel made of twisted straw, used for many domestic purposes, such as carrying corn, and at one time it was of a specific size, and was used as a measure.

It fell into disuse generally as more suitable appliances were devised, but long held its own for the housing of bees, chiefly on account of its cheapness and non-temperature conducting qualities. It is now condemned as a home for bees, its almost only remaining use among the up-to-date bee-keepers being to bring back vagrant swarms for which purpose every bee-keeper has among his appliances one or two of these venerable articles. With the gradual extension of the non-swarming system of bee-keeping under which increase of colonies is obtained by dividing them, this use bids fair to disappear also. It is to be noted that the basket in which a broad-cast sower carries his seed is simply a modified skep. Sometimes skeps were made of rushes, and this suggests an explanation of the terms "ruskie," "rusk," and "ruche" mentioned above, although the geographical distribution is curious. However, it is quite common to meet words of Norwegian, Swedish and Danish origin in use in the North of Scotland, and as regards France it is only to be remarked that drivers both in France and Scandinavia speak the same language to their horses, ssshhh meaning go on, and rrrrrr, stop. The German "stock," which means a stick, simply relates to the not yet extinct custom of the country to obtain its bee-hive by bringing home and establishing in the garden a section of the trunk from a hollow tree containing bees. The other word "Stande" is synonymous with the English word "stand" or "location." Indeed the Americans use the expression "bee-stand."

Strange to say the author of the proposed universal language, "Volapuk," omitted altogether from his vocabulary the words "hive," "skep," and "honey' For "bee" he proposed "bien" (pron. been), a distinctly retrograde suggestion. —*Beekeeper.*

Pa and Ma and the Bees.

BY A. J. WATERHOUSE, IN SUNSET MAGAZINE.

The man that bought the hive of bees firs' set
them by the path
[Oh, the bees were full of vigour, and were also
full of wrath],
An' he said: "It might be better to leave 'em
like as not.
Till I hear from Mr. Perkins where he'd like
to have 'em sot;"

An' 'bout that time my ma came out dressed in
her Sunday best,
An' she tumbled o'er that beehive, an'—I hate
to tell the rest;
For we all got mixed up in it, and the atmosphere was shot
With bees an' language of my pa, an' both of
them was hot.

Ma turned to speak to Susan: "What ever may
occur—"
Then she tumbled o'er the beehive, and it
tumbled over her;
An' it seems to me I hear it yet, her piercin',
curdlin' yell
When the bees came out to greet her an' they
fired their shot an' shell;

An' they prodded with their lances, and they
stung her with their darts,
On her face an' on her shoulder an' her hands
an' other parts;
An' ma kep' on a-yellin' till I thought my
blood would freeze;
Then pa came round the corner to see what
ailed the bees.

Well, he found out middlin' sudden, for the
biggest of the hive
Firs' landed on his eyebrow, an' my pa said
"man alive!"
Then they peppered him all over, an' settled in
his hair,

An' his l nguage was disgraceful—it was different from a prayer.

Then my ma an' pa, united, rolled together on the walk,
An' her shrieks, thou rather movin', wasn't touchin' as his talk,
While the bees kept stingin', stingin' just as they meant to say :
" You will kindly please to notice that this here's our busy day !"

We turned the fire hose on them, an' pa remarked ;
" It's nice,
But I think it would be better if you'd pack us both in ice,
For them bees, I want to mention, lest you make a grave mistake,
Is the hottest little insec's this side of brimstone lake ;"

An' six days later, when they both had convalesced somewhat,
Said pa : " This weather's warmish, but there's only bees that's hot ;"
An' then he turned to me an' said: "To prove our gratitood,
We'll give them bees unto the poor, twill save 'em coal an' wood."

Western Bee Journal.

CAPPINGS.

A Mr. Pritchard, in America, showed a visitor a frame containing what appeared to be laying-worker drone brood. He then showed him a queen-cell that actually contained nine big fat grubs, presumably all of them drone larvæ. He opened up other queen-cells, and found from three to five larvæ in each.

A CHEAP PRESS FOR A SMALL AMOUNT OF WAX.—For those who have but a small amount of wax each year the simplest way to handle it is to make a strainer and press combined. To do this, take a comb honey super and fasten a wire screen over the bottom; and to strengthen it use several pieces of heavy wire. Telegraph wire is about the right size. Now take a piece of plank ; cut it to fit inside of super. With an inch auger bore a hole in the centre of it, and into this hole fasten a pole two or three feet long. You are now ready for business. Put your strainer over a tub. When you have accumulated two or three quarts of slumgum in the strainer make use of the plunger. To get out the last of the wax you will have to stand on the plunger with both feet. Take hold of the pole and rack it back and forth. In this way you can get just about all of the wax, although sometimes it is best to dump the slumgum back and cook and press it a second time. Another thing is to have a hole near the bottom of your tub with a plug in it. This is to let the water off from the bottom. By so doing the size of your cakes of wax is limited only by the size of the tub.

TO GET CAKES OF WAX WITHOUT CRACKS. —The way to get large cakes of wax, and have them free from cracks, is to have the wax all cool at the same time. The only practical way to do this is to dip the wax from one tub into another. If a little care is used in doing this, perfect cakes of wax can be obtained up to almost any size.—*Exchange.*

Some persons say that bees don't like to see daylight through the top of the hive. The belief is based chiefly upon the behaviour of the bees themselves. I have observed, in the first place, that both natural and " shook " swarms frequently, if not generally, abscond if placed in hives with large openings at the top. In the second place, if the openings are not so large as to prevent it the bees will seal every thing up tight with propolis. An opening above is apt to admit rain and sunshine, both detrimental to the welfare of the colony. It is, however, not so much a question of daylight as it is of maintaining a certain nearly constant temperature necessary for comb-building and for the rearing of brood. This temperature with, in the brood-nest, Mr. Doolittle tells us is between 92 and 98°. The temperature outside, during the latter part of the night, is, even in summer, quite cold—colder than most people are aware of, and the warm air within the hive, being lighter, rises and passes off more readily than in a hive open only at the bottom. If open at both top and bottom, it is still more difficult to maintain a constant temperature, as there will be a draught through the hive, increasing with the

lowering of the temperature outside, and decreasing in the daytime as the temperature approaches that within.--*Gleanings.*

They had but the one colony in an old box hive, and the girls said laughingly they were very choice expensive bees. The mother has six or seven grown-up children, and the girls said mother got each of them to give her a dollar to get the bees with. The colony cost but one dollar, yet mother got at least six dollars to buy them; and yet people prate of "foxy grandpa."—*Exchange.*

According to the theory of parthenogenesis, which is now very well established, drones are of the same race as the queen which lays the egg; therefore, if an Italian queen is mated to a black drone all the drones from this queen are pure Italians. If from this queen a second queen is reared she will be half Italian and half black. According to this theory, then, the drones from the second queen will be half Italian and half black, and not, as you suppose, pure Italian. For the third generation the queen would be one-fourth Italian and three-fourths black, and her drones would be a blend of these two races in the same proportions.

Bees in an observatory hive, within 300 yards of the London Docks, made, filled and sealed 7 sections of honey, besides feeding themselves, last summer. They were not artificially fed at all. They got their food largely from the sugar ships which happened to come into dock, and from the jam factories.

Bees of all creatures, love cleanliness and peace. Therefore, handle them leisurely and quietly.

Man, Woman, and Two Horses Killed by Bees.—It is reported that Makranzki, a farmer of Budapest, with his wife have been killed, together with two horses whom the farmer permitted to wander with a cart through his apiary. Eight hives were knocked over, after which the bees sallied forth.—*Irish Bee Journal.*

Wax boiled several times in salt water is said to render it beautifully clear.

The government statistics given in France for 1903 show 1,793,205 colonies. The honey produced was 9,123,347 kilos, and the wax production 1,815,999 kilos. (Fives kilos are equal to about eleven American pounds.)—L'Apiculture.

A German Beekeeper in Neuschleibach, Germany, had the misfortune to fall from a ladder which he had ascended to get a swarm. Immediately under him was a picket fence on which he fell, literally impaling himself through the abdomen. He soon died in great agony.

Considerable honey is produced in Europe. According to *Handels Museum* the annual crop from that continent, leaving out Italy, is as follows, together with the number of colonies kept. I rather suspect that European statistics are far more reliable than those obtained in the United States. The figures stand: Germany leads off with 1,910,000 colonnies and 20,000 tons of honey; Spain has 1,690,000 colonies and 19,000 tons; Austria, 1,550,000 colonies and 18,000 tons; France, 950,000 colonies and 10 000 tons; Holland, 240,000 and 2500 tons; Belgium, 200,000 colonies and 2000 tons; Greece, 30,000 colonies and 1400 tons; Russia, 110,000 colonies and 900 tons; Denmark, 90,000 colonies and 900 tons.— *Gleanings.*

Some time ago Dr. Miller, in *American Bee Journal*, mentioned the comb foundation with a tinfoil base sent out by Schulze, a noted German foundation manufacturer. Knack says in Ill. Bztg., that bee-keepers in Germany have not found foundation with mental base a success, but asserts that Schulze's foundation with veneer base, is quickly accepted by the bees and that the queen does not hesitate to fill combs of that kind with eggs, although the so constructed combs have flat-bottom cells.

A smoke of cow dung much delighteth and comforteth bees. The keeper of bees ought to be---(1) Eschew all smelling savours, (2) be chaste of body, (3) be free from filthiness, (4) not breathing stinking breath, (5) nor sweating, (6) please the bees with a more gentle manner.---*Hyll* (but quoted from several ancient authorities).

PRICES CF HONEY.

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

Melbourne Leader.—Honey, Prime clear garden honey is selling at up 3d., medium and cloudy lots going at from 2d to 2¾d. Beeswax—Prime samples are quoted at from 1/1 to 1/1½, down to 1/- being accepted for more or less discolored lines.

Melbourne Australasian.—Honey. Prime clear in good demand at 3d., medium, 2½d to 2¾d; inferior lower.

S. M. Herald.—Honey, 60lb tins, choice extracted 3½d, good 3d to 3¼d, candied 2¼d to 2¾d 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 1⅞d to 2¼d per lb.

BEESWAX.—

In good demand, selling freely at 1/1 to 1/2 per lb.

THE EVERLASTING MEMORIAL.

Up and away like the dew of the morning
That soars from the earth to its home in the sun,
So let me steal away, gently and lovingly
Only remembered by what I have done.

My name and my place and my tomb all forgotten,
The brief race of time well and patiently run,
So let me pass away, peacefully, silently,
Only remembered by what I have done.

Gladly away from this toil would I hasten
Up to the crown that for me has been won
Unthought of by man in rewards or in praises,
Only remembered by what I have done

Yes, like the fragrance that wanders in darkness,
When the flowers that it came from are closed up and gone,
So would I be to this world's weary dwellers,
Only remembered by what I have done.

Needs there the praise of the love-written record,
The name and the epitaph graved on the stone?
The things we have lived for, let them be our story,
We ourselves but remembered by what we have done.

I need not be missed if my life has been bearing
(As its summer and autumn move silently on)
The bl om and the fruit and the seed of its season;
I shall still be remembered by what I have done.

I need not be missed if another succeed me
To reap down those fields which in spring I have sown;
He who ploughed and who sowed is not missed by the reaper—
He is only remembered by what he has done.

Not myself, but the truth that in life I have spoken,
Not myself, but the seed that in life I have sown,
Shall pass on to ages, all about me forgotten,
Save the truth I have spoken—the things I have done.

So let my living be, so be my dying;
So let my name be emblazoned, unknown
Unpraised and unmissed, I shall still be remembered—
Yes, but remembered by what I have done.

CORRESPONDENCE.

F. J., North Coast Line, Q.—I am young and never had bees, and will you kindly let me know how to get them and manage them. I have seen three swarms lately, but did not know how to get them.

[As you are living in Queensland, your best place is to communicate with Mr. H. L. Jones, of Goodna.]

F. H., Glenorchy, Vic.—It being the off year with us, things are pretty slack; but the bees have done fairly well after the cold winter we have passed through.

J. J. P., Gosford.—Bees doing fairly well, considering the dry, cold winter and late spring. The most of my neighbours that kept a few hives lost every one this winter, but I have only lost three hives up to now. My bees swarmed well this season for the dry spell. We will have all bees this year and not much of a surplus. I had a great crop last year and left a good super on before going into winter quarters. I have, at present, a good demand for honey, and was fortunate to have some good stuff stowed away. Wishing you a merry Christmas and a Prosperous New Year.

B. D., jun., Rosedale, Vic.—Will you please cease sending me the A. B. Bulletin, as I have decided not to subscribe any longer. I regret giving it up, but beekeeping seems to be on the down

grade of late, and I must direct my energies into some other channel. I have had two poor seasons in succession, and the prospect for this is even worse than the former years. I don't intend to abandon beekeeping altogether, so if it again wears a brighter outlook I might be pleased to renew my acquaintance with your valuable little journal. With best wishes.

R. S., Parkes—We have had about three weeks' very bleak weather here lately, and it has had a bad effect on the bees. Spring is much later than was expected, and the season is not likely to be up to the prospective expectations. Wishing you a good season, and honey easy to quit. Has any reader grown Mignonette on a large scale, say 1 acre, and with what result, also method of culture adopted?

W. H., Dunolly, Victoria.—I feel that you are on the right track in checking the tendency to boom bee-keeping business. The Associations, which should be protective, has, to some extent, been destructive, in that it has degenerated into a mere advertising agency. The objection appears to be to obtain numbers. But numbers are not always a source of strength. In this case it is a sign of weakness, as indicated by the market prices and unsaleableness of honey. But some do well. Yes, but such isolated instances are always held up to public view. They are the allurements from which eminate the chargin and sting of disappointment to the uninitiated who embark with the hope of doing likewise. I have a few boxes, but have not joined the Association, as the good they may do always appeared to be neutralized by its stimulating over-production, and, so far as Australia is concerned, production should be governed by consumption, as no payable outlet has yet been found.

C. Y., Mt. Keira - Things have not been very bright in the beekeeping line of late down this way, but I hope that they will take a turn for the better after Christmas.

H. R., Wilmington, S.A.—There was very little bloom out this year. All the country around is rung for miles, and they are still at it. And though there are few bees about here now, honey is still 2½d.

J. C., Bulli.—Enclosed you will find my subscription for A.B.B., which I find very interesting and valuable to beekeepers. I am sorry to see that you are having such a bad time with your bees up north. We have had very little honey the last two years, this year proving a little better. The bees have just started on a flow from the Mountain Brush, which will last about three weeks, and then they will commence a flow from Blackbutt and Willybutt, which is heavy in bud this year. I have 40 colonies in good condition, only having two swarms off for this spring. I find that the best method of keeping them from swarming is to give them plenty of room. Hoping to hear better news from your district next month, and wishing you a very Merry Christmas.

CAPPINGS.

"Tanging" Bees.—Perhaps the following extract from a letter written in Angola, Portuguese West Africa, may interest some of your readers, as bearing on the subject of "tanging" bees. We are told that it is an old wives' fable to suppose that it has anything to do with making the bees settle, and is in reality the survival of an ancient custom to inform the neighbours that there is a swarm on the wing; but this is what the natives of Central Africa are doing to this day:—"A number of swarms of bees are overhead to-day. Their hum can be heard a long distance. The natives have hives ready placed in the topmost branches of prominent trees, and try to attract the swarms to them by firing guns, beating drums, and yelling. Distant fusillades are echoing on all sides, and I have no doubt the swarms are responsible for them."—*British Bee Journal.*

Bees in England.—In our progress through the British Isles (and I have been in all three) I have been surprised to note the striking absence of large apiaries. While I have seen the few colonies scattered very widely, I have yet to see a large apiary, such as so frequently gladdens the eye of the traveller along the foot-hills of California. Indeed, I am told that there is but one person in all the British Isles who relies upon his bees for his livlihood. Usually the bees are kept simply to help out. One, if not the largest beekeeper, whose honey is put up in very fancy shape, each section glassed on both sides, and the glass bordered with fancy scalloped paper, has a good business aside from his bees. From my observation I believe beekeeping here to be a much more precarious occupation than in the United States. A bountiful honey crop comes only from abundant nectar secretion; and it has been fully demonstrated that rather dry hot weather not only favours the flight of the bees, but also conduces to a honey flow. The cool moist climate of the British Isles is inimical to both, and thus we may readily believe, as I am assured by beekeepers here, that Britain can never be an ideal locality for bees. It lacks the favouring dry hot climate of Arizona, Colorado, Nevada, and Southern California.—Professor Cook in *Gleanings*.

The natural way in which a swallow catches insects in the air is to fly with its mouth open, and when a fly is once inside, it cannot escape because of the bird's mouth being lined with a sticky, adhesive substance on which the flies are held exactly as on a "fly-paper." A beekeeper shot several swallows one year, and the insides of their mouths were covered with small flies and other tiny insects.

Washing hands between visiting each hive, and then crushing drones of the next hive and rubbing the drone juice on your hands, so as to give them the odour of that hive, is said to be a good way of avoiding stings.

Honey Ointment for Sores.—Honey and flour mixed to the extent of half the quantity of honey with water, is stirred into a stiff mass. Linseed oil and the yolk of an egg to be added in order to give the same a tenacious tendency.

A Legend of Ireland Bee-Keeping.—In the far gone-by centuries our forefathers and the Bretons were closely connected together, as they were converted to the Christian Faith by the Breton Monks—colleagues and successors of St. Patrick. But, perhaps, some beekeepers are not aware how much they are indebted to a Breton monk if the following gracious incident be true. It is related that a disciple of St. David, called Modonnoc, sailed for Ireland towards the end of his life, and that all the bees of his monastery followed him. He returned with the ship on which the bees had settled, and tried three times to get rid of them. But all his efforts were of no avail, and he resigned himself to take them with him to Ireland, where no bees had been until then. The legend adds that he was a successful beekeeper, and that he liberally distributed his honey to the poor around him.— *Irish Bee Journal*.

A good freckle cure is the following: Eight ounces of extracted honey, 2 ounces of glycerine, 2 ounces of alcohol, 6 drams of citric acid, 15 drops of the essence of ambergris.—'The Woman Beautiful," in Chicago Record-Herald.

In all cooking, honey may be used in place of sugar, only keeping in mind that less moisture must be used with honey than with sugar.

Smoker Fuel.—Put ½ oz. saltpetre in a quart of warm water; after it is dissolved, dip your cotton rags into the solution, wring out, and dry thoroughly. This fuel will burn till all is consumed. Another plan is to sprinkle a pinch of powdered nitre on the piece of rag, then roll up and light. Brown paper may be treated the same, and, when dried, gives forth volumes of smoke.

At a conference of county representatives of the British Beekeepers' Association, held in London on 5th October, the chairman said the division of opinion among county councils was about equal regarding the desirability of obtaining foul brood legislation. Then, the opinions of the largest beekeepers were adverse to any statutory enactment, as they resented all interferance, and such fact must weigh in the end. He did not think any useful purpose would be served by any further attempt to push a bill of the kind.

The general verdict of the masses about the utility of the goldens as compared with the leather-coloured or the three-banded, seems to be about equally divided. The goldens having Cyprian blood in them are very vindictive, and for this reason many are opposed to them; but the queen-breeder has more calls for the goldens than for anything else, and that in spite of the desire on the part of some to make it appear that the three-banders are the best of all bees.—*Doolittle.*

Clothespins are the handiest things to use as marks to warn you that that hive wants looking after. Why use brick when it is so much cheaper and easier to take a few clothespins with you? To use them you want to cut off one of the prongs so it will drive into the edge of the cover and stay up. If you paint them some bright colours, say, red, white, blue, black, or yellow, you can use them for different purposes. For instance, a white one could be used for the queen. You want to clip your queens. Now, as fast as you find one and have her clipped, use a pin to note it; and if you don't happen to find your queen, leave your pin off and you will then know that that hive wants looking at again. Different positions will also help in indicating the condition of a colony.

It is generally stated that bees will gather more honey with drawn combs than with foundation and drawn combs, although there are conditions when foundation may be given with practically no loss. It is a mooted question whether bees secrete wax when they do not need it; but I think the best authorities are of the opinion that, when there is no comb-building there is no waste of wax scales. In fact, none are secreted in the first place. If this is true, then drawn combs would enable the bees to furnish actually more extracted honey than frames containing merely foundation. As a matter of fact, more extracted is actually produced in the generality of cases when drawn combs are used. This would be a proper subject for the experiment stations, and I here offer the suggestion that the general government have this matter tested.

There is no royal road to finding a queen, and practice is what the novice needs. It becomes, in general, a simple process—although at times some queens, especially young ones, prove very elusive, and are really adepts at the art of hide and seek.

So far as reported, all attempts in the past to colonize bumble bees have been unsuccessful, and it is doubtful that much can be done in that direction in the future. Their habits are quite unlike those of the hive-bee. A single female or queen starts out in business in the spring all by herself. Some of her progeny come to her aid, but a nest of bumble-bees remains always a diminutive affair compared with the thousands in a hive of our honey-bees. There are no combs made of wax, larvæ and honey alike being contained in cups formed in the pollen-mass, so movable combs are not likely to be viewed by them with favour.

Beeswax is a little like iron; you can cast iron and make it malleable, and it is the same way with beeswax. Pour beeswax into a mould and the cake will be brittle. It will break readily and you can't stretch it. But put that cake of beeswax under the roller and it will become malleable; that is, warm it to a certain temperature. There are a good many points concerning beeswax that it

is impossible for the general public to know. In regard to the adulteration of beeswax with tallow, it may be well to inform you as to the way of detecting tallow. It is very easily detected; it makes the beeswax softer, and when you have a cake which you suspect of having tallow at the ordinary temperature, run your finger-nail over the cake. If it is pure beeswax it will make ripples in the cake; if it is tallow it will make a dull-looking streak in the cake.—*Dadant.*

How can I line bees out in the woods? Answer.—Set your bait and watch the direction the bees go when they leave it. Then move your bait in that direction and try again. Keep on till you find that the bees go back in the opposite direction, and then you'll know you've passed the right place, and you can bait back nearer to it, all the while keeping a close watch on the trees to see or hear the bees flying in or out. Another way is to cross-line. After watching the direction the bees take, instead of moving directly in that line, move at right angles to it and watch the line the bees make. Now guess about where the point would be where these two lines cross, and try accordingly.—*American Bee Journal.*

Boys in knee-pants and black stockings have been noticed to be more often stung on the legs when walking through the apiary than were bare-footed boys, or when shoes were worn without stockings to protect the legs.

An apiary was fenced in with poultry netting, and several broods of little chickens turned in. It was found that the little white chickens could run about without being molested, rarely, if ever, by the bees. Brown leghorns were not taken much notice of, but coal-black chicks were often stung to death.

Russia seems to have the best future before it for honey of any country in Europe or Asia. In the southern half of Siberia, that vast land of camels and icebergs, oranges and frozen oceans, there are plains of flowers as unlimited, apparently, as the sea, and quite good honey-yielders, too, that are never trodden by human foot, except in the roads through those vast fields. With the freedom for development we have here in America, Russia could put enough honey on the market to surprise the whole of us. —*Gleanings.*

The Indigestibility of wax is often mentioned in print, and in a way that is far from beneficial to bee-keeping. It is true that wax is indigestible, but its consumption when eating comb honey is far from harmful—in fact, it is really beneficial. It is in the shape of delicate flakes, and when brought to the temperature of the body is very soft and smooth—would not injure or irritate the most delicate membrance. We cannot thrive upon a too concentrated food. The horse must have hay as well as oats. The human must have something to give bulk to the food, and also a porosity that will allow the gastric juice to come in contact with the bulk of the food. The flakes of wax help to hold apart the particles of biscuit, and make passages for the gastric juice. It may be all right to argue in favor of extracted honey, if that is your belief, but don't talk about the indigestibility of wax as though it were something undesirable.—*Beekeepers' Review.*

How to make honey and sugar thick for feeding.—Take good, thick honey and heat (not boil) it until becomes very thin, and then stir it into pulverised sugar. After stirring in all the honey the sugar will absorb, take it out of the utensil in which it is mixed, and thoroughly knead it with the hands. The kneading will make it more pliable and soft, so that it will absorb or take up more sugar. For summer use it should be worked, mixing in a little more sugar until the dough is so stiff as not to work readily, and it should then be allowed to stand for a day or two; and if still so soft as to run, a little more sugar should be kneaded in. A good deal will depend upon the season of the year — there should be more sugar in proportion to the honey in warm weather than in cool weather.—*Exchange.*