The Australian bee bulletin. Vol. 17, no. 4 July 31, 1908

West Maitland, N.S.W.: E. Tipper, July 31, 1908

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THE AUSTRALIAN Bee Bulletin.

A MONTHLY JOURNAL, DEVOTED TO BEE-KEEPING.
Edited and Published by E. TIPPER, West Maitland; Apiary, Willow Tree, N.S.W
Circulated in all the Australian Colonies, New Zealand, & Cape of Good Hope.

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Editor & Publisher: E. TIPPER, West Maitland, N.S.W. Aus.

MAITLAND, N.S.W.—JULY 31, 1908.

OUR warmest thanks due to the many friends and sympathisers who, during the past month have shown us many kindnesses. Not only immediate friends and relatives, but neighbours and old friends, yes, pressmen, and beekeepers, who have shown such kindness as we can never forget, and our greatest wishes are that when their days of trial and sickness come they may be surrounded by the same kindness and sympathy as we have received. We are happy to be able to state we are now well and strong again.

EXPORT OF HONEY.

Writing from London on 27th March, the Agent-General for Victoria (Hon J. W. Taverner) has furnished the Minister of Agriculture (Hon. Geo. Swinborne, M.L.A.) with the following report relative to the export of Victorian honey to the United Kingdom:—

"On Tuesday last I saw Messrs. Cosmelli, Meyer and Company, leading honey brokers of this city, whom I have consulted on previous occasions. They are very anxious to do what they can to increase the honey trade, and as you will see by the copy of a fully detailed letter enclosed they are even prepared to join with the producer if necessary. The honey they refer to, being the only samples I have here, they were very satisfied with, and they think there should be no

difficulty in netting 2½d per lb. So far as Victorian honey is concerned it must not be forgotten that some honey sent over has the flavor of Eucalyptus, and other honeys have had the flavor of tallow. The three honeys I submitted to Messrs. Cosmelli, Meyer and Company were :—

JB Honey (Messrs. W. J. and F. Barnes, East Melbourne), Ben Nevis (extracted and bottled by Mr. C. B. Sumsion, Oakleigh), and Swallow and Ariel's Pure Garden Honey.

Mr. Meyer informed me after tasting them that, if our producers continue to deliver similar honey, they (Messrs. Cosmelli, Meyer and Company) could sell 50 to 60 tons per year. Messrs. Cosmelli, Meyer and Company is one of the leading firms here and if you could induce others engaged in the industry to send consignments to them or co-operate with them you may depend upon getting the best results. Our exports to various places come to only 8 tons yearly so there is room for expansion if our people will only send across honey of a uniform and good quality.

Messrs. Lyons and Company receive an annual vote from the South Australian Government for placing their wines on all their menus, and they undertook to take a certain quantity of South Australian honey. I am informed that the honey is put in lb. bottles. The retail trade people perfer to buy it in bulk and to put up the article in their own jars and bottles. As you know, my advice has always been to be extremely careful not to interfere with the system of distribution of produce in this country, as in the long run it would recoil on the producers. I venture to say that our produce will derive larger returns from the cask trade. Compared with South Australia the Victoria honey trade with the united Kingdom is more than double, and capable of large expansion if our people will send over regular supplies for good honey. Your proposal to make advances upon properly graded honey should result in increasing our trade. I am not afraid of the prices, provided the product is right and suitable for this market."

Copy of Letter From Messers, Cosmelli, Meyer & Co.,
24 Eastcheap, London, E.C.,
24th March, 1908.

The Hon. J. W. Taverner,
Agent-General for Victoria,
142 Queen Victoria-street.

Dear Sir,—Referring to the visit this morning of our Mr. Meyer as regards the importation of Victorian honey, we should like to give you a little essay on this article in order to facilitate any future business which may come along. The honey might be used for several purposes, chiefly for manufacturing as a substitute for high class sugars, and for shops to sell in 1 and 2 lb. jars for house consumption. There are also a few other outlets such as for medicine. In order to cater for all requirements it will be wise to have the honey sorted on the other side, so that we can right away offer into direct channels without having to get the goods graded at this end.

For eating, that is to say shop purposes, we can only recommend you to bring along white and water white honey. We have before us your samples J.B., and the honey packed by C B. Sumsion, both of which qualities are very nice in color and would do excellently for putting up in jars. Anything as good in color as the J.B. can be classified as water white, and anything about equal to C.B.S. could be classified as white honey, and we certainly think they would pass the standard. Darker honey would not do for shops but would come in for manufacturing purposes. These very high grade honeys we suggest you put up in standard oil tins which have been thoroughly well cleansed, packed two tins in a case, which would then represent about 1¼ cwt. of honey, and we should say we would find

a ready market at this end where it will come mainly into competition with Californian honey. It is preferable that this honey should arrive in London in a liquid state because it is then easier to handle, but should it arrive in a set state it will not materially interfere with the sale, because all importers are aware that honey will set at one time or another.

The idea of bringing the honey over packed in glass jars will be found impracticable for the following reasons :—

Firstly, we presume the glass jars and the labor of putting honey into them will be fairly expensive over there.

Secondly, the honey would have to be packed in cases containing 24 or 28 jars, which would make a pretty heavy package and increase the freight.

Thirdly, whilst we can insure barrels against leakage and rough use during the journey, it would be impossible for us to insure glass bottles against breakage as no insurance company would accept such a risk. Should any bottles get broken, a thing which seems quite feasible to us, the honey would run all over the other bottles, and for all intents and purposes that case would be lost, because with one bottle missing the others would soon shake about and smash each other. The outside and inside of the case would show stains and the case would have to be made merchantable at the wharf before we could do anything with it.

Fourthly, the large shops and stores here are in the habit of purchasing their white and water white honey in barrels or tins and they fill their own bottles, which method shows them an advantage which they would not be willing to sacrifice on account, the more so as they stick on their own labels and would not care to sell brands which are no advertisement to them at the same time.

Finally, the introduction of such honey in bottles would be terrible work for anybody who wished to push the line and as far as we are concerned we would not undertake such a job, as we know we should not be able to sell any quantities and the results would not be satisfactory either to ourselves or the shipper on the other side.

Honey for manufacturing purposes would have to come along in barrels containing 2 cwt. or more, but it will not be wise to make the barrels too heavy because they become unmanageable, and good strong barrels must be used. It does not matter if the barrels are second hand as long as there is no trace of the previous liquid to affect either the color or flavor of the honey. This honey also ought to be well graded, and if there are deviations of color in a parcel it will be well for the shippers to mark different numbers on the end of the barrels, so that when the goods arrive they can be piled according to the numbers at the wharf. This will also save expense because it would save us having each cask sampled at the wharf if we could draw a representative sample from three or four barrels.

As regards quantity, we should say we would be able to place all you can offer us, both of the fancy and manufacturing honey, provided naturally that prices are right to compete with honey which comes into this market from all parts of the globe. Your two sample bottles show really high class honey, and we should say this fancy article will find a ready sale in the shops.

The strongest competition with which you will have to contend is from California and Jamaica, and in order to introduce your honey it will be necessary to quote a bit below Californian prices. This, however, should be comparatively easy because California has a large outlet for honey in the United States and they practically get the same prices for their surplus as they do in the home country.

They have also high freights to reckon with, because they must either ship the goods overland from Califorhia to New York and thence by steamer to London or by steamer all the way, so we think you almost could save something on this item. Prices naturally fluctuate according to supply and demand. We have known Californian water white honey as cheap as 23s to 24s and as dear as 35s per cwt. of 112 English lbs. c. and f. London. At times you will have a struggle to compete and at other times you will be able to compete and make a handsome profit. This will vary from season to season and we shall be able to advise you in this matter because we are in direct touch with California and purchase honey year by year.

There now remains to find out if you will be able to deliver fine honey of good color, equal to samples submitted, regularly. It will also be necessary that the honey is of same flavor as the sample and quite free from eucalyptus and tallowy flavors, because these are very much objected to at this end. As regards the dark honey these also should come in casks and should on no account be put into tins. Here, also, the prices vary according to supply and demand and we cannot to-day give you a quotation because the market might have changed very considerably by the time your information reaches the other side. Your honey will find its level and you can rely on its fetching market value by the time it arrives. We are doing a fairly heavy business in honey, and we will gladly take up your qualities as well and will go out of our way to initiate the business, as mentioned to you this morning.

If necessary we would be prepared to do the business for the first year or so on joint account with your friends, until we have found the proper basis on which we can work. If this is not approved of, may be your friends will send us a few consignment parcels in order to enable us to introduce the goods, or failing this we would even be prepared to place an order with them if absolutely necessary; in case of consignments we would pay 75 per cent. of the value against documents on arrival of goods, or your friends could draw on us for the amount.

We are anxious to do the business if at all possible, and you can rely on our utmost support in this matter.

Trusting that some good business will result in this direction, we remain, yours truly, Cosmelli, Meyer & Co.—"Victorian Journal of Agriculture."

HONEY PROSPECTS.

This has been an excellent winter for bees, in our district at least. It is to be hoped that such has been the case in general, and that it will continue. The hives are now as strong as they were three months ago, the cold, but dry weather kept the bees at home at rest, but in readiness for work as soon as the days get warm, therefore we may have early strong hives and perhaps early swarms, and there is every chance of a good bee and honey year. If this happens in most parts of the state, or the continent, the question arises—what is to be done with the crop? The last few years have been partial failure and the number of hives of bees reduced by paralysis, thus the supply did not exceed the demand and prices were fairly reasonable. But what if a plentiful harvest results? Export to England gives no inducement so far for this season. About six months ago the Intelligence Department invited beekeepers to send samples of honey to be forwarded to the Agent-General in England in order to test the market. I sent three samples, and quite recently I received word to supply 5 tons at 25/- per cwt., freight paid to London. I declined the offer; it would mean considerable loss to me to supply at that rate to London, when the price is better here. If any other sender should have been asked to supply, it would be

well to have the facts published. In a plentiful season the matter would stand somewhat different but by no means enable us to meet the present London requirements. We must, then, find other means to dispose satisfactorily of our surplus honey, assuming we shall have a surplus than the one under review. Each of my three samples were first class quality and at least two of the samples in my opinion, exqual to any honey from elsewhere. At a 1½d or 2d per lb. it does not pay the producer, taking good and bad seasons together, but why the beekeeper does not receive fair remuneration for his products is a matter that requires adjucation, and the sooner done the better it will be for the industry. In my opinion 3d to 4d per lb. is by no means too much for such delicious and wholesome article of diet. Here then we have a subject that needs every beekeepers' careful consideration and support, in order to obtain full value for our product.

W. ABRAM.

Beecroft, Near Sydney.

Intelligence Department,
Challis House, Martin Place,
Sydney, 30th. June, 1908.

Dear Sir,—With reference to your letter of the 29th October last, in regard to the question of forwarding samples of honey to the Agent-General for the purpose of testing the English market, and the sample which you subsequently forwarded, I beg to inform you that I have to-day received a cablegram from the Agent-General, to the effect that the sample of honey forwarded by you is highly thought of; but owing to the low price which is received for South Australian honey, 23/- per cwt c.f. and i., London, is the highest offer which has been received.

It is understood from the cablegram that Lipton's are prepared to test the market with a consignment of 60 cwts. or 80 cwts., and the Agent-General asks whether this amount can be sent.

I should be glad if you would be good enough to advise me as soon as possible whether you have available the quantity of honey specified similar to the sample sent, which you mentioned in your letter was "Yellow Box", and if so, whether you would be prepared to accept the price offered, and the conditions, if any, which you would desire to make.

I shall be glad to hear fully from you as soon as possible.

Yours faithfully,
E. RAYMENT,
for the Director.

Mr. E. Tipper,
Editor, "Australian Bee Bulletin,"
Wallabadah.

[Our reply has been that our last season's crop of about 8 tons has all been disposed of at about 28/- per cwt., and Lipton's price would not pay us for N.S.W. yellow box honey. ED.]

Honey and its Adulterants

Honey is one of the most variable of food materials. When pure it is derived solely from the sweet fluid collected from the nectaries of flowers and further elaborated by the honey-bee. But bees often fill their cells with other substances than the nectar of flowers, as molasses, honeydew, or the juices of fruits; indeed, they almost always gather varying amounts of the exudations of plants other than nectar. Chemically considered, the ideal honey is a concentrated solution of invert sugar—*i.e.*, of dextrose and lævulose in equal proportions, with traces of formic acid, nitrogenous bodies, dextrin, and other organic substances. Owing to the presence of impurities so generally introduced by the bees, much difficulty is found in attempting set up a suitable standard of purity for honey as found in commerce. The difficulty is increased by the common practice of artificially feeding bees and by the addition of adulterants. The historical and literary associations of honey and its value as a food and a medicine lend interest to an important

nvestigation into its composition and analysis that has recently been undertaken by Mr. C. A. Browne and Mr. W. J. Young, of the United States Department of Agriculture. At the present time the chief adulterants of honey are cane sugar, starch syrup or commercial glucose, and invert sugar. It is interesting to note that bees readily feed upon cane sugar, but they often refuse to take glucose syrup. The latter adulterant is added to natural honey for the double purpose of cheapening the product and preventing crystallization. The nectar of flowers contains from 70 to 80 per cent. of water, but honey contains only about 20 per cent. The reduction is effected partly by the bees exposing the nectar in thin layers to the action of a current of air produced by the fanning of their wings and partly by a process of regurgitation, the nectar being continually thrown out from the honey-sac on the partially doubled tongue, and then drawn in again until by the movement of the air and the heat of the hive, the nectar is sufficiently concentrated to be deposited in the cells of the comb. Another change of considerable importance, which takes place while the nectar is in the honey-sac of the bee, and also probably during evaporation and storage in the comb, is the conversion of over 85 per cent. of the sucrose originally present in the nectar through the action of an enzyme secreted by the bee. The nectar is further modified by the bee by the introduction of a minute quantity of formic acid which is not present in the original nectar This acid is supposed to act as a preservative, and to prevent fermentation. The Bulletin deals very fully with the chemical investigation of honey, and concludes with an interesting chapter on the microscopical examination of honey. It is shown that the genuineness or otherwise of a sample of honey may be indicated by the number of pollen grains present. By counting the number of pollen grains present it is possible to ascertain approximately the amount of glucose or other adulterant that may have been added. A careful study of the size, shape, and markings of the pollen grains of different flowers enables the analyst to determine the genus, and frequently the species, of the flowers from which the honey was collected. In this way the statements on the label regarding the source of a given sample of honey—e.g. "heather honey" can be verified.—The Lancet per "B.B.J."

POETRY.

When the Children come Home

On a lonely selection, far out on the west,
An old woman works all day without rest,
And she croons as she toils 'neath the sky's glazed dome,
"Sure I'll keep the old place till the children come home."
She mends all the fences, she grubs and she ploughs,
She drives the old horse, and she milks all the cows,
And she sings to herself as she thitches the stack,
"Sure I'll keep the old place till the children come back."
'Tis five weary years since her old husband died,
And oft as he lay on his death bed, he sighed,
"Sure, one man can bring up ten children, he can,
An' its sad that ten sons cannot keep one old man."
Whenever the all willing old sundowners come,
And cunningly ask "if the master's at home;"
"Be off" she replies, "wid your blarney and cant,"
"Or I'll call my son Sandy, he's working beyant."
"Git out," she replies, tho' she trembles with fear.
For she lives all alone, and no neighbours are near;
But she says to herself when she likes to despond,
"That the boys are a working in the paddocks beyond."
But none of her children need follow the plough,
And some have grown rich in the city are now.
"Yet," she says, "they might come when the shearing is done,
And I'lll keep the old place if its only for one."

Bottom Starters in Sections.

At first glance one would think there could be no surer way to have sections well filled with honey and entirely built out to the wood, than to have the section entirely filled with foundation, either by having the sheet waxed in, or by using split sections. But it seems that at least sometimes there are failures. E. F. Atwater says this in "Gleanings":

"As I was the first in this part of the West to use sections containing a full sheet of foundation fastened on all four sides, and as that experience has covered several years, extending in part to the present, I feel qualified to say something about the results. In many cases the results are all that could be desired—beautiful slabs of honey without hole or blemish to mar their beauty. But here the (as yet) inevitable sagging propensities of all surplus foundation, on the market, in hot weather, is a factor with which we must reckon. A full sheet of foundation as usually used, attached at top only, with 1-16 to ¼ inch space below it, will usually sag evenly, resulting in a comb even and smooth of surface. But if the foundation completely fills the section, being attached at all four sides, then when the sheet does sag, a bulge usually occurs somewhere near the bottom; and the bees, when the comb needs capping, are often unable to puzzle out a satisfactory solution of the problem; a depression or small uncapped area results, besides a tendency towards comb attachments to the separator.—"American Bee Journal."

THE WELLS SYSTEM.

The present discussion regarding the possibility of retaining more than one queen in a hive brings back memories of the time when the pages of the "British Bee Journal" teemed with references to the Wells hives, which were (and are) worked with two queens. In this hive the queens are separated by a wooden division-board having perforations ⅛ inch in diameter. This does not allow the bees to pass, but allows the same odor to permeate the whole hive. In some cases the bees were allowed to work together on the same sections, the latter being placed above a queen-excluding honey-brood. The reason why a wood division-board was used was to allow the bees to form one cluster, one colony clinging to one side of the board, and the other to the opposite side. The divison-board gets clogged with propolis, and it is quite a job to clean it; but some hold there is no need of cleaning it very often, as the colonies retain the same odor in any case

In the years 1893, '94, '95, '96, the "British Bee Journal" gave all due aid and encouragement to the double-queen system; but we see little about it now.

Dzierzon was a strenuous advocate of more than one colony in a hive, twin hives being his favorites, and he also had four-colony hives in his apairy. He did not advocate these hives to be worked as single colonies, but merely from the increased warmth and comfort engendered by the bees being associated together under one roof.

Some experimenters with the Wells system actually kept as many as four queens—two above the zinc and two below—the two upper ones being young queens to take the place of those below

In one instance, at least, a swarm issued from a Wells hive which weighed 14 pounds. It does not follow, because the Wells system did not succeed in establishing itself, that the underlying idea should be discarded. The two-queen system requires rather skillful management, and for that reason it appeals more to the specialist than any one else. —"Gleanings."

DISTANCE OF FLIGHT OF DRONES.—M. Maurice Bellot says, in "Les Abeilles et les Fruits," that after moving from his apiary a colony of bees that had retained their drones to a distance of a mile and a quarter, he found next day that a number of these drones had returned to their old stand. This colony had been previously moved six metres away from the others in the apiary, which shows that the returning drones belonged to this hive. He also says that in a radius of six kilometres (nearly four miles) from his apiary most of the bees are cross-bred with Italian bees. M. Bellot is a queen-breeder, and imports a great many Italian queens.

GOT A BEE IN IT.

Auntie.—Now, Tommy, take my bonnet up-stairs for me, there's a good boy.

Tommy—Boo-hoo! I don't want to!

Auntie—Indeed! And why not, pray?

Tommy—'Cause mother told me you'd got a bee in it.—The Sketch.

HONEY.—

Demand quiet. Supplies continue to come in freely. Choice Western is selling from 2¾d to 3d.; good from 2¼d to 2½d per lb.

BEESWAX.—

Very dull of sale. Best bright from 1/1½ to 1/2; dark, 1/- to 1/1 per lb.

STRANGLING SETTLEMENT.

THE BANNING OF BEE-FARMERS.

From Trunkey Creek a correspondent writes drawing attention to most peculiar conduct by the Government concerning the Turnkey district. The district contains a considerable number of bee-farmers, who put upon the market a large quanitity of honey. These useful settlers should certainly be encouraged by a government that boasts of its alleged efforts to encourage closer settlement; but instead of this being the case, what according to our correspondent, is found ? Why, that the best bee-country is being handed over to squatters under improvement leases and that the improvement lessees are promptly proceeding with preparations to ruin the bee-industry by ring-barking the timber ! If this be done, then it means not only that timber will be destroyed—and recent reports have shown that New South Wales cannot afford to lose any timber—but that a considerable class of men, handling many tons of honey, circulating much money in the Turnkey district, and supporting large families, will be pushed out by a few squatters. The trees are necessary to the bee-farmer, of course, because the bees extract their honey from the tree-blossoms.

We are informed that the bee-farmers have drawn up and signed a petition, which they have forwarded to the Lands Department. In this petition—a copy of which has not been sent to this office—they go into details as to the amount of honey produced in the Trunkey district, and the number of persons supported by the beekeeping industry. Letters have also been sent to the Minister and Mr. Beeby, the member for the district. Up to the present, our correspondent says, the dismayed bee-farmers of Trunkey have not ascertained the result of their action. Mr. Beeby should certainly—particularly as Parliament is not now sitting—hurry up the Department in this matter. To spend the people's money on the promotion of immigration, and then to hand over to timber-destroying improvement-lessees land that is at present supporting numerous small farmers, is a scandalous outrage upon the people of New South Wales, which must not be tolerated.

EUCALYPTUS TREES.

"The American Bee Journal" gives the following extract from this year's Seed Bulletin from the Agricultural Experiment Station of the University of California :—

The growing interest in Eucalyptus planting is now keener and wider than in any previous year since this important genus was introduced from Australia over 50 years ago. This interest is inciting commercial propagators and our nurseries are therefore offering large collections of well-grown trees at prices which encourage forest and wood-lot planting. Aside from species thus available we have several growing at the University Forestry Station at Santa Monica from which seed has been gathered for this distribution to those who desire to grow species which usually do not enter into large plantings, viz. :

1. EUCALYPTUS BOTRYOIDES ("BASTARD MAHOGANY").—An upright and spreading tree highly recommended by all the Australian writers as one of the best timber trees, if it is grown where there is plenty of water. The first 14 months after the young grove was put on the Station Grounds at Santa Monica the average height was nearly 13 feet. It will stand a small amount of frost.

2. EUCALYPTUS CITRIODORA ("LEMON SCENTED GUM").—Very ornamental, having lavender and cream colored deciduous bark, the leaves are long and narrow, the branches are pendent, giving the trees a weeping effect. The wood is

claimed by the Australians to be valuable for wagon work. The average growth of this species is about 5 feet a year for the first 12, then the average is somewhat smaller. The leaves when crushed give off an aroma, from which the species is named.

3. Eucalyptus Cornuta var. Lehmani.—This variety is a dwarf, having very small, thick dark-green leaves. The buds are borne in large irregular masses and the deciduous calyx caps are 4 and 5 inches in length. The flowers are of a dark-green color and are in bloom during the late fall. The wood is a light-brown in color, very hard and easily polished. This variety is a curiosity capable of forming a good shade-tree if properly trained.

4. Eucalyptus Decipiens.—Of a dwarf growth at Santa Monica Station, but it blooms profusely during the late fall and early winter; The bloom is worked by large numbers of bees.

5. Eucalyptus Diversicolor ("Karri gum").—One of the tallest growing trees in Australia, producing a very valuable wood for wagon-work. This tree will stand frosts nearly as well as some of the better known and hardy species.

6. Eucalyptus Eugeniodies.—This stringy bark produces a fairly durable timber and one that can be used in building, although it is of slow growth. Its range is not definitely known.

7. Eucalyptus Gunnii ("Tasmanian cedar gum").—One of the hardiest gums in Australia. It attains a fair size in this country and has a fairly large range.

8. Eucalyptus Leucoxylon ("Iron-bark gum").—An upright and rather rapid grower and the timber is very hard and durable. The trees are found growing in the southern part of the State. The white flowers are in bloom during the winter.

9. Eucalyptus Melliodora ("Yellow box-tree").—Produces a wood valuable for wagon-work, etc. In contact with the soil it is very durable. This is one of the best bee-trees among the Eucalyptus and is in bloom all winter and early spring.

Therapeutic Value of Honey.

"According to Dr. Pol Demade, who writes on this subject in *La Réforme Alimentaire* for January, honey occupies, or should, at least, occupy an honourable place in therapeutics. Since up to the present date this right has not been generally accorded to it, the Doctor draws the attention of his confrères to certain experiences of his own, and also gives his reasons for the conclusions to which he has been led. He relates that the Lady Superior of a certain convent asked his advice about a tiny, emaciated baby. The child, which lay in its mother's arms, was 9 months old, and gave one the feeling that it had but to close its little eyes for death to assert itself. The infant was suffering from diarrhea, which had refused to yield to all remedies tried; the poor little creature was emaciated to an extreme degree, with black rings under the eyes, and the lower stomach fearfully large. The poor sufferer had no appetite whatever, but was in its place plagued with almost incessant vomiting and diarrhea.

"This sickness, it appears, the French and Flemings call 'old man.' 'What,' says Dr. Demade, 'could a medical man hope to do with such a wretched specimen, which any breath might send into Paradise? And yet, there stood the mother, pressing this remnant of life to her heart, her ninth child, which she told me she loved better than all the rest.

"'I ordered her to feed the infant on honey and water, nothing else absolutely for 8 days, and, turning to the Lady

Superior, I added that if the child were still living at the end of that time, to give goat's milk and water in the proportion of 1 to 2 parts, respectively. I dismissed the case from my mind, since I did not hope for anything better than death as a release.

"'What my astonishment was when at the end of 3 months, I was shown a healthy-looking, well-nourished baby, with an excellent appetite and regular habits, and its stomach reduced to normal proportion, may be easily guessed. Here was my little wretched creature nothing less than metamorphosed by means of the honey And I learnt that the mother had used my remedy to other children who suffered from stomach disorder with equally good results. I profited by her experiments, and I have since found the use of honey in any disease of the digestive organs a most valuable agent.'

"The Doctor adds that he has tried honey as a remedy for that most obstinate of all diarrheas which follows an advanced stage of pulmonary consumption, and even with young animals, and has in every case been rewarded by seeing the diarrhea stop, and a desire for nutrition takes its place. The list of chemical compounds used to clear the intestinal canal, with more or less good results, some of which work other mischief, is a long one; honey, which is at once cleansing and nutritious, ought to take their place. And it may be that this is only one of the therapeutic uses out of many to which it might with advantage be put.

"Dr Pol Demade argues that it should be easy for any practitioner with commonsense to recognize the reasons for this high value possessed by honey. It is, in the first place, a most extraordinary natural product. It is a sugar, but not of the ordinary kind. It is antiseptic, almost free from fermentation, and withal capable of almost instant assimilation in the organism with next to no exertion on the part of the digestive agents. Ordinary sugar is saccharine, wheras honey is a glucose. The former ferments readily, and has to be turned into glucose by the action of the saliva or some of the other digestive juices before it can be assimilated. In the case of a healthy stomach, saccharine can be dealt with at no great expense to the system; but when the digestive organs have been weakened by disease, and the whole nervous system is extra-sensitive, sugar should be withheld and honey given."

The foregoing article taken from the Vegetarian Messenger ought to be of special interest to those of the sisters who have anything to do with looking out for what goes on the table (and which of us has not?, but especially those who have the care of little ones. It is not likely that such remarkable results as here depicted would follow in all cases; but it is entirely possible that some other little lives might be saved by following a like course And would not a little less sugar and a little more honey be for the health of all, old as well as young?—"American Bee Journal."

ALCOHOLIC FERMENTATION.

To make alcohol which will be later changed to vinegar, it takes saccharine matter. The scientists tell us that the sugar of fruits is entirely destroyed by putrid fermentation. We hardly need to be told this, for every one knows who has tasted spoiled fruit, that instead of a sweet flavor, nothing but bitterness remains. Even although apples and grapes contain the germs that cause alcoholic fermentation, these fruits will only rot, unless placed in conditions which help develop the proper germs. A pile of apples under a tree will rot, the same number of fruits crushed and placed in a receptable which will keep warmth and exclude the air sufficiently will develop

alcoholic fermentation which will almost immediately afterwards become acetic if the air is not entirely excluded. Honey-water diluted so that the sweet it contains is sufficient to preserve it, and kept in a cool place, may develop a certain amount of putrid fermentation.

We are told that all sorts of germs are brought into the hive with the honey gathered in the flowers. So honey, unripe or diluted, is subject to all sorts of possibilities. That is why many people heat it before trying to use it either for mead or vinegar. This heating destroys all germs of fermentation, and to secure the alcoholic ferment, it is then necessary to add some yeast. But it is also necessary to keep the liquid at a temperature sufficiently high to permit the development of the germs of fermentation, and not high enough to kill those germs.

It is generally admitted that a heat of 70 to 90 degrees is necessary to keep up fermentation, and that a heat of 130 and upwards will destroy the germs, although some bacteria live at a much higher temperature.

When the alcoholic fermentation is well under way, the acetic fermentation may begin at any time, but it takes a much greater quantity of air for the latter than for the former. The alcoholic fermentation develops a large amount of carbonic acid, which for the time being will prevent all other fermentation. The deadly gas escaping from a vat of fermenting grape-juice, which will extinguish a candle brought near the surface —will exclude acetic fermentation until this gas has escaped. But the vineyardist knows well that if he does not exclude the air, there soon comes a vinegar odor from his fermenting vats, unless the amount of sugar is so great that either it or the alcohol formed in large amount will preclude the development of the acetic germ. So the very thing the wine-maker avoids is what the vinegar-maker needs. While the one hastens to bung up his barrels, keeping them well filled with as little air space as possible, the vinegar-maker devises the most feasible ways to expose the fermented liquid to the oxydizing action of the air.

Four things are therefore necessary in making vinegar:

1. A sufficient quantity of honey to permit of alcoholic fermentation. This fermentation is usually speedy, requiring but a very few days.

2. A sufficient amount of water. If there is too much saccharine matter, there will be but a very slow fermentation. From one to one and a half pounds of honey to the gallon is the most approved quantity.

3. A favourable temperature, from 70 to 90 degrees, Fahrenheit. The lower temperature gives a slow change, the higher a speedy one.

4. Air and ferment. The quantity of air needed for the first or alcoholic fermentation is limited, but some air is necessary as well as an escape for the gas which forms, during the chemical change which ensues. For the acetic fermentation, the more air the better, if the temperature is preserved.

Yeast, fruits or fruit-juices will furnish plenty of germs for both the alcoholic and the acetic fermentation. For the latter, if it should be slow to come, a little good vinegar or vinegar-mother will supply it. Fruit-juices, wine or cider, contain so much of the germs that a barrel of wine or cider left unchanged will be almost certain to turn to vinegar in a few weeks, if placed in a warm cellar. The only reason why so many people fail in securing the acetic fermentation for their honey-vinegar is that they do not give it enough opportunity to develop the alcoholic fermentation first, and most honey-vinegar will be found still sweet when already partly made.

Pure alcohol mixed with water, cannot make vinegar unless it contains some of the albuminous substances of vegetable juices on which the fermenting germs will feed.

There are cases where the alcoholic fermentation is induced, but no acetic fermentation can take place. It is when the liquid has been made very rich and has fermented until it contains 14 to 16 per cent. of alcohol and still retains some unfermented sweet. The quantity of alcohol mentioned is sufficient to arrest further fermentation. The alcohol dominates. We then have a liquid which much resembles Port of Maderia or rich California wines. This happens when three or more pounds of honey have been used. To make vinegar out of this requires thinning with water and adding acetic ferment, for such germs as may have existed in the liquid have been destroyed by the large quantity of alcohol produced.

After the alcoholic fermentation has taken place, it is not necessary that the temperature be kept constantly at the proper degree, in order to make good vinegar. But it must be remembered that in such case the changes will be delayed, and if the temperature is allowed to go below the freezing point, it is quite likely that more ferment will be needed in order to re-establish favorable conditions. The swiftest action may be secured by the slow trickling of the fermenting vinegar through the air. In some good vinegar-rooms of Europe, beech shavings, soaked in good vinegar, are used through which the forming vinegar is allowed to trickle, in contact with the oxygen of the air, and it is said that very strong vinegar is thus made in 48 hours, if the proper conditions are present.

A very limited quantity of honey in water, less than a pound to the gallon; a temperature too low, say 65 or less; the absence of ferment—any or all of these conditions will prevent fermentation and the production of vinegar. In such conconditions putrid fermentation of different kinds take place. Your honey-water will find itself in the position of apples allowed to rot, instead of going through the alcoholic and acetic changes which take place in normal conditions.

BEES IN A BARREL.

A stray swarm of bees somehow or other managed to find lodgement in an empty barrel, and one of pretty good size at that. It appears by the half-tone engraving that the owner of the barrel made four holes in the center of the barrel so as to put through its middle part two sticks crossing each other. This is usually done with box-hives, both here and in Europe. Judging by the photograph and the description given, the bees began by building a piece of comb under one of the cross sticks; then a few were started somewhat obliquely, and finally the rest came in very irregularly but rather in a radiating disposition from the center to the circumference. The photograph represents the barrel half demolished. It is evident that the upper part of the barrel, which was not full had the comb built from the cross sticks upwardly climbing, so to speak, along the walls and extending at the same time toward the center. The whole with all the irregular pieces, the braces between the combs, the openings left, etc., look very much like an ant nest built or rather excavated in a piece of rotten wood. The article is written by Mr. Melys.

Those who have demolished box-hives know that the combs therein are constructed more or less in a similar way. It is also contended that bees (at least those wintered out of doors) will winter better in a box or straw hive than in a modern one. There is no doubt that this peculiar construction is the key to the secret. With such an arrangement

the cluster of bees can reach anywhere in the hive wherever there is any honey. Any bees that happen to be separated from the cluster can find near by an opening to reach it. With solid combs it would be necessary to go over, or below or clear around; and in very cold weather, it would be an impossibility.

The celebrated Italian apiarist and writer, Dr. Dubini, in order to attain the same results with modern hives, was in the habit of making several holes in each comb. To prevent the bees from plugging them up, he inserted small tin tubes in them.

It seems to me that such holes would also help the queen in her laying, as when a comb is finished she could pass to the next without having to go around it.—La'Apiculteur Nouvele.

ECONOMICS OF APICULTURE.

J. E. HAND IN "AMERICAN BEEKEEPER."

Economics of apiculture is a subject that should command the careful consideration of every progressive beekeeper. In these times of short honey crops and frequent failures of the clovers to yield the coveted sweets, it is only too painfully evident that the beekeeper's profits are gradually diminishing, and in order to meet the changed conditions and keep up the profits of honey production it is necessary to practise the most rigid economy in our methods by eliminating unnecessary expenses.

Perhaps the greatest factor in the cost of honey-production is labour. Beekeeping as a pursuit has not kept pace with other like industries by adopting labour-saving methods.

If we would increase our profits we must avoid unnecessary labour by adopting short-cut methods.

The amount of labour that is wasted in the useless tinkering with bees is extravagant in the extreme, especially in the handling, brushing, and interchanging of broodframes, all of which adds to the cost of honey-production and lessens the beekeeper's profits.

With the right system it is seldom necessary to handle frames singly, and all manipulations, even to the introduction of queens, can be performed by hives in half the time required by the tedious methods of frame-handling.

Next to the labour problem perhaps the greatest factor in the cost of honey-production is the extravagant purchasing of new-fangled clap-traps that too often prove a disappointment to the purchaser. The average beekeeper can reduce the cost of honey production by buying his frames and sections, and getting out his hives at a planing mill at home.

A fancy dovetailed cover costs money and does not increase the honey crop. If your time is worth less than five dollars a day it will pay to make your own hives, providing you know enough and are a pretty good mechanic, otherwise don't try it.

During my 30 years of beekeeping I have purchased but one hive, and that was the first one I ever owned, and the combs in my hives are not handled once in three years, and yet my bees are worked on the high pressure plan, and I know the exact conditions of every colony in my apiary.

I am producing honey in a poor location and must reduce short-cut methods to a science or go out of the business, and I prefer to devote the time that others waste in useless frame-handling, to the care of a few more colonies, or to some other occupation that will pay equally well.

Another important factor in economical apiculture is the improvement of our bees by selecting our breeding queens from the colonies that possess the most desir-

able qualities thereby bringing our entire apiary to a higher state of permanent productiveness.

It is poor economy to allow bees to supercede their queens, since this is the direct cause of a great part of our swarming troubles and which must result in a large per cent. of unproductive colonies headed by worn-out and feeble queens.

Everything hinges upon the queen; if the queen is worthless the honey crop is a failure, and the Cheap John methods of queen-rearing employed by the average queen-breeder is the bane of modern apiculture.

The wholesale transferring of larvae as well as the caging of virgin queens compelling them to subsist on queen candy in a hostile colony where they are worried and often maimed through the meshes of the cage is poor economy and must result in poorly developed and short-lived queens.

With the right system a beekeeper of average intelligence can rear the choicest of queens at little expense, and there is no excuse for keeping a lot of unproductive colonies headed by played-out queens. If you don't need the 75 pounds of honey that it takes to keep each of those "no account" colonies, you have no right to prevent some other beekeeper from getting it. There is a moral side to the question of flooding the country with unproductive colonies to the detriment of the small beekeeper who would work his bees on the intensive plan. Bees will store as much honey in a cheap hive if the principle is right as they will in an expensive one, but a cheap queen will prove a disappointment in the end.

CAPPINGS.

TO DETECT ARTIFICIAL HONEY.—Artificial honey can now be made so like the genuine article in flavour that even the expert cannot tell the difference. Thick syrup of sugar is boiled with a minute quantity of mineral acid, which converts it into the same form occurring in honey. This is mixed with some natural honey of strong flavour, and thus closely simulates the real article. It is said that the following, known as Ley's reagent, will detect the spurious honey. Ten parts of silver nitrate are dissolved in a hundred parts of water, and to this 20 parts of a 15 per cent. solution of sodium carbonate is added. The precipitate is filtered, washed, and dissolved in 115 parts of a 10 per cent. solution of ammonium chloride. It must be kept in the dark in a well-stoppered bottle. The honey to be tested must be diluted with twice its weight of water. A few drops of the reagent are to be added, and heated for five minutes on a water bath in the dark. Natural honey turns brown, and shows a greenish-yellow fluorescence; the imitation turns a lighter tint, and shows no fluorescence.—THE GLOBE.

There are about 90,000 beekeepers in the British Isles. For many reasons, however, it is advisable to confine our consideration to the rural districts of England, omitting Scotland, Ireland and Wales, and I think that a fairly correct estimate for this area will show about 63,000 beekeepers, or say one beekeeper for 350 of the population. I think it will be admitted that this is not a bad proportion. The honey imports from abroad, amounting to about 35,000 per annum, imply, however, that the home production of honey is not equal to the demand, and that the inferior quality of the imported honey is indicated by the low price which it yields. Coming now to the question of the organisations of beekeepers in the country, I find that there are about twenty-seven county associations, and that their membership amounts in the aggregate to about 6,500 members, or roughly 10 per cent of the number of beekeepers. There are about thirteen counties in England, omitting London, which have no association. The foregoing figures suggest the conclusions that the

number of beekeepers in the country is fairly large, but that the number of stocks is relatively small, and that the output of honey is not equal to the demand or as large as it might be.—British Bee Journal.

The Production of Beet and Cane Sugar.— The production of beet sugar is now equal to that from cane. The total of the world's output of cane sugar for the season of 1906-7 was 7,146,446 tons. For beet sugar the figures are 7,144,377 tons. The production of cane sugar has risen rapidly of late on account of the liberation of Cuba, which has greatly encouraged the growth of sugar-cane. The United States is now the greatest market for cane sugar, while the British Isles are by far the greatest consumer of beet sugar. The Britishers are the greatest consumers of sugar, the consumption per capita being about 10 lbs. higher than in the United States.

Caramels.—Melt together half pound of butter (not salted), half pound of granulated sugar and half pound of honey. Boil slowly during about 20 minutes and when cooked just right (this has to be learned by experience), pour on a marble slab slightly greased and cut in pieces of the size and shape wanted —"La Revue Eclectique."

In the afternoon of the 14th instant, I removed a queen from a hive and made a record to that effect. In the forenoon of yesterday I was removing the queen cells started in the hive in the interval, and among several nearly finished ones was found one completed and capped over. As this was done in less than four days, it would seem that I was probably not in error in the other instance, in claiming that it had been done in about three days. Would be willing to take oath as to the correctness of my records in this latter occurrence.—"American Beekeeper."

To Cuba as to all other portions of the American continent, the true honey bee is not indigenous. It was introduced from Spain early in the fifteenth century. The conditions being so favorable the bees multiplied rapidly, and soon spread to all parts of the island, and beekeeping became one of the leading industries. The honey crop was always sure and its profitable disposal to be depended upon until well into the sixteenth century, when the process of sugar-making was discovered and introduced into the island. Then commenced a steady decline in the call for honey, and the prices obtained were correspondingly less, but beeswax, on the contrary, not only retained its ancient commercial importance, but, owing to its exsensive use in many modern mechanical arts, steadily advanced in price.—"American Beekeeper."

According to the report of the Leicester B. K. A. the past season as probably the worst that any beekeeper in the county has ever experienced, very few indeed having secured any surplus honey whatever, and the majority having had to continue feeding their stocks right through the honey-season to prevent them perishing of hunger. It is feared that where liberal autumn feeding has not taken place many stocks have succumbed during the winter. The retiring committee was re-elected as were also Mr. Wood, hon. auditor, Mr. Taylor, hon. treasurer and librarian, and Mr. Bold, hon. secretary, a special vote of thanks being passed to the last-named gentleman for his untiring exertions as secretary; also to Dr. Anderton, of Chorley, for his generous gifts of prizes and upon their society as fast tottering to destruction; but he had since grown calm. The whole thing was so droll that he was quite sure all the ladies would not follow suit and withdraw their subscriptions. They were such a great help to the society; in fact, he might compare them to the inmates of the beehive. They were the workers, and many amongst them were queens. If the bees could only do so, they would surely give ladies the vote, because ladies did so much for them and saved so many of them from the sulphur-pit. (Laughter.)

CORRESPONDENCE.

We beg to acknowledge receipt of the following letter from Mr. W. Abram: — Whilst expressing my best thanks for your kind words of the 26th. ult., I also feel very grieved to hear of your affliction, which is the more distressing because one never knows when it may come on again. But as it is so uncertain in its appearance there is also this chance for you that you may never again suffer from a similar attack, or if you do it is not to be hoped to have the attack serious. As you may remember my wife suffered from epileptic fits for over ten years, but she is now much better and for several years has not had a fit, though she gets slight faints. My general health is somewhat better, but the eye-sight is not as it was, and hardly ever will be better than now. If it is not getting worse I shall be satisfied.

I have just received a telegram from the Intelligence Department, that Agent-General, London, has cabled for honey as per my sample which I sent with others, and I am asked to call at the Dept. in reference thereto.

E.J., Taradale, Victoria.—The past season in Victoria has been a very lean one, regards honey. Very little honey has been taken, consequently the prices are firm. The farmers as well as the apiarists have suffered severely through the great drought, where I have the apiary at present. Cattle and sheep have been dying by hundreds for want of feed, but glad to say that during the last 12 days, we have been favoured with good general rains throughout the state, although somewhat late, still will do a great amount of good.

J.G. Junr., Waratah Apiary, Gunnary, Burrowa.—I have just finished my work in the apiary for the season. I have had a very fair honey flow here, and it is not quite over yet. My largest yield from one hive being 300lbs extracted honey, I dont know, but I consider that very good. I took off one hoffman frame weighing 114½lbs from which I extracted 11½lbs of honey. I don't know if that is near a record or not. My honey is selling very slowly at present for the simple reason that I won't sell for what my neighbouring beemen are selling their crop for. They sell for just what the public like to offer them, but I have a fixed price, and they can either take for leave it. I will get my price when others have sold out. I expect to start another apiary next season if all goes well. Wishing you and the "A.B.B." every success.

[The enclosed letter by some means or other has been mislaid for a time. As much of it agrees with our own experience we are the more sorry for its being mislaid. We might mention the fault of cutting down prices in our neighbourhood is blameable to not only ignorant beekeepers but to unprincipled storekeepers who do not consider business lies as falsehoods, though putting on long faces when taking part in church matters.—ED.]

W.J.B, Bunbury, W.A.—Beekeepers in W.A. are having a bad time this season, and there is little prospect of improvement. Bees and honey are almost a thing of the past with me.

Gargar Apiary,
Howlong,
June 31, 1908.

DEAR MR. TIPPER,—I have no doubt but what you will be wondering how it was I have not written to you before now. Well, to tell you the truth everything has been so bad I had no heart to write to anyone. Well now I will try and tell you how I have been getting along since last I wrote to you, and also the bees. Three years ago asI told you I had a good year, took up a special lease of some 400 acres of land, went in for more bees, increasing to about

200 colonies. Of course I was going to make a good haul and fill my pockets full of money. Beekeeping is such a good money-maker, nothing to do but get somebody's hives, fill them with somebodys strain of bees, and the money will roll in. When lo and behold the bad times came and where was all the good prospects gone to. I lost half the bees through what my friend Behune calls shortness of pollen, and from the others a few tins of honey, that did not pay me for my time.

I saw an advertisement stating there was a good sale for honey. This was just before Christmas, and stating that 3½d. could be got. I sent a sample and was told there would be no difficulty in getting that price, and to send at once. I forwarded 40 60lb. tins and was waiting every day for the cheque. Shortly after I received a note with printed heading, sold this day 20 cases of honey. Waited another month, wrote, telling them I wanted the cash and that a remittance would be very acceptable. I rereceived a letter enclosing cheque for £14 and telling me my honey was not sold. I can assure you I was surprised, as I naturally thought that after me sending the sample and accepting same they would have had it sold. I waited for about 4 months and wrote them a straight letter about it telling them I would let my brother beekeepers know how business is carried on in Sydney.

Since came in a reply stating that they were surprised at the tone of my letter, and I have not heard anything since.

Now I will leave it to you. Do you think it is right to get one to send honey over 400 miles and when they have got it to be treated in this manner? Oh yes, beekeeping is the game everyone should go in for, get a little honey and then send it to a Sydney commissioner's house. If this matter is not fixed up shortly I intend to test it at law. If it does not come off, at any rate it will warn other beekeepers of the business methods of this firm.

I am glad to see the A.B.B. still going along, and I can assure you I am always looking forward to it.

Yours very sincerely.

PAUL MOORFIELD

Trunkey.

Dear Sir,—For benefit of your readers, I attach letter (original) received from Department in reference to beekeepers' petition. You will note that we have had a partial success, and if we were not unfortunate enough to have, big landowners all round us, who look upon beemen as loafers—one gentleman made no bones about calling we beekeepers a pack of loafers. It is seemily unjust that any industry but sheep should be festered.

Yours etc.,

E. HUNTER.

Department of Lands,
Sydney,
15th July, 1908.

Gentlemen,—Referring to an area of about 17,200 acres within Mulgunnia Gold Field, Land District of Carcoar, I have the honour to inform you that the Minister for Lands has approved of the subjuct area being offered by tender as six Improvement Leases in areas 3,300 acres, 3200 acres, 1860 acres, 3050 acres, 2990 acres and 2800 acres for a term of 21 years at rentals of 1½d, 1¾d, 1½d, 1¾d, 1d, and 1⅓d per acre per annum respectively subject to certain conditions which provide among others, for the preservation of all edible scrubs all straight sound box and stringy bark six inches or over in diameter measured at three feet from the ground, all green apple trees, and for the thinning out of box, apple, and stringy bark saplings, and trees under six inches in diameter measured at three feet from the ground, to distances of thirty feet apart and shall select the best saplings or trees for prerervation. The areas to

be operated on are respectively, 2100 acres, 1950 acres, 1080 acres, 1950 acres, 1950 acres and 1950 acres.

Action is now being taken to have the land offered as Improvement Leases by tender and copies of the Gazette notice and lithograph will be forwarded you when ready.

I have the honour to be, Gentlemen, your obedient servant,

Robert McDonald,
Under Secretary,
per Fred Chambers.

Messrs. E. Deacon, W. E. Hunter T. O. Dunyer and J. A. Stiff, of Trunkey, c/o G. S. Beeby Esq. M.L.A. Parliament House, Sydney.

RHEUMATISM CURED.

ANOTHER CASE OF THIS DISEASE CURED BY BEE-STINGS.

BY HIRAM LANDIS.

I am glad to give you any information you wish in regard to my successful cure of rheumatism, which, I am satisfied is the only permanent cure in existence up to the present time, or at least the only one I have heard of yet. I suffered for seven months, and took all the truck imaginable; but nothing did me any good.

I paid a visit to an old friend, Mr. D. B. Travis, in Armstrong Co., Pa. I got acquainted with old Dr. Sharp in Dayton, Pa., on the B. R. & P.R.R. He said he would give me a cure, but added I would not take it—that it was a sure cure, as he had suffered for one year, and it had cured him. I told him I could take *any* thing he could. Then he told me to cover my face and roll up my sleeves and stir up a bee-hive and let them sting me in the arms all they would. I did so. I got 25 stings, and it never swelled. In a day or so I went back and got another dose of the same medicine. It never swelled; but the third time it swelled and I quit. I took no more truck to knock out my stomach, and I felt better every day; and in four weeks I went on the road and have been out in all kinds of weather for a year and six months. I have not felt the least effect of rheumatism since—not even in a change of weather. I have been on the road for 50 years, and feel like a four-year-old boy.

My rheumatism commenced in my knees, and finally got up into my shoulders and arms. I could scarcely get out of bed. I could not put on my clothes myself for seven months until I got stung by the bees. Dr. Sharp told me that the poison of the stings would eradicate the poison or uric acid in the blood, and said I would get rid of my rheumatism.—"Gleanings."

Sweet Clover Some Years Ago.

SWEET CLOVER FOR PASTURE; SOME IMPORTANT TESTIMONY IN REGARD TO ITS VALUE.

Professor Thorne, of our Ohio Experiment Station, has called our attention to an exceedingly valuable article on sweet clover, which is clipped from "Wallace's Farmer." Perhaps I should explain that the Wallaces, editors of the journal named, of Des Moines, Iowa, are about as good authority on all the clovers, perhaps as any people living. Below is the extract:—

Mr. Frank Coverdale, of Jackson Co., Iowa, has for some time been advocating through the press and at farmers' institutes the use of sweet clover (*Melilotus alba*) as a pasture grass. Many regard sweet clover as a vile weed growing unsown by the roadside, and we are often asked how to get rid of it. Therefore it has surprised many farmers that any farmer should advocate its cultivation. Mr. Coverdale, however, is not the first one to advocate it. As much

as twenty years ago a farmer in Madison Co. was a staunch advocate of this plant, using it both for meadow and pasture. We once visited his farm and asked him if he did not have difficulty in getting cattle to eat it. He replied, "Not when they once become accustomed to it." In order to find out what there is in this thing we sent Mr. Coverdale the following questions :—

1. How many acres do you have in sweet clover?

2. How long have you made a practice of pasturing sweet clover?

3. Do you have any trouble in getting your cattle to eat sweet clover?

4. When do you turn them on in the spring.

5. Will they eat after it has grown up a foot to eighteen inches?

6. Will catttle which have not been on sweet clover, and practically starved to it in the beginning, eat it?

7. Is your sweet-clover pasture entirely sweet clover, or do you grow other grasses with it?

8. How long can you keep a field in sweet clover, when you follow the practice of pasturing it closely, and not permit it to bloom and seed?

9. Where do you get sweet-clover seed? and how much do you pay for it?

10. How do you seed it to make a pasture? and how much seed do you sow per acre?

11. How many steers will a forty-acre sweet-clover pasture carry through the grazing season?

12. Are any of your neighbors sowing sweet clover for pasture?

In answering the above, Mr. Coverdale has sometimes grouped two or three questions together; but his answer gives a clear statement of his experience as follows: --

1 and 2. I have pastured 35 acres for 4 years; have also sown small patches here and there in an experimental way. This field was sown to timothy and sweet clover except a little strip of alsike, which is now nearly gone, and it is now nearly gone, and it is now a thick mass of sweet clover and timothy with blue grass coming in.

3 and 7. My cattle make no choice between this and other grasses. All are eaten with equal relish, as you will see from the photograph of my cattle in the pasture, sent you herewith. Timothy grows with it, also a little alsike and blue grass, and it is all eaten together.

4. I have always turned cattle on it in the early spring, as this clover is a week earlier than the other clovers.

5 and 6. Cattle turned into a field of the clover a foot high act a steers do that are brought from the range and introduced to a trough of corn. At first they will not eat it; but they soon catch on, and thrive on it. My cattle never refuse to eat sweet clover. If the plants become old and woody they will browse on the tops or any part of it that remains green.

8. If a field of sweet clover is pastured close to the ground, three years will finish it. One man here turned too many cows on a small plot of it, and it is seriously injured; whereas it ought to grow better year after year. I sold one man enough seed to seed a small field for hogs, and they have completly destroyed it. He has simply put on too many hogs for the pasture. Another man had a small hog-lot of old plants started, and by the first of June it was eaten out root and branch.

9. I purchased my seed in Chicago at a cost of 9 dollars per 100 lbs. I think it is found most generally in the Southern States.

10. This 35-acre field was sown with timothy and sweet clover after being ploughed and harrowed, just as you would seed to alfalfa. The ground

should be put in good condition, and the seed covered shallow. In this respect it seems to differ somewhat from red clover, which should be covered deeper It should be sown thicker than red clover to get the best results. It will not smother out either timothy or blue grass. In fact these grasses do their best when sown with sweet clover.

11. I have never found out the capacity of this thirty-five acres for yielding grass, as it is such a rapid grower. However, after once getting established it will very far outstrip any other clover that grows here and should be better as the years go by, which is not true of any other clover. Tramping the ground benefits it, provided it is allowed to reseed itself each year. Other grasses will come to the front if sown with sweet clover.

12. My neighbors are just beginning to wake up to the value of this crop, and are purchasing seed to sow from ten to forty acres for pasture.

I sowed 70 acres last fall on stubble, and hoped to get a good catch It was sown on the bare ground early in December, and proved an entire failure, only a bunch here and there surviving. I have never failed when I put it in in the spring, covering lightly, and then turning on the cattle. The tramping does it no hurt. However, the soil should be inoculated with soil that is full of the bacteria, which seems to be the same as that of alfalfa. A good stand can always be secured by sowing with oats and pasturing moderately. Last spring I sowed a narrow strip through the oats-field, and at this writing it is a fair stand of slender plants that looks rather sickly, just as alfalfa would look under similar conditions. Inoculated soil should have been sown with it and covered with the seed.

July 23 I took steers off from this 35 acres in order to let it grow up for seed. I harvested the seed Aug. 18, and part of the steers that were not shipped were turned back on it Aug. 25, by which time the young clover growing up was 20 inches high. It was eaten at once with evident relish. The mower-bar was run over the top of this young clover ten or twelve inches from the ground, thus allowing only the tops of the old clover for seed. The steers will make heavy gains on this field.

After my four years experience with sweet clover I would advise farmers not to put too many cattle on the field if they wish to fit them for market, as I have done, and save two months' feeding of expensive corn. My cattle that were shipped off this pasture (without corn) weighed 1163lbs. at Chicago, and brought 5.75 dollars per 100lbs. while other cattle on the market at the same time, and of better quality, brought from 4.90 dollars to 5.25 dollars. Mine went on grass thin, while the latter went on in better flesh. My cattle had a nice sleek coat, similar to corn-fed cattle, and they were nearly as fat.

Now, friends, the above article ought to answer the question, and it ought also to refute the statement that has been made several times in different periodicals, to the effect that sweet clover is of no value to farm stock, or that horses, sheep, and cattle would not eat it. The above explains quite fully why it is that farm stock will at first refuse to eat it. I feel confident that I can in a very little time teach horses, cattle, sheep, and pigs—yes, and poultry too—to eat sweet clover with avidity anywhere in the United States wherever sweet clover will grow.—"Gleanings."

Our experience with yellow box honey is that it blooms up to Christmas, when it immediately starts budding for the next season, the flow coming on about March or April.

The British Bee Journal considers that starting a bee and poultry farm in the south of England would require a capital of £250.

How Bees Distinguish Color.

By the Jay in Gleanings.

I have been accused of being like the fellow from Missouri, "You got to show me." I do not like to jump at conclusions, but enjoy giving a good fair test before believing it. I have sometimes been amused by a long argument as to just how certain things ought to turn out; but when you try them they just won't work. The trouble with too many theories is that the theorist does not take into consideration all the circumstances. I had the pleasure of trying an experiment the other day that gave, as I think, conclusive results. It has been claimed that bees dislike black, and will sting anything black much quicker than any thing of a different color. I have believed this also, as I thought the bees were crosser with me when I had on black clothes. The following experiment removed all doubts in my mind.

I was out among the bees when out came a black dog belonging to one of the neighbors. In a minute, out came a brown dog from another neighbor. I was dressed in grey. Now I thought I would see which dog the bees would sting the more. This seemed a little cruel, but I thought that, as long as I took my chances with the other dogs, and we all had an even break, there would be no kick coming. I called the dogs in front of the hive and began to bark at them and play with them. We all jumped and tore around in front of the entrance at a great rate. I kept a little nearer to the hive so as to see that the dogs got a fair deal. In a moment some of the bees began to lodge in the black fur of the dog, and stick there like cockle burrs. They went clear around me and the brown dog. At last one got Rex (the black dog) where the hair was short—i. e., on the nose. He withdrew to the brush to sneeze a little. I had determined to give three trials, then count up all the stings, average it up, and see just what per cent. madder a bee got at a black object than it did at brown or grey.

Rex subjected himself to this second test with more or less reluctance; but by dint of hard coaxing and barking I induced him to forget the past and have another romp. We kept getting nearer and nearer to a hive of doubtful repute when I called a halt long enough to give the hive a little jar. Then I jumped in front with the other dogs, and began to jump around with them. At least a dozen bees took a bee-line for Rex and got next to his feelings at the very first dash. Rex never said a word, but turned around and skeedaddled for home. He never thought to yelp. His mental capacity was occupied in the discussion of two important points—first, how he might insert space between himself and that hive; and, second, how this might be accomplished without occupying too much time. I did not know exactly what to call that test, the color line or the race problem. Rex arrived at the door a little ahead of time, and never stopped to knock, but smashed against it. It was shut, but it opened with a bang as Rex came against it. In he went, and crawled under the kitchen table. This was the second trial. The black dog had all the stings, and the brown dog and I had none. The third trial—well, that never came off. Rex positively refused to subject himself to further experiment, even in the interest of science. I do not consider him sentimental.

I thought some of continuing the experiment between the the brown dog and myself, but—well, it was getting late, and we might both look black to them, and then there might have been some cranky old maids among them that were color-blind and lacked proper discrimination; and if any of them should show me any discourtesy I would have to say "stung;" so, all things taken into consideration, I concluded to be satisfied with the results as they stood.

New Zealand Statistics.

Gisborne, N.Z.,
July 16, 1908.

Mr. E. Tipper,
West Maitland.

Dear Sir,—In your issue of the Bee Bulletin of May 30th, my attention has been drawn to a copy of the statistics of the Agricultural Department of the Dominion of N.Z., giving the quantity of honey produced and other information relating to apiculture in the Dominion. Now, Sir, although only a late subscriber to the Bulletin, I wish your permission to say a few words regarding these same statistics, as one interested and engaged in the beekeeping industry. The office responsible for these statistics places the value of the given amount of honey at 5d per lb., that is what the beekeeper is supposed to have received for his produce. (I also note the Editor's remarks added to the foot of the paragraph.) The figures given re quantity, &c., may be reliable, but the value given per lb. is *certainly not.* There may be isolated cases in which that amount may have been received by the beekeeper, but I have never heard of that amount being paid by any wholesale merchant for extracted honey. For honey pronounced by the dealer (who was also an expert in regard to honey) to be of excellent quality, I was offered 3½d per lb., and have never got more than 3¾d., and had to fight for that. I have before me at present replies from merchants in all the large cities in the Dominion, and in no case does the offer exceed 3½d., or a visionary 4d. It is part of my duty as secretary of a Beekeepers' Association to seek the best market for our members' produce, so you will admit that I ought to be aware of these facts. It is, so far as I am aware, the only commodity that the law of supply and demand does not affect. There seems to be a fixed scale of value, and from that they do not deviate.

Beekeeping is being boomed in this colony, and to my mind not to the interests of those who have spent much capital and labour in the industry, a subject on which, with your permission, I may deal later. I may add that if the gentleman who valued that honey would only put us on to the market where we can get 5d. per lb. for our honey, he shall have earned the eternal gratitude of the beekeepers of New Zealand.

I hope you will excuse the length at which I have written, but I only do so that you may know the exact facts, and so remove some idea that we in this colony are so much ahead of you in the revenue derived from beekeeping.—I am, Sir, yours, &c.

Jas. B. Adams,
Hon. Sec, Poverty Bay Bee Assn.

A writer in the British Bee Journal says :— I am acquainted with over ninety beekeepers in this district of the county, and I hear that quite 33 per cent. of their stock have perished from starvation, queenlessness, and dwindling.

The same Journal says :—I am wondering how the big consignment of Australian honey is selling. It is to strongly flavoured with the eucalyptus to suit the Britisher's palate, unless they have cleared the forests of gumtrees and planted lucerne or white clover. If this is done they may get a chance for their honey in our market.

The following par is from the "British Bee Journal": —The fact that the honey imports last year amounted to £31,000 showed that beekeeping could be increased in the British Isles, although the amouut quoted was somewhat lower than usual of late years, for it had been at one time from £40,000 to £50,000. The lower figures, however, showed that more could be done at home to supply the demand for honey.