



# LIBRARIES

UNIVERSITY OF WISCONSIN-MADISON

## **The Australasian bee journal. Vol. II, No. 9 March 1, 1889**

Auckland, New Zealand: I. Hopkins and Co., March 1, 1889

<https://digital.library.wisc.edu/1711.dl/O7F3PFPJ7VPS38A>

<http://rightsstatements.org/vocab/NKC/1.0/>

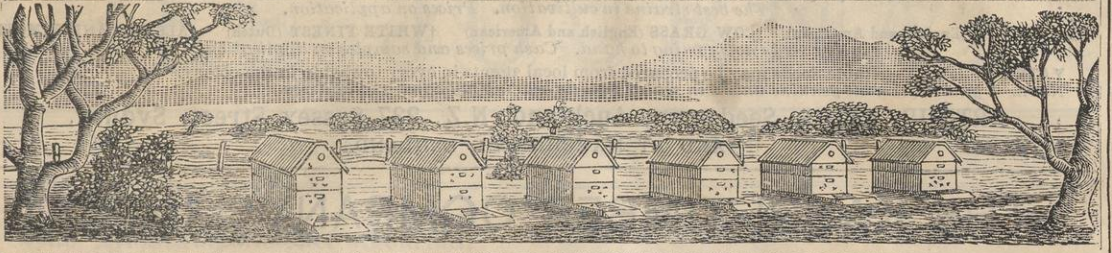
For information on re-use see:

<http://digital.library.wisc.edu/1711.dl/Copyright>

The libraries provide public access to a wide range of material, including online exhibits, digitized collections, archival finding aids, our catalog, online articles, and a growing range of materials in many media.

When possible, we provide rights information in catalog records, finding aids, and other metadata that accompanies collections or items. However, it is always the user's obligation to evaluate copyright and rights issues in light of their own use.

# BEE JOURNAL



No. 9. VOL. II.] AUCKLAND, N.Z., MARCH 1, 1889. [PUBLISHED MONTHLY SIXPENCE.



*Important to Dairy Farmers, Dairymen,  
Cheese Factory & Creamery Proprietors.*

ALEX. HARVEY,

ALBERT STREET (Corner of Durham Street),

Begs to intimate to the above that he has imported the most improved plant for the manufacture of all the requirements for the above. Having had a long experience in this business, I am prepared to supply these goods with all the most recent improvements; and, being a direct importer, can supply same at very low prices.

The following are a few of the specialties manufactured by me:—

Cheese Factory Vats, Factory Cans, Railway Milk Cans, Creamery Vats, Cheese Hoops, Dairymen's Milk Cans and Measures, Cream Cans, Milk Dishes, Strainers, Refrigerators, Butter Tins, Honey Tins, Honey Extractors, and every description of Tin, Iron, and Copper Work.

Best value in Jam Tins, Honey Tins, Butter Tins, etc.

ALEX. HARVEY, Albert Street (corner of Durham Street).

P.O. Box 386.

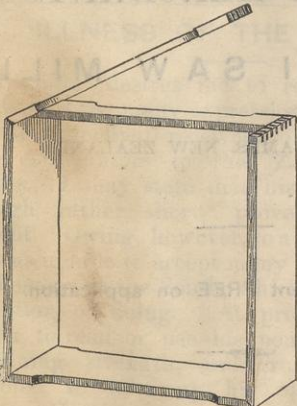
Telephone 285.

## I. HOPKINS AND CO.

Manufacturers, Dealers, and Importers of all kinds of Apiarian Appliances, Importers and Breeders of ITALIAN QUEENS. Honey Tinned, Labelled, Packed, and Sold on Commission (see circular). Estimates furnished of cost of fitting out any sized Apiary, and their laying out undertaken.

BEESWAX BOUGHT AND SOLD ON COMMISSION.

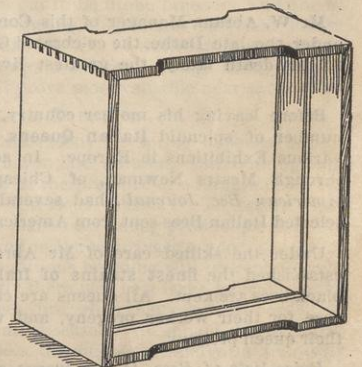
IMPROVED HONEY EXTRACTORS AND SECTIONS.



OUR IMPROVED ONE-PIECE SECTIONS.

Comb Foundation can be firmly secured in the centre of these Sections without the aid of these levers or melted wax, and in one quarter the time, as the section is folded and the foundation fixed at the same time. These sections are the best yet introduced. Our New Extractors are a great improvement on the old ones, and much cheaper.

Send for the coming season's Supplement to our circular and price list.



P.O. Box 386.

OFFICE & STORE: LOWER QUEEN STREET, AUCKLAND.

# YATES' RELIABLE SEEDS.

CHOICE SEEDS FOR THE GARDEN AND FARM.

VEGETABLE SEEDS, 6d per packet  
FLOWER SEEDS (ordinary), 3d per packet

\*SWEDE, YATES' CHAMPION PURPLETOP  
\*YELLOW ABERDEEN GREENTOP

\*SWEDE, YATES' SELECT GREENTOP  
\*YELLOW ABERDEEN PURPLETOP

*\* The best strains in cultivation. Prices on application.*

†RED CLOVER (English and American) †COW GRASS (English and American) †WHITE FINEST (Dutch) †ALSYKE AND TIMOTHY  
† New seeds now coming to hand. Cash prices and samples on application.

YATES' Reliable Vegetable Seeds may be procured from local agents in every township in the colony.  
NOTE.—I guarantee none genuine unless in sealed packets bearing my name and address.

ARTHUR YATES, Seedsman, Auckland, N.Z., 237 Sussex Street, Sydney,  
AND AT MANCHESTER, ENGLAND.

## THE KAURI TIMBER COMPANY, LIMITED.

TIMBER.—Weather Boarding (rusticated and feather-edged), Rough and Dressed Flooring, Lining and Scantling.

Manufacturers of every description of Joiners' Work, Doors, Sashes, Mouldings, Turnery, Carving, &c.

SPECIALTIES.—Seed Protectors, Hand Lights, Vineries (glazed on the new patent principle, without putty), and all kinds of Horticultural Implements, Hives, and Apiarian Appliances.

BRICKWORKS at New Lynn Railway Station. Available for the supply of orders to any station on the Waikato, Kaipara, and Onehunga Lines.

All Classes of Building Materials supplied with despatch and delivered into railway trucks.

Illustrated Catalogues and Price Lists free on application. Liberal discounts to cash purchasers.

MILLS.—EAST COAST, WHANGAPOUA.

WEST COAST, PORT ALBERT, KAIPARA.

HEAD OFFICE, MILLS AND FACTORY, CUSTOMS STREET, AUCKLAND.

FRANK JAGGER, Manager.

## THE ITALIAN BEE

COMPANY.

BEE FARM AT PARRAMATTA,

In charge of W. ABRAM.

OFFICE, 312 GEORGE STREET, SYDNEY,

S. MACDONNELL, Secretary.

Mr W. Abram, Manager of this Company, served his time under the late Dathé, the celebrated German naturalist, and, till his death lately, the greatest living authority on bee culture.

Before leaving his mother country, Mr Abram secured a number of splendid Italian Queens, which took prizes at various Exhibitions in Europe. In addition, the Company, through Messrs Newman, of Chicago (publishers of the *American Bee Journal*), had several colonies of specially-selected Italian Bees sent from America.

Under the skilled care of Mr Abram, the Company has established the finest strains of Italians. No hybrids nor black bees are kept. All queens are carefully tested in every case for their worker progeny, and when time allows, for their queen progeny.

Price lists of Bees, Hives, Queens, etc., posted on application to the Manager or Secretary as above.

## BAGNALL BROS. & Co.

MANUFACTURERS OF HIVES,

AND ALL OTHER

APIARIAN APPLIANCES,

TIMBER MERCHANTS

HAURAKI SAW MILLS

TURUA, THAMES, NEW ZEALAND.

Price Lists sent FREE on application.

N.B.—A few Foundation Machines on hand.

# THE AUSTRALASIAN

# BEE JOURNAL

No. 9. Vol. II.]      AUCKLAND, N.Z., MARCH 1, 1889.

[PUBLISHED MONTHLY.  
SIXPENCE.]

## The Australasian Bee Journal.

PUBLISHED MONTHLY.

I. HOPKINS      EDITOR AND PROPRIETOR.

### TERMS OF SUBSCRIPTIONS

Per Annum (in advance)      6/-  
Post Free on day of Publication.

All correspondence for publication and business communications to be addressed to the Editor, P.O., 386, Auckland, New Zealand.

## Editorial.

### SEASONABLE HINTS FOR MARCH.

THANKS to the genial rains, which fell during the beginning and middle part of the month, February has proved very favourable for apiculturists. Our own bees have been gathering honey during the whole of the month, and have finished off some nice one-pound sections. This state of affairs cannot, however, be expected to last, as the honey season is practically drawing to a close. There is every prospect, with the renewed growth of vegetation, caused by the late refreshing rains, of a fair autumn yield of honey, which will enable the bees to gather a plentiful supply of winter stores.

So far we are not enabled to say what the yield of honey will be compared with other seasons, but so far as we can judge at present it will be considerably below the average. However at present we have insufficient data to make any statement with certainty.

#### ROBBING,

As recommended last month, should be particularly guarded against, and during manipulation of hives at this time of the year, the operation should be got through as quickly as possible, or as a sure preventive the work should be conducted under the protection of a bee tent.

#### OVERHAULING COLONIES.

It is of very great importance that we should know the exact condition of each colony immediately at the close of the honey season, as we have but a short time at our disposal for getting the bees into good condition for wintering. Many circumstances may have occurred during the honey season, such as over-swarming, loss of queens, etc., that many colonies will be found much stronger than others. Consequently it will be well to equalise matters as far as possible, by strengthening the weaker ones by adding combs of honey and brood from the strongest, and in the case of colonies found to be queenless, it will be preferable to unite them to other colonies should there be no spare fertile queens on hand, rather than allow them to raise queens so late in the season, which often turn out to be drone breeders, and therefore useless. Probably during this month sufficient honey will be gathered to enable the bees to work out several sheets of foundation; if so we would advise advantage being taken of this, as these combs will prove most valuable next season.

#### LATE BREEDING.

The prosperity of the colony in spring depends almost entirely upon its condition in late autumn, and nothing will conduce to this so much as the presence of a large number of bees reared late the previous season. To secure this, there should in the first place be a young prolific queen at the head of every colony, and in the next place a good supply of stores. Under these conditions breeding will be kept up right into winter, consequently there will be a large force of young and vigorous worker bees just when they are most needed, in the early part of the coming season. It should be borne in mind that the aged bees die off very rapidly in the early spring, when, should there be a lack of young bees, the colony will rapidly decrease in population, and probably succumb to

## Contents.

Illness of the Editor	131
EDITORIAL—	
Seasonable Hints for March	131
The Bee and Poultry Journal	132
The Proposed Convention	132
The American National Beekeepers' Union	133
Glucose and Honey	133
New Zealand Beekeepers' Association	134
Otago Beekeepers' Association	135
Internal Temperature of Hives. By J. R. Madan	135
Bee Gossip. By O. Poole	136
English Bee Journals. By J. R. M.	137
OCCASIONAL NOTES—	
Bees and Honey within the Tropics. By T. J. Mulvany	138
CORRESPONDENCE—	
Treatment of Foul Brood	141
EXTRACTS FROM FOREIGN JOURNALS—	
Marketing Honey. By Allen Pringle	141
Crossing Races of Bees. By Professor A. J. Cook	142
Honey Vinegar	142
QUERIES AND REPLIES—	
Spare Combs	143
Andrew C.	143
David Rees	143

### ILLNESS OF THE EDITOR.

THE editor desires me to return his grateful thanks for the many expressions of sympathy and tokens of goodwill received from many subscribers and contributors to the *Journal* during his illness. I may state that his trip to the South, though rather short, proved of considerable benefit. Owing, however, to a relapse in Dunedin, he was unable to accept many invitations to visit beekeepers in the South, which it was his original intention of doing. At present he is unable either to read or use his pen, but he is slowly regaining strength, and trusts shortly to be enabled to take up his old position on the *Journal* again.

O. POOLE.

what is known as "Spring dwindling," or if not will prove of very little use.

#### PAINTING HIVES.

Now is the best time of the year for performing this necessary operation. Hives cannot be kept in good condition unless they have an occasional coat of paint, and when done in the spring of the year, it is liable to be affected by the hot rays of the sun during the ensuing summer, and the first heavy shower of rain frequently washes the most of it off. If the hives are seen to now, a coat of paint will be sufficient to keep them in good order for a twelvemonth. The covers should be especially attended to, and all leaks stopped, as nothing is more detrimental to the health of the bees than a constant dampness within the hive, which is found to result from leaky covers. If attention is given to this matter, the hives will last many years longer than they would otherwise do, to say nothing about their more neat and tasteful appearance in the apiary.

#### DISINFECTING HIVES.

We strongly recommend in all cases a thorough disinfecting of hives and other bee appliances that have been in use during the season, before being stowed away for winter. Nothing in our opinion will tend to the prevention of foul brood, or the spreading of that disease, more than the constant use of disinfectants in the apiary. In our own case we make it a practice of disinfecting the hives and combs on every occasion on which they come out of use, if only for a single day. It is but very little trouble, when included in the routine work of the apiary, and also inexpensive. The following solutions will be found very effective, either for spraying combs or painting over hives:—Salicylic acid, 1oz.; soda borax, 1oz.; water, 4 pints; or one part of absolute phenol to 200 of water may be used for the same purposes.

#### THE HONEY MARKET.

At present there appears to be little or no demand for honey in the Auckland market. This may be attributed to the immense supply of all kinds of fruit, which is more plentiful and cheaper than ever we have known it to be before. There is a small demand for honey in bulk of good quality for export. We have endeavoured to work up an export trade, and so far we have been fairly successful. No doubt in time it will extend to a trade of considerable proportions, provided we can supply the foreign markets at a reasonable rate. It however depends entirely upon the price at which we can supply it, for we are restricted as to price within certain limits, beyond which our foreign customers refuse to go at present. We are very anxious to see the export trade extend, as it will relieve our local markets, and thereby tend to create a better tone in the same.

Last month we mentioned buckwheat as a honey producing plant; a correspondent has since informed us that he has a large area under cultivation, and that it has thriven splendidly. During the greater part of February it has been one mass of bloom, from which his bees have gathered a large quantity of honey, and he is so pleased with the crop, that he intends in the future to cultivate a much larger area. We have repeatedly advocated a more general cultivation of this crop, having had some experience of its profitable nature, and are much surprised that it is not more generally grown.

For early spring bee forage rape is perhaps the best, and to ensure its blossoming at that time, it should be sown this month.

Surplus boxes not required should be removed, also spare combs, and the latter carefully put away beyond the reach of the wax moth.

Weeds and long grass should also be kept down near the hives, which will add not only to the comfort of the bees, but to the neatness of the apiary.

#### 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.

I. HOPKINS & CO.

## THE BEE AND POULTRY JOURNAL.

SINCE our last issue we have received several further communications, all favourable to the proposed alterations in the *Journal*. Several beekeepers have also personally expressed their approval; still those who have communicated their ideas on the subject are but a small proportion of our numerous subscribers, and if there are any who object to the proposed change and enlargement of the *Journal* we shall be glad if they will let us know. As we before stated the *Journal* will be about double its present size at the same price, and the bee department will in no way be curtailed, but will as heretofore take the foremost place.

#### THE PROPOSED CONVENTION.

WE deeply regret that circumstances have made it necessary to abandon the idea of holding the proposed convention and show this season, the more so because of the disappointment of those few who were looking forward with a considerable amount of pleasure to the meeting and who had notified their intention of being present. Our beekeepers do not yet appear to realise the advantages of co-operation. Unlike our English and American brethren, they do not set sufficient value on meetings of this kind. Certainly, the inconvenience and expense of travelling in this country, compared with England and America, must debar many from attending. Still, seeing the concessions promised by the railway and shipping companies, we certainly expected more promises of support, and that an effort would have been made by a larger number of our beekeepers to have been in attendance. There cannot be the slightest doubt as to the benefits which would have resulted to the industry from such a meeting, and we believe that this will be conceded even by those who had no intention of being present. The expense of attending may to many have seemed more than they could well afford; still, looking at the good that must have resulted generally and to each individual beekeeper, this would have more than balanced any pecuniary sacrifice which he might have made.

If, as suggested by Mr Poole at the last meeting, the time of year fixed was inconvenient for beekeepers leaving home, then it would be of importance that the committee should know this to aid them in fixing on a more favourable time in the future. Notwithstanding the compulsory abandonment of the convention for this season, we trust that the committee will receive the support of every beekeeper in New Zealand in their efforts for the same end at some future time.

#### A RARE OPPORTUNITY.

We have a few Given Presses and Root's 10-inch Roller Foundation Machines of the latest makes, pretty new, to be disposed of at less than cost price to clear stock. Price of Presses or Roller Machines each £5 10s. Only a very few in stock.

## THE AMERICAN NATIONAL BEEKEEPERS' UNION.

No greater proof of the advantages derived by co-operation amongst beekeepers could be given than the result of the working of the Union formed in America for the protection of the interests of beekeepers throughout the United States. This association has now been in existence about four years, and the amount of good it has done in protecting the rights and interests of beekeepers against the 'unjust attacks of ignorant and prejudiced persons' has been incalculable, and every apiarist in America has reason to be proud of such an institution flourishing in their midst. About twelve months ago we gave a *resume* of the third annual report, and we have very great pleasure in noticing the fourth annual report, lately published in the *American Bee Journal* by Mr. Thos. G. Newman, general manager of the Union. From this we gather that the Association has been entirely successful and has come out victorious in the defence of the rights of its members whenever and wherever attacked. There is no knowing what injuries might by this time have been done to the beekeeping interest of America had not the beekeepers banded together to prevent an injustice being done to one of their number in that notorious lawsuit known as the 'Sheep versus Bees' case. The defendant in this case, compared with the plaintiff, was a poor man, and had he not received pecuniary assistance from his brother beekeepers he could not have successfully defended the case, and the result would have been that an unjust precedent against the beekeeping interests would have been set up in the American courts of law. As it was, however, thanks to the Union, the case was fought out on its merits, and victory No. 1 achieved. Since then other determined attempts have been made by unscrupulous individuals to do injury to the industry in various ways in the Arkadelphia suit. Mr. Z. A. Clarke was put into gaol for maintaining his apiary in the suburbs of that city. The case was tried on the 'clean cut' law question, viz., that the 'city ordinance was illegal and void.' The victory in this case was for the Union, the circuit court deciding that the city ordinance was illegal and void—that the KEEPING OF BEES WAS NOT A NUISANCE!

Mr. Newman adds: 'The city has decided to appeal the case to the Supreme Court. This is very fortunate, for we want a decision from the highest courts to declare that beekeeping is *not a nuisance*. The Union not only seeks to obtain decisions from the highest courts of America, but also to have on record these decisions to be quoted as precedents in all the courts of law and by all the lawyers who practice therein.'

To give some idea of the expenditure of the Union in the defence of its members, it is stated that the cost in the 'Rich' lawsuit, which has not yet been decided, amounts to upwards of 1 000 dollars, and bonds have been given to that amount; and that the costs in the Arkadelphia case, which will be very heavy, cannot at present be determined. According to the financial state-

ment the cash balance on hand, on the 15th December last, amounted to a little over 279 dollars.

We have so often tried to impress upon the beekeepers of Australasia the advantages of co-operation, with seemingly but poor results, that we have purposely brought the above under their notice that they may see the beneficial results of practical work in this direction. America is without doubt the foremost beekeeping country in the world, and it is to the push, vim, and the unanimity in which beekeepers work in all matters affecting the general welfare of the industry that it has achieved and maintained this proud position.

We trust that the time is not far distant when beekeepers in these colonies will be awakened from their lethargy and associate themselves together for their mutual benefit, and so advance the industry to its utmost capability, remembering the old motto, 'United we stand, divided we fall.'

## GLUCOSE AND HONEY.

WE notice in a letter published in the *Melbourne Evening Herald* of January 23rd, that our friend Mr. R. J. Kendall is still on the warpath, and strenuously pursuing the honey adulterators. It will be noticed, in the letter which we publish below, that Mr. Kendall has given very full information with regard to the matter in question, and we need only further remark that the levulose of pure honey, when placed alone in the polariscope, turns the ray of light to the left, and dextrose, when placed alone in the same, turns the ray of light to the right, but not so strongly as the levulose does to the left. Hence, when mixed as in the glucose of pure honey, and placed in the polariscope, being in about equal quantities, the ray of light is almost always turned to the left, and never to the right. On the contrary, the glucose of commerce, when placed in the polariscope, invariably turns the ray of light strongly to the right.

TO THE EDITOR OF THE HERALD.

Sir,—In your issue of Monday you had an account of a prosecution at the Prahran Court in which the Red Cross Jam Factory, South Yarra, were charged by the Central Board of Health with "selling an article of food, to wit, honey, which was not of a nature, substance and quality of such article demanded by the purchaser." The case was dismissed. And it appears to have been dismissed somewhat hastily by Dr. Fetherston, who tried to put the blame of the dismissal on Inspector Taylor, whereas it rests on himself. I know nothing of the constituent parts of the "honey" produced in court, but I am pretty well sure Dr. Fetherston did not understand the merits of the matter he was trying, or the difference between natural glucose and other glucose, and this I'll try to tell him as well as the Central Board Health and its officer, both of whom, I believe, are trying to do a good work, and I hope they will not desist just because they have been defeated once, but try, try again. And I would suggest to Inspector Taylor that he communicate with Mr. I. Hopkins, editor of the *Australasian Bee Journal* and author of the *Australasian Bee Manual*, of Lower Queen-street, Auckland. Mr. Hopkins will be able to give Mr. Taylor just the information he needs to secure the conviction of people who adulterate honey with glucose.

And more, Mr. Hopkins will be only too glad to do it—so that Mr. Taylor need not rely merely on what I am going to say as to glucose and honey.

There are two kinds of glucose—the glucose of nature and the glucose of commerce—and they are two entirely different things. One is a real, the other an imitation and a chemical sham. When we talk of glucose adulteration we mean the addition of this artificial concoction to the natural honey. Levulose and dextrose are the names given to two kinds of natural glucose, the glucose found in the pure honey as collected by the bees from flowers and blossoms, but the glucose of commerce is a concoction of starch converted into sugar by the aid of sulphuric acid, lime, etc., at a certain temperature. The manufacture of this glucose is as easy as eating cheese. It can be made, and is made, from the cheapest kind of grain. All that is necessary is to soak the grain in water for a certain number of hours, grind it between burrs while wet, run the slop into tubs to allow the starch to settle, drain off the water, dump the starch into another vat with sulphuric acid to convert it into sugar, neutralise the acid by adding marble dust, strain the product, boil it down to syrup in a vacuum at a low temperature, strain through bone charcoal, and finally through felt presses, and the syrup is ready for the barrel. Glucose is used in the manufacture of confectionery; it is used to adulterate syrups, for which hundreds of thousands of barrels are used annually. Solidified and placed on the market as grape sugar, it is used to mix with ordinary sugars. Brewers use it extensively, and it has made itself useful in defrauding stomachs and filling manufacturers' purses in many ways. The impurities most common in manufactured glucose are calcic sulphate, known as sulphate of lime and sulphuric acid. Calcic sulphate is insoluble in alcohol. If, therefore, a drop of glucose containing any of the above salt be thoroughly mixed by shaking in a glass vessel with four or five table-spoonfuls of strong alcohol a white precipitate of calcic sulphate will appear, and make the solution milky. The above test will usually find sulphate of lime. (It may, however, be necessary sometimes to add a drop or two of sulphuric acid to the solution before the precipitate will appear.) For the detection of sulphuric acid a drop or two of the suspected glucose is to be placed in a glass vessel and dissolved in two or three table-spoonfuls of water. Add a few drops of chloride of barium to the solution, when, if sulphuric acid is present in any quantity, a white precipitate will appear and make the solution milky. When the acid is present only in minute quantities it will be necessary to add to the solution of glucose and water a drop or two of dilute chlorhydric or muriatic acid before adding the chloride of barium. In making tests pure water or rain water should be used. It is scarcely necessary to add that pure bee honey contains no lime or sulphuric acid.

But not content with adulterating honey some even adulterate glucose, and they do it with a sweet compound found in the hydro-carbon of coal tar. The compound forms salts with any carbonate of the alkalies, alkaline earths or metals. It is, however, not an acid, but belongs to a class of bodies called sulphines, the compound in question being benzoic sulphide. This is soluble in alcohol more so than in cold water. The above is gleaned from the Australasian and American bee journals, papers that have gone for the scalps of the glucose manufacturers more than once. And got them too. When analysts go into court for the defence of adulterators, and talking about pure honey containing glucose, in this way they tell the truth, but mislead people who don't know there are two kinds of glucose. The glucose in pure honey is one thing, the lime and sulphuric acid concocted into glucose is an entirely different one. The best and safest way for consumers is to purchase only local honey—honey bearing the labour of a beekeeper. There are enough beekeepers in our own localities to supply us with honey, but the public frequently discourage them by rejecting good, honest honey—genuine honey from the apiaries of local men—and giving preference to some manufactured muck from America or elsewhere, just because the latter is put up in tins with neater or prettier labels than the poor, but honest, country beekeeper can afford to put on his tins or bottles. If people want to be sure they are getting a real, pure

article they will buy honey only direct from the beekeeper. That is the safest way. And I hope the public will adopt it, as St. Paul said, for their "stomach's sake."—Yours, etc.,

R. J. KENDALL.

## NEW ZEALAND BEEKEEPERS' ASSOCIATION.

THE usual monthly meeting of the Executive Committee of the above Association was held on Friday, February 15, at 2.30 p.m., at the office of Mr. I. Hopkins, Secretary, Lower Queen-street, Auckland, Mr. O. Poole, Vice-President, in the chair. The minutes of the previous meeting were read and confirmed. The first business dealt with was the proposed convention and show. The Chairman stated that very few beekeepers had responded to the invitation of the Committee signifying their intention of attending the proposed show and conference—in fact, only some half-dozen had done so. This was much to be regretted, as the Committee had been to a deal of trouble in obtaining concessions both from the shipping companies and railway department, and had done everything possible to make the meeting a success. Probably the time of year chosen would prove inconvenient to many beekeepers at a distance leaving home. This was the only solution he could give to the apparent lack of sympathy to the movement. Such conventions had proved both interesting and beneficial to beekeepers both in America and in England, and it was much to be deplored that the proposed show and convention should fall through. Mr. Hopkins, their indefatigable hon. secretary, was also exceedingly ill, and it would probably be some time before he could again take charge of the business of the Association. Taking all things into consideration, he therefore reluctantly moved, "That the Executive Committee of the New Zealand Beekeepers' Association regret the seeming inability of the majority of our beekeepers to attend the proposed convention; also, the unfortunate illness of our respected secretary, Mr. I. Hopkins, with whom we deeply sympathise, and that under the circumstances we deem it advisable to postpone the said convention and show until a future period, when we trust to be enabled to successfully carry it out, and that the said postponement be notified in the next issue of the *New Zealand Farmer* and *Australasian Bee Journal*." Mr. S. Hooker seconded the resolution, and said he quite agreed with the previous speaker. The illness of Mr. Hopkins was most unfortunate at the present time, and the want of interest shown by beekeepers in the proposed convention was much to be deplored. He trusted, however, yet to see a first-rate show of honey and appliances held in Auckland, and the proposed convention an accomplished fact. The resolution was unanimously carried.

The Chairman said that the next business was to fix a day for holding the annual general meeting of the Association, for the election of officers, etc., and according to the rules one month's notice must be given to the members through the organs of the Association, and he would suggest that it be put off

as late as possible in the month of April, which time might prove more convenient for the attendance of country members. After some further discussion it was resolved to hold the meeting on Friday, April 26, at 2.30 p.m., at the office of I. Hopkins and Co., Lower Queen-street, Auckland. There being no other business on hand, the meeting closed with a vote of thanks to the Chairman.

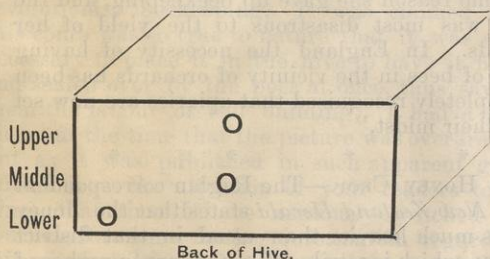
**OTAGO BEEKEEPERS' ASSOCIATION.**

THE regular monthly meeting of the Otago Beekeepers' Association was held in Messrs Royse, Smith and Co.'s offices. The sub-committee brought up their report of the Bee Exhibition given at the annual gathering of the West Taieri Caledonian Society, which was adopted, together with a vote of thanks to the sub-committee for their conduct of the business. The secretary was instructed to write to Mr S. E. Brent, of Outram, conveying to him a vote of thanks; also to the West Taieri Caledonian Society for their services. The question of the affiliation of this Association to the New Zealand Beekeepers' Association was discussed, and Mr Hopkins, of Auckland (the editor of the *Australasian Bee Journal*), being present gave reasons in favour of joining the New Zealand Association, but no action was taken in the matter, as it was considered desirable to further consider it. The subject of instituting an editor's letter box for the purpose of answering any questions relative to beekeeping that members of this Association might wish to know, was discussed, and it was decided to do so.—*Dunedin Evening Star*, Jan. 15.

**INTERNAL TEMPERATURE OF HIVES.**

THE following are the results of some observations made with thermometers inserted about half an inch into a strong Italian colony. The thermometers were well insulated and placed in a wooden case with a glass top, and the part outside the hive wrapped round with several thicknesses of flannel, and over all some brown paper, so that the sun when shining should have as little effect as possible on them. The observations were taken about every half-hour, and the shade (and in some cases the sun temperature) recorded also, thus affording some

DIAGRAM SHOWING THE POSITION OF THE THERMOMETERS.



statistics towards determining the effect of the external temperature on the internal. The wind is rated from 0 (a calm) to 10 (a hurricane).

FIRST SERIES.—JANUARY 15, 1889.

Upper	...	80	80	79	77	77	77	77
Middle	...	85	83	82	82	80	80	84
Lower	...	86	85	84	80	76	74	
Shade T.	...	70	67	64	62	59	55	
Wind	...	2	2	2	2	2	2	

There was a summer breeze playing irregularly on the hive, and the observations were taken every half-hour from 6 p.m. to 8.30 p.m. The most noticeable features are (1) that the temperature at the top, just under the mat near the ventilating hole, was always lower than that three inches below; (2) that the lower thermometer was highest until the sun set; and (3) that when the external temperature fell there was always a fall inside also.

SECOND SERIES.—JANUARY 24, 1889.

Upper	..	89	87	86	84	84	83	82	82	80	79
Middle	...	—	90	89	87	85	84	83	82	82	82
Lower	...	97	94	90	88	86	85	83	83	82	82
Shade T.	...	80	78	77	75	73	71	70	69	67	63
Sun T.	...	105	102	95	98	97	97	94	94	—	—
Wind	...	1	1	1	1	1	1	1	1	1	1

These observations were taken between 4 p.m. and 8.30 p.m., on a cloudless summer day, with a slight movement of the air. They show again the fact that the temperature at the top was lower than the temperature at the bottom. Further experiments will, it is hoped, enable this phenomenon to be explained. Is it that the bees at the entrance drove out the air, so that there was a down current on the upper thermometer from the ventilating hole? The mat fitted closely over it, but still the colder air may have been drawn down through it. The sensitiveness of the internal temperature to the fall of the external temperature was again very definitely proved. What will the effect of a frosty air be? What that of a biting wind?

THIRD SERIES.—FEBRUARY 4, 1889.

Upper	...	78	76	75	75	73	71	72
Middle	...	82	81	80	80	80	77	78
Lower	...	80	79	76	75	75	73	73
Shade	...	66	64	64	62	62	61	61
Wind	...	1	1	1	1	1	1	1

There was a steady downfall of warm rain the whole afternoon, from 4 p.m. to 7 p.m., while these temperatures were recorded, but little or no wind. The temperature half way up the hive was, without exception, the highest, and the temperature at the bottom, on the whole, next, at times five degrees lower; the upper temperature noticeably the lowest. The decline of the temperature in every part followed the decline of the outer air. These are the only observations recorded as yet on a day where the sun could not affect the thermometer.

FOURTH SERIES.—FEBRUARY 15, 1889.

Upper	...	84	86	85	87	84	84	84	79	76
Middle	...	87	88	88	88	87	87	87	85	84
Lower	...	82	84	86	86	86	87	89	84	81
Shade T.	...	80	79	78	75	87	82	71	71	68
Sun T.	...	102	108	102	92	106	96	97	—	—
Wind	...	2	2	2	1	1	1	1	1	1

These observations were taken from 12.30 p.m. to 6 p.m. on a warm summer's day, with a dancing breeze dying away as the afternoon went on. After the last observation the hive was examined, and found crowded with bees preparing to swarm. It will be observed that the same phenomena occurred, the lower thermometer registering rather lower than before. The extraordinary difference between the



upper and middle thermometers in the last observations, viz., 6° to 8°, points strongly to a downward current from the ventilator. But at present it is unsafe to draw conclusions. It may be added that the thermometers were tested anew before the above were taken.

J. R. MADAN.

ADDITIONAL OBSERVATIONS MADE BY THE EDITOR  
OF THIS JOURNAL.

FIFTH SERIES.—FEBRUARY 11, 1889.

Upper	... 81	83	86	86	85
Middle	... 84	86	87	88	88
Lower	... 82	82	84	85	85
Shade	... 69	76	84	83	79
Sun	... 74	76	90	92	86
Wind	... 3	3	3	2	2

The above represent the movements of the temperature every hour on the forenoon and noon of a summer's day, between 9 a.m. and 1 p.m. In the forenoon it was cloudy with a strong breeze, at mid-day it became bright and warm, with showers just before the last observation. The upper and lower thermometers ranged more regularly together. What is the cause of the central heat?

### BEE GOSSIP.

BY O. POOLE.

NEW EDITIONS TO WELL-KNOWN BEE BOOKS.—During the latter part of 1888 and the beginning of the present year no less than four well-known works by American authors have advanced another stage. Professor A. J. Cook has published the thirteenth edition of his well-known 'Manual of the Apiary,' which has been enlarged to nearly 500 pages. This is a work which is both scientific and practical, and is one of the most popular works on bee culture now extant.

\* \* \* \* \*

Next I may mention J. A. Root's 'A B C of Bee Culture,' which was reviewed in last month's *Journal*. This, too, has been enlarged, and is brimful of information; and, with the exception of one work, has had the largest circulation of any book of the kind yet published. One pleasing and interesting feature to Australasian apiarists is the 'Biographies of Noted America Beekeepers,' with portraits of Rev. L. L. Langstroth, Messrs. Quinby, Grim, Hetherington, Cook, I. C. Root, Mason, Dadant, Francis Elwood, Doolittle, Heddon, Jones, Hutchinson, Boardman, Muth, Dr. C. C. Miller; also of Mrs Harrison, Mrs Axtell, and Mrs Chaddock. Mr Root is to be congratulated on the production of such a valuable and interesting work.

\* \* \* \* \*

A further edition of the 'New Beekeepers' Text Book' is also announced. This book, though small, is one of the most popular works published, as may be gathered from the fact that it has had the largest sale of any known work on beekeeping, upwards of fifty thousand copies of it having been sold since it was first published.

\* \* \* \* \*

Last, though by no means least, we are promised

a new, revised edition of that most popular work of all, by Langstroth, 'The Hive and the Honey Bee.' The work of revision has been undertaken by Mr Chas. Dadant. The publication was delayed for several weeks by a fire which occurred at the binder's, which completely destroyed the first instalment of the work. However, by this time it will have been issued in America, and by the next mail I hope to receive a copy. The work will be peculiarly interesting, as it is now thirty years since it was first published, and since that time greater strides have been made in beekeeping than during any other period of which we have any record. It is sincerely to be hoped that this last work will prove of considerable pecuniary benefit to the author, for if any man has been robbed of the fruits of his labours and inventions by unscrupulous beekeepers it is the Rev. L. L. Langstroth. I heartily recommend every one of my fellow beekeepers in Australasia to purchase a copy of this interesting work as a token of respect to him to whom we owe so much.

\* \* \* \* \*

BEES POISONED.—According to a paragraph in the Auckland *Evening Star* of February 16, 'a beekeeper in Waikato attributes the wholesale slaughter of his bees during last spring to the Paris-green used in neighbouring orchards' This is a matter worthy of strict investigation, and it would have been well if the beekeeper in question had communicated with the New Zealand Beekeepers' Association, and had the question settled by an analysis of the bodies of the defunct bees. Paris green, if taken by bees, would certainly prove fatal, but considering its pungent, bitter taste, I can hardly believe they would touch it or attempt to gather honey from blossoms impregnated with it. Still, we have it on the authority of many American writers that it is possible to poison bees. This is a question which affects fruitgrowers as much as beekeepers, and it would be well for them to remember that without the aid of the honey-bee in the cross fertilisation of the fruit blossoms two-thirds of their crop would probably never come to perfection.

\* \* \* \* \*

Speaking of bees as hybridisers, Mr Frank Cheshire quotes a case that strikingly illustrates their value in this respect. "A lady in Derbyshire owned some orchards from which she derived a considerable income. She also owned a small apiary, but did not know the valuable aid rendered by her bees in the production of some of the fruit. For some reason she gave up beekeeping, and the result was most disastrous to the yield of her orchards. In England the necessity of having plenty of bees in the vicinity of orchards has been so completely recognised that apiaries are now set up in their midst."

\* \* \* \* \*

THE HONEY CROP.—The Raglan correspondent of the *New Zealand Herald* states that the honey yield is much heavier than usual in that district this year, which is attributed to the large number of rats that have been out in bloom this season. Whilst congratulating those beekeepers of Raglan who have been fortunate enough to secure a good

harvest of honey from the rata blossom, still, judging from reports that have reached me from various parts of the colony, I very much fear that when sufficient data is furnished the honey harvest for this year will be found to be a long way below the average.

\* \* \* \*

We have now had in New Zealand two poor honey seasons in succession, and it may be worthy of remark that both American and European beekeepers have been unfortunate in having three or four bad seasons following each other. In England scarcely any honey was gathered by the bees during the last season, and feeding had in most cases to be resorted to even during the summer months. Consequently the importations of honey into Britain have been on a larger scale than usual. In America the shortness of the honey crop has had the effect of considerably enhancing the value, and there is now a fair demand for good honey at prices considerably in advance of former years. In New York, for instance, comb honey is quoted from 16 to 17 cents, and extracted from 8 to 9 cents per lb. In Chicago on the same date (January 12) prices ruled for comb honey from 18 cents to 20 cents, and extracted from 7 to 9 cents per lb. Cuban honey was selling at the same time in New York at 65 cents per gallon. I am unable to supply the prices of English honey, as for some reason or other they are never quoted in the *British Bee Journal*.

\* \* \* \*

OUR OWN AND AMERICAN JOURNALS.—I notice that our journal is frequently favourably noticed by our American cousins. Several of the articles have been reprinted in their journals, notably those by your esteemed correspondent 'J.R.M.' on 'Ventilation,' which doubtless will prove as interesting and valuable to American readers as they have to us. This is as it should be. We owe much to American beekeepers for most of the improved and highly valued appliances now in use in New Zealand apiaries. Their various bee periodicals are both instructive and interesting, and I for one always look forward with pleasure to their arrival by the 'Frisco mail.

\* \* \* \*

ARTIFICIAL COMB.—Some time ago, quoting from an American contemporary, I mentioned the invention of a machine for making artificial honey comb (not foundation), which was calculated to revolutionise beekeeping. It was claimed that this comb was so true to nature that it was only necessary to place it in the hive to have it filled and sealed over by the bees at once, thus saving them the labour of cell building. I had a suspicion at the time that the picture was overdrawn, but as it was published in such apparent good faith I drew the attention of your readers to it. Since that time I have anxiously watched the journals for some further information regarding this wonderful invention, in order, as promised at the time, to communicate the same to your readers. Nothing, however, turned up until a paragraph appeared in the *American Bee Journal*

on January 12, which described it as 'an imperfect affair and of no practical use in the apiary.' In this scientific age it is of course impossible to say what may be accomplished in the future, but I much doubt if any great improvement will ever be made in the comb foundation in use at the present time.

\* \* \* \*

FOUL BROOD.—The *Beekeepers' Record* states that foul-brood has been cured by a Swiss beekeeper by the use of common thyme. This disease is so common in New Zealand at present that beekeepers should try every remedy, however simple, and from whatever source obtained. The simplest remedies sometimes turn out to be the best, and any one that will cure this plague will prove an inestimable blessing to beekeepers. Will somebody give it a trial? The following is the paragraph from the *Record*:—

'This common herb (thyme) was dried, put into an ordinary smoker, set alight, and the smoke injected plentifully into the hive at the entrance. After doing this eight evenings he found the larvæ which had died from the disease quite dry, and the new brood in a perfectly healthy condition. He continued the fumigation another eight days, which ended in a complete cure of the disease.'

I have often thought whether the leaves of the eucalyptus, or common bluegum, used in the same way, would have a similar effect. It is a powerful disinfectant and antiseptic, and is frequently used medicinally for that purpose.

\* \* \* \*

A Swiss veterinary surgeon in the *Conduit* says:—

'Camphor ought to come in the first place to cure the bees of their feeble condition and fever. It may even suffice to disinfect the apiary if the disease is not yet too far advanced.'

It is a common practice with many beekeepers to wrap a small piece of camphor about the size of a walnut in rag to prevent it too quickly evaporating, and place the same in the hive at the beginning of winter. This plan was, I believe, adopted as a preventive by Mr Hopkins when at Matamata.

### ENGLISH BEE JOURNALS.

By J. R. M.

THE "November 8, 1888," number of the *British Bee Journal* opens with an illustrated article on a cheap mode of protecting hives from cold in winter (and why not also from heat in summer?), viz., canvas or calico painted, tarred, or otherwise waterproofed, and packed with chaff, and completely covering the top and sides. Readers of the *Australasian Bee Journal* may remember a suggestion some months ago of nailing canvas on the lower edge of an ordinary Langstroth cover, and letting it hang down over the bodies, and tying it at the bottom. In either case, and of course the packed canvas is best, one gets rid of the expense and trouble of an outer wooden hive, the usual plan where winter packing is adopted. As experience is leading to the conclusion that warmth (not including the absence of ventilation) is always good for bees, this canvas packed plan should be well tried. An

outer case of Willesden paper or 'card,' a material, I believe, absolutely unknown out here, is also suggested. This Willesden paper is perfectly weather-tight, lasts with care for ever, and has this advantage if used internally, that bees will not touch it with propolis, and much less bite it through. The leaving of unfinished and unsealed sections on a hive for food for the winter, the necessity or advisability of a passage above the frames, the advantage of food in a dry state so as to absorb condensed moisture, wide entrances narrowed by perforated zinc *versus* narrowed entrances simply, are urged by different contributors.

\* \* \* \*

The following number gives a summary of some experiments in Germany on the effect of colours on the work of bees. Hives painted green and blue have a bad influence, it is concluded, on their inmates; and all dark colours are apt to cause extreme variations of temperature. Yellow is the best—a remark of Father Dzierzon's earlier—and the colour of the old straw skeps may, if this theory be true, have had something to do with their success in spite of their other disadvantages. That thick chaff mats should be placed in frosty weather over enamel mats, if used, to minimise condensation; that a paint composed of linseed oil 3pts, white resin 4oz., and sugar of lead 1oz., heated up, is cleaner and better in colour than tar for waterproofing canvas; and some testimony in favour of Carniolan queens, is all that is of interest to us.

\* \* \* \*

The December 20, 1888 number contains the result of inquiries as to comparative amount and value of the exports and imports of honey in the British Isles. Leaving out fractions the figures are as follows:—

	1886.		1887.	
	Imports.	Exports.	Imports.	Exports.
Amount...	107 tons	989 tons	679 tons	555 tons
Value...	£25,610	£17,568	£16,025	£10,495

These figures show (1) that the English consumers of honey required eighty-eight tons beyond their own production in 1886, and 124 tons in 1887; (2) that there is a considerable export trade varying according to the amount imported, Holland and Germany being the principal applicants for it; and (3) that the mean value of the honey was £1 3s. 7d. per cwt. (French honey fetching the highest price, viz., £2 4s.) in 1886, and £1 3s. 9d. in 1887. British honey fetched at the same time about £3 per cwt. Most of the imported honey seems to have been roughly put up, and used only by confectioners and biscuit manufacturers. The 'Report of the Special Agent McClain to Entomologist of the Department of Agriculture,' presumably in Michigan, U.S.A., or thereabouts, is given in full. It showed that after a vigorous trial, hungry bees could not or would not bite through the skin of grapes, and even when the skin was broken by other means they could not or would not do more than sip the surface syrup. Anyone who is afraid of bees

injuring his grapes, had better read the mode of the experiments, and the details of the results.

\* \* \* \*

The *New York World* says:—'Beeswax is refined so as to clear it from all foreign substances by melting the wax with about 4 or 5 per cent. of water in a bright copper boiler, preferably heated by steam, and after the whole is perfectly liquid, and has boiled for some minutes, withdrawing the heat, and sprinkling over the surface a little oil of vitriol in the proportion of about five or six fluid ounces to every hundredweight of wax. Great care should be used, else the melted wax will froth up and boil over the sides of the pan. The acid should be well scattered over the surface. The melted wax is next covered over and left for some hours to settle, when it is carefully drawn off for moulding, without disturbing the sediment.'

## Occasional Notes.

No. 7.

### BEES AND HONEY WITHIN THE TROPICS.

(Continued.)

BY T. J. MULVANY.

SUFFICIENT has been said in the last paper to show the very general use made of honey, both for food and in the preparation of drinks, by the natives in all parts of tropical Africa. The trade done in beeswax, not only in Africa, but in nearly all parts of the globe into which the honey-bee has found its way, is so important that I shall postpone any particular notice of it for a future time. I mean here to note whatever is to be met with in the works already quoted, with regard to the varieties of bees and other insects encountered, the class of bee forage peculiar to the country, and the rude system of beekeeping practised by the aborigines in some parts.

None of the travellers, to whose writings we are indebted for our knowledge of Central Africa, have given much information as to the special variety or varieties of the honey-bee which produces all the honey and wax of which they say so much. None of them, probably, were either practical beekeepers or specialists in entomology, and they only make incidental mention of what struck their attention. Dr. Gerstaecker, however, has informed us that the specific African bee (*Apis Adansonii* of Latrille) is of the same size and colour as the Egyptian bee (which is one-third smaller than the German or Italian, and coloured like the latter, but with the back of the thorax also yellow), but that it differs in the greyish-yellow colour of the hair on the chest and body. This variety, he says, is spread over the whole African continent, with the exception of Algiers and Egypt, from Abyssinia and Senigambia to the Cape of Good Hope. In the absence of any notice to the contrary from our travellers, we may therefore assume that this is the bee we have now to deal with.

Livingstone, indeed, in the account of his second expedition of 1856-64, mentions a small, stingless bee, met with in the Bakota country, above Victoria Falls.

"We got some honey from the small, stingless bee, called by the Bakota 'moandi,' and by others, 'the kokomatsane.' This honey is slightly acid, and has an aromatic flavour. The bees are easily known from their habit of buzzing about the eyes, tickling the skin by sucking it as common flies do. The hive has a tube of wax like a quill for its entrance, and is usually in the hollow of trees."

This would appear to be much the same as the *Melipona fasciculata*, found by Mr Bates in the valley of the Amazon river, as mentioned in a former paper (page 109 of this journal).

Du Chaillu speaks in rather a vague manner about bees, flies, and wasps. Although a naturalist by profession, he does not write like an entomologist. He uses the terms *bite* and *sting* indifferently, sometimes applying both to the same insect, where he evidently means only one or the other. He first speaks of a number of venomous flies—the igoogonai, or gnat, apparently like our sand-fly; then, the iboulai, an insect twice as large as our common house fly, of which formidable animal he tells us:—

"It approaches you with a sharp whistle, and its *sting* is long and strong enough to pierce the thickest clothes one can wear in the heat of an African summer. The *sting* is so sharp that I have often jumped up with sudden pain, which was as if a pin had been stuck savagely into my bosom. But the *bite* of this insect, if painful, does not last like that of another of the same size which is called the nehouna. This animal makes no noise to warn you of its approach, and inserts its *bill* so gently that it often gets its fill of blood before you know you are bitten. Presently, however, the itching begins, and lasts for some hours, varied at intervals by sudden sharp stabs of pain, as though a scorpion had bitten you. Often this lasts the whole day. These last-named animals are found mostly on the rivers. The iboco, another fly, is the size of a hornet, and very quick in its motions. Its bite is the most severe of all, and clothing is no protection from them. Often the blood has run down my face or arm from one of their savage attacks, and even the well-tanned skin of the negroes is punctured till it bleeds so that one would think a leech had been at his work on them."

These insects appear to be all blood-sucking animals, not belonging to the family *Apidae*. Not so the following, which he calls a "nest-building fly," but which would rather appear to be a wasp or some species of bee. It is clearly a *stinging* not a *biting* insect. He goes on to say:—

"But the most dreadful of all is the eloway, a nest-building fly which frequents the waterside, where its clay lives are hung to the pendent branches of trees. This fly is really a monster of ferocity, and the natives run from it as they do from no other animal or insect of these woods. The eloway is a little fly, shaped much like a bee, but not quite so big. The body is longer in proportion than that of a bee. Their hives are made of clay, and evidently have separate apartments, as the whole pendent bottle-shaped mass is filled with holes, each of which has a little roof over it. They generally choose a branch which is full of leaves, for their *nego* or nest, and thus are hidden from view. The clay of the nest is so hard that even a bullet fired from a reasonable distance made no impression on it, as I found by several trials. The hives seem to be very full; when disturbed I have seen them issuing in large swarms, and several from each hole. When troubled they are very savage, and attack with a kind of blind rage. Sometimes

when paddling down the Rembo a canoe accidentally strikes against a tree containing an eloway *nego*. Instantly they fall ferociously upon the men. The natives always dive into the water and swim under water for a little distance; but I noticed that if one of these venomous little insects had settled on a man, he clung to him even in the water, and had literally to be picked off. In such cases I always covered myself up with matting and lay still till they retired. Happily they do not pursue far; when the enemy is out of their sight they quietly return to their nest.

"Their *bite* is exceedingly painful, and they leave in the wound an acrid poison which pains for two or three days. At intervals of an hour the poison seems to gather force, the wound begins to throb, and for a little while is excessively painful. The natives fear these eloways very much, and retreat with all expedition when they have accidentally disturbed a nest. When they see a nest, also, they always paddle to the opposite side of the stream. Going nearly naked they are very much exposed to its attacks; and its motions are so quick that even a speedy tumble overboard does not generally save them from one or two bites."

It is a pity that the size of the nest is not described, and that one was not secured and broken open to disclose its interior economy, and to see if honey or what else was stored inside. This eloway is probably the same insect described by Livingstone as a hornet found along the banks of the Zambesi river, of which he says:—

"In walking among bushes on the banks we were occasionally stung by hornets, which have their nests, in form like those of our wasp, on the branches of trees. The ferocity of this insect in the breeding season is such that it will pursue anyone who happens to brush too closely past its nest, for twenty or thirty yards. Its sting is more like a discharge of electricity from a powerful machine than anything else, and produces momentary insensibility, followed by the most pungent pain."

Our authors say little about the African flora in general, and about bee forage in particular. They speak frequently of the mimosa tree (a species of acacia) and of the *acacia arabica*. No doubt the bee forage chiefly consists of flowering trees and shrubs, the nature of the country in the interior, where the grasses grew to a height of six, and even ten feet, being unfavourable for small flowers, or anything of the nature of clovers or dandelions. On the east coast, however, as described by Mr H. H. Johnston in his "Journey to Mount Kilima-njaro, in 1885," there appears to be a great variety of bee forage. He says:—

"Wherever the ground is not in cultivation it is covered with brilliantly coloured wild flowers—balsams, hibiscus, dissotis, green and white orchids, scarlet alves, and numberless species whose names I know not, and from all these the bees are taking toll. The mild-eyed kine driven from the pasture suggest supplies of milk; the throng of bees about the blossoms imply that honey is also to be had."

On his visit to the Congo river, in 1883, the same traveller, in describing his excursion to Stanley's stations at Leopoldville, etc., gives the following hints as to bee forage:—

"Here it is that the African flora is best represented. On each side of the path are beautiful cannas, thickly growing, with their crimson flower-spikes and yellow-green leaves telling out strongly against the dark purple-green foliage behind. In the interior of the wood may be discerned flecks of colour caused by the orange blossoms of a species of *Jatropha*, and by delicate pinky-mauve blossoms of *Amonum*. There are strange *Arums* and *Anonas*, and many sprays of scarlet *Menensecs*. Myriads of little blue *Commenillas* deck the ground, and

there are blue bean flowers and white and purple dandelions, mauve and white candy-tufts, and large yellow mallows, while for absolute gorgeoussness nothing can compare with the divers gourds and seed-vessels of the many species of *Cucurbitaceæ*, which, when ripe, split open to expose the crimson interior, where the black seeds are laid in tempting rows to invite birds to assist in their distribution. Indeed, the whole effect in floral colouring like this is to suggest a tremendous competition going on amongst the many plants for the favourable notice of birds and insects, as if the flowers were advertising their advantages and saying to the bees, 'your patronage is earnestly solicited.' Certainly every taste is consulted, and every bait is offered in the way of gaudy colour and attractive scent, and all to ensure the possession of large families, and to effect their distribution about the world."

Livingstone mentions, in his description of the Kalahari desert, that the water-melons which abound there, are, some of them, quite sweet, while others are so bitter as not to be eatable, and he adds, "even melons in a garden may be made bitter by a few bitter kengwe (water-melons) in the vicinity, for the bees convey the pollen from one to the other."

From anything to be gleaned from Baker's travels in Abyssinia and in north Central Africa, or from Du Chaillu's exploration on the west coast near the equator, it would appear that the natives of these parts only take honey where they happen to find the hives of the wild bees in the forests or elsewhere; but in the central parts, south of the equator, and on the east coast, it would appear that a rude system of beekeeping is practised by the natives, the honey being sought after for home use, and the wax for export. The first mention of this practice is made by Livingstone in the account of his "Travels and Researches in South Africa, 1849-56." Near Shinte's town, on the Leeambeya river, about 12½° south latitude, he remarks:—

"In these forests we encountered the artificial beehives so common between this and Angola (west coast); they are made out of the bark of a tree about four feet in circumference, which is taken off in two pieces, and re-joined, the tops and bottoms being made of coiled grass-ropes. These hives are placed in high trees in different parts of the forest, and in this way all the wax exported from Benguela and Loanda is collected. A 'piece of medicine' is tied round the trunk of the tree, and proves a sufficient protection against thieves; for they believe that certain medicines can inflict disease and death, though these are supposed to be known only to a few."

Some distance further on, when passing through the Chibouque country, he writes:—

"All the bees in this country are private property, for the natives place hives sufficient to house them all. We therefore paid no attention to the call of the honey-guide, for we were sure it would only lead us to a hive which we had no right to touch. The bird continues its habit of inviting attention to the honey, though its services in this district are never actually needed."

In his second expedition, when on the Rovuma river, in the Makololo country, he again writes:

"A great quantity of excellent honey is collected all along the river, by bark hives being placed for the bees on the high trees on both banks. Large pots of it, very good and clear, were offered for a very little cloth. No wax was brought for sale; there being no market for this commodity, it is probably thrown away as useless."

This passage is illustrated by a woodcut view of the Rovuma river near the cataracts, with women catching fish in conical-shaped baskets,

and in the left hand corner a "bee-hive," which however, is not represented as being placed in a high tree, but laid on its side in a seat formed by the stump of a branch projecting from the trunk some three or four feet from the ground. The hive appears to be formed of two semi-cylinders of bark, sewn together, with ends of coiled straw or grass-ropes like that used in common skeps (as previously described by Livingstone) and, if the drawing is in correct proportion, may be some fifteen or sixteen inches in diameter, and nearly four feet in length.

When at Pangola village, on the Zambesi, he says:—

"We established ourselves under a stately wild fig-tree, round whose trunk witchcraft medicine had been tied to protect from thieves the honey of the wild bees, which had their hive in one of the limbs. This is a common device. The charm, or medicine, is purchased of the 'dice doctor,' and consists of a strip of palm-leaf smeared with something, and adorned with a few bits of grass, wood, or roots. It is tied round the tree, and is believed to have the power of inflicting disease and death on the thief who climbs over it."

Mr H. H. Johnston speaks also of bark hives found on the east coast, between Mombasa (north of Zanzibar) and Mount Kilima-njaro, as follows:—

"On the branches of all the big trees hereabouts are hung oblong cases—boxes made of bark, in which these half domesticated bees construct their hives, and store their honey. These 'honey-boxes,' called by the natives 'mizinga' which word is also applied to cannons on the coast, are familiar objects in East Africa, and may generally be met with in the vicinity of villages."

Unfortunately, he does not more fully describe the size and construction of these honey-boxes, and the illustration given of "Trees with honey-boxes" is very defective and unsatisfactory, only showing some things which might be taken for bundles of cigars, hanging by long ligatures from some of the branches. Read, however, in conjunction with the description given by Livingstone, and seeing that the name is synonymous with "cannon," there can be little doubt that these bark hives are of the cylindrical form, and probably of nearly the same size as those found on the Zambesi.

It is to be regretted that we have no further particulars as to how the natives manage these hives and obtain their honey and wax. It would be interesting to know whether they merely hang these bark hives up on chance for the bees to occupy them, or whether they practise the taking and living of swarms; whether they smother and destroy the bees when taking the honey, or only quiet them with the smoke, which we are told they know how to use; and how they separate honey from the comb, and prepare the wax for market. They must be tolerably proficient in the latter operation, as Livingstone speaks of meeting "long lines of carriers bearing large square masses of beeswax, each about a hundred pounds weight," on the way from the interior to the Portuguese stations on the west coast.

(To be continued.)

"BEES may always be made peacable by inducing them to accept of liquid sweets."—*Langstroth.*

## Correspondence.

### TREATMENT OF FOUL-BROOD.

TO THE EDITOR OF THE AUSTRALASIAN BEE JOURNAL.

SIR,—In the November number of the *Journal* is a query asking if McLain's remedy for foul-brood is too strong. During the summer of 1887-88 my bees had foul-brood, and I used McLain's remedy largely. I did not find it too strong. I used to apply the remedy just after daylight, before the bees began to fly. I watched the colonies closely during the day, and very few bees were killed. It was amusing, though, to see how thirsty they were. The watering places were soon crowded, and I had to set out fresh ones. It is possible that Mr Naveau's bees died because, it being night, they were unable to get water. McLain says to add to the mixture 'sufficient honey to make it quite sweet, but not enough to perceptibly thicken,' and it is quite likely that some may add less than others, and so make the mixture stronger.

It has occurred to me that it is possible that when the alcoholic solution of salicylic acid is added to the mixture the salicylic acid is precipitated, and if so there would be none of it in the solution used. I also tried Cheshire's method, but neither it nor McLain's remedy cured the disease. They both did good, but they did not cure, and much time was wasted. I then took the bees out of their old hives and gave them clean ones and frames of foundation. This was successful, and in no case did the disease reappear. Some I fed on salicylic syrup, some I did not, and the result appeared the same in both cases. One colony that was only slightly affected swarmed on November 1, 1887. They returned to the hive, the queen being lost. I left them without a queen for two months; the bees cleaned up their combs, and having no brood to feed stored lots of honey. I extracted two or three times, and sprayed the combs with McLain's solution, but when the new queen began to lay in January quite a lot of brood was diseased. The colony was at once given a new hive and frames of foundation, and it has been healthy ever since. When I returned home last November I found two colonies diseased, one badly and the other slightly. I destroyed the queen in the bad case, and after keeping the bees in a box for three or four days and feeding them with salicylic syrup, I gave them combs and a queen cell. The second colony swarmed before I did anything to them. I removed the old hive and combs, and hived them *a la* Hutchinson. Both colonies have since been healthy.

In future I will never hesitate to remove and destroy all the combs of a colony that I find diseased. I believe it to be the surest plan, and also the simplest. Moreover, you get rid of the disease *at once*, and there is no danger of the disease spreading as there is while you are fussing with medicated remedies. The hives and frames I use again after they have been scalded and disinfected.—I remain, yours etc.,

H. LINDSAY MILLER.

Warnambool, Victoria,  
January 30, 1889.

### Extracts from Foreign Journals, etc.

#### MARKETING HONEY.

THE meagre proceeds of the apiary this season, one would think, could be disposed of without any trouble; yet so unskilful are some people in this important branch of the business that we find them even in the scarcity going about seeking customers, and offering their diminutive stock at starvation prices. Such people have neither patience nor prudence, and they spoil the market till their stock is exhausted. The regular apiarist has these always to contend with, but the annoyance this time will be of short duration, as the small stock will not go far in the public

market. Not that I am in favour of taking advantage of the scarcity to demand an exorbitant price for what we have. We only want a fair price. Considering the skill and labour required for the production of honey, and the risks involved in wintering, etc., the price has been hitherto too low for fair profit and remuneration. For this the beekeepers themselves have been to blame—the small ones, and even some of the big ones. The prime cause is premature rushing of the crop on the market, whether it be large or small. Before the hot weather and fruit season are over, while there is yet little or no demand for it, it is hurried on, much of it unripe, and sold for what it will bring. Honey, being largely carbonaceous as food, is for autumn, winter and spring use, not specially adapted for summer food. In hot weather people want cooling fruits and vegetables, and not much honey. Hence the folly of rushing honey away from the hives in the summer to the market when it is not wanted. A chief reason for such action is no doubt the inability to properly preserve the honey. Extracted honey is easily preserved good for months and even years, but the comb honey, to preserve it good for any great length of time, requires very proper handling.

#### HOW TO PRESERVE HONEY.

If the extracted honey is properly cured before being taken from the hives, or evaporated afterwards, it will usually granulate when a few weeks old, and will then save almost anywhere. But with comb honey it is quite different. No matter how well cured and capped when taken from the hive, if not kept in a suitable place, it will greatly deteriorate in quality. And it will sometimes granulate no matter how kept. The granulation, however, is not essentially injurious, but the deterioration from low temperature and dampness is decidedly so. While we are not able always to guard against the former condition, we may against the latter. To preserve comb honey from deterioration, and in a measure from granulation, it must be kept in a *warm, dry place*, duly ventilated. No matter where the place is so long as these conditions are subserved. When the time comes to market the honey, one half of the secret of success lies in the injunction, "Do it decently and in order."

I used to know a beekeeper who would come to the market with a lot of "black strap," buckwheat, candied honey, in an old rusty milk can with no lid, and a dirty old pair of rusty scales to weigh it out on, and old black newspapers to match. That, in an old spring wagon with an unkempt, rickety horse, was his outfit. For an hour or two after he had left the market he could be seen delivering his one to five or six pounds of honey in each hand on a piece of the aforesaid paper duly exposed to sun and dust. Fortunately, such specimens of beekeepers are rare. The fraternity on the whole are characterised by cleanliness and taste as well as good judgment.

It is astonishing how far neatness of package and taste of get up will go in selling honey. Try it, ye who practically ignore these pre-requisites, and see for yourselves. Have a label for glasses, tins, and pails advising purchasers that extracted

honey will almost always granulate, and instructing him how to liquefy it without injury to flavour or quality. Give your grocer packages and crates with which he will not be ashamed to adorn his shelves. Be sure your honey is ripe before you take it to market. Let the comb honey also be labelled with name and proper advice. Something like the following would answer for both "Pure honey from John Smith's apiary. Almost all kinds of pure extracted honey will granulate and become quite solid in cool weather. To liquefy without injuring it, melt slow in warm, not hot, water, by placing the tin or glass of honey in another vessel containing warm water. Comb honey, which must be kept in a warm, dry place, will also sometimes granulate, and must then be used in that condition, as a temperature sufficient to melt the honey would also melt the comb." Some such form may be neatly printed on a moderate sized label, and will always explain itself.

The next essential in marketing is to sell at home instead of looking abroad for a market. Sell to your neighbours round about and develop "home market." The consumption of honey has enormously increased in the past ten years and can still be enormously increased. As soon as the people understand that honey is not only nutritious and wholesome food, but a cheap food, the consumption will be greatly increased. Having the advantage, in addition to the above qualities, of being highly palatable, it must in time inevitably take its place on the tables of the land as a staple article of diet. As soon as the people understand that there is as much nutriment in a pound of honey at 12½cts. as in a pound of butter at 25cts., and as much in the pound of honey as in 3 or 4lbs. of fat pork at 10cts. per lb., as soon as they understand that more honey on their tables and less butter and meat, not only means economy but health, the change will be made. It remains for us to so educate them.—ALLEN PRINGLE in *Canadian Bee Journal*.

### CROSSING RACES OF BEES.

A RACE, whether of men, cattle or bees, is a group of animals with certain marked characteristics which are persistent. That is so say, the individuals within a breed or race, if purely mated, will breed true to the characteristics of the race. Race and breed are essentially the same thing; though we usually use the word breed when the group referred to as originated through man's selection, as we say Shorthorn breed, Morgan breed, Merino breed, Berkshire breed, etc., while we generally apply the term race where the breeding has been done solely by nature; where natural selection, not man's, has developed the peculiarities. Thus we speak of the negro race, and the Carniolan and Italian races of bees. In case of a breed or man-formed race, the selection and breeding, if carefully done, is towards some type or standard. Thus our Jerseys were bred for milk exclusively; our Shorthorns more for beef. In like manner, our Hambletonians are bred for speed, our Percherons for draught. As such animal are bred for a distinct and specific purpose and

owe their superior excellence to the very fact of a stored up potency because of this careful breeding, to cross such animals is very unwise. It antagonises two powerful but opposite, or at least different tendencies, and so is a shock to both and likely to shatter both tendencies and leave only uncertainty.

In case of a race this is quite different. Here nature has selected, and the gain has been solely the good of the individual. So our races of bees, each has its virtues and all are developed in the line of the best welfare of the individuals. Some are stronger in one line, others in another. Thus in crossing bees we violate no tendency, as there is no developed monstrosity, if I may use the term, as with our Jersey cattle for milk and fat. All the tendencies are in a common line, the best good of the race. It is perfectly rational, then, to cross our races of bees. Indeed, there is probably no way to improve our bees so big with promise as by judicious crossing. Each race is strong in some valuable line, and this strength is bred in the bone, if we may so speak. Thus Carniolan bees are very amiable, very industrious and fairly prolific. They are rather too ready perhaps to swarm. The Syrian bees are astonishingly prolific, have long tongues, but are not so amiable as Carniolans. They are not given to over-swarming. We see then that by combining these two races we may hope to eliminate the ill-temper of the Syrians and the undue tendency of the Carniolans to swarm. From our knowledge of races and bees we might be sure of this merely as a theory without the actual trial. I have, however, put the matter to actual test, and I am very pleased with results. I have now been breeding these two races for five years and I am pleased with the quiet temper, industrious habits, prolificness and freedom from the swarming habit of our bees. I am not yet satisfied with the type; I wish at least five or ten years more when I hope to have developed a race better than any of our present races, and one without any of the undesirable peculiarities found in the several races of to-day. I believe our hope lies in just this line.—A. J. COOK in *Queen Breeder's Journal*.

### HONEY VINEGAR.

#### VALUABLE HINTS ON MAKING.

I HAVE made and sold honey vinegar for the last four or five years, but I have never used good saleable honey in its manufacture. I sell about 100 gallons per year to my neighbours, and the reputation of my vinegar is such that some of my customers have driven out to my apiary, three miles from Brandon, rather than buy vinegar at the stores.

When I read the articles mentioned, I noticed that there was quite a difference of opinion between the two authors. Since then I have been experimenting. I built what I call my vinegar-factory. It is not a very large or pretentious building, but it is able to turn out 200 gallons of No. 1 vinegar in a season. The size of the building is 5 x 7 feet high on the south side, and 6 feet on the north, with shed

sloping to the north. Roof and sides are all painted dark brown. There should be no shade to prevent the sun from shining on the building all day long. The sides are made of shiplap, which gives plenty of ventilation, and is bee-proof. There is a window 2 x 7 feet, extending across the south side 4 feet from the bottom. The building cost about \$6.00. On the inside there is a shelf 20 inches wide, 1 foot high, on which to set three barrels so that their tops will be even with the bottom of the window, and to permit the vinegar being drawn through faucets near the bottom of the barrels. The shelf is supported on stakes driven in the ground. There is a door on the north side, wide enough to admit a barrel. The barrels are covered with a piece of cheese-cloth, and on that a cover is made of thin boards.

For convenience in describing operations we will number the barrels in the vinegar-house 1, 2, and 3. I generally have about a barrel of partly made vinegar in the fall, which I keep in the cellar during the winter. In the spring, when the weather becomes warm, I put about half of this in barrel No. 3, one-third in No. 2, and the remainder in No. 1. When I have any waste honey or washings from honey cans, or candied honey soaked from combs, it is put in No. 1. I test the sweetened water in No. 1 with the 35-cent hydrometer. When it sinks to 11 on the scale it is about right when it is not soured, and contains about 2lbs. of honey to the gallon. If the sweetened honey is soured some, the hydrometer should sink to 8 or 9. Good vinegar tests about 3 on the scale of the hydrometer. When that in No. 3 becomes good vinegar, it is drawn off and put in the cellar, and that from No. 2 is transferred to No. 3, with enough from No. 1 to fill the barrel about half full. No. 2 is filled half full from No. 1. To obtain the best results, the barrels should be kept about half full. If the vinegar in the cellar is kept cool, and the barrels bunged tight, mother will not form on it, and it will keep almost any length of time. One pound of honey will make one gallon of vinegar, as good as most of the cider and white-wine vinegar that is sold; but to make strong No. 1 vinegar it requires 2lbs of honey to the gallon. Most of the honey that I use for making vinegar is the thin honey which I skim from the top of my extracted honey directly after extracting.

Friend Bingham, in his article, says: "I have beautifully candied honey evaporated from such vinegar as I have made and used exclusively in my family for the past 12 years, so you can get your honey out of such vinegar in case you should want honey more than vinegar."

I have evaporated honey vinegar, but I can get nothing but a very strong acid as the result. I think it is generally understood that the honey is changed to alcohol, and then the alcohol to vinegar. Now, is it a fact that the acid can be changed back to honey? Will some of the friends who understand chemistry enlighten us on this subject?—G. D. BLACK in *Gleanings in Bee Culture*.

## AUSTRALASIAN BEE MANUAL.

A few Copies of the above, slightly spotted on the covers, otherwise in good order, free by post, 4s 9d each, or 4s when sent with other goods.—I. Hopkins, & Co.

## Queries and Replies.

W. G. F.—*Spare Combs*.—Spare combs should be kept in close boxes. Body boxes piled one on the other in a dry room make good receptacles. Fumigation with sulphur will destroy the wax moth.

ANDREW C.—A good autumn food for bees, as recommended by Mr. Cowan, consists of white lump sugar ten pounds, water five pints, vinegar one ounce, salicylic acid solution No. 1, one ounce, salt half ounce. Boil for a few minutes. The salicylic solution No. 1 for mixing with the above consists of salicylic acid one ounce, soda borax one ounce, water four pints. This is also useful for painting over hives, spraying combs for prevention of foul brood, etc.

DAVID REES. *Introducing Queens*.—The queen should be placed in the introducing cage *alone*. On no account should any bees be confined with her. *Virgin Queens*.—These can be introduced to queenless colonies, but the operation is attended with more danger and cannot be so safely accomplished as in the case of impregnated queens.

## 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.

## WAVERLEY HOTEL

QUEEN STREET (ADJOINING RAILWAY STATION)  
AUCKLAND, NEW ZEALAND.

The above Hotel is one of the largest in the City of Auckland, and for the accommodation of families and travellers is unsurpassed.

**HOT, COLD, AND SHOWER BATHS.**

Tram Terminus and Busses to all parts of the City and Suburbs.

G. I. PANTER, PROPRIETOR.

## ODLUM & SMITH

## Coppersmiths, Gasfitters

HOUSE and SHIP PLUMBERS.

TIN, ZINC, and IRON-PLATE WORKERS.

SPECIALTY

Having imported machinery for making all kinds of HONEY and JAM TINS we are prepared to supply these articles at the LOWEST PRICE in any quantity

Took FIRST PRIZE at the Exhibition for Honey Tins

NEAR THE DOCK

LOWER ALBERT STREET,

AUCKLAND.



# FIRST EIGHT HOURS' ROLLER MILLS

J. C. FIRTH, PROPRIETOR.

By a combination of mechanical and scientific appliances, Mr. J. C. FIRTH has produced at his Eight Hours' Roller Mills a Pleasant and Wholesome Breakfast Food as Porridge,

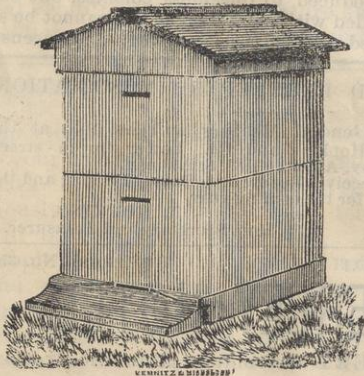
(PATENTED) "GERMINA." (PATENTED)

Easy of Digestion, and remarkable for its Bone and Flesh-Producing Qualities. Free from the heating and flatulent properties incidental to Oatmeal.

For FUDDINGS it is unsurpassed, if even equalled by RIC, SAGO, or CORNFLOUR.

This admirable Food for Young and Old is now on the market.

IN 10<sup>LB</sup> BAGS, OF ALL DEALERS.



Send for Price List.

J. G. BRICKELL,  
BATH STREET, DUNEDIN,

MANUFACTURER OF

THE STANLEY AUTOMATIC EXTRACTOR

The finest Four-Comb Extractor made. Automatic Reversing Gear.

*These are made for work.*

Just received, a Large Consignment of

ROOT'S TWO-COMB EXTRACTORS

In order to clear this season, will sell at 36s. each, F.O.B.

Registered Spring Crates for Comb Honey, and every other Appliance.

J. G. BRICKELL.

G. CAMPBELL,

TAILOR,

225 QUEEN STREET,

AUCKLAND.

EGGS FOR HATCHING

From my WYANDOTTES.

Including Imported and First Prize Birds (2 strains), Auckland Poultry Show, 1887. £1 for 13 eggs. F. STEPHENS, 136 Queen Street, Auckland.

**B**ONEDUST! **B**ONEDUST!  
J.C.E. J.C.E.

The undersigned has for sale—50 tons of Ellis's well-known J.C.E. brand of Newcastle Bonedust, in lots to suit purchasers.

Iron Bark Timber, Spokes, Shafts, etc., in any quantities.

M. V. HURLEY, 7, Queen-street.

F. STEPHENS

Boot and Shoe Manufacturer

136 QUEEN STREET

AUCKLAND, NEW ZEALAND.

W. WILDMAN,

Bookseller & Fancy Stationer

ENGLISH, AMERICAN, and COLONIAL  
PERIODICALS SUPPLIED.

COUNTRY ORDERS PROMPTLY ATTENDED TO.

VICTORIA ARCADE, AUCKLAND