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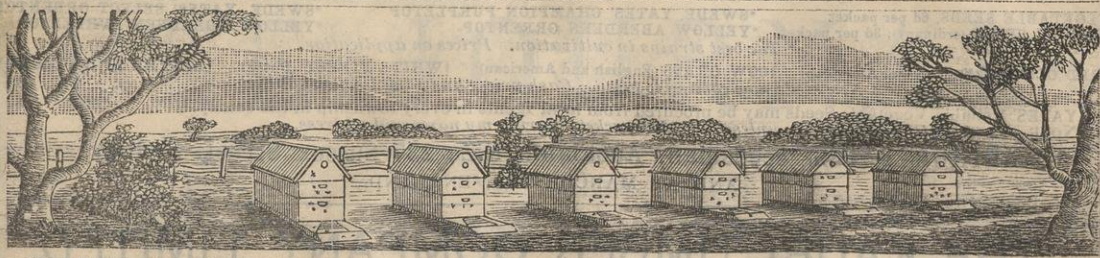
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H. J. C. 6/4/89

THE AUSTRALASIAN

BEE JOURNAL



No. 10. Vol. II.] AUCKLAND, N.Z., APRIL 1, 1889.

[PUBLISHED MONTHLY
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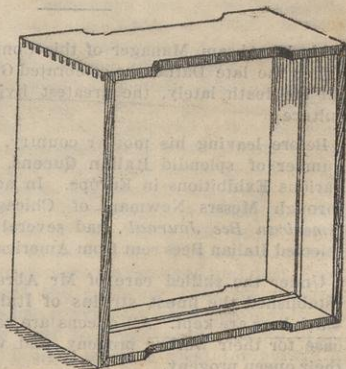
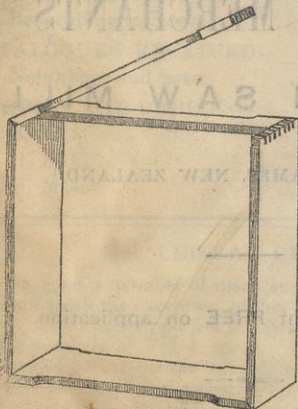
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THE AUSTRALASIAN



BEE JOURNAL

No. 10. Vol. II.] AUCKLAND, N.Z., APRIL 1, 1889.

[PUBLISHED MONTHLY. SIXPENCE.]

The Australasian Bee Journal.

PUBLISHED MONTHLY.

I. HOPKINS ... EDITOR AND PROPRIETOR.

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Editorial.

SEASONABLE OPERATIONS FOR APRIL.

THE honey season for 1889, as we anticipated, continued later than usual, but has now practically closed in all parts of New Zealand, and in most parts of Australia. As far as we can gather at present, the honey crop is a very light one, in New Zealand, at all events. Owing, however, to the delay of our beekeepers sending in their reports, we are unable to estimate with anything like correctness what the yield for the season really is. This lack of information is in reality a loss to beekeepers themselves, for had they a knowledge of the possible quantity of honey that would be placed on the market they would be enabled to regulate the supply and prices accordingly. When will our beekeepers take the trouble to supply these small items of information for the benefit of their brother apiarists as well as themselves?

REMOVING SUPERS.

Supers and top boxes, when not further required, should be removed, and all empty combs put carefully away beyond the reach of the wax moth, remembering to thoroughly disinfect the supers as recommended for hives last month. The spare combs should receive a spraying of a solution of phenol—1 in 400—and be suspended in a well-ventilated place till they are perfectly dry.

THE WAX MOTH

will be busy during this and the ensuing month, and great care should be taken that she has no access to the combs; but in order to avoid all risks it would be well to fumigate them with sulphur at least two or three times during the winter months.

FOUL BROOD.

Where foul brood exists, though it may have escaped the notice of the inexperienced eye during the preceding summer, the symptoms usually appear so plainly at this time of the year, that they can scarcely be overlooked when going through the hives. The caps of the brood cells, instead of appearing as in their healthy state—slightly convex and plump looking—are indented and pierced and sometimes partly removed; the cappings have also a much darker appearance when diseased, and it will be noticed in cells from which cappings have been wholly removed, a black-looking substance lying on the lower wall of the cell. When comb has this appearance it is a certainty that foul brood exists, and steps should at once be taken to eradicate it. The badly infected combs should in the first place be removed and destroyed, and the remainder, with the adhering bees, be removed to a clean hive which has previously been thoroughly disinfected. It will be best to remove the whole of the honey, which, if well boiled, may be used for syrup for feeding back after being medicated with a solution of phenol or salicylic acid. If the whole of the food required for their winter stores has been medicated and fed back

Contents.

EDITORIAL—

Seasonable Operations for April	147
Experiments on the Ventilation of Hives	148
Marketing Extracted Honey	149
Untested Italian Queens	149
Bogus Honey in Melbourne	150
Otago Beekeepers' Association	150
Internal Temperature of Hives. By J. R. Madan	150
Victorian Experiences. By Charles Fullwood	152
Queensland Jottings. By C. C. Cusack	153
Bee Gossip. By O. Poole	154

OCCASIONAL NOTES—

Bees and Honey within the Tropics. By T. J. Mulvaney	156
--	-----

CORRESPONDENCE—

Beekeeping in Southland	158
-------------------------	-----

CATALOGUES RECEIVED—

Neighbour and Sons	159
--------------------	-----

QUERIES AND REPLIES—

B. J.	159
H. A. C.	159
H. Mason	159

A LIBERAL OFFER.

AS we have a number of spare copies of each issue of the *Journal* (with the exception of the first, which is now out of print), we will send post free to any address in Australasia the eleven numbers of Vol. I. for 4s. This is a good chance for new subscribers to get the *Journal* from the start.

There are also a few copies of Vol. I. of the *New Zealand and Australian Bee Journal*, cloth bound, still on hand, which will be sent post free in New Zealand for 3s., or out of New Zealand for 3s. 6d.

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to them, the probability is that the disease will disappear, or at all events it will be kept in check.

FOUL BROOD REMEDIES.

Cheshire's medicated syrup is made in the following manner:—Take in the proportion 12 oz. of absolute phenol to 3 oz. of water: shake well until the water is dissolved. Next mix 1 oz. of this solution with one pint of water and shake until the oily appearance has entirely disappeared. Now mix one ounce of this last solution with every pint of syrup to be fed. It is also advisable to keep a disinfectant in the hives in the shape of a piece of camphor about the size of a walnut, tied in a piece of thin rag.

AUTUMN FOOD FOR BEES.

A capital food for autumn feeding is made by boiling for about ten minutes

White sugar	...	...	10 lbs.
Water	...	...	5 pints.
Vinegar	...	...	1 oz.
Salt	...	...	$\frac{1}{2}$ oz.

To this should be added, whilst boiling, 1 oz. of No. 1 salicylic acid solution which is highly recommended by Mr. Cowan in the 'British Beekeepers' Guide Book,' and is made by mixing 1 oz. of salicylic acid and 1 oz. of soda borax with four pints of water. A supply of these remedies should always be kept on hand so as to be ready at a moment's notice either for disinfecting hives or medicinal purposes. Many hives are lost through neglect, often the result of not having the proper remedies at hand when needed.

ROBBING.

We are tempted to again remind our readers to beware of robbing. It is so easily started and so difficult to stop when once commenced, and so likely to spread throughout the apiary, that it cannot be too carefully guarded against. Weak colonies should have their entrances contracted in order that the bees may be the better able to defend themselves against the attacks of marauders. When feeding is necessary the greatest care should be exercised when placing the food in or upon the hive. This operation should always be performed the last thing in the evening, and precaution taken that none of the syrup is spilt upon or around the hive. In the event of a hive being attacked by robbers, the following plan we have found to be an effectual remedy. Take a watering pot with a pine rose and lay a cloth across the entrance of the hive, cutting off the ingress and egress of the bees, then pour water from the watering pot, held at a considerable height, on to the cloth and over the bees flying in front. After a short time remove the cloth for a few seconds to allow the bees to come out without letting any go in. Put the cloth back and wet it again, repeating these operations two or three times. In extreme cases it would be well to close the entrance of the hive completely with perforated zinc, or by any other means that will allow of ventilation, and remove the hive to a dark, cool place, there to remain at least twenty-four hours before replacing it; but the best preventive against robbing, as well as many other evils in the apiary, is to keep all colonies strong.

FUMIGATING COMBS.

In small apiaries, where there are but few combs to be fumigated, hang them in body-boxes of hives piled one on top of the other, allowing the combs to hang at least half an inch apart, and should the hives not fit close on one another paste a piece of paper round the joints. On top of all place an empty body box within which, and on the topmost tier of combs, place a brick. Now procure an iron dish or shovel containing live wood embers, which place on the brick, throw on a handful of sulphur and put on the cover, seeing that it fits closely and that no smoke escapes. The reason for placing the sulphur on the top instead of below, as might seem most suitable, is that the fumes being much heavier than the atmosphere, gradually descend so that each comb gets a thorough fumigation.

In large apiaries it is necessary, where there are some hundreds or perhaps thousands of spare combs to carry over the winter, to fit up a smoke proof room for this purpose, arranged so that the combs may hang on a

framework of battens. Here they could be stored in safety all the winter, and fumigated without difficulty as often as required.

THE HONEY MARKET.

The Auckland market is still so overstocked with fruit that there is absolutely little or no demand for sweets of any kind, and although there is but little honey on sale, it is quite sufficient for the present demand.

The cleaner and neater the apiary is kept the less harbour there will be for injurious insects. The space in front and around the hive should be especially clear of weeds and grass.

EXPERIMENTS ON THE VENTILATION OF HIVES.

WE have no doubt that the series of experiments on the ventilation of hives now being carried out by the Rev. Father Madan will result in the attainment of a knowledge of the subject which will prove of great benefit to beekeepers. As we have before stated, so far as we are aware, no experiments on a scale extensive enough to be of any practical service have ever been previously carried out to ascertain whether the present system of ventilating hives is the best that could be adopted.

Beekeeping is such an extensive industry, and so many persons are now engaged in it, that no problem connected with it should be left unsolved. We should not work at random, or without scientific knowledge in any particular, when there is the least opportunity to discover the right way from the wrong. The fact of ventilation being a subject of discussion from time to time in the bee journals is sufficient to show that beekeepers view the matter with some concern, knowing that it is necessary for the health of bees that the sanitary condition of their domiciles should be attended to; and if a perfect system of ventilation can be discovered, we are assured that it will mean the prevention of some diseases to which bees are now liable, and will be readily welcomed and adopted, and the discoverer looked upon as a benefactor to beekeepers generally. The carrying out of these experiments may seem a simple matter, but in reality it is not so; for before anything like a satisfactory conclusion can be arrived at they must be carried on under various conditions and circumstances, and must extend over several months, entailing much time and patient investigation. To give some idea of what is being done at the present time, we may state that the readings of eight thermometers in different parts of a two-story hive are taken every hour or two. Great credit is due to the Rev. Father Madan for initiating and carrying out these experiments, and as he expects to remain in Auckland until the end of June he will no doubt by that time have procured a sufficient number of observations to enable him to formulate some fairly perfect scheme of ventilating hives.

The rev. gentleman has frequently expressed a wish that others would co-operate with him in

carrying out these experiments, as he believes that the observations would prove of greater value if taken in various districts. He specially mentioned the name of Professor A. J. Cook, of Michigan, U.S.A., whose services he is very desirous of enlisting in these investigations.

MARKETING EXTRACTED HONEY.

WITH regard to Mr. Mulvany's article on page 117 in the February number, there appears to be some misunderstanding concerning what was meant by the resolutions passed at the previous meeting of the New Zealand Beekeepers' Association. The report, as published in the *Journal*, was, perhaps, not sufficiently explicit to convey the full import of the discussion that took place which led up to the passing of the resolutions. We may state at once that Mr. Mulvany is correct in believing that the quotation '12lb. tins at £2 14s per gross' is a misprint: it should have been £3 14s per gross. With regard to the opinion of the committee that 'the best and cheapest method for beekeepers to adopt is to ship their honey in bulk to a central depôt (where one exists), to be tinned and placed on the market,' this had no reference whatever to the *whole of their crop*, to the neglect of their local customers, but simply to that portion which they were unable to dispose of themselves; and this portion, we maintain, could be tinned cheaper and more advantageously at the market town to which they were sending their honey than it could be done by themselves at home.

For instance, supposing a beekeeper living one hundred miles from Auckland had one ton of honey on hand, and out of this he could dispose of 5cwt. at home. It would then be cheaper for him to procure the tins (if they were needed), and tin that quantity himself. He would then only have to pay the freight on the carriage of the empty tins beyond their cost. But with regard to the other 15cwt. to dispose of, that he would in all likelihood have to send to Auckland, in which case it would pay him better to send it in casks, and have it tinned there, rather than pay the freight on the empty tins and cases to his apiary and the return freight to Auckland when filled. This refers chiefly to small packages; but where it is intended to place it on the market in the larger tins (say, of 60lbs), then it would be almost as cheap to the beekeeper to tin it at his own apiary.

On arriving at the conclusion they did, the Committee took into consideration the wants of the market at the present time, which undoubtedly is for what Mr. Mulvany terms 'the small and fancy packages,' except for export, and even for that purpose there are better sized packages than the 60lb. tins. We cannot ignore the fact that the consumers, except in very few cases, do not purchase the larger tins, neither is there any demand for it at present worth considering for manufacturing purposes.

We quite agree with Mr. Mulvany that it would

be cheaper for householders to purchase it in larger quantities at a time; but until they can be induced to do so, it will be folly to put it up in large tins. The most convenient packages for export in large quantities are casks holding from 120lbs. to 400lbs. The latter in preference.

Mr. Mulvany says, 'I do not at present see how any distant apiary could send its extracted honey in bulk *and in perfect condition* to a central depôt at less cost than in 60lb. tins, and there would be clearly no advantage in getting it there re-packed into 10lb. or 12lb. tins, at a new cost.' We have only to say that we believe Mr. Mulvany is in error. We have bought a good deal of honey in bulk from an apiary above one hundred miles distant which was shipped to us in casks containing nearly 400lbs each, some of which we have re-shipped to England in the original packages, and they have reached their destination in perfect condition. Now, these casks were invoiced to us at 5s each, which would really mean about 1s 3d per 100lbs. of honey, being about one-half of the same quantity in 60lb. tins, including cases for same. A considerable saving would also be effected in the export carriage, as the casks would measure less than tins and cases holding the same quantity.

Mr. Mulvany, in conclusion, states, as one of his reasons that the producer should tin his honey is, 'because except in those cases where the honey can be delivered in bulk in a liquid condition, so that it can be simply tapped off into the tins intended for market, I am convinced that every process of heating or re-melting the granulated honey must be attended with more or less injury to its flavour.'

Evidently Mr. Mulvany's impression is that in tinning granulated honey it is necessary to melt it. Now, last season we tinned several tons of granulated honey into 2lb. packages, and in no case was the least particle melted. Neither is it necessary to do so. It of course takes a little more time and trouble to tin it in its granulated state, but knowing, as we do, the danger of spoiling the flavour in the re-melting process, we prefer taking the extra trouble than running the risk of injuring the honey. There are many more points of interest in Mr. Mulvany's article which we should like to have noticed, and which we hope to have an opportunity of doing at some future time.

UNTESTED ITALIAN QUEENS.

It has been suggested by some of our customers that we should adopt the American queen breeders' plan of offering young untested Italian queens at a cheap rate. We have a splendid lot of young impregnated queens, bred from imported mothers, at the present time, and therefore have pleasure in offering them at the rates quoted below. We have none but Italian drones flying, and up to the present time the proportion of purely mated queens has averaged over 80 per cent. One untested queen, free by post, 7s. 6d.; 2 do., 14s.; 3 do., 20s.; 6 do., 35s. Purely mated and tested queens as per price list.

BOGUS HONEY IN MELBOURNE.

WE are sorry to see, by the subjoined report from the *Melbourne Evening Herald*, the failure of a prosecution for the sale of adulterated honey. The prosecution evidently laboured under a great disadvantage, and Mr Kruse, the analyst, should have explained that the glucose found in pure honey is a totally different article to the glucose of commerce used in the adulteration of honey. The statement of the defendant that glucose is added to honey to prevent fermentation and to keep it bright and limp, is absolutely false. Pure honey, instead of being improved by an admixture of glucose or any other saccharine matter, has its true and delicious flavour entirely destroyed. We trust, however, should Mr Taylor undertake another prosecution, he will see that he is better prepared to fight the adulterators, and that this pernicious practice will be put a stop to.

GLUCOSE IN HONEY.

At the Prahran Court, G. Ward, of the Red Cross jam factory, South Yarra, was prosecuted by the Central Board of Health under section 33 of the Public Health Amendment Act, on a charge of selling an article of food, to wit, honey, which was not of a nature, substance, and quality of such article demanded by the purchaser.

Mr Gillott appeared to prosecute and Mr McKean to defend.

John Taylor, inspector of the Central Board of Health, gave formal evidence relative to having purchased a sample of honey from the defendant, portion of which he sent to the city analyst.

John Kruse, public analyst, deposed to having analysed the sample of honey forwarded by the last witness, and found it to contain three parts glucose and one of honey.

In answer to Mr McKean, witness said the component parts of pure virgin honey were about 70 per cent. of glucose, and the remainder water. Glucose syrup was composed of a mixture of glucose and saccharine matter. The elements of glucose were 6 of carbon, 12 of hydrogen, and 6 of oxygen.

Mr Gillott: With regard to the mixture, would the added material very much increase the weight?

Witness: Yes. About three times.

Is it necessary that grape sugar should be added in order that the honey should keep?

No. It is not necessary.

Mr McKean: Will honey ferment?

I have had it standing for two years and it did not ferment.

Mr McKean produced authorities to show that it would ferment, and in his statement for the defence he intimated that the case affected the business of a very large establishment, and he had expert evidence to upset that given by the analyst for the prosecution. He, however, would first of all refer to the law points touching the case. The Legislature had said that if there is any ingredient like chicory put in coffee added to an article of consumption it must be notified on a label placed upon the bottle or packet. Section 33 of the Health Act provided that no person should be guilty of an offence in respect to the sale of an article of food or drug mixed with an ingredient not injurious to health and not intended to fraudulently increase its bulk, weight or measure, or conceal its inferior quality, if, at the time of delivering the article, he supplies to the person receiving it a notice by a label distinctly written or printed thereon to the effect that the same is mixed, and stating the nature or composition of such mixture. He submitted that his client had complied with the Act, as the bottles into which the sample was divided bore a label, notifying that the honey contained a 'proportion of grape sugar, which enabled it to keep bright and limp in any climate.'

Mr Gillott contended that the label was not sufficient, as the evidence was that honey contained three parts of foreign substance to increase its bulk.

Mr McKean pointed out that according to Mr Gillott's own witness there was about 70 per cent. of glucose in pure honey.

The witness Taylor, on being recalled, stated that the labels were placed on the bottles during the time he purchased the honey. When asked if the defendants did not sell him some samples of 'pure honey,' witness became somewhat confused, and taking his answer for prevarication, Dr. Fetherston hastily remarked, 'As an officer of the Central Board of Health your evidence is anything but creditable—you have damned the case. Case dismissed.' Four guineas costs were allowed.

OTAGO BEEKEEPERS' ASSOCIATION.

THE Otago Beekeepers' Association made their second annual exhibit of honey at the Dunedin Horticultural Society's Autumn Show, which was held at the Garrison Hall on the 7th and 8th inst. There was a marked improvement in the number of exhibits, and they attracted a good deal of attention. Three little boxes containing respectively German, Ligurian, and Carniolan bees, shown by Mr Brickell, and an observatory hive shown by Mr Morris, were among the most interesting features of the exhibition. The following is the prize list:—The Dunedin Horticultural Society's prize for the best 12lbs. comb honey: Mr Skey first, Mr Morris second, Mr Brickell third. The Otago Beekeepers' Association prize, best 12lbs. extracted honey: Mr Brickell first, Mr Skey second, Mr Burnside third. Mr T. G. Brickell's prize for the best exhibit: Mr Brickell first, Mr Morris second.

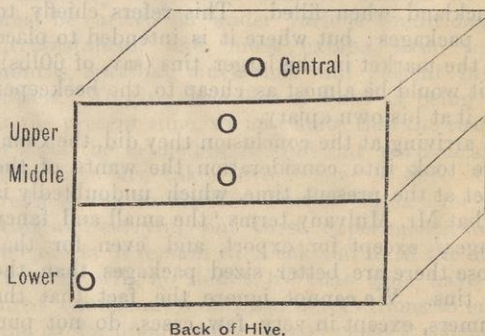
C. B. MORRIS.

INTERNAL TEMPERATURE OF HIVES.

BY J. R. MADAN.

AFTER the observations recorded in the last number of this *Journal*, an upper body, with ten frames, fitted with full foundation, was placed over the same strong colony of Italians, and the bees began at once to draw out the foundation, and breed in or fill with honey the cells. A hole was bored in the back of the new upper story, close to the mat, and another at the bottom, so as to record the temperature, just over the top bars of the lower frames. Thus the temperature close to the back of the hive would be recorded at the

DIAGRAM SHOWING THE POSITION OF THE THERMOMETERS.



top, in the middle, and at the bottom; in fact, in the same relative positions as in the former observations, only in a two-storied hive instead of a one-storied hive.

SIXTH SERIES.—MARCH 5, 1889.

Time.	Sun.	Shade.	Back of Hive			Central.	Wind.	Remarks
			Low.	Mid.	Upp.			
p.m.								
1.30	115	81	87	86	84	96	0	Paper over mat.
2.0	103	84	90	86	84	96	0	Do.
2.30	124	85	90	86	86	96	0	Do.
3.0	100	81	90	86	82	96	1	Mat without paper
3.30	88	79	89	86	81	96	1	Do.
4.0	98	78	87	84	82	96	1	Do.
4.30	103	79	88	85	83	95	1	Paper over mat.
5.0	99	74	86	84	83	95	0	Do.
5.30	—	71	83	82	81	94	0	Do.
7.0	—	66	74	80	78	92	0	Do.
8.0	—	60	70	78	79	92	0	Do.
9.0	—	60	68	79	79	92	0	Do.

The day was at first hot and hazy, then bright. A breeze rose as the day went on, giving way in the evening to a calm, with a heavy dew. The wind is roughly rated as before, from 0 (a calm) to 10 (a hurricane).

With reference to the above, it may be observed that the sun, shining on the left hand side, had a sensible effect on the "lower thermometer's" readings, showing that the one inch board was rapidly heated through. And when the sun was down, that side cooled rapidly down, and the heat just inside was lowered some 20 deg. Again, the heat at the "upper thermometer," [just under the mat, was disposed to be lower than the "middle thermometer," as noticed in the previous set of observations. Again, the placing of two or three sheets of newspaper over the whole top of the hive, thus hermetically sealing it, had very little effect. Finally, the temperature in the centre, as registered by thrusting the bulb of a sensitive thermometer through the mat, varied only 5 deg., and at times was 15 deg. higher than the temperature ten inches off, close to the back of the hive.

SEVENTH SERIES.—MARCH 6, 1889.

Time.	Sun.	Shade	Back of Hive			Cen.	Wind.	Remarks
			Low.	Mid.	Upp.			
a.m.								
8.15	75	70	72	78	78	92	0	Mat only.
9.30	85	74	73	80	78	92	0	Cloudy, fine.
10.0	105	78	76	81	79	93	0	
10.30	105	77	77	82	80	94	1	
11.0	85	74	79	82	80	94	1	Very cloudy.
12.0	113	79	81	83	82	94	2	Bright.
p.m.								
1.0	116	79	84	84	84	94	1	Bright and hot.
2.0	121	80	85	85	85	96	0	—
3.0	78	78	85	83	84	93	0	—
4.0	112	79	83	82	82	92	1	—
6.0	—	68	78	77	77	89	0	—
7.0	—	65	78	76	77	91	0	Heavy dew.
8.0	—	63	70	78	81	91	0	—
10.0	—	58	67	78	80	90	0	—

The sunny side of the hive, viz., the left hand in the diagram, was shaded by boards in the afternoon. This protection at once showed the sensitiveness of the boards, as the readings more

closely followed the "shade" temperature. The "upper thermometer" was high in the evening, owing possibly to the bees clustering near it, in the cool night air.

EIGHTH SERIES.—MARCH 7, 1889.

Time.	Sun.	Shade	Back of Hive			Cen.	Wind.	Remarks.
			Low.	Mid.	Upp.			
a.m.								
9.30	86	75	75	81	79	91	0	Cloudy.
10.30	95	80	79	83	80	92	1	
11.30	97	82	82	84	82	94	1	
p.m.								
1.0	96	81	82	84	82	94	2	
3.0	96	80	83	84	84	94	1	Bright and warm
4.0	97	80	84	84	83	92	1	
5.0	—	72	82	82	80	92	0	
6.15	—	67	76	76	75	90	0	Heavy dew.
10.30	—	54	62	74	78	88	0	

Some boards leaning against the sunny side again made the "lower thermometer's" readings approximate to the shade temperature, until the sun set, when presumably the board took some time to cool down. The temperature throughout the hive was more equable, and assuming this to be a desideratum, it points to the desirableness of double walled or canvas covered sides. Observations next winter will make it clear how far this is a grave necessity.

NINTH SERIES.—MARCH 8, 1889.

Time.	Sun.	Shade	Back of Hive.			Centre.		Wind.	Remarks.
			Low.	Mid.	Upp.	Cen.	Over mat.		
a.m.									
7.30	—	63	62	71	73	86	69	1	Occasionally cloudy.
9.0	87	75	70	78	77	90	—	1	
10.30	—	80	78	82	82	92	—	1	
11.30	97	82	80	84	84	93	—	2	
p.m.									
12.30	91	83	81	86	84	94	90	2	Side of hive shaded by wood.
2.30	86	83	84	86	84	94	89	2	
5.15	—	73	82	81	80	91	78	1	
6.45	—	66	76	76	78	—	70	1	
10.45	—	63	68	75	77	—	68	1	

An additional self-registering thermometer was added in this series. It was placed on the top of the mat and under the common ventilated Langstroth roof. It was slightly affected by the hot air rising through the mat, but apparently followed the shade temperature, as one would expect. The observations at 12.30 p.m. and 2.30 p.m. must have been affected by the sun's heating the roof. The "lower thermometer" registering less than the shade temperature showed that the side was still cold from the night air.

TENTH SERIES.—MARCH 14, 1889.

Owing to the extraordinary difference between the temperature in the centre of the hive and that within half an inch of the sides, some additional thermometers were obtained and thrust right into the centre of the hive between two combs, thus providing (a) one over the mat, (b) a second, as

before, just under the mat, (c) a third just between the upper and lower frames, and a fourth within an inch of the bottom board. The heat over the mat showed a temperature regularly a little over the shade temperature, showing an escape of warm air through the mat, although not much.

Time.	Sun.	Shade.	Back of Hive			Centre of Hive.				Wind.	Remarks.
			Low.	Mid.	Upp.	Low.	Mid.	Upp.	Over.		
p.m.											
2.15	—	73	75	76	80	86	94	92	73	1	
3.30	—	72	72	74	77	85	95	91	76	1	
4.30	—	65	68	71	73	85	96	92	72	2	
5.30	—	61	65	71	72	84	95	93	68	0	
7.30	—	59	62	68	66	—	96	90	62	2	
8.30	—	59	61	68	72	—	—	—	—	2	Cloudy, the sun occasionally appearing.

The heat half way down the hive in the centre was considerably and invariably higher than the temperature just under the mat, and the temperature just over the bottom board, while much lower, was at times close upon 20deg. higher than that only eight to ten inches off at the sides.

As a set off to the low temperature observed previously of the "upper thermometer" at the back, it will be observed that the "upper thermometer" ranged regularly above the lower ones, until 7.30 p.m., when again, after falling, it rose.

By way of experiment one of the sensitive thermometers was placed close to the outside of the entrance of a hive. With a shade temperature of 61deg. it showed a stream of hot air coming out of the entrance at a temperature of 75deg., 80deg., and at one observation 86deg., or no less than 24deg. higher than the air a few inches off. This requires further experiments, but the fact of a hot current coming out of the entrance, contrary to the common opinion that cold air went in and the hot air escaped by the mat, was evident. Presumably bees were fanning inside, as none were seen outside so doing.

Will no fellow-beekeeper join in investigating these problems? Milk thermometers costing 1s. 9d. answer excellently.

NOTICE.

As the JOURNAL will go to press about the 23rd of each month, correspondence for publication in the next issue should reach the Editor not later than the 15th.

CORRESPONDENTS will oblige by writing on one side of the sheet only anything sent for publication, and apart from business communications.

P.O. ORDERS for subscriptions, advertisements, etc., to be made payable to I. Hopkins and Co., and addressed to P.O. Box 296, Auckland, New Zealand.

POSTAL NOTES for sums under £1 are the handiest and cheapest.

ADVERTISEMENTS for the next issue should reach the Publishers by the 20th of the month.

VICTORIAN EXPERIENCES.

BY CHAS. FULLWOOD.

THE promise of a bountiful harvest, that gave zest to the pursuit of the beekeeper at the commencement of the season, has not been kept. Dame Nature has disappointed us in this locality at all events. And from correspondence received from Queensland and elsewhere, the hopes of many have been blasted, and some desponding ones decry the honey business as one of the most unreliable.

I did anticipate, as the spring opened so beautifully and the fruit trees displayed such magnificent bloom, that this season would recoup the beekeeper for the failures of the previous wet year; but, alas! week after week passed over without rain. The bees reared immense numbers of drones where opportunity was given to do so; great preparations were made for swarming; one or two strong stocks sent out their teeming hosts to occupy other territory. Suddenly the scene changed. The business eased off as the honey failed. The drones were worried and mercilessly expelled, and larvæ dragged out to perish outside. Such has continued until recently, when the fall harvest was to be expected; but no rains of any account have come to replenish the gardens and pastures, hence the "little busy bee" toils hard for a bare subsistence, quite unable to store the coveted sweets that are not findable. We all know what this means in manipulation. With naughty black fellows prowling around looking for tucker, awaiting anxiously to get it—quite willing, no doubt, to get it honestly if possible, but determined to get it anyhow—and in its attempts arousing the ire of "gentle Italians" or pugnacious "hybrids" to such an extent as to call forth expressions of anything but gentleness from the unlucky manipulator, whose bravery and curiosity, or hardihood, led him to dispense with veil and smoker just this once as an experiment.

Friends will see from the above, we have not had much increase. In fact, only one swarm was allowed. And one fine young extra queen reared, which was given to a stock that had somehow got a miserable little black-looking apology for a queen, which was taken away from them, and the obstinate little varmint positively refused to raise another, and demolished all the eggs that were given them and simply, after a very lazy fashion, reared workers from the larvæ.

I am convinced that few colonies or apiaries about this are without disease—diseases that had not developed, or were powerless to reduce stocks in Queensland, but are destructive here. No doubt, friend Bonney, of Adelaide, is quite correct in his reply to a Queensland inquirer, "Not a single apiary has he discovered quite free from disease." Does it not appear as though nature, in her regulation of her affairs, finds the means to check the too large and rapid increase of any form of life by means of some destructive force. We overcome the moth trouble by increasing the energy or force of the inhabitants of the hive, and by this means threaten to immensely increase the

armies of bees throughout the world. Nature steps in and introduces other destructive agencies that are more difficult to control, and that are at least as effective to destroy.

"Foul Brood," terrible sound, awfully ominous. What is it? Whence comes it? Who knows? Bab, "*bacillus alvei*." Is not this the result—not the cause? True, this infinitesimal life may propagate the disease upon which it flourishes, as the affected dies, but whence came it, and how? Somebody says in the honey; another loudly asserts in the pollen, and not in the honey at all; or the bee gets it somewhere on its peregrinations, possibly where it had no business to intrude, and carries home on its naughty little feet, or inquisitive antennæ, the terribly destructive and insidious foe.

I have taken just a few two pound sections off a capital stock of really fine hybrids, and two or three one pound sections from a good stock of hybrids that are rather inclined to resent interference. I do not expect to obtain many more, neither shall I have any to extract worth speaking of. There may be parts of Victoria where the beekeeper might do fairly well, but I do not think I have seen anything yet to compare with Southern Queensland, although the last two seasons have been failures there compared with previous years.

I shall extract all the honey I can shortly, and remove all combs containing any quantity of pollen, and double up some of my stocks, saving the best and youngest queens, and try for a fair start next season, by feeding and protection during winter.

I received during the season two consignments of queens for another colony from Bianconcini, of Bologna. In both cases most of the queens were alive, but some of them would not have lived more than three or four days. In every case the water was all used up, in some cases nearly all the honey, and in the majority sufficient for other two or three weeks. Of course, most of the bees were dead in all the boxes. I believe, from my experience in shipping, that most of the bees die in the first week or two of their confinement.

I want to reiterate just here a caution to those who get queens this way from Italy. Do not try to save the combs. Be careful where you unpack the boxes, so that the accompanying moths do not escape. The combs are usually full of moth larvæ or eggs at certain seasons of the year, and the bees have no chance of clearing them out. What do I do with them? Well, I prepare old boxes received previously from Italy, by putting a division in the centre, and making one box into two compartments, putting a re-filled water bottle in each, and cut the cover into two, just to fit the divisions. I then open one of the boxes carefully, find the queen, cage her, and let the bees fly on to the window. If there is sufficient honey and bees in one or two frames, put the frames into the compartment, catch the bees, repack them with the queen, and treat another in the same way, and so complete one package with two queens and attendant bees. Should I need it, in cases where honey is gone and bees few, as I sometimes find a lively queen almost alone, surveying her slaughtered subjects who have succumbed before the war with enforced idleness, I prepare a frame

or two with clean sealed honey, just smear a little honey on the frame and sealing, hang it a minute or two in a healthy docile hive until a sufficient number of bees cluster on it, then take it to the small compartment, drop in the queen, tack on the cover and all is well. Not a queen has yet been lost by this plan, all having reached their destination safely. Some trouble, of course it is. Does it pay? Well, probably if the bees had gone on, in some instances, seven out of twelve, others, five out of twelve would have reached, but in nearly every case ten out of twelve have arrived all right.

I am half inclined to test the Carniolans, simply to secure the nice white comb honey. These Italians and hybrids fail to produce such fine samples we see from others.

QUEENSLAND JOTTINGS.

By C. C. CUSACK.

I AM sorry to report that in many parts of the colony the favourable promises of the early spring for a good honey flow are not fulfilled. In my own apiary the season has been a fair one, the hives that were worked for honey having averaged about 151 lbs each. But in many parts, as far as I can gather, the honey crop has been a very poor one. The price of honey is much more satisfactory than it is generally at this time of year. The season has been remarkable for the small percentage of colonies that swarmed, it being not more than 5 per cent. in many cases, and in my own nil. I have experienced considerable difficulty in rearing sufficient drones this season for queen-rearing purposes; the worker bees in many instances destroying the drone larvæ as soon as they were hatched, though, strange to say, in spite of this scarcity of drones, I have never had a season in which there was such a small loss of queens when on their matrimonial flight. This small percentage of losses, which has not exceeded one in twenty, I can only attribute to the fine sunny weather which has prevailed throughout.

While upon the subject of queen-rearing, I may mention two slight incidents in connection with queen-raising in an observatory-hive. I have reared several queens in an observatory-hive in my dining-room, so as to be better able to watch the whole *modus operandi*, and find that the queens raised in this hive get mated several days earlier than those reared in the ordinary hive. As a rule, those reared in the observatory-hive get mated on the third or fourth day after their quitting the cell, whereas the queens in an ordinary nucleus hive rarely get mated before the sixth day.

Another thing that came under my notice when rearing queens in this hive, was, that on the second or third day of the queen's leaving the cell, the bees worried and teased her, as if to drive her from the hive, and gave her no peace until she left the hive for impregnation. Whether workers in an ordinary nucleus hive act in this manner towards their queens would be of interest to learn.

Let me advise every apiarist to make an observatory-hive. It will prove both interesting and instructive to him and to others visiting his apiary.

The editor of the *Journal* has invited subscribers to express their views as to the advisability of combining the bee with the poultry journal. If the apiarian department does not suffer thereby, I think the combination will prove advantageous both to bee and poultry keepers, as at present there are not sufficient beekeepers to support a journal devoted exclusively to apiculture; and aside from this, many beekeepers take an interest in poultry keeping.

Indooroopilly, Queensland, March 5, 1889.

[It is certainly curious that queens reared in your observatory hive should take their wedding flight so much earlier than from the ordinary nucleus hives. The weather has much to do with the age at which impregnation takes place. We have frequently had queens—reared during a spell of fine sunny weather—laying at ten days old, while at other times—notably this season—they have been nearly or quite twice that age.—Ed.]

BEE GOSSIP.

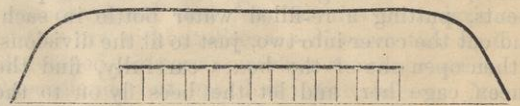
BY O. POOLE.

MINORCAN BEES.—Early during the last season a queen of the above race of bees was imported into England by Mr F. C. Andreu and was taken charge of by Mr C. N. Abbott, the well-known beemaster and founder of the *British Bee Journal*. The bees are said to resemble the common English black bee, except that they are "much darker, almost black, and appear to have a more glossy surface." They are said to be very prolific, and Mr Abbott states that four Minorcan queens in combination hives, examined last November, "were still laying and had patches of brood, the original having five combs fairly stocked with eggs, sealed brood and hatching bees, all surrounded with ample stores in first-rate order." This is certainly very late in the season for queens to be breeding in England. They generally cease laying in September, and do not resume their maternal duties again until the following January or February. The editor of the *British Bee Journal* states in the November number of that periodical that he had recently examined a colony on a cool day, and that he found that, "whilst the other races of bees were all snugly and compactly clustered, and were hardly stirred by the disturbance, the Minorcan bees were spread over the combs, were much more vivacious, and flew out to resent the intrusion. Numbers of bees ran out at the entrance, whilst with the other bees not one was to be seen to leave that way. A smoker was not used in either case, so that all had the same treatment." With regard to their temper, there is, I notice, a great difference of opinion. Mr Cowan speaks of them as "dreadful stingers." Mr F. C. Andreu, who has a large apiary of them in Minorca, says he manages them with

ease, and that his apiary is frequently visited by any number of ladies and gentlemen, who seldom carry off a sting, although he states that often in manipulating he has come across a hive so ill-tempered that it was difficult to do anything with it. He also explains that in Minorca the bees are unused to hibernation, for in winter, as soon as a storm is over which had kept most of them indoors, they issue forth livelier than any cricket, and that they would be more sensitive to the cold of England, which would naturally make them irritable and inclined to sting. Mr C. N. Abbott, however, says: "I am inclined to believe that the characteristic 'gentleness' may be added to that of 'prolificness,' when speaking of the merits or demerits of Minorcan bees.

I was assisted by an able expert, and when we came to the stock containing the Minorcan queen I prevented the use of everything in the nature of a pacifier, and determined to see what the bees would do under ordinary handling. We wore veils, but no gloves, and we examined the whole of the combs, beginning at the back, and scraped and cleansed the frames and all the inside of the hive, returned everything to its place except such combs as we determined to withhold, and covered them up to stand the winter without having received a single sting." The past season was such an exceedingly poor and wet one that there has been no chance of testing the character of the Minorcans as honey gatherers, but doubtless this year, when our friends will have a chance of commencing the season with established stocks, they will get a fair trial, and their working qualities tested with other races of bees. One peculiarity in these bees is the habit they have of erecting barricades of propolis and wax at the entrance of the hive, described as follows in the *British Bee Journal* :—

The barricades were built up apparently of the usual materials, viz., propolis and wax, and extended the whole of the entrance, which was about eight inches long. We have seen bees build barricades to protect themselves against robbers, and also against the death-head moth, but in such cases the inside of the entrance is filled up with propolis and wax, and a hole left here and there just as the bees seem inclined. In these barricades there is a regularity that is most beautiful, and has called forth the remark from one correspondent that 'they seem for all the world the work of engineers learned in the art of self-defence.' In this case the barricades form a regular trellis, each hole being nearly one quarter inch wide, or just large enough to allow a bee to pass, and having an upright bar of about one-eighth of an inch wide between each hole. The illustration will give an idea of the structure :—



When we first heard of these barricades the idea at once occurred to us that they were probably intended to keep out the rose beetle, very common in the south of Europe, and that the habit was probably inherited.

* * * *

Whether this new variety of bees will ultimately prove of any value or not, either by themselves or crossed with another race, remains to be seen, but those beekeepers who are taking the

trouble to introduce them in their apiaries for the purpose of testing their qualities, are deserving of credit and the thanks of their brother beekeepers generally.

* * * *

SMALL SECTIONS.—A few months ago I called the attention of your readers to an ingenious contrivance by an American beekeeper for producing small sections of honey weighing about two ounces each, for samples or otherwise. Great difficulty was, however, experienced in fitting the thin veneer square together, and the idea has since been improved upon by Mr T. Bonner Chambers, F.L.S., who has successfully used circular glass sections cut out of round bottles. Two round slices were used for each section, with a piece of comb foundation between the two; a block of wood pierced with holes, drilled the proper size, was used to hold the glasses, each block being sawn across the centre of the holes previous to being inserted in a frame and placed in the hive. These sections, Mr Chambers says, "look lovely. I had them beautifully sealed over—not a single pop hole in them." The editor of *Gleanings*, commenting on the above, says:—"Glass cut out of bottles is terribly dangerous stuff for almost anybody to handle. The objection to circular sections is the amount of waste space between the circles. If they are to be used I think I should much prefer stiff paper or wood shavings."

* * * *

For my own part, I must confess that I should much like to see these small sections introduced into New Zealand. If beekeepers only got one penny each for a two-ounce section, they would then pay well to raise, and not only that, but I believe it would be the means of introducing this delicious sweet into many households where at present it is never seen. Once let the people get a liking for honey and they would never be without it. Next season I shall certainly try some of the circular sections.

* * * *

THE NATIVE BEE OF AUSTRALIA.—The information contained in the following paragraph, clipped from an Australian paper, regarding the habits of the native bee, will prove interesting. Perhaps, some of your readers could give us some additional information concerning these interesting insects:—"Mr James S. Bray has just added to the very interesting collection at his museum, 12, Queen's-place, a hive of native bees. They were obtained from a dead tree about three miles from the head of Middle Harbour, and as they are of very rare occurrence, a brief description of them may prove of interest. Their comb is a dark chocolate colour. It is not built up like that of the ordinary bee, but in a mass, and to all appearance solidly, but still in small globular sections, which are filled with the honey. In the very centre of this hive, which is all surrounded by the honeycomb, they build sections like a cup which contains their eggs. The wax is of commercial value and the honey is quite equal in quality to that made by the ordinary bees, but

to the taste it is slightly acid. In olden times the aborigines mixed it with water, and drank it as a beverage, and even if done now it makes a very pleasant drink. The bees are about half the size of an ordinary house fly, but they have no sting, and they swarm just in the same way as an ordinary bee. Confined in a glass case, the bees at Mr Bray's museum are in full working order, and anyone desirous of seeing them can do so by calling at the museum."

* * * *

BEE FORAGE.—Although planting large areas of land for honey alone cannot be recommended, still there are many crops which might be advantageously cultivated by farmers who keep bees which would prove as useful either for hay silage, or for use as green food for cattle, as they would be beneficial to the bees. Mr Simmins asserts, in his work on bees, that twenty acres of mellilot and borage are sufficient for one hundred colonies of bees, but I am at a loss to see how he arrives at this conclusion, although twenty acres of borage would certainly be a great help to any apiary. Mr T. Beale-Brown, of Salperton Park, Gloucestershire, England, some years ago grew several acres of this, and he assured me that his horses did remarkably well on it when chaffed and mixed with other food.

* * * *

I notice in New Zealand that farmers are in the habit of growing large quantities of oats both for hay and for use as green food. These, of course, are useless to bees, and farmers possessing apiaries, might, with advantage, substitute many other plants which would be both suitable for cattle and beneficial to the bees. Autumn-sown vetches, for instance, give a capital early spring feed for sheep; they may be fed off until September, and then allowed to blossom and seed. In this way in England we get capital crops of seed with very little straw—much easier to harvest than a crop that has not been fed off. Crimson clover (*trifolium incarnatum*) is also a good forage crop, and is much liked by bees. This also is easily cultivated, as it only needs harrowing in on the autumn stubble; in fact, all the clovers except the red are valuable for bee pasturage, the white Dutch especially so, which should never be forgotten when laying down land to permanent pasture. Saintfoin and lucerne are excellent honey producers, as also are rape and mustard.

* * * *

Buckwheat should likewise be cultivated. The grain forms the best possible food for fowls, and the flowers yield a large quantity of nectar, which Professor Cook says is inferior in colour and flavour, though some people prefer it to all other honey. Dzierzon speaks very highly of it as a winter food for bees, and states that after the seasons of 1858-59, his latest swarm, contrary to ordinary experience, wintered best, because they had only wholesome buckwheat honey, while old stocks and early swarms, which previously had stored much pine honey, suffered terribly from dysentery. As buckwheat comes into blossom

about February, it conveniently fills a gap between the white clover and the late autumn flowers, and if the extractor has been previously used, the bees will gather from it a considerable portion of their winter stores.

* * * *

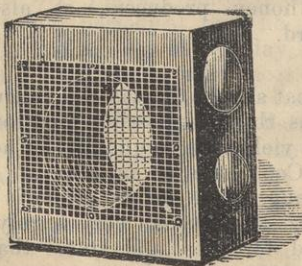
Many useful flower seeds may also be with advantage scattered in waste places, such as by the roadside and in hedgerows, taking care to distribute none that may spread and prove injurious to the adjoining land.

* * * *

In the *American Agriculturist* for February, Dr. A. W. Thornton highly recommends "serradella" both as a valuable forage plant and most useful for bees, as the blooming season is a long one, and the bees work on it all the time. It is a native of Portugal and has only been lately introduced into America, although it has figured in Messrs. Sutton's catalogue in England for several years past. Dr. Thornton says he made two sowings, the first on April 18th, which blossomed in June (December in New Zealand), when it seemed to take a fresh start, and grew rapidly, attaining a height of four or five feet by September 29th (March in New Zealand), having bloomed all that time. His second sowing was made May 16th (November in New Zealand), and by September 29th (March in New Zealand), it had attained a height of six feet, and although planted in drills three and a half feet apart, it formed a perfect, dense mass of verdure, completely covering the ground and smothering all weeds. It is also valuable as a soiling crop, as it keeps on growing until the late frosts. It makes excellent hay, surpassing both clover and timothy in nutritive value. The time of seeding and mode of cultivation is the same as for peas. I trust that some of our beekeepers, who may require a crop of this description, will be induced to give serradella a trial.

* * * *

FLIEBIG AND SON'S INTRODUCING CAGE.—Some few weeks since Messrs. Fliebig and Son, of Adelaide, forwarded the editor of this *Journal* a new introducing cage, designed by themselves, accompanied by a note, asking the editor to give it a trial, and if approved of, to give the reader of the *Journal* a description of the same. It is somewhat similar in appearance to the annexed



A

engraving, but only has one hole in the edge A. Its dimensions are:—Length, $2\frac{3}{4}$ in.; width, $2\frac{1}{2}$ in. and thickness $\frac{3}{4}$ in.; the diameter of the centre hole $1\frac{1}{2}$ in., and is covered on both sides with wire cloth. One edge of this hole comes to within three-eighths

of an inch of one end of the block, leaving a full half inch at the other end, through which is bored the hole A five-eighths of an inch in diameter nearly through the block and communicating with the centre hole. A small tube of fine wire cloth $1\frac{1}{2}$ in. deep is made to fit this hole, having a small portion of the side of the inner end cut away large enough for the queen to make the exit from the larger hole to the hive. To use the cage, withdraw the wire cloth tube and fill it with "Goods" (candy). Now, place the queen in the cage, and carefully insert the tube. It is then ready to place in the hive. The bees gradually eat away the candy, and by the time they have done so they have become friendly to the queen, and she makes her exit in safety to the hive. The noticeable improvement in this cage is the wire cloth tube, which is a very handy arrangement for supplying the food, which, when tightly pressed in, takes the bees at least forty-eight hours to reach the queen. Those engaged in tunnelling through the candy also make the acquaintance of the queen through the meshes of the tube. Having used this cage on many occasions I can highly recommend it.

* * * *

Have any of your readers a spare copy of the first number of this *Journal*? I should be glad to get a copy to complete the first volume.

Occasional Notes.

No. 8.

BEES AND HONEY WITHIN THE TROPICS.

(Continued.)

BY T. J. MULVANY.

CONFINING our attention for the present (as we have done in preceding papers in regard to South America and to Africa) to that portion of the tropical zone which extends about ten degrees north and south of the equator, and tracing this belt eastwards from the coast of Africa, it will be found to take in, first, the island of Ceylon and the extreme southern part of India proper, and next, the so-called "East India Islands" in the Malay Archipelago; then, passing by the northern extremity of Australia to New Guinea and to the least important of the island groups in the Pacific Ocean. North of this narrow belt lie those districts of Arabia, India, and Eastern Asia, which were amongst the earliest inhabited parts of the globe, and into which the honey-bee had found its way, and where the use of honey and the traffic in both honey and beeswax seem to have been established long before the earliest pages of history were written.

The Egyptian bee (*Apis fasciata* of Latrille) appears to be the variety which extended itself most extensively eastwards, through Arabia, Central Asia, north of the Himalayas, and into China. The peninsula of India proper, south of

the Himalayas, is said by Dr. Gerstaecker to possess three indigenous species of the genus *apis*, named by Latrille *Apis indica*, *A. sirialis*, and *A. dorsata*; but a closer inquiry seems to indicate that these are not separate species, but only varieties of the *Apis mellifica*. I don't know if this point is as yet quite settled to the satisfaction of scientific men; but at all events, the *Apis dorsata*, of which we hear most in Southern India, in Ceylon, and in the eastern islands, is a very remarkable insect, and seems to differ more in size, character and habits from the European honey-bee, than any other variety we have heard of.

It is now some eight or nine years since Mr. D. A. Jones, of Canada, took steps to ascertain the practicability, or the reverse, of importing the East India variety of the honey-bee. Mr. Benton, who was sent out by him to Ceylon, in his first report wrote: "*Apis dorsata* is a wonderful bee, whether it can be domesticated or not. It builds in the open air on branches, often making combs six feet long; and I have good authority for saying that *thirty natives have each taken a load of honey from one tree.*" In 1883 the Indian Government published the result of investigations that had been going on for some years in all parts of India, in connection with the popular treatment of bees in that country. From this source we learn that the chief honey district in Southern India is about Coorg and the Wynaad, near the Neilgherry Hills, which is about the nearest part of continental India to Ceylon, where Mr. Benton met the *Apis dorsata*. In Coorg, it is said, "the wild bees build their combs in the trees, and as many as a hundred combs are occasionally found in a single tree. An average of 8lbs of honey is obtained from each comb in this district, and the bees are driven out by smoking torches applied to their nests." One case is mentioned of a "large mango tree, some 20 feet in girth, standing on the boundary between Wynaad and Mysore, where the natives in each district exercise the right of collecting the honey from the branches overhanging their own territory." These bees would appear to be of the same variety as those found in Ceylon, but unfortunately no particulars are given as to their size, colour, the size of their combs or its separate cells, nor about the separation into different "nests" or stocks of the large number of combs found in one tree. One of the reporters, Mr. Morgan, Deputy Conservator of Forests in the Wynaad, comes to the conclusion that "only one kind of bee, the *Apis indica*, is capable of domestication, and that only in hilly districts, not on the plains"; but he does not say why, nor give any special description of this variety. A very large sort of bee, which they call "large cliff bees" (building in cliffs and under ledges of rock), are represented as "so ferocious in habit, and furnished with such deadly stings, as to be dangerous to both men and beasts coming within their neighbourhood." Whether these dangerous insects are *A. indica* or *A. dorsata*, or some other sort, does not appear. Mr. Jones, of Canada, has since made personal acquaintance with the *A. dorsata* in Ceylon, and endeavoured to import some to America, but as far as I know, without success up to the present.

Mr. A. R. Wallace, in his work entitled "The Malay Archipelago," published in 1868, mentions bees, honey, and beeswax as met with, especially in the great island of Borneo, in Celebes, and in Timor. They are no doubt common in all, or nearly all the islands of this group, though not specially mentioned, the principal objects of Mr. Wallace's pursuit having been the birds of paradise and other gorgeously feathered denizens of that interesting region. At Maros, in the Celebes islands, he notes, "the flies and bees were abundant, and of these I daily obtained new and interesting species"; but he does not describe the species or varieties of bees met with. However, when at Timor he speaks, as we shall see further on, of the *Apis dorsata*, and in the following extract, the manner in which the honey-bee of Borneo is described, leads to the conclusion that it is the same as at Timor. After describing the many uses to which the bamboo cane is applied in Borneo—the building of light suspension bridges across rivers, etc.—he says:—

"One of the most striking uses to which the bamboo is applied by the Dyaks, is to assist them in climbing lofty trees, by driving in pegs in the way I have already described at page 55. This method is constantly used in order to obtain wax, which is one of the most valuable products of the country. The honey-bee of Borneo very generally hangs its combs under the branches of the Tappan, a tree which towers above all others in the forest, and whose smooth cylindrical trunk often rises a hundred feet without a branch. The Dyaks climb these lofty trees at night, building up their bamboo ladder as they go, and bringing down gigantic honeycombs. These furnish them with a delicious feast of honey and young bees, besides the wax, which they sell to traders, and with the proceeds buy the much-coveted brass wire, earrings, and gold-edged handkerchiefs, with which they love to decorate themselves."

"Thin, long-jointed bamboos form the Dyaks' only water-vessels, and a dozen of these stand in the corner of every house. They are clean, light, and easily carried, and are in many ways superior to earthen vessels for the purpose. . . . Salted fruit, or fish, sugar, vinegar, and honey are preserved in them instead of jars or bottles." At Timor also, describing a photograph given of two natives, he remarks, "the covered bamboos probably contain honey for sale."

At Timor he gives the following account of the manner in which the natives climb the tall trees there and take the honeycombs of the *Apis dorsata*. The description is so graphic and interesting, especially to the different means adopted by these natives as compared with those of Borneo, climbing the tall smooth trees, that I am induced to give it at full length.

"The beeswax is a still more important and valuable product, formed by the wild bees (*Apis dorsata*), which build huge honeycombs, suspended in the open air from the underside of the lofty branches of the highest trees. These are of a semi-circular form, and often three to four feet in diameter. I once saw the natives take a bees' nest, and a very interesting sight it was. In the valley where I used to collect insects, I one day saw three or four Timorese men and boys under a high tree, and looking up; saw on a very lofty horizontal branch three large bees' combs. The tree was straight and smooth—barked and without a branch, till at seventy or eighty feet from the ground it gave out the limb which the bees had chosen for their home. As the men were evidently looking after the bees, I waited to watch their operations. One of them first produced a long piece of wood, apparently the stem of a small tree or creeper, which he had brought with him, and began splitting it through in several directions, which showed it was tough and

stringy. He then wrapped it in palm leaves, which were secured by twisting a slender creeper round them. He then fastened his cloth tightly round his loins, and producing another cloth wrapped it round his head, neck, and body, and tied it firmly round his neck, leaving his face, arms, and legs completely bare. Slung to his girdle he carried a long, thin coil of rope; and while he had been making these preparations one of his companions had cut a strong creeper or bush-rope eight or ten yards long, to one end of which the wood-torch was fastened, and lighted at the bottom, emitting a steady stream of smoke. Just above the torch a chopping knife was fastened by a short cord.

The bee-hunter now took hold of the bush-rope just above the torch and passed the other end round the trunk of the tree, holding one end in each hand. Jerking it up the tree a little above his head he set his foot against the trunk, and leaning back began to walk up it. It was wonderful to see the skill with which he took advantage of the slightest irregularities of the bark or obliquity of the stem to aid his ascent, jerking the stiff creeper a few feet higher when he had found a firm hold for his bare foot. It almost made me giddy to look at him as he rapidly got up—thirty, forty, fifty feet above the ground; and I kept wondering how he could possibly mount the next few feet of straight smooth bark. Still, however, he kept on with as much coolness and apparent certainty as if he were going up a ladder, till he got within ten or fifteen feet of the bees. Then he stopped a moment, and took care to swing the torch (which hung just at his feet) a little towards these dangerous insects, so as to send up the stream of smoke between him and them. Still going on, in a minute more he brought himself under the limb, and in a manner quite unintelligible to me, seeing that both hands were occupied in supporting himself by the creeper, managed to get upon it.

“By this time the bees began to be alarmed, and formed a dense buzzing swarm just over him, but he brought the torch up closer to him, and coolly brushed away those that settled on his arms or legs. Then stretching himself along the limb, he crept towards the nearest comb and swung the torch just under it. The moment the smoke touched it, its colour changed in a most curious manner from black to white, the myriads of bees that had covered it flying off and forming a dense cloud above and around. The man then lay at full length along the limb, and brushed off the remaining bees with his hand, and then drawing his knife cut off the comb at one slice close to the tree, and attaching the thin cord to it, let it down to his companion below. He was all this time enveloped in a crowd of angry bees, and how he bore their stings so coolly, and went on with his work at that dizzy height so deliberately, was more than I could understand. The bees were evidently not stupefied by the smoke or driven away far by it, and it was impossible that the small stream from the torch could protect his whole body when at work. There were three other combs on the same tree, and all were successively taken, and furnished the whole party with a luscious feast of honey and young bees, as well as a valuable lot of wax.

“After two of the combs had been let down, the bees became rather numerous below, flying about wildly and stinging viciously. Several got about me, and I was soon stung, and had to run away, beating them off with my net and capturing them for specimens. Several of them followed me for at least half a mile, getting into my hair, and persecuting me most pertinaciously, so that I was more astonished than ever at the immunity of the natives. I am inclined to think that slow and deliberate motion, and no attempt at escape, are perhaps the best safeguards. A bee settling on a passive native probably behaves as it would on a tree or other inanimate substance, which it does not attempt to sting. Still they must often suffer, but they are used to the pain, and learn to bear it impassively, as without doing so no man could be a bee-hunter.”

Timor is nearly the most eastern of the East India islands, and that nearest to the north-west coast of Australia, from which it is however more than 300 miles distant. The *Apis dorsata* never

made its way across that sea, as neither it nor any of the European varieties of the *Apis melifica* was known in Australia until the latter were introduced by the white settlers. It is well known that there is an extraordinary and very marked difference between both the fauna and flora of continental Asia and those of Australasia; and naturalists point out, as the abrupt boundary between the two, a narrow strip of deep water which divides the shallow seas on each side of a line passing between the islands of Bali and Lombok, and through the Macassar Straits, between Borneo and Celebes. Some of the western species of birds, and some insects—the *Apis dorsata* among the latter—have made their way or been carried to some of the islands east of that line of demarcation, but not further, in a south-easterly direction, than Timor, as above mentioned. As bees are plentiful in Celebes, and there are several large and small islands scattered between it and the great island of New Guinea which might serve as stages in the eastward spread of the insects, one would expect to find them also in the latter place; but I have not seen any mention of bees or honey in the meagre accounts of New Guinea which I have chanced to come across. Of the Pacific islands in this equatorial belt, the Caroline, Marshall, Gilbert, Ellice, and Phoenix groups, New Britain, the Solomon Islands, etc., but little is known. They are, no doubt, destitute of any species of the honey-bee. With regard to the more important and better known groups in the southern tropical region—New Caledonia, New Hebrides, Fiji, Samoa, the Friendly, Cook's, and Society groups, etc., it is greatly to be wished that information on this subject could be collected from parties who may have visited them. In the principal of these islands now inhabited by Europeans, apiculture will, no doubt, have been already introduced to some extent, and it is to be hoped that some among these pioneers of the industry may be readers of the *Australasian Bee Journal*, and may be induced to favour us with the information desired.

Correspondence.

BEEKEEPING IN SOUTHLAND.

TO THE EDITOR OF THE AUSTRALASIAN BEE JOURNAL.

SIR.—The following is a brief outline of my experience as a beekeeper. In September, 1887, I got my first box of bees. The next month I drove them into one of the bar frame hives made in accordance with the directions contained in the *Australasian Bee Manual*. During that season I worked entirely for increase, not having an extractor. At the end of the season I had seven stocks—three of them very good; the other four I united, making two of them, one of which died during the winter, leaving me with four to start the past season with. The united one was not very strong, in fact it has not quite filled out the bottom box with honey up to the present. I worked the other three for extracted honey, starting with Nos. 1 and 2 hives on the 21st January, 1889, for 90lbs of honey. On the 4th February I worked Nos. 2 and 3 for 87lbs. On the 18th I worked the same hives for 54lbs. On the 24th I took off the supers for 15lbs and seven full frames as a stand-by for the winter, not having taken any from the bottom boxes; but if the weather holds good I shall

take out one side frame from each of the boxes, replacing it with an empty one. I have had two swarms. The past season in this district has been anything but a good one. We as a rule get swarms from the common boxes about the middle of November, but the few that came off this season before the middle of January, as far as I can hear, died off. *Re* the proposed change in the journal, I don't go in much for poultry myself, but I am in favour of the change, as I think it will tend to increase the circulation.

G. CHURCH.

Southland, March, 1889.

[You have done very well indeed from your three hives, considering it was your first season.—Ed.]

CATALOGUE RECEIVED.

Neighbour and Son's Improved Bee Hives, 127, High Holborn, London.

We beg to acknowledge the receipt of the above catalogue, which is quite a little book in itself. It contains sixty-six pages and about one hundred well-executed engravings of hives and other apiarian appliances, many of them peculiar to English beekeeping. Some of the hives are extremely ornamental, and seem more fitted to adorn the lawn of a lordly mansion than the apiary of a practical beekeeper, who perforce must keep the £ s. d. part of the business in view. Nevertheless, there are also enumerated in the catalogue some very serviceable and substantial hives at reasonable prices. We believe Messrs Neighbour are the oldest firm of apiarian supply dealers in Great Britain, and judging from the number of medals and first prizes taken at various exhibitions, both in and out of the United Kingdom, their goods must be of a superior class. The catalogue can be obtained free of charge on application.

Queries and Replies.

B. J.—Double-walled hives are certainly not necessary for successful wintering in the Auckland district; nor, in fact, in any part of the North Island. In the extreme South it would be perhaps beneficial to use them.

H. A. C.—Sections that are only partly filled are not now likely to be finished by the bees, as the season is too late. Allow the bees to remove the honey, and then pack them securely away in a dry place, for use next season.

H. MASON.—It is far better to unite weak colonies, as there will be less danger in wintering. Should the bees show any disposition to fight, give them a good smoking; this will generally stop them.

NEW ZEALAND BEEKEEPERS' ASSOCIATION.

THE Annual General Meeting will be held at the office of I. Hopkins and Co., Lower Queen-street, Auckland, on Friday, April 26, 1889, at 2.30 p.m.

Business: To receive Report and Balance Sheet, and the Election of Officers for the coming year.

I. HOPKINS,
Hon. Secretary and Treasurer.

TELEPHONE No. 370.]

[TELEPHONE No. 370.

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The undermentioned works are not mentioned in our new Catalogue, owing to delay in their arrival:—

Cowan's 'British Beekeepers' Guide Book,' post free 2s 4d

Simmins' 'Method of Direct Queen Introduction,' post free 1s 2d

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A few Copies of Vol. I. of the above Journal, bound in cloth free by post, 4s.; original price, 8s.—I. HOPKINS, P.O. Box 386, Auckland.

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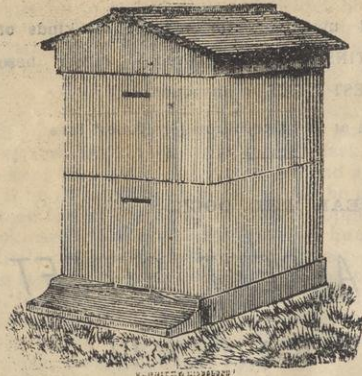
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