The Australian bee bulletin. Vol. 4, no. 45 December 28, 1895

West Maitland, N.S.W.: E. Tipper, December 28, 1895

THE AUSTRALIAN BEE BULLETIN.

A MONTHLY JOURNAL, DEVOTED TO BEE-KEEPING.

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The Australian Bee Bulletin

A JOURNAL DEVOTED TO BEEKEEPING.

MAITLAND, N.S.W.—DEC. 28, 1895.

WITH this issue we wish our many friends and subscribers all the compliments of the season. We hope not many other districts have suffered so severely for the past nine or ten months as this has. As a result of prolonged drought there was no spring clover flow, and the forest trees would give buds to be shrivelled off before the bees could gather any nectar from them. Very few swarms have come off. For the last month or so a few thunder-storms have set the lucerne and other crops on the grow, but the needs of the farmer hurries the mower around before much bloom can crown the tops, and the cry is still for more rain. For different reasons —the drought, paralysis, &c.—we do not believe there are one third of the bees in the district there were twelve months ago. At Minmi, where an ironbark flow is on, the beemen complain they have no bees to gather it. The numerous and extensive bush fires may also be blamed for the almost entire absence of bush swarms. Should the present weather keep up, with perhaps more frequent showers, those who have strong stocks will reap a fair harvest.

This is about the most important month of the year to beekeepers. Should you have seen in preceding months that each hive was supplied with a good queen your lower boxes will now be full of brood, and in most places honey will be coming in. If you want increase of swarms you may now allow them to come off, or as you see queen cells being started swarm them yourself artificially. Queens raised now under the swarming impulse are of the very best class. A swarm catcher should be handy in every apiary for emergency; also spare hives with starters or full sheets of foundation. Clipping the queens wings saves the apiarist very much trouble. When the swarm issues she will be found on the ground near the hive surrounded by a small ball of bees, or in the hive being tormented by the bees. As prime swarms do not at first build drone comb, starters are as well to use as full sheets of foundation, except that full sheets may enable them to get to work more quickly. Second or after swarms always build drone comb until queen is about to lay. A frame of uncapped brood put in with the swarm will be an effectual means of preventing them flying away a second time. In swarming artificially you watch till queen cells are about to be capped, remove the hive to a new stand; place a new hive with frames of foundation or starters on the old stand; then take from old hive frame with queen cell, but not the queen, and put in new hive on old stand. The field bees will all go to their old location, and the old hive being depleted to that extent will, unless very strong, tear down the remaining queen cells, or the apiarist may do it himself, and thus save after-swarming. Swarming may be prevented to a great extent, and a far better honey crop result, by occasionally placing a frame of foundation in the centre of the brood nest, and placing the supers on. Be sure not to do the former unless there is plenty of brood and bees, or a change in the weather may cause brood to be chilled.

Half supers are coming much into favor of late years, possibly for the reason that adding a full super, especially of a ten-frame size, is too big an expansion at one time. The half frames are also very convenient for the uncapping knife, or to be sold for large sections. Our own "fad," however, is the "long idea" of sixteen to eighteen frames, with a stout follower, and top in two pieces. The hive can be expanded or contracted, if

necessary, only a frame at a time.

And now as to the honey crop. If possible to wait do not extract it unless capped over. You can only then be sure of its being ripe. Unripe honey placed on the market sours and gets a bad name for the apiarist, also hurts the demand for honey generally. Of course it can be ripened artificially by allowing it to stand with a large surface exposed to warm air.

Sections, if not already, may now be placed on. Section honey is really honey in its most delicious form, but in Australia it does not seem to be much in favor with producers. Possibly the warmth of our climate, and the long distances and rough journeys it is likely to travel over, makes it become less presentable and saleable than it otherwise would be. To the apiarist extracted honey has the greater advantages. In comb honey, your comb as well as honey is sold, and is the extra trouble and loss of comb recouped by the extra price realised? In extracted honey you retain your comb for future use, and the honey, if put up in moderately strong vessels, will be good for ages.

One most important matter now is the using of full sheets of foundation as the brood nest increases. When only starters are used the bees are likely to place drone cells in a good portion of them, especially if the queen is any way old. Now the raising of drones and after feeding them is a big loss to the apiarist. Full sheets of foundation saves this loss, and makes a big difference in the honey crop.

The present month is a good one to supersede old queens. There is nothing that tends more to the success of an apiary than young vigorous queens. In doing this a change of blood is also an advantage, and for this reason we would strongly recommend our readers to read the advertisements of the various queen raisers in our pages.

A great deal has been written on the matter of introducing queens. Our invariable practice has been to remove the queen in the hive, and place the cage containing the new queen on top of or between the brood frames. Next day turn up one corner of the wire cloth over the candy and let the bees eat her out. We have not lost one queen yet in this way.

At Branxton lately a plague of brown beetles that lasted about four hours, attacked the pepper trees clearing of foliage and flowers every tree they set on. Where kerosene was applied the beetles were killed.

Mr A. J. Grace, of Bando, has kindly forwarded us a photo of his apiary, cabinet size. The apiary is well shaded by acacia and pepper trees, and Mr Grace himself, immediately in front of extracting room, forms the centre of the picture. It is an excellent photograph.

We would call attention to the advertisement elsewhere that the world renowned apiarist, Mr. Peterson, proposes selling his apiary. This surely is a rare opportunity for those who wish to make a good start in beekeeping.

Two more excellent photos to hand, from Mr J. W. Dumigan, North Killarney. The one is of himself, an intelligent, thoughtful looking young man. The other is of his apiary. And we really must say, with its good lay out of hives, and its surrounding of trees and adjoining village, it is a really nice picture.

We have received from Mrs. Conn, of Timor, an excellent photograph of what is termed the "Hen and Chickens, Timor Rock." A huge granite boulder, resting by a small neck on another isolated piece of the same rock, thrown up in liquid state from subterranean depths in past ages through softer surface material, to be left exposed as on a pinnacle when the summers and winters of many years has washed the latter away—looking not unlike the name by which it has been designated. It is really an interesting and remarkable rock.

WELLINGTON VALLEY B. K. A.

Annual Report and Balance Sheet, 1895.

To the Members of the
Wellington Valley Beekeepers' Association.

Gentlemen,—As I could not get sufficient members together on the 19th ultimo to form a quorum (which is disgraceful out of a membership of nearly 60), and it being our annual meeting, at which officers for ensuing year should have been appointed, balance-sheet submitted showing business done during the year, accounts passed for payment, etc., I now offer you, through the press, a statement of our position up to the end of August, 1895, that being the end of our financial year, and trust it will be found correct and satisfactory. I feel annoyed to think the members take so little interest in this association, which is the largest in New South Wales, and which has not been surpassed by any much older one as regards our prize list at last show; nor has the exhibit been equalled, except at the Royal Exhibition, in Sydney, and then only by quantity. It was the intention of several members to arrange an exhibit for next Sydney Show, and I consider that had they, as agreed upon, met and discussed ways and means, and formulated a proper scheme to carry it out, that Wellington beekeepers would not have been last when the honours were meted out. But, as with everything else in this slow-and-go-easy town, things are left till too late and we find others reaping the benefits which, if a little energy was displayed by our members, could be secured to themselves. It must be a well-known fact that since the formation of the W.B.K.A. every beekeeper has derived a large amount of benefit of concessions allowed us by the Commissioners, in railway freight, free passes, and cheap fares, therefore it should be the duty of every beefarmer to uphold that association and all kindred ones, more especially the one in our midst, for an association of our dimensions must have some weight if we care to use our influence in matters pertaining to beekeepers, as we are recognised as a strong body, whereas the individual beekeeper cannot obtain any concessions by himself, therefore it is incumbent upon the members to band together and *stick together* for the welfare of one and all. In conclusion, on behalf of our Association, I take this opportunity of thanking the Wellington P. and A. Society for the valuable assistance they accorded us at the last two Shows, both monetarily and by placing at our disposal the principal position in the centre of their pavilion; also those members who donated special prizes, and the business people generally who so liberally donated when asked to contribute towards our apicultural exhibit, and hope that the support accorded in the past will be continued in the future. I might state that our membership for 1894 was only 23, and this year we have the grand number of 52 on the roll.

Appended is the Balance Sheet for 1895. Although not audited as I should have wished, or inspected by the committee as I should have desired, my books are at the disposal of any member for inspection.

Yours, etc.,
H. NANCARROW,
Hon. Sec. W.V.B.K.A.

Receipts,

	£	s.	d.
46 Members at 5s. each	11	10	0
1 Member	0	10	0
Specials—			
John Haynes	1	0	0
Fong Lee	1	0	0
Western Post	0	15	0
H. Nancarrow	1	0	0
E. J. Mathews	0	10	0
P. & A. Society	5	5	0
Trophies—			
Wise & Co., Lassetter & Co. Satchell.			
	£21	10	0

Expenditure.

Prizes—			
Italian Queen ..	3	0	0
Collection B-K appliances	1	0	0
Trophy Ap. Product	1	10	0
Frame and Hive	0	15	0
Extractor	0	10	0
12 1lb. Sections	1	0	0
8 Large Frames	0	10	0
3 Shallow „	0	10	0
6lb. Extracted Honey	1	10	0
Comb Foundation	0	10	0
5lb. Beeswax	1	0	0
Wax Extractor	0	10	0
Collection edibles	1	0	0
"Western Post" special	0	15	0
Observation Hive	1	0	0
Attractive display	1	10	0
Collection and trophy	1	0	0
French Queen Cells	0	10	0
Stamps, 4s. 4d., 24 post cards 2s.	0	6	4
40 post cards and printing	0	5	0
Murphy (caretaker)	0	8	0
Advertising and book	0	10	6
Post cards, 2s. 6d., stamps, 3s.	0	5	6
Do do 3s., printing same 2s.	0	5	0
Murphy, (caretaker)	0	4	6
Printing	0	14	6
Balance	0	10	3
	£21	10	0

That distinguished scientist, Prof. C. V. Riley, who, till recently, held the position of United States Entomologist, which he resigned but a short time ago, died on the 14th, of September, as the result of a fractured skull from a bicycle fall.

MEAD.

[BY RICHARD HELMS.]

It is surprising that such delightfully refreshing drinks as cider, perry, and mead have not risen into higher estimation in our country. The main reason is no doubt that most of these and similar drinks are made for immediate consumption. They are bottled before they are ripe, that is before the fermentation is complete. They are then, as a rule, anything but pleasant drinks, and often produce objectionable after effects. But when well seasoned, these drinks are enjoyable. Another reason for their disfavour may also be habit of indulging in strong alcoholic liquors, which has been introduced together with other customs unsuitable to our climate.

Mead is of very unstable composition, and may be made almost any strength, from a light, nearly non-alcoholic beverage, to that of a stiff whisky punch. Regarding its stimulating power, it could be made to suit anybody's taste. The light drink is what we want for the summer, and for a homely chat over the fire in the winter, and to make us feel neighbourly some of the special brew is the better. One thing, however, is a *sine qua non*, the stuff must have age, that is to say must have been cleared of all ferment. It is a good drink, and has maintained a reputation longer than anything else in use by civilised man. No doubt it has varied in its preparation since first it was made, and the art of giving it a specially pleasant taste must have frequently engrossed the attention of many a "guid wife" whilst it was one of the regular homebrew beverages up to a little over a hundred years ago.

The cradle of the Arian races was also the land that witnessed the first known brew of mead. The Sanskrit *madhu*—honey, sweet pleasant, lovely (also social), is undoubtedly the origin of the word *mead* of modern English. *Medu* in Greek means intoxicating drink. Brit. *med* medu ; Cambr. *medu* drunk ; Lit. *medù* honey, wine ; A. S. *medu* ; O. H. G. *mëtu* ; H. G. *meth* have all the ring of their derivation. But the Gr. and Lat. *mel*, and the similarly sounding terms of the modern Romanic languages, are also derived from the same. This is over 6000 years ago. With the migration of these races it travelled to the west. The Greeks in later days called it Melicrate and also Hydromel. But these clever people knew also how to make wine, and sometimes mixed their melicrate with it and then called it Oenomel. The Romans also softened their wine with honey or mulso, the latin name for mead. Plinius ascribes to mellina (mead) all the bad, but none of the good qualities of wine. His writings are however, often harsh. It may be that he met with a bad sample and became prejudiced.

Among the Teutonic races, whose rough countries produced no wine, mead became the national drink. No other was known to them for many centuries. In the holy oak-groves, after sacrificing at their altars, the Druidic priests refreshed themselves with mead. When the solemn duty of conveying a corpse to earth was fulfilled, the last friendly act to the dead consisted in passing round a horn filled with mead to drink a happy meeting again in Whalhalla. When a marriage was solemnised mead dared not be wanting. Mead in fact they quaffed on every occasion when they had it, during war or in times of peace ; and I believe their horses, whom they loved so well, got a share on special occasions.

The Norsemen, when roving in their corracles to plunder the coasts beyond the limits of Spain, carried some mead with them in bags of hide ; and at their feasts in the Hall of Odin drank it from the skull-cups made of the heads of their slain enemies.

Nothing could surpass this drink in their opinion, and consequently they hoped to freely enjoy it in after life together with the gods of their heaven :

Fill the honeyed beverage high,
Fill the skulls, 'tis Odin's cry !
Heard ye not the powerful call,
Thundering through the vaulted hall ?

Fill the meath, and spread the board,
Vassals of the grisly lord !—
The feast begins, the skull goes round,
Laughter shouts—the shouts resound."
—Penrose (*Carousal of Odin.*)

Odin himself had an insatiable thirst, but his daily wants were liberally supplied by the good goat Heidruna :

Whose spacious horn would fill the bowl
That raised to rapture Odin's soul ;
And ever drinking—ever dry—
Still the copious stream supply.
—Cottle.

The Ancient Britons were equally fond of it, and long knew no other beverage. Before the time of the conquest the Anglo-Saxons knew ale. This and mead they drank freely. Æthelstan, King of Kent in the tenth century, on paying a visit to his relative Æthelfleda, expressed his satisfaction that there was no stint of mead. The ale was probably at first scarcely more than a variety of mead, for up to the reign of Henry VIII it was made without hops.

An old law of the Welsh ran thus : "There are three things which must be communicated to the King before they are made known to any other persons: 1st, every sentence of the Judge ; 2nd every new song ; 3rd every cask of mead." It is evident that the Welsh kings knew what was good, and did not like to be short of a supply of it, for this law no doubt gave them the right to acquire the mead if it was found to be palatable.

Queen Bess, "of happy memory," is another royal personage said to have been so fond of mead that she had it regularly prepared for her special drinking.

Shakspeare and Dryden, who called it metheglin, sang its praise :

T' allay the strength and hardness of the wine,
Let old Bacchus with new Metheglin join.

In those days it appears a difference was made between mead and metheglin. The latter was a better quality, and spiced.

One of the queerest bee books that ever passed through my hands was published in 1608, by Thomas Hill, of London. It is instructive in places, but far more amusing on the whole, owing to the many remarkable statements it contains. The great benefits derivable from honey and its preparations, I believe, have never been extolled in a like manner in any other book. The following concerns mead :—

"*Of the drinke of Hony, which is called mulse water or sweete water of the Romaneo.*"

"By the answere of *Pollio* the Romane, to *Augustus* Emperor, we may evidently learne that the mulse made of hony is healthfull drinke in strengthning the body. For *Augustus* on a time demanded of him by what means a man might live to great yeares, and all that season be free from sicknesses. To whom he thus answered : That applying the mulse water within, and annointing oyle without the body, doeth work the like. Now the mulse water drunke, doth ease the passage of wind or breath, softneth the belly ; and the long time of oldnesse change it into the kind of wine, is most agreeable and profiting to the stomacke, but the same is contrary to the sinews, yet it recovereth the appetite lost, and is a defence against the dangerous drinke of Henbane, if it be ministered with asses milke. This drinke truly (Ægineta writing thereof) is thus made : Let eight times so much water be mixed unto your honey, which boile or seeth so long untill no more fome ariseth to be skimmed off, than taking it from the fire, preserve it to your use."

The following is Dzierzon's recipe : "Boil the honey water steadily, constantly skimming when needed, till a fresh laid egg floats in the liquor so that the end of it is just visible. Then allow it to cool, after which remove it into a cask, not quite filling the same. The liquor is then left to develop self fermentation under a temperature of 55 deg. to 60 deg. F., the bunghole being covered with a wet linen rag. After six weeks the mead is to be removed into a somewhat smaller cask, the bunghole of which is stopped with a loosely-fitting bung, and a linen rag laid over it. The residue is filtered and preserved in bottles, which are stopped with a rolled piece of linen The mead continues to ferment slowly in

the second cask and gradually shrinks. The cask has to be kept full from the bottles. After a twelve month the mead is carefully racked into another cask, which is tightly bunged and left in a cool place. In about six weeks the mead is generally perfectly cleared. If then bottled and sealed with resin (which is the cheapest) the mead will keep for an indefinite time, and improves with age."

Here is a splendid recipe to brew from, and I hope it will induce some beekeepers to produce a good sample of mead for the next Convention. Why don't some of the Societies offer a prize for the best sample of mead?

A more modern recipe which accelerates the fermentation is the following:—Honey, 1 cwt.; warm water, 24 gallons; stir well until dissolved; the next day add yeast 1 pint, and hops 1lb., previously boiled in a gallon of water, along with water sufficient to make the whole to measure one barrell; mix well and let ferment. This mead when finished contains on the average from 7 to 8 p.c. of alcohol.

Another recipe is this:—On 30lbs clear honey pour 13 gallons soft water, boiling hot. Clarify with white of egg well beaten; boil again, remove all scum as it rises, add 1 oz. best hops, and boil for ten minutes, then pour the liquor into a tub to cool, spreading a slice of toast on both sides with yeast, and putting it into the tub when the liquor is nearly cold. The tub should stand in a warm room. When fermentation has thoroughly began, pour the mixture into a cask, and as it works off fill up the cask, keeping back some of the liquor for this purpose. Bung down closely when the fermentation has ceased, leaving a peg hole, which can be closed up in a few days. Let it remain a year in the cask before bottling off.

When young all mead tastes strongly after honey, which taste gradually loses itself as the liquor ages. If properly made mead becomes then a very pleasant drink.

In Western Prussia, Poland and Russia, it is to the present day a much esteemed beverage. A special aroma is imparted to it by the addition of fruits, such as currants, cherries, rasberries, &c. Frequently the mead is mixed with cider, wine, beer, and even vinegar. It is then called wine-mead or beer-mead, &c., as the case may be.

The Scandinavian mead is flavoured with primrose blossoms.

In England sometimes a little brandy or sherry is added to it, and then it is called sack-mead.

Recipe for Sack-Mead:—To every gallon of water allow 4lbs. honey; boil for three-quarters of an hour, skimming well; to each gallon of liquor add ½ oz. hops; boil again for a quarter of an hour; pour into a tub and let stand for twenty-four hours working with yeast, then pour into a cask, and to 13 gallons of liquor allow 1 quart sack. Close tightly until all fermentation has ceased, then bung up close. If a large cask, allow a year in wood before bottling off.

Many other methods of specially flavouring the beverage may probably be found, and which would make it difficult whether to classify the liquor as mead or as metheglin. Metheglin is a modern preparation compared with mead, and is besides known as honey-wine and mead-wine, which terms have been latinised into *mellis vinum* and *hydromel vinosum*. Some of the best recipes for its preparation are the following:—

Dzierzon gives two recipes. Dissolve 30lb. of honey in 50 quarts of water and then boil it slowly for two hours. This has to be skimmed, cooled and treated just like the mead. Crush a nutmeg and an ounce of cinnamon and suspend the same in a linen bag through the bung hole whilst the liquor is fermenting. The wine when aged resembles sherry and is even superior.

Another kind of honey-wine may be made which equals the finest Madeira. The preparation of it is more troublesome, but when it has been lying a few years in bottles it is fit to be placed before princes.

In a bright copper mix 25lbs. of honey with 50 quarts of water and let it boil gradually. After half an hour add by degrees 3lb. of powdered chalk whilst constantly stirring. A somewhat tenacious scum rises, which has to be removed, and when no more appears the liquor is poured in a vat. It is quietly left standing to cool and to allow the chalk to settle It is then carefully poured off, leaving all the chalk behind, mixed with 6lb. well burned powdered charcoal, and slowly boiled. The liquor is then for the second time poured iuto the vat which has in the meantime been cleaned, and after cooling is filtered through a felt or flannel bag. It is then again poured into the copper and brought to a boil. Meanwhile the white of 25 eggs together with some water have been whisked into foam and are now added. This removes every particle of impurity that may be left with the froth, which must be removed whilst the mass is slowly boiling. The chalk absorbs the acid and the charcoal removes the taste of the wax. After clarifying, the liquor is allowed to simmer for about another hour and then allowed to cool. In filling it in a cask a small space must be left below the bung hole over which a clean linen rag is placed while the liquor is allowed to undergo self-fermentation. The further procedure is as with mead. Cleared in the cask and afterward filled into bottles the wine will keep for fifty years. A cool cellar, 40 deg. to 45 deg. F is an important factor. The bottles are packed in damp sand which is kept moist by pouring from time to time some salt water over it.

Butler, who wrote his bee book in the 16th century,has preserved the receipt of Queen Elizabeth's special metheglin. He writes :—"First gather a bushel of sweet brier leaves and a bushel of tyme, half-a-bushel of rosemari, and a peck of bay-leaves. Seethe all these (being well washed) in a furnace of fair water ; let them boil a pace of an hour or better, and then pour out all the water and herbs into a vat, and let it stand until it be but milk-warm ; then strain the water from the herbs and take to every six gallons of water one gallon of the finest honey and put it into a boorne and labour it together half-an-hour ; then let it stand two days, stirring it well twice or thrice each day. Then take the liquor and boil it anew, aud when it doth seethe, skim it as long as there remains any dross. When it is clear pour it into the vat as before, and there let it be cooled. You must then have in readiness a kive of new ale or beer, which as soon as you have emptied, suddenly whalm it upside down and set it up again, and presently put in the metheglin and let it stand three days' working ; and then turn it up in barrels, tying at each tap-hoal (by a pack-thread) a little bag of beaten cloves and mace to the value of an ounce. It must stand half-a-year before it be drunk."

The following is a recipe of another highly-spiced and malted metheglin :— To 15lbs. honey add 6 gallons soft water, clarify with white of eggs, boil for ten minntes and keep thoroughly skimmed ; add a handful of mixed herbs, thyme, rosemary tops and bay leaves ; boil for half-an-hour more ; strain the mixture into a tub upon five pints ground malt ; stir well to ether, and when lukewarm, strain through a cloth into another tub ; work it with yeast , and when fermentation is set up, pour it into a cask. Suspend in the cask a muslin bag, containing sliced ginger, ½ oz ; ¼ oz. each of cloves, nuteg and mace, well bruised ; bung tightly when it has ceased working, letting the bag of spice remain. It should stand in the wood for a year, and then be bottled off.

So-called "American mead" is made with cider. Take 20lbs. honey and 12 gallons good cider, and blend them together in a tub ; ferment with yeast, then pour into a cask and add half gallon rum, half gallon French brandy, 4 oz. red tartar dissolved, and half oz. cloves. Bung down close when it has ceased working, and bottle off at the end of three months. It will be fit to use three months after.

The following is slightly different from the last and worked in a different manner:—Honey 20lb., cider 12 gallons blend in tub and ferment. Then add rum half gallon, brandy half gallon, red or white tartar (dissolved), 6 oz. bitter almonds and cloves quarter oz. each. Bottle when clear, but do not cork too tightly if in weak bottles. Fermentation may be stopped by adding to each gallon qr. oz. sulphite (not sulphate) of lime. Make an emulsion and stir into the mass, agitating and stirring briskly for a few minutes.

It must be borne in mind that the production of an excellent liquor depends upon a thorough fermentation and a careful racking afterwards. When that is accomplished the drinks will improve with age if kept in an equable temperature. The best adapted locality for keeping an equable temperature, a cellar, is unfortunately, far too seldom met with in Australia.

HONEY YIELDING FLORA.

J. O'GRADY.

Can you elicit a little more information about the value of our honey and pollen yielding flora; not only about quality of honey, but also quantity, and time of flowering in various districts? Your correspondent "Loyalstone" places apple tree near the end of the list. We have no yellow box here, but I think the principal apple tree in this district (*angophora subolutina*) would be hard to beat, both for quality and quantity of honey and bloom, especially as the very young trees blossom. Perhaps "Loyalstone" refers to the tall shrub variety (*A cordifolia.*) Another splendid honey tree that has been in blossom all last month is the swamp mahogany—not the eucalyptus of that name, but belonging to the water gum family (*tristania suaveolens*); it is, I think, superior to the apple in honey yielding, though it does not bear such an immense quantity of bloom. A tree somewhat similar to the red gum, the botanical name is *Eucalyptus Tereticornis*, alluding to the long horn-like lid to the calyx, blossoms about the same time as the last, and is a valuable honey yielder. There is also in this vicinity a large, rough, fibrous barked tree, blossoming early in November, which seems a first-class bee tree. Bushmen seem at a loss for a name for it, and call it indiscriminately messmate, woolly butt, and Paddy's ironbark. I have been unable to find a description of it in any botanical work I have access to. It is peculiar in having the stamens in four bunches, with a small hemispherical lid to the calyx, having a short point in the centre. As I intend shortly getting Baron Von Mueller's work on the Eucalypti, I will no doubt be able to name it, if it is described. Do any brother bee men know a tree called Red Ash, or Leather Jacket, by bushmen? (Alphitonia Excelsa), which comes in bloom at a time other blooms are scarce, and fairly hums with bees. Unfortunately, I neglected to take a note of the time of flowering, but I believe it to be especially valuable as a bee tree. It bears a black berry, with brown seeds, somewhat similar shape to pearl barley.

What is the value of the Silky Oak (*Grevillea Robustea*), as a bee tree? The blossoms fairly drip with honey, as a great many of the family (*Proteaceæ*) which includes the honey suckle, or Banksia do as there are no silky oaks very close by, I have not observed whether the bees work on them to a great extent, but if the honey is good, there is an unlimited supply. It blossoms here in October. Another medium sized tree that blossoms early in October, is the quince (native), or emu apple (there is another so-called native quince); the botanical name of the tree I refer to, is *Petaloetigma Quadriloculare*, it is energetically worked by the bees, the male tree yields pollen I think, possibly the female honey. The Banksias ought also to bear special value as winter flowering.

Mr. O'Grady's letter is very valuable and suggestive. Re the time of blossoming, and value as honey producers of our different trees, we would be glad if our various correspondents will keep us posted on such from time to time. There is great confusion as to the names of a good many trees and plants. The same tree being known under one name in one place, and another name in another place. Those only who have access to Baron Von Mueller's excellent work, can get much light on this matter. Perhaps also as the different numbers of Mr Maidens "Flowering Plants and Ferns" are issued, a great help will be given to the enquiring botanist and bee-keeper. Will some one else answer some of Mr. O'Grady's queries?

DO BEES INJURE FRUIT?

A correspondent of the *W. A. Journal of the Bureau of Agriculture*, writes:—I have in many instances advised Australian fruit growers, who complain that their trees blossom well, but bear no fruit, to keep bees, that the bee in gathering honey distributes the pollen from blossom to blossom, and so far as they go assist Nature in the work of fertilization. I am almost invariably asked the question Don't the bees injure the fruit? The best answer that can be given to that question is to quote from a letter which appeared in the *California Fruit Grower*,

a short time ago, as follows:—Should anyone who says bees bite the raisins, take the pains to examine a bee while feeding, with a microscope, he would be surprised to learn that a bee has no biter, but has only a slender and limber proboscis that is as small as our finest needle, and through the hollow of this proboscis it can only take liquid food, and through it all the honey gathered has to pass. Will bees injure raisins? is the question. I say they will not. I know there are many who dispute this, and claim they have seen grapes eaten by them. Those who make this assertion are only making a common mistake, for if the skin of the grape is broken before the grape is dry, the juice begins to ferment as soon as it is exposed to the air; as soon as fermentation begins, the bees begin to eat the juice, and keep at it only when and where there is fermentation. But, says Mr. Everybody, the bees bite a hole in the skin of the grape and that makes it decay. To this I would answer, examine a bee while feeding, and you will never again accuse her of biting anything. The bee is not built that way.

CAPPINGS.

(*From American and other Bee Journals*)

To detect adulterated honey,—A glass containing pure honey will not blend with spirits, but adulterated honey will.

Mr. Frank Benton in regard to mailing queens across the ocean, says:—"In selecting workers for the journey do not put in more than two or three that have filled their bodies with honey, but select for the most part, such as have empty or nearly empty honey sacs, and none of course that are too old—only those that are bright and young, though preferably such as have flown. I generally put in two or three that have honey in their sacs (they feed the queen at once), two or three just emerged if such are present but old enough to cling well, and the rest such as are five or ten days or two weeks old as it happens."

J. A. McK., Stroud.—Since winter the bees have had a struggle for existence. but things are now looking much brighter. Some species of the gum and iron bark are now in bloom and the apples are literally covered with buds and give promise of a good yield of honey.

Blowing hot smoke directly on bees when balling a queen is about the surest way to cause them to sting her to death. immediately. A very good way to free a queen, although it is an old way, is to drop the ball into water, when the bees will separate, and the queen can be easily picked up without any damage to her.

H. W. Brice.—My advice is—increase slowly, nor think that a large number of stocks always give the best results. Many things require consideration in the management of a large number of hives, and the axiom, "to keep your bees in as few colonies as you can," has much more in it than appears on the surface.

L'Apiculture.—Queen cells, says the Editor, which are short and thick, and roughened clear to the point with depressions like the rudiments of worker cells, instead of being smooth and thin at the point like normal queen-cells, contain a dead larva, usually only two or three days old, which has been closed in by the bees. He observed two such cases this year.

A. Eby, in *The Kansas Bee Journal.*—Another good remedy for robbing is, after you have contracted the entrance, saturate a cotton rag with tincture of camphor and place it near (not too near) the entrance, and hold it in place with a tack or by laying on it a small stone or piece of board. No robber bee will go within the smell of the camphor, while the bees of the colony will pass it quickly with a peculiar buzz never given by bees at any other time. If the robbers persist in trying to rob the colony the rag must be saturated at least once a day as the camphor speedily evaporates.

R. A. Taylor, Apiarist, at the Experimental Apiary, U. S. A., says:—Many fears have been at different times expressed with regard to the danger of spreading the disease of foul brood by the use of queens shipped from districts where that disease prevails. To try to find an answer to this question by experimentation that would warrant the use of such queens is like trying to prove a negative so that greater caution should be exercised in such a matter than would allow one to place reliance upon the favourable results of a dozen experiments not to say one, for so far as is yet known though forty-nine such queens might be used without conveying the disease the introduction of the fiftieth one might entail costly consequences. Nevertheless in feeling my way towards the light on this question, I took a queen from a colony affected with foul brood of the worst description and the case was of such a serious nature that at least one half the brood was dead. This was on the 20th of last April. This queen was at once caged and placed in a healthy colony. This colony was strong and apparently in excellent condition except that it was queenless and must have been so for at least three weeks, and was consequently entirely without brood in any stage. In thirty six hours the queen was released and accepted by the bees and began to deposit eggs within a few hours. The colony has prospered as prosperity went during the season full better than the average of the colonies in the apiary. It has been carefully examined at divers times for any appearance of foul brood, but up to the present time no indication of the disease can be discovered, and it would be entirely safe now I think to say after the length of time that has elapsed that it is quite improbable if not impossible for it now to develop as a result of the queen. It would not nevertheless as I have already intimated be safe to conclude that the disease would never be the result of the introduction of a queen from a diseased colony. But it must be confessed that if a queen taken from a diseased colony and immediately placed in another does not convey the disease it would appear extremely improbable that one which had passed through the mails in a clean cage could do so. But there is a contingency to be considered. It is possible, that, in the colony which is the subject of the experiment, as the period which has elapsed is that during which the hive contains the largest amount of brood, a diseased cell or two might have escaped the closest scrutiny and that the disease might even lie dormant there for a considerable length of time before the circumstances are such as to favour its dissemination. The question has been raised before as to whether foul brood may lose its vitality and disappear of itself. L. C. Root, in his Quinby's New Bee-keeping, mentions the fact that it disappeared from his apiary in 1870 without any effort on his part. But it does not appear that such disappearance often happens, nor has the cause of such disappearance been divined. In a former report I mentioned the case of a colony which I have had under observation for several years. At different times it contained dead brood which seemed to answer in every point the description required for foul brood, but the disease if such it was kept at most but a slender hold on the colony. During the present year observations of the colony have been continued. From examinations made in April, though the disease itself was not discovered, I expected from general appearances to find it later, but so far it has not done so, and the brood has now every appearance of health.

Alfalfa is the same thing as lucerne or luzerne. Formerly it was known in America by its French name lucerne, but in 1853 it was introduced into California from Chili, and has since been known by its Spanish name alfalfa. It is also called Chilian clover and Brazilian clover. Its botanical name is *Medicago sativa.*

THE HONEY BEE.

Part V. of the "Honey Bee" by Richard Helms, issued by the N. S. W. Department of Agriculture, is to hand, and we make the following extracts:—"On the relationship of all bee races with suggestions for their improvement" He says:—

"Bees are evidently the production of a tropical or subtropical region of the globe, where an equable climate predominates throughout the whole year, for they succumb in colder climates without artificial protection."

From remote times they must have been domesticated in countries which they could not have reached naturally, such as Corsica, an extensive island in the Mediterranean, where the ancient Romans drew large supplies of wax. All bees have descended from one type.

Experience proves that all the domesticated races of the honey bee and their varieties freely inter-cross, and are fertile; their mongrel offsprings are perfectly fertile likewise with each other, and the parental races as well. Such is quite sufficient evidence of their descent from one species, for it has been observed as an almost invariable fact that when once varieties have been modified to such an extent as to become true species, the offsprings of their hybrids, as a rule, are sterile.

Appearances point to the probability of that original being either closely allied to the brown or the Egyptian bee, principally the tendency of the reversion of certain crosses towards the colour of one or other of these races. Here follows a very interesting account of the different races of bees.

THE RACES AND THEIR VARIETIES.

1. *The "Brown" or "Northern" Bee—Apis mellifica.*—Are of a uniform dark-brown colour, sometimes greyish when young, owing to the greater quantity of hair with which they are covered at this age; the hair is of a dirty yellow colour, as a rule, but sometimes shiny; with some strains an indistinctly reddish-brown band makes its appearance on the first abdominal segment.

This bee is found throughout Europe, some parts of Asia, in Algeria, and round the west cost of Africa, in the old world. It was early introduced into America and the Cape of Good Hope, and within this century to Australia. The Spaniards introduced it into Mexico and Central America soon after the conquest of these parts, and later into Cuba, where it has thriven exceedingly well ever since. From this island it was probably first brought to the Southern States of North America, where it became feral as in the Cape Colony and Australia. This shows that a tropical or subtropical, as well as a warm climate, are equally agreable to this race, and the term "northern" is not specially applicable to it. No doubt it received this name on account of its domestication in somewhat remote times in Germany and England. whence it became known through the literature of these nations.

The following varieties of geographical sub-races must be distinguished:—

(*a*) *The "Heath Bee" of Lüneburg.*—This variety is fouud throughout the high moors of Northern Germany, and nowhere else. In colour and size it is indentical with the brown bee, but it is characterised by its strong swarming propensity, which most likely has to a large extent been purposely cultivated to suit the prevailing system of beekeeping in these parts of the country.

(*b*) *The "Nether-Austrian" Bee.*—This variety seems not to be very widely distributed, and is mainly found to the east and the south of Vienna. It is slightly lighter in colour than the typical race, and the greatest number of them have the first abdominal segment coloured reddish brown, some specimens very markedly so.

(*c*) *The "Carniolian" or "Carinthian" Bee.*—A widely-distributed South European variety, but predominating in the two Austrian provinces after which it is named. It is slightly larger than the brown bee, with whitish air fringing the abdominal segments on their lower margin, which gives them when yonng a very bright appearance. It is famous as being the mildest tempered among all the domesticated bees.

(*d*) *The Attic or Cecropean Bee*, also called *Hymettus Bee* (from Mount Hymettus, near Athens.) —It was considered a distinct species by naturalists, and therefore is known as *apis cecropia.* Besides the home it is named after, this distinct variety is found all over Greece. and said to occur in Upper Italy and in Spain. It is probably also found in Asia Minor and the islands of its western coast. It is slightly smaller than the brown bee, and occasionally rather more hairy; the first, and more or less the second, abdominal rings are bronzy brown red, or sometimes rusty red. By some it is considered a cross-tempered race. Berlepsch says:—Kuchenmeister thinks that the Cecropeon race stands midway between the native (German) and the Italian race of noble colouring, and that it is identical with the one occurring iu the Canton Tessin, which is distributed from Mona under the name of Italian. I am inclined to agree with him.

2. *The Egyptian Bee* (*apis faciata*).—This is the furthest removed from the brown race of bees. In size it is nearly a third less: its colour is light, owing to the anterior part of the first three abdominal segments being yellow, and the

hair of the thorax, and on the posterior margins of the abdominal rings, &c., being light yellow and sometimes whitish; the upper part of the thorax between the wings is also yellow. A mild tempered race on the whole, but when once excited a very vicious stinger.

The Egyptian bee is probably the oldest race known to mankind. The earliest positive reference to bees occur in the Egyptian hieroglyphic monuments of the ancient history of this country. Two thousand years before the present era they are found to represent the symbol of monarchial government, which proves for certain that the economy of the hive was known to this people and makes it very probable that the bee was domesticated before those remote days. A much older people, the Indians, used honey and drank mead; the earliest known cultured people, it appears, disseminated the knowledge of a more extended use of honey, besides other useful knowledge and arts. Since both agriculture and stock-breeding had reached the highest proficiency in India and Egypt, it appears more than probable that bees were cultivated as well, especially since no other source is known from which saccharine matter conld be drawn for the enormously dense population of these countries. When the Jews were driven out of Egypt, Moses soothed their tribulation by promising them a land where milk and honey flowed, which may, figuratively, mean a land of plenty, but most assuredly proves honey to be a coveted and familiar product.

The supposition of an early domestication of the bee is justified by the fact that the silkworm is known to have been systematically reared in China for upwards of 5,000 years back. As the product of this insect must be considered entirely a luxury in a country which yields abundant fibre from various plants, the demand for it cannot be compared with that of such pleasant and nutritious food as honey, for which besides, no substitute was known in those days. It is more than likely that the bee was domesticated by man over 6,000 or even 7,000 years, or longer, ago, for so long it is known that cultured people have existed, and in densely-populated countries the supply of wild honey would not cover the demand. All uncultured people are fond of sweets where such are found in nature; they either rob the insect that gathers it for its own food, or they take it from the flowers direct, as for instance the aborigines in Western Australia, who suck with pleasure the banksia flowers, which in consequence have been named honeysuckle by the whites. The inherited liking for sweet food, it is well known, is increasing rather than diminishing with the progress of civilisation, and when the ancient Indians more than 6,000 years ago discovered what a pleasant beverage mead is, the demand for honey must have increased, enormously, quite enough, I should think, to encourage systematic apiculture, which, however, probably existed long before that time.

The known varieties standing nearest to the Egyptian bee are the Syrian and Cyprian. The colours of these are exactly like that of the Egyptian except that the hairs are not so light. They differ, however, in size from the latter, as both varieties are nearly as large as the brown bee. The Cyprian besides differ considerably from the Egyptian in temperament, for their viciousness is notorious.

Although the brown bee, *apis mellifica* and the Egyptian bee *apis faciata* differ most from each other among the domesticated races, still they are not species, and can only be regarded as varieties, or perhaps more correctly as geographical races. They are perfectly fertile *inter se* and their offspring are so likewise. Which however, of these two races most resemble the original type whence they and all the other domesticated varieties have primarily sprung, is difficult to determine, but it seems to me that the brown bee probably resembles it most, and may in appearance perhaps not have been modified to any great extent.

The Ligurian Bee.—This bee, when first discovered by Spinola, was by him considered a good species, and therefore named *agis ligustica*. It possesses the typical bands of the Egyptian bee and its near varieties, but its thorax is uniformly brown, and is not marked yellow like with these. Although breeding fairly true as to colour, which is a sure sign of a long pre-existence of such a characteristic, it is probably not a true geographical race, but is a cross between the brown and the Egyptian bee.

Mr F. W. Vogel, who stands next to Dzierzon among the scientific apiarists of the continent of Europe, published, in 1883, his work on the honey bee, wherein he describes the extensive experiments he made by crossing various races by selection. He found that when the brown and the Egyptian bees were crossed, the offsprings of the first generation exhibited mixed characteristics of both parents, but in the second generation a true Ligurian race became the result, which remained true to the typical colouring if kept pure. He also found that, if Italian and brown bees were successfully crossed, that the offsprings would throw back by degrees into either of the characteristics of their original ancestors, and not produce a new race. From this the conclusion has been drawn that the brown and the Egyptian bees are primary geographical races, and that the Ligurian bee is a secondary race produced by a cross of the two primary races under natural conditions. This secondary race must have originated soon after the contact of the two primary in Italy.

The brown bee is still found in some parts of Italy, and most likely was the first to be introduced into that country, probably by the Greeks, if not by the Phœnicians. The Egyptian race must have been introduced later, as the banded bee has been the favourite from the earliest historical times, and if it existed in Italy before the brown bee, this race would scarcely have been

introduced. Virgil knew of two races, as may be gathered from the following lines of his fourth Georgic. Describing the *Kings* he goes on to say :—

"The people's looks are different as their King's,
Some sparkle bright, and glitter in their wings;
Others look loathsome and diseased in sloth,
Like a faint traveller, whose dusty mouth
Grows dry with heat, and spits a mawkish froth.
The first are best * * "

Why the first are best is not further enlarged upon, but we will suppose that it was practically so at Virgil's time, and that his statement is not the mere expression of an æsthetic fancy.

MUSWELLBROOK B. K. A.

From the Muswellbrook Register.

The usual monthly meeting of the Muswellbrook Beekeepers Association was held on Saturday night, Novr. 25th. The attendance was fair. The minutes of previous meeting were read and confirmed. There being no formal business, and no member having been appointed to read a paper the meeting took a new departure in the shape of a question box discussion. Five members having written questions they were put into the box and drawn by the same five members and each member spoke upon the question he drew.

Mr. Roberts drew—"What is the best way to manage an out apiary, to control swarming and avoid loss of bees and honey; visits being limited to once a week?" He said he preferred artificial swarming by taking most of the brood and bees and putting them in a new hive and placing them on a new stand and giving them a laying queen. This was the way he managed and he found that it worked well so far.

Mr. Grant drew—"Which is the best method of artificial swarming?" He said he would favour moving the old hive and smoking most of the bees and queen off and and letting them run into a new hive on the old stand, and when the old hive has reared queen cells and they were nearly ready to hatch, move it right away and thus avoid after swarms.

Mr. Hornery drew—"Which breed do you favour, the golden or leather coloured Italian, and why?" He said the golden Italians were very handsome bees, but he would favour the leather coloured bees, as he thought they were much hardier than the golden and would resist hardships and disease better.

Mr. Ellerton drew—"Would it be advisable to rear queens in the top story or the brood chamber?" He said he had reared them in the brood chamber and in the top storey, and he failed to see any difference in them, but he would prefer those reared in the brood chamber.

Mr. Grant thought with Mr. Ellerton that the queens that were reared in the brood chamber were the best. He considered the top storey was too liable to get over heated. He also described Mr. Heddon's system of rearing queens in the lamp nursery.

Mr. Roberts said he differed from the previous speakers as he thought just as good queens could be reared in the top storey as the brood chamber. He had reared both ways and failed to see any difference.

Mr. Weidman drew—"What is the best kind of bee to keep when no honey is coming in?" He considered the best bee you could have under the circumstances would be the best robber bee you could get. But he thought the best all round bee one could keep, was the first-cross Italian Hybred, as they would fly farther and work harder than any bee he knew.

Mr. Ellerton moved that the secretary be instructed to convey a vote of condolence to Mr. Paul in his late bereavment.

Seconded by Mr. Grant, supported by various members and carried.

The following questions having been drawn, will be spoken to by the various members next meeting, viz. :—Mr. Ellerton, "Is it advisable to clip queens?" Mr. Hornery, "Which is the most suitable hive?" Mr. Grant, "The affiliation to National Beekeepers' Association;" Mr. Russell, "The bast method of taking bees from trees;" Mr. Weidman, "Which is the most profitable, full sheets of foundation or starters?" Mr. Roberts, "What is the best way to advance the interests of this Association?

QUESTIONS.

44.—What system do you adopt in taking your honey from the hive during a good season?

45.—Does "Foul Brood" affect any but immature bees?

46.—Why do the bees always make the colour of the cappings of brood agree in colour with the comb? New comb light cappings, old comb dark cappings.

47.—Which is the most profitable to put in frames, starters or full foundation?

P. RIDDEL.

44.—A wheelbarrow, two comb boxes with covers, and two sets of comb are brought to the first hive that requires to be unloaded. Combs of honey are gently removed and placed in order alongside the hive, see that the queen is doing duty and has room, arrange brood to one side, fill up with empty comb and each comb in place of most value. Close the hive. Beginning on the frames to be extracted, by a short, firm, sudden shake displace the bees home and box

the comb. This question makes us think of another system connected with which are, the bee tent, the bee escape, the removing of whole supers, the dispersion of bees by carbolic acid, the amateur method of getting the bees off the comb, quick assault and ruction. During a good season best use two extractors, one takes the comb as they come from the hive and with a gentle turn throws out the unripe honey; the other takes the combs after uncapping and gives the ripe honey. We cannot do it in a bad season.

45.—I do not know for certain but I expect that it will yet be found that it does. Many mature bees will die prematurely from its effects on them. Conditions of food supply and temperature will greatly change its effect on mature bees. It is a matter of fact that old bees transmit it to the young.

46.—Because it is not a matter of optics or ethics but that the comb the bees are bred in is largely drawn upon for material for cappings. It is not always so. If bees building a new comb and have in it brood one way and stores fail by reason of dull weather, etc., and there be in that hive a good old comb, the bees will thin down the old comb and incorporate the material with the new to complete it. Looks brown cappings on new comb. Same with too old combs, the bees add new mouths to the cells.

47.—It all depends on season, strength of colony and food supplies. Full foundation is always safe, starters are best with warm weather, fair flow of honey and average swarm of bees. Starters are a loss in a honey rush, the bees make drone cells and waste time. Again two swarms, one served full sheets, other starters at same time, may under conditions similar at 30 days give equal complements. Of course the only difference being that the full sheets were stronger in material than the wholly bee built. The one costs 8d. the other 2/6, so that to the experienced they are both most profitable or otherwise according to conditions. But for the amateur, full foundation is always most profitable to put in frames.

J. R. H. GAGGIN.

45.—We have never had, and, in the probabilities of things, never *will* have foul brood in these northern districts.

46.—Mr. Cowan in "Anatomy of the Honey Bee" states that bees use up for the brood cappings any old material handy, such as disused queen cells, etc. In old combs these spare materials are dark brown in colour, and the adjacent cappings would therefore necessarily be darker than those ones new.

47.—Full sheets of foundation during a good honey flow are without doubt most profitable, but in a slack season possibly starters might pay as well if used only in moderately strong colonies or swarms headed by young queens, so that the building of drone comb might be restricted to the lowest possible minimum.

JOSEPH G. CRANE.

47.—To this question I can say with certainty that full sheets of foundation are most profitable, though in these bad times and low price of honey very expensive.

F. W. PENBERTHY.

46.—I think the capping is drawn out mostly from the rims of the cells.

47.—I have 3,000 combs built out from starters, about 70 per cent worker combs, and can get 90 per cent built out now with very little trouble. If I wanted to increase the number of hives quick, I would use full sheets of foundation, but not else.

FOUL BROOD ACT.

W. E. BAGOT.

I must say our energetic secretary treated the matter on the whole in a masterly manner, but he must have made a mistake when he said I took a pessimistic view (surely he meant optimistic), and I cannot let it go forth that I advocate killing half the bees, far from it. It was in this case the least of two evils, perhaps half the bees die of foul brood, or ruination by tax and overproduction, etc., but that bugbear has been got rid of. Close season for wild bees! Was it a queen breeder in some favoured locality that had that put in? Bees' nests are the worst nuisance a bush beekeeper has to contend with. It is nearly impossible to get pure stock with them in close proximity. The majority of bush beekeepers would be glad to see them all destroyed. Now to wind up with, it would be better for all bee farmers to join the National Beekeepers' Association, whether they are in favour of foul brood act or not, and send their protests direct to the sec., which principle in future I intend to carry out.

WILLIAM NIVEN.

In special edition of A.B.B. of 8th November, containing a communication from Mr. H. R. Whittell, Hon. Sec. National Beekeepers' Association, you signified your willingness to receive correspondence re same. I will now express myself as briefly as possible on his paper. A bill to prevent the spread of contagious diseases among bees and to provide for protection of wild bees I consider very necessary. Copy of Act, printed in your special edition, to my mind, would to a great extent meet all requirements. I consider it important that there should be a close season for wild bees, the cruel and wasteful manner bush bees are destroyed in the depth of winter each season is very objectionable. We are well aware there are large quantities of honey and wax going to waste each year on the bush lands of this colony. Squatters lease the land for pastoral purposes, people are prohibited from

going on those lands or they will be prosecuted for trespass. In time the greater quantity of honey and wax are destroyed by bush fires and otherwise, thus causing a certain amount of loss to the country. It would be well if some plan were devised by which people would be allowed to take honey, wax and bees on the crown lands of this colony at a certain time of the year. Mr. Whittell asks questions re wild bees. The following are my replies:—For the last 42 years, at different periods, I have made a practice of felling bush bees' nests, some seasons having taken hundreds, and honey in tons, and beeswax in cwts. In the early years of my experience disease and enemies to bush bees were never seen. Of later years the bee moth made its appearance. Foul Brood I have never seen in a bush bees nest. With regard to the carriage of empty honey tins, when this proposition was moved and discussed at a meeting of Lachlan B. K. Association, it was thought if the executive committee could obtain the concession asked, beekeepers would be able to get empty honey tins carried by rail free of charge, no distinction to be made between new and sesond hand tins. I think if the executive committee brought this matter before the Railway Commissioners in a clear manner the concession asked would still be granted. The National Beekeepers Association is not as universally supported as it should be, If we look for the reason it is soon seen. I am speaking of the beekeeping industry as it has been in this district for the last 18 months. I do not wish to discourage those who intend to become beekeepers, nor those already in the industry. For the last 18 months there has been no return of honey taken here, and nearly one half of the bees have dwindled and died out. Many who kept bees have given it up in disgust, others are discouraged and do not try to work up the industry as they should, hence the lax support the National B. K. A. and Honey Supply Co., have received from this part. I trust with perseverance we will tide over the present difficulties, good seasons return, and I hope to see honey as plentiful as it has been in the past. If the beekeepers as a body were in a more prosperous condition the N.B.K.A. would be brought in closer touch with them, and be more liberally supported, also the Honey Supply Co. I do not wish to flatter the committee of the N.B.K A. In my opinion they are all very capable men, and the Secretary has shown himself to be the right man in the right place. I think if the country beekeepers consult our own interests we should do our best to retain their services, they should have the hearty support of everyone who keeps bees with the intention of making a profit out of them—that is, they should feel they are backed up by the whole body of beekeepers of the colony. In return the beekeepers would find they had a powerful friend in the executive committee N.B.K.A. to look after their interests.

F. A. MAXWELL.

Re proposed Foul Brood Act:—I had intended to enter my protest against any Act that would entail a tax on beekeepers to pay Inspectors, but as it turns out there is not to be a tax. I see no objection to the Act, provided, the clause relating to wild bees is left out. The honey got from wild bees, dirty bee juicy stuff comes into competition with our good honey and helps to ruin the market, therefore we dont want wild bees protected.

W. ABRAM

I have read your "Special" repeatedly, and I cannot overcome the impression it created at first, namely, that I consider some of its contents uncalled for, some premature and unauthorised; but, to traverse over the whole of the voluminous matter, would require another "Special" to supply material for which, however, I have now no time to spare, because my bees are keeping me busy this year.

In the first place let me mention that Mr. Whittell has supplied you with material for publication which matter ought to have been submitted to the council of the association, to be dealt with before publishing it. In the second place, what justification has Mr. Whittell to offer in explanation for criticising all and sundry correspondence in the A.B.B., in his official capacity as Secretary of the association; And is it a Secretary's business as a rule to crititisize the actions of the committee to whom he is executive officer?

In line with his capacity is the remark: "I really cannot understand the lukewarm way in which the beekeepers have so far responded in supporting both the association and the company."

In my opinion there are various reasons. Probably every bee-keeper has his individual season or reasons for his lukewarmness. It is hardly likely that every beekeeper will join an association so long as he can reap the benefit such as cheap freight, etc., all the same. Then, some bee-keepers cannot grasp the idea that being a beekeeper, a person is incapable to be a trademen or a legislator. For instance, they think that their affairs are best understood and managed by the likes of themselves. If they would think differently! Common sense ought to tell them that if they were not beekeepers, they might be goodness knows what, and they have the audacity to think that some persons are neither, not even beekeepers, but that makes them no wiser. Again, some beekeepers are of too quiet a disposition. If they thrashed their matters out according to their own gusto, not only would they then do as they liked, but they would shut out others from talk who talk a lot. Further, I opine, that the main objects of the association are overlooked. Beekeepers are like that, I suppose. Their desire is to produce from 30 to 300 tons of honey in a season and

have it sent free all over the country as well as their bees and hives, including empty kerosene tins; but when their is nothing to be sent, they are quiet as if it paid them better so. Anyway until there is some alterations in various respects the membership will not extend to evsry bee-keeper in N.S.W., and even then one cap won't fit them all. As regards the company, I know no more than the most of you, namely the list of provisional directors and their prospectus, having again forgotten how many decimal ozs. of honey to eat per day as my share. All I can say is that I hope the concern will be started, and under the control of suitable directors and an experienced tradesman as manager, it ought to go ahead, or else we will still have to slave hard and drive in a cart (those that have a cart, I have only a wheelbarrow), while others ride in carriages as hitherto.

QUESTIONS NEXT MONTH

48.—J. B. S.—What do you find the best and simplest method of storing the honey crop as it comes in?

49.—Are hives best painted or unpainted?

50.—NOVICE, N. Z,—Can any of your numerous readers of the A.B.B. give me the readiest means of finding the queen?

51--NOVICE, N.Z.—Other things being equal are bees placed in the open with shade board likely to store more honey than when hives are located in a dark shed with small openings in front of hives for bees to work through.

THE LAST MOMENTS OF THE REV L. L. LANGSTROTH.

The following account of the last moments of the patriarch of modern bee-keeping is contained in a letter from his daughter, Mrs. Cowan, to Mr. E. R. Root :—

Mr. E. R. Root,—Dear friend,—I can hardly tell you whether my heart is fuller to-day of sorrow for the loss of my dear father or of joy as I think of his blessed entrance into the land where, "there shall be no more death, neither sorrow nor crying, neither shall there be any more pain, for the former things are passed away."

I can give you only a brief account of my father's last days. When asked, the Sabbath previous to his release, by our pastor whether he felt able to make the address at our communion service, he replied, "I shall be most happy to do so," adding, in response to the assurance that, if he did not feel able for it when the time came, he could be relieved "Oh! I shall be able, it will be a *joy* to me, Mr. Raber. I am so glad you asked me!" He had been very bright and happy ever since his return from Toronto; but last week he took a heavy cold, and was much oppressed with it; and during the last few days he lost strength so rapidly, and seemed so feeble, that I wished him to notify our pastor not to depend upon his assistance on Sabbath. He was however confident that he could carry out his part in the services, and was so anxious to do so that I could not insist.

On Sabbath morning he was unusually bright and overflowing with happiness and gratitude to the Lord for his blessings. My eldest son, with his wife and baby, had been spending a week with us, and he was much pleased with, and proud of his little great-grandaughter. He asked her mother that morning to wheel her little carriage into his warm room, and I shall not soon forget how happy he looked as he sat beside it, talking to and caressing the little one. They were at the church.

After dressing, father seemed much fatigued, and I again asked him whether he thought it best for him to try to preach. He replied, "Oh yes! I will say a few words, and then I will come home and rest, rest, rest." He is most certainly at rest with the Lord.

Before preaching, Rev. Amos O Raber moved the pulpit to one side and placed a chair on the front of the platform. Father began to address the audience sitting, with some explanatory remarks as to his weakness. After a few introductory sentences, requesting the prayers of the congregation for himself and the service, he said: I am a firm believer in prayer. It is of the love of God that I wish to speak to you this morning—what it has been, what it is, what it means to us, and what we ought——". As he finished the last word he hesitated; his form straightened out convulsively; his head fell back ward, and in about three minutes, he was "absent from the body, at home with the Lord."

There was no scene of confusion in the church. Tears were running down every cheek, but there were no screams, no loud sobbing. As one person remarked, "Heaven never seemed so near before, it seemed but a step."

"Then, with no fiery throbbing pain,
No slow gradations of decay,
Death broke at once the vital chain
And freed his soul the nearest way."

Sincerely yours,

Dayton, O., Oct. 8. ANNA L. COWEN.

HOW TO MAKE A START IN BEES.

LOYALSTONE.

3. *Preparing Site, Stands, Hives and Bees.*—In preparing your site you have nothing very hard to do beyond having the ground perfectly level wherever you set a stand for your hives to rest on. This you can easily do with a sharp spade and a spirit level. Don't make your stands and have the ground uneven underneath and round the stands. The proper distance apart to have your stands is 9 feet and 18 feet between the rows. You could put them closer to be sure but it would be detrimental to the health of your bees, for if you crowd them together you will have diseases of all kinds breaking out among them. You must go as near to nature as you can. Between the rows you could plant fruit trees, or better still the tree lucerne before mentioned, which would give a good shade in the summer and a protection in the winter time. Have about a yard clear all round where you intend to set a stand, and the best thing I know of to lay down to keep it clean, and prevent weeds from growing is good mortar. Put it on in each place about three inches thick, and when this hardens it will last for years and your hives will present a nice clean appearance. And you will have no difficulty in seeing if any of your bees are suffering from disease from the dead bees that will be thrown out or if one of your queens is missing from a hive. You will find her at once if the bees have dragged her out.

There are many kinds of stands but nothing better and more durable than bricks, and is the cheapest stand in the long run. Of course you make your stand to suit the hive you intend to have. These stands you want nine inches high or three bricks from the level of the ground. To have them higher makes it more difficult for the bees to alight in the evening after a hard day's toil, and to put them lower leads to dampness in tke hives during winter time, a thing that must be avoided as dampness leads to disease.) To sum this up have stands of brick a yard clear all round, laid down with three inches good mortar (cement would be altogether too expensive). Each stand 9 feet apart and 18 feet or double the distance between the rows. You now want hives to suit your locality. Go in for the one kind and stick to it. Don't have all sorts of hives and all sizes of frames, for they would give you endless trouble. I place hives as follows: Long single storied hive to hold 20 frames with division and excluder boards, 1st, ; then Langstroth, Gallup, Heddon and Berlepsch. I advise you to go in for the first hive as the advantage of it over other hives is as follows: less material, less labour, and less expense. You can raise comb honey sections, &c. and do quicker work extracting than with any other hive. 2nd, You can control swarming by making hive small with division board when you want swarms, and let them have the run of the hive when you don't want swarms, and you have a large colony of bees to work for you. The stronger the hive the more honey you will gather. 3rd—Easier manipulated, and for detecting diseases of any kind in their first stage. 4th—You can supersede old queen by rearing young one behind excluder board without materially disturbing the working order of the hive. 5th—Uniting colonies or doubling up. And lastly, you can get a greater return of wax than from any other hive, if you run the apiary for wax alone. Any of the other hives you can buy, but I would prefer to make all my own hives, always buying one for a pattern to go by. The Heddon hive is well suited for short honey flows, but too much trouble to make and work for a good locality. The Langstroth, 8 and 10 frames, seem to be the general favourite among beekeepers. The long, single-story hive I would have you adopt you cannot buy at present, so I will give you a description of it, so that you can make them yourself. You should go in for the Root-Hoffman standard frame, as it is far ahead of any other kind. To return to hives. Make all your hives out of well-seasoned double-dressed ⅞in. redwood. To make hives out of packing cases or unseasoned timber is at the best a "sorry" job. With redwood you have a timber that will last a lifetime if properly looked after. The dimensions of this hive are as follows—Sides 32 inches long, ends 19¼ inches long. Sides and ends, 10⅛ inches deep, bottom, 35 inches long, 22½ wide, to allow for alighting board for side entrance. Cover, 33in long, 20¼in wide. Bottom and top to be made of the one board (you can get timber up to 24 inches wide) with a grooved cleat on each end to prevent warping. Cut a rabbet ⅞ inch wide and ⅜ inch deep out of the ends of sides to let the ends of hive in (what you call halved joint), so that both sides and ends can be nailed together. Cut another rabbet 1 1-16 inches wide, and ⅜ inch depth out of top of sides. And tack on to this rabbet metal rabbets (which can be had from any supply dealer, which give the frames an easy and lateral movement and prevent bees glueing the frames to any extent) which will give the required space between tops of frames and cover and prevent bees from sticking cover to frames, as they will do if you give them more or less space than the ⅜ in. Have frames parallel to entrance and cut front entrance 12 inches wide and ⅜ deep out of end of body of hive. Simply set your body of hive on bottom board and it is complete, barring a side entrance you want to cut behind excluder board 4 inches wide and ⅜ inch deep. To work this hive give 8 Root-Hoffmann frames to brood chamber in front of hive, put in excluder brood and put balance of frames behind excluder.

To Be Continued.

HONEY AS FOOD.

J. B. STEPHENS.

Anyone studying the Scriptures can scarcely fail to be struck with the frequent reference made to honey as an article of food, and also the fact that it is invariably associated with health and goodness.

Thus we find in Isaiah, ch. 7, v. 15, "Butter and honey shall he eat, that he may know to refuse the evil and choose the good." The thought expressed there seems to be that the use of butter and honey as food is conducive to a healthy state of body and mind, enabling us to choose rightly between good and evil. Again, in the 22nd verse of the same chapter the Prophet says "Butter and honey shall everyone eat." Earlier in history we find the promised land spoken of as "a good land, a land flowing with milk and honey."—Exodus iii. 8, 17; xiii. 5; xxxiii. 3; Jeremiah xi. 5, and many others.

In Proverbs xxiv. 13, Solomon says in his wisdom: "My son, eat thou honey, *because it is good.*" Again, in Ezekiel, xvi. 13, we find, "Thou didst eat fruit, flour and honey and oil, and *thou wast exceeding beautiful.*" (Girls please note.) Again in Proverbs xvi. 24, we find: "Pleasant words are as an honeycomb, *sweet to the soul and health to the bones.*" In numerous other passages we find honey mentioned, and always spoken of as something to be desired.

We see clearly then, that in these early days honey was a valued article of food, and must have been much used, much more than in the present day. It was plainly valued as a means of keeping good health. We remember also that the people of that day lived to a good old age, far beyond the allotted term of the present day. Is it unreasonable to suppose that the use of plain food, such as fine flour, milk, butter, honey and fruit (all natural products) was one of the chief factors in that desirable state of affairs.

Coming to our own day, we cannot help thinking that a more liberal use of honey by both young and old would be conducive to more health and vigour. Amongst children especially would this be so. It is commonly known that honey is a valuable remedy for colds. Either by itself or made up in various mixtures it is highly valued and much used. But where its value is not fully appreciated is as an every day article of food. Its liberal use goes a long way to keep the body in good health. A spoonful eaten after every meal is a valuable preventive of indigestion. Used on bread it is one of the best things we know of where one is troubled by a poor appetite. If in some of our hot, sultry weather you sit down to a meal feeling as though you *could* not eat, try a piece of bread and good honey. From personal experience and testimonies received we should say you will go on eating till you have had a hearty meal. Some mothers are much troubled by their children having no appetite, and tempt them with all sorts of dainties, to the ruin of their digestion. Now, mothers, you just try the regular use of honey; give it a trial and note results. But what about those poor mothers whose trouble is *too* many mouths to feed, and *too* big appetite. I don't know, I am sure, but perhaps you had better let honey alone, only after all you will hardly find anything cheaper. The cry of beekeepers is continually one of over-production and low prices, and really prices are low, making this valuable production within reach of almost everyone. Surely people are ignorant of its high value, or it would be used more largely. Where one pound is used at present we might possibly use a ton both in its natural state and in cookery where it is very little used at present.

J. W. P., Elsmore:—Honey coming in fast. Only three swarms out yet, the usual swarming season ends here about the end of this month. I use queen excluders too. Mr. Gale is going to lecture at Inverell at the end of this week. I believe there is a great demand for hives there already.

HAWAIIAN ISLANDS.

W. HORSFALL.

My dear sir,—Thanks for your communication dated October 15. In regard to the statement of the Reverend Mr. Webb "that in the islands of the Pacific, the bees being enabled to gather honey all the year round, gradually ceased their habit of storing say for winter use, and for that reason were unprofitable to the apiarist," I can unhesitatingly say that it is untrue. In this particular group of islands we have our regular honey season just as you have in temperate climates. Here, in Lahaina, we can reckon upon a more or less honey flow from May to September. In October and November bees kill their drones, gather what honey and pollen they can, and *rest* awhile. I think their *rest*, whether in tropical or temperate climates, is an essential to the very existence of the bees. During their resting period the bees work, but the queens either leave off depositing eggs, or confine themselves to a very diminutive brood nest. At this period, too, they are addicted to robbing, and woe betide a weak stock. When special honey-producing flowers are in bloom in the summer months, like the Algaroba, for instance, the bees work like veritable niggers—except during the mid-day, when the sun is directly overhead for about 2 hours, then they pause in their labours. Is it not wonderful how these little creatures adopt themselves to the climate? I give you the result of one season this year, May to September: From 9 hives we took, during this period, 567 sections, giving an average of 63 to each; besides this we took out whole frames of white comb honey without a speck of brood, of which we have kept no account. There were besides long periods during which we had no supers on our hives at all. I think these facts are sufficient to contradict Mr. Webb's statement.

1. Bees in these islands *are not enabled to gather honey all the year round.* There are times in the winter when there is an absolute dearth of flowers.

2. Bees have their season of rest in these islands, also their seasons for swarming, which are twice in summer.

I had better tell you how I think this foolish idea has got abroad. I have heard it over and over again. Bees in the first instance need a great amount of care in these islands. They have many enemies, especially ants. Persons have kept bees in boxes badly nailed together and placed on the ground. Whenever hives are thus kept or placed they become a prey to the ants. A good sound hive, raised from the ground, is ant proof, but soap and other boxes attract them; under the bottom boards they make their nests, and the wretched hive provides them with their food. They will catch and kill bees that come home overloaded and which are resting a moment before entering their home. Such boxes, too, harbour the wax-moth, giving it all kinds of openings by which it can enter and do its dreaded work. This is how bees have usually been kept, hence a bad report of them has gained currency. There is nothing so bad as ants for making bees heartless and thriftless. Once ants have an entry into a hive, the bees know their 'Ichabod' has been pronounced. Often in sheer despair they will desert in a body from their ant infested combs. The usual thing you hear said is as follows: "Oh, any box will do for bees—and they will look after themselves." This is the mistake; *any box* will admit damp and ants and other evils. There is only *one* way, namely to have good well jointed hives, thoroughly painted, and protected both at the bottom board and at the cover. Linen or calico covers under the cover are the best protection: the bees soon propolise them tight to their frames. I am writing in a great hurry, but I should like to say before I close that we are trying to sell the bees we have, as I expect to leave here in January for the Friendly Islands (Tonga.) We have 11 stocks on frames and 16 in boxes—a fairly good nucleus for anyone who wants to take the thing up.

THE UN-EXPECTED SOMETIMES HAPPENS.

W. ABRAM.

The other day I divided a strong stock in a Langstroth hive which had been queenless just two days. I took five frames with the most sealed brood with all the bees on and put them in the new hive. The bees were as usual exceedingly quiet, so instead of introducing a fine fertile queen from a queen-rearing hive under a cage, I thought I would let her run in right away. She was caged just before I divided the hive, and I put the cage on top of two frames, She walked down at once on to frame and a few bees smelled around her. I watched her all the the time. There was no sign of any offensive attack from the bees, so I turn round to get the cover to lay it on, but before doing so I look for the queen once more. She was still visible from above with a few more bees around her as if they meant to block her passage. I at once got the cage, moved the frames apart and put her in the cage. One bee had her on a wing. I pulled the bee off and it stung me in the finger and left the sting in without however causing the slighest pain. As soon as I had the queen by herself in the cage I saw thai she had been stung too. She moved slowly about for a minute or so and died. I could see no sting in her body, anywhere, and I saw no bee attempting to sting her, and yet one must have done so I am sure. The whole affair did not last two minutes. My practise is always to cage a new queen if only for a few hours, except when a hive has neither

queen nor brood, as I have lost a number of queens by the running in plan, and this one was a repetition and a warning as well. The bees had evidently made up their minds already to swarm as soon as young queens hatch. They like to swarm this year. One hive with only half the broodroom built out had queen cells, I having taken their queen, and I left two cells, the result being a swarm a few days later. This swarm settled on a thin branch of a high tree. To get it seemed impossible, yet I tried thus: I took my gun and fired five shots a little above the swarm, the fifth shot breaking the branch, brought them down and I put a box over them wherein they went, but a couple of handfuls settled again on a branch near where they were before, so I took the bees that were in the box and put hem back into the hive they came from, where they stopped, the little swarm with the queen however hung for two days in the same spot and then cleared. The last few years even strong stocks would not swarm. Where have they got the swarming impulse from now? Because natural conditions are favonrable.

I notice under "Cappings," an extract of Mr. Gale's describing the procedure of mating select drones with select queens. I may mention that Mr. Kohler of Germany made that method public some twenty years ago, and I would like to know if Mr. Gale ever tried it in this country. I have tried it more than once, but could never see my way clear to recommend it. Will Mr. Gale inform us how he succeeded?

Has the strongest and mobilest drone always the best chance to connect with a queen? This is said to be the case, but I do not think so. If we look around in nature we find that sometimes conditions and circumstances favor the strong, sometimes the weak. Is this not so?

W. Z. Hutchinson, says:—If simply producing honey for market I see but little more use for numbering the hives than in numbering the trees in a sap bush, the sheep in the pasture, or the trees in an orchard. If I visit an apiary it would be with some definite purpose. If in the early spring, to see if any colonies needed feeding by taking combs of honey from those having plenty, I should go at the work systematically, and go through the whole apiary and then go home. Numbers would not help. If to put on supers, I should put supers on colonies needing them. Numbers would not help. If I went to take off honey, numbers wouldn't show me its location It is the same with all kinds of work—it should be self evident.

NOTICE.

At different times we have received communications stating that the writers had received some imported queens, or else praising up queens they had received from certain breeders. We wish any persons who may have felt annoyed such were not inserted to understand our advertising columns are the places for such announcements. To put them in our reading columns would be doing an injustice to those who pay for advertisements, and would tend to have our pages filled with cheap puffs instead of legitimate bee news.

J. G. C., Kangarillo.—I have about 40 hives (all bar frames) but have only had four young swarms this season although I left plenty of surplus honey in the hives last year. I never knew such a bad swarming season before, it is a very bad season this for honey. Foul Brood, bee paralysis and wax moth are known about this district. The two former only the last two seasons, the latter is destruction to the black race of bees, though it does not hurt Italian bees.

Mr. J. W. D, Killarney,—Some time ago there was a discussion in your valuable journal how to make bees build full combs from starters. I will describe to the best advantage the way I get my bees to build their combs in the frames from starters without a fault. The method I adopt is a very simple one. The first I do I get two starters about ¼ inch in width, I fasten one to the top and the other to the lower bar of the frame, I then place it in the hive, and in a very few days you will see a beautiful frame of comb properly drawn out and joined together as if you gave them a full sheet of foundation. I have tried the above plan in the brood and honey chambers both ways with success, I think nothing looks so bad in an apiary as to see a number of frames improperly finished.

BEES IN A COFFIN IN CHINA.—J. E. Walker, in *Gleanings*, says: After I had seen bees in a table drawer, in a box bed under a counter and under the floor of a Mohammedan mosque which is to be found here in Shaowu, I thought the possibilities had been pretty well nigh exhausted. But one day I went up to a mountain village to visit a Christian. His father and mother were very aged, and after the common custom of the land he had their coffins all ready, finished up and varnished over nicely, in a shed adjoining his house. The cover of each coffin rested loosely on it, and a swarm of bees, finding a place large enough at the edge of one of the covers, had taken possession of the coffin.

J.S.C., Shaftesbury, N.Z.—Do you consider trefoil clover a good honey plant or herb? I have here some thousand of acres of it and in a measure it is supplanting the white clover. I take it to be a trefoil, as the leaf is much the same though smaller than white clover and bears a small yellow flower, but so far this spring I have not yet seen any bees working in it. For the past two years both English daisies and buttercups have obtained a firm hold here, and many paddocks are yellow with the latter. How are these two as honey yielders? Our season, though some three weeks backward, promises to be a boomer, as we have had very good seasonable rains and everything in the way of vegetation is looking its best. Expect to commence extracting next month.

We cannot speak as to the value of either the trefoil, the English daisy or buttercup as honey plants. Will some of our beekeepers please report. In several English beekeeping works we have looked at we do not see them spoken of as such.

"One in a Fog."—Will you kindly let me know how to get rid of bulldog ants effectually from near the hives and from their nests? These ants, if they once can touch a bee, either black or Italian, it is all over with the bee. I have prevented them from going into the hive by having dry rabbit skins, fur downwards, under the hives. I shall have to fix all the hives on posts 12 or 18 inches high, and tack rabbit's fur under bottom board, then rest the hive on posts at least 12 in. diameter, colonial pine (plenty here.) Just at present I have an Italian hive without a queen, so have lately joined this with another which had a queen. Now I want to divide them again, but first want to rear queen How am I to cut out cells to breed a queen? What shape, &c.; is it right through the midrib of comb, or only to cut out a few cells? Then about larvae—is it any worker egg placed in queen cell that will rear queen, &c. I am going to fall a dozen bee trees at Christmas for the bees. Shall I feed back their honey to them after they are located in L frame hives. There are not many blossoms out yet, and drought has done us great harm. I did not receive the extra or supplement coutaining the F.B. act. In looking over the adds in A.B.C., I find Dr. Miller's "Year among bees." Would that be about what I require to teach me. Do bees like Dogwood bloom, I have a lot of trees here, but do not notice any bees about them. Your reply will greatly oblige.

Boiling water is one good remedy for ants. On page 167, *Servb Kill Co's Destructant* is recommended. Other writers recommend finding the ants nest and with a crow bar, make a hole and place in it an oz. of bi-sulphide of carbon quickly plugging it up by packing clay in the hole and on the nest. Better be done when the ants are mostly in their nest. Re queen rearing, if you have the A.B.C., turn to page 239, where you will find a lot of information re same. Or Dr. Miller's book will give information required. If you remove the hive and put another in its place, putting the queen in same with frame of brood, the bees will rear queens in the other. As, however, you would have to wait a considerable time before the young queen's bees would be honey gatherers, at this time of year, it would be better to send and get a queen at once from a queen breeder. We do not know anything about the dogwood bloom. Try and visit some established apiaries to see how things are done.

Mrs E. C. C, Coonabaraban.—I am slow shoes letting you have a little bee news but I watch with interest for

your paper, which improves every time. Well, that is more than can be said of all the bee journals. I send you 1lb of honey just gathered, the iron bark and spotted gum on the hills being in bloom a few weeks ago. The honey was like clear amber through the glass and pleasant flavoured in fact, it is mostly clear and *always* good flavoured, and I have never yet had an ounce candied,not if kept through the winter, and just under this rock it does be very frosty. Now, Brother Shumaker, 30 miles from here, appears to have a great quantity candied, what would be the reason of the difference? His honey is good too, I dont see how our honey could be condemned if it gets fair play. The honey here is very very thick, but as I said before never candied. I sell at 5d. per pound, and have never once had a complaint. Many customers remark they get none to equal it in flavour. Plenty sell at 2d., but we want more customers of honey just now, butter being scarce and high priced, fruit the same. We may sell more, but if I do ever follow up the business as could be done here to perfection, we must have a new market. I read of famine and disease but I am thankful to state that is my share of it. I never have dwindles, foul brood or famine. I never feed, I simply keep strong swarms and pull them about as little as possible; I think they are pets that can be killed with kindness. I always leave them plenty of stores. Often after extracting or putting up a new swarm it may set in unfavourable weather, then I find I am a gainer by not being too greedy, and my belief is, one strong swarm is better than six weak ones. I dont see the use of weak ones, especially black bees, they are not worth the room. I have had a little experience with queens. I purchased four leather coloured Italian queens from a certain bee man, in the Autumn. One went along till spring splendidly. I noticed something going wrong, but put off looking from time to time, when I did look, Oh horrors! I had a box of honey, a beautiful yellow queen, about 20 workers and drone brood. Bad management that. The second one laid eggs that would not hatch, she dissappeared, and the third the bees kept her a week or more and then got another, the fourth took herself to the woods. I wrote to the gentleman and sent a stamp for answer told him two out of the four were no good, eggs that would not hatch were no good, and the others did not appear to stay. But the gentleman did not answer. I did not read of him as being dead, but he may read this, and I thought it very mean of him. I will not give the name, there are whys and wherefores sometimes, so I'll give him the benefit of the doubt. He may be absent minded. I read your supplement and by it a few questions asked. I give my little experience. First, I am not good with the axe, but I assist in taking the honey. I have not once found foul brood in the many bush nests I have seen robbed. I guess all bees here appear healthy. On one occasion we got a swarm in a dirty condition from some greenish excrement. We brought them home and put them in a clean box, and I noticed nothing wrong. They worked and appeared to ail nothing after we moved them. I can't see that wild bees ail anything only moths, and they play havoc on them. The moths fly about here in hundreds, but I keep close boxes and strong swarms, so I dont notice the moth—they dont hurt with good swarms and good hives. So I tell you, Mr Editor, I for one dont wish to see any officious person rummaging my pets about for what they are likely not to find. I think I am too far away from all outside beekeepers, for I think it is they more than the wild bee that disease comes from. The moth and the ant are sometimes their greatest enemy. But not if they have a suitable hollow with a small opening—they are secure against the moth. I notice the woodpecker, and a grey bird about the same size sit by the entrance and eat the bees. The blow fly will send off the biggest

swarm ever was if they get at some crushed brood, and then it gets very offensive if the bees cannot get it all out before the smell gets too bad. Perhaps that is foul brood with some!

Has anyone else noticed the blow fly in brood in the hive?

A. M., Springwood,—Your October issue contains much valuable information, still the extract from "Canadian Beedom" page 189, s misleading. The statement that "clipping" is liable to reproduce degeneracy runs counter to both the theory and the practice of the laws of "variation." Any variation of form or colour may be made use of as desired, but no amount of maiming will eliminate or produce objectionable or desireable qualities, as the case may be. That this is so, is self evident to anyone who has any knowledge of animal life. Take for example, that most common of objects to Australians, the sheep. For generations untold the sheep has had its tail amputated at a certain age, and yet a lamb without a tail is an unknown quantity. Given, a sheep born without a tail, and a race of the same could be soon established. On the other hand, there are three polled breeds of cattle established in England and America.; but this desirable creature has been obtained, not by dishorning, but by selection; either by breeding from animals with diminished length of horn or else by taking advantage of a freak of nature and breeding from an animal born without horns. Why should bees differ in such respects? Considering too, that the queen must use her wings before she can reproduce her species, and therefore, before she is subjected to any maiming, there is not the slightest chances of diminishing wing power in her progeny. The statement that, degeneracy in the queen's wings will be apt to reproduce itself in the workers is perfectly right, but maiming the queens' wings will not cause that degeneracy or non-reproduction of the same as is inferred in the article. In addition allow me to recall the attention of beekeepers to the complaints made in one of this year's *Bee Bulletins* about the destruction of "thousands of pounds worth" of valuable timber for the sake of a few pounds worth of grass. This appears to me to be a mistaken idea. There is a certain amount of waste in clearing ground, but in most cases, either advantage is taken of good timber and it is used on the homestead, or where opportunity occurs the timber is sold to the sawmills. Much of the timber destroyed is quite useless. It is of no use for beekeepers to grumble and to look to government for redress. The value of grazing land reclaimed is much greater than that of "piped and short grained timber. What I should like to point out is:—That beekeepers may do much good to themselves and the country in general. Who has not noticed and regretted the absence of trees on roadsides throughout the colony? Everywhere it is the same, where trees are most wanted they are ruthlessly destroyed and then in a few years subscriptions are started in go a head towns for planting trees. Why should not the N.B.K.A. urge upon the government and the different municipal councils the advisability of leaving sufficient trees on the sides of the roads to form shady avenues instead of hot glaring tracks. This would be a boon to the whole country and no beekeeper in particular. When the roads are first opened up, there is usually no dearth of trees just off the line, but in a few years as the land comes into use these disappear. In most cases it is too late now to request that trees may be left, still there are always saplings springing up, and these instead of being destroyed should be judiciously thinned and taken care of. If beekeepers would take these ideas into their consideration and urge their fulfilment on every occasion they would be more than satisfied with the result.

Charles Norman.—On the European continent, foundation mills are much less used than in America. Very many beekeepers there make their foundation themselves on hand foundation presses or forms. Of one of them, Rietsche's, between 6000 and 7000 have been sold. By the *Leipziger Bienenzeitnng* I see that another one is manufactured now which consists partly of cement, and is said to furnish thinner foundation than the Rietsche press, and to work faster than the latter, as no brushing off, no rubbing in of honey and the like, is needed; its price is also much cheaper, being only three and a half reichmarks, or about 82 cents. Should the press break down by a falling down, the manufacturer repairs it for a trifle, as the wrought-iron frame, the most valuable part of it, cannot break. To use the press it is previously laid in water for at least five or six hours. Before the work is commenced, the table has to be wetted thoroughly and it must be kept wet as long as the work is going on. Reason why: The press has no rim to collect and gather the wax which is forced out by the manipulation. This wax flows partly down on the table, partly sticks to the outer part of the press from which when wet, it can be easily detached—which operation, though, has to take place every now and then, when a thicker crust has formed.

After the melted wax is poured on the press, the latter is closed with the left hand, as the weight of the upper plate itself produces the necessary pressure. Then the press is immersed in water for a moment, is opened on the table, and the foundation is loosened from it in a certain way by applying horizontally the blade of a knife. It is advisable that an assistant take hold of the foundation to take off what may adhere on its outer rim. Before one proceeds to make another sheet of foundation, the press is again immersed in water, then it is opened, and what drops of water may adhere are let run off; what water does not flow off, is almost momentarily taken up (swallowed) by the cement.

Mr. Petersen, Wattle Flat, says:—A few months ago I read some articles in *Gleanings* about the fitness or otherwise of galvanized iron tanks for storing honey, such tanks being principally used in California by large honey producers; but I haven't seen anybody recommending the tanks I use. The tanks I have for honey storing are square iron tanks, made of stout iron plates, the seams closely riveted, very strong and painted red on the outside. These tanks are used on board ships for holding water, and are also sent out to Australia filled with groceries, but principally with malt for the breweries. They hold 200 to 400 imperial gallons, equal to 3000 and 6000 pounds of honey. I have at present eleven of these tanks in use—six of 6000 capacity, and five of 3000; three of them for over eight years in use, and they give every satisfaction. Some have had honey in them for three or four years. Before using I clean them well, and wax inside.—A. I. Root says: Honey, when in actual contact with iron, is an excellent rust preventative.

The editor of the *Progressive Beekeeper* says:—I too find it more pleasant and profitable to rear queens (in fact, do a great many things) the way I first learned how. I never form nuclei until after the queen cells have been built in full colonies, and I proceed as follows: I select strong colonies, and take the queen and all the brood from them. In place of these I give them a frame containing eggs from my breeding queen in which they will build queen cells. When the cells are capped over I transplant them to eight, all but the two outside frames, and leave all alone for a day or so, when the bees will have them all glued fast to the combs. Should there be more than eight cells, I destroy the poorest ones. Should there not be eight cells, I use them in the manner stated above as far as they will go. When all is ready I divide up this colony into as many nuclei as I have frames with cells attached, and add to each nucleus a frame of brood from some other part of the apiary. This method may not be scientific, and it may be a slow and expensive way to get queens; but I am sure I get good queens this way, and with me the above is the good old way.

Abbey Dufey, of Chili, does his extracting at night, to avoid flies and robbers, and because his new combs are not then so liable to break down.

J. E. Pond, says in *American Bee Keeper*—I don't use dummies now at all, as I believe a sheet of comb will prove as warm a thing for bees to cluster against as any other that can be used.

Pastor Stale, in four cases, sprinkled with flour the bees of swarms which grouped themselves abnormally after being hived, as if demoralized or intending to abscond. One of these was already agitated and beginning to swarm again. In each case the bees went immediately to work or formed a normal cluster, and did not abscond.

M. Dumoulin has successfully cured his apiary of foul brood by placing on the top bars of each hive a rag of the size of the hand, soaked in a solution of camphor in brandy, renewed three times a week until a cure is effected, which is generally in three weeks; after which the rag is renewed once a week for some time.

NOTICE.

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