The Australian bee bulletin. Vol. 13, no. 3 June 18, 1904

West Maitland, N.S.W.: E. Tipper, June 18, 1904

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

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. 13. No 3. JUNE 18, 1904. PER COPY, 6D.
Per Annum 5s, booked 6s 6d, in Australasia, outside N.S.W., add 6d. postage

N. S. W. BEE-FARMERS' ASSOCIATION.

OFFICERS :—

President :
HASSELL HALL, M. A.

Vice-Presidents :
F. W. PENBERTHY, T. BRADLEY.
J. F. DONNELLY.

Secretary & Treasurer.
E. TIPPER, J.P., WILLOW TREE.

Committee :

MESSRS. E. J. RIEN, J. PENNINGTON, F. BOLTON, J. R. W. GAGGIN, E. DOWLING, J. R. IRVINE, J. ANDERSON, W GEE, P. RIDDELL, W. E. BAGOT, W. NIVEN, — BUSHELL, W. AGER, LATIMORE, HEWITT.

RULES & OBJECTS.

1. The careful watching of the interests of the industry.
2. To arrange for combined action in exporting honey to relieve local glut when necessary.
3. To advise members as to suitable localities for establishing apiaries.
4. Any beekeeper can become a member on approval of committee, subscription 2/6 per annum.
5. That every member with more than 50 hives shall be allowed an extra vote for every additional 50 effective hives.
6. No member be eligible for office who has less than 50 effective hives, or his subscription is in arrear.
7. The Association to consist of a central body and district branches affiliated with it.
8. The principal officers be such as will undertake to meet each other in committee at least once in twelve months.
9. The officers shall consist of President, Vice-President, Treasurer and Secretary, and Executive Committee.
10. After the first election of officers, arrangements to be made by the Secretary to call for nominations for office-bearers, and issue ballot papers prior to the next annual meeting.
11. Supply dealers or commission agents cannot become members.
12. Members unable to attend meetings or conventions can authorise or nominate any member they know will be present to vote for them on any subject brought forward. Such vote or votes to be in addition to the member's present own vote.

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

Registered at the General Post Office Sydney for Transmission through post as a Newspaper.

THE AUSTRALIAN BEE BULLETIN

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

MAITLAND, N.S.W.— JUNE 18, 1904.

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

Supply Dealers.

R. K. Allport, 4 O'Connell St., Sydney.

A. Hordern & Sons, Haymarket, Sydney.

The W. T. Falconer Manufacturing Co., Jamestown, N.Y., U.S.A.

Queen Raisers.

W. Abram, Beecroft.

H. L. Jones, Goodna, Queensland.

E. T. Penglase, Fernbank P.O., Gippsland, Victoria.

T. Bolton, Dunkeld, Victoria.

R. H. Jervis, Moss Vale.

Honey Tins.

Chown Bros. and Mullholland, Ltd., Thomas St., Ultimo, Sydney.

Miscellaneous.

A. Hordern & Sons, Haymarket only, Sydney.

P. J. Moy & Co., 161 Sussex St, Sydney.

Corney & Co, 55 Clarence-St., Sydney.

H. Prescott & Co., 336 & 338 Sussex-St, Sydney.

WORK FOR THE MONTH.

Buy, make, or repair hives.

Clip queens wings.

If a winter flow either extract on warm days, or give room for queen to lay, lest when the spring and summer comes there will not be bees to gather honey.

Disturb propolis as little as possible. Bees use it a great deal to regulate their temperature.

If there is no flow on, contract entrances, see there is food in the hive. We feed with sugar syrup mixed with a little honey. During the day time mark hives that need feeding, leave space for frame. Just before sundown, pour syrup (warm) on spare combs, from a height of a foot or two, and quickly drop into spare space in hives, immediately putting on cloth and cover. A milk dish is handy for putting frame whilst being filled. Sugar syrup may be made as follows - Use the best grade of granulated sugar, two parts to one of water by weight. The water should first be brought to a boil, then the pan or vessel set back on the stove so that the boiling will not continue, but the water be kept sufficiently hot to dissolve all the sugar. The sugar should be poured in slowly and thoroughly stirred until all is dissolved. The syrup should then be fed in a lukewarm condition.

Candied honey is made as follows: Take good, thick honey and heat (not boil) it until it becomes very thin, then stir in fine granulated sugar. After stirring in all the sugar the honey will absorb, take it out of the utensils in which it has been mixed, and thoroughly knead it with the hands. The kneading

makes it more pliable and soft, so that it absorbs, or rather takes up, more sugar. The kneading operation, with the adding of fine sugar, should be continued until the dough is so stiff as to be quite hard to work. It should then be allowed to stand for a day or two, and if at the end of that time it is so soft as to run, or to be sticky, a little more sugar should be kneaded in. It should be cut into convenient sized cakes and placed on top of the frames in such a way that the bees can get at it easily.

Orange trees grow wild in Paraguay, in great abundance, in many parts the commonest wild tree.

One of the finest honey confection is solid candied honey, cut into cubes about an inch square, dipped into hot chocolate.

A Melbourne (Victorian) correspondent says :—The demand for honey at present is very limited with large stocks of Victorian on hand, independent of those received from other States.

Publications Received. — "The Poultry Guide," Brisbane. Well got up and advertised. "Holland Abroad," supplement to the "Algemeen Nedenlandech Exportblad."

Carbon bisulphate destroys eggs as well as larvae, an advantage over sulphur, and does not discolour white comb, as sulphur sometimes does. It is not poisonous to man, unless breathed in comparatively large quantities.

A Dungog correspondent remarks, on the low price of honey people are selling their honey at there. It is a shame, the thoughtlessness of some people, at the injury they inflict on other people by such.

Artists are occasionally a little astray in their knowledge of the insects world. We have lately received a copy of a pamphlet published by a patent medicine vendor, the frontispiece being a bull-dog running away from a bee, the bee vigorously *biting* him on the hind quarters.

FOUL BROOD.

Experience teaches us that foul brood is easily produced in those colonies, where there is poor ventilation. Honey is the only food for bees, sugar, containing hardly any albumen, will not have the desired effect. Whoever had the opportunity to see how bees prefer honey when sugar is set next to it; whoever has not observed, that in spring the swarms fed in winter with honey are in advance of those raised on sugar, will have to learn from physiology, that the development of all animals and formation of nitrogenous organic substances depends on the albumen in the food; hence the energetic active spirit of the bees depends on their food. This shows, that the bees need honey and pollen in order to be able to take up the fight against foul brood. What has a colony of bees got to nourish its brood in spring, with a solution of sugar which contains scarcely any albumen? Nothing, not even what they need to keep up the energetic spirit to throw out the dead larvae and nymphs. How valuable the albumen is in the food, we can readily observe in the wild animals. Without albumen where would their energetic spirit be? A foul brood colony never shows life. Pollen is the food for bees, which contains the most albumen. What pollen amounts to we can learn from the Heide bee-keepers. Mr Lehrzen, of Lueneburg, writes: The bee-keepers claim that if the bees are left in one place for three years, they will all be infected with foul brood, caused as the bee-keepers claim, by the lack of pollen until late in the season. This also shows, that the originator of foul brood must be widely diffused, for if foul brood appears in consequence of missing pollen, the foul brood bacteria must be very plentiful. When pollen is missing the bees will keep themselves for some-time as the honey contains about from 1 to 3 per cent. of albumen. The most of this in digested form called peptone, which does not melt on cooking. The presence of peptone in honey I have found on analysis. Out of the salivary glands, the

peptone is more or less transformed into a sugar solution, but in quantities too small. Often the queen is at fault, that the colony becomes sick, if she produces more or less degenerated bees. Degeneration shows itself on the creatures by organic defects, insufficient development, small resistability against contagious diseases, short life, especially by laziness and lack of energy. The degeneration is a consequence of abnormal conditions, especially copulation of near relation. Look for good ventilation, good food for fresh blood and for queens not related to your stock.

Other precautions for the prevention of the malady, which, however, are of secondary importance, must be taken into consideration. Under all circumstances keep away contagious combs and honey as much as possible. When buying honey for feeding, we should be very careful to place no foul brood combs into healthy colonies; watch the brood cells at all times, in order to detect the presence of the disease in the beginning. Disinfect all used hives which come from other apiaries, fumigate them with formaline. All bacillus and spores are positively killed by the formaldehyde fumes under the following conditions: They must be so exposed that the fumes can come in contact with them, they may only be covered with thin materials, for instance, paper, one cubimeter of air must at least contain eight grains of formaldehyde, the air of the respective department must be very moist and warm and the fumigation must be continued for at least seven hours.

Formaldehyde is highly recommended, because it leaves no odor or residue in the hives or combs. For fumigation, pastilles in a retorte may be used, the fumes out of the retorte to be led into the hive, into which a vessel with boiling water had been previously placed. After ten hours all foul brood, bacillus and spores will be dead. Or, the lamp, which I described about a year ago, may be used.

A 40 per cent. solution of formaldehyde is called formaline. One pastille produces one grain formaldehyde. First, it acts as formaldehyde, then as formic acid into which it was transformed by oxydation. C. H.2O (formaldehyde x 2O (oxygen) – C H.2O formic acid). Formaldehyde readily oxydizes into formic acid in the air. It is not impossible that the escaping formic acid, which is generated in the brood cells, originates from formaldehyde. It is not interesting to know that science has found the way of Nature and that the antiseptics we now use and which are acknowledged to be the best are the same, which Nature has forever used in the bee hive? We no longer place all our hopes upon the application of one remedy, but rather upon the colony itself, upon the conditions prevailing in the hives, upon the conditions of the colony, so that it is able to produce the substance which it needs for the prevention of the evil, upon the energetic spirit which will make the bees throw out the dead larvae and nymphs.

The strength of the colony which has to be treated must be taken into consideration. When the disease is noticed in a weak colony, I would not try to to cure it, but would unite it with another one of the same condition, as the value of time thus employed would repay the trouble. The sickness passes through various stages, we may therefore make two divisions, calling the one the first or harmless stage, and when it is further advanced, the second or dangerous stage. A strong colony throws out the nymphs and larvae when dead at once and cannot become foul broody.

If the colony suffers, however, under the depression of unhealthy conditions by not having enough supply of healthy food or from exposure to the cold, or from overheating, then we notice dullness and laziness on the part of the bees and they no longer throw the dead larvae and nymphs out of the cells. These suffering bees may make an attempt to do so, or may gnaw at the dead larvae and nymphs, removing the cappings of the cells in which they had died two days after being capped. In such combs, we see uncapped cells among the perfectly capped brood, these uncapped cells contain white and

brownish nymphs which had died two days after being capped. This can be seen plainly on the pointed head. Such a colony, which has uncapped foul brood cells, suffers from the harmless stage. If the bees notice the foul brood, they gnaw the larvae, nymphs and cappings, but cannot resolve to clean the cells. If, however, better weather and food sets in, they often wake to new life; they clean the cells and by so doing destroy the harmless foul brood. The same result may also be obtained by artificial means. If such a colony, where there is no flow of honey, be daily supplied with prepared honey pollen, at the same time placing a piece of blotting paper, on which from 40 to 50 drops of Ajowan oil, rosemary oil, melissen oil, or anis oil had been poured, on the bottom board of the hive you will be astonished at the stimulating effect the oil will have upon the colony, how it will bring out new life, and how the colony will recommence to clean up and cast out the dead larvae and nymyhs. It occurs that a colony becomes affected with the harmless foul brood and is again cured without the owner noticing it.

On longer duration of the disease it becomes more and more contagious, the number of dead larvae and nymphs grow together with the depression of the colony. The bees no longer uncap the cells, but leave the most untouched, they bite a small hole in the capping and then the dead nymphs begin to putrefy and transform into the well known bad-smelling brood mass. This is the dangerous stage of foul brood. It now declines from step to step. But even this dangerous stage is not always so bad, but that the colony may become re-encouraged if fed for some time or treated with the above mentioned remedy. There are several cases known, that affected colonies were cured by a honey flow. In such cases in which the colony was treated with stimulating food and etheric oil, without the desired effects having been obtained a better queen must be substituted for the old one. Disinfecting and changing the hives is only necessary, when the malady has developed to a high degree.

Whosoever treats his colony carefully and takes care that his colonies are supplied with good and plentiful food, fresh blood, good ventilation, and good queens will be safe from the bad or dangerous stage of foul brood. If foul brood ever appears, the careful bee-keeper will surely cure it in the described manner, he will constantly watch his brood and if notices any gnawed cells, he will attend to them at once, so that the evil does not gain the upper stage. Last summer, after the honey flow was over, I had the opportunity to witness a party using the McEvoy treatment. For a while we thought that it had cured, but after some time the sickness reappeared, although the treatment had been carefully performed. But as only sugar syrup was fed, the energetic, active, ambitious spirit of the bees was missing. This I also noticed, when formaldehyde fumigation was used exclusively. This leads me to the conclusion that if healthy honey and pollen in oils had been used the cure would have been perfect.

The prevention of disease and the natural care of colonies are the main thing, but not the destruction and the curing of the malady. The enemy is only to be kept out of the apiary by natural ways. Keep them so, that when spring reappears and revives all nature, your bees awake from their slumbers strong and healthy, not weak, perhaps so weak they are beyond recovery.

Cincinnati, Ohio, Jan. 16, 1904.

WHAT IS HONEY?

Honey is a waste product in the vegetable kingdom, gathered by only a few species of insects, the most important of which is the honey-bee, as well as the most abundant. Honey may be closely imitated, but can never be made as perfect by man as it is when gathered by the bees from the flowers and leaves. Our great and good Father appears to have created bees for this specfic purpose. The honey partakes of the flavor of the oil that may be extracted from the seed of the plant or tree producing the flowers.

Plants that yield no seed never yield any surplus sugar, or honey, in their flowers. But I am drifting away from the object I have in view, and I must return to the theme above announced.

"How is honey produced?" is the first question we propose to answer; that done, and no sane person can claim that bees gathering it from the flowers of plants or the leaves of forest-trees either injure the plant or reduce its weight when matured. In explaining the process as worked out in nature we must invade the field of science, and learn from the chemist and vegetable physiology what they have seen of the subject in the great laboratory of nature.

Plants and forest trees, as well as all fruit trees, are compound objects, consisting of roots, bark, and leaves, all of which have their particular functions to perform. In this article we shall confine ourself to the leaves and flowers. We have all seen that leaves hang on to the trees and plants long after they are fully grown. Why is this? What are they doing? The function of the leaves is to gather or assimilate carbon from the surrounding air, in the form of carbonic-acid gas, which, under the influence of sunlight, is transformed into starch. This starch is stored in the body of forest and fruit trees for the purpose of supporting the next season's growth of wood and seed. At the proper season, and under the influence of proper temperature, another substance, known to the chemist as diataste makes its appearance in these starch grains, and a new transformation takes place, whereby the starch is changed into sugar, then into gum, then into wood.

We said that honey is a waste product from nature's great laboratory, gathered and saved by the honey bees. This starch, after being changed into sugar, is used by the plant to feed and support new growth and the seed; and whenever and wherever there remains an excess after supplying the newly formed leaves and seed stem, etc., it is discharged in the form of a syrup on the leaves of certain trees, and on the petals of certain flowers, from where the bees gather it and store it in the combs of their hives.

All seeds are composed of starch, principally, hence the large amount of this grape sugar syrup which we call honey. But what becomes of this waste after the new seed has been formed, and gone to work performing the same function as the leaves until it reaches maturity? The seed will not receive it, the leaves will not take it, for they are taking it in its first form (carbonic acid gas). Then what is to become of this vast amount of nectar? In the humid regions it is washed away by the dews and rains; in the arid of irrigated sections it falls off the plants with the dry mature flowers and is gone unless it is saved by the bees. The honey dew on leaves, and the honey on the petals of the flowers, are governed by the same law; that is, the exudation of the excess that remains after this infant seed, leaf, or stem has been supplied with the quantity required to start it to work for itself.

We said above that plants or trees that produce no seed never discharge any of the syrup which we call honey, such as the rose, snowball, and many others. The sugar derived from the starch stored in the body of such plants is tranformed into a gum substance; thence into wood or woody fibre, and added to the plant, forming what we call growth. No method yet applied by scientific experimenters has ever resulted in forcing a plant to imbibe sugar when it has once yielded it. The sugar maple, although yielding a sap heavily charged with sugar, could by no appliances in the hands of the experimenter be made to receive again the sugar. It will imbibe the water when applied to the roots, but rejects the saccharine matter.

In the light of all these known facts how can the bees, by saving the honey

from the spent blooms of plants, injure or decrease their value, when it is known that the spent blooms must fall to the ground with all the honey they may contain, to decay and disappear from man's control.—D. T. Meacham, in *Gleanings*.

BEE PATENTS.

After making a careful examination of all the apiarian patents ever granted in this country, Editor E. R. Root gives this as the result of his investigation:

Nine-tenths—yes, I am safe in saying ninety-nine per cent—of all patents relating to bee-culture have been issued to men—can hardly call them bee-keepers—who have had almost no practical knowledge of the general principles covering hive-construction and the general habits of bees. The great majority of these useless inventions, even if they would accomplish what was expected of them by the brilliant (?) geniuses that evolved them, would have absolutely no sale, for the simple reason that the dear public is not going to pay for something for which it has absolutely no need. Let me give a few illustrations of some of the wonderful (?) inventions.

One inventor got up a hiving apparatus that consisted of cogwheels, shafting, chain-gearing, and elaborate frame-work, for dumping a swarm, after it has clustered into a hive. The whole apparatus would cost a hundred times as much as any swarm is worth. And, just think of it! here was a man who had the temerity to pay out $100 for a patent covering something he supposed would have a demand! Was he after glory or money?

And then the devices that were gotten up to catch the moth miller! The amount of brains and time that has been spent on this one subject alone is enough to have made a nice little fortune We have something like 1500 apicultural patents in our office, which number comprises the entire list. Probably one fourth of them is devoted to moth traps—say there are 300; then let us estimate $100 as the cost of each patent, or $30,000 This amount went into the hands of patent attorneys. Besides, this is loss of time, which, if it had been spent behind the plow handle, would have made another fortune.

It does seem as if the general government ought to have an expert to pass on the practicability of some of the subjects that come up for patents. This would afford protection to some fools who need to be saved from themselves, and save thousands of dollars; but it might also throw thousands of quack attorneys out of business.

If there were an expert in each department who would rule out certain inventions that have no value, it would save good dollars, wasted efforts, and blighted hopes. But the government does do something in this line to a certain extent.

We certainly would not try to discourage real inventions, but how silly it is for one, who had perhaps only a few month's experience with bees, to think that he is able so to improve the hives and other fixtures of beedom as to revolutionize the business, and himself command wealth and fame! How very many devices have been patented that never were in sufficient demand to pay the cost of securing the patent. In the 20 years that we have been connected with bee-keeping interests, we can not recall a half-dozen apiarian inventions that ever paid the expense of having them patented. It's discouraging to would-be inventors in this line, but it is history that is well worth heeding.—*American Bee Journal.*

AMONG THE BEES.

Some Old-World Recipes.

Manufacturing Bees.—In this year just opening, when so many colonies will be found defunct on the approach of spring, it may be of interest to give an old recipe for filling empty hives! "Take a calf, or rather a stirk, of a year old, about the latter end of April, bury it eight or nine days, till it begin to putrify, then take it forth of the earth, laying it under some hedge or wall, where it may

be most subject to the sun, by the heat whereof it will turn into maggots. After a while, when they begin to have wings, carry it near the hives, perfume them with honey and sweet herbs, and the maggots will resort to them *as bees*." These facts are certified by "that great husband man," Mr Carew, of Anthony, in Cornwall. You will also find it all poetically described in Virgil's fourth Georgic—

"Till shooting out with legs and imped with wings,
The grubs proceed to bees with pointed stings."

DRESSING THE HIVES.(1.) Gather some fennel, mallow, or other sweet herbs and dip them in fair water, drink, or sweet wort, putting a little honey into them, if you have it, and sprinkle or rub well the inside of your hives and sticks; or if you have no honey, do it with any of the former, with milk that is sweet, and it will suffice. (LEVETT).

(2.) Put into your hive two handfuls of barley, peas, or malt, of which the last is the best, and let a hog, sow, or pig eat it out of the hive; turning the hive as he eateth, with your hands, that the froth he maketh may remain on the hive; then wipe lightly with a cloth, and hive your bees, when they will undoubtedly tarry in the hive (SOUTHERNE).

(3.) That the bees may be moved to abide in the hive you must sprinkle it with water and honey and cover the same within with green nettle, or rather green fennel, or some such sweet herb, anointed a little with honey. If this serve not then besmoke the hive with flax, and they will after abide therein (HYLL)

FEEDING BEES.—(1.) Toasts of bread steeped in strong ale and put in a bee hive is very good and cheap food. Lay on it some dry meat or flour.

(2.) Take a handful of balm, 1 drachm camphor, ½ drachm musk dissolved in rose water, yellow bees-wax sufficient, oil of roses as usual. Insert a lump the size of a hazel nut. This will much increase the number of your bees, multiplying them greatly, and (N. B.) entice other bees to come and stay! (HARTLIB).

(3) Take ten figs, seething them in five pints of fair, conduit, or spring water; others will to seethe honey and water together (HYLL.)

(4) Beer and sugar is their best winter food (COTTON).

(5) Turn up your hives and sprinkle them with a little warm sugar and sweet wort. Do it dexterously! (Evelyn).

(6) Aristotle mentions figs, or any sweet things. Pliny recommends raisins or figs. Some others advise bean flour, ground malt, roasted wardens, apples, sweet wort, and even the flesh of a chicken! (BUTLER).

SUBDUING BEES.—(1.)

"With sweetened water first the city choke,
And then pursue the citizens with smoke." (VIRGIL).

(2.) Smoke them with cow's dung, sophisticated with sweet wort Set them over the smoke while you barely count ten (HARTLIB).

(3.) If bees are angry spit on them! Spitting on them many times, I took them by handfuls with the naked hand. (LYSDERF).

(4.) Handle them gently and leisurely and their keeper, whom they know, may do with them what he will without hurt.

(5.) Go orderly to them, and thou shalt find them gentle as sheep. If stung take a sage leaf, cabbage leaf, or a piece of a dock leaf, and rub it in, and the pain will soon cease.

(6.) The herb spurge, bruised and mixed with oil and hands annointed with same doth defend the person from being "stinged" by coming nigh the hives. (Pliny).—D. M. M. Banff, N. B. in *Irish Bee Journal*.

OUR HIVE BEE.

We find that each bee queen drone or worker is divided or cut into three distinct portions—(1) The head; (2) the thorax; (3) the abdomer, from which cutting into they get the name of insecta. It will be seen that the incisions are so deep than the slenderness to which the body is there

reduced cannot be contemplated without admiration. In the head the most noticeable parts are the eyes, five in number, the two antennæ, and the various organs of the mouth. All of these can be seen fairly well by the naked eye, but the use of a powerful microscope opens up vistas of new and undreamt wonders, which appeal forcibly to all lovers of nature, showing how marvellously perfect the smallest creatures have been created, and how admirably these organs are suited as means to an end for the well-being of the individual and the community.

The thorax, or second part of the bee, is divided into three segments – the pro-thorax, the meso-thorax, and the meta-thorax. The legs and wings are attached to the front, or pro-thorax, and the bee has six of the former and four of the latter. The four wings distinguish the Hymenoptera from the Diptera order, or flies, which have only two; and the six legs are almost a necessity, especially in the dark interior, as by their means the insect has a power of movement in and out of the hive fully suited to its varied needs as to locomotion under all manner of circumstances and surroundings.

The abdomen forms the third, or hinder division of the body, and is joined to the meta-thorax by a narrow tube, known as the petiole. In this division are found the viscera, the sexual organs, the sperm-atheca of the queen, the sting of the worker, or the drone organs. All of these and many other organs are most interesting, but can at present receive only a passing notice or mere mention, so many are they, and so wonderful is their construction.

The skin of the bee is tough and leathery, being composed of a substance known as chitine. It consists of two layers, and performs many of the functions of bones and cartilages in larger creatures. The outer part of its body is covered all over with a multitude of hairs of diverse shapes and sizes; many of them not only serving to clothe the bee, but also to perform several important duties in aiding them while going about their various duties. The blood of the bee is colourless, and, although they have no regular system of arteries and veins, they have distinct organs of circulation. The insect breathes by means of spiracles running all over each side of the body and these openings communicate, by means of special tracheæ, all over the system. The centre of the nervous system is the brain, situated in the head; but, in addition, there are quite a number of ganglionic centres forming a chain right along from head to tail, and each of these generates some distinctive force. They thus originate and regulate the functions of different organs, such as those of motion, digestion, etc. The brain power of the bee—especially of the worker—is something approaching the marvellous, for in some points their knowledge, skill, prescience, and instinct show an intelligence little short of that generated by the brain of man.—D. M. M. Banff in *Beekeeper's Record.*

W. L. Coggshall, one of America's largest beekeepers, says: That I honestly think that a square joint is better than either a miter or dovetail, for durability—and they are certainly cheaper. He also says: Every one of my twenty apiaries represents some one who has become discouraged at bee-keeping. He has 3800 colonies, and his brother 650.—*American Beekeeper.*

Bees during the night, evaporate nearly all the water out of the honey gathered the previous day, now, all the honey you can take off in the morning, before any new is stored, will be much better than it will be if left until later in the day, when the raw, thin honey will be mixed with it. *Extract.*

CORRESPONDENCE.

G. K., Dungog.—We have had a very good season for honey on this river, but prices are not advancing very fast. Do you think they will next month? I think it may go up to 3d for best. What do you think? Best wishes and hope you have had a good season.

H. S., Goulburn.—I am leaving for South Africa in a few weeks. I hope to keep a hive or two when I get settled down, and as the "A.B.B." is in circulation over there I will make one of its many readers, and will always say a good word for it.

W. C., Yackandandah, Vic.—The past season has been a bad one, in fact the worst ever experienced here. I got three tins from fifteen hives and I will have to feed up for the winter. I hope you meet with good encouragement from bee-keepers, for I am sure your paper is a great help to them, especially beginners

R. T., Fremantle, W.A.—Things are very dull over here in the honey line. In fact some of the largest beekeepers have been compelled to feed. Hoping you are having better times than we in the bee line.

C. G. R., Harvey, W. A.— Can you give me any method for whitening wax when boiled. I have an idea I saw sulphuric acid mentioned somewhere, but am not certain, and would not know the quantity. Thanking you in anticipation.

[When the wax is well dissolved put in about a tablespoonful of sulphuric acid, and keep at a low boil for an hour or so.]

J. R. C. Wolesley, S.A.—I am afraid I must write more in the spirit of a learner than that of having any new information to impart. My experience in this locality has been of twelve months duration. I started with 18 box hives, but have now increased to 45 all in moveable frames, a good number of which were cut out of trees. Up till the end of February the bees had gathered scarcely enough for their own requirements, but from then the tea tree, (as it is here called, I enclose a sprig) came out in bloom, and the bees gathered rapidly; during second week of April extracted 19 tins of honey, dark in colour, slightly peculiar in taste, but not bad. It realised 2d per lb. in Adelaide. From then some of the gums began to blossom, but as the combs were not sufficiently capped when the wet weather began, the bees are still in possession. *Query*: 1. There is still a large surplus. Would it be wise to attempt extracting on any fine day, or leave it until spring? 2. Do the bees begin to consume their stores at the furthest point from the brood nest? The weather has been intermittent of rain a few days and a few days of sunshine. 3. Does the rain affect the nectar in the blossom, if so in what way? *Foundation* —At present I am using for all purposes 6 sheets per lb., and I am not satisfied with the economy of selling my wax at 1s 2d, and paying about 1/10 per lb. for foundation, therefore I am anxious to manufacture my own. Can you recomend any work on the manufacture of foundation comb, are those metal plates advertised in Melbourne fast enough, and do they turn out the correct article. If you have any work please let me know price, or send it along and I will pay by return post from Adelaide where I couduct most of my financial business from. You may be able to enlighten me by sending some back numbers of the "Bee Bulletin." I am pleased with the "A.B.B." it has improved on those first copies I had. I wish you every success, and shall be pleased if I can be of any service.

[1. Extract if short of room only. But don't take any honey within a frame or two of the brood. 2. Not in cold weather. In cold weather they stick to the cluster. Perhaps some of our readers would say a little on this subject. A. Hordern and Sons, of Sydney, sell the "A.B.C. of Bee Culture." Kindly mention the *A.B.B.* in writing.]

R. W., Footscray, Vic.—I am informed by Mr. Leonard Chambers, Beekeeper's Supply Stores, Franklin St., Melbourne, that you would be pleased to answer any

question which was in your power in connection with the management of bees, so I thought I would write a few lines to you in reference to an ailment which some of my bees have been troubled with, and by which I have lost one hive, and I am afraid I may lose more if I cannot discover a remedy. At about ten o'clock in the morning numbers of them come out of the hives and crawl about in the grass, and do not attempt to fly, but continue to crawl round until they die. My wife spread a few white cloths in front of the hives and we find that the bees void a green substance which is of a watery nature. They void it in considerable quantity, and the cloths present the appearance of a target in a shooting gallery with the green splashes all over it. I have the hives placed on platforms which rest on four bricks, which keeps them about four inches from the ground, and they stand in the middle of the garden where they get the sun upon them, so I do not think they suffer from dampness. I have been feeding them with an inferior sample of honey, but some of them which I have not fed have been attacked in a similar manner. Now, dear sir, if you can kindly suggest a remedy and let me know what is the ailment, I will be very thankful to you.

[Your bees have Paralysis. The only known cures up to the present are to sulphur all frames except those having brood in, and to change the queen, that being the most reliable.]

S. T. M., Dungog, writes: — I have sold out here, the bees and working plant and will be leaving for Taree, Manning River, on Monday next. What do you think of the Richmond River district for honey. I believe they obtain large crops up there, but mostly dark honey. I'm afraid, and as the tendency seems to point to low markets, it would mean poor sale for the dark grade. Good honey is being sold in Dungog to storekeepers at 8/- and 9/- tin. Some beekeepers, because they are able to run a few cattle, or do a bit of farming do not seem particular what price they get for their honey, which makes it bad for the professional beekeeper, who has to depend upon apiculture alone for his living. I have sold 3 tons so far, but only let two tins go at 10/ the other ranging from 11/ to 12/6 tin nett, and not too bad considering the glut in the honey market. For next season I would like to hear of a good place to work an apiary on the ½ share, should you hear of anything similiar later on, kindly let me know I want a change from batching."

[We note our correspondents remarks. People when they sell their honey at such low prices, dont consider how they injure others.]

VICTORIAN APIARISTS' ASSOCIATION.

ANNUAL CONFERENCE.

[W. L. DAVEY, SECRETARY.]

Our Executive will meet on 22nd June to arrange minor details connected with the Conference, any requests or resolutions that any beekeeper wishes passed at the Conference, should be sent to the Secretary at once.

The Forecast for the Conference is as follows: –

There will be some good queens.

The swarm will be a record one.

The flow of honey (language) will be good (so fill up your gas bags early).

The Association Extracting will commence on 29th (we'll extract all your spare cash, and all the good flavour out of your speeches.)

Then we'll melt down the Cappings and swarm off home again, to smile on the trees that shall bloom (and never fear the axe), and to gather in the honey harvest which we have saved from destruction. Come along all, there's room in our hive for many queens, many workers, we can do with some drones, even if they can do nothing but make a noise, let's have a heap of it. If it was not for the noise of the drone flight where would our populous hives be. So come everybody and bring good long

tongues and level heads, and let's see if we cannot get some sweets that we have never before tasted.

I believe all the beekeepers are coming to this Conference. Let 'em all come, millions of 'em, and fight everything that s trying to block the honey industry from being more profitable in every way possible.

Hamburg, Germany, Jan. 6.—California amber, per cwt. $8.33; white, $8.80. Shipments of honey soon due are offered at $7.66 and $8.14. All honey importations are subject to import duties of $4. 76 per 100 lbs.—L. Gabian, *American Beekeeper*

A French paper states that buckling of foundation is due to the fact that the foundation is put in at comparatively low temperature, and that the buckling is the result of the expansion of the wax due to the high temperature of the hive. He claims that when the wiring is done in a very warm room, with the wax nearly fully expanded, there will be no subsequent buckling.

Every intelligent well read beekeeper knows that with all the time, labor and thought that has been spent in trying to devise a means for controlling the mating of queens we must admit that we still have no practical method for accomplishing it.—*Exchange.*

CAPPINGS.

From American and other Bee Journals.

If the wholesale market is low, do not help it down lower, with your honey. Fruit must be shipped when ripe, but we can keep our product for months. Then why hurry it off just as soon as taken from the hives? If you say "I must sell, for I need the money very much," just ask yourself this: "What would I have done for money if I had failed to get a crop?" As it is a very uncertain business, you often do not have the crop to sell; what did you do then? Keep your credit good at your bank, and see which will pay the best, to borrow money to live on, or sell your honey for anything you can get for it? I can assure every beekeeper that there is a consumer who is just as anxious to get your honey, as you are to sell it, and at a good price too. There is too much difference between the wholesale and retail price.—Exchange.

The *Pfalz Bienenzeitung* says the ancient beekeepers of Egypt were in the habit of putting their bees in boats in October, and descending the Nile slowly, stopping here and there in order to allow the bees to gather nectar in that spot. The idea is not peculiar to the Egyptians. *L'Apiculteur*, one of our best French exchanges, says, "There is nothing new under the sun. The Russians have copied the Egyptians. Some boats, carrying a garden of honey-bearing plants, forming a veritable apicultural garden, descend the large rivers of Russia, explaining to the people along the shore the benefits of apiculture. We are informed that the Russians employ the same process to popularise new methods in fruit culture." There is a decidedly poetic aspect to that phase of beekeeping. No valid argument could be raised against movable frames in that case as the whole business would be a moving spectacle.

After extracting, all honey should be carefully strained. A strainer made of double thickness of cheese cloth answers very well for this purpose. As there is

always a slight variation in the color of each lot of honey that is extracted, it is well to mark the cans that contain the honey of the same extracting alike, and then give each subsequent lot a different marking. Then, when it comes to the marketing of the honey, it is easy to take a correct sample of each lot.—*Exchange.*

I think our honey harvests depend almost wholly upon certain conditions of the atmosphere. Give me a hot, damp summer, when we have frequent thunder and lightning, with most of the showers going around us, and the flowers will fairly *rain* honey; but with cold, cloudy, windy weather, bees will get no honey, even if hives are *five miles apart.*—E. W. Alexander in *Beekeeper's Review.*

An American exchange reports that a beekeeper named Gill, with his wife and one helper, cared for 1000 colonies, and secured 75,000 lbs of comb honey.

"We have to recognize the fact that it is part of the queen's duty to lay a certain number of drone eggs, and that we can not prevent her doing so, whether by using full sheets of foundation or any other means."—*British Bee Journal.*

A Milk and Honey Land.—In a Glasgow Sunday-school the lesson bore on the land of Canaan, where it is spoken of as a land flowing with milk and honey. "What do you think a land flowing with milk and honey would be like?" asked a lady teacher. "It would be awfu' sticky, responded a wee chap at the foot of the class."

We should remember that eight ten-frame hives, contain as many frames as ten eight-frame hives, and in the various necessary manipulation it is just about as easy to examine a ten frame as an eight-frame hive. A ten-frame hive admits of a stronger colony in a single story, and if one strong vigorous colony will gather more nectar than two weak ones (which I believe everyone will admit) why should not eight strong colonies store as much as ten which are not quite so strong. If a ten frame hive is two large for some weak colonies it is easy to reduce it to a smaller capacity by the use of chaff packed division boards or chimnies, but if the eight-frame hive is too small for a strong colony we can only add to its capacity by giving another body or extra story and should this prove too much we must resort to the dummies the same as with the ten-frame hive. I do not know how it may be in other localities but at Bluffton the queens have a fashion of avoiding the two outside combs except in the very height of brood rearing when the inside of the outer combs are partly occupied by brood. Generally though a ten frame hive will have eight combs containing brood and an eight-frame hive will have six containing brood. Therefore I conclude that for me at least the ten-frame is the best hive. Ten eight-frame hives cost more than eight ten-frame hives and a ten-frame body costs only 1 cent more than an eight frame body. - *Exchange*

When the frost is all out and the ground becomes settled go through your apiary and level up the hives. I have never seen the winter that the heaving of the frost did not cause many hives to settle more at one corner than at the others thus throwing them out of level. Let your hives be a half-inch or an inch lower in front but never let them hang over to one side. If you do I don't see how you expect to get straight plumb combs and nicely filled sections.—*Exchange*

The Rucher Belge has an article (by M. Leger) concerning winter feeding, in which the use of honey is strongly advocated But if honey cannot be had, sugar must be used. He advocates boiling the sugar until it becomes syrup and add tartaric acid. The boiling and the addition of tartaric acid have the effect of inverting (chemically) the sugar, making it thus similar to the honey itself and more easily digested by the bees. He disapproves of using vinegar instead of tartaric acid. Often the vinegar is adulterated. If pure it has little inverting power. Several other writers advise adding a little salt to the syrup.—Adrian Getaz in *American Beekeeper.*

VICTORIAN APIARISTS' ASSOCIATION.

Annual Meeting & Conference,

JUNE 29th & 30th, 1904.

WILL BE HELD AT

FEDERAL COFFEE PALACE, = = =
= = COLLINS STREET, MELBOURNE.

Wednesday Evening, June 29th, at 7 o'clock sharp; Thursday Morning, at 9.30 sharp; Thursday Afternoon, 1.30 o'clock; Thursday Evening, 7 o'clock sharp; also Friday if needed.

SPLENDID PROGRAMME, comprising 20 different subjects, nearly all of very great importance, all certainly most interesting, (and concluding with a social evening if time permits.

BEEKEEPERS COME and shape your destiny, discuss the best means of helping and safe-guarding your interests.

THIS IS OUR 5th ANNUAL CONFERENCE WITHOUT A MISS, BE SURE & COME.

For further particulars, apply to

W. L. DAVEY, SEC., FAIRFIELD.

BEES AND FOREST TREES.

The following was addressed to "The Argus," by Mr. Thomas Bolton, president of the Victorian Apiarists' Association:—

In regard to the bee-farming industry, permit me to say that under the Irvine Government, and till quite recently, when the industry has been brought under more direct view of Mr. Wallace, with encouraging and sympathetic treatment as a result, bee farmers had little to be thankful for to the "powers that be." If their production has increased it is not because of any fostering care by the Government, but in spite of continued neglect to grant a fair measure of certainty and security as to the continuance of their pasturage to those who have, or who contemplate embarking upon the industry. Not a year ago a large deputation of beekeepers waited upon the Minister of Lands, and urged upon him the value of our native timbers for honey and wax production, especially in certain poor grazing districts, where the value of these products exceeds that of the grass, and we ask explicitly for such an assurance that graziers would not be given permits to destroy these trees, as would justify beekeepers in embarking capital, and spending their time in establishing apiaries and homes in such districts. We also asked that were a bee farm was already established, permission to ringbark should not be given to any Crown lands lessee in the vicinity without the beekeeper being given an opportunity to oppose the destruction of his source of livelihood. But we asked in vain; and even to-day all engaged in this industry are at the imminent risk of having their labour of, perhaps years, rendered suddenly useless by a Lands Department permit to kill the trees being issued, without, it would seem, one feeling of sympathy in the official mind for the industry whose destruction follows. Let Mr. Bent, if he is returned to power, have this uncertainty as to "ringing" the trees removed definitely and finally.

Let him give bee farmers a right of entry upon state forests and Crown lands to gather the honey otherwise going to waste, and to establish apiaries (a right already granted them by a clause of the Land Act, but so reluctantly granted in Lands department administration, if not refused altogether, that they are little better off than before Mr. McColl inserted that clause); and let country eminently adapted for beekeeping, but of poor grazing capacity, be classified as such, and its whereabouts made known, and beekeeping upon it encouraged, instead of discouraged, as at present; and finally let the beekeeper's tenure be independent of the good or bad will of the man whose lease entitles him to the grass only, but who hitherto has been treated as if he owned soil and trees, and all, and nobody else had a right to get a living out of the country. Let Mr. Bent, I say, do this for our industry, and when his term expires he will have then good reason to congratulate himself upon a largely-increased number of beekeepers and honey production.

As further indicating the slight value put upon beekeeping by the officials of the Lands department I would challenge inquiry as to (1) whether it is a fact that not a single person known to be interested in this pursuit was recommended to a block at the sub-division of the "blue-block" Glenelg country some little time back, and this in spite of abundant expert proof of the very great value of that region for beekeeping. (2) Is it a fact that in spite of protests from a neighbouring apiarist, and with full knowledge of the thriving industry in course of being established close by, permission to destroy a large number of splendid honey-yielding trees was recently granted to a grazier in that vicinity? (3) Seeing beekeepers could not get upon the land as above, have they not applied in some cases for one-acre bee sites under clause in Land Act, and have they been successful in their application? (4) Is it a fact that a beekeeper in the vicinity of the blue blocks, finding his need of buildings to extract his crop in, and of a fence around his acre bee-farm site to keep his horses from straying upon the open country, applied for permission, not to destroy, but to build and fence, and was curtly refused, and no reason assigned? Finally, is it not that because beekeepers raised their protest against the throwing open to timber-destroyers of this garden of nature and honeybees' paradise by Mr. Taverner, it has been decided they shall have the least possible facilities for gathering up the tons of valuable products wasting there?—*Australasian.*

Presence of Drones and Swarming.

"Does the presence of a large number of drones tend to intensify the swarming tendency or impulse?"

Pres. York—How many think it does? Six.

Pres. York—How many think the drones don't make any difference as to the swarming tendency? One.

Mr. Wilcox—How many think the swarming propensity tends to increase the number of drones? Sixteen.

Mr. Whitney—I asked that question. On examining my bee-hives I found a large number of drone combs. I never had so much swarming in my life among my bees. I had 31 colonies to start the season with and I had 54 swarms. I thought I knew how to keep down swarms. I increased, gave them plenty of room, cut queen-cells and did everything I could do and yet they swarmed, and I never saw so many drones as I had.

Mr. Moore—I would like to ask in this connection, when you control the production of drones by workers can you thereby solve the swarming question?

Dr. Miller—No, you can't do it; and I would like to say to Mr. Whitney that he will find that there will be years when he will have exactly the same amount of drone-comb in his hives, and possibly with the same amount of drones, and he will have swarming more than other years. With quite a number the last

season was an unusual one for swarming. It has been one of the worst years for swarming that I ever knew. I know I spoke of it more than once. There seemed to be a scarcity of drones, the smallest number of drones I ever had was this year, yet I think it was about the worst year for swarming. The two things don't always bear the same ratio. Mr. Hutchinson says that if it wasn't for the swarming you wouldn't have any drones. The two things are not always in proportion.

Mr. Starkey—I noted that drones would tend to increase swarming, but by doing so I meant this : That instead of drones, if the same amount of labour had been expended in producing workers we would still have had the same amount of swarming tendency. I don't believe that the presence of drones would increase it any more than the workers themselves. However, I believe that it would be an advantage to the colony in point of the value to the honey-producer if these drones had been prevented.

Dr. Miller—If you suffer a large number of drones in your apiary you will have more swarming, and I believe if you allow a large amount of drone-comb in your hives you will have more swarming for it. One of the means to help cut down swarming is to allow as little drone-comb as possible to remain in the hives.

Mr. Longston—You may put a drone-comb into a very small colony, but the colony that doesn't show any tendency, at the time of swarming, and immediately almost, if other conditions are favourable, that colony will swarm. I know it is the change of the drone-combs that does it. I believe the drones have a very great amount to do as regards the swarming of bees.

Mr. Whitney—I attempted to prevent swarming by cutting queen-cells. I had a hive-box that I would put the queen in, and turn it in front of the hive so the swarm couldn't get back, and they would all cluster in that box, and I cut the queen-cells out. They would work for some time ; perhaps put in a case or two of honey and then swarm. I had one swarm come out with 200 or 300 bees, and I made them a hive and they are a good colony of bees to-day ; but there was only about 200 or 300 bees in the whole swarm, so you see what I produced with the queen. She gathered 200 or 300 bees and they swarmed out in a cracker-box. I merely mention that as the tendency of swarming in my yard, as one bee against four.

Dr. Miller—A single bee never swarms.

Mr. York—That's so ; I believe they have to get married first !

Mr. Duby—I don't believe a large or small number of drones has anything to do with it. I have had colonies that swarmed three times, and they had but very few drones, and I have seen lots of drones and have had no swarming.

Mr. Hutchinson—Mr. Aspinwall is now working with a non-swarming hive. I believe he spent $1,000 in making wooden combs and his idea was that the bees wouldn't rear drones, and he was going to get rid of swarming that way, but the bees swarmed just the same with those wooden combs.—*American Bee Journal.*

THE MAKING OF THE QUEEN-BEE.

"In regard to the physiology of the worker and the queen bee I have concluded, after a close observation, that the female bee-larva, when but little developed, embraces within her little body two distinct possibilities or tendencies, viz: 1st, to develop either into a mother-bee, or, 2nd, into a nurse or worker bee. One is irresistibly forced to the conviction of its being an error that the worker-bee is a dwarfed or undeveloped female bee, for in the worker as well as in the queen do we find different organs in the highest state of perfection. The worker is endowed with that wonderful system of glands, the pollen-baskets, the stronger

tongue and jaws; the queen with those perfect organs of reproduction."

Mr. Kline proceeds to show that no distinguishing line really exists—that the degree of development of the respective functions is proportionate to extent or thoroughness of the treatment during the larval stage, as prescribed by nature—and that the distinguishing characteristics blend, or overlap to an extent that entirely obliterates the dividing line. He says: "What do we know about a larva developing into a worker in one case, into a queen in another? It is believed that we must look for a certain admixture in the larval food, or that the latter is more plentifully administered, and thus produces the queen bee. It appears that as soon as the larval food is changed the development changes with it but it comes very gradually. I have taken five-day worker larvæ and transferred them to queen-cells. They should have been sealed after one-half day, but it was accomplished only in a full day, and yet the resulting queen could hardly be distinguished from a worker. The older the larva selected for a queen at the time the change is made, the nearer the resulting queen will be like a worker. "Worker larvæ, when from one to one and a half days old, have hardly received other treatment than queen larvæ. Not till the end of the second day, can we notice that the larval food is more scantily supplied to worker than to queen larvæ. Even when a three-day worker larva is placed into a queen cell full of royal food, its growth is slower than that of one that has been in a queen cell from the beginning, and we can notice some distinguishing marks in the natural insects between those that were reared from one, or two-day larvæ. I transferred 30 one-half to one day old worker larvæ to queen cells, let them remain therein for two days, and finally returned them to worker cells. I succeeded only with two. One of the larvæ was immediately sealed after the second transfer, and produced a perfect worker bee; the other one was not sealed quite so quickly and produced a queen, small and weak, showing round head and curved hairs on the hind legs, and possessing a short tongue. This experiment shows that a queen larva can be changed into a worker."

"The moral of the whole," says Mr. Kline, is this: "The earlier a larva receives royal treatment, and therefore the more lavish she is fed, the better and more perfect will be the resulting queen."

In conclusion, Mr. Greiner makes the following supplementary comments:—"While I fully endorse the moral, I wish to say this: Our positive knowledge of this mysterious matter is restricted to the fact thal the queen larva is fed more lavishly and slightly differently during the latter period of her life. We do not know that this difference in food and food supply produces the results we see. I believe the real cause is not understood, and what we see are only the accompanying circumstances."—*American Bee Journal.*

PREPARING COLONIES FOR WINTER.

BY R. BEUHNE.

The removing of combs of sealed honey from the brood chamber at the beginning of winter, and replacing them with empty combs is a decided disadvantage to the colony, if a little honey should come in after. It is to the consumption of this unripe and soured honey that much of the mortality in spring is due. Against this assertion, it has been repeatedly urged that box hive men sometimes rob their boxes very late in the season, and the bees have to depend entirely upon late gathered honey, and yet they often come through the winter well. My reply to this is that it is an entirely different thing. A colony deprived of everything late in the season cannot build comb outside the warmth of the cluster, and therefore any honey stored will be ripened or, at any rate, preserved. Bees do at any time build but very little comb in advance of immediate requirements, much less so during cool weather, and as combs are extended down-

wards the honey stored gets the benefit of the warmths required for comb building. The amount of unripe honey is therefore very small, and is always consumed first, as soon as nothing fresh is stored. A frame hive colony, however, having empty combs accessible may store new honey should a few warm days occur even in winter. At the beginning of this article I stated that the ideal condition was to have the brood combs heavy with sealed honey, and crowded with bees. The advisability of having the brood combs full of sealed honey for the winter has been disputed during the controversy (some years ago) as to the cause of the disappearing mortality then prevailing. It was asserted that there should be some open comb left in the brood chamber to enable breeding to proceed to some extent. To satisfy myself on that point, I fed twenty colonies with honey during last autumn, while the weather was still fairly warm, till all the combs in the brood chamber were sealed excepting a few patches of brood in the centre. Examination during the middle of September last showed that these twenty colonies contained more bees, more brood and more honey than any other 40 colonies in an apiary of over 200. This appears to show that when bees require room for brood rearing they make it by consuming honey, and refraining to a large extent from flying for new stores during the cold season, thus preventing loss and wearing out of workers.

To confirm the previous experiment or otherwise, I have again fed twenty colonies heavily, although all others are well stored for winter as well. I have received several inquiries as to the cause of bees blocking their brood combs with honey and how to prevent it. The answer is, don't try to prevent it, for you will not succeed, but will most likely make it worse by inserting empty comb.

The stopping of breeding rather early in autumn is in many instances due to want of pollen coming in. It will usually be found that an earlier stoppage of breeding is followed by an earlier start in spring.

If a colony contains a fair number of bees, a laying queen and plenty sealed honey, all it needs is a water tight cover and not too large an entrance, and it may safely be left alone for the next three or four months. In spring if not taken indoors, I advise to place underneath the brood chamber, after having extracted any honey the combs may contain, particularly if it is thin. This honey, if kept in a warm place, may with advantage be used for feeding during the blank following the spring flow, provided always, however, that no foul brood existed in any of the colonies the honey came from. —*Leader.*

BEE PARALYSIS.

1st. Drones are quite subject to, and they have never been accused of being chyle producers. Mr. Atchley is without doubt mistaken when saying that drones do not die with the disease. Many others besides myself have reported on that point, at least two Texas beekeepers having done so within the last two months.

2nd. The disease seems to be much more prevalent in certain strains or families of bees. At least four times within the last ten years I have had to utterly destroy certain queens and all their daughters; nearly all the cases in my aplary being confined to the particular bees. Certain queens seem to transmit the germs of the disease through queen daughters to their progeny. This looks as though there can be but little doubt that the disease is of a nature to be transmitted from one generation to another. It will, however, take the most skillful scientific examination to absolutely determine this point—an examination which neither Mr. Atchley nor myself have the facilties to do.

3rd. Colonies which have had the disease one season, but recovered without treatment of any kind, are much more liable to have the disease next season than are other colonies.

4th. It is the old bees, the field workers that die, not, as a rule, the younger ones, they are the ones that prepare the chyle. If chyle was in any manner the cause of the disease, the nurse bees would be the ones affected, not the field workers. I think the strong inclination shown by the diseased colonies to rear all the brood they possibly can is caused by the disease, and that the disease is not a result of the brood rearing inclination.

All badly diseased colonies are very short of field workers and have an unduly large proportion of young or nurs-bees. All weak colonies with prolifie queens have a strong desire to raise all the brood they can. In nearly all badly diseased colonies many more eggs are laid by the queen than the few field workers can gother food for. I have never noticed that colonies developed any abnormal brood rearing desire before being weakened by the disease. It looks to me as though the facts point to a shortage of the chyle supply rather than an over supply.—O. O. Poppletan, in *American Beekeeper*.

NEW SOUTH WALES CHAMBER OF AGRICULTURE.

The adjourned annual meeting of the Chamber of Agriculture was held at 4 p.m. on Thursday, the 26th May, 1904, in the Royal Chambers, Castlereagh-st., Sydney.

The President, Mr. C. H. Dight, M.L.A., presided.

Apologies were received from Messrs. Chaffey, Davidson, Rodd, Keys, Wood, and Harris.

Minutes of the meeting on the 8th April were read.

Correspondence from Mr. Rumsey and the Yewen Company, read—

Resolved on the motion of Messrs. Eyres and Ramsay that the balance sheet be taken as read.

The Chairman, in moving the adoption of the balance sheet, explained that the amount of £15 12s. 7d. appears as shortage in the auditor's report, and for which no vouchers are available, but various items have been paid which reduces that amount to 27s., which was probably used for postages, etc., by the late treasurer, who has been written to, asking for vouchers for the whole amount.

Resolved, on the motion of Messrs. Dight and Eyres, "That the balance sheet, as, printed be adopted."

Messrs. Eyres, Hall and Rumsey were appointed to open and count the ballot papers on the question of dissolving the Chamber.

The result was 29 voted "No," and 16 voted "Yes," giving a majority of 13 in favour of continuing the Chamber.

Resolved on motion of Messrs. Hall and Rumsey, "That the Election of Officers be postponed to a future date."

Resolved, on the motion of Messrs. Hall and Eyres—"That this meeting stands further adjourned till Thursday, July 7, 1904, at 11 a.m., in the Royal Chambers, Sydney."

Resolved, on the motion of Messrs. Hall and Rumsey—"That the matter of securing any alterations in the Rules and Constitution of the Chamber, and of making any fresh arrangements in order to secure the effective working of the Chamber, be remitted to a committee, consisting of Messrs. Eyres, Harris, Hessell-Hall, Lalor and Rumsey, such committee to report to the adjourned meeting."

The secretary was instructed to forward the thanks of this meeting to Messrs. Sparkes and Smithhurs, and the Yewen Publishing Company, for offers of assistance.

The meeting adjourned.

The further adjourned annual meeting of the Chamber will be held at 11 a.m. on Thursday, 7th July, 1904, in the Royal Chambers, Castlereagh Street, Sydney. Business: 1. To receive Committee's Report. 2. Consideration of any alteration of Rules. 3. Election of Office Bearers and Auditors. 4. Consideration of business, due notice of which has been given.

"In a question in the *American Bee Journal*." Would you prefer a free hanging frame? Seventeen replied in favor of such and ten against.