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IEW
EALAND

BEEKEEPER

FEBRUARY, 1971

Miss Mary Bumby

New Zealand's First Beekeeper

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CONTENTS

RUMINATING

A HOT BATH is an excellent place to ruminate, to think on things of the past and to hope for the future. It is a condition for relaxation, constructive thinking, making decisions and removing dirt.

A recent rumination was the tragedy affecting the human race that we do not all speak a common language. Magazines from all over the world are received in this office containing information on experiments and developments of vital interest to beekeepers, and much cannot be assimilated and passed on because of inability to understand the writer's language.

Music is an international language. What a tragic omission that we cannot all so easily communicate by sight or word of mouth. How helpless one feels to be in the company of a Russian eager to impart his methods and knowledge and to listen to your own, to be confronted with an insuperable barrier of words impossible to understand.

Nation cannot speak unto nation until we have the wherewithal of a common tongue and understanding. As to whether such an ideal will ever materialise is a subject for conjecture. English speaking people are sufficiently egotistical to think that the common tongue should be English; if nothing else, it is the line of least resistance for us to follow albeit inconsiderate for other nationals.

Another human failing for which we share guilt is apathy; not to the problem of communication through the spoken word but to the dissemination of knowledge required by others to help them in their work.

A comparatively small band of research and practical workers in our own sphere of interest provide information to help others, but much more help should be given to assist beekeepers to be more efficient.

The ability to express practical knowledge in words is not enjoyed by all, but basic noted provided on a particular subject can

(Continued on Page 12)

CROP PROSPECTS FOR 1970-71

Summaries of reports from Apiary Instructors on seasonal conditions and honey crop prospects as at mid-January by the Superintendent, Beekeeping, Department of Agriculture, Wellington.

Northland

A mild winter mollowed by ideal conditions during September and October resulted in strong colonies in most areas of lower Northland and excellent crops of manuka were obtained.

In the Far North weather conditions were quite the reverse with cold winds and rain, which made queen breeding difficult, reduced bee strength and adversely affected manuka crops.

November and December proved to be very dry months in most areas. However recent rains should bring about a delayed clover flow. Some swarming was evident during October.

Good crops were secured in most areas from lotus major and buttercup with some rewarewa and fair to average clover crops are expected in all areas except the Far North where hopes for a good crop from bush sources remain high.

Auckland

Weather during November was ideal. Little rain fell until the end of December when almost drought conditions were experienced and the possibility of the honey crop from clover being a failure appeared likely. During the November—early December period light but steady yields were obtained from hangihangi, rewarewa and buttercup; yields from manuka, blackberry and tawari were about average.

Rains on six days during January has revived pastures and a light flow from clovers has commenced. Pennyroyal and fennel are making an early showing in some urban areas.

With more rain and other conditions remaining favourable average crops are still a possibility.

Hamilton

Following a mild winter most colonies were very short of stores by early August. Winter losses of hives from starvation was above average. Syrup feeding and a reasonable flow of nectar from willow brought hives up to a good standard of strength by late August. Early in the Spring weather changed from mild to cold with strong winds. These conditions prevailed until late October and syrup feeding was necessary to keep colonies alive. November—December weather was warm. Yields from buttercup and rewarewa were good, but kamahi, although showing good flower, was disappointing. In December other bush sources, blackberry and manuka, showed good prospects, but pasture sources had dried out and looked a failure. With rains and warm temperatures during January pastures have benefitted and pasture sources could now produce an above average crop.

With favourable weather during the remainder of January and through February the prospect is for the overall crop to be above average.

Tauranga

The winter was generally mild and bees wintered well. Early spring sources of nector were worked well and bees built up rapidly. Some areas experienced spring rains and flooding and the season was set back about 2-3 weeks. Warm weather has been experienced up to the present with periods of rain maintaining pasture growth generally.

Present conditions are good and an above average honey crop is likely. Rotorua has been later than the Bay of Plenty district but with warm weather and periods of rain it is hoped to see a heavy clover flowering.

Prospects look bright.

Hastings

Hawkes Bay—Poverty Bay beekeepers have been experiencing a difficult season for honey production. Both November and December were dry months with a poor flowering of manuka. The clover did, however, flower earlier than usual, but yielded very little nectar.

By mid-December the bees were gathering a crop which ceased to flow by Christmas due to adverse weather. Although the rain has brought the clover away again, conditions will have to improve very quickly for the district to realise anything like an average honey crop this year.

Palmerston North

Early spring conditions were good allowing colonies to build up early in strength using up their food supplies. Weather conditions broke towards the end of September with rain and high winds which continued during most of October. Because of these conditions bees were unable to work willows and most other early nectar sources and heavy supplementary feeding was required in most districts. With improved weather conditions during November, early swarming became prevalent in most districts.

Little rain fell during November and December and drought conditions began to develop in the coastal country of Manawatu and Wairarapa also in South Wairarapa. On the heavy land and in the high country because of more rain conditions were better but clover bloom in pastures was very poor.

Several days of rain during early January brought away pasture growth of clover and other nectar sources.

Honey crops from manuka and other early sources have been disappointing. Given favourable climatic conditions during the next few weeks a light to average crop should be gathered in this district.

Hawera

Conditions for beekeeping on the coastal area have been far from ideal. This being due to very dry weather conditions and very persistent winds throughout November and December. Further inland, normal sources of nectar are available and a near average crop can be expected from this area. Heavy rain fell in early January, but favourable weather did not make its presence felt until the 18th January. If these fair conditions persist a light crop could still be taken from the now green coastal belt.

Results so far from bush apiaries have been disappointing except for an early flow of rewarewa in some locations.

Nelson

The West Coast experienced a mild winter. This was followed by a wet spring with some heavy falls of rain and flooding. The flowering of kamahi was the best for several years but bees were unable to work it to advantage.

It appears to be an off-season for rata, only the odd flower showing from Karamea to Franz Josef.

The first two weeks of January have been fine and sunny and bees are working lotus major, white clover, catsear, white rata vine and minor bush sources.

With continued fine weather and high temperatures the West Coast can expect to harvest an average crop.

The season appears to be about a fortnight late and extracting is only just beginning.

Nelson-Marlborough also experienced a fine mild winter with heavy spring rains with flooding in some areas, but the last half of November and December were hot and dry and pasture growth burnt off. Good rains in early January have improved pasture growth.

White clover, viper's bugloss, catsear and lucerne is flowering well and with the continued good weather with high temperatures a slightly below average crop could be harvested.

Very little extracting has been done.

Christchurch

Heavy rains in March ended the dry 1969/70 season. Then followed the mildest winter in Christchurch since the records began in 1864.

This type of weather produced lush pasture growth throughout the district even on the lightest lands. However, about 3 days of hot dry winds in early December burnt off the clover heads without them having any chance of yielding nectar. So ended 1970 with a below average crop in sight.

The new year brought the hoped-for rains, most areas having a good rain and the second flush of clovers has appeared. If no more extremes of weather occur, the prospects of a good honey crop must be there, and it is possible we shall get a good late honey flow.

Gore

Following a mild winter hives built up early and by October were very strong, with heavy feeding necessary. Heavy snow and late frosts adversely affected all bush cources and these ceased to yield. By early December hives had started storing surplus honey and in the last week of December a good honey flow from clover prevailed in all districts.

Prospects are very good with an above average crop in sight.

Oamaru

The bees came through the exceptionally mild, dry winter in good order. Unfortunately, inclement weather ruined the willow flow; in Central Otago two consecutive twenty-five degree frosts in late September actually frosted the trees. Little honey was gathered from any early sources. However, plentiful rain in the early spring got pastures away to a good start, and by the end of October prospects looked very good indeed.

White clover started to flower about mid-November and fair quantities of honey were gathered during a hot spell at the end of the month. But hot weather early in December dried off clover surprisingly fast, and the rain which fell about the middle of the month had little effect. By Christmas conditions were generally very dry, and prospects were for a crop well below average.

The weather during the first two weeks of January has been changeable and cool with some rain. At present, the prospects are still for a less than average crop, but heavy rain followed by warm, calm weather would improve the situation.

Progress Report from

THE N.Z. HONEY PACKERS' ASSOCIATION

ANNUAL MEETING: November 28, 1970.

Mr. Frank Todd of Carton Specialties Ltd., made a special trip to Christchurch to give packers an opportunity to discuss packaging requirements.

Resolved: "That this Association apply to the Minister of Industries and Commerce for permission to increase the price of honey in line with the recent price increase of honey by the Honey Marketing Authority."

The Honey Marketing Authority Chairman Mr. R. F. Poole apologised for unavoidable absence of the H.M.A. Manager and spoke to the meeting on the H.M.A. plans and policy. Mr. K. Ecroyd was also in attendance.

Mr. D. Penrose, representing the N.B.A. gave a report on the Association and the proposed "Industry Investigation Committee". Following discussion it was resolved "That the Honey Packers Association advise the N.B.A. that financial support is available to a maximum of $500.00 for a properly constituted Investigating Committee."

It was further resolved that this Association request a meeting be held between the various beekeping industry Associations to discuss the future of the industry with particular reference to the Industry Investigating Committee.

After some discussion it was resolved to put the question of the removal of the Seals Authority Number from containers to a postal vote of members.

OTHER REMITS CARRIED WERE:

"That the Health Department be asked to formulate a standard of hygiene under which honey may be packed for sale."

"That this Association pursue the *unrestricted* export of honey and that all exports be free from levies."

ELECTION OF OFFICERS

President, Mr. W. L. Holt. Secretary, Mr. R. Davidson. Executive Members, Messrs. K. M. Herron and T. C. Gavin.

EXEMPTION FROM PRICE FREEZE REGULATIONS 1970

As from December 3, 1970, the N.Z. Honey Packers Association pressed for exemption from the price freeze regulations resulting in a telegram on December 23 from the Acting Minister of Industries and Commerce, Mr. Lance Adams-Schneider advising our representations had

been effective in gaining an amendment to the regulations exempting honey from the price freeze.

REMOVAL OF SEALS AUTHORITY NUMBERS FROM CONTAINERS

In a postal vote on the quesion of the removal of the Seals Authority Numbers from containers the result was for the removal of the seals number.

INDUSTRY MEETING

The following letter has been forwarded to the respective members:—

22nd January, 1971.

Dear Sir,

In a sincere attempt to bring stability to the whole beekeeping industry of this country we ask that your representatives attend a meeting of the various sections in the industry for discussion and decisions on the following subjects:—

1. The Seals Levy and/or Production Levies etc.
2. The marketing and export of N.Z. honey.
3. The future functions and policies of the N.Z. Honey Marketing Authority.

We consider this meeting should be called by the National Beekeepers' Association as early as possible (preferably February) in Wellington or Christchurch and that the following be represented:

1. The National Beekeepers Association Inc.
2. The Comb Honey Producers Association.
3. The N.Z. Honey Marketing Authority.
4. The Honey Packers Association.
5. The Representative of the Minister of Agriculture.

We suggest that this meeting be chaired by the N.B.A. Secretary, Mr. E. R. Neal and that a recorded resume be kept.

We are prepared to provide finance towards the hire of the meeting accommodation and the employment of a recorder and suggest that the meeting be of a two day duration and be constituted to bring down definite recommendations to the industry and Government.

Our Association has previously suggested that the Executive Members of the before mentioned sections of the industry convene a meeting without success and in our opinion unless some urgent action is taken in this direction the future of the beekeeping industry could be in jeopardy, particularly as we understand that the N.B.A. Executive do not have finance available for the Industry Investigation Committee requested by the N.B.A. Conference.

Yours faithfully,
R. DAVIDSON,
Secretary.

CODEX ALIMENTARIUS

The recommended European Regional Standard for honey as defined by the Joint FAQ/WHO Standards Programme with which New Zealand might have to comply if and when Britain joins the European Common Market.

1. DESCRIPTION

1.1 Definition of Honey

Honey is the sweeet substance produced by honey bees from the nectar of blossoms or from secretions of or on living parts of plants, which they collect, transform and combine with specific substances, and store in honey combs.

1.2 Description

Honey consists essentially of different sugars, predominantly glucose and fructose. Besides glucose and fructose, honey contatins protein, amino acids, enzymes, organic acids, mineral substances, pollen and other substances, and may include sucrose, maltose, melezitose and other oligosaccharides (including dextrins) as well as traces of fungi, algae, yeasts and other solid particles resulting from the process of obtaining honey. The colour of honey varies from nearly colourless to dark brown. The consistency can be fluid, viscous or partly to entirely crystallized. The flavour and aroma vary, but usually derive from the plant origin.

1.3 Subsidiary Definitions and Designations

1.3.1 According to origin

Blossom or nectar honey is the honey which comes mainly from nectaries of flowers.

Honeydew honey is the honey which comes mainly from secretions of or on living parts of plants. Its colour varies from very light brown or greenish to almost black.

1.3.2 According to mode of processing:

Comb honey is honey stored by bees in the cells of freshly built broodless combs, and sold in sealed whole combs or sections of such combs.

Extracted honey is honey obtained by centrifuging decapped broodless combs

Pressed honey is honey obtained by pressing broodless combs with or without the application of moderate heat.

2. ESSENTIAL COMPOSITION AND QUALITY FACTORS

2.1 Compositional Criteria

2.1.1 Apparent reducing sugar content, calculated as invert sugar:	
Blossom honey, when labelled as such:	not less than 65 per cent
Honeydew Honey and blends of Honeydew Honey and Blossom Honey:	not less than 60 per cent
2.1.2 Moisture content:	not more than 21 per cent
Heather Honey (Calluna)	not more than 23 per cent
2.1.3 Apparent sucrose content:	not more than 5 per cent
Honeydew Honey, blends of Honeydew Honey and Blossom Honey, Robinia Lavender and Banksia menziesii Honeys	not more than 10 per cent
2.1.4 Water insoluble solid content:	not more than 0.1 per cent
Pressed Honey:	not more than 0.5 per cent
2.1.5 Mineral content (ash):	not more than 0.6 per cent
Honeydew Honey and blends of Honeydew Honey and Blossom Honey	not more than 1.0 per cent
2.1.6 Acidity	not more than 40 milli-equivalents acid per 1000 grams

2.1.7 **Diastase activity and hydroxymethylfurfural content**
Determined after processing and blending

diastase figure on Gothe scale:	not less than 8
provided the hydroxymethylfurfural content is:	not more than 40 mg/kg
Honeys with low natural enzyme content, e.g., Citrus, diastase content on Gothe scale:	not less than 3
provided the hydroxymethylfurfural content is:	not more than 15 mg/kg

2.2 **Specific Prohibitions**
2.2.1 Honey must not have any objectionable flavour, aroma or taint absorbed from foreign matter during the processing and storage of honey.
2.2.2 Honey must not have begun to ferment or be effervescent.
2.2.3 Honey must not be heated to such an extent as to inactivate greatly or completely the natural enzymes it contains see 2.1.7).
2.2.4 The acidity of honey must not be changed artificially.

3. FOOD ADDITIVES AND ADDITIONS
3.1 None permitted.

4. HYGIENE
4.1 It is recommended that the product covered by the provisions of this Standard be prepared in accordance with the appropriate sections of the General Principles of Food Hygiene recommended by the Codex Alimentarius Commission. (Ref. No. CAC/RCP. 1-1969).
4.2 Honey should, as far as practicable, be free from inorganic or organic matters foreign to its composition, such as mould, insects, insect debris, brood or grains of sand, when the honey appears in retail trade or is used in any product for human consumption (see 2.1.4).

5. LABELLING
In addition to Sections 1, 2, 4 and 6 of the General Standard lor the Labelling of Prepackaged Foods (Ref. CAC/RS 1-1969) the following specific provisions apply:

5.1 **The name of the food**
5.1.1 Subject to the provisions of 5.1.4 only products conforming to the standard may be designated "honey".
5.1.2 No honey may be designated by any of the designations in 1.3 unless it conforms to the appropriate description contained therein.
5.1.3 Honey may be designated according to colour, and according to floral or plant source if the predominant part of the honey originates from the floral or plant source or sources so designated and if the honey has the characteristics of the type of honey concerned. Honey may be designated by the name of the geographical or topographical region if the honey was produced exclusively within the region referred to in the designation.
5.1.4 Honey not complying with the requirements of 2.1.7, 2.2.1, 2.2.2 or 2.2.3 of this Standard must, if offered for sale, be labelled "baking honey" or "industrial honey".
5.1.5 Honey complying with the provisions of this standard may be sold under designations which describe its physical characteristics, e.g., "creamed", "whipped" or "set".

5.2 **Net Contents**
The net contents shall be declared by weight in either the metric "Systeme International" units) or avoirdupois or both systems of measurement, as required by the country in which the product is sold.

5.3 **Name and Address**
The name and address of the manufacturer, packer, distributor, importer, exporter or vendor of the honey shall be declared.

5.4 **Country of Origin**
The country of origin of the honey shall be declared unless it is sold within the country of origin, in which case the country of origin need not be declared.

6. METHODS OF ANALYSING AND SAMPLING
The methods of analysing and sampling described are international referee methods primarily of interest only to scientific staff.

HOW TO MAKE HONEY YOGURT

(By G. Douglas Brown and Frank V. Kosikowski, members of the Department of Food Science, Cornell University, Ithaca, U.S.A. Recently published in "American Dairy Review.")

Yogurt is one of the oldest fermented foods known to mankind. Its popularity in the Middle East and Mediterranean countries is well documented and since 1900 it has become highly accepted in Europe. In North America three decades ago consumption was confined to a few large cities like New York. Since then, however, sales have been increasing steadily and over a wider geographical area. The same applies in Australia and New Zealand.

The new popularity of yogurt is attributed to consumer education through extensive advertising, to the productian of a better quality milder acid product, and to the introduction of many flavours. In 1968, for example, domestic yogurts could be found in 25 flavours, according to an American Dairy Review survey, with blueberry the most widely distributed after plain yogurt. Other major flavours included strawberry, peach, pineapple, cherry and raspberry.

While this has been happening a major transformation has occurred in techniques employed in making flavoured yogurt. Many companies departed from the traditional method of layering condiments on the container bottom and are now incorporating such materials throughout. This yogurt type is marketed under various titles, like Continental, or the more common, Swiss-style. The latter is so named because it resembles that found in Switzerland.

NEW FLAVOURS

Consumption of yogurt is expected to increase rapidly in the next few years as the public becomes better acquainted with the existing flavours and as new flavours appear.

In France, for example, where yogurt is big business, many additional flavours including banana exist.

New flavours are a key to growth, but it is interesting to note that honey, which along with yogurt, wheat germ and blackstrap molasses is listed among the primary basic natural foods does not appear as a flavouring material for yogurt in a recent American Dairy Review survey of 560 dairy plants.

Honey, like yogurt, has a history

stretching back into antiquity. Its nutritional properties are well recognised and its flavour appeals to all age groups. As a result, over the years honey has been incorporated into some neutral foods, such as butter.

At the Food Science Department Cornell University, research efforts were made to blend pure clover honey with plain yogurt. The preparation was relatively simple since honey dissolves readily in hot milk and does not crystallize on cooling. Several distinct procedures for manufacturing honey yogurt were tried in our laboratory. One was to dissolve clover honey in hot milk, cool the milk to 43 deg. C. and ferment it with yogurt culture in the normal manner. Another was to lay the required honey at the bottom of the container and cover it with inoculated milk and incubate. These products were test marketed in our campus serf-service dairy store in 8 oz. plastic cups in direct competition with excellent quality commercially packaged, plain and flavoured yogurts manufactured by several New York dairy firms. Advertising consisted of container labels and several small signs directing attention to the product. Honey yogurt was sold at the same price as each of the ten commercial flavoured yogurts, 29 cents per 8 oz. container.

SALES TAPERED

In the first two weeks considerable interest was shown in the new clover honey yogurt, but then sales began to taper. The general quality of this product was excellent, comparing favourably with the competitive commercial yogurts, so the nature of the honey was investigated. It was found that the replica to flavour of the clover honey was being masked by the acidity of the yogurt. Since it was not wise to reduce the yogurt acidity or to raise the level of honey, the only recourse was to go to a stronger flavoured honey.

Baker's honey was found to possess the desired flavour intensity. Also it was less expensive than other honey. The product made from buckwheat honey (15 per cent by weight) and yogurt was excellent and consumers accepted it at a relatively high level throughout the study.

Honey yogurt over a two and one-half month sales period on the average, garnered 31 per cent of the total sales of ten flavoured yogurts, and for each ten containers of plain yogurt sold, eight of honey yogurt were sold (Table 1). The presence of honey yogurt appeared to increase the total sales of all yogurts as interpreted from available comparable records.

FUTURE BRIGHT

Honey yogurt has a good future potential. It can be made in exactly the same manner as any flavoured yogurt, regular or Swiss-style and its caloric value is no higher than fruit flavoured yogurt. Also two basic natural foods are now combined into one, which should appeal to many consumers. Furthermore, as buckwheat honey is only 17c per pound, compared to 45c per pound for many fruit preserves, honey yogurt is a less expensive product to make, perhaps even less expensive than plain yogurt.

The only technical problem observed was a slight reduction in body viscosity. This was overcome by adding skim milk solids at levels low enough to avoid lactose crystal formation.

THREE TYPES

1. Swiss-Style — Hot Milk and Honey Mixture

Blend homogenised whole milk (1800 psi, single stage) with skim milk to give a 1.9 per cent fat content and dissolve 2-3 per cent dried skim milk powder in the blended milk.

Heat to 185 deg. F. and hold for 30 minutes.

Introduce 15 per cent by weight buckwheat honey in hot milk and reduce temperature of mixture to 43 deg. C.

Add 5 per cent active thermophilus-L. bulgaricus commercial yogurt starter to milk.

Package the warm yogurt in consumer-size containers and incubate at 43 deg. C to an acidity of 0.9 per cent, usually requiring 8 hours. Chill the package quickly to 5 deg. C and distribute.

2. Swiss-Style — Cold Yogurt and Honey Stirred Mixture

Prepared 1.9 per cent fat milk as

above, with spray-dried skim-milk powder. Inoculate using 3 per cent yogurt starter and incubate cans for 5-6 hr. to give a titratable acidity of 0.9 per cent.

Chill the plain yogurt to 40 deg. C and fold in 15 per cent by weight buckwheat honey to approximately 10 gal. lots. Agitate in blender for exactly one minute and pump semi-liquid to filler for consumer packaging and re-setting.

3. Regular Style — Layering of Honey

Layer 15 per cent by weight buckwheat honey on the bottom of each consumer container. Add to each container properly pasteurized, homogenized 1.9 per cent fat milk at 43 deg. C previously inoculated at this temperature with 3 per cent active commercial yogurt starter. Cover packages and incubate to approximately 0.9 per cent acidity, usually requiring 5-6 hr. Then chill packages of honey yogurt rapidly and distribute.

RUMINATING

(from Page 1)

be easily handled and presented in readable form if the master is willing.

Lack of support is not common to any particular publication or any particular country. It is with profound regret that Dr Francis G. Smith's decision was read to cease publication of **Apiculture**, the excellent quarterly magazine published by the Western Australian Department of Agriculture in South Perth. **Apiculture** has been published for seven years as a service to the industry, and it is a tragedy that such an ably produced publication must be allowed to fade away through lack of support by contributors. Dr Smith is to devote his time and his energy to other more pressing problems within the industry because he feels that without the injection of fresh stimuli and ideas the publication cannot usefully continue. Cessation of publication is for an indefinite period and until such time as the industry is prepared to show by its own effort that resumption of publication is justified. Our own industry should take note of this situation and decide the future of its own publication. Lack of support is frustrating in the extreme and must eventually result in stagnation.

Letter to the Editor

Correspondence on any subject of interest to beekeepers is cordially invited. Publication does not necessarily imply agreement with the views expressed.

18th December, 1970,

Retutai R.D. 7, Dargaville.

Sir,

I wish to obtain information re the handling of newly emerged queens. Detailed procedure for mating and handling of queens off the combs of, say, a nucleus colony, into introducing cages with escorts.

How do you get a queen into a cage, etc., etc.

I have little wire cages to press in on the combs but cannot induce the queen or bees to leave the comb cage and enter the introducing cage.

Old hands tell us that better results are achieved by breeding from one's own stock than from any queens bought in from outside.

With all due respect to our breeders I am inclined to think the old hands are right in that matter.

I can manage things all right until the virgin queens appear in their queen cell cages—Allen plan—but from then on have not the knowledge.

Should you be able to help me through the "N.Z. Beekeeper" it would be much appreciated.

Yours faithfully,

H. V. WILLIAMS.

P.S. I have a nursery to place over a strong hive and can keep queens alive for some days.

I have been a subscriber to the "N.Z. Beekeeper" for 30 years or more.

BEECH HONEYDEW

Summary of a paper given at the field day of the N.B.A. held at Staverley on 21st November, 1970, by

V. A. Cook, Apiary Instructor, Dept. of Agriculture, Oamaru.

Introduction

The raw materials of both honey and honeydew come from the same source, the fluid or sap circulating through the phloem of higher plants. Honey is processed by honeybees from nectar which is usually secreted in the nectaries of flowers. Some nectar may be secreted by extra-floral nectaries (Butler 1954). Honeydew is gathered by honeybees from plant sucking insects.

Beech honeydew has been produced in Canterbury for many years as bee food. The realisation that in Central Europe local honeydew fetches higher prices than ordinary honey suggests that perhaps our beech honeydew could become a new export commodity. I am quite optimistic about this after receiving samples of Swiss and Polish pine honeydew (very kindly sent to me by Dr Anna Maurizio, the famous Swiss authority on the chemical and botanical aspects of honey and honeydew production) which are similar in colour and flavour strength to beech honeydew. There is also some interest in marketing beech honeydew locally.

The beech honeydew insect

The insect which produces beech honeydew has been identified by the D.S.I.R. as **Ultracoelostoma assimile** Maskell (Perrott 1968). It is a soft scale insect of the order Homoptera. Very little seems to be known about its life history. Dumbleton (1967) suggests it may be parthenogenetic. The insect attacks native beech trees (**Nothofagus spp.**); it is pink, soft and up to about ⅛" in diameter.

Trees harbouring honeydew insects have trunks and limbs characteristically blackened by the sooty mould which grows on the sticky honeydew. Hair-like anal wax tubes from the insects protrude through the mould, and the honeydew can be seen as clear, glistening globules on the ends of the tubes. Careful probing at a point where a tube protrudes through the mound reveals a honeydew insect beneath the bark.

According to Mr J. T. Holloway, Director , Forest and Range Experimental Station, Rangiora (1968) **U. assimile** may be found on any species of native beech, but mostly in low to moderate rainfall areas, particularly where long, dry periods are experienced in summer. It is very rarely found at altitudes exceeding 3,500 feet.

Beech honey is produced mainly east of the main South Island ranges north of Mt Somers, where the dominant beech species is **Nothofagus solandri var. cliffortioides.** It is also produced on the West Coast of the South Island north of a line from Blackball to Bell Hill, around Reefton and Ikamatua (Hobbs 1968) and probably in other West Coast areas.

Production potential

There is insufficient data on which to base a reliable estimate of the potential production of beech honeydew. I understand, however, that while thousands of hives are located in honeydew producing beech forests, large areas are as yet not exploited by beekeepers partly through difficulty of access. Some beekeepers report harvesting, in very good seasons, up to five full-depth boxes of

honeydew, while others regard two boxes as a good crop. Considering the large areas of suitable beech forest available, it is safe to say the potential production is more than 500 tons per annum.

The composition of honeydew

There is some local prejudice against the use of beech honeydew for human food because it is derived from the excrement of an insect, and for this reason the honeydew produced is almost invariably used for feeding to bees. However, this prejudice is quickly dispelled if we briefly consider the nutrition of honeydew producing insects and the composition of the excreted material. It is perhaps inconsistent for anyone to condemn honeydew because it is produced from material which passes through an insect, and at the same time extol the virtues of honey which, in the process of conversion from nectar, is ingested and regurgitated many times by bees.

Wigglesworth (1964) describes the feeding habits of honeydew producing insects as "exceedingly wasteful". He says, "The sap is passed quickly through the gut and the components that the insect needs are presumably absorbed; but much passes out again as a liquid excrement containing plenty of amino acids, sugars and other nutritious substances." There is now plenty of evidence that the sap undergoes chemical changes within the insect. Maurizio (1962) says "In comparison with those of nectar, the sugar spectra of honeydew are always more complex, showing a whole series of high-molecular sugars (oligosaccarides), indicative of the presence of very active enzymes." So honeydew is really excess sap which has undergone a chemical change brought about by enzymes from the honey insect.

Buchner (1967), who found that most honey produced in Central Europe contains honeydew, studied the differences between flower honey and honeydew. Some of his findings were that honeydew is darker in colour than honey, has a different sugar content with less invert sugar and more sucrose, maltose and melezitose, contains more and greater quantities of minerals and develops a higher anti-bactericidal activity.

Beech honeydew has not, to my knowledge, been analysed, but an analysis is to be carried out by the D.S.I.R. It is light amber in colour and does not granulate.

The future for beech honeydew

The future for this product can only be properly gauged after the necessary investigations have been conducted. Traditionally, honeydew has been used for bee food, but the relative food value to bees of honeydew, honey and sugar have not been fully investigated, though this subject is hotly debated by beekeepers. Production costs could also be assessed. Is it more economical to run extra hives to produce honeydew than to feed either sugar or stored honey?

But it is the marketing of beech honeydew which should attract attention. It may well be a worthwhile export commodity which has been hitherto overlooked. Present indications are that markets can be established at prices at least equal to those received for honey of similar colour and flavour strength. Because it does not granulate, beech honeydew is very suitable for exporting in the comb. One beekeeping firm has already found a small market for honeydew sections at the same price obtained for white clover honey sections. The same firm is selling honeydew sections on the local market.

It is my personal view that honey containing beech honeydew should not be condemned out of hand as unsuitable for export; it should be labelled "honeydew honey" and graded, as honey is, to protect the interests of producers and buyers.

In developing any export market we need to look beyond our own tastes and prejudices; the aim must be to satisfy the customer. In Europe no differentiation is made between honey and honeydew according to a definition given by Maurizio (1962), which reads, ". . . honey is a matured sweet substance made by bees by collecting nectar, honeydew or other sweet fluids from plants;

(Continued on Page 29)

COMMENTARY from the Editor's Desk and Mail

REMITS CARRIED AT CONFERENCE of interest to the Department of Agriculture have been receiving attention and the Director, Horticulture Division, has advised as follows:

Remit 24

> "That this Conference requests that the Department of Agriculture carry out an investigation into existing bee strains within New Zealand with a view to improvement of stocks."

Owing to the fact that no one has taken up the duties of Agricultural Advisory Officer, Christchurch, it is not possible for the department at present to carry out an investigation into existing bee strains within New Zealand as it is considered that this project should be based on Canterbury.

Remit 25

> "That the Department of Agriculture be requested to co-operate in gaining information from farmers regarding wild colonies on their properties."

This remit is primararily an Industry matter and if the N.B.A. is prepared to initiate a scheme whereby farmers will advise beekeepers in regard to wild colonies on their properties the department is willing to consider the extent to which it can co-operate in the objectives of keeping the numbers of wild hives down to the lowest practicable minimum.

Remit 26

> "That this Conference is concerned at the possibility of illegal entry of queen bees, and requests that the strongest possible measure be taken against future illegal importations."

The department shares your concern regarding the illegal entry of bees into New Zealand and the department's Port Agricultural Service is very vigilant in this matter. The Apiaries Act 1969 includes new legal provisions and an additional amendment to strengthen the provisions against illegal entry of bees is receiving consideration.

However, if the illegal entry of queen bees is known to any of your members it is essential that they co-operate fully with departmental staff if this suspect activity is to be stamped out in the interest of the beekeeping industry of this country.

Remit 27

"That this Conference is appreciative of the work that is being done by the Department of Agriculture in attempting to find a suitable poison wasp bait and request that this work be given top priority."

Your appreciation is noted and priority in regard to finding a suitable wasp bait has passed from the Department of Agriculture to the Department of Scientific and Industrial Research and that department has commenced work on wasp baits.

On the general subject of Apiary Instructors' appointments to Northland, Auckland and Waikato, the Director points out that in early 1971 there should be two Apiary Instructors stationed in Auckland to cover the North Auckland and Auckland districts. It is intended to continue with the existing staff pattern, i.e. both being based in Auckland in the meantime although one will normally cover Northland and the other Auckland and its environs.

The question of appointing a second Instructor stationed in the Waikato has been investigated and in relation to the overall staffing situation of the Horticulture Division at present, such an increase in the Apiary establishment cannot be justified. However, having visited Hamilton and reviewed current work with particular regard to the registration of apiaries and control of B.L. disease, there is an urgent need for commercial beekeepers in the district to share the responsibility of acting as part time Inspectors if the finance which has been provided in the estimates is to be fully used in disease control. Assistance to encourage Waikato beekeepers to help with this work would be appreciated. In addition some short term assistance by a neighbouring Apiary Instructor is receiving consideration.

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THE NZBC feature COUNTRY CALENDAR gave a useful reminder to farmers that the success or failure of their clover crop largely depended on bees as pollinators, particularly for seed production, and emphasised that treatment for the destructive clover case bearer moth must have regard to bees presence or the 'baddies' will be killed in company with the 'goodies'. Advice was given to spray at night with the flowers open so that whilst the moths will be abundant, every self-respecting bee will be busy in the hive.

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THERE IS A RISK in adding natural pollen to supplement. Research has shown that the addition of a percentage of natural pollen to artificial supplements makes the supplement more attractive to bees and accelerates brood production. Unless, however, the natural pollen used is produced by the beekeeper himself or he is very certain of its source, it is better to do without it as there is a definite possibility of American

Brood Disease being introduced into hives by feeding pollen from unknown origins. Pollen is quite capable of carrying spores of this disease.

Incidentatlly, when using dry pollen in this way it should not be added to sugar syrup as it does not readily soften in syrup. It should be added to the water before the sugar is dissolved. (A helpful hint from Apiculturist R. S. Walsh in Auckland.'

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UNFORTUNATELY, and due to a number of unforseen circumstances, the AUGUST 1970 edition of the "N.Z. BEEKEEPER" was short-printed with the result that our librarian is short of filing copies. Would any reader not in need of the August issue for his own file please help up by sending in the unwanted copy? If several beekeepers respond so much the better and the copies will be welcome.

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The N.Z. HONEY PACKERS ASSOCIATION has offered to provide finance to the extent of $500.00 towards the cost of an Investigating Committee to study the Industry Levy problem.

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BEES DIE AS visitors inspect hives. It was a big day for Arthur Adams —he was playing host to the yillage Bee Breeders Association for the firs time.

New member Arthur proudly showed eight branch members how healthy and hard working his bees were.

But as they inspected his thirty-four hives, the bees began to drop dead before their eyes. Half a million were killed—by an insecticide a neighbouring farmer was using, he claims.

Arthur (50), of Legsby, near Market Rasen, Lincolnshire, said: "It couldn't have happened at a worse moment. It was tragic to have to watch and not be able to do anything about it."

A farm worker spraying insecticides by tractor on potatoes in a neighbouring field stopped when the bee-keepers told him what was happening.

New Arthur is calling for legislation to protect bee-keepers from farmers who spray crops without warning them. He has reported the incident to the Ministry of Agriculture, and scientists are studying samples of the dead bees.

Arthur added: "I am not sure if the remaining bees will survive the winter with their numbers so depleted. I will lose about 400 lb. of honey."

Farmer Joseph Vickers said: "I am sorry for what happened. We waited until seven o'clock in the evening before spraying, and I thought the bees would have gone in for the night by then."

(English) Evening Post Aug. 17, 1970.

THE OLD WIVES' TALE that beekeepers never suffer from rheumatismtism is being investigated at University College, London, with financial backing from the National Research Development Corporation.

There is believed to be something in the sting of a bee that prevents the disease from setting in. It is hoped that the research into bee venom will lead to more effective treatment for rheumatism and arthritis.

Bee venom samples extracted by Prof. C. A. Vernon, Professor of Chemistry at University College, are now being investigated by four drug companies.

Dr R. F. Homer, of the National Research Development Corporation, said he was "cautiously optimistic" about the outcome of tests. Tests on rats will take two years. If all goes smoothly a drug could be in use in about four years, probably as a course of injections.

To milk the venom from a bee, research workers use an electrically charged thin sheet of silicone rubber. When the bee gets an electric shock, it digs its sting right through the rubber so that the venom can be collected underneath.

Prof. Vernon previously investigated the venom of wasps, but found nothing of promise. Unlike bees, wasps cannot be milked. Their nests have to be collected, the wasps killed and their stings extracted with a sharp instrument.

From the *Daily Telegraph* (London).

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THE XXIIIrd INTERNATIONAL APICULTURAL CONGRESS is being arranged to take place at the Rossia Hotel, Moscow, U.S.S.R., August 27 — September 2, 1971.

The Soviet National Committee of Organization for the Congress has put out Informative Bulletin No. 1, with details of the programme.

The Congress may be attended by scientists, experts in problems of Apiculture, practical beekeepers, as well as representatives of the bee industry.

An International Apicultural Exhibition will also be organised including bee material, bee equipment and bee products, and a Film Festival and competition is scheduled.

Congress will take place in the big concerts and Congress Hall of the "Rossia" Hotel, aggregating 3,000 seats. On the opening of the Congress a great concert is scheduled in honour of the participants, and Congress will close with a banquet. One day will be reserved for tours of the neighbourhoods of Moscow. Official languages will be Russian, French, English, German and Spanish.

The Organising Committee together with the International Intourist Join - Stock company for foreign tourism has scheduled 5—10 day post congress tours which will enable participants to visit scientific research institutes and beekeeping educational institutions, as well as apiaries in different regions of the Soviet Union.

A special programme has been arranged for the ladies.

The organizing committee intends to publish further Informative Bulletins and tourists' literature, and if you are able to attend this important meeting of world-wide beekeepers, enquire now for further

details to:—

The Secretariat,

Soviet National Committee of Organization of XXIIIrd International Apicultural Congress,

Ministry of Agriculture of the U.S.S.R.

Orlikov per 1/11, Room 832 MOSCOW, 1 - 139, U.S.S.R.

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COPIES OF AUGUST 1970 ISSUE OF "N.Z. BEEKEEPER" WANTED. Owing to an error in the number of copies printed your library did not receive any copies of the August issue. These are used to keep two complete files and for other purposes. Any beekeeper who could spare his copy is requested to post it to "Beekeepers Technical Library," Box 423, Timaru.

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BELL HEATHER CROPS in Scotland for the past season were negligible and ling heather takes were poor, so that any available is at a premium.

Recommended minimum prices for "flower" honey have been published to show a fair return to the producer and they are detailed below. Retail prices are shown first, followed by the wholesale buying rate. Grocers expect between 17 and 25% profit on the retail selling price:

Per 1lb. jar extracted flower honey	6/6	4/10
Per 1lb. jar cut comb "flower" honey in cartons (5½d per oz.)	7/4	5/6
Per 1lb. top quality "flower" honey sections wrapped	8/6	6/4
Per 1lb. jar pressed heather honey	7/3	5/6
Per 1lb. cut comb haether honey in cartons (6d per oz.)	8/-	6/-
Per 1lb. top quality heather honey sections wrapped	9/3	7/-

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SIGNS ON EMPTY BLOSSOMS. J. A. Nunes, Institute Director at the Institute for Beekeeping at Frieburg University in West Germany, made the following discoveries—

To save the energy of other bees, foraging bees leave an "odour" sign on blossoms from which she has extracted the nectar. This was proved by the use of artificial flowers filled with sugar-syrup.

As soon as a bee had extracted the sugar-syrup no other bee attempted to draw syrup from the flower. The "odour" sign left behind by the foraging bee indicated to the next bee that the nectar supply was depleted.

Bees followed this "odour" sign completely, even long after the artificial flowers had been refilled with sugar-syrup.

THE HARMLESS GREEN DYE added to sugar for bee feed purposes in the U.K. is still causing problems for beekeepers and consumers. A B.B.C. report says that one apiarist with several tons of green hue honey has been unable to obtain sales at any price for human consumption by sale in the shops or through the bakery and confectionery trade. Who wants green food? Latest information is that the Department of Agriculture has agreed to compensation to beekeepers with stocks of unsaleable honey. Compensation will be better than "nowt" as the Yorkshireman would say, but it is pretty heartbreaking for any self respecting beekeeper to see his hard labours reduced to such a level.

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HONEY WAS EXEMPTED from the Price Freeze Regulations on 24 December by the Department of Industries and Commerce. The secretary of the National Beekeepers' Association sent telegrams to all branch secretatries informing them of this vital fact in the industry's economy.

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EXAMINATION RESULTS of the Royal New Zealand Institute of Horticulture show two successful candidates for the National Diploma in Agriculture. Named were G. R. DOBSON of Hamilton and P. W. MARSHALL of Hastings, to whom our congratulations are extended.

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THE COST OF MOST THINGS is increasing world wide and the dollar shrinks in its purchasing power whether US$, NZ$ or HK$. Our publishing friends in the States announce that their respective journals are to cost more for subscriptions because they cost more to produce. AMERICAN BEE JOURNAL is to cost $4.75 for a year, $8.75 for two and $12.25 for three years' despatch, postage included. GLEANINGS IN BEE CULTURE will cost $4.75 for a year, $8.00 for two and $10.65 for three payable, of course, to the equivalent in US$ which is slightly in our favour on exchange. Nobody likes paying more for anything, but with trade publications, one good idea to increase efficiency in any one year makes the subscripton well worth having.

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FLORAL SOURCE packs of New Zealand honey will be available to passengers on the Russian cruise liner "Shota Rustaveli," now on the homeward voyage to Southampton. The shop on board has purchased a trial consignment and if sales are as popular as expected, larger stocks will be purchased with the probability of other ships being similarly serviced.

Having expressed admiration for New Zealand honey on previous visits to Auckland, the captain of the liner was presented with a 5lb. tin for the officer's breakfast table when the ship called at Auckland on January 29.

BEEKEEPERS' TECHNICAL LIBRARY

The following books, presented by Foundation Life Members, have been added to the Library and a suitably Inscribed Book Plate has been mounted on each book.

FIRST LESSONS IN BEEKEEPING *by C. P. Dadant* – presented by Ian Keedwell Spence of Wendonside, Southland.

PHILOSOPHY AND PRACTICE OF BEEKEEPING *by A. L. Gregg* – presented by John Stewart Spence of Wendonside, Southland.

SILENT SPRING *by Rachael Carson* – presented by Ronald Henry Newton of Ashburton.

THE VENTILATION OF BEE HIVES *by E. D. Wedmore* – presented by Douglas Gordon Hamilton of Waimate, in appreciation of contribution by *Ivor Forster* to Beekeeping Industry in New Zealand.

SWARMING, ITS CONTROL AND PREVENTION *by L. E. Snelgrove* – presented by Clarry Hill of Rangiora.

QUEEN REARING *by L. E. Snelgrove* — presented by Dudley L. Ward of Dannevirke.

QUEEN REARING *by H. H. and J. E. Eckert* – presented by John De Wit of Woodlands, Southland.

HONEY GETTING *by Edward Lloyd Sechrist* – also – PROCEEDINGS OF THE SECOND INTERNATIONAL SYMPOSIUM ON POLLINATION *edited by Erik Akenberg and Eva Crane* – both presented by George Edmund Gumbrell of Geraldine, South Canterbury.

STARTING RIGHT WITH BEES *by J. A. Root* – also – PROCEEDINGS OF THE FIRST INTERNATIONAL SYMPOSIUM ON POLLINATION *edited by Tom E. Mittler* – both presented by Arnold H. Simpson of Woodbury, Geraldine.

Bundles of 10 assorted Beekeeping Magazines or any of above books available on loan to members by sending 20 cents.

Catalogue of Books and Copy of Rules available from Branch Secretaries or the Honorary Librarian.

Chris. Dawson, Hon. Librarian, Box 423, Timaru.

IS FULLY STOCKING OFTEN MISTAKEN FOR OVER-STOCKING?

By R. S. Walsh, Agricultural Advisory Officer, Auckland

The problem of over-stocking is one that has exercised the minds of beekeepers for many years, and is still a very live issue. However, with the very considerable increase in bee colonies which has occurred since the end of World War II and the accompanying increase in the total honey production, the carrying capacity of the honey producing areas of the Dominion now appears to be more fully realised.

At one time beekeepers felt that the only way to meet the threat of over-stocking was to have brought into existence a system of site-licensing. This idea no doubt resulted from the breakdown to some extent of the unwritten moral law which obliged beekeepers to observe a distance of two miles between any established apiary and a newly created yard. The great increase in beekeeping both as a full time occupation and part time living resulted in such a demand for apiary sites that the "Gentleman's Agreement" relative to the distance between apiaries became difficult to uphold, not wilfully in most cases, but because of the sheer necessity with which beekeepers were faced if they were to extend their beekeeping activities. It was almost universally accepted that a distance of at least two miles between apiaries was necessary if producers were to obtain an economical return from their bees. However, unless the basic fundamentals on which this belief was founded have been closely examined and the correctness of the assumption proved beyond doubt considerable hardship could be suffered by individuals and large quantities of honey could go ungathered by the bees in some districts.

The questions are: What constitutes over-stocking and what does not? How many hives will a given area support and at what point is saturation reached? What factors govern a honey flow and in what manner is nectar available to the bees? For many years as a Field Officer with the Department, the writer has had opportunities to make contacts and observations usually denied producers and his experience has led to the conclusion that many of the hard and fast beliefs allied to the over-stocking problem cannot be sustained. More honey is lost than is ever gathered by the bees and it is doubtful if a location could be over-stocked during a heavy honey flow.

It is true that in areas where little honey is available during the all-important period of spring colony development and where perhaps a pollen shortage also prevails, temporary over-stocking could exist at that time. To some extent these conditions also apply to localities where following a satisfactory spring honey flow a period of dearth precedes the main flow. However, more unsatisfactory springs than good ones are experienced and more localities lack dependable sources of spring nectar than otherwise. It is for the beekeeper to assist nature in the preparation of his colonies to meet the honey flow. Some areas are prone to pollen shortages even when sparsely populated by bees and substitutes must be fed. This also applies to honey supplies, and

if adequate stores have not been left with the bees, or spring nectar is poor, or the season late, feeding will be necessary irrespective of the number of hives in the area. Over-stocking is frequently used as the excuse for light honey crops when the cause lies with inefficient management methods, poor site selection, exposing the bees to draughts and cold and high winds which decimate the field force, or some other factor that could be corrected by the producer.

While large numbers of hives are congregated in some areas, only scattered apiaries are found in adjacent regions and although one or two additional apiaries might be established in those less congested areas, the creation of an economical chain of apiaries cannot be achieved because of the presence of other apiaries bordering on and beyond the under-stocked area. Consequently, although the land area in New Zealand capable of carrying greater numbers of hives is considerable, much of it cannot be utilized to its fullest economical extent because beekeepers are unable to expand their activities without encroaching on territory already occupied by other apiarists. These considerations have, however, been disregarded in some districts and blatant over-stocking has occurred.

The necessity to fully stock all good beekeeping areas makes it imperative that all the factors accepted in the past and recognized today as conclusive evidence that an area is over stocked should be reviewed. It is certain that in some districts insistence that apiaries remain two miles or more apart would mean the loss of honey. Yet on the other hand there are districts where very moderate crops are gathered although apiaries are separated by three and more miles. Would these apiaries produce still less honey if they were two miles or less apart? Poor producing country is unlikely to yield more honey to just a few hives than to a normal stocking of hives for the area. Conversely, much honey is lost in high producing country if the bees are not there to gather it and apiaries separated by two miles would be unlikely to gather all the nectar offering in country of this type except in years of extreme drought or similar disaster conditions.

If this contention is correct, seasonal conditions would not affect the relative yield per colony whether the season be a poor or favourable one or whether the hives be few or many. Some honey is inevitably lost every season because of insufficient numbers of bees to collect the nectar during the peak of the honey flow, whether it be a poor season when the periods of nectar secretion are of short duration or a good season when these periods are frequent and prolonged. This seemingly paradoxical position is more understandable when the acreage involved in a large tract of country is given consideration in conjunction with an explanation of what seems to occur during a honey flow.

A square mile of country comprises 640 acres. Thus, apiaries two miles apart have access to 8,000 acres of bush and pasture. If the foregoing range is increased to 10,000 acres, each hive of every 100 in the area would have access to 100 acres and for every 1,000 acres in clover 10 acres would be available to every hive—more than sufficient for them to gather a maximum crop if conditions are favourable.

Viewed from another angle, we know that hives in peak condition for say the clover flow would have available each day about 20,000 field bees which would be about one-third the hive strength. In suitable weather bees average ten trips per day or 200,000 nectar gathering visits each day for each colony. Clover blossoms will remain open and fresh looking for more than a week if they are not pollinated. It would be impossible to estimate the number of florets visited by a bee to gather a load, but assuming the flow is poor or the sugar concentration of the nectar is low, it may be necessary to visit 1,000 florets, thus 20,000,000 florets would be visited once each in one day. It has been estimated that there are between 50 and 100 million florets in an acre of clover pasture in full bloom, so it is evident that a single colony must gather a considerable quantity of nectar from an acre of clover.

It is doubtful, however, except in bush areas, if every acre of land anywhere would be entirely at the disposal of nectar producing plants and trees, when roading and other means of land occupation is taken into consideration. Probably only one quarter to three quarters of the country would be available for bee pasturage.

It is a common belief that during a honey flow from clover just so much nectar is available each day and if more than a limited number of bees are present to collect the nectar so the proportionate amount to each hive will be reduced. As mentioned earlier, the area ranged by bees can be quite extensive if necessary and the number of flower heads and florets available to them is very considerable; facts which are not always taken into account, probably because they are not fully understood. During the heavy nectar secreting period of clover or any other source for that matter, whether the flow be short or prolonged, the clover in the entire region of similar soil types, nectar concentration and climatic conditions is yielding simultaneously, either for a short or extensive period and it is most unlikely that the bees can gather all that is offering during this period of the flow. It is the time element that restricts the bees. The flow is either on or it is not and when the clover is secreting heavily, the bees are unable to collect all that is available. The area of country confronting them and the number of florets to be worked make the job beyond the bees in the time at their disposal.

It is not a matter of the nectar being removed from a head of clover which can then be regarded as an empty vessel for the next ten days or so thus allowing the bees to go from flower to flower until all have been relieved of their nectar. All or the majority of the florets already worked will be continually secreting nectar until pollinated so the bees cannot catch up on the supply during the period of heavy flow. If the flow has been steady and prolonged, the crop would be good, but if short and ceases abruptly, a poor crop is likely.

If honey flows do function as described, it must follow that intensive stocking is often mistaken for over-stocking and in many areas where the two mile limit is observed, a great deal of honey is lost. In other words, a fully stocked area does not mean less honey per colony but that less honey is lost to the beekeeper.

Although bees are known to fly several miles to gather some types of honey, or when there is no flow in the vicinity of the apiary, they do prefer to work within a mile if nectar is offering, a good average distance being threequarters of a mile.

An account of three experiences of many which have guided the writer's thoughts along the lines set out in this article have influenced his conclusions. In a well stocked district in North Auckland a beekeeper complained that a fellow apiarist had established an apiary in plain sight of the yard of 55 hives that he had been operating for a number of years. Nothing would induce the second apiarist to remove the bees yet after three seasons the first beekeeper frankly admitted that he had not suffered in any way, his honey crops being no less than prior to the establishment of the second apiary.

A few miles from Auckland City a mixed farmer derived a substantial part of his income from 70 colonies of bees worked for the production of section honey. He was greatly perturbed when a large commercial beekeeper established an apiary comprising 60 hives within half a mile of him but he could do nothing but accept what he reasonably considered a gross encroachment. The district is not renowned for high production and it did look as if the mixed farmer would have to suffer a reduction in his section honey crop. Thus the position remained for the next five years until the mixed farmer retired. Long before this he had ceased to resent what he at first considered an intrusion, and after five years admitted that the returns from his bees had not been affected.

The other beekeeper reported payable crops and was well satisfied with the site.

The final example is one in which the element of friction between beekeepers is entirely lacking as the incident occurred unbeknown to either party. In the South Auckland district an apiary of 45 colonies had been long established behind a hedge in the centre of a large property. Another beekeeper searching for a temporary site found an ideal location in a hollow at the end of a blind road. He placed 75 hives on the site which was only a quarter of a mile from the first mentioned apiary. The season was an excellent one for the district and both beekeepers were highly pleased with the returns from their bees. The crop harvested by the long established apiarist was a record from that apiary. The honey came mainly from pasture sources. At the end of the season the second beekeeper moved his 75 hives to a permanent site he had been awaiting in the area where he ran his chain of apiaries. The first beekeeper thus had the locality to himself the following season which happened to be a poor one, and despite the fact that his bees were in undisputed possession of the entire area, they failed to harvest any surplus.

DRY SUGAR IS GOOD FOR BEE FEED

By C. G. Rope, Honey Grader, Auckland

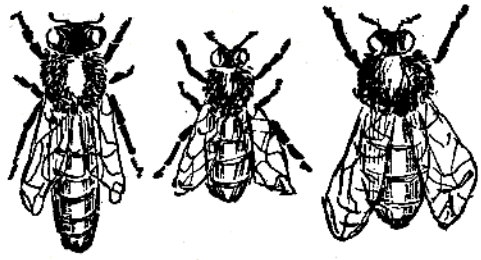
Dry sugar for spring feeding once had few advocates in this area. Here, it was generally believed that at best dry sugar will merely keep the adult bees alive, and at worst it is wasteful because some colonies dump it outside their hive entrances, much to the chagrin of the beekeepers! And this is exactly what does happen when dry sugar is fed in the wrong part of the hives, that is, on the bottom boards.

The secret of success with dry sugar is that it must be fed at the TOP of the hive immediately beneath the lid. In this position condensation, and warmth arising from the colony enable bees to utilise the sugar effectively. They dissolve the crystals and store this liquified sugar in their combs, consuming only as much as is required for normal development. Colonies make pleasing progress, but are not forced ahead too quickly for the time of year as is likely to occur if syrup or honey is fed. Dry sugar does not start up robbing in the apiary; it may be given at any time of day and during routine examination of colonies.

METHOD

A sheet of stiff brown paper is placed over the frames of the upper storey in the position usually occupied by a hive mat, leaving sufficient gap at one end for the bees to pass through. Place on top of this a queen excluder which has a wooden rim. This rim provides ¾ inch high walls which will prevent the sugar from spilling over the edges of the paper, and it also keeps the lid bee-tight and stable. (If you don't use this type of excluder, you will need to make up rims of similar dimensions.) Up to 6 lb. of sugar is then poured through the wires of the excluder before the lid is replaced. This amount of sugar should sustain an average colony for about 3 weeks. Incidentally, the bees remove the burr comb from excluders as they consume the sugar.

IS THE "DANCING BEE"



THEORY FACT OR FICTION?

This article reprinted from the "ARIZONA FARMER-RANCHMAN" in the United States gives interesting food for thought.

The author is ERNEST DOUGLAS of Arizona, U.S.A.

Odours govern bee behaviour to such a fantastic extent that science is just beginning to comprehend dimly. When a scout bee discovers a food source she returns to the hive and "recruits" other food gatherers by the scent clinging to her body.

This much is now known positively, from recent research. But does that scout dance in certain ways to tell other bees the direction and distance to the food source?

Dr. Adrian Wenner, who heads that research and was a principal speaker at the 1968 convention of the Arizona Beekeepers Association, says that bees have no "dance language." The scout dances, yes, but only to stimulate her hive mates to fly out and search for the food source the scout has located.

Dr. Wenner believes that the famous hypothesis of Dr. Karl von Frisch, hitherto accepted as gospel, is demolished by his carefully controlled experiments. Other researchers, and plain beekeepers who heard his Arizona address, suspect that von Frisch's theory is disproved only in part.

Dr. Wenner is a faculty member at the University of California's Santa Barbara campus. Associated with him in current investigations is Dr. Patrick Wells of Occidental. Their work is supported by the Office of Naval Research and National Science Foundation. They have repeated the von Frisch experiments, and made many others, under conditions more rigidly controlled than at the University of Munich.

Conclusions Challenged

It was at Munich that Dr. von Frisch developed his dance-language hypothesis and wrote , "Bees, Their Vision Chemical Senses and Language."

In that book Dr. von Frisch stated that when a successful scout arrives back at the hive she performs a "round dance," then a "tail-wagging dance," to indicate distance and direction to the food source she has located. He also surmises a "third factor," vigour. That is, the spirit that she puts into her performance conveys another message, perhaps the nature of the food.

Dr. Wenner asserts that this "third point" is definitely not true. That fact, and other evidence, collapses the whole "dance-language" theory. He is not sure why the scout dances but leans to belief that it is merely stimulus for other bees to get out and look for the same food she has found.

There seems to be no doubt that whatever they do look for is food with the same odour borne by the scout. But do they go with no other information about it?

Yes, says Dr. Wenner. They are as likely to fly in one direction as another.

They Flew and Hunted

He set up feeding stations at various distances. He said that when a station was only 100 yards from the hive, it took the first recruits up to ten minutes to find it, and then only a few turned up.

In his tests, elaborate means were taken to make sure that bees which did visit the station were from the scount's colony. Those from the colony were marked with paint, and any not marked were captured and put in alchohol as they appeared at the station.

Various foods were placed at the stations, usually sugar. When the food was odourless sucrose, scouts lured not a single recruit.

Once a piece of ordinary paper was placed under a dish of unscented sucrose. That paper imparted enough odour to the scout that recruits soon lighted on it.

"Odour is all-important in attracting recruits," Dr. Wenner declared.

Strangely enough, bees can be misled by odours that do not denote food at all. One time, Dr. Wenner recalled, a chemical was sprayed near some of his hives and in a short time bees were buzzing all around the sprayed spot. The same thing happened when grass was mowed in the neighbourhood, and when chicken manure was spread on a lawn. Any smell with which the bees are not familiar gets explored as a possible food source.

Reluctant to Change

As a colony works on one source, such as a certain flower, the odour of that blossom builds up in the hive. It is then difficult to induce bees to switch to some other flower, although it may normally be more attractive. They respond primarily to the odour permeating the hive.

Among the most interested listeners while Dr. Wenner spoke at Phoenix were Dr. Marshall Levin, director of the U.S. Bee Research Laboratory at Tucson, and half a dozen members of his staff. At that institution it has long been known that odours exert profound influence on bees. "Dr. Wenner's work has suggested new lines of investigation for us," Dr. Levin said.

Among those already investigating are Gordon Waller and Dr. Lonnie Standifer. Waller is trying to isolate the particular fraction in the odour of blossoms from certain strains of alfalfa that makes them particularly attractive to bees. Dr. Standifer, whose main objective is to formulate an acceptable pollen, no longer devotes exclusive attention to pollen chemistry; he is endeavouring to identify the odours that cause bees to prefer some natural pollens while scorning others.

BEECH HONEYDEW

(from Page 15)

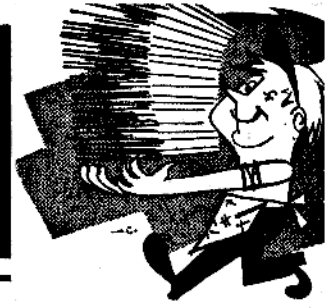
adding to it materials they themselves produce, so that it undergoes changes within their bodies; depositing it in cells of the comb; and leaving it to mature."

In Germany honeydew is called forest honey or woods honey. In West Germany in 1968 very dark woods honey has retailing at $US1.74 per 500 grams (i.e. ½ kg or about 1.1 lbs), when the same quantity of local clear honey fetched $US1.31, and imported medium amber sold for 59 cents (Patty 1969). I believe these figures indicate that the market is worth investigating.

REFERENCES

BUCHNER, R. (1967). The difference in honey from flower and honeydew nectar flow. Mitt. bad. Landesver. Naturkunde und Naturschutz: 5891593. In German.
BUTLER, C. G. (1954). The world of the honeybee. Collins: London. p. 170.
DUMBLETON, L. J. (1967). A note on the genus Ultracoelostoma Cockerell (Homoptera: Margarodidae). N.Z. Entom. 3(5).
HOBBS, R. H. (1968). Personal Communication.
HOLLOWAY, J. T. (1968). Personal communication.
MAURIZIO, ANNA (1962). From the raw material to the finished product: honey. Bee Wld 43(3): 66-81.
PATTY, C. E. (1969). U.S. honey in the West European market. F.A.S. M-206 U.S.D.A. Washington.
PERROTT, D. C. F. (1968). Personal communication.
WIGGLESWORTH, V. B. (1964). The life of iinsects. Weidenfeld and Nicolson. London. pp. 69-70.

BRANCH NOTES



NORTHLAND

Weather conditions have affected the honey take. It looked as if we were to have another bumper crop, but that was not to be. The manuka "forgot" to produce any nectar at all and then it turned dry for a month, followed by rain. So now we are hoping for a clover flow.

During November there was a very successful Field Day held with combined clubs Far North and Northland, with forty or more members in attendance. Malcolm Haines explained his method of extracting honey and how to remove honey from cappings by spinning them, which is more simple than the old method of the press.

There is talk of the Far North Branch combining with the Northland Branch and having meetings alternately at Kaitia and Whangarei. We shall decide at our next meeting.

One of our staunch members passed away suddenly on November 4, and our deepest sympathies go to his widow and family from members. He was always keen on bees and spent a lot of time helping junior members.

The next task is to get the honey house ready in case there is a late flow.

Reported by Arthur Tucker.

WAIKATO

Our boxberry (barberry) didn't give us a box; in fact, only about half a box in the best areas. With our promising lush (bush) sources, a very big rewarewa crop and an average Tawari crop, many will feel that it is a lush crop indeed.

As mentioned in my last report, prospects were for an early season or wind till Christmas, and we got both With nosema evident in places, hives lost a lot of field bees.

Loss of introduced queens a month after introduction was very heavy and sometimes up to 50%. However, where sugar feed was used to stimulate, losses were much lighter. We sent a queen away that had stopped laying for laboratory examination, and sure enough she and the escorts all had nosema.

Through most of the Waikato, clover has been nearly non existant in pastures until January, and after a brief flowering has gone again.

Rewa Rewa has yielded very heavily, with big crops harvested in many places. Tawari has been average, but a lot of weak hives shifted into Tawari areas got nothing. It is a waste of time taking hives that are below strength on to Tawari unless one likes shifting hives for pleasure.

Blackberry has yielded very well, and with some help from clover, lotus and other minor sources, average to good crops are evident. Continued fine weather could make this the biggest season for many years.

Reported by C. Bird.

CANTERBURY

When there has been a surplus of honey some have said that a bad season would be the simplest way of restoring confidence on the local market —just as long as I don't have the poor crop! If the Dominion crop followed the pattern of mid and north Canterbury's, then our marketing problems would be solved. Right from early

Spring the season progressed in copybook fashion with good growth of clover and masses of flower. But it is the rains in December which decides the crop and this year they were too late and too little.

What early clover there was didn't yield and a recent hot spell has again parched the countryside. Heavier coastal and foothill country have yielded a fair crop but overall the average will be down.

On the marketing side, things are equally haphazard. Honey is still being sold at the old price, due largely to the failure of a number of packers to advance their prices promptly when the Authority increased its packs on November 27 last. Prices ranging from 19 to 38 cents per lb can do little to establish the stability needed to return to the producer the maximum price for his honey.

Reported by J. K. Bray.

OTAGO

The new year is well and truly here, and while some beekeepers in a small way have been able to enjoy their holidays in very pleasant weather, the same weather has kept many of the fraternity very busy indeed. The rather doleful weather reported in the last set of Branch notes has been replaced at least up to the time of writing by quite the reverse.

For a report on conditions and a forecast of the future for this season locally I cannot do better than pass on to you directly a short summary prepared by our local apiary instructor, Gavin McKenzie.

"At present the situation is much brighter with most beekeepers flat out supering and some extracting because of a shortage of empty supers.

"With an exceptional spell of hot, fine weather between Christmas and New Year, and the abundant clover flower in the area meant in most cases two supers per hive which after a very trying Spring with rain, storms and

frost which destroyed all bush sources, was most pleasing to all. (What better Christmas present?)

Clover is still flowering well in most districts and with an odd shower of rain the honey flow could dwindle on for some time yet.

"It is very pleasing that the disease incidence this year is very low; some 100 hives less than last season and considerably less than for a long period of years. Only a watchful eye and a continual search will keep it this way. Many thanks for the co-operation from all beekeepers, without which my task would be impossible in this field.

"Discussion Group activities in December were a little disappointing, with a fall in support, but with the Christmas period approaching and work to be done, time is at a premium although I am sure for those whom attended, a lot was gained. Discussion was instructive and many problems and ideas were brought forward by members.

"Prospects are good for this season which will counteract a lot of the expense in feeding sugar to bring the hives through the Spring. By and large beekeepers' wives have now forgiven all the comments made like 'going broke', 'no crop this year', 'no money for Christmas', sell the car' or even 'sell out frustrated beekeepers'."

Thank you, Gavin, for your contribution.

The last Hobbyist Discussion Group meeting was poorly attended, and although those present, as always, did gain, a better attendance and greater benefit for all is looked forward to in the future. Like many things, a little time spent now represents an investment for the future. No doubt the same could also be said for branch meetings.

With regard to the honey flow, there is the odd report of too dry a condition in some areas affecting the nectar flow, but it is always so that not everyone gets a fair deal.

The recruitment drive reported on last time brought encouraging results and poured more membership life blood into the Branch's arteries and veins. As always, the wishful thinking is for 100% response, so if there is anyone reading these notes who is thinking of joining, a word to the secretary is all that is required for "Better Beekeeping—Better Marketing,"

A small pre-Christmas social was held in the form of a cheese and wine evening attended by some twelve Branch members and their ladies, the success of which may perhaps be best judged the next time one is held. Certainly bees and beekeeping were discussion topics but I am sure the "Grape" (no grain) brought out a host of other things from wine making to a better knowledge of other interests and foibles. Actually, some attending started the evening as non-members and finished as members. No doubt something to do with recruitment. By the way, within the resources of the organizer and other helpful persons it proved impossible to locate "Mead" to give topicality to the evening. It is indeed time that Mead manufacture was put right.

The basis of the Branch Apiary is now a fact and that is an important step, with opportunity to now see it into the Winter and follow its development next season.

The Otago Branch field day this year is now forecast for being held on the property of M. J. Heineman's "Milburn Apiaries" at Milton on the third Saturday in February. Notices and programmes will be sent out but all should be an accomplished fact by the time these notes are published.

At our last Branch meeting two movie films were shown—one on "Starting With Bees" and the other a rather "Cliff-Hanging" (literally) presentation forcefully making impact on safety at work and play. In searching the field for suitable beekeeping and related films it has been found the number available is relatively quite extensive.

Back again to the weather, which at the moment has allowed these notes to be penned in my back garden in shorts with the sound of bees gathering nectar around me. But! Are they all gathering nectar? A swarm? End of notes.

Reported by Bruce Norton.

WEST COAST

The Field Day on November 7 was, I think, a success—a happy gathering in pleasant surroundings and kindly weather.

All speakers were accorded an attentive hearing—something that does not always happen at such gatherings and discourages young potential speakers lacking in confidence.

Graham Walton of Palmerston North was guest and his many remarks on pollen supplement and feeding methods were noted.

Apiary Instructor J. Varley's straight talk on disease with particular reference to bacillus larvae would have hurt folks' feelings a few years back; today most agree that the spread of BL is due to operator carelessness.

An "auction" of donated queens caused a humorous break, with very spirited bidding by Canterbury v. the Coast. All proceeds went to the branch social fund. Thanks folks. Hope yours performed as well as the one I got. Put with a strong nuc. now 6 high.

Had it not been for odd days of near gale wind, the Coast has had very good weather this season. Cyclone Rosie left some farms looking as through some bears had had a picnic. 80 odd colonies scattered around.

Though kamahi season was short and no flower on hinau many other sources have yielded well. Plenty of cat's ear and lotus major around. Flats are so dry and bees are on white clover in some areas. White rata vine is yielding well but no tree rata. A few trees bloomed in the far south area of Puringa-Haast. Better beekeepers should get a near-average crop of above average quality honey.

On December 29th, 1970, the branch lost its last foundation member, David Thomas Cochrane, J.P., a branch life member, 85 years old. About November 1916 David convened a meeting of beekeepers, the outcome of which was the West Coast Beekeepers' Branch in February 1917 with David Cochran as honorary secretary. There is some doubt who was elected president (minute books being among the missing papers).

He was an active beekeeper until 4 years ago.

Reported by Tom Holland.

The Bulldozer and the Bees

"the old horse was just moping along when they met that army of bees head on."

By D. J. BERNHARDT

Three Rivers

Michigan, U.S.A.

This timeless and highly amusing story was written for GLEANINGS to whom we are indebted for permission to reprint. Encounters twixt bees and bulldozer drivers are not new and dislike by the bees for the roaring monsters is understandable — particularly when their cosy tree home is unceremoniously destroyed. Sorry as we are for the horse and passenger's predicament, who could help but smile at the report?

The big bulldozer growled and groaned as it pushed and pried relentlessly at the roots and trunk of a scrub apple tree which was standing at the side of the Fish Lake Road. Fences, trees and all other obstacles were being removed in order to put up a new grade to widen and resurface the old road. Usually such work is only rough, hard labour, but the uprooting of this tree was to provide a medium of diversion from the ordinary. As the protesting roots were broken loose from the hard August-dry soil the tree toppled across the road and at the same instant, from near the ground level of the tree, thousands of honeybees poured from a hole in the hollow trunk. The dozer operator upon seeing this horde of disturbed and well-armed insects, beat a hasty retreat—well not so hasty maybe but at least as fast as the dozer would travel, he being a brave man and unwilling to abandon his machine. Although the dozer moved at an agonizingly slow pace not one bee attempted to attack the driver. Instead the bees flew about in an uncertain cloud, unable to comprehend this sudden catastrophe and seemed to have no inclination to strike back. As the road must be cleared, the tree had to be removed. After a ways and means discussion someone bravely attached a long chain to the tree and it was hauled into the adjacent field.

Up to that point I was not an eyewitness as I was at work some distance away and if I had stayed at a distance the incident would have ended there. But I happened along just as the tree was left in the field and being a beekeeper I took quite an interest in the account of the foregoing happenings and noticed the large number of bees flying around the tree and also at its former location I made a remark which added greatly to the doings thereabouts the next day. As I had been removing many well-filled comb honey supers from my hives that summer I said, "I'll bet there's a good batch of honey in that tree trunk." Just talking—with no intention of salvaging any. But one fellow was interested in this aspect and asked a few questions concerning methods of obtaining honey from wild bees.

Now if there is one thing to be depended on when you are collecting wild honey is that you are likely to have a rugged time. But almost equally certain is the fact that no matter how many times you have fought a colony of bees determined to defend their stores, the next time there is an opportunity to cut a bee tree you are just as eager as ever. So after finding that someone was interested in getting the honey, I offered to bring my bee veil and smoker the next day to make it an easy job. After all, the tree was already on the ground and we even had a chain saw to make quick work of it. It was now near quitting time for the day. The bees would quieten down over night and we could remove the honey quickly and be gone before the bees became much disturbed..

The next morning the fellow who was going to remove the honey donned the bee suit, hat and veil. We fired the smoker and our hero waded in with the chain saw. Those bees were just sitting around waiting for something to show up that they could light into. They came out cussing and screaming and somehow the bee tree sawer got a bee in his hat. He started saying just about the same things the bees had been yelling, only in a different language of course. As he retreated to the bushes I was hiding behind (no veil) to have the bee removed, he said, "He stung me again." That didn't seem likely as a honeybee loses her stinger and her life the first time she stings. But he was stung twice as two bees were in his bonnet where there wasn't even a way for one bee to get in. How they did we'll never know. After having the stingers removed and the veil retied he went back to the tree and finished cutting a door into the hive. He removed brood comb and empty comb but very little honey. This to me, was surprising as it had been a good honey year in this locality and there was plenty of sweet clover in the vicinity.

The taking of the honey didn't finish the bee episode. Oh no! These were wild bees and many things can happen (and usually do) when you tangle with wild bees. We were just finishing our honey gathering when the engineer-manager (big boss) came on the job to check some survey stakes. The bees were so wild by then that they were ready to attack anything in the vicinity and prevented us from going back to work. They were patrolling the road for many rods and even prevented the dozer driver from getting his machine on the job as it had been parked overnight only a few rods from the bee tree. With the boss on the job something had to be done. The dozer operator was too scared to get anywhere near his machine, so the bee tree cutter moved in complete with coveralls, hat and veil and started the machine to push over more trees.

This didn't help a lot as there were so many bees looking for victims that they prevented us from cutting the trees up after they were pushed over. I might say right here that when I said coveralls, that is exactly what I meant, as the suit was mine and I am 6 feet five inches tall and weigh about 270 and the guy that was wearing the suit that morning is about five feet ten inches and 140 or 150 pounds.He looked like a small boy wearing a circus tent. Luckily the manager's business didn't take him very close to our tree but just as he left, along came the superintendent and stopped and got out of his car, (probably to see why us guys were hiding behind bushes and trees). Well, when the superintendent stepped from his car a couple of bees made for him. He tried to ignore them but you just can't ignore even one angry wild bee. He jumped back into his car and left fast.

After some time we were able, with much dodging and getting a few stings, to cut enough tops from the trees to clear the road of timber, if not of bees, and enable traffic to pass. The motor traffic made it all right, but, there being quite a number of Amish in this community, the inevitable happened. Up the road came a surrey drawn by a disconsolate looking old horse who must have reached voting age many years before. In the front seat of the surrey sat two middle-aged ladies and in the back seat a young fellow. I knew what would be liable to happen if they tried to go through the swarm of angry bees with the slow moving outfit so I stopped them and told them what was

ahead on the road, but the lady driver said they would try to get through as it would mean several miles of extra driving to turn back and take another road into town. I tried to convince them that the extra distance was a small matter compared to a swarm of angry bees but I could not dissuade them from driving on. Well, all I could do was watch, and that was enough.

That old horse was just moping along when they met that army of bees head on. Upon contact I could see the horse's ears go up and its tail began to switch, then that animal lit out for town and it was lucky the rig was aimed straight and had a clear track as I don't believe that old traveller would have turned aside for anything. The speed limit was 65 miles per hour but I believe a motorcycle cop would have had a hard time trying to catch them to give them a ticket. That horse would have earned a fortune on any race track.

I worked on that road all day and they didn't come back from town. I have often wondered since if they went home from town by a different route or if that horse is still running yet.

In Memoriam

To an Association which Died through Apathy

This epitaph should be engraved on a plaque and hung on the door of every honey house in the land. How can members of any organisation possibly expect their affairs to be conducted without adequate finance?

Expenses have to be met to pay for the vast amount of work being currently undertaken by the Executive on your behalf, and a great deal of time and effort is devoted to the affairs of the industry by a dedicated few.

Figures released from the Secretary's office show an alarming number of subscriptions to be still outstanding, and they are detailed below:

1969	**and**	**prior**	**39.60**
1970		**Branches**	**208.60**
		Direct	**45.00**
1971		**Branches**	**975.45**
		Direct	**128.50**
			Total $1,397.15

The total outstanding of $1,397,15 is urgently needed as working capital, and recalcitrant members are urged to make restitution immediately. It is grossly unfair to your President and all the voluntary members of the Executive who work without payment to help you in YOUR business.

JAPANESE BEEKEEPER SEEKS ASSISTANCE FROM NEW ZEALAND

A Japanese beekeeper anxious to commence operations with a commercial apiary in Tokyo contacted our man at the New Zealand Embassy to enquire how he could gain greater experience in beekeeping.

The enquirer, Mr. Yozo Shirai, who writes in good English, was given the name of the Honey Marketing Authority as a New Zealand contact.

In his letter Mr. Shirai states that he has had some experience of apiculture whilst attending college in the United States but that he is anxious to obtain a position enabling him to become a beemaster.

A commercial man requiring willing assistance may contact Mr. Yozo Shirai at 1192 Aihara-Mahi, Machida City, Tokyo, Japan to obtain further information and to provide details of a situation available.

There would, of course, be immigration formalities and other problems to be faced, but good keen men are hard to find anyway.

NATIONAL EXECUTIVE SPECIAL MEETING AT WELLINGTON

Because of the problems facing the industry the President of the Association deemed it expedient to call an unscheduled meeting of Executives at on December 16 and 17, 1970.

A NEW BRANCH in the process of formation is to be called Taranaki-Manawatu and an inaugural meeting scheduled for February 1971. To assist the new branch over initial difficulties with finance, Executive approved the loan of working capital to cover immediate expenses, and the President agreed to attend the first meeting of the Branch and to give them every support.

Messrs. Greig and Smaellie attended the meeting by invitation and reported on activities of the Department of Agriculture. In answer to questions it was explained that further investigations into existing strains of bees in New Zealand had been delayed due to the fact that it had not been possible to make an appointment as Apicultural Advisory Officer in Christchurch to carry out further investigations. The suggestion was made that the D.S.I.R. should be asked to make top priority an investigation into wasp bait. As a measure of self insurance against the problems of disease it was decided to forward to all branches a recommendation that members participate as part-time apiary inspectors in collaboration with the Department. Work on the incubation of queen cells was proceeding with the assistance of F. H. Bartrum at Pleasant Point providing at his own cost two incubators, and experimental work by the Apiary Instructor at Oamaru, Vince Cook.

RESTRICTED ZONE. Co-operation had again been obtained from beekeepers and reference was made to publication of a letter in a Christchurch newspaper asking for information on the effects of poisoning from bush. A reasoned reply had been given by the District Medical Officer of Health that beekeepers were generally well aware of the problem, that precautions were taken and new tests undertaken, and the risks were minimal.

FINANCE is an acute problem in conducting the Association's affairs and to avoid a deficit, further funds would have to be found.

PACKERS' ASSOCIATION. The N.B.A. delegate reported that 18 members from both islands attended the meeting at Christchurch at which policy decisions were taken including agreement to offer $500.00 to the N.B.A. to assist with financing an acceptably constituted Investigating Committee.

H.M.A. Mr. Eckroyd reported on matters of common interest. On **Remit 7**, the basis of the H.M.A. final payout was designed in relation to net realisation for each category. **Remit 9** The Authority reconsidered its freight policy and has taken steps to adjust some anomalies that previously existed. **Remit 12** Messrs Kimpton Bros. had been given notice that the Agreement was to be terminated 12 months from the end of the present quarter, i.e. December 1970. **Remit 13** Storage facilities were under investigation, particularly at Napier. **Remit 14** Approval had been given for the export of up to 10 tons of packed lines to anywhere in the world, subject to the same conditions as hitherto. **Remit 15 and 16** Exports of bulk honey had been considered and the policy reaffirmed that the Authority should be the sole exporter of bulk honey. **Remit 18** The H.M.A. intended to have a pilot advertising scheme to commence as soon as possible.

PRICE FREEZE. A delegation consisting of the President of the N.B.A., Mr. K. Ecroyd of the H.M.A. and the General Secretary attended the Department of Industries and Commerce on December 18 and made written submissions to the Director of the Distribution Division. (Just before Christmas the General Secretary was advised that the submissions had been successful and that honey was to be exempted from the Regulations effective from December 24. Telegrams to this effect were immediately despatched to all Branch Secretaries and direct members).

Other matters of a confidential nature were discussed and will receive publication in due course. The meeting closed at 3.45 p.m. on December 17.

PLANNING BEEKEEPING PROFITS

By V. A. COOK, Apiary Instructor, Oamaru

From an address to the N. Island Seminar, Ruakura

Introduction

To most beekeepers the only important factor concerning the business side of beekeeping is the taxable income figure shown at the bottom of their profit and loss accounts. In fact, if it wasn't for taxation I suppose many beekeepers wouldn't keep accounts or employ accountants at all.

Traditionally, beekeepers have been producers of honey and beeswax rather than businessmen. This attitude was summed up for me recently by a beekeeper who said his approach to beekeeping economics was to be happy when he had money in the bank, and to worry a bit when he got into the red. Well, present indications are that beekeepers need to give very careful attention to the economics of all their operations if they are to secure a reasonable profit margin.

An economic survey conducted in the South Island for the 1966/67 season, (Cook and Crump 1969), showed clearly that, in general the 400 to 500 hive outfit is hard put to make a profit, yet we know that twenty years ago units of this size were sound, profitable enterprises. What has happened is that honey production costs have risen at a faster rate than its selling price. Of course, this problem of the narrowing cost/prise gap is by no means confined to beekeeping. Wool growers, meat producers, dairy farmers and poultry farmers are all battling with the same problem. The beekeeper's problem of reduced returns must be tackled from both the technical and economic viewpoints, and it must be considered in terms of the individual beekeeper and the industry as a whole.

Planning Ahead

In planning the future of your business you should be prepared to seek advice from your beekeeping adviser, your accountant, banker and solicitor. But the first and most important person to consult is yourself. You and you alone can decide the type of beekeeping business, and hence, the type of life you want. Do you want a big outfit employing permanent labour? Or do you prefer to be a one-man beekeeper? Do you want to pack and retail your honey, or supply a packer? These are the sort of basic questions only you can answer.

Having decided what sort of business you want, then start detailed planning before doing anything. Get into consultation with your local apiary instructor. He has the knowledge of the advisory and economic sections of the Department of Agriculture to call on, and has a detailed knowledge of your district. He is the man to go to. As a first step work out with him a budget embracing your business aspirations.

The Cash Budget

A budget is an estimate of income and expenditure for some future period. I suppose few, if any, long term business budgets work out accurately, but nevertheless budgeting is an integral part of sound business management. I am sure that budgeting in beekeeping is essential for planning beekeeping profits.

The budget form I have prepared for beekeepers is a cash budget for one financial year. A beekeeper's business is conducted over a period of a year, and

therefore, weekly or monthly budgets which are used by manufacturing and trading concerns are less commonly of use to him.

The cash budget is an estimate of cash income and cash expenditure. If it shows an insufficiency of available funds, cash must be borrowed or plans must be altered.

The cash budget form is set out below:

BEEKEEPER'S CASH BUDGET

Year

Cash Income
Honey (produced & sold) ..... lbs at .....
Honey (bought & sold) .....lbs at .....
Beeswax .....lbs at .....
Queens No. ..... at .....
Hives of bees No. ..... at .....
Other business income

Total Cash Income $.....

Cash Expenses
Rates
Insurance (business only)

Administration
Accountancy fee

Overheads
Bank charges
Legal expenses
Newspapers
Subscriptions
Telephone
Stationery and stamps
Queens—Purchased No. ..... at .....
Feed—Sugar ..... tons at .....
Honey—bought for resale ..... tons at .....

Wages
Permanent ..... weeks at .....
Casual weeks at .....

Electricity and Fuel
Honeyhouse & workshop

Vehicle Expenses
Fuel, oil & grease
Registration
Repairs & Maintenance

Hive maintenance
Hive equipment purchased:
Supers No..... at ....
Bottom boards No..... at ....
Lids No..... at .....
Excluders No..... at .....

Mats No..... at .....

Frames No..... at .....

Nucleus Hives No..... at .....

Wax Foundation

(Own converted) lbs..... at .....

Purchased lbs..... at .....

Materials purchased for hive maintenance:

Timber

Galvanised iron

Nails

Preservatives ..... galls. at .....

Paint ..... galls. at .....

General Maintenance

Apiary fencing

Buildings

Plant and Machinery

Marketing Expenses

Freight

H.M.A. seals levy

Tins (4 gall.) No..... at .....

Drums (5 gall.) No..... at .....

Drums (44 gall.) No..... at .....

Retail containers (not including seals charge)

Sales promotion

Freight other than marketing freight

Development (Not to include replacements)

Hives of bees No..... at .....

Bottom boards No..... at .....

Lids No..... at .....

Excluders No..... at .....

Frames No..... at .....

Mats No. ..... at .....

Nucleus Hives No..... at .....

Wax Foundation

(Own converted) lbs..... at .....

Purchased lbs..... at .....

New Plant & machinery

Buildings

Apiary fencing

Materials purchased for making new hives

Preservatives ..... galls. at .....

Paint ..... galls. at .....

Financial Charges

Mortgage interest	.....	
Interest on overdraft	.....	
Rent	.....	.....
Any other cash expenses	.....	.....
	Total Cash Expenses	$.....
	Total Cash Income	$.....
	Total Cash Expenses	$.....
	Cash Surplus/Deficit	$.....

Calculation of Cash Outcome at End of Year

Income		
Farm cash income		.....
Non farm cash income		.....
	Total Cash Income	$.....
Expenses		
Farm cash expenses	.....	
Drawings	.....	
Life Insurance	.....	
Education Fees	.....	
Taxation	.....	
Capital repayment	.....	
	Total Cash Expenses	$.....
	Cash Surplus/Deficit	$.....

Total cash income is entered in the top portion of the first page. In order to estimate honey production and beeswax production, the five year, or preferably the ten year average for your own business should be used. The yearly average crop per hive is calculated by dividing the number of hives kept during the flow into the amount of surplus honey produced. Honey stored away for feeding back to the bees cannot be included, and hive numbers should not be taken as at the spring count because this number could be almost double by the start of the main flow. All hives kept during the flow must be counted; not just those which produce a surplus! There's little point in living in a fool's paradise. In short, your appraisal of past results must be realistic.

Beeswax production should be based on a figure of about 35 lbs of cappings wax for each ton of honey extracted.

"Honey bought and resold" will apply to only a few beekeepers, as will the sale of queens and hives of bees. "Other business income" covers such items as pollination fees, and the sale of pollen and package bees.

In the expenditure section costs as at the current year must be increased in proportion to any substantial development which may be planned.

Hive maintenance must be carried out irrespective of your development programme, and therefore the sections "Hive maintenance", and "Development" must not be confused. They are separate budgeted items.

If your budget shows a deficit, cash must be borrowed or the budget must be amended to show an adequate surplus. To this end, the final section allows for the calculation of your final cash outcome at the end of the year after all your business and private expenses have been met. I hope you will put these forms to good use.

Forecasting the Honey Crop

One of the most difficult tasks in beekeeping is forecasting the honey crop. Prospects for the main clover flow may look excellent one day, and a couple of days later, due to changed conditions, they may look very gloomy indeed. It is often said that the only time to forecast the honey crop is after it has been harvested.

The main reason for the difficulty in forecasting the honey crop is that it is not produced in the sense that farm crops and animal products are produced; it is in fact collected.

The size of farm crops such as cereals, wool, meat, dairy products and eggs can be pretty accurately estimated, despite the fact that they may all be influenced by diseases, climatic conditions and other factors. For example, if a farmer sows fifty acres of wheat using the correct cultivation methods, the right fertilisers and so on, he can expect a crop equal to the average yield in his district.

By comparison, the size of the honey crop depends mainly on two factors. Firstly, the availability of nectar producing flora (which is dictated largely by current farming practices) and secondly, climatic conditions, which in turn, determine honey flow conditions, that is both nectar secretion and its collection by the bees. The result is, of course, that the crops produced by one hive may vary from very big to nil.

I have already said that the average crops of individual businesses must be used as a basis for budgeting, but of course an average crop is not produced each year. There are, in fact, very wide fluctuations, but these tend to be widest in small outfits located over a small area. With the present trend for beekeeping businesses to become bigger, apiaries are being bought or established in different climatic and farming areas, with the result that more even crops are being produced each year than was formerly the case. Therefore, bigger, more widely dispersed outfits are making reasonably accurate honey crop forecasting possible.

The Challenge of Reduced Returns

It is curious that many beekeepers should blame their reduced returns on ever decreasing honey production per hive when, in fact, the long term average per hive has remained steady. The average crop for the ten year period 1949 to 1959 was 65 lbs per hive for the whole country. For the period 1959 to 1969 it was 63 lbs per hive. Total production for the 1968/69 season was 6,670 tons, only 330 tons less than the biggest crop produced in the past twenty years, which was 7,000 tons in 1954/55. The problem is therefore definitely one of economics rather than decreased production per hive. It is in fact, as I stated earlier a narrowing honey cost/price margin. How then, can this problem be overcome? Four ways can be considered: more efficient honey marketing, reduced production costs, increased production per hive and the establishment of bigger beekeeping enterprises.

1. Honey marketing

Honey marketing is the responsibility of the beekeeping industry and I am therefore not at liberty to make recommendations concerning the selling price of honey. However, I would point out that as honey is not an essential commodity, there is a limit to which the retail price can be pushed. The consumer will, in the final analysis, always decide what that limit is.

The level of efficiency of honey marketing obviously has a tremendous effect upon the amount of profit producers make. Honey marketing should therefore be perhaps the major consideration of the industry as a whole. At present this vital issue tends to be left to a few to worry about; producers generally are apathetic towards honey marketing. The whole question of honey marketing would receive much more attention if producers actively sold their honey; at present the tendency is to wait for someone to buy it.

2. Production costs

Despite the fact that production costs are increasing, some costs can be pruned. Seemingly small costs can be significant and any saving in costs can be worthwhile.

The biggest scope for cutting costs lies in transport. The 22 beekeepers who contributed to the survey mentioned earlier averaged 21 miles per hive for one year. Mileage per hive varied from 10 to 33. There was no correlation between mileage per hive and honey yield. Nor was there any correlation between mileage per hive and the size of the outfit.

If we take the average of 21 miles per hive at say 10 cents a mile, this means it cost $2.10 per hive per year just to visit it. Therefore, if the average mileage per hive can be cut to 10 miles, there would be a saving of $1.10 per hive per year in production costs.

In many cases mileage can be cut without causing reduced production if colony management is more carefully planned on a yearly basis. Every visit to an apiary should only be to perform an essential stage of seasonal management to all the hives in the apiary.

3. Economic Production per hive

A good deal is said about the need to increase production per hive but little, if any, increase is achieved. As I see it, economic production per hive can only be increased by sound, fundamental colony management, and by breeding improved strains of bees.

Fundamental colony management means disease control, adequate food supply, regular requeening and swarm control — in that order.

Effective disease control is so obviously vital that it need not be discussed at length here.

Swarming is troublesome in some seasons, and it should be controlled, but generally it is not a serious problem.

The two factors retarding honey production are insufficient feeding and requeening.

In the case of food supply, many beekeepers not blessed with minor spring and early summer flows regard a big sugar bill in the critical November/December period with dread, when in fact heavy feeding at this time is a beekeeper's best insurance against a poor crop or a crop failure.

There is some considerable divergence of opinion as to the amount of stores a properly fed hive should have. My recommendation is that a hive should never have less than the equivalent of three full combs of stores. It should be remembered that a strong hive consumes about a full comb of honey each week during the November/December period. So it follows that if hives become short of stores at this time, they require three combs of honey or a couple of gallons of thick sugar syrup, and feeding must be continued until the bees are self supporting.

Too many hives are not requeened regularly. This applies mainly to the beekeeper who does not raise his own queens. He may not be able to afford to buy them, but, what is much more serious from the industry's point of view, he is likely to find that queens are not available. An abundant supply of quality queens, particularly in springtime would certainly help many beekeepers to plan, and indeed to increase their profits.

Bee breeding is the ultimate answer to increasing production per hive. We know that some strains of bees produce more honey than others, and after all, no matter what sophisticated equipment or advanced methods of management we may use in beekeeping, it is the bee itself that gathers the honey crop.

I think perhaps the whole question of bee breeding has been made to sound so abstruse that it is not seriously contemplated by ordinary beekeepers. Better bees can be bred from existing stock by every beekeeper who rears his own queens and by every queen breeder. Breeder queens should be selected on the performance of their worker progeny. Queens to breed the most desirable drones should be selected on the same basis. If mating apiaries are established with a reasonable degree of isolation, worthwhile results from bee breeding can be achieved fairly quickly.

Bigger Beekeeping enterprises

The survey referred to previously showed clearly that bigger beekeeping enterprises are needed to enable beekeepers to increase profits.

A new attitude of mind is needed. We must think in terms of running more hive per man to produce more honey per man. At present we are stuck with the twenty year old idea of 500 hives per man. It is interesting to consider the increase in production units per man that has been achieved in other primary industries during the same twenty year period.

In the case of poultry, 500 birds was considered to be a fair sized flock twenty years ago. Today, 2,500 birds is reckoned to be an economic unit, and some poultry farmers are running up to 5,000 birds per man.

Ewe flocks have increased from about 800 to 1,500, and dairy herds have increased from about 40 cows per man to more than 80.

Bigger beekeeping enterprises are more profitable than small units for several reasons. In the case of say a 1,000 to 2,000 hive unit, where the apiaries are widely dispersed into different climatic and farming areas, the honey crops produced are relatively even.

Capital outlay on a 2,000 hive unit is less than that required for four 500 hive units. And in the bigger units proportionately less capital is, or should be, invested in plant, machinery and buildings with the majority being invested in production units, that is, hives of bees.

There is a tendency for many beekeepers to over-capitalise on plant. You should think carefully before buying new plant whether you really need it, or whether you are trying to "Keep up with the Joneses". Extracting plants, many of which were designed for a 500 hive unit, will deal with the honey from 1,000 or more hives quite adequately.

Mechanisation is one of the main factors which will make possible an increase in the number of hives which can be run efficiently by one man from 500 to 800 or more. The purpose of mechanisation should be to increase overall production and/or to reduce labour costs. Mechanisation does not necessitate over-capitalisation.

Most of the mechanical aids available are for harvesting the honey crop, and particularly for honey extracting. Much of the machinery used can be operated by unskilled workers and more use can be made of casual labour for honey extracting work, particularly during evenings and weekends.

There is a limit to the number of hives which can be kept economically in the country as a whole. Some areas are stocked to capacity already and only a few new areas are becoming available, where high country development is taking place. In general, it can be expected that the more progressive beekeepers will expand their enterprises by buying smaller businsses which come onto the market. The trend will be for fewer beekeepers to operate about the same total number of hives and produce approximately the same overall crop.

Conclusions

The beekeeping industry must accept the challenge of reduced returns which has been brought about by general economic circumstances.

The best way for beekeepers to increase returns is by expanding their enterprises to give greater production per labour unit, even though this means fewer beekeepers will operate about the same total number of hives. Capital should be invested mainly in hives of bees.

It is possible, in the long term, to plan beekeeping profits despite the fact that honey is such an elusive crop.

Careful budgeting is essential for planning beekeeping profits. You are invited to seek advice on budgeting and other aspects of beekeeping economics from Apiary Section staff. We are keen to help you to plan your beekeeping profits.

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NEW N.B.A. BRANCH FORMED

The inaugural meeting of the combined Taranaki-Manawatu branch of the National Beekeepers' Association is to be held in Wanganui on February 27th.

The Chairman will be E. J. Whalley, supported by the President of the Association Bruce Forsyth and industry leaders.

All beekeepers within visiting distance of Wanganui are urged to attend, and the good wishes of us all are for a very successful meeting.

The National Beekeepers' Association

(For the advancement of the Beekeeping Industry in New Zealand)

'Better Beekeeping—Better Marketing'

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0	to 20	hives	$2.00	1001 to 1100	hives	$22.00
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201	to 300	hives	$6.00	1201 to 1300	hives	$26.00
301	to 400	hives	$8.00	1301 to 1400	hives	$28.00
401	to 500	hives	$10.00	1401 to 1500	hives	$30.00
501	to 600	hives	$12.00	1501 to 1600	hives	$32.00
601	to 700	hives	$14.00	1601 to 1700	hives	$34.00
701	to 800	hives	$16.00	1701 to 1800	hives	$36.00
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THE N.Z. BEEKEEPER

This Journal is issued to all members of the National Beekeepers' Association and direct subscribers.

Literary contributions and advertisements must be in the hands of the Editor, Mr L. W. Goss, P.O. Box 3561, Auckland, not later than the 25th of the month preceding publication.

Nome-de-plume letters must be signed by the writer and address given, not necessarily for publication, but as proof of good faith. Letters accepted for publication do not necessarily express the views of the Editor.

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Quarter Page	$4.50	Per Inch	$1.25
Half Page	$8.25	Min. Charge for each insertion.	65c.
Full Page	$15.00		

Front Page Story

MARY BUMBY
New Zealand's
First Beekeeper

After John Smith, Canterbury's Apiary Instructor, had addressed a meeting of North Canterbury ladies, one of those present asked if he would be interested to see an oil painting of one of the persons mentioned in the lecture.

You can imagine John's surprise when he discovered that not only was there at her home a portrait in oils but a great-grandson of New Zealand's first beekeeper, Mary Bumby.

Mrs R. C. Overton invited John to visit her at Scargill, about fifty miles north of Christchurch.

John knew that your librarian was interested in collecting further information about Miss Bumby so we were on the north road just as quickly as it could be arranged.

It was very interesting to meet Mr and Mrs Overton at their back-country residence, "Raumati", near Scargill, and thrilling to see and take a photograph of this portrait of one of New Zealand's famous firsts. Some very useful information for further enquiry was gleaned and your librarian is placing this on permanent record before it is lost forever.

INFORMATION WANTED—

It would be appreciated if any person who has information about Miss Mary Bumby who was sister of William Hewgill Bumby and who later became Mrs Gideon Smales, would write to the Librarian, P.O. Box 423, Timaru.

BOUGHTWOOD PRINTING HOUSE, North Shore