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The New Zealand Beekeepers' Journal.

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The Honey-House and part of the Apiary at Tauherenikau Farm

ISSUED MONTHLY

FOR

THE NATIONAL BEEKEEPERS' ASSOCIATION OF N.Z.

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The New Zealand Beekeepers' Journal

The Official Organ of the
National Beekeepers' Association of N.Z.

No. 6 Vol. 6 7/6 Per Annum.

National Beekeepers' Association of New Zealand.

The object of the Association is the improvement of the Beekeeping Industry and furthering the interests and prosperity of the Beekeepers throughout the Dominion. Membership is extended to any Beekeeper who is in accord with the aims and objects of the Association on payment of fees as follows:—1 to 15 Hives, 5/-; 16 to 50 Hives, 10/-; 51 to 100 Hives, 15/-; 100 to 200 Hives, 20/-; every additional 100, 5/- extra.

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All matter for publication must be in the Editor's hands NOT LATER than the 20th of the month previous to publication. Address

FRED C. BAINES, Kati Kati, Bay of Plenty.

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EDITORIAL.

We hope this Journal will arrive sufficiently early for those who are waiting to see the programme of the Conference before deciding to attend, as we feel sure the interesting papers that are to be read will be sufficient to ensure their attendance. The authors of the various papers are all fully qualified men, and their remarks are bound to be of the very greatest service to those who are privileged to hear them. Mr. T. E. Clark, who is to give a paper on "Working Methods," is wintering 800 colonies; so one can be sure "method" enters largely in the successful running of this number. Mr. J. Rentoul, whose paper is on "The Hygienic Requirements in the Extracting and Storage of Honey," has a very extensive knowledge of his subject, and as Chairman of the H.P.A. has seen the necessity of honey being handled properly before sending it from the apiary. In the subject of "The

Necessity for Keeping Better Bees," Mr. C. S. Hutchinson has one on which he can speak with authority, as the Hutchinson Bros. were at one time the largest commercial men in the country. "The Eradication of Foul Brood," by Mr. H. N. Goodman, is a subject on which he is well qualified to speak, as his district (the Clutha Valley) is one of the cleanest, and that largely due to Mr. Goodman's efforts. Mr. Robt. Gibb, who will give "Advanced Methods of Beekeeping," is one of the most advanced beekeepers in the country, and one that has "made good." The forming of nuclei is one of the most important items in successful beekeeping, and Mr. A. R. Bates, who will give "My Method of Forming Nuclei," is a 500-hive man, and re-queens every year, so his experience in this direction should be valuable. Mr. Robert Stewart needs no introducing, and his paper on "Italianising an Apiary, and why I Prefer Italians" is a subject of the greatest interest, and our friend, whose queens or their progeny are probably in every apiary in the Dominion, is a speaker who is well worth going a long way to hear. The question of increasing the honey-yielding plants is one of the greatest importance, and Mr. E. G. Ward, who will speak on "A Wonderful Honey Plant," will give his experience with a plot of Hubam sweet clover. With the paper "Improving Branch Organisation" Mr. L. Irwin has one that is after his own heart, as our friend is not only secretary of the Southland Branch, but has served on the Executive for two years to the great advantage of the National. Any suggestion to improve the parent body and its branches will be welcomed. The selling end of our industry will be enlarged upon by one of the officials of the H.P.A., and we hope all those who are not shareholders of that concern will listen attentively to what is said, and then decide that it is to their advantage to join up. Mr. Brickell's paper on "Pools and their Effect on the Producer" will be an interesting one, seeing that the meat and butter producers are strongly in favour of the system. Other papers are expected, and we feel sure that the programme will attract a good number of beekeepers to the Conference, and we hope that many of our friends in the south who have never attended a Conference will come along and have a good time.

* * * *

Recently, at the request of the beekeepers of the Dominion, the Government issued regulations prohibiting the importation of queen bees, &c., for the purpose of preventing the introduction of the Isle of Wight disease. Although at that time we all were under the wrong impression that Nosema Apis was the cause of the disease, the principle of keeping this dread disease out of the country was absolutely sound. These regulations were adversely criticised by certain beekeepers in the Dominion and in Australia, and we were thought to be acting against our own interests in getting the regulations passed. Be that as it may, we were very interested to read in the April "Gleanings" an article headed "Prohibiting Importation of Bees and Queens," in which we find that "A committee was appointed to plan some measure to prevent the introduction of this disease into the United States and Canada, the committee being composed of Dr. S. B. Fracker, State Entomologist of Wisconsin; Prof. Geo. H. Rea, Pennsylvania State College, and C. B. Gooderman, Dominion Apiarist of Canada. A conference of entomologists and inspectors was called by Dr. Fracker on March 9th at the Bee Culture Laboratory at Washington, where it was decided inadvisable to apply any means of regulation as to the importation of bees and queens, **and that nothing short of absolute prohibition of further importations would meet the situation.**" Then follows the report of the meeting, and among those present were Dr. L. O. Howard and Dr. C. L. Marlatt, chief and assistant chief of the U.S. Bureau of Entomology; Dr. E. F. Phillips, Government Apiarist; Prof. F. E. Millen, Apiary Instructor for Ontario, Canada; Prof. G. H. Rea, Pennsylvania State College; E. G. Carr, Apiary Instructor of New Jersey; J. G. Saunders, President of the American Association of Economic Entomologists; Prof. N. E. Phillips, Massachussetts Agricultural College; and Dr. H. E. Ewing, Expert on Mites, of the U.S. Bureau of Entomology. ("Some names, my masters!") Read on and see what they did! "The meeting decided to recommend that the U.S. Post Office Department shall at once prohibit the introduction of queen bees through the mails from all foreign countries except Canada, and that a Bill be introduced into Congress to prohibit the introduction of adult bees into the United States except for experimental and scientific purposes by the U.S. Department of Agriculture. Since there is no known Isle of Wight disease in Canada, and since it is hoped and expected that the Dominion of Canada will establish the same safeguards to the beekeeping industry, it is planned not to establish any quarantines or prohibition against shipments of bees from and to Canada." "It was the opinion of those in attendance that the Isle of Wight disease is such a serious menace to beekeeping on this Continent that every possible step should be taken to prevent its introduction, and that all importations of queen bees should be stopped. Pending full legislation in this matter, it is hoped that beekeepers throughout the Continent will co-operate to the fullest degree by making no attempts to introduce adult bees into the country. Any queen breeder who introduced this disease into the country would be doing a great damage to the beekeeping industry, and it would be a serious drawback to his business in the future." "The Committee urges that beekeepers who see any outbreak of any disease of adult bees shall at once

send samples for examination and diagnosis to the Bureau of Entomology, Washington, D.C.''

By the above reports it will be seen that the best specialists in the beekeeping industry and entomology in America are now trying to do what New Zealand did nearly two years ago. Bravo, New Zealand! The highest specialists in America have endorsed your action in this matter, and that being so, you can easily afford to ignore the small opposition that has been raised to your successful efforts. We congratulate the ''National'' in having its policy endorsed by so high an authority.

* * * *

In connection with the above, it will be seen by the article on the disease ''Nosema Apis.'' which we have taken from the N.Z. Journal of Agriculture for April, that our own Entomologist is studying the disease, and his request that bees suspected of being infected should be sent him for examination and diagnosis should be availed of. We are indebted to the Department of Agriculture for the loan of the block illustrating the article.

* * * *

We also are indebted to the Department for the loan of the block illustrating the honey house and part of the apiary at the Tauherenikau Repatriation Farm, where returned soldiers who are afflicted with tubercular diseases are taught beekeeping, horticulture, poultry farming, &c. The report on the apiary section reads:—''The trainees in this section, under a most enthusiastic instructor (Mr. W. Booth), have acquitted themselves well.'' That is just the report we should expect of you, friend Booth.

* * * *

We notice that a firm in Auckland is offering for sale Australian honey, 18oz. jars at 1/3 per jar. We wonder when this honey was imported, and if the certificate necessary according to regulations was supplied. Know anything about it, friend Westbrooke?

* * * *

The Editor expects to be away from home from about the 25th May till about the middle of June. Should there be any delay in answering correspondence, the above fact will account for it.

Another convert to the claims of the West Coast as a country suitable for commercial beekeeping has appeared in the person of Mr. W. J. Jordan, who has just returned from a tour of the South Island, and is satisfied from records shown him that the flora of Westland is as hospitable as the inhabitants of that district. Of course, it rained whilst the visitor was there, but nevertheless the nectar was being gathered. The West Coast has seen many rushes, and we wonder if the opening of the Otira tunnel at the end of the year will cause a rush of apiarists. If they spread out there is room for all.

Market Reports.

The market continues steady since our last report, and the Home trade enquiry is still good. There have been sales made of 300 barrels of Chilian as follows:—Pile X, at 50/- per cwt.; Pile 1, at 44/- per cwt.; Pile 2, at 42/- per cwt.; Pile 3, at 37/- to 37/6 per cwt.; No Pile, 32/6 to 34/- per cwt.

There have been also 12 cases Pile 1 sold at 48/- to 49/- per cwt. Buyers would give 28/- to 30/- c.i.f. Liverpool.

Beeswax.—The market remains quiet, and African and other descriptions are still offering at low prices. The value is about the same as quoted in last month's report—namely, £6 to £10 per cwt. There have been 15 sacks sold at £6 10s. to £7 12s. 6d. per cwt.

TAYLOR & CO.

Liverpool, March 2nd, 1922.

The Director of the Horticulture Division has received from the apiary instructors the following reports concerning the honey crop prospects:—

Auckland.—There is nothing further to report since last month. Prices remain unchanged. Bees are now closed down for the winter, except in sheltered bays in the north, where they are gathering freely from the ti-tree.—G. V. Westbrooke.

Wellington.—The honey for this season has all been gathered, and the crops packed for export or local consumption. The quantity is below the average, and the quality in many instances is not up to the usual high standard. This is due to the climatic conditions. Prices for bulk lines have dropped 1d. per lb., which, of course, reflects on other sales. Beeswax, from 1/9 to 2/- per lb.—F. A. Jacobsen.

Christchurch and Dunedin.—There is nothing fresh to report. Extracting has finished. A few small lines of bulk honey are coming forward, and are meeting with ready sale. Prices are firm. Pat honey is now being offered.—E. A. Earp.

In the January issue a Woodland correspondent asks:—''Can honey, taken from foul-brood combs, be fed to bees safely?'' The reply was that it can be if first boiled slowly at a simmering heat. I do not know where this advice comes from, but this brother beekeeper is taking grave chances by so doing. If he has the American type, such boiling will not kill the germs, as has been demonstrated by the Department at Washington, and told here on the convention floor at Los Angeles. American foul-brood germs resist the strongest acids, and also heat up to a high temperature. Dr. Phillips explained this, basing his advice upon laboratory tests made in Washington. Take no chance in feeding it back to your bees.''—G. W. Bereaw, in Western Honey Bee.

National Beekeepers' Association of New Zealand.

NINTH ANNUAL CONFERENCE

To be held at the Hall of the Y.M.C.A., Dunedin,
May 31st, June 1st and 2nd, 1922.

Programme.

NOTE.—It is suggested that the Morning Sessions be occupied in the discussion of general business, and the afternoon for papers of interest.

MORNING SESSIONS, 10 to 12.30. AFTERNOON SESSIONS: 2 to 5 p.m.

FIRST DAY—WEDNESDAY, MAY 31st.

10 a.m.—Official Opening of Conference.

11 a.m.—President's Address.

11.15 a.m.—Secretary's Report and Balance Sheet.

11.30 a.m.—Amendments to Constitution.

Clause 6 reads:—Subscriptions to the Association are due and payable on June 1st in each year, and must be paid within two calendar months of that date. Members who do not resign by notice under their hand on or before July 31st in each year shall be deemed to be members of the Association for that year, and their subscriptions shall be due and payable.

Proposed Amendment.—The dates in the above to be altered to April 1st and May 31st respectively.

Clause 10 reads:—Prior to the Annual Meeting at which they are to be elected, every Branch Association shall nominate a representative to serve on the Executive. This should consist of not more than seven members, but should not sufficient nominations be received, the quota shall be made good from those members attending the Annual Meeting. The officers of the Executive shall consist of a President, Vice-President, and Secretary-Treasurer; the last-named, however, if thought desirable, may be appointed by the Executive from outside the Association. Remainder of clause unaltered.

Proposed Amendment.—Prior to the Annual Meeting every Branch may nominate a representative to serve on the Executive, which shall consist of not more than six members, including President and Vice-President. From the nominations so made, the meeting shall elect four members. Should not sufficient nominations be received, the quota shall be made good from members attending the Annual Meeting. The Secretary-Treasurer shall be a permanent officer, his appointment, remuneration, and removal being entirely in the hands of the Executive, subject to three months notice on either side. Remainder of clause unaltered.

Clause 17 reads:—At the Annual or Special General Meetings, delegates may represent the District Branch and vote on the following terms:—On all questions of which notice of motion has been given, the delegate or delegates may exercise one vote for every financial member of their Branch.

Proposed Amendment.—At the Annual or Special General Meetings, delegates may represent the District Branch and vote on the following basis:—One vote for every financial member owning up to 25 colonies, and an extra vote for every additional 25 or part thereof. The official delegate shall exercise the total voting power of the Branch. In the event of a Branch not being able to send one of its own members as a delegate to the Annual or Special General Meeting, it may appoint any member of the National Association to act.—

(NOTE.—The delegate's certificate from a Branch must state—(a) The number of members who are financial; (b) the total number of hives owned by such members; (c) the number of votes to which the delegate is entitled.) The certificate to be signed by the Branch President and Secretary. Members of the National who

are not members of a Branch shall have the same voting powers—i.e., one vote for every 25 colonies or part thereof, and such votes may be exercised by a duly authorised proxy.

The General Secretary will move:—That the voting power of each member be on the basis of the subscriptions paid to the National—i.e., 5/- subscription (1 to 15 hives), one vote; 10/- subscription (16 to 50 hives), two votes; 15/- subscription (51 to 100 hives), three votes; and one additional vote for every 5/- paid above 15/-; hon. members, one vote.

12.30.—Adjourn.

2 p.m.—"Improving Branch Organisation."—Mr. L. IRWIN.

2.30 p.m.—"A Wonderful Honey Plant."—Mr. E. G. WARD.

"Random Thoughts."—Mr. BASIL HOWARD.

3 p.m.—"My System of Making Nuclei."—Mr. A. R. BATES.

3.30 p.m.—"Working Methods."—Mr. T. E. CLARK.

4 p.m.—"Hygienic Requirements in the Extracting and Storing of Honey."—Mr. J. RENTOUL.

4.30 p.m.—"Eradication of Foul Brood."—Mr. H. N. GOODMAN.

5 p.m.—Adjourn.

7 p.m.—Open Meeting for Informal Discussion, exhibition of appliances, &c.

10 p.m.—Adjourn.

SECOND DAY—THURSDAY, JUNE 1st.

10 a.m.—Branch Remits.

West Coast—(1) That it be a recommendation to the Government that the maximum penalty for breaches of the Apiaries Act be increased to £50.

(2) That the Conference use its power to urge the appointment of a permanent apiary instructor for the West Coast, Nelson and Marlborough Districts.

(3) That the West Coast Branch strongly disapproves of the Conference being held in the north of New Zealand one year and the extreme south the following year, and suggests that the Conference be held in Christchurch and Wellington alternately.

(4) That the Conference consider the matter of drawing up rules and regulations and registering the National under the Friendly Societies' Act.

Rangiora Branch—

(1) That the Department of Agriculture be asked to give a receipt for all apiary registrations, and would suggest that the registrations be acknowledged in the N.Z. Beekeepers' Journal, and thus save the Department posting individual receipts. This would provide some small financial return towards the Journal expenses.

(2) That this Branch condemns any idea of a tax on apiaries.

(3) That the Department of Agriculture be requested to consider the advisability of again allowing Branches to nominate men as being suitable for apiary inspectors.

(4) That the Conference consider ways and means of improving the financial returns to the honey producer of the South Island, so as to save the heavy expense of sending crops to the North Island to be blended, and then sent back to the local markets, resulting in a loss to honey producers of about 1½d. per lb. for transit expenses.

"In Defence of Registration of Apiaries."—Mr. W. E. BARKER.

11.30 a.m.—"The New Grading Regulations."—Mr. E. A. EARP.

12.30.—Adjourn. Photo of visitors, if desired.

2 p.m.—"Advanced Methods of Beekeeping."—Mr. ROBT. GIBB.

2.30 p.m.—"Italianising an Apiary, and why I Prefer Italians."—Mr. ROBT. STEWART.

3 p.m.—"Pools v. Co-operation."—Mr. R. W. BRICKELL.

3.30 p.m.—"The N.Z. Honey Producers' Association and the Industry."——

4 p.m.—"The Necessity for Keeping Better Bees."—Mr. R. S. HUTCHINSON.

4.30 p.m.—"My System of Treating Diseased Hives."—Mr. C. J. CLAYTON.

5 p.m.—Adjourn.

THIRD DAY—FRIDAY, JUNE 2nd.

10 a.m.—Unfinished Business.

11 a.m.—Election of Officers.

12.—Closing of Conference.

NOTE.—The time given for the various items is only estimated, and the order of the papers to be read may possibly require alteration.

The use of solder for fixing "press in" lids is no longer necessary. A tool designed by Mr. W. J. Jordan, of the H.P.A., has been taken into general use at the grading stores, which will save the Association a considerable sum, as well as obviating the danger of the spirits of salts used in soldering of rusting the tin. The tool is a sort of pliers, which expand the lower edge of the press-in lid, and in no way affecting its air-tightness. Probably this will solve the lid problem, as the screw-lids were not quite a success, as they often had to be torn off if the side of the cap got dented, or the case dropped the wrong side up. Again the adage "Necessity is the mother of invention" is applicable.

Canterbury Tales.

By E. G. WARD.

A feeling of disappointment came over me on reading in last issue of the Journal that the usual social evening was to be omitted this year from the Conference programme. This function has been such an unqualified success since its inauguration that I would suggest the desirability of taking the feeling of the visitors on the first day as to whether to hold it or not, rather than take it for granted that a visit to the show would be more appreciated.

I wonder how many patents have been taken out in connection with beekeeping appliances, and how many of the patentees have wished they had their money back in their pockets? I feel doubtful whether Mr. Franke's invention will be a commercial success, but congratulate him for his efforts to deal with a difficult problem. I was discussing this question of thick honey with a Canterbury beekeeper, who told me he had about four tons of it this season. If Mr. Franke's invention will solve the difficulty and save the combs, he has performed a signal service to the industry. An ocular demonstration would be worth a journey to Dunedin to anyone troubled with thick honey, to say nothing of the natural attractions of the city.

I was much interested in Mr. Pearmain's article on nectar-bearing flowers. I think most authorities are agreed that as a commercial proposition it does not pay to plant solely for bees. Mr. Root, I think, says there is one exception, and that is sweet clover. Some of the early writers on bee-culture (Henry Alley for one, I think) advocated every beekeeper carrying some sweet clover seed (Bokhara) in his pocket, and scattering it in waste places. I have recently planted about one hundred young ribbon-wood trees at the back of my apiary, as I have been told it is a good nectar yielder; and although I do not expect great things from it, I think it well worth while for every beekeeper to do his best to increase the honey yielding flora of his district.

I visited my apiary about ten days ago and threshed my Hubam clover. It had lain on the ground about a fortnight after cutting, and did not yield so much seed as I expected. I got out all I could, and have stacked the hay, and will try again in a month or six weeks time. I made a scarifier from a description I saw in "Gleanings," and have secured a nice bright sample of seed after riddling and using considerable lung power to get rid of husks and dust. A neighbour is going to sow about four acres next spring, and I will have all the ground I can spare round the apiary cultivated for the same purpose.

Mr. Hankinson's experience in giving chilled brood to strong colonies to be cleaned up supplies food for anxious thought. Before feeling convinced, I should like more corroborative evidence. Is he quite sure the brood he gave was chilled brood? I suggest it might have been frames of foul-brood which he mistook for chilled. The books tell us that foul-brood is caused by an organism called bacillus larvæ, and that putrefaction is caused by quite a different process. Here is a chance for some of our scientifically trained men to chip in and put us on the right track. I am not going to get into deep water, but would welcome any information which would help to "clear the air." One at a time, please!

When I read such effusions as are contained in the attached clippings, I wonder if all industries are subject to the same sort of distortion:—

BLACK HONEY.

There are certain parts of the world where black honey, green honey, and red honey are not unknown. There lives in Brazil a wasp which produces red honey, which, although extremely sweet, is regarded as poisonous. The black variety is sour and disagreeable to the taste. Of course, honey varies in colour and flavour with the breed of bee producing it, but flowers also have some effect on the little worker. For instance, wild bees make their honey out of the rhododendron, wild azalea, and "mountain laurel," but this honey has an irritating and narcotic effect upon people, and is not, of course, in popular use.—Christchurch Star, 6/5/22.

BEES AS NOXIOUS ANIMALS.

A COUNCIL PUT RIGHT.

A Press Association cable from Sydney, dated May 3rd, stated that the Minister of Labour (Mr. E. H. Farrer) had announced that the Parkes Council had declared bees to be noxious animals. Acting on the advice of the Crown solicitor, he notified the Council that there was no power to declare insects noxious.

No wonder somebody wrote:—"Fools rush in where angels fear to tread."

District Reports.

TARANAKI.

We have had some really nice weather lately—just about three months too late!

Owing to the poor season most beemen have finished up their outside work, and are now preparing and planning for next season, or taking on winter jobs at other occupations to help keep the wolf away.

I have read a good deal about the outbreak of paralysis among bees in this district, but I think it is greatly exaggerated. As far as my own stocks are concerned, I have only had one colony dwindle to any extent with it, and have not found it any worse than usual. Generally speaking, I have only met one apiarist who has found it more serious than usual.

With regard to Mr. Hankinson's experience of foul-brood cropping up after giving chilled brood to the bees to clean up, I think, from personal experience, it is highly improbable that such was the cause. It was probably just a coincidence.

I have occasionally put dead brood in colonies from different causes without any ill-effects, as long as the colony was strong.

Last spring I had about ten frames of brood cooked through moving a very strong colony on a hot day without sufficient ventilation, and I split their brood up among quite a few colonies, and it did no harm.

H. R. PENNY.

Okaiawa, 8/5/22.

WEST COAST.

We have circularised the whole of the beekeepers in the district with the hopes of increasing our membership, and our Branch efforts for the betterment of the beekeeping industry in this locality are evidenced by the following programme which we are offering to all interested:—

April 8—General Business.

April 22—Successful Wintering.

May 6—Commercial Beekeeping and Honey Production.

May 20—Advantages of the Ten-frame Hive.

June 3—The N.B.K.A. and H.P.A.

June 17—Hive Construction.

July 1—Feeders, and Management of Feeding.

July 15—Organisation of the Honey Industry.

July 29—Real Apiary Management.

August 12—Beekeeping as an Occupation for Women.

August 26—Foul-brood, Its Cause and Treatment.

Sept. 9—Bee Production; Spring Management.

Sept. 23—Out-Apiary Management.

Oct. 7—Ventilation.

Oct. 21—Colony Control; Prevention of Swarms.

Nov. 4—Frames, Assembling, Wiring, and Electric Embedding Demonstration.

Nov. 18—Preparing Stocks for the Honey Flow.

Dec. 2—Queen Rearing.

Dec. 16—Artificial Increase.

1923.

Jan. 13—Queens and Introducing.

Feb. 10—Extracting. Marketing Honey.

March 10—Annual General Meeting.

E. AIREY, Hon. Sec.

[That's a very fine programme, you West Coasters. You may have a damp climate, but it evidently does not damp your enthusiasm. We hope you will have another successful year.—Ed.]

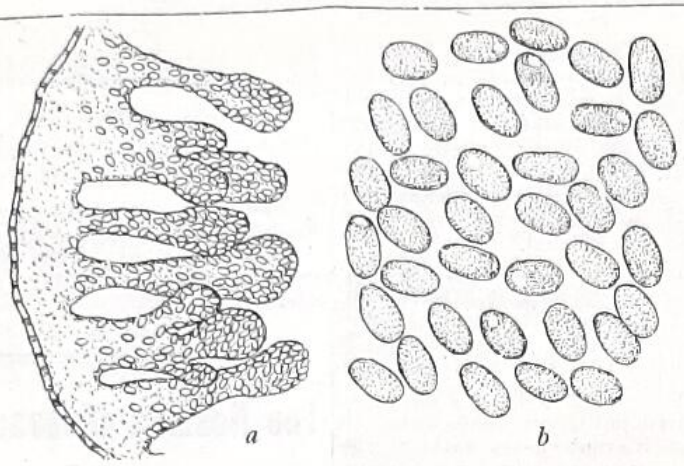
The Nosema Disease of Bees.

By R. WATERS, Biological Laboratory, Wellington.

The stomach of the bee has an internal cellular lining of what are known as epithelial cells. These cells are sometimes tenanted by minute ovoid bodies, the spores of an organism named Nosema Apis Zan. The organism is of the simplest kind, consisting as it does of but a single cell, and is therefore grouped with the lowest animal forms—the Protozoa. It has been observed in Britain, Denmark, Germany, Switzerland, Canada, the United States and Australia. Now it is to be recorded as present in New Zealand.

Nosema Apis is a recognised parasite—it lives at the expense of the bee. As to the injury it inflicts, this is a matter upon which there has been much divergence of opinion. In 1912, for instance, Graham-Smith, Fantham and Porter, in view of their accumulated evidence, stated that "the writers consider themselves justified in taking the view that Nosema Apis is the causative agent in most outbreaks of disease in which the Isle of Wight symptoms are present." In 1919 White wrote: "For the present the American beekeeper should bear in mind that where Nosema disease is given as the diagnosis, a condition having the destructiveness described for the Isle of Wight disease is not meant." Finally, Rennie (1921) announced the occurrence of a parasitic mite, Tarsonemus woodi, in the respiratory passages of the bee. On abundant evidence he believed this to be the cause of Isle of Wight disease.

In New Zealand we have had no epidemic comparable to the destructive Isle of Wight disease. We have recently discovered the presence of Nosema Apis, but it is incredible that this organism is of recent introduction. Nosema Apis has not directly been associated by us with any specific disease. Symptoms kindred to those commonly associated with "spring dwindling" have, it is reported, been observed. Our object then should be (1) to arrive at the distribution of this animal parasite, and (2) to ascertain its effects upon the bee.



NOSEMA APIS.

(a.) Transverse section of portion of a bee's stomach, showing the internal lining of club-shaped epithelial cells packed with the spores of Nosema Apis; highly magnified. (b.) Spores greatly enlarged, showing circular vacuoles.

[Drawing by E. H. Atkinson.

So far the parasite has been sought and found in but two places—Auckland and Te Puke. The stomachs of four hundred Auckland bees have been examined. Of these ten showed traces of the spores, one abounded with them, and one showed a fair number of the vegetative form of the organism. A naked-eye examination of thirty-five stomachs at Te Puke showed only one that looked suspicious. This was brought to Auckland, where it was found to be packed with spores. Minor infection among the Te Puke bees may have gone undetected.

The writer will be pleased to examine any bees for the presence of the Nosema organism. Specimens should be sent—preferably alive—addressed care of the Biological Laboratory, 71 Fairlie Terrace, Wellington. An account of any observed symptoms should accompany the specimens. Next spring may afford an opportunity of associating the symptoms with the parasite, for then the effects of spring dwindling and certain other obscure bee troubles may become more noticeable.

Regarding the symptoms of Nosema disease, White says that weakness, especially in the spring of the year, should cause a suspicion that the disease is present; further, that this suspicion is strengthened if in such a colony the brood in general is normal; if the adult bees are not noticeably different in outward appearance or behaviour from bees of healthy colonies; if the queen is present; and if stores are abundant. His recommendations show that bees sent for examination should be workers from the field—pollen, water, or honey carriers. Next to field-bees those about the entrance of the hives should be selected—ten or more per colony. The contamination by excrement and otherwise of the water-supply, and the robbing of weakened and diseased colonies, are considered to be the main means of infection.

It will be noted that the present tendency is to abandon the idea that Nosema apis is the cause of the Isle of Wight disease, and to view the disease arising from the Nosema parasite as of minor importance. New Zealand experience certainly suggests such a view. Nevertheless, we should not neglect this organism until our local knowledge of its effects shall have justified us in doing so.

N.Z. Journal of Agriculture.

Re-Queening and Queen Introduction.

By A. H. BOWEN.

The foundation of successful beekeeping undoubtedly lies in keeping good stock headed by young prolific queens. No matter how good the hive may be, or how enthusiastic the owner, it is essential for the bees to be strong in numbers and of a thrifty honey-gathering strain if the best is to be obtained from the pursuit of beekeeping. Bee stocks, in their natural condition, ensure young queens each season by casting one or more swarms each. Honey production requires that the swarming impulse shall be restricted in order to maintain a large working force during the summer months.

If bees are thus deprived of the necessity for swarming, they must be supplied with young queens at periodic intervals in order to keep the strength of the colony from dwindling, and avoid the evils which generally follow it. A queen may prove unsatisfactory, and require replacement for several reasons. She may be a worthless drone breeder in the spring, or she

may be unprolific. Her prolificness is likely to be reduced after the second season, thus failing to maintain the large population that is needed for getting a maximum honey yield.

During the active season stocks found queenless should be supplied with queens with as little delay as possible. Although queenless, stocks will, during a honey flow, accumulate considerable natural stores, the lessened number of workers renders them liable to be robbed. Little or no work is ever done in supers by bees in a queenless condition.

Which is the best time?

Queens may be introduced with comparative safety any time from the end of April (October for New Zealand), and when May (November) is in supplies of queens are usually plentiful. In the districts where the honey flow is late, it is sometimes—when increase is desired—possible to sub-divide colonies during the latter part of May (November), introducing young queens to build up the divisions as strongly as possible before the honey flow commences.

All things considered, the termination of the honey flow provides the best time for requeening failing queens, when most, if not all, of the supers have been removed.

It occasionally happens that stocks, after the flow, require strengthening as well as re-queening to enable them to survive the winter. To meet such cases, it is an excellent plan to take several three-comb nuclei from colonies that can spare the bees. These should be given queens, and virgins will be found most useful for running into these small nuclei. Frequently, by the time that they are required, the nuclei will have grown to the size of small stocks, and are most valuable for bringing up to full strength colonies with little brood and a scarcity of foragers. The addition of a large proportion of young bees to any colony in the autumn is one of the best means of making sure of its survival of the winter.—British Bee Journal.

N.Z. Co-op. Honey Producers' Association, Ltd.

We have received a copy of the Eighth Annual Report and Balance-Sheet of the above Association, to be presented at the annual general meeting on May 30th.

In common with most balance-sheets one peruses these days, the H.P.A. does not make the showing we could wish, and so far as the actual returns paid to suppliers are concerned, there is room for considerable improvement. We can only hope that the recent change of management will be instrumental in keeping down the very heavy expenses that the present balance-sheet reveals.

It is pleasant to notice that the number of shareholders has increased by 52, the subscribed capital by £876, and the paid-up capital by £627.

New Observations on the Natural History of Bees.

By Francis Huber.

(Published in 1808.)

(Continued from last issue.)

In terminating the confutation of Mr. Debraw's opinion, I have only to explain what led him into error; and that was, his using queens whose history he was unacquainted with from their origin. When he observed that the eggs produced by a queen, confined along with males, were fertile, he thence concluded that they had been bedewed by the prolific fluid in the cells; but, to render his conclusion just, he should first have ascertained that the female never had copulated, and this he neglected. The truth is, that, without knowing it, he had used in his experiments a queen after she had commerce with the male. Had he taken a virgin queen the moment she came from the royal cell, and confined her in his vessels along with drones, the result would have been opposite; for, even amidst a seraglio of males, this young queen would never have laid, as I shall afterwards prove.

The Lusatian observers, and M. Hattorf in particular, thought the queen was fecundated by herself, without concourse with the males. I shall here give an abstract of the experiment on which this opinion is founded.*

M. Hattorf took a queen whose virginity he could not doubt. He excluded all the males of the large and likewise of the small species, and in several days he found both eggs and worms. He asserts that there were no drones in the hive during the course of the experiment; but, although they were absent, the queen laid eggs from which worms proceeded; whence he considers that she is impregnated by herself.

Reflecting on this experiment, I did not find it sufficiently accurate. Males pass with great facility from hive to hive, and M. Hattorf took no precaution that none should be introduced into his. He says indeed, there was no male, but is silent

*Vide in M. Schirach's History of Bees, a memoir by M. Hattorf, entitled "Physical Researches whether the Queen Bee requires fecundation by Drones?"

respecting the means he adopted to prove the fact. And although he might be satisfied of no large drone being present, still a small one might have escaped his vigilance, and fecundated the queen. With a view to clear up the doubt, I resolved to repeat his experiment in the manner described by him, and without greater care or precaution.

I put a virgin queen into a hive from which all the males were excluded, but the bees left at perfect liberty. Several days afterwards I visited the hive and found new hatched worms in it. Here then was the same result as M. Hattorf obtained! But before deducing the same consequence from it, we had to ascertain beyond dispute that no male had entered the hive. Thus, it was necessary to immerse the bees, and examine each separately. By this operation, we actually found four small males. Therefore, to render the experiment decisive, not only was it requisite to remove all the drones, but also, by some infallible method, to prevent any from being introduced, which the German naturalist had neglected.

I prepared to repair this omission by putting a virgin queen into a hive, from which the whole males were carefully removed; and to be physically certain that none could obtain access, a glass tube was adapted at the entrance, of such dimensions that the working bees could freely pass and repass, but too narrow for the smallest male. Matters continued thus for thirty days; the workers departing and returning performed their usual labours; but the queen remained sterile. At the expiration of that time, her belly was equally slender as at the moment of her origin. I repeated the experiment several times, and always with the same consequence.

Therefore as a queen, rigorously separated from all commerce with the male, remains sterile, it is evident she cannot impregnate herself, and that M. Hattorf's opinion is ill-founded.

Hitherto, by endeavouring to confute or verify the conjectures of all the authors who had preceded me, by new experiments, I acquired the knowledge of new facts, but these were apparently so contradictory as to render the solution of the problem still more difficult. While examining Mr. Debraw's hypothesis, I confined a queen in a hive, from which all the drones were removed; the queen nevertheless was fertile. When considering the opinion of M. Hattorf on the contrary, I put a queen, of whose virginity I was perfectly satisfied, in the same situation, she remained sterile.

Embarrassed by so many difficulties, I was on the point of abandoning the subject of my researches, when at length on more attentive reflection, I thought these contradictions might arise from experiments made indifferently on virgin queens, and on those with whose history I was not acquainted from the origin, and which had perhaps been impregnated unknown to me. Impressed with this idea, I undertook a new method of observation, not on queens fortuitously taken from the hive, but on females decidedly in a virgin state, and whose history I knew from the instant they left the cell.

From a very great number of hives I removed all the reigning females, and substituted for each a queen taken at the moment of her birth. The hives were then divided into two classes. From the first, I took the whole males, both large and small, and adapted a glass tube at the entrance, so narrow that no drone could pass, but large enough for the free passage of the common bees. In the hives of the second class, I left all the drones belonging to them, and even introduced more; and to prevent them from escaping, a glass tube, also too narrow for the males, was adapted to the entrance of these hives.

For more than a month I carefully watched this experiment, made on a large scale; but, much to my surprise, all the queens remained sterile. Thus it was proved that queens confined in a hive would continue barren though amidst a seraglio of males.

This result induced me to suspect that the females could not be fecundated in the interior of the hive, and that it was necessary for them to leave it for receiving the approaches of the male. To ascertain the fact was easy by a direct experiment; and as the point is important, I shall relate in detail what was done by my secretary and myself on the 29th June, 1788.

Aware that in summer the males usually leave the hive at the warmest times of the day, it was natural for me to conclude that if the queens were also obliged to go out for impregnation instinct would induce them to do so at the same time as the males.

At eleven in the forenoon, we placed ourselves opposite to a hive containing an unimpregnated queen five days old. The sun had shone from his rising; the air was very warm; and the males began to leave the hives. We then enlarged the entrance of that which we wished to observe, and paid great attention to the bees that entered and departed. The males appeared, and immediately took flight. Soon afterwards the young queen appeared at the entrance; at first she did not fly, but during a little time traversed the board, brushing her belly with her hind legs; neither workers nor males paid any attention to her. At last she took flight. When several feet from the hive she returned, and approached it as if to examine the place of her departure, perhaps judging this precaution necessary to recognise it; she then flew away, describing horizontal circles twelve or fifteen feet above the earth. We contracted the entrance of the hive that she might not return unobserved, and placed ourselves in the

centre of the circles described in her flight, the more easily to follow her and observe all her motions. But she did not remain long in a situation favourable for our observations, and rapidly rose out of sight. We resumed our place before the hive; and in seven minutes the young queen returned to the entrance of a habitation which she had left for the first time. Having found no external appearance of fecundation, we allowed her to enter. In a quarter of an hour she reappeared, and, after brushing herself as before, took flight. Then returning to examine the hive, she rose so high that we soon lost sight of her. Her second absence was much longer than the first; twenty-seven minutes elapsed before she came back. We then found her in a state very different from that in which she was after her first excursion. The sexual organs were distended by a white substance, thick and hard, very much resembling the fluid in the vessels of the male; completely similar to it indeed in colour and consistence.*

But more evidence than mere resemblance being requisite to establish that the female had returned with the prolific fluid of the males, we allowed this queen to enter the hive, and confined her there. In two days we found her belly swollen; and she had already laid near an hundred eggs in the worker's cells.

To confirm our discovery, we made several other experiments, and with the same success. I shall continue to transcribe my journal.

On the second of July, the weather being very fine, numbers of males left the hives. We set at liberty an unimpregnated young queen, eleven days old, whose hive had always been deprived of males. Having quickly left the hive, she returned to examine it, and then rose out of sight. In a few minutes she returned, without any external marks of impregnation. In a quarter of an hour she departed again, but her flight was so rapid that we could scarcely follow her a moment. This absence continued thirty minutes. On her return, the last ring of the body was open, and the sexual organs full of the whitish substance already mentioned. She was then replaced in the hive, from which all the males were excluded. In two days we found her impregnated.

These observations at length demonstrate why M. Hattorf obtained results so different from ours. His queens, though in hives deprived of males, had been fecundated, and he thence concludes that sexual intercourse is not requisite for their impregnation. But he did not confine the queens to their hives, and they had profited by their liberty to unite with the males. We, on the contrary, have surrounded our queens with a number of males; but they continued sterile, because the precautions for confining the males to their hives had also prevented the queens from departing to seek that fecundation without which they could not obtain within.

The same experiments were repeated on queens twenty, twenty-five, and thirty days old. All became fertile after a single impregnation; however, we have remarked some essential peculiarities in the fecundity of those unimpregnated until the twentieth day of their existence; but we shall defer speaking of the fact until we can present naturalists with observations sufficiently correct and numerous to merit their attention: Yet let me add a few words to what I have already said. Though neither my assistant nor myself have witnessed the copulation of a queen and a drone, we think that, after the detail which has just been commenced, no doubt of it can remain, nor can the necessity of copulation to effect impregnation be disputed. The sequel of our experiments, made with every possible precaution, appears demonstrative. The uniform sterility of queens in hives wanting males, and in those where they are confined along with them; the departure of these queens from the hives; and the very conspicuous evidence of impregnation with which they return, are proofs against which no objections can stand. But we do not despair of being able next spring to obtain the complement of this proof, by seizing the female at the very moment of copulation.

Naturalists have always been extremely embarrassed to account for the number of males found in most hives, and which seem only a burden on the community, since they fulfil no function. But we now begin to discern the object of Nature in multiplying them to such an extent. As fecundation cannot be accomplished within, and as the queen is obliged to traverse the expanse of the atmosphere, it is requisite the males should be numerous, that she may have the chance of meeting some one of them. Were only two or three in each hive, there would be little probability of their departure at the same instant with the queen, or that they would meet in their excursions; and most of the females would thus remain sterile.

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*It will afterwards appear that what we took for the generative fluid was the male organs of generation left by copulation in the body of the female. This discovery we owe to a circumstance that shall immediately be related. Perhaps I should avoid prolixity by suppressing all my first observations on the impregnation of the queen, and passing directly to the experiments that prove she carries away the genital organs; but in such observations which are both new and delicate, and where it is so easy to be deceived, I consider that a candid avowal of my errors is doing the reader service. This is an additional proof to so many others, of the absolute necessity that an observer should repeat all his experiments a thousand times, to obtain the certainty of seeing facts as they really exist.

But why has Nature prohibited copulation within the hives? This is a secret still unknown to us. It is possible, however, that some favourable circumstance may enable us to penetrate it in the course of our observations. Various conjectures may be formed; but at this day we require facts, and reject gratuitous suppositions. It should be remembered that bees do not form the sole republic among insects presenting a similar phenomenon; female ants are also obliged to leave the ant-hills previous to fecundation.*

I cannot request, Sir, that you will communicate those reflections which your genius will excite concerning the facts I have related. This is a favour to which I am not yet entitled. But as new experiments will unquestionably occur to you, whether on the impregnation of the queen or on other points, may I solicit you to suggest them? They shall be executed with all possible care; and I shall esteem this mark of friendship and interest as the most flattering encouragement that the continuance of my labours can receive.

Pregny, 13th August, 1789.

LETTER FROM M. BONNET TO M. HUBER.

You have most agreeably surprised me, Sir, with your interesting discovery of the impregnation of the queen bee. It was a fortunate idea that she left the hive to be fecundated; and your method of ascertaining the fact was extremely judicious, and well adapted to the object in view.

Let me remind you that male and female ants copulate in the air; and that after impregnation the females return to the ant-hills to deposit their eggs. "Contemplation de la Nature," Part II., chap. 22, note 1. It would be necessary to seize the instant when the drone unites with the female. But how remote from the power of the observer are the means of ascertaining a copulation in the air. If you have satisfactory evidence that the fluid bedewing the last rings of the female is the same with that of the male, it is more than mere presumption in favour of copulation. Perhaps it may be necessary that the male should seize the female under the belly, which cannot easily be done but in the air. The large opening at the extremity of the queen, which you have observed in so particular a condition, seems to correspond to the singular size of the sexual parts of the male.

You wish, my dear Sir, that I should suggest some new experiments on these industrious republicans. In doing so, I shall take the greater pleasure and interest, as I know to what extent you possess the valuable art of combining ideas, and of deducing from this combination results adapted to the discovery of new facts. A few at this moment occur to me.

It may be proper to attempt the artificial fecundation of a virgin queen by introducing a little of the male's prolific fluid with a pencil, and at the same time observing every precaution to avoid error. Artificial fecundation, you are aware, has already succeeded with more animals than one.

To ascertain that the queen, which has left the hive for impregnation, is the same that returns to deposit her eggs, you will find it necessary to colour the thorax with some varnish that resists humidity. It will also be proper to paint the thorax of a considerable number of workers in order to discover the duration of their life. This is a more secure method than slight mutilations.

That the worm may be hatched, the egg must be fixed almost vertically by one end near the bottom of the cells. Is it true that it is unproductive unless when fixed in this manner? I cannot determine the fact; and therefore leave it to the decision of experiment.

I formerly mentioned to you that I had long doubted the real nature of the small ovular substances deposited by queens in the cells, and my inclination to suppose them minute worms not yet begun to expand. Their elongated figure seems to favour my suspicions. It would therefore be expedient to watch them with the utmost assiduity, from the instant of production until the period of exclusion. If the integument bursts, there can be no doubt that these minute substances are real eggs.

I return to the mode of operating copulation. The height that the queen and the males rise to in the air prevents us from seeing what passes between them. On this account the hive should be put into an apartment with a very lofty ceiling. M. de Reaumur's experiment of confining a queen with several males in a glass vessel merits repetition; and if instead of a vessel, a glass tube, some inches in diameter and several feet long, were used, perhaps something satisfactory might be discovered.

You have had the fortune to observe the small queens mentioned by the Abbé Needham, but which he never saw. It will be of great importance to dissect them for the purpose of finding their ovaries. When M. Riem informed me that he had confined three hundred workers, along with a comb containing no eggs, and afterwards found hundreds in it, I strongly recommended that he should dissect the workers. He did so, and informed me that eggs were discovered in three. Probably without being aware of it, he has dissected small queens. As small drones exist, it is not surprising if small queens are produced also, and undoubtedly by the same external causes.

(To be continued.)

* The males and females of ants are winged insects; the former perish some time after their amours, and the females lose their wings a certain period after impregnation.—T.

A Prophet Hath no Honour in his own Country.

While this might not be wholly applied to "Imperial Bee" honey, there have been complaints from different districts that it is not like the honey supplied by some neighbour who keeps a bee. But from the far ends of the earth come its praises.

A storekeeper in Dawson City, Klondyke, writes that he had sampled some, and found it an excellent honey. Could the H.P.A. send him a few cases? And from far Cashmere a lady writes to a friend that while on leave in England they got some H.P.A. honey, and could get no other like it. Could he send her some more from New Zealand? It is good to see ourselves as others see us.

Correspondence.

[The publication of any letter does not necessarily imply our agreement with the subject matter, and we do not hold ourselves responsible for the opinions expressed by correspondents.]

(TO THE EDITOR.)

Sir,—May I take Mr. E. G. Ward's remarks on "The Honey Industry in New Zealand" as a text on which to write a short resumé of the work that the Honey Producers' Association has done since its inception some eight years ago. In this connection also I would refer to the article copied from the New Zealand Herald 20th March showing the increase in production during the past four years. This article states that the increase in production had nearly trebled during that time, and puts this down to the effects of the operation of the Apiaries Act. While no doubt the operation of the Act made the establishment of apiaries more secure, the stimulus to increase and the incentive to others to take up beekeeping came from an assured market for honey at a payable price. It may be interesting to those who have only taken up honey production during later years to know what the conditions were previous to eight years ago. Although the amount of honey produced then was very small to what is produced now, the prices offering were quite unremunerative. Honey was being hawked on the local market by needy producers anxious to sell, and as the supply even then always exceeded the demand, buyers had no difficulty in filling their requirements at their own prices. Those who produced enough to export their own met the conditions that the meat exporters to-day complain of. These small lots were offered against one another on the London market, and while there is no doubt that much of the New Zealand honey arriving in England was packed and sold as English honey, the price to the exporter was about the price of other foreign honeys. It was these conditions that induced a number of beekeepers to join together and form the Honey Producers' Association. From the inception of the Association right through a period of abnormal conditions up to the present this Association has not only found a market for the bulk of the honey of the Dominion, but has been able to make such arrangements that suppliers have been able to draw prompt and substantial advances as soon as the honey has passed the grader. When the circumstances are considered under which the Association was born and has lived, suppliers should be more than satisfied with the services rendered.

The Association commenced life with practically no capital. No payments in cash were required to take up shares, but only a small deduction made from the honey supplied. Yet the Association made advances. Through the war period when shipping failed, the Association's arrangements enabled them to hold the honey and still find cash for the producers. When the slump came and the English market failed, a brief opportunity that offered owing to American exchange rates was taken advantage of to sell in America, and good returns were made. And last year when the slump struck New Zealand and it was impossible to get satisfactory advances on produce of any kind, the Association again was successful in finding the money to make a very satisfactory preliminary advance. And this has all been done at a cost to the suppliers of less than £7,000—the amount of the paid-up capital of the Company.

And what now? The exportable honey in New Zealand this year will be about 500 tons. Supposing we reverted to pre-H.P.A. conditions, and this honey was hawked around to buyers, what would be the result? A little patience is necessary at this period. The Association has taken up marketing in England on lines approved by all the bigger producing industries in the Dominion. It is only a matter of waiting till this market fully develops. It will take a little time, but it is moving, and it will not be long before our export market is demanding bigger consignments. The Association is progressing. The purchasing of the Alliance Box Company in Dunedin will be the commencement of a Branch in the South Island.

The directors, while claiming that they have "made good" under very difficult conditions, do not claim to possess all the brains of the beekeeping world, and will be pleased to discuss any matters of interest with producers at the annual meeting or at the Conference. The Association has done good work as it is. It can do better with a fuller support of producers and more capital.—I am, &c.,

J. RENTOUL.

Cheviot, April 21st, 1922.

Subscriptions Received.

[NOTE.—Should there be found any discrepancy, please write the Editor.]

Rangiora Branch, to June 23
J. W. Excell, Opotiki, to Dec. 22
D. M. Ewart, Paretai, to Mar. 23
J. Scott, Rongomai, to April 23
C. Campbell, Takaka, to March 23
Miss E. Crawford, Waikoikoi, to March 23
A. Ecroyd, Christchurch, to April 23
J. Appleby, Palmerston, to April 23
A. Gwyn, Broad Bay, to April 23
J. McLay, Otekura, to April 23
C. P. Darby, Pokeno, to Jan. 23
H. J. Ellis, Patutahi, to April 23
A. W. R. Quinnell, Kihikihi, to March 23
W. R. B. Mitchell, Puriri, to April 23
J. H. Fowler (6/-), Bunnythorpe, to Feb. 23
A. C. Craw (22/6), Chorlton, to April 25
P. Sullivan, Temuka, to April 23
D. Henderson, Corbyvale, to April 23
O. J. Hodge, Te Puke, to April 23
W. Hope, Gisborne, to April 23
C. J. Clayton, Peel Forest, to July 23
D. McQueen, Kennington, to Dec. 22
J. Peters, Kennington, to Dec. 22
L. Irwin, Woodlands, to March 23
A. J. May, Island Block, to April 23
H. R. Penny, Okaiawa, to July 23
W. S. Grenfell, Dunedin, to April 23
R. Jones (20/-), Balclutha, to Jan. 25
G. Watt (6/6), Riversdale, to March 23
K. Tsukigawa (10/-), Balclutha, to Sep. 23
R. Allsworth, Palmerston North, to May 23
W. Lyall, Pigeon Bay, to June 23
T. Wackett (5/-), Kawhia, to Jan. 23
T. Orr, Temuka, to May 23
H. Parrett, Tai Tapu, to Sept. 23
J. T. McEwan, Runanga, to May 23
G. R. Willis, Pukekohe, to April 23
W. A. Willis, Pukekohe, to April 23
S. C. Rhodes, Tauranga, to Sept. 23
J. Jolly, Millers Flat, to May 23
D. McGregor, Browns, to May 23
Bernard and Barnes, Drury, to April 23
R. Hitchcock, Waimatuku, to March 23
J. Irving, Albury, to June 23
W. Gutry (6/-), Cambridge, to Feb. 23
H. Claughton, Havelock North, to May 23

"A very poor crop of honey about here this season. Even the thistles did not yield nectar. The worst season we have experienced!"—H. B., Masterton.

* * * *

"Very poor year for honey here; most of the bees require all they gathered to carry them through the winter."—W. L., Pigeon Bay.

* * * *

Mr. W. S. Pender (N.S.W.) writes under date April 12th:—"Market here over-supplied with honey, though coastal districts produced nothing. Some apiaries in the West have taken an average of 480 lbs. and over."—[I should like to be able to plead "Guilty" to the latter indictment."—Ed.]

Beekeepers' Exchange.

[Advertisements on this page will be inserted at the rate of 3/- per 36 words per insertion. Cash must accompany order or will not be inserted. Addresses care Editor 6d. extra to cover cost of postage of replies.]

"There is, however, one thing peculiar about honey-houses—that, no matter how large you build, you never regret it."—J. E. Crane, in "Gleanings."

New Zealand Beekeepers' Journal.

ADVERTISING RATES.

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One-eighth Page	2 2s.	1 5s.	15s.	5s.
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